

Junos® OS

Chassis-Level User Guide

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Junos® OS Chassis-Level User Guide

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About This Guide

Use this guide to configure several properties of a router at the [edit chassis] hierarchy level. You can also configure support for chassis-level alarms, power management, and other features at the chassis level. Some of these features are platform-specific, while others are common across all routers.

1

CHAPTER

Overview

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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.

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]`.

2

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MPC-specific

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Upgrading or Downgrading MPCs (MPC8E and JNP10K-LC2101)

IN THIS SECTION

- [Upgrading MPC8E to Provide Increased Bandwidth | 4](#)
- [Downgrading JNP10K-LC2101 to Provide Decreased Bandwidth | 5](#)

You can upgrade MPC8E to provide an increased bandwidth of 1600 Gbps (1.6 Tbps). Similarly, you can downgrade the JNP10K-LC2101 MPC to provide a decreased bandwidth of 1.44Tbps.

Upgrading MPC8E to Provide Increased Bandwidth

In Junos OS Release 15.1F5 and later, MX2020 and MX2010 routers support No Link Title (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.

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 No Link Title 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.

Downgrading JNP10K-LC2101 to Provide Decreased Bandwidth

In Junos OS Release 18.2R1 and later, MX10008 routers support the JNP10K-LC2101 line card. The 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). 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.

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.

RELATED DOCUMENTATION

No Link Title

[Line card \(MX10K-LC2101\)](#)

Configuring Line Card Interoperability

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- [Interoperability of Type 3 FPCs and Type 4 FPCs with Type 5 FPCs | 6](#)
- [Configuring 100-Gigabit Ethernet MICs to Interoperate with Type 4 100-Gigabit Ethernet PICs \(PD-1CE-CFP-FPC4\) Using SA Multicast Mode | 7](#)
- [Interoperability Between MPC4E \(MPC4E-3D-2CGE-8XGE\) and 100-Gigabit Ethernet PICs on Type 4 FPC | 9](#)
- [Configuring MPC4E \(MPC4E-3D-2CGE-8XGE\) to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode | 10](#)
- [Interoperability Between MPC7E-MRATE and 100-Gigabit Ethernet PICs on Type 4 FPC | 12](#)
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- [Interoperability Between MPC9E \(MX2K-MPC9E\) and 100-Gigabit Ethernet PICs on Type 4 FPC | 17](#)
- [Configuring MPC9E to Interoperate with 100-Gigabit Ethernet PICs on Type 4 FPC Using SA Multicast Mode | 18](#)

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-1CE-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-1CE-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-1CE-CFP-FPC4)

The default packet steering mode for the 100-Gigabit Ethernet PIC (PD-1CE-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 {
    gigether-options {
      802.3ad ae0;
    }
  }
  et-5/0/0:1 {
    gigether-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

IN THIS SECTION

- [Configuring SA Multicast Bit Steering Mode on MPC4E | 10](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface | 11](#)

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

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

IN THIS SECTION

- [Configuring SA Multicast Bit Steering Mode on MPC7E | 13](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface | 13](#)

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

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

IN THIS SECTION

- [Configuring SA Multicast Bit Steering Mode on MPC8E | 16](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface | 16](#)

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

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 Interfaces 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

IN THIS SECTION

- [Configuring SA Multicast Bit Steering Mode on MPC9E | 18](#)
- [Configuring Two 50-Gigabit Ethernet Physical Interfaces on the Ethernet PIC as One Aggregated Ethernet Interface | 19](#)

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

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 Interfaces 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 gicether-options 802.3ad ae0
user@host # set et-4/3/0:1 gicether-options 802.3ad ae0
```

3. Verify the configuration at the interface.

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

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

RELATED DOCUMENTATION

| |
|--------------------------------------|
| T4000 FPCs Supported |
| T4000 PICs Supported |
| No Link Title |
| No Link Title |

Configuring the Number of Active Ports on 16x10GE 3D MPC

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](#).

RELATED DOCUMENTATION

| [MPC-3D-16XGE-SFPP](#)

Guidelines for Identifying Active PICs on 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 1 on page 23 lists the active PICs on MPC5E-40G10G based on the configuration.

Table 1: 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 |
| PIC1 and PIC2 powered off | Online: PIC0 and PIC3 Offline: PIC1 and PIC2 |

Table 1: MPC5E-40G10G Active PICs *(Continued)*

| CLI Configuration | PIC Selection |
|--|---|
| 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. |

RELATED DOCUMENTATION

| [6x40GE + 24x10GE MPC5E](#)

3

CHAPTER

Fabric Management

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Fabric Resiliency and Degradation

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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

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.

MX Series Routers Fabric Resiliency

IN THIS SECTION

- [Fabric Connectivity Restoration | 30](#)
- [Line Cards with Degraded Fabric | 31](#)
- [Connectivity Loss Towards a Single Destination Only | 31](#)
- [Redundancy Fabric Mode on Active Control Boards | 31](#)

MX routers provide intelligent mechanisms to reduce packet loss in hardware failures scenarios. MX Series routers ensure network and service availability with a broad set of multilayered physical, logical, and protocol-level resiliency aspects

MX10008 provides redundancy and resiliency. All major hardware components including the power system, the cooling system, and the control board are fully redundant.

The MX10004 power system and the Routing Control Board (RCB) provide redundancy and resiliency.

The MX2020 and MX2010 chassis provide redundancy and resiliency. All major hardware components including the power system, the cooling system, the control board and the switch fabrics are fully redundant.

Switch Fabric Boards (SFBs) are the data plane for the subsystems in the MX router chassis. SFBs create a highly scalable and resilient “all-active” centralized switch fabric that delivers up to 4 Tbps of full duplex switching capacity to each MPC slot in an MX2000 router.

The MX240, MX480 and MX960 chassis provide redundancy and resiliency. The hardware system is fully redundant, power supplies, fan trays, Routing Engines, and Switch Control Boards.

The MX304 router contains redundant, pluggable, Routing Engines and supports up to three line-card MICs (LMICs).

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

- ["Fabric Connectivity Restoration" on page 30](#)
- ["Line Cards with Degraded Fabric" on page 31](#)
- ["Connectivity Loss Towards a Single Destination Only" on page 31](#)
- ["Redundancy Fabric Mode on Active Control Boards" on page 31](#)

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:
 - a. All the line cards that have destination errors on a PFE are turned offline.
 - b. The fabric planes are turned offline and brought back online, one by one, starting with the spare plane.
 - c. 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 MX10008, MX10004, MX2020, MX2010, MX960, MX480, MX304, 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 details, see [No Link Title, Fabric Plane Management on MX10K-LC9600 and SFB2 \(Model Number: JNP10008-SF2\)](#), [No Link Title, Fabric Plane Management on JNP10K-LC2101 and JNP10K-LC480](#), ["Fabric-Plane-Management-on-MX10008-Devices" on page 69](#) and [Fabric Plane Management on AS MLC Modular Carrier Card](#).

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.

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

IN THIS SECTION

- [Fabric-Failure Detection Methods on MX Series Routers](#) | 33

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 you remove the control board on the primary Routing Engine, resulting in removal of active fabric planes, the line card takes the local action of disabling the removed planes. If spare planes are available, the line card initiates switchover to spare planes. If an active control board on a backup Routing Engines is removed, the primary Routing Engine disables the removed planes and performs the switchover to spare planes, if available. 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 (MX2020 supports 24 fabric planes and MX10008 supports 12 fabric planes).
- 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.

Detection and Corrective Actions of Line Cards on MX Series Routers

You can configure a line card to be moved to the offline state on an MX-Series routers (such as MX10008, MX10004, MX2020, MX2010, MX2008, MX960, MX480, or MX304, MX240, and so on). 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 :

-
- 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 , 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.

When a line card is operating with less than the required number of active fabric planes. If a line card is operating with less than four planes, the fabric traffic operates at a reduced bandwidth.

The following conditions can result in reduced operating bandwidth in 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 null route 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 null route.

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 null route or reduced operating bandwidth occurs in the fabric:

- 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 determines the presence of spare control boards
- The switch fabric is hosted on the Switch Fabric Boards (SFBs) on MX10008, MX10004, MX2020, MX2010 and MX2000 devices:
 - The MX10008 router has eight slots for the line cards that can support a maximum of 768 100-Gigabit Ethernet ports (4x100), 192 40-Gigabit Ethernet ports, 192 100-Gigabit Ethernet ports, or 192 400-Gigabit Ethernet ports with line card slots 0-7 that combine Packet Forwarding Engine (PFE) and Ethernet interfaces enclosed in a single assembly. MX10008 supports six Switch Fabric Boards (SFBs) There are two models of SFBs: the JNP10008-SF and the JNP10008-SF2. SFBs installed must be of the same model type in a running chassis.

For details, see ["Fabric-Plane-Management-on-MX10008-Devices" on page 69](#)

- MX10004 features a compact 7-U modular chassis, line card slots 0-3 silicon line cards (2.4 Tbps, 480 Gbps, and 9.6 Tbps throughput) , with full hardware redundancy. Switch Fabric Boards (SFBs) create the switch fabric for the MX10004. Each SFB has a set of connectors to the line cards and the Routing and Control Board (RCB) to the switch fabric. Three SFBs provide reduced switching functionality to an MX10004 router. Six SFBs provide full throughput. Each MX10004 SFB has four connectors. Each connector matches up with a line card slot, eliminating the need for a backplane.

For details on fabric plane management, see No Link Title.

- The MX10003 router contains modular routing engines and PFEs. The single PFE performs both ingress and egress packet forwarding. The router provides two dedicated line card slots. The router supports one primary and two redundant Routing and Control Boards (RCBs).
- The MX2020 and MX2010 devices support 8 SFBs. The Mx2020 has 20 dedicated line card slots. The MX2010 router has 10 dedicated line-card slots The host subsystem consists of two Control Boards with Routing Engines (CBREs) and eight Switch Fabric Boards (SFBs). Data packets are transferred across the backplane between the MPCs through the fabric ASICs on the SFBs.

Switch Fabric Boards (SFBs) provide increased fabric bandwidth per slot. Up to eight SFBs, SFB2s, or

SFB3s can be installed in an MX2020 or MX2010 router. All switch fabric boards in the chassis must be the same type. Mixed mode is not supported.

- 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, 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.

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

IN THIS SECTION

- SIB-Level Faults | 41
- FPC-Level Faults | 43

Starting with Junos OS Release 14.1, the PTX5000 Packet Transport Router supports nine Switch Interface Boards (SIBs). Each FPC2-PTX-P1A 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 2 on page 40](#):

Table 2: List of Operational Mode Commands

| Operational mode command | Description |
|--------------------------|---|
| show chassis sibs | Displays Switch Interface Boards (SIBs) status information. |

Table 2: List of Operational Mode Commands (*Continued*)

| Operational mode command | Description |
|--|---|
| <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

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

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 2 on page 40](#) 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

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 2 on page 40](#) 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 3 on page 44](#) lists the differences between fabric fault handling per plane and per SFB.

Table 3: 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.

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.

On Junos OS, you can use the configuration statement `bandwidth-degradation` at the `[edit chassis fpc slot-number fabric]` hierarchy to detect and respond to fabric plane degradation in ways you deem fit. You can configure the router to specify which healing actions the router should take once such a condition is detected. You can also use the optional statement `blackhole-action` to determine how the line card responds to a 100 percent fabric degradation scenario. This command is optional and overrides the default fabric hardening procedures.

NOTE: The `bandwidth-degradation` command and the `offline-on-fabric-bandwidth-reduction` statements are mutually exclusive. If both commands are configured, an error is issued during the commit check.

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.

Fabric Hardening and Recovery on PTX10001-36MR, PTX10004, PTX10008, and PTX100016 with PTX10K-LC1202-36MR Line Card

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PTX10001-36MR, PTX10004, PTX10008, and PTX100016 routers support fabric hardening. Fabric hardening is a resiliency feature to detect fabric blackholing and attempt automatic recovery process to restore the Packet Forwarding Engines from blackhole condition.

We've enabled fabric hardening by default. When the system detects any unreachable Packet Forwarding Engine destination, this feature attempts automatic fabric connectivity restoration.

If restoration fails, the system turns off the interfaces to limit the blackholing and trigger alarm to indicate the unreachable Packet Forwarding Engine destinations. However, instead of turning off the interfaces, user can configure Packet Forwarding Engine offline by using `set chassis fabric event reachability-fault actions recovery-failure pfe-offline` statement at the `[set chassis fabric event]` hierarchy level.

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

- Complete self-blackhole- Complete connectivity loss occurs on all fabric planes.
- Complete peer-blackhole- Two Packet Forwarding Engines can reach the fabric but not each other.

You can configure a router to trigger fabric recovery when the router detects degradation in fabric bandwidth by using degraded statement at the [edit chassis fabric event reachability-fault] hierarchy level. The degradation statement is configured with a percentage value that can range from 1 to 99. The percentage value represents the error threshold for fabric bandwidth degradation and the router starts the recovery once the threshold is reached.

When the degraded error threshold is configured, the router can also attempt fabric recovery for the following reasons:

- Self degradation- Degraded fabric condition in a Packet Forwarding Engine destination.
- Peer degradation- Degraded fabric condition between two Packet Forwarding Engines.

The fabric recovery process involves one or more of the following phases:

- SIB restart phase: If Packet Forwarding Engine destinations across multiple line cards have fabric connectivity failures on planes, then the router attempts to resolve the issue by restarting the SIBs. If multiple SIBs require a restart, the router restarts the SIBs one by one.
- FPC restart phase: The router attempts automatic recovery by restarting the FPCs for the following scenarios:
 - All Packet Forwarding Engine destinations having complete or partial blackhole conditions are in a single FPC.
 - If Packet Forwarding Engine destinations with complete or partial blackhole conditions occur across different FPCs, but none of the Packet Forwarding Engines share common plane of failure.
 - The attempt of SIB restart phase failed to recover Packet Forwarding Engines.

You can disable restarting of FPCs to limit recovery actions from a degraded fabric condition. To disable restarting of FPCs, use the set chassis fabric event reachability-fault actions fpc-restart-disable statement at the [set chassis fabric event] hierarchy level.

- Packet Forwarding Engine offline phase: Because previous attempts of recovery phases failed or recovery action disabled in the configuration, the router turns off the interfaces to limit the blackholing by default. However, instead of turning off the interfaces, user can configure Packet Forwarding Engine offline by using set chassis fabric event reachability-fault actions recovery-failure pfe-offline statement at the [set chassis fabric event] hierarchy level.

If the router has only Packet Forwarding Engines with peer blackhole or peer degradation condition, then the router attempts recovery through link autoheal by restarting fabric links on the planes.

Benefits

- Attempts automatic recovery process to recover the Packet Forwarding Engines from degraded fabric conditions to minimize traffic loss.
- Raise alarms that provide fault information to indicate the unreachable Packet Forwarding Engine destinations, if the recovery fails.

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
```

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 null route 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.

Error Handling by Fabric OAM

Fabric Operation, Administration, Maintenance (OAM) helps in detecting failures in fabric paths. Fabric OAM validates the fabric connectivity before sending traffic on a fabric plane whenever a new fabric path is brought up for a PFE. If a failure is detected, the software reports the fault and avoids using that fabric plane for that PFE. This feature works by sending a very low packets per second (PPS) self-destined OAM traffic over each of the available fabric planes and detecting any loss of traffic at the end points (fabric self-ping check).

NOTE:

- In Junos OS Evolved Release 20.4R1, the fabric OAM feature is enabled by default. You can disable the feature by using the CLI command `set chassis fabric oam detection-disable`.
- In Junos OS Evolved Releases 20.4R2 and 21.1R1, the fabric OAM feature is disabled by default.
- In Junos OS Evolved Release 22.1R1, the runtime fabric OAM feature is enabled by default. You can disable the feature by using the CLI command `edit chassis fabric oam runtime-disable`. The runtime fabric OAM feature is supported on PTX10004, PTX10008, and PTX10016 routers.

The Fabric OAM checks are done at boot time. The failed paths are disabled. The system does not do any recovery action. However, you can try to recover the affected fabric planes by restarting the SIBs. The recovery steps depend on the nature of the failure.

A fabric plane represents an independent bidirectional path between a PFE and fabric ASIC. Runtime Fabric OAM periodically checks fabric connectivity and helps detect and report failures in fabric planes during system runtime. Runtime Fabric OAM detects the fabric reachability of each PFE.

When the same fabric planes fail on a single or multiple FPCs, restart the SIB containing the failed planes, using the following commands:

```
user@host> request chassis sib slot slot-number offline
```

```
user@host> request chassis sib slot slot-number online
```


When random fabric planes fail on multiple FPCs, the fault cannot be isolated to a specific FPC or SIB. However, you can try to recover the planes by restarting the SIBs that contain the affected planes in a sequential manner.

For each error detected by the fabric OAM feature, a syslog is generated. The following is an example:

```
Oct 29 23:02:46 router-dvi resiliencyd[12921]: Error: /fpc/0/fabspoked-pfe/0/cm/0/pfe/0/
fabric_link_foam_fault (0x410009), scope: board, category: internal, severity: major, module:
fab-pfe@0, type: fabric link foam fault
```

The following syslog message indicates that a fabric OAM-related error was cleared.

```
Oct 29 23:25:14 router-dvi resiliencyd[12921]: Performing action clear-cmalarm for error /fpc/0/
fabspoked-pfe/0/cm/0/pfe/0/fabric_link_foam_fault (0x410009) in module: fab-pfe@0 with scope:
board category: internal level: major
```

Also, you can use the CLI commands `show system errors active detail` and `show system alarms` to view the Fabric OAM-related errors.

```
user@router> show system alarms
20 alarms currently active
Alarm time          Class Description
2020-08-20 10:32:02 UTC Major FPC 0 Ideeprom read failure
2020-08-20 10:58:07 UTC Major FPC 0 Self_FOAM fault detected
[...Output truncated...]
```

```
user@router> show system alarms
14 alarms currently active
Alarm time          Class Description
2022-02-15 23:45:28 PST Minor FPC 1 Volt Sensor Fail
2022-02-16 00:02:03 PST Major FPC 1 Self_Fabric OAM Runtime fault detected
2022-02-15 23:43:04 PST Minor FPC 1 Secure boot disabled or not enforced
2022-02-15 23:55:50 PST Minor FPC 3 Secure boot disabled or not enforced
[...Output truncated...]
```


The following output shows details for both single fabric plane failure (on Packet Forwarding Engine 0) and all fabric planes failure (on Packet Forwarding Engine 1).

```
user@router> show system errors active detail
```

```
System Active Errors Detail Information
```

```
FPC 0
```

```
-----
Error Name           : fabric_down_condition_on_pfe
Identifier           : /fpc/0/fabricHub/0/cm/0/fabricHub/1/fabric_down_condition_on_pfe
Description          : fabric_down_condition_on_pfe
State               : enabled
Scope              : pfe
Category            : functional
Level               : major
Threshold           : 1
Error limit         : 0
Occur count        : 3
Clear count        : 2
Last occurred(ms ago) : 103158
```

```
System Active Errors Detail Information
```

```
FPC 0
```

```
-----
Error Name           : fabric_link_foam_fault
Identifier           : /fpc/0/fabspoked-pfe/0/cm/0/pfe/0/fabric_link_foam_fault
Description          : fabric link foam fault
State               : enabled
Scope              : board
Category            : internal
Level               : major
Threshold           : 1
Error limit         : 100
Occur count        : 2
Clear count        : 0
Last occurred(ms ago) : 113277
```

```
System Active Errors Detail Information
```

```
FPC 0
```

```
-----
Error Name           : fabric_link_foam_fault
Identifier           : /fpc/0/fabspoked-pfe/0/cm/0/pfe/1/fabric_link_foam_fault
Description          : fabric link foam fault
State               : enabled
Scope              : board
```



```

Category          : internal
Level             : major
Threshold         : 1
Error limit       : 100
Occur count       : 12
Clear count       : 0
Last occurred(ms ago) : 103267
System Active Errors Detail Information
RE 0

```

```

-----
Error Name        : fpga_min_supported_fw_ver_mismatch
Identifier        : /re/0/hwdre/0/cm/0/fpga_fw_events/UBAM FPGA/
fpga_min_supported_fw_ver_mismatch
Description       : firmware_version_lower_than_minimum_expected
State            : enabled
Scope           : board
Category         : functional
Level            : minor
Threshold        : 10
Error limit      : 1
Occur count      : 1
Clear count      : 0
Last occurred(ms ago) : 68886367

```

```

FPC 1

```

```

-----
Error Name        : fabric_link_self_fabric_oam_runtime_fault
Identifier        : /fpc/1/fabspoked-pfe/0/cm/0/pfe/0/
fabric_link_self_fabric_oam_runtime_fault
Description       : fabric link self fabric oam runtime fault
State            : enabled
Scope           : board
Category         : internal
Level            : major
Threshold        : 1
Error limit      : 36
Occur count      : 1
Clear count      : 0
Last occurred(ms ago) : 2022-02-16 00:02:03 PST (448108 ms ago)
System Active Errors Detail Information

```


You can use the CLI command `show chassis fabric fpcs` to view the fabric OAM self-ping state of each fabric plane.

```
user@router> show chassis fabric fpcs
Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_Asic0_Fcore0 (plane 0) Plane Disabled, Links ok Fabric OAM failed
    SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 3) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 5) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 9) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 10) Plane Enabled, Links ok Fabric OAM success
    SIB1_Asic0_Fcore0 (plane 11) Plane Enabled, Links ok Fabric OAM success
  PFE #1
    SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok Fabric OAM success
    SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok Fabric OAM success
```

```
user@router> show chassis fabric fpcs
Fabric management FPC state:
FPC #1
  PFE #0
    SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB0_Asic0_Fcore0 (plane 1) Plane Disabled, Links ok Fabric OAM Runtime failed
    SIB0_Asic1_Fcore0 (plane 2) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB0_Asic1_Fcore0 (plane 3) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB0_Asic2_Fcore0 (plane 4) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB0_Asic2_Fcore0 (plane 5) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB1_Asic1_Fcore0 (plane 8) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB1_Asic1_Fcore0 (plane 9) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB1_Asic2_Fcore0 (plane 10) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB1_Asic2_Fcore0 (plane 11) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB2_Asic0_Fcore0 (plane 12) Plane Enabled, Links ok Fabric OAM Runtime success
    SIB2_Asic0_Fcore0 (plane 13) Plane Enabled, Links ok Fabric OAM Runtime success
```



```
SIB2_Asic1_Fcore0 (plane 14) Plane Enabled, Links ok Fabric OAM Runtime success
SIB2_Asic1_Fcore0 (plane 15) Plane Enabled, Links ok Fabric OAM Runtime success
```

The `show chassis fabric fpcs` command displays the following output when the fabric OAM feature is disabled:

```
user@router> show chassis fabric fpcs
Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 3) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 5) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 9) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 10) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 11) Plane Enabled, Links ok
  PFE #1
    SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 3) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 5) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 9) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 10) Plane Enabled, Links ok
    SIB1_Asic0_Fcore0 (plane 11) Plane Enabled, Links ok
  PFE #2
    SIB0_Asic0_Fcore0 (plane 0) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 1) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 2) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 3) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 4) Plane Enabled, Links ok
    SIB0_Asic0_Fcore0 (plane 5) Plane Enabled, Links ok
```



```

SIB1_Asic0_Fcore0 (plane 6) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 7) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 8) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 9) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 10) Plane Enabled, Links ok
SIB1_Asic0_Fcore0 (plane 11) Plane Enabled, Links ok
PFE #3

```

Release History Table

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

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[Fabric Plane Management | 56](#)

[Troubleshooting the T4000 SIBs](#)

[Troubleshooting the T4000 FPCs](#)

[show chassis alarms | 501](#)

[show chassis fabric fpcs | 1158](#)

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[PTX5000 Description](#)

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[PTX5000 Switch Interface Board Description](#)

Fabric Plane Management

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

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

MX2020 routers can support eight Switch Fabric Boards (SFBs) or 24 fabric planes. The MX2020 chassis provides redundancy and resiliency. All major hardware components including the power system, the cooling system, the control board and the switch fabrics are fully redundant.

MX10004 supports six SFBs. Each SFB with the switch fabric is connected to the line cards and the Routing and Control Board (RCB). Three SFBs provide reduced switching functionality to an MX10004 router. Six SFBs provide full throughput. Each MX10004 SFB has four connectors. Each connector matches up with a line card slot, eliminating the need for a backplane. The MX10004 power system and the Routing Control Board (RCB) provide redundancy and resiliency.

The MX2010 and MX2020 routers support 8 SFBs and two control boards. MX2010 and MX2020 routers provide redundancy and resiliency. All major hardware components including the power system, the cooling system, the control board and the switch fabrics are fully redundant.

The MX2020 router has 20 dedicated line card slots. The host subsystem consists of two Control Boards with Routing Engines (CBREs) and eight Switch Fabric Boards (SFBs).

An MX10008 device has six Switch Fabric Boards (SFBs). MX10K-LC2101 has six Packet Forwarding Engines (PFE). Each PFE has 24 connections to the fabric (24 planes, or 4 connections per SFB).

The MX10008 has two models of SFBs: the JNP10008-SF and the JNP10008-SF2. SFBs installed must be of the same model type in a running chassis. On both SF and SF2 models, the SFB has eight connectors that connect to one of the eight line cards.

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

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:

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:

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.

NOTE: Fabric mode cannot be changed dynamically for MX-Series devices. Please reboot the MX device after switching the fabric mode.

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

See also: [MX-Series Switch Control Board \(SCB\) Description](#)

Example: Configuring Fabric Redundancy Mode

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Requirements for Configuration of the Fabric Redundancy Mode

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.

See also: [32x10GE MPC4E](#) and [2x100GE + 8x10GE MPC4E](#).

Configuring Increased Bandwidth Mode

IN THIS SECTION

- [Procedure | 58](#)

Procedure

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
```

For FPC slots with MPC Type 4, Type 5, 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.

Type 4 and Type 5 MPCs refer to MPC 4 and MPC5 line cards, respectively.

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.

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

IN THIS SECTION

- [Verifying the Fabric Redundancy Mode of the Router | 60](#)
- [Verifying the Number of Active Fabric Planes | 61](#)

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

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 |

For FPC slots with MPC Type 4, Type 5, 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.

Type 4 and Type 5 MPCs refer to MPC 4 and MPC5 line cards, respectively.

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.

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 upto 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-MS
  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@hostshow 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 MX304 Routers

IN THIS SECTION

- [Fabric Hardening Support and Plane Management on MX304 Routers | 66](#)
- [Limitations | 67](#)

The SFB on MX304 router supports the following functionalities:

- **Fabric Hardening:** Controls bandwidth degradation and prevents null route.

- **Fabric Fault Management:** Supported per plane. Fabric fault management per plane results in increased granularity, to identify, isolate, and repair faults.

Fabric Hardening Support and Plane Management on MX304 Routers

Fabric plane management includes fabric hardening, that is the process to control bandwidth degradation and prevent a null route for data transmission.

MX304 routers have only one built-in SFB and line card MIC, MX304-LMIC16-BASE. The SFB has two PFEs. Each PFE supports 18 fabric planes (or sub-channels).

Table 4: LMIC support for SFB

| LMICs | Switch Fabric Boards Supported | Packet Forwarding Engines (PFEs) | Fabric Planes | Fabric Redundancy |
|-------------------|--------------------------------|----------------------------------|---------------|-------------------|
| MX304-LMIC16-BASE | 1 SFB | 2 PFE | 36 | No |

For details, on the fabric resiliency support, see *Fabric Plane Management on MX304 Routers*.

Table 5: Fabric Plane Management on MX304 Routers

| Failure or Fault | Default Action | Configurable Action |
|--|---|---|
| All planes of a PFE come down (due to training failures, destination timeouts or combination of both). | Affected PFE is disabled. | Log only, FPC offline, FPC restart, FPC restart and then offline. |
| Multiple PFEs lose all 18 planes (number of PFEs are less than 50% in the chassis) | Affected PFEs are disabled. | Log only, FPC offline, FPC restart, FPC restart and then offline. |
| Combination PFEs are at fault. | Affected PFEs are disabled. | Log only, FPC offline, FPC restart, FPC restart and then offline. |
| All 18 planes are offlined or more than 50% of the PFEs in the chassis have faults. | SFB restart and FPC restart. If the attempt fails, PFEs are disabled. | Ignore SFB restart, Ignore FPC restart. |
| SFB Fatal error | SFB reset- attempts 3 times before giving up. | None |

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 null route 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.
- Use the commands `show chassis fabric reachability detail` to see if any fabric hardening actions are taken.
- Use command `show chassis fabric degradation` to check bandwidth information.
- Use `show chassis fabric summary extended` and `show log chassisd` for log information.

Limitations

- MX304 routers have only one built-in SFB and one FPC. Hence there is no fabric redundancy support.
- SFB offline and online is not supported. The command `request chassis sfb slot 0 {offline| online}` is not supported. You can control the operation of the specified fabric planes by using the command `request chassis fabric plane plane_number {offline| online}`.

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 Grant Bypass | 75](#)

[Fabric Resiliency | 26](#)

Fabric-Plane-Management-on-MX10008-Devices

SUMMARY

IN THIS SECTION

- Fabric Plane Management on JNP10K-LC2101 and JNP10K-LC480 | 70
- Fabric Plane Management on MX10K-LC9600 and SFB2 (Model Number: JNP10008-SF2) | 71

The MX10008 router has eight slots for the line cards that can support a maximum of 768 100-Gigabit Ethernet ports (4x100), 192 40-Gigabit Ethernet ports, 192 100-Gigabit Ethernet ports, or 192 400-Gigabit Ethernet ports with line card slots 0-7 that combine Packet Forwarding Engine (PFE) and Ethernet interfaces enclosed in a single assembly.

There are two models of SFBs: the JNP10008-SF and the JNP10008-SF2. SFBs installed must be of the same model type in a running chassis. On both SF and SF2 models, the SFB has eight connectors that connect to one of the eight line cards.

MX10008 devices supports the following line cards:

- **MX10K-LC2101**—The MX10K-LC2101 line card provides a maximum bandwidth of 2.4Tbps and has six Packet Forwarding Engines (PFEs), each providing a maximum bandwidth of up to 400 Gbps.
- **MX10K-LC480**—The MX10K-LC480 line card is a Cx;7 configuration MPC with 48 ports. Each port supports a speed of 10 Gbps or 1 Gbps, providing the line card a maximum bandwidth of 480 Gbps. The MX10K-LC480 has two PFEs, each providing a maximum bandwidth of up to 240 Gbps.
- **MX10K-LC9600**—The MX10K-LC9600 is a fixed configuration 24-port line card, which provides a line rate throughput of 9.6 Tbps. The line card has twenty-four QSFP-DD ports, each capable of supporting a maximum speed of 400 Gbps. The line card has 12 Packet Forwarding Engines, each providing a maximum bandwidth of 800 Gbps.

NOTE:

[MX10008 Hardware Guide](#)

This topic discusses the fabric plane management on these line cards.

Fabric Plane Management on JNP10K-LC2101 and JNP10K-LC480

MX10K-LC2101 and MX10K-LC480 are fixed-configuration MPC that provides increased port density and performance to MX10008 devices. MX10K-LC2101 and MX10K-LC480 plugs into the chassis and provides the fabric interface.

An MX10008 devices has six Switch Fabric Boards (SFBs). MX10K-LC2101 has six Packet Forwarding Engines (PFE). Each PFE has 24 connections to the fabric (24 planes, or 4 connections per SFB).

The following [Table 6 on page 70](#) provides information about MX10K-LC2101, MX10K-LC480, and Switch Fabric Boards.

Table 6: Line card support on SFB and SFB2

| Line Cards | Switch Fabric Boards Supported | Packet Forwarding Engines (PFEs) | Fabric Planes | Fabric Redundancy |
|--------------|--------------------------------|----------------------------------|---------------------|----------------------------|
| MX10K-LC2101 | SFB and SFB2 | 6 PFE | 24 (SFB), 12 (SFB2) | Yes (5+1 for SFB and SFB2) |
| MX10K-LC480 | SFB and SFB2 | 2 PFE | 24 (SFB), 12 (SFB2) | Yes (5+1 for SFB and SFB2) |

MX10K-LC2101 and MX10K-LC480 line cards with SFB2 support 12 planes. In case of one SFB2 failure, the line rate is achieved with 10 planes.

The MX10008 SFB also supports fabric hardening. Fabric hardening is the process of controlling bandwidth degradation to prevent null route. 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 null route 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.

Fabric Plane Management on MX10K-LC9600 and SFB2 (Model Number: JNP10008-SF2)

MX10K-LC9600 is a fixed-configuration MPC which provides a line rate throughput of 9.6 Tbps. MX10K-LC9600 is supported on MX10008. MX10K-LC9600 supports Switch Fabric Boards (SFB)2 (Model Number: JNP10008-SF2) only. MX10008 routers support either SFB or SFB2. The first SFB that powers on determines the fabric type of the system. Smooth upgrade from SFB (JNP10008-SF) to SFB2 is not supported in MX10008 routers. You can manually upgrade between SFB and SFB2.

The following [Table 7 on page 71](#) provides information about MX10K-LC9600 and Switch Fabric Boards.

Table 7: MX10K-LC9600 line card support on SFB and SFB2

| Line Cards | Switch Fabric Boards Supported | Packet Forwarding Engines (PFEs) | Fabric Planes | Fabric Redundancy |
|--------------|--------------------------------|----------------------------------|---------------|---|
| MX10K-LC9600 | SFB2 | 12 PFE | 12 | MX10KLC9600 requires all six SFB2s to support the line rate (fabric redundancy is not supported). |

MX10008 devices with SFB2 support interoperability of line cards: MX10K-LC9600, MX10K-LC2101, and MX10K-LC480.

MX10008 SFB2s supports the following:

- Fabric fault handling: Supported per plane. Fabric fault handling per plane results in increased granularity, which helps identify, isolate, and repair faults.
- Fabric hardening: Supports controlling bandwidth degradation to prevent null route.

Platform Redundancy FEB Redundancy Support for High Availability of ACX7509 Devices

IN THIS SECTION

- [Routing Engine Switchover Conditions and Prerequisites | 72](#)
- [Support for Replication and Restoration of Statistics on RE Switchover \(ACX7509\) | 74](#)
- [Traffic Flow and Switchover | 74](#)
- [Limitations for GRES mode | 74](#)
- [Traffic Management | 75](#)
- [RELATED INFORMATION | 75](#)

FEB redundancy is supported on the ACX7509 device. The Routing Control Board (RCB) and Forwarding Engine Board (FEB) mastership is tied and switchover together. The master Routing Engine (RE) software manages both FEBs. Graceful RE switchover (GRES) for RCB and FEB simultaneous switchover is supported with support for replication and restoration of statistics.

The graceful Routing Engine switchover (GRES) feature in Junos OS and Junos OS Evolved enables a router with redundant Routing Engines to continue forwarding packets, even if one Routing Engine fails. GRES preserves interface and kernel information. Traffic is not interrupted. However, GRES does not preserve the control plane.

When GRES mode is not enabled on the Junos OS, or Junos OS Evolved, it is considered as Non-GRES mode.

Routing Engine Switchover Conditions and Prerequisites

The prerequisite for a GRES is that, the backup RCB and FEB are online for 360 seconds. The back to back switchover time is more than 360 seconds.

The switchover conditions are as follows:

- Master RCB power-failure.
- Master RE rebooted,

- Master RE plugged out,
- Master RE offlined.
- Linux kernel crash on master RE.
- Critical application failure on master RE (including PFE management, PP management & packet input output applications).
- Power fault on master FEB.

When the FEB redundancy configuration is active, the supported RCB-FEB configurations for ACX7509 are as follows:

Table 8: Supported Redundancy Modes in ACX7509

| Supported Redundancy Modes | Condition |
|---|-------------------------|
| Both RCBs and FEBs present | Fully redundant system. |
| RCB0/FEB0 present and RCB1/FEB1 not present | Non-redundant system. |
| RCB1/FEB1 present and RCB0/FEB0 not present | Non-redundant system. |

The unsupported redundancy modes for ACX7509 with related alarms are as follows:

Table 9: Unsupported Redundancy Modes in ACX7509

| Unsupported Redundancy Modes | Condition |
|------------------------------|--|
| RCB0/FEB1 present | The unmatched FEB1 does not come online. |
| RCB1/FEB0 present | The unmatched FEB0 does not come online. |
| Two RCBs with FEB0 | Both RCBs and the FEB come online. RCB0/FEB0 becomes master. CLI based switchover is allowed. Fault-triggered automatic switchover does not happen. |

Support for Replication and Restoration of Statistics on RE Switchover (ACX7509)

The RCB and FEB mastership is tied and switchover together. The master RE software manages both FEBs.

Traffic Flow and Switchover

The WAN traffic entering the system is forwarded to and flows through both FEBs. The FEBs route the traffic internally to the egress FPC. The FPC transmits traffic from master FEB to WAN and drops the traffic from the backup FEB. The backup FEB is in hot standby and ready to forward traffic.

Junos software supports the replication and restoration of the following statistics for traffic flow and switchover:

- Interface Statistics.
- Sub-interface Statistics (Without Queue Statistics).
- The replication for other PFE statistics entities, such as:
 - Interface per Queue Statistics
 - Firewall Statistics
 - uRPF Statistics
 - DDoS PFE Statistics (excluding the RE level DDoS counters)

Limitations for GRES mode

- RCB and FEB are a host-subsystem and switchover due to one will cause complete host sub-system switch. Hence, the independent switchover of RCB and FEB is not supported.
- For GRES, if there is sudden master PFE loss, the interface could go down briefly at the end router. The link comes back up immediately when the switchover takes effect.
- The `show interfaces` command displays the restoration of the RE based statistics.
- Ungraceful removal of FEB is not supported.

Traffic Management

When the WAN traffic is affected due to various fault scenarios, the traffic hit duration depends on:

- The time taken to detect the fault condition.
- The time taken for RCB-FEB switchover.

The RE manages the traffic switchover.

RELATED INFORMATION

Fabric Grant Bypass

IN THIS SECTION

- [Understanding Fabric Grant Bypass | 75](#)
- [Disabling Fabric Grant Bypass to Control Congestion and Improve Performance | 76](#)
- [Re-Enabling Fabric Grant Bypass | 77](#)

Understanding Fabric Grant Bypass

Modular 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. Transmitting a packet from a Packet Forwarding Engine to another involves a fabric request and grant process. As per this, the ingress Packet Forwarding Engine first sends a fabric request to the egress Packet Forwarding Engine across an active fabric plane. And when it receives the fabric grant in response, it sends the packets to the egress Packet Forwarding Engine.

However, the MX2010 and 2020 routers in some configurations are set to bypass the fabric request and grant process by default. The fabric grant bypass configuration is required to support MPC1 (MX-

MPC1-3D), MPC2 (MX-MPC2-3D), and 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFPP) on MX2020 and MX2010 platforms. On the MX Series routers with the fabric grant bypass enabled, the switch fabric takes in the fabric requests from the ingress Packet Forwarding Engine and provides fabric grants; and the ingress Packet Forwarding Engine sends the packet to the egress Packet Forwarding Engine. In this case, the switch fabric forwards the fabric request to the egress Packet Forwarding Engine, but discards the fabric grants it receives from the egress Packet Forwarding Engine.

Table 10 on page 76 describes the fabric grant bypass behavior on MX2010 and MX2020 routers.

Table 10: Fabric Grant Bypass Behavior on MX2010 and MX2020 Routers

| MX Series Routers | Switch Control Board | Switch Fabric Board | Default Fabric Grant Bypass Behavior |
|-------------------|----------------------|---------------------|---|
| 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. |

Disabling Fabric Grant Bypass to Control Congestion and Improve Performance

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

NOTE: After you disable fabric grant bypass and reboot the router, the existing MPCs on the router where fabric grant bypass 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
```

Re-Enabling Fabric Grant Bypass

After you disable fabric grant bypass, you can re-enable it on the MX2020 and MX2010 routers with SFBs.

NOTE:

- By default, fabric grant bypass is enabled on the MX2010 and MX2020 routers.
- After you enable fabric grant bypass feature and reboot the router, the existing MPCs on the router where fabric grant bypass 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
```

RELATED DOCUMENTATION

[Fabric Plane Management | 56](#)

[Fabric Resiliency | 26](#)

Smooth Upgrade from SFB to SFB2

IN THIS SECTION

- [Understanding the Smooth Upgrade Process | 79](#)
- [Before you Begin the Smooth Upgrade Process | 81](#)
- [Performing a Smooth Upgrade to Enhanced Switch Fabric Board \(SFB2\) with Minimal Impact on Traffic | 93](#)

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 4SFB2s 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 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 11 on page 80](#).

Table 11: 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 81 |
| Perform a Smooth Upgrade | "Performing a Smooth Upgrade to Enhanced Switch Fabric Board (SFB2) with Minimal Impact on Traffic" on page 93 |

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 [No Link Title](#).
 - 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 |
| 740-031469 | 18T446600002 | | SFP-LX10 | REV 01 |
| 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 | P9P0X6V | 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-12xQSFPP-XGE-XLGE-CGE |
| CPU | REV 16 | 750-057177 | CAFY5688 | SMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | MRATE-6xQSFPP-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 |

2. 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

IN THIS SECTION

- [Requirements | 93](#)
- [Overview | 94](#)
- [Configuration | 94](#)
- [Verification | 97](#)

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

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 81.](#)

Overview

IN THIS SECTION

- [Topology | 94](#)

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

IN THIS SECTION

- [Initiating the Smooth Upgrade Process | 95](#)
- [Performing the Smooth Upgrade | 95](#)
- [Terminating the Smooth Upgrade Process | 97](#)

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

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

IN THIS SECTION

- [Verifying That the Switch Fabric Board \(SFB\) is Offline | 98](#)
- [Verifying That the Enhanced Switch Fabric Board \(SFB2\) is Online | 101](#)

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

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 | 75](#)

[Disabling Fabric Grant Bypass to Control Congestion and Improve Performance | 76](#)

4

CHAPTER

Power Management

[Configuring Ambient Temperature](#) | 106

Configuring Ambient Temperature

IN THIS SECTION

- [Understanding How Configuring Ambient Temperature Helps Optimize Power Utilization | 106](#)
- [Monitoring the Power Consumption of PTX5000 FPCs by Configuring the Ambient Temperature | 107](#)
- [Managing Power Allocated to PTX5000 FPCs on the Basis of Chassis Ambient Temperature Configuration | 111](#)

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](#) | **269**

[show chassis temperature-thresholds](#) | **1697**

[Understanding How Dynamic Power Management Enables Better Utilization of Power](#) | **216**

5

CHAPTER

Managing Errors and Alarms

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Understanding Chassis Alarms

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Chassis Alarms

[Table 12 on page 114](#) and [Table 13 on page 120](#) list the chassis-related alarms that are displayed when you execute the `show chassis alarms operational mode` command on PTX Series or MX series routers.

Table 12: Chassis Alarms for PTX5000 series routers

| Message displayed in the output of <code>show chassis alarms</code> 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. |

Table 12: Chassis Alarms for PTX5000 series routers (Continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|---|
| 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. |

Table 12: Chassis Alarms for PTX5000 series routers (Continued)

| 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 primary-role 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. |

Table 12: Chassis Alarms for PTX5000 series routers (Continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|--|
| 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. <i>See Disk Recovery Using the VM Host Snapshot in Installing, Upgrading, Backing Up, and Recovery of VM Host.</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-labbed 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. |

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 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 | <p>Appears when port speed configuration needs an FPC reboot for the new speed configuration to take effect.</p> <ul style="list-style-type: none"> x-FPC slot number. | Minor | <p>Do one of the following to clear the alarm.</p> <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. |

Table 13: Chassis Alarms for PTX10008 and PTX10016 routers (Continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|---|
| PEM <i>pem-slot</i> 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. See the dip switch and enable switch settings for your specific power supply model, Removing and Installing MX10000 Power System Components . |
| PEM <i>pem-slot</i> feed <i>feed-slot</i> no input | Appears when both power supplies are not connected but the enable switch is set to on. | Major | |
| PEM <i>pem-slot</i> feed <i>feed-slot</i> 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 | |
| Mix of AC & DC Supplies | Mix of AC and DC power supplies. | Major | Ensure that the router has the same type of power supplies. |

[Table 14 on page 122](#) 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 primary-role switchover followed by reboot using the command primary-role 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. |

Table 14: Chassis Alarms for MX series routers *(Continued)*

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|---|
| 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 ECC error is above the threshold value. | Major | Reboot the router. |
| 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. |

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 Missing | <p>Appears when 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 | <p>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.</p> <p>See <i>Disk Recovery Using the VM Host Snapshot</i> in No Link Title</p> |
| 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. |

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 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 the 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. |

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 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. |
| Mix of PDM types | Appears when the new high-voltage second-generation universal PDM is used along with older PDM variants. | Minor | Replace the old PDMs with the new universal PDMs. |
| Mix of PSM types | Appears if the new high-voltage second-generation universal PSM is used along with other AC/DC or DC/DC PSMs. | Minor | Install the same type of PSMs in all the slots. |

Table 14: Chassis Alarms for MX series routers (Continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|--|-------|---|
| Mix of PEMS | <p>Applicable to the MX960 routers with high-voltage second-generation universal power supply module (PSM).</p> <p>This alarm appears if the 5100 W power supply is used along with older power supplies in the MX960.</p> | Minor | Install the same type of power supplies in all the slots. |

Table 15: Chassis Alarms (PTP-Specific) for ACX710 Router

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|--|-------|--|
| PTP No Foreign Master | Raised if the external Precision Time Protocol (PTP) primary clock does not send announce packets. | Major | Ensure that the PTP configuration is correct. Also, ensure that external primary clock is working fine. This alarm gets cleared when the system recovers from the error state. |
| PTP Sync Fail | Raised if the PTP lock-status is not in Phase Aligned state. | Major | Ensure that the PTP configuration is correct. This alarm gets cleared when the PTP lock status moves to Phase Aligned state. Use the CLI 'show ptp lock-status' to view the PTP lock status. |
| Chassis Loss of all Equipment Clock Synch References | Raised if both the primary and secondary SyncE references fail and the chassis PLL is in holdover. | Major | Use the show chassis synchronization command to view the ineligibility reason, and to debug further. This alarm gets cleared when the system recovers from the error state. |

Table 15: Chassis Alarms (PTP-Specific) for ACX710 Router (Continued)

| Message displayed in the output of show chassis alarms Command | Description | Class | Solution |
|--|---|-------|--|
| Chassis Loss of Equipment Clock Synch Reference 1 | Raised if the primary SyncE reference fails and no secondary SyncE reference is configured or present. | Major | Use the show chassis synchronization command to view the ineligibility reason, and to debug further. |
| Chassis Loss of Equipment Clock Synch Reference 2 | Raised if you have configured at least two or more SyncE sources and the secondary SyncE source has failed. | Major | Use the show chassis synchronization command to view the ineligibility reason, and to debug further. |

SEE ALSO

| [show chassis alarms](#) | [501](#)

Chassis Conditions That Trigger Alarms

IN THIS SECTION

- [Chassis Component Alarm Conditions on M5 and M10 Routers](#) | [130](#)
- [Chassis Component Alarm Conditions on M7i and M10i Routers](#) | [133](#)
- [Chassis Component Alarm Conditions on M20 Routers](#) | [138](#)
- [Chassis Component Alarm Conditions on M40 Routers](#) | [142](#)
- [Chassis Component Alarm Conditions on M40e and M160 Routers](#) | [147](#)
- [Chassis Component Alarm Conditions on M120 and M320 Routers](#) | [153](#)
- [Chassis Component Alarm Conditions on M320 Routers](#) | [159](#)
- [Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms](#) | [164](#)
- [Backup Routing Engine Alarms](#) | [170](#)

- [Chassis Component Alarm Conditions for Guest Network Functions \(GNFs\) | 172](#)
- [Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices | 173](#)

Various conditions related to the chassis components trigger yellow and red alarms. You cannot configure these conditions.

- ["Backup Routing Engine Alarms" on page 170](#)
- ["Chassis Component Alarm Conditions on M5 and M10 Routers" on page 130](#)
- ["Chassis Component Alarm Conditions on M7i and M10i Routers" on page 133](#)
- ["Chassis Component Alarm Conditions on M20 Routers" on page 138](#)
- ["Chassis Component Alarm Conditions on M40 Routers" on page 142](#)
- ["Chassis Component Alarm Conditions on M40e and M160 Routers" on page 147](#)
- ["Chassis Component Alarm Conditions on M120 and M320 Routers" on page 153](#)
- ["Chassis Component Alarm Conditions on M320 Routers" on page 159](#)
- ["Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms" on page 164](#)
- ["Chassis Component Alarm Conditions for Guest Network Functions \(GNFs\)" on page 172](#)
- ["Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices" on page 173](#)
- 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 16 on page 130 lists the alarms that the chassis components can generate on M5 and M10 routers.

Table 16: 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 |
| 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 |

Table 16: Chassis Component Alarm Conditions on M5 and M10 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--|---|--|----------------|
| 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 |
| 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 |

Table 16: Chassis Component Alarm Conditions on M5 and M10 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|---|----------------|
| | 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 |
| 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 |

Table 16: Chassis Component Alarm Conditions on M5 and M10 Routers (Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|---|----------------|
| | 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 www.juniper.net/ 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 M7i and M10i Routers

Table 17 on page 134 lists the alarms that the chassis components can generate on M7i and M10i routers.

Table 17: 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 |

Table 17: Chassis Component Alarm Conditions on M7i and M10i Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------|--|---|----------------|
| | 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 |
| 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 |
| Routing Engine | Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device. | Replace the serial cable connected to the device. 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. | Yellow |
| | Error in reading or writing hard disk. | Reformat hard disk and install bootable image. If this fails, replace failed Routing Engine. | Yellow |

Table 17: Chassis Component Alarm Conditions on M7i and M10i Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|---|----------------|
| | 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 17: 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 |

Table 17: Chassis Component Alarm Conditions on M7i and M10i Routers (Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|------------------------------------|--|----------------|
| | 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 M20 Routers

Table 18 on page 138 lists the alarms that the chassis components can generate on M20 routers.

Table 18: 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 |

Table 18: Chassis Component Alarm Conditions on M20 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------|--|---|----------------|
| | 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 |
| Routing Engine | Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device. | Replace the serial cable connected to the device. 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. | Yellow |
| | 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 |

Table 18: Chassis Component Alarm Conditions on M20 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------|---|---|----------------|
| | System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition. | Install bootable image on default primary 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. | <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 |
| | 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 |

Table 18: Chassis Component Alarm Conditions on M20 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--------------------|---|---|----------------|
| SSB | The control board has failed. If this occurs, the board attempts to reboot. | Replace failed control board. | Red |
| 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 |

Table 18: Chassis Component Alarm Conditions on M20 Routers (Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|------------------------------------|--|----------------|
| | 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 M40 Routers

Table 19 on page 142 lists the alarms that the chassis components can generate on M40 routers.

Table 19: Chassis Component Alarm Conditions on M40 Routers

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--------------------------|--|--|----------------|
| Air filter | 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 |
| 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 |

Table 19: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------|---|--|----------------|
| | 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 |
| 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 |

Table 19: Chassis Component Alarm Conditions on M40 Routers (Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------|---|--|----------------|
| | 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 |
| Routing Engine | <p>Excessive framing errors on console port.</p> <p>An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded.</p> <p>This might be caused by a faulty serial console port cable connected to the device.</p> | <p>Replace the serial cable connected to the device.</p> <p>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.</p> | Yellow |

Table 19: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|---|----------------|
| | 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 primary 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 |

Table 19: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--------------------|--|---|----------------|
| | 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 |
| SCB | The System Control Board (SCB) has failed. If this occurs, the board attempts to reboot. | Replace failed SCB. | Red |
| 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 |

Table 19: Chassis Component Alarm Conditions on M40 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| | 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.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 M40e and M160 Routers

Table 20 on page 147 lists the alarms that the chassis components can generate on M40e and M160 routers.

Table 20: 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 20: 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 |

Table 20: Chassis Component Alarm Conditions on M40e and M160 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---|---|-----------------------------|----------------|
| | 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 |
| 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 20: 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. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device. | Replace the serial cable connected to the device. 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. | Yellow |
| | 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 primary 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 |

Table 20: Chassis Component Alarm Conditions on M40e and M160 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--|--|---|----------------|
| | 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. | 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 |

Table 20: Chassis Component Alarm Conditions on M40e and M160 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--------------------|---|---|----------------|
| | All SFMs are offline or missing from the chassis. | Insert SFMs into empty slots or set all SFMs online. | Red |
| 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 |

Table 20: Chassis Component Alarm Conditions on M40e and M160 Routers (Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|------------------------------------|--|----------------|
| | 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 M120 and M320 Routers

Table 21 on page 153 lists the alarms that the chassis components can generate on M120 routers.

Table 21: Chassis Component Alarm Conditions on M120 and 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 Ethernet switch has failed. | Replace failed CB. | Yellow |

Table 21: Chassis Component Alarm Conditions on M120 and M320 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--|---|--|----------------|
| | A CB has been removed. | Insert CB into empty slot. | Red |
| | A CB has failed. | Replace failed CB. | 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 |
| 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 21: Chassis Component Alarm Conditions on M120 and M320 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 21: Chassis Component Alarm Conditions on M120 and M320 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------|--|---|----------------|
| Routing Engine | Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device. | Replace the serial cable connected to the device. 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. | Yellow |
| | 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 primary Routing Engine. If this fails, replace failed Routing Engine. | Yellow |

Table 21: Chassis Component Alarm Conditions on M120 and M320 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|--|---|----------------|
| | 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. | <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 21: Chassis Component Alarm Conditions on M120 and M320 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 |

Table 21: Chassis Component Alarm Conditions on M120 and M320 Routers (Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|------------------------------------|--|----------------|
| | 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 22 on page 159 lists the alarms that the chassis components can generate on M320 routers.

Table 22: 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 |

Table 22: Chassis Component Alarm Conditions on M320 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|------------------------|--|---------------------------------|----------------|
| | 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 |
| 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 |

Table 22: Chassis Component Alarm Conditions on M320 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------|--|---|----------------|
| | 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 |
| Routing Engine | Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device. | Replace the serial cable connected to the device. 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. | Yellow |
| | 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 |

Table 22: Chassis Component Alarm Conditions on M320 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------------------------|---|---|----------------|
| | System booted from default backup Routing Engine. If you manually switched mastership, ignore this alarm condition. | Install bootable image on default primary 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. | <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 |
| Switch Interface Board (SIB) | A SIB has failed. | Replace failed SIB. | Yellow |

Table 22: Chassis Component Alarm Conditions on M320 Routers *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|--------------------|---|---|----------------|
| | 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 |
| 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 |

Table 22: Chassis Component Alarm Conditions on M320 Routers (Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-------------------|---|--|----------------|
| | 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 23 on page 164 lists the alarms that the chassis components can generate on MX Series 5G Universal Routing Platforms.

Table 23: 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 23: 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 |

Table 23: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(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 |
| 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 |

Table 23: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------|--|---|----------------|
| | 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 |
| Routing Engine | Excessive framing errors on console port. An excessive framing error alarm is triggered when the default framing error threshold of 20 errors per second on a serial port is exceeded. This might be caused by a faulty serial console port cable connected to the device. | Replace the serial cable connected to the device. 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. | Yellow |
| | 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 primary Routing Engine. If this fails, replace failed Routing Engine. | Yellow |

Table 23: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|-----------------------------------|--|---|----------------|
| | 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. | <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 |
| 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 23: 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 |

Table 23: Chassis Component Alarm Conditions on MX Series 5G Universal Routing Platforms
(Continued)

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|---------------------------------|--|---|----------------|
| | 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 |
| 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 <code>show chassis fpc errors</code> 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 primary and backup Routing Engines, a primary Routing Engine can generate alarms for events that occur on a backup Routing Engine. [Table 24 on page 171](#) 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 24: 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 |

Table 24: Backup Routing Engine Alarms *(Continued)*

| Chassis Component | Alarm Condition | Remedy | Alarm Severity |
|----------------------------|---|---|----------------|
| 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 |
| 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 25 on page 173 lists the Chassis conditions that trigger alarms on guest network functions (GNFs).

Read more about GNFs in [this Junos Node Slicing article](#).

Table 25: 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 primary 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 |
| 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 |

Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices

Table 26 on page 174 lists the alarms that the chassis components can generate on SRX1500, SRX4100, SRX4200 and SRX4600 devices. Execute `show chassis alarms operational mode` command on SRX1500, SRX4100, SRX4200 and SRX4600 devices to view the alarm.

Table 26: Chassis Component Alarm Conditions on SRX1500, SRX4100, SRX4200 and SRX4600 devices

| Chassis Component | Alarm Name/ Condition | Remedy | Alarm Severity |
|--------------------------------|--|--|----------------|
| Power supply unit (PSU) | Appears when one among the two PSU is not available or not energized for SRX1500, SRX4100, and SRX4200. | Install the missing PSU or refer "pem absence" on page 356 | Red |
| Power supply unit (PSU) | Appears when one among the two PSU is not available or not energized for SRX4600. | Install the missing PSU or refer "pem absence" on page 356 | Yellow |
| FPC Line Card | FPC Inefficient Port Mapping: Appears when the two port blocks 0/0 - 0/3 and 0/4 - 0/7 are unequally used on the SRX4100 or SRX4200. | This minor alarm is triggered when the two port blocks 0/0 - 0/3 and 0/4 - 0/7 are unequally used. The alarm is cleared when the ports in UP status are more equally distributed over the two port blocks. | Yellow |

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 27 on page 175 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 27: 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 |

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.

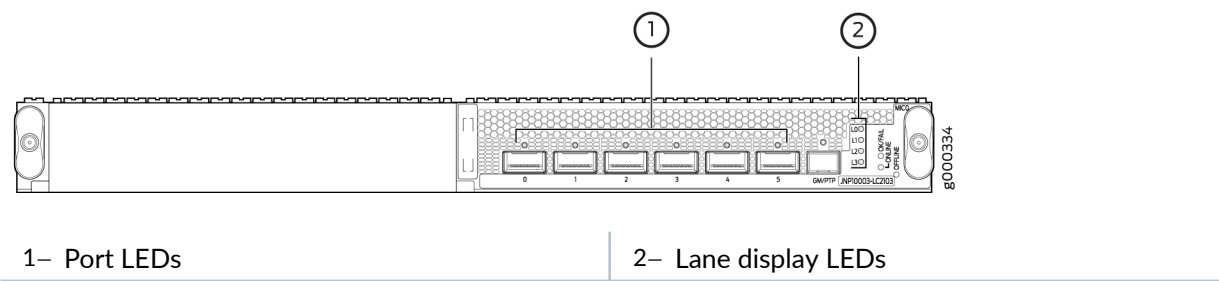
The following interface cards support lane LEDs:

- [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.

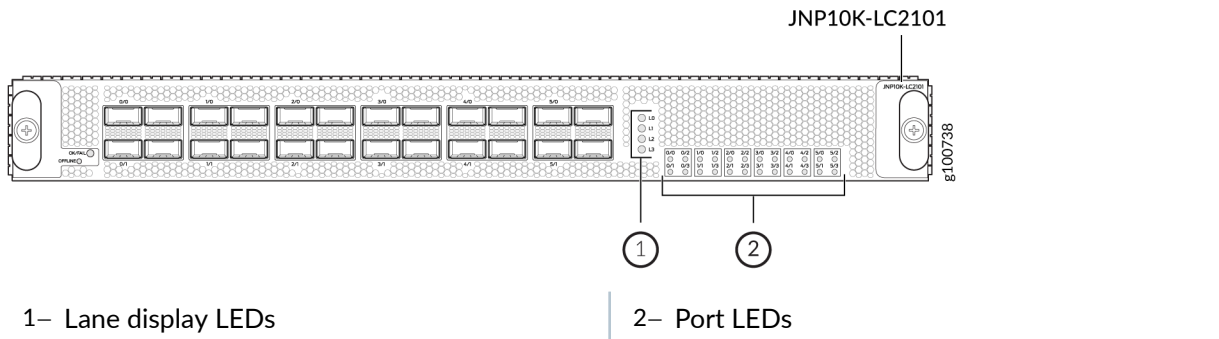
[Figure 1 on page 176](#) illustrates the port LED and lane LED displays on the MPC.

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



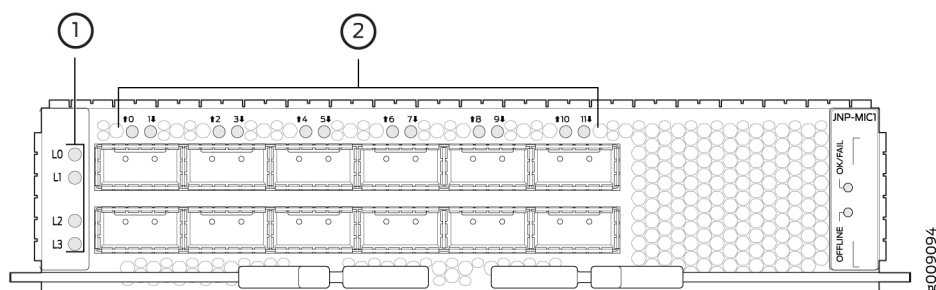
[Figure 2 on page 176](#) illustrates the port LED and lane LED displays for the MPC.

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



[Figure 3 on page 177](#) 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 28 on page 178 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 28: 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 |

Table 28: Port LED State and Color Rules (Continued)

| Pluggable Inserted | Breakout Configuration State | Explicitly Disabled | Port State | Normal | Port Location ON | Lane Display |
|--------------------|------------------------------|---------------------|--|--------|------------------|----------------|
| 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 29 on page 179](#) summarizes the state and color rules for the lane LEDs.

Table 29: Lane LED Color Rules

| Pluggable Inserted | Breakout Configuration State | Explicitly Disabled | Port State | Order | LED Color |
|--------------------|------------------------------|---------------------|-------------------------------------|-------|-----------|
| Yes | Breakout | No | Up | 1 | Green |
| Yes | Breakout | No | Down; loss of signal (LOS) detected | 2 | Off |
| Yes | Breakout | No | Down; transceiver hardware failure | 3 | Red |

Table 29: Lane LED Color Rules *(Continued)*

| Pluggable Inserted | Breakout Configuration State | Explicitly Disabled | Port State | Order | LED Color |
|--------------------|------------------------------|---------------------|---|-------|-----------|
| 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 |

Configuring Slow Packet Forwarding Engine Alarm

IN THIS SECTION

- [Enabling Slow Packet Forwarding Engine Alarm | 180](#)
- [Disabling Slow Packet Forwarding Engine Alarm | 181](#)
- [Verifying That the Alarm Output and System Log Messages are Updated | 181](#)

On an M Series, an MX Series, a T Series, or an SRX Series device, 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 device, 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

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

IN THIS SECTION

- Purpose | 182
- Action | 182
- Meaning | 183

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 an SRX Series device:

1. Verify that the alarm is displayed in the output of the `show chassis alarms operational mode` command.

`show chassis alarms`

```
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" on page 501](#).

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.

`show chassis alarms`

```
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" on page 501](#).

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

IN THIS SECTION

- [Alarm Contact Port | 184](#)
- [Alarm Input | 184](#)
- [Alarm Output | 184](#)

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

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

Configuring Chassis Alarm Relays

Configuring Chassis Alarm Input

Configuring Chassis Alarm Relays

[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.

Configuring Chassis Alarm Input and Output (ACX710 Routers)

The alarm interface port, an RJ45 port on the front panel of the ACX710 router, provides user-configurable input and output signals. You can configure the alarm input to receive alarm inputs from the external devices (such as sensors) connected to the router through the alarm port. You can configure the alarm output to relay the alarms in the router to external alarm devices (for example, bells and bulbs) connected to the router through the alarm port. You can configure up to three alarm inputs and one alarm output.

The router supports configuration of up to three alarm inputs and one alarm output, using the command `alarm-port` at the `[edit chassis]` hierarchy. You can configure the alarm input signals independent of the alarm output signal, and vice versa.

Table 30: Alarm Port Pin-out Information

| Pin Number of the Connector on the Device | Signal Definition | IN/OUT | CLI Mapping |
|---|-------------------|--------|-------------|
| 1 | ALARM_IN0_Sig | IN | port 1 |
| 2 | ALARM_IN0_Return | IN | port 1 |
| 3 | ALARM_IN1_Sig | IN | port 2 |
| 4 | ALARM_IN2_Sig | IN | port 3 |
| 5 | ALARM_IN1_Return | IN | port 2 |
| 6 | ALARM_IN2_Return | IN | port 3 |
| 7 | ALARM_OUT_Sig | OUT | port 1 |
| 8 | ALARM_OUT_Return | OUT | port 1 |

To configure an alarm input:

1. Specify the input port number by using the command `set chassis alarm-port input port port-number`. The router supports three input ports (1 to 3).

```
user@host# set chassis alarm-port input port 1
```

2. Configure a signal polarity for the alarm input based on the user environment.

```
user@host# set chassis alarm-port input port 1 active low
```

3. Set the administrative state of the alarm input as enabled.

```
user@host# set chassis alarm-port input port 1 admin-state enabled
```

4. Provide a description to the alarm input. For example, FAN.

```
user@host# set chassis alarm-port input port 1 description FAN
```

5. Specify an alarm severity. The following are the available options: critical, major, minor, and warning.

```
user@host# set chassis alarm-port input port 1 severity major
```

6. Commit the configuration with the `commit` command.

To view the input alarms, by using the `show chassis alarms` command.

To configure an alarm output:

1. Specify the output port number by using the command `set chassis alarm-port output port port-number`. The router supports only one output port (port number: 1).

```
user@host# set chassis alarm-port output port 1
```

2. Set the administrative state of the alarm output as enabled.

```
user@host# set chassis alarm-port output port 1 admin-state enabled
```


3. Provide a description to the alarm input.

```
user@host# set chassis alarm-port input port 1 description alarm-output-description
```

4. Commit the configuration with the commit command.

For more information, see ["alarm-port" on page 265](#).

You can use the command `show chassis craft-interface` to view the alarm port configuration details.

```
user@router> show chassis craft-interface
```

```
System LED's on front panel:
```

```
-----
```

```
Fault LED :          On
```

```
Status LED :         Off
```

```
Operational LED :    On
```

```
Fan LED :           Off
```

```
Alarm-port on front panel:
```

```
-----
```

```
Input port :          1
```

```
    Active signal :    LOW
```

```
    Description :
```

```
    Admin state :     DISABLED
```

```
    Severity :        CRITICAL
```

```
Input port :          2
```

```
    Active signal :    LOW
```

```
    Description :
```

```
    Admin state :     DISABLED
```

```
    Severity :        CRITICAL
```

```
Input port :          3
```

```
    Active signal :    LOW
```

```
    Description :
```

```
    Admin state :     DISABLED
```

```
    Severity :        CRITICAL
```

```
Output port :         1
```


Description :
Admin state : DISABLED

RELATED DOCUMENTATION

| [Silencing External Devices Connected to Alarm Relay Contacts](#) | 210

Managing Errors

IN THIS SECTION

- [Configuring FPC Error Levels and Actions](#) | 192
- [Example: Configuring FPC Error Detection and Self-Healing on T Series Core Routers](#) | 195
- [Managing FPC Errors](#) | 200
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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 | trap | online-pfe | reset-pfe)` 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
```

The `offline`, `reset`, `disable-pfe`, `offline-pfe` and `reset-pfe` actions are mutually exclusive with respect to configuration. The specified PFE is disabled automatically, if `offline-pfe` or `reset-pfe` is configured.

NOTE:

`disable-pfe`

The following table provides details about PFE error mapping actions and the system response:

Table 31: PFE Error Mapping Action and Response

| Action | Response |
|-------------|---|
| disable-pfe | Disables all PFE interfaces, alarms and logs. |
| offline | Takes the FPC offline, disables the alarms and logs. |
| reset | Takes the FPC offline and resets to online, enables the alarms and logs. |
| reset-pfe | Powers-off the PFE, disables the alarms and logs, then, powers-on the PFE, enables the alarms and logs. |
| offline-pfe | Powers-off the PFE, disables the alarms and logs, |

Example: Configuring FPC Error Detection and Self-Healing on T Series Core Routers

IN THIS SECTION

- Requirements | 195
- Overview | 196
- Configuration | 196
- Verification | 199

This example shows how to configure error detection and self-healing on a Juniper Networks T Series Core Router with Type 5 FPC.

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

IN THIS SECTION

- [CLI Quick Configuration | 196](#)
- [Configuring the Error Detection and Self-Healing | 197](#)
- [Results | 198](#)

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.

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 resetset chassis fpc 0 major threshold 1 action  
alarmset 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 resetuser@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

IN THIS SECTION

- [Verifying the Configured Actions Related to Fatal Severity of FPC Error | 199](#)

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

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

IN THIS SECTION

- [Modifying Severity of an Error | 200](#)
- [Disabling an Error | 201](#)

On the PTX series routers, you can disable an FPC error or modify the severity of the error at the error-id level. See [FPC self-healing](#) for details on PTX platforms that support this feature.

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

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.

Powering Off Packet Forwarding Engines

You can power on or power off the Packet Forwarding Engines in a running system, or keep a Packet Forwarding Engine powered off when the FPC comes online. The following are a couple of scenarios in which this feature is used.

- When the Packet Forwarding Engine ASIC is malfunctioning.
- To conserve power in case the deployment does not require the full capacity of the system.

To power off a Packet Forwarding Engine, use the following steps:

```
user@host# set chassis fpc slot-number pfe pfe-id power off  
user@host# commit
```

To power on a packet forwarding engine, use the following steps:

```
user@host# set chassis fpc slot-number pfe pfe-id power on  
user@host# commit
```

NOTE: You need to apply this configuration to both the Packet Forwarding Engines in an ASIC to be able to commit the configuration.

NOTE: On MX series routers with MPC10E-15C-MRATE, you can power off or power on only the Packet Forwarding Engine 2. The Packet Forwarding Engines 0 and 1 do not support this command. On the MPC10E-15C-MRATE, operating the Packet Forwarding Engine 2 requires the Packet Forwarding Engines 0 and 1 to be functional. You can use the command `show chassis fpc fpc-slot detail` to view the Packet Forwarding Engine power ON/OFF status and bandwidth for the individual Packet Forwarding Engines in the MPC10E-15C-MRATE.

You can use the `show chassis fpc fpc-slot detail` command to view the Packet Forwarding Engine power on/off configuration status. See an example below:

```
user@router> show chassis fpc 0 detail
```

Slot 0 information:

| | |
|-----------------------|---|
| State | Online |
| Temperature | 41 degrees C / 105 degrees F (PFE_24-HBM) |
| Temperature | 44 degrees C / 111 degrees F (PFE_25-HBM) |
| Temperature | 43 degrees C / 109 degrees F (PFE_26-HBM) |
| Temperature | 41 degrees C / 105 degrees F (PFE_27-HBM) |
| Temperature | 40 degrees C / 104 degrees F (PFE_28-HBM) |
| Temperature | 40 degrees C / 104 degrees F (PFE_29-HBM) |
| Temperature | 38 degrees C / 100 degrees F (PFE_30-HBM) |
| Temperature | 39 degrees C / 102 degrees F (PFE_31-HBM) |
| Start time | 2020-10-28 00:46:17 PDT |
| Uptime | 1 day, 1 hour, 34 minutes, 48 seconds |
| Max power consumption | 825 Watts |

PFE Information:

| PFE | Power ON/OFF | Bandwidth | SLC |
|-----|--------------|-----------|-----|
| 0 | On | 500 | |
| 1 | On | 500 | |
| 2 | On | 500 | |
| 3 | On | 500 | |
| 4 | On | 500 | |
| 5 | On | 500 | |
| 6 | On | 500 | |
| 7 | On | 500 | |

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;
```

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 null-route filtering, 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 primary role automatically, if it detects a hard disk error on the primary 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 [Junos OS High Availability User 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.

Handling Thermal Health Events Using Thermal Health Check and PSM Watchdog

You can use the thermal health check feature to configure an action to be taken on detection of a thermal health event such as power leakage. The thermal check feature monitors the power supply module (PSM) power output and FRU power consumption and if it detects that the PSM power output exceeds the FRU power consumption by a user-defined threshold, it assumes that there is a thermal health event, and takes an action based on user configuration. You can configure actions such as auto shutdown or alarms to be initiated on detection of a thermal health event. An example of the configuration is as follows: `set chassis thermal-health-check action-onfail auto-shutdown shutdown-timer 10 power-threshold 700`. This example configuration enables the software to detect a thermal health event if the power leak exceeds 700W, and shuts down the system 10 seconds after the thermal health failure is detected.

The thermal health check feature works only if:

- The router has the high capacity AC or DC power distribution units (PDU) installed in both the slots, and each PDU has equal number of PSMs. Both AC PSM and DC PSM are supported.

The supported PSMs and PDUs are listed below:

- High Capacity AC PSM (model: PSM2-PTX-AC; firmware: 0210 or later; hardware revision: 06 or later)
- High Capacity 60A DC PSM (model: PSM2-PTX-DC; firmware: 0315 or later; hardware revision: 09 or later)

- High Capacity 60A DC PDU (model: PDU2-PTX-DC; use the firmware version 0404 or later with hardware revision 07; use the firmware version 0503 or later with hardware revision 08)
- High Capacity AC Delta PDU (model: PDU2-PTX-AC-D; firmware: 0305 or later; hardware revision: 04 or later)
- High Capacity AC Wye PDU (model: PDU2-PTX-AC-W; firmware: 0305 or later; hardware revision: 03 or later)
- High Capacity Single Phase AC PDU (model: PDU2-PTX-AC-SP; firmware: 0102 or later; hardware revision: 03 or later)
- Each PDU has at least three PSMs that are online, and each online PSM is consuming above 60A current (in case of an AC PSM) or above 100A current (in case of a DC PSM).
- None of the FRUs (RE, SIB, and FPC) is in the 'Present' state.

On the router, you can also configure the PSM watchdog feature at the [edit chassis] hierarchy. If a thermal health event causes Junos to go down, the PSM watchdog feature detects it and shuts down the router. In the watchdog configuration, you can specify the watchdog timer in seconds. After the specified duration, the watchdog expires. You can also specify the frequency (in minutes) at which Junos resets the watchdog counter. If the watchdog counter doesn't get reset because of reasons such as Routing Engine crash, the PSM turns off the output power on watchdog timer expiry and thereby shuts down the router.

Example configurations are as follows:

- Use `set chassis psm watchdog timeout 600 pat-frequency 2`. This command enables PSM watchdog with the watchdog timer set to 600 seconds and the counter is set to be reset every 2 minutes.
- Use `set chassis thermal-health-check fet-failure-check action-onfail auto-shutdown shutdown-timer 10..` This command enables thermal health check, and shutdowns the system, 10 seconds after FET failure is detected.

NOTE: The PSM watchdog feature works only if all the online PSMs in the router support this feature.

In short, if the Routing Engine software is running when a thermal event occurs, the thermal health check feature detects the thermal event and takes an action. However, if the Routing Engine software goes down in a thermal health event, it is the PSM watchdog timer that detects this issue and brings down the system.

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

| |
|--|
| No Link Title |
| thermal-health-check 394 |
| watchdog (PSM) 401 |

Craft Interface

IN THIS SECTION

- [Silencing External Devices Connected to Alarm Relay Contacts](#) | 210
- [Configuring the Junos OS to Disable the Physical Operation of the Craft Interface](#) | 211
- [Remote Port Identification using LEDs for Cabling Assistance](#) | 211
- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\)](#) | 212

Silencing External Devices Connected to Alarm Relay Contacts

You can manually silence external devices connected to alarm relay contacts. To silence an external devices, 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](#) | 210

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.

The remote port identification feature is supported on MX10K-LC2101 and MX10K-LC9600 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.

Configuring the LCD Panel on EX Series Switches (CLI Procedure)

IN THIS SECTION

- [Disabling or Enabling Menus and Menu Options on the LCD Panel | 212](#)
- [Configuring a Custom Display Message | 213](#)

This topic applies to hardware devices in the EX Series product family, which includes switches and the XRE200 External Routing Engine, that support the LCD panel interface.

The LCD panel on the front panel of EX Series switches displays a variety of information about the switch in the Status menu and provides the Maintenance menu to enable you to perform basic operations such as initial setup and reboot. You can disable these menus or individual menu options if you do not want switch users to use them. You can also set a custom message that will be displayed on the panel.

Disabling or Enabling Menus and Menu Options on the LCD Panel

By default, the Maintenance menu, the Status menu, and the options in those menus in the LCD panel are enabled. Users can configure and troubleshoot the switch by using the Maintenance menu and view certain details about the switch by using the Status menu.

If you do not want users to be able to use those menus or some of the menu options, you can disable the menus or individual menu options. You can reenable the menus or menu options.

Issue the `show chassis lcd menu operational mode` command to see the menus or menu options that are currently enabled.

NOTE: On some platforms, you must specify an FPC slot number in these commands. See the [lcd-menu](#) statement for details.

To disable a menu:

```
[edit]
user@switch# set chassis lcd-menu menu-item menu-name disable
```

To enable a menu:

```
[edit]
user@switch# delete chassis lcd-menu menu-item menu-name disable
```

To disable a menu option:

```
[edit]
user@switch# set chassis lcd-menu menu-item menu-option disable
```

To enable a menu option:

```
[edit]
user@switch# delete chassis lcd-menu menu-item menu-option disable
```

Configuring a Custom Display Message

You can configure the second line of the LCD to display a custom message temporarily for 5 minutes or permanently.

To display a custom message temporarily:

- On an EX3200 switch, a standalone EX3300 switch, a standalone EX4200 switch, a standalone EX4300 switch except EX4300-48MP and EX4300-48MP-S switches, a standalone EX4500 switch, a standalone EX4550 switch, an EX6200 switch, an EX8200 switch, or an XRE200 External Routing Engine:

```
user@switch> set chassis display message message
```

- On an EX3300, EX4200, EX4300, EX4500, or EX4550 switch in a Virtual Chassis configuration:

```
user@switch> set chassis display message message fpc-slot slot-number
```


To display a custom message permanently:

- On an EX3200 switch, a standalone EX3300 switch, a standalone EX4200 switch, a standalone EX4300 switch except EX4300-48MP and EX4300-48MP-S switches, a standalone EX4500 switch, a standalone EX4550 switch, an EX6200 switch, an EX8200 switch, or an XRE200 External Routing Engine:

```
user@switch> set chassis display message message permanent
```

- On an EX3300, EX4200, EX4300 except EX4300-48MP and EX4300-48MP-S, EX4500, or EX4550 switch in a Virtual Chassis configuration:

```
user@switch> set chassis display message message fpc-slot slot-number permanent
```

NOTE: The buttons on the LCD panel are disabled when the LCD is configured to display a custom message.

To disable the display of the custom message:

```
user@switch> clear  
chassis display message
```

You can view the custom message by issuing the `show chassis lcd` 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](#) | 468

6

CHAPTER

Network Services Mode

[Managing Power | 216](#)

[Configuring Network Services Mode | 235](#)

Managing Power

IN THIS SECTION

- [Understanding How Dynamic Power Management Enables Better Utilization of Power | 216](#)
- [Understanding Power Management on the PTX5000 | 217](#)
- [Power Redundancy on SRX5400 | 221](#)
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- [Redistributing the Available Power by Configuring Power-On Sequence | 227](#)
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- [Configuring Voltage Level Monitoring of FPCs | 229](#)
- [Overriding the Default Maximum Power \(Junos OS Evolved\) | 230](#)
- [Powering Off Packet Forwarding Engines | 233](#)

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. Starting in Junos OS Release 15.1R1, MX Series routers support dynamic power management. Starting in Junos OS Release 17.2R1, EX9200 switches support dynamic power management.

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 (Field Replaceable Units: Replaceable or swappable Junos device and device parts) 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

IN THIS SECTION

- [Power Priority of FPCs | 218](#)
- [Power Zones | 220](#)
- [Power Supply Redundancy | 220](#)

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 $N+1$ 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

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*.

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 $N+1$ 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.

Power Redundancy on SRX5400

The power redundancy feature in SRX5400 supports to manage the high-capacity high line power supplies for 2+2 AC redundancy mode. The power rate is 1167W at low line and 2050W at high line on SRX5400. The 2+2 redundancy mode requires four AC power supplies.

The minimum PSU requirement is now 2 instead of 1 for the PEM alarm to be raised. If you install only 1 high-capacity high line AC, a major alarm is raised.

For more information about power supply on SRX5400 refer to [SRX5400 Services Gateway AC Power Supply Specifications](#).

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 32 on page 223](#) 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 32: FPC Connection Limit Comparison

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

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

IN THIS SECTION

- [Configuring the Six-Input DC Power Supply on an LCC Router in a Routing Matrix | 225](#)
- [Configuring the Six-Input DC Power Supply on T640 and T1600 Routers | 225](#)
- [Configuring the Six-Input DC Power Supply on T4000 Routers | 226](#)

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

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.

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" on page 315](#) 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 configuring Power-On Sequence to Redistribute the Available Power, 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 related information.

SEE ALSO

| [Configuring Power-On Sequence to Redistribute the Available Power](#)

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" on page 1579](#) command to view power limits and usage details for the FPCs.

SEE ALSO

| [fru-poweron-sequence](#) | 315

Configuring Voltage Level Monitoring of FPCs

IN THIS SECTION

- [Enabling Voltage Failure Errors on the FPC](#) | 230
- [Disabling Voltage Failure Errors on the FPC](#) | 230

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

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;
}
```

Overriding the Default Maximum Power (Junos OS Evolved)

IN THIS SECTION

- [Overriding the Default Maximum Power \(PTX10001-36MR\) | 231](#)
- [Overriding the Default Maximum Power \(PTX10008\) | 232](#)

On the PTX10001-36MR router, you can override the maximum power value of the power supply module (PSM) by specifying a lesser power value. Similarly, on the PTX10008 router, you can override the default power budget allocated to the line card by specifying a power value.

Overriding the Default Maximum Power (PTX10001-36MR)

You can override the maximum power value of a power supply module (PSM), if you need to deploy the PTX10001-36MR router in an environment that does not require the maximum power capacity (3000 W) of the PSM. You can use the command `set chassis psm max-power` to override the maximum power capacity of the PSM. Using this configuration, you can specify a value that is less than the maximum capacity of the PSM, and then monitor the real-time power consumption against the configured power value.

See the following example to know how to override the default power in PTX10001-36MR:

```
user@router# set chassis psm max-power 1600
user@router# commit
```

If the above configuration is set, the system power capacity is shown as 1600W. See the following `show chassis power detail` output:

```
user@router# show chassis power detail
```

| Chassis Power | Voltage(V) | Power(W) |
|-------------------|-------------------------|----------|
| Total Input Power | | 937 |
| PSM 0 | | |
| Input 1 | 229 | 391 |
| Output | 12.03 | 305.44 |
| Capacity | 1600 W (maximum 3000 W) | |
| PSM 1 | | |
| Input 1 | 0 | 546 |
| Output | 12.04 | 515.08 |
| Capacity | 1600 W (maximum 3000 W) | |
| Item | Used(W) | |
| Routing Engine 0 | 25 | |
| CB 0 | 5 | |
| System: | | |
| Zone 0: | | |


```
Capacity:          3200 W (maximum 6000 W)
Actual usage:      937 W
Total system capacity: 3200 W (maximum 6000 W)
```

NOTE: If the power consumption of the PTX10001-36MR router exceeds the threshold you configured using the `set chassis psm max-power` command, the software does not take any corrective action against the breach; and the router might still encounter a power failure.

If the power consumption exceeds the configured threshold, the system raises a chassis alarm, as shown in the following example:

```
user@router# show system alarms

Mar 15 12:51:30
2 alarms currently active
Alarm time          Class  Description
2020-03-15 12:50:52 UTC  Minor  Power consumption is critical
```

Overriding the Default Maximum Power (PTX10008)

On the PTX10008 router, during the system startup, the power management software by default takes the maximum power mentioned for each field replaceable unit (FRU) and makes the power calculations based on this number. However, you can override the default power budget allocated to the line card by specifying a power value (in watts). You can use the command `set chassis fpc fpc-slot max-power watts` to override the default power. You can use the command `show chassis fpc detail` to view the maximum power consumption by a line card.

You can also disable the power management on PTX10008 by using the command `set chassis no-power-budget`. If you disable the power management on PTX10008, the system does not move any of the FRUs to offline state in case of insufficient power. Instead, the system keeps all the FRUs powered on by default. However, in case of a power shortage, a power redundancy alarm is raised as shown in the following example.

```
user@router> show system alarms

1 alarm currently active

Alarm time Class Description
```


2019-07-25 21:16:25 UTC Major chassis No Redundant Powe

SEE ALSO

[maximum-power](#)

Powering Off Packet Forwarding Engines

You can power on or power off the Packet Forwarding Engines in a running system, or keep a Packet Forwarding Engine powered off when the FPC comes online. The following are a couple of scenarios in which this feature is used.

- When the Packet Forwarding Engine ASIC is malfunctioning.
- To conserve power in case the deployment does not require the full capacity of the system.

To power off a Packet Forwarding Engine, use the following steps:

```
user@host# set chassis fpc slot-number pfe pfe-id power on
```

```
user@host# commit
```

You need to apply this configuration to both the Packet Forwarding Engines in an ASIC to be able to commit the configuration.

NOTE: On MX series routers with MPC10E-15C-MRATE, you can power off or power on only the Packet Forwarding Engine 2. The Packet Forwarding Engines 0 and 1 do not support this command. On the MPC10E-15C-MRATE, operating the Packet Forwarding Engine 2 requires the Packet Forwarding Engines 0 and 1 to be functional. You can use the command `show chassis fpc fpc-slot detail` to view the Packet Forwarding Engine power ON/OFF status and bandwidth for the individual Packet Forwarding Engines in the MPC10E-15C-MRATE.

You can use the `show chassis fpc fpc-slot detail` command to view the Packet Forwarding Engine power on/off configuration status. See an example below:

```
user@router> show chassis fpc 0 detail
Slot 0 information:
  State                               Online
```



```

Temperature          41 degrees C / 105 degrees F (PFE_24-HBM)
Temperature          44 degrees C / 111 degrees F (PFE_25-HBM)
Temperature          43 degrees C / 109 degrees F (PFE_26-HBM)
Temperature          41 degrees C / 105 degrees F (PFE_27-HBM)
Temperature          40 degrees C / 104 degrees F (PFE_28-HBM)
Temperature          40 degrees C / 104 degrees F (PFE_29-HBM)
Temperature          38 degrees C / 100 degrees F (PFE_30-HBM)
Temperature          39 degrees C / 102 degrees F (PFE_31-HBM)
Start time           2020-10-28 00:46:17 PDT
Uptime               1 day, 1 hour, 34 minutes, 48 seconds
Max power consumption 825 Watts

```

PFE Information:

| PFE | Power ON/OFF | Bandwidth | SLC |
|-----|--------------|-----------|-----|
| 0 | On | 500 | |
| 1 | On | 500 | |
| 2 | On | 500 | |
| 3 | On | 500 | |
| 4 | On | 500 | |
| 5 | On | 500 | |
| 6 | On | 500 | |
| 7 | On | 500 | |

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 | Starting in Junos OS Release 17.2R1, EX9200 switches support dynamic power management. |
| 17.2R1 | In Junos OS Release 17.2R1, for EX9200 switches, dynamic power management for MICs is enabled by default. |
| 15.1R1 | Starting in Junos OS Release 15.1R1, MX Series routers support dynamic power management. |

| | |
|--------|---|
| 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](#) | 106

[fru-poweron-sequence](#) | 315

Configuring Network Services Mode

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- [Network Services Mode Overview](#) | 235
- [Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers](#) | 240
- [Feature Restrictions on MX Series Routers Running in Ethernet Network Services Mode or Enhanced Ethernet Network Services Mode](#) | 240
- [Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode](#) | 242

Network Services Mode Overview

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- [Network Services on SCBE2](#) | 238

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" on page 286](#).

[Table 33 on page 237](#) explains how different modules function when the MX Series 5G Universal Routing Platform chassis is configured to run in different network services modes.

Table 33: 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 <code>limited-ifl-scaling</code> option with the <code>network-services enhanced-ip</code> statement at the <code>[edit chassis]</code> hierarchy level. Using the <code>limited-ifl-scaling</code> 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> |
| Enhanced IP Network Services mode (upon boot) | <p>Only MPCs, MS-MPCs, and MS-DPCs are powered on.</p> <p>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.</p> |

Table 33: Network Services Mode Functions (Continued)

| Configuration Upon Boot or Configuration Change | Module Function |
|---|--|
| Enhanced Ethernet Network Services mode (upon boot) | <p>Only MPCs, MS-MPCs, and MS-DPCs are powered on. All restrictions for operating in Ethernet Network Services mode apply.</p> <p>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.</p> |
| 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 Ethernet Network Services mode to Enhanced IP Network Services mode. | Reboot is required. |
| Change from Enhanced IP Network Services mode to Enhanced Ethernet Network Services mode | Reboot is required. |
| 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 240.

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 simultaneously (using the CLI command `request system reboot both-routing-engines`) 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:

1. Access the chassis hierarchy.

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

2. 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 34 on page 241](#) lists Junos OS feature restrictions when running in Ethernet Network Services mode or Enhanced Ethernet Network Services mode.

Table 34: 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 operational mode</code> 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

| |
|---|
| <i>Firewall Filters and Enhanced Network Services Mode Overview</i> |
| Junos OS Subscriber Management and Services Library |
| <i>Configuring Enhanced IP Network Services for a Virtual Chassis</i> |
| enhanced-mode (Network Services) 286 |
| network-services 336 |

7

CHAPTER

Packet Scheduling Mode

[Enabling an M160 Router to Operate in Packet Scheduling Mode | 245](#)

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 available for M160 routers only.

RELATED DOCUMENTATION

| *Configuring the Junos OS to Support Eight Queues on IQ Interfaces for T Series and M320 Routers*

8

CHAPTER

OSS Mapping

[Configuring OSS Mapping](#) | 247

Configuring OSS Mapping

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- [Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis | 247](#)
- [Example: Configuring a T4000 Chassis to Represent a T640 Chassis | 249](#)

Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis

IN THIS SECTION

- [Configuring T4000 Chassis as a T1600 Chassis | 247](#)
- [Configuring T4000 Chassis as a T640 Chassis | 248](#)
- [Disabling the OSS Mapping Feature | 248](#)

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

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

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- [Overview | 250](#)
- [Configuring the T4000 Chassis to Represent a T640 Chassis | 250](#)
- [Verification | 251](#)

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

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

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- [Procedure | 250](#)

Procedure

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

IN THIS SECTION

- [Verifying the OSS Mapping Feature | 251](#)
- [Verifying the OSS Mapping Feature on SNMP MIBs | 253](#)

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:

show chassis hardware

```
user@T4000> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis              REV 01  710-027486  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 |
| 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:

show chassis hardware detail

```

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           201101050335CCFACCFA 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:

show chassis hardware extensive

```

user@T4000> show chassis hardware extensive
Hardware inventory:

```


| Item | Version | Part number | Serial number | Description |
|--------------|------------|-------------------|---------------|-------------|
| Chassis | | | JN11B3892AHA | T640 |
| 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:

show snmp mib walk system

```
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:

show snmp mib walk jnxBoxAnatomy

```
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.

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9

CHAPTER

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action

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Syntax

```
action ( alarm | disable-pfe | get-state | log | offline | reset | offline-pfe | reset-pfe |
trap )
```

Hierarchy Level

[edit chassis "fpc" on page 300 *slot-number* "error " on page 289 "fatal" on page 296]

[edit chassis "fpc" on page 300 *slot-number* "error " on page 289 "major" on page 331]

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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. You can use `offline-pfe` and `reset-pfe` options to map errors belonging to pfe category.

Options

| | |
|--------------------|--|
| alarm | Raise an FPC alarm. |
| disable-pfe | (PTX routers) Disable Packet Forwarding Engine interfaces on an FPC. (MX240, MX480, MX960, MX2020 PTX10008 routers). Disables the interface associated with the ASIC that raised the error. Disables all PFE interfaces, alarms and logs. 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 <code>/var</code> on the routing engine. |
| offline | Disables the alarms, logs, and shuts down the affected FPC, allowing traffic to be re-routed through interfaces on other FPC in the device. |
| reset | The system takes the affected FPC offline and resets to online, enables the alarms and logs. |
| offline-pfe | Disables the alarms, logs, and shuts down the affected PFE. |
| reset-pfe | Powers-off the PFE, disables the alarms and logs, then, powers-on the PFE, enables the alarms and logs. |
| log | Log occurrences to the system log file. |
| trap | The system raises traps for the FPC errors. |

Usage

The usage guidelines are as follows:

- The specified PFE is disabled automatically if `offline-pfe` or `reset-pfe` is configured. For details, see *Configuring FPC Error Levels and Actions*.

Required Privilege Level

| | |
|-------------------|--|
| interface | To view this statement in the configuration. |
| interface-control | To add this statement to the configuration. |

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.

RELATED DOCUMENTATION

[show chassis fpc errors](#) | 1476

No Link Title

Configuring FPC Error Levels and Actions

aggregated-devices

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- [Hierarchy Level](#) | 261
- [Description](#) | 261
- [Options](#) | 262
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- [Release Information](#) | 262

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]

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 Level

interface—To view this statement in the configuration.

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

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.

RELATED DOCUMENTATION

[Configuring Junos OS for Supporting Aggregated Devices](#)

alarm (chassis)

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- [Hierarchy Level | 263](#)
- [Description | 264](#)
- [Options | 264](#)
- [Usage \(ACX7900\) | 264](#)
- [Required Privilege Level | 264](#)
- [Release Information | 264](#)

Syntax

```
alarm {  
    interface-type {  
        alarm-name (ignore | red | yellow);  
    }  
}
```

Hierarchy Level

```
[edit chassis],  
[edit chassis interconnect-device name],  
[edit chassis node-group name]
```


Description

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.

To configure more than one alarm, include multiple *alarm-name* lines.

Options

alarm-name—Alarm condition. For example, input1, input2

ignore—The specified alarm condition does not set off any alarm.

interface-type—Type of interface on which you are configuring the alarm: psm, fpc, atm, ethernet, sonet, or t3.

red—The specified alarm condition sets off a red alarm.

yellow—The specified alarm condition sets off a yellow alarm.

Usage (ACX7900)

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

Alarm Types and Severity Levels

[Chassis Conditions That Trigger Alarms](#)

Chassis Alarm Messages on a QFX3500 Device

Interface Alarm Messages

alarm-port

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- [Description | 266](#)
- [Options | 266](#)
- [Required Privilege Level | 267](#)
- [Release Information | 268](#)

Syntax

```
alarm-port {  
    input port port-number {  
        active {  
            (high | low);  
        }  
        admin-state {  
            (disabled | enabled);  
        }  
        description description;  
    }  
    severity {  
        (critical | major | minor | warning)  
    }  
}
```



```

output port port-number {
    admin-state {
        (disabled | enabled);
    }
    description description;
}
}

```

Hierarchy Level

[edit chassis]

Description

Configure an alarm input or output on the dedicated alarm port on the router. You can use the alarm input configuration to receive alarm inputs from the external devices such as sensors. You can use the alarm output configuration to relay the alarms in the router to external alarm devices. You can configure up to three alarm inputs and one alarm output.

Options

port-number Specify the port number for the alarm input or output. The system supports up to three alarm input ports (port number: 1 to 3). The system supports only one alarm output port (port number: 1)

active Applicable only to alarm inputs.

Configure a signal polarity for the alarm input based on the user environment. The alarm relay becomes operational when the input signal polarity is high or low based on this configuration. The following options are available.

- high
- low

- **Default:** low

admin-state Specify the administrative state of the alarms.

- disabled—Disable the alarm configuration. If you choose this option, the router will not trigger the alarm configured on this port. Disabling an alarm configuration does not delete the alarm. You can enable it when required.
- enabled—Enable the alarm configuration.
- **Default:** disabled

description
description Provide a description for the alarm input or output. For example, you can provide a description to identify the device connected to the alarm port.

severity Applicable only to alarm inputs.

Configure an alarm severity. The system supports the following alarm severities.

- critical
- major
- minor
- warning

NOTE: The system considers the alarm inputs configured with the critical or major severity as major alarms. The alarm inputs configured with the minor or warning severity are considered minor alarms.

- **Default:** critical

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced before Junos OS Release 20.2R1.

RELATED DOCUMENTATION

[Configuring Chassis Alarm Input and Output \(ACX710 Routers\) | 189](#)

allow-sram-parity-errors

IN THIS SECTION

- [Syntax | 268](#)
- [Hierarchy Level | 268](#)
- [Description | 269](#)
- [Required Privilege Level | 269](#)
- [Release Information | 269](#)

Syntax

```
allow-sram-parity-errors;
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```


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.

Release Information

Statement introduced in Junos OS Release 8.0.

ambient-temperature

IN THIS SECTION

- [Syntax | 270](#)
- [Hierarchy Level | 270](#)
- [Description | 270](#)
- [Default | 271](#)
- [Options | 271](#)
- [Required Privilege Level | 271](#)
- [Release Information | 272](#)

Syntax

```
chassis ambient-temperature (25C|40C|55C);
```

Hierarchy Level

[edit chassis]

Description

Set the chassis ambient temperature and instruct the power manager to allocate power to the line cards according to the ambient temperature value.

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.

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.

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.

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.

Release Information

Statement introduced in Junos OS Release 14.1.

RELATED DOCUMENTATION

[Managing Power Allocated to PTX5000 FPCs on the Basis of Chassis Ambient Temperature Configuration | 111](#)

[Monitoring the Power Consumption of PTX5000 FPCs by Configuring the Ambient Temperature | 107](#)

[Understanding How Configuring Ambient Temperature Helps Optimize Power Utilization | 106](#)

bandwidth (MPC Bandwidth)

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- [Syntax | 272](#)
- [Hierarchy Level | 272](#)
- [Description | 273](#)
- [Options | 273](#)
- [Required Privilege Level | 273](#)
- [Release Information | 274](#)

Syntax

```
bandwidth bandwidth;
```

Hierarchy Level

```
[edit chassis fpc slot]
```


Description

Configure the MPC bandwidth.

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:

```
[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#
```

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

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 16.1.

RELATED DOCUMENTATION

| *MPC8E*

bandwidth-degradation

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- [Syntax | 274](#)
- [Hierarchy Level | 275](#)
- [Description | 275](#)
- [Options | 275](#)
- [Required Privilege Level | 276](#)
- [Release Information | 276](#)

Syntax

```
bandwidth-degradation {  
    action (log-only | restart | offline | restart-then-offline);  
    no-fabric-switchover;  
    percentage (1-99);  
}
```


Hierarchy Level

```
[edit chassis fpc slot-numberfabric]
```

Description

Configure a FPC to take a specific action once bandwidth degradation reaches a certain percentage to avoid causing a null route 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.

NOTE: MX Series devices will count fabric planes in the `offline` or `fault` state as part of the bandwidth degradation percentage calculation. On PTX Series devices, when a fabric plane is `offline` it won't be counted in the bandwidth degradation percentage calculation.

Options

| | |
|-----------------------------------|---|
| <code>log-only</code> | A message gets logged in the <code>chassisd</code> and message files when the fabric degradation threshold is reached. No other actions are taken. |
| <code>restart</code> | The FPC with a degraded fabric plane is restarted once the threshold is reached. |
| <code>offline</code> | 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. |
| <code>restart-then-offline</code> | 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.

Release Information

Statement introduced in Junos OS Release 15.1.

RELATED DOCUMENTATION

[Managing Bandwidth Degradation | 45](#)

[blackhole-action | 276](#)

[offline-on-fabric-bandwidth-reduction | 343](#)

blackhole-action

IN THIS SECTION

- [Syntax | 276](#)
- [Hierarchy Level | 277](#)
- [Description | 277](#)
- [Required Privilege Level | 277](#)
- [Release Information | 277](#)

Syntax

```
blackhole-action (log-only | restart | offline | restart-then-offline);
```


Hierarchy Level

```
[edit chassis fpc slot-number fabric]
```

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.

Release Information

Statement introduced in Junos OS Release 15.1.

RELATED DOCUMENTATION

[Managing Bandwidth Degradation](#) | 45

[bandwidth-degradation](#) | 274

chassis

IN THIS SECTION

 [Syntax](#) | 278

- [Hierarchy Level | 278](#)
- [Description | 278](#)
- [Required Privilege Level | 278](#)
- [Release Information | 278](#)

Syntax

```
chassis { ... }
```

Hierarchy Level

```
[edit]
```

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.

Release Information

Statement introduced before Junos OS Release 7.4.

craft-lockout

IN THIS SECTION

- [Syntax | 279](#)
- [Hierarchy Level | 279](#)
- [Description | 279](#)
- [Required Privilege Level | 279](#)
- [Release Information | 280](#)

Syntax

```
craft-lockout;
```

Hierarchy Level

```
[edit chassis]
```

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.

Release Information

Statement introduced in Junos OS Release 8.1.

RELATED DOCUMENTATION

[Configuring the Junos OS to Disable the Physical Operation of the Craft Interface](#) | 211

degraded

IN THIS SECTION

- [Syntax](#) | 280
- [Hierarchy Level](#) | 281
- [Description](#) | 281
- [Options](#) | 281
- [Required Privilege Level](#) | 282
- [Release Information](#) | 282

Syntax

```
degraded {  
  action-fpc-restart-disable;  
  degraded-fabric-detection-enable;  
  degraded-fpc-bad-plane-threshold number-of-bad-planes;  
}
```


Hierarchy Level

[edit chassis fabric]

Description

Configure options that apply to degraded chassis fabric conditions.

In Junos OS Evolved, for the fabric planes to be available for the Packet Forwarding Engines, the following conditions must be met:

- The associated SIBs are in online state.
- The fabric ASICs are initialized.
- The links between the Packet Forwarding Engine ASICs and the fabric ASICs are brought up.

However, events such as link faults, fabric ASIC faults, SIB faults, and boot time Fabric OAM errors could make the fabric planes unreachable for Packet Forwarding Engines. If you have configured the degraded fabric detection along with a threshold for the number of bad planes, when the number of unreachable planes becomes equal to or more than the threshold, the software reports a degraded fabric condition.

When a Packet Forwarding Engine is affected by a degraded fabric condition, the software disables the interfaces associated with that Packet Forwarding Engine.

Options

- `action-fpc-restart-disable`—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.

The system will detect a null-route filtering condition and try to heal the system.

NOTE: The `action-fpc-restart-disable` option is not applicable to Junos OS Evolved.

- `degraded-fabric-detection-enable`—Enable detection of an FPC with degraded fabric.

- `degraded-fpc-bad-plane-threshold` **number-of-bad-planes**—Configure the number of bad planes that indicate an FPC is degraded.

Options: *number-of-bad-planes*—Number of bad planes.

Range: The range could vary depending on the platform. For example, the PTX10001-36MR supports a range from 4 to 32.

Default: 4

Required Privilege Level

`interface`—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 11.4.

Statement “`action-fpc-restart-disable`” introduced in Junos OS Release 12.1.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions | 48](#)

disable-grant-bypass

IN THIS SECTION

[Syntax | 283](#)

[Hierarchy Level | 283](#)

- [Description | 283](#)
- [Default | 284](#)
- [Required Privilege Level | 284](#)
- [Release Information | 284](#)

Syntax

```
disable-grant-bypass;
```

Hierarchy Level

```
[edit chassis fabric]
```

Description

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.

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.

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

Release Information

Statement introduced in Junos OS Release 16.1.

RELATED DOCUMENTATION

[Understanding Fabric Grant Bypass | 75](#)

[Disabling Fabric Grant Bypass to Control Congestion and Improve Performance | 76](#)

[Re-Enabling Fabric Grant Bypass | 77](#)

disk-failure-action

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- [Hierarchy Level | 285](#)
- [Description | 285](#)
- [Options | 285](#)

- [Required Privilege Level | 285](#)
- [Release Information | 286](#)

Syntax

```
disk-failure-action (halt | reboot);
```

Hierarchy Level

```
[edit chassis routing-engine on-disk-failure]
```

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.

Release Information

Statement introduced in Junos OS Release 9.0.

RELATED DOCUMENTATION

[Enabling a Routing Engine to Reboot on Hard Disk Errors | 207](#)

enhanced-mode (Network Services)

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- [Hierarchy Level | 286](#)
- [Description | 287](#)
- [Default | 288](#)
- [Required Privilege Level | 288](#)
- [Release Information | 288](#)

Syntax

```
enhanced-mode;
```

Hierarchy Level

```
[edit chassis network-services]
```


Description

PTX1000, PTX3000 and PTX5000 Routers—When you configure `enhanced-mode` on PTX series routers, the following features are enabled on the router:

- 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, except the PTX10000 line of routers—By default, the `enhanced-mode` statement is disabled.

PTX 10000 line of routers (such as PTX10001, PTX10003, PTX10008, and PTX10016 routers)—By default, the `enhanced-mode` statement is enabled.

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.

Release Information

Statement introduced in Junos OS Release 12.3.

RELATED DOCUMENTATION

[Network Services Mode Overview](#) | 235

[show chassis fpc | 1402](#)

[mac-table-size](#)

[show chassis network-services | 1533](#)

error

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- [Release Information | 293](#)

Syntax

```
error {
    (fatal | major | minor)
{
    threshold threshold value;
    action (alarm | disable-pfe | offline-pic | log | get-state | offline | reset | offline-
pfe | reset-pfe | trap)
    ;
}
scope error-scope {
    category category {
        (fatal | major | minor) {
            threshold threshold value;
            action (alarm | disable-pfe | log | get-state | offline | reset | offline-pfe |
reset-pfe | trap);
```



```

    }
}

reset-pfe
{
    pause-period <pause_minutes>
    pfe-disable-period <pfe_disable_minutes>
    retry-limit <retry_number>
}
}

```

Junos OS

[edit chassis]

[edit chassis fpc *slot-number*]

Junos OS Evolved

[edit chassis fpc *slot-number*]

[edit chassis sib slot *slot-number*]

Description

Configure the threshold at which FPC or SIB 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 the 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). Using the configuration command for error levels, you can isolate PFE errors, thereby reducing the need for a field replacement of FPCs. For feature details and PTX platforms supported, see [FPC self-healing](#).

NOTE:

- On the MX104 routers, Junos does not initiate restart of the system on encountering a Fatal error. Additionally, though you can configure the action `disable-pfe` for Major errors on the MX104, the router does not disable its only PFE on encountering a Major error.

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.
- `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. On Junos OS Evolved, for the errors belonging to the `internal` category, the default threshold value is 1.

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.
- `reset-pfe`—Reset the PFE. (Supported for PTX series devices including PTX10003)
- `offline-pfe`—Take the PFE offline.
- `trap`—Raise traps for the FPC errors.

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`). Starting in Junos OS Release 21.4R3, the additional options for `reset PFE` are valid only for line cards MPC7, MPC8, and MPC9, for the platforms MX240, MX480, MX960, MX2008, MX2010, and MX2020.

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`. Junos OS Evolved also supports the `scope switch`.

- `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`. Junos OS Evolved also supports the category `internal`. On every occurrence of an error belonging to the `internal` category, the software by default raises an alarm at the individual error level (not at the scope or category level). You cannot configure an action against errors belonging to the `internal` category.
- `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.
- `reset-pfe`—Configure thresholds associated to `reset-pfe` action.
 - `pause-period <pause_minutes>`— Pause period in minutes. Valid range is 0 to 10000000.
 - `pfe-disable-period <pfe_disable_minutes>`— PFE disable period in minutes before reset PFE. Valid range is 1 to 10000000. The PFE disable period must be greater than the pause period.
 - `retry limit <retry_number>`— Retry limit for reset PFE. Valid range is 0 to 3.

Required Privilege Level

| | |
|--------------------------|--|
| interface | To view this statement in the configuration. |
| interface-control | To add this statement to the configuration. |

Release Information

Statement introduced in Junos OS Release 13.3.

Reset-pfe error action support added to PTX10003 in Junos OS Evolved Release 22.4R1.

RELATED DOCUMENTATION

[Fabric Resiliency](#) | 26

Configuring FPC Error Levels and Actions

[show chassis fabric errors](#) | [1151](#)

[show chassis fpc errors](#) | [1476](#)

[action](#) | [258](#)

[error-id](#) | [294](#)

error-id

IN THIS SECTION

- [Syntax](#) | [294](#)
- [Hierarchy Level](#) | [295](#)
- [Description](#) | [295](#)
- [Options](#) | [295](#)
- [Required Privilege Level](#) | [295](#)
- [Release Information](#) | [296](#)

Syntax

```
error-id {  
    severity; {  
        (fatal | major | minor) {  
        }  
    }  
    state {  
        disable;  
    }  
}
```


Hierarchy Level

[edit chassis fpc *slot-number* error]

[edit chassis sib slot *slot-number* error]

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.

Release Information

Statement introduced in Junos OS Release 18.2R1.

RELATED DOCUMENTATION

[Managing FPC Errors | 200](#)

[Configuring FPC Error Levels and Actions | 192](#)

[show chassis fpc errors | 1476](#)

fatal

IN THIS SECTION

- [Syntax | 296](#)
- [Hierarchy Level | 297](#)
- [Description | 297](#)
- [Required Privilege Level | 297](#)
- [Release Information | 297](#)

Syntax

```
fatal {  
  threshold threshold-value;  
  action {  
    alarm;  
    disable-pfe;  
    get-state;  
    log;  
    offline;  
    reset;
```



```
}
}
```

Hierarchy Level

[edit chassis "fpc" [on page 300](#) slot-number "error " [on page 289](#)]

[edit chassis]

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. |

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.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation](#) | 26

[Configuring FPC Error Levels and Actions](#) | 192

feeds (T640, T1600, and T4000 Routers with Six-Input DC Power Supply)

IN THIS SECTION

- [Syntax | 298](#)
- [Hierarchy Level | 298](#)
- [Description | 298](#)
- [Options | 299](#)
- [Required Privilege Level | 299](#)
- [Release Information | 299](#)

Syntax

```
feeds number-of-input-feeds;
```

Hierarchy Level

```
[edit chassis pem]  
[edit chassis lcc lcc-number pem] (Routing Matrix)
```

Description

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.

When providing four or five input feeds on standalone routers, you must 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 must configure the `feeds` statement at the `[edit chassis lcc lcc-number 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.
- All power supplies in the router must use the same number of inputs feeds.

Options

- **Range:** 4 through 6
- **Default:** 6

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 12.1.

RELATED DOCUMENTATION

[Configuring the Six-Input DC Power Supply on T Series Routers](#) | 224

fpc (M320, T320, T640 and PTX Series Routers)

IN THIS SECTION

- [Syntax | 300](#)
- [Hierarchy Level | 301](#)
- [Description | 302](#)
- [Options | 302](#)
- [Required Privilege Level | 302](#)
- [Release Information | 302](#)

Syntax

```
fpc slot-number {
    fpc
        slot slot-number

    { pfe pfe-instance
        { temp-perf-throttle-disable;
          temp-volt-reduction-disable;
          power (off | on);
        }

    { error {
        [fatal | major | minor] {
            threshold threshold-value;
            action (alarm | disable-pfe | offline-pic | log | get-state | offline | reset | trap
| offline-pfe | reset-pfe);
        }
    }

    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 {
        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;
    }
    max-queues-per-interface (8 | 4);
    no-concatenate;
    q-pic-large-buffer (large-scale | small-scale);
}
}

```

Hierarchy Level

[edit chassis]

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 , PTX10008 routers: 0 through 7. On PTX1000 routers, the FPC number is always 0.
- **Range:** PTX3000 routers: 0, 2, 4, 6, 8, 10, 12, 14

pfe—Slot number in which the PFE is installed.

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.

Release Information

Statement introduced before Junos OS Release 7.4.

Error statement introduced for PTX Series routers in Junos OS Release 13.3.

RELATED DOCUMENTATION

Configuring FPC Error Levels and Actions

No Link Title

fpc (MX Series 5G Universal Routing Platforms)

IN THIS SECTION

- [Syntax | 303](#)
- [Hierarchy Level | 304](#)
- [Description | 304](#)
- [Options | 305](#)
- [Required Privilege Level | 305](#)
- [Release Information | 305](#)

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);
    pfe identifier {
        exception-reporting {
            category category-name {
                inline-monitoring-instance inline-monitoring-instance;
            }
        }
        forwarding-packages {
            mobility;
        }
        power (off | on);
        tunnel-services;
    }
    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]

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 Level

`interface`—To view this statement in the configuration.

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

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.

`exception-reporting` option added in Junos OS Release 21.2R1.

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)

IN THIS SECTION

- Syntax | 306
- Hierarchy Level | 307
- Description | 307
- Options | 307
- Required Privilege Level | 307
- Release Information | 307

Syntax

```
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;  
        q-pic-large-buffer (large-scale | small-scale);  
    }  
}
```


Hierarchy Level

```
[edit chassis lcc number]
```

Description

On a TX Matrix or TX Matrix Plus router, configure properties for the PICs in individual FPCs.

Options

slot-number—Slot number in which the FPC is installed.

- **Range:** 0 through 7

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.

Release Information

Statement introduced before Junos OS Release 7.4.

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](#)

[TX Matrix Router Chassis and Interface Names](#)

fpc-feb-connectivity

IN THIS SECTION

- [Syntax | 308](#)
- [Hierarchy Level | 308](#)
- [Description | 308](#)
- [Options | 309](#)
- [Required Privilege Level | 309](#)
- [Release Information | 309](#)

Syntax

```
fpc-feb-connectivity {  
    fpc number feb (slot-number | none);  
}
```

Hierarchy Level

```
[edit chassis]
```

Description

On the M120 router only, configure a connection between any Flexible PIC Concentrator (FPC) and any Forwarding Engine Board (FEB).

Options

fpc *number*—Specify the FPC slot number.

- **Range:** 0 through 5

feb *slot-number*—Specify the FEB slot number.

- **Range:** : 0 through 5

none—Disconnect the FPC from the FEB.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 8.0.

RELATED DOCUMENTATION

[Configuring the Junos OS to Support FPC to FEB Connectivity on M120 Routers](#)

fpc-offline-on-blackholing

IN THIS SECTION

- [Syntax | 310](#)
- [Hierarchy Level | 310](#)
- [Description | 310](#)

- Required Privilege Level | 310
- Release Information | 310

Syntax

```
fpc-offline-on-blackholing;
```

Hierarchy Level

```
[edit chassis fabric degraded]
```

Description

Take the FPC offline and raise an alarm if a traffic null route condition is detected in the routing matrix. By default, FPCs remain online when a null route condition is detected.

Required Privilege Level

system—To view this statement in the configuration.

system-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 14.2.

RELATED DOCUMENTATION

| [show chassis alarms](#) | [501](#)

fpc-nmi-volt-fail-knob

IN THIS SECTION

- [Syntax](#) | [311](#)
- [Hierarchy Level](#) | [311](#)
- [Description](#) | [311](#)
- [Required Privilege Level](#) | [312](#)
- [Release Information](#) | [312](#)

Syntax

```
fpc-nmi-volt-fail-knob (enable | disable)
```

Hierarchy Level

```
[edit chassis]
```

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

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

RELATED DOCUMENTATION

[show chassis fpc | 1402](#)

[Configuring Voltage Level Monitoring of FPCs | 229](#)

fpc-restart

IN THIS SECTION

- [Syntax | 313](#)
- [Hierarchy Level | 313](#)
- [Description | 313](#)
- [Default | 313](#)
- [Required Privilege Level | 313](#)
- [Release Information | 313](#)

Syntax

```
fpc-restart;
```

Hierarchy Level

```
[edit chassis fabric degraded]
```

Description

Allow the user to restart the FPCs when a traffic null route 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 null route condition is detected.

Required Privilege Level

routing—To view this statement in the configuration.

routing-control—To add this statement to the configuration.

Release Information

Statement added in Junos OS Release 13.2R6.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[Disabling Line Card Restart to Limit Recovery Actions from Degraded Fabric Conditions | 48](#)

fpc-resync

IN THIS SECTION

- [Syntax | 314](#)
- [Hierarchy Level | 314](#)
- [Description | 314](#)
- [Required Privilege Level | 315](#)
- [Release Information | 315](#)

Syntax

```
fpc-resync;
```

Hierarchy Level

```
[edit chassis]
```

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.

NOTE: In order to prevent null-route filtering, 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.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 10.2.

RELATED DOCUMENTATION

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online](#) | 207

fru-poweron-sequence

IN THIS SECTION

- [Syntax](#) | 316
- [Hierarchy Level](#) | 316
- [Description](#) | 316
- [Options](#) | 316
- [Required Privilege Level](#) | 317
- [Release Information](#) | 317

Syntax

```
fru-poweron-sequence fru-poweron-sequence;
```

Hierarchy Level

```
[edit chassis]
```

Description

(MX Series 5G Universal Routing Platforms, SRX5xxx Series Platforms) Configure the power-on sequence for the DPCs in the chassis for routers with the enhanced AC Power Entry Module (PEM).

(T640 routers, T1600 routers, T4000 routers, MX2020 routers, and PTX Series packet transport routers) Configure the power-on sequence for Flexible PIC Concentrators (FPCs) installed in the chassis.

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/fpc_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.

Release Information

Statement introduced in Junos OS Release 10.0.

RELATED DOCUMENTATION

Redistributing the Available Power by Configuring Power-On Sequence

input-current (T4000 Routers)

IN THIS SECTION

- [Syntax | 318](#)
- [Hierarchy Level | 318](#)
- [Description | 318](#)

- Options | 318
- Required Privilege Level | 319
- Release Information | 319

Syntax

```
input-current amps-in-each-feed;
```

Hierarchy Level

```
[edit chassis pem]
```

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.

NOTE: Before configuring input current for your router, see the *T4000 Core Router Hardware Guide* for special considerations.

Options

Values:

- 40—Indicates 40 A of input current is received in each feed.
- 60—Indicates 60 A of input current is received in each feed.

- **Default:** 60 A

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 12.3.

RELATED DOCUMENTATION

| [Configuring the Six-Input DC Power Supply on T Series Routers](#) | 224

ir-mode

IN THIS SECTION

- [Syntax](#) | 320
- [Hierarchy Level](#) | 320
- [Description](#) | 320
- [Default](#) | 320
- [Options](#) | 321
- [Required Privilege Level](#) | 321
- [Release Information](#) | 321

Syntax

```
ir-mode (IR | R);
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

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.

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.

Default

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:

- 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

- IR** Configure the license mode IR for an MPC installed in a specified MPC slot. Includes the following features:
- 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.
- 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.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 14.2.

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](#)

led-beacon

IN THIS SECTION

- [Syntax | 322](#)
- [Hierarchy Level | 322](#)
- [Description | 322](#)
- [Required Privilege Level | 323](#)
- [Release Information | 323](#)

Syntax

```
led-beacon
```

Hierarchy Level

```
[edit interfaces interface-name (with port number)]
```

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.

NOTE: At the [edit interfaces *interface-name* (*with port number*)] hierarchy level, you must include the port number as part of the interface name. For example, `et-x/y/z(:n)`.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 15.1F3 and 16.1R2.

RELATED DOCUMENTATION

| *show interfaces detail*

license-mode

IN THIS SECTION

- [Syntax | 323](#)
- [Hierarchy Level | 324](#)
- [Description | 324](#)
- [Options | 324](#)
- [Required Privilege Level | 324](#)
- [Release Information | 324](#)

Syntax

```
license-mode IR | R
```


Hierarchy Level

```
[edit chassis fpc slot-number]
```

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.

Release Information

Statement introduced in Junos OS Release 15.1F3.

RELATED DOCUMENTATION

[fpc \(M320, T320, T640 and PTX Series Routers\)](#) | [300](#)

limited-ifl-scaling

IN THIS SECTION

- [Syntax](#) | [325](#)
- [Hierarchy Level](#) | [325](#)
- [Description](#) | [325](#)
- [Required Privilege Level](#) | [326](#)
- [Release Information](#) | [326](#)

Syntax

```
limited-ifl-scaling;
```

Hierarchy Level

```
[edit chassis network-services enhanced-ip]
```

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.

Release Information

Command introduced in Junos OS Release 15.1R3.

RELATED DOCUMENTATION

[Limiting the Maximum Number of Logical Interfaces on MX Series Routers With MS-DPCs in Enhanced IP Network Services Mode | 242](#)

[Network Services Mode Overview | 235](#)

Configuring Enhanced IP Network Services for a Virtual Chassis

linerate-mode

IN THIS SECTION

- [Syntax | 327](#)
- [Hierarchy Level | 327](#)
- [Description | 327](#)
- [Required Privilege Level | 327](#)
- [Release Information | 327](#)

Syntax

```
linerate-mode;
```

Hierarchy Level

```
[edit chassis fpc slot-number pic pic-number linerate-mode],  
[edit chassis lcc number fpc slot-number pic pic-number linerate-mode] (Routing Matrix)
```

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.

Release Information

Statement introduced in Junos OS Release 10.1.

RELATED DOCUMENTATION

[Junos OS Network Interfaces Library for Routing Devices](#)

l2-channel-error-threshold (chassis)

IN THIS SECTION

- [Syntax | 328](#)
- [Hierarchy Level | 328](#)
- [Description | 328](#)
- [Required Privilege Level | 329](#)
- [Release Information | 329](#)

Syntax

```
l2-channel-error-threshold threshold; {  
    l2-channel-errors (ignore |red | yellow);  
}
```

Hierarchy Level

```
[edit chassis alarm l2-chan-err-ethernet]
```

Description

Use this command to specify the threshold limit for the L2 error count. Range is 1 through 4294967295 per hour and default value is 50,000 per hour.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 21.1R1.

RELATED DOCUMENTATION

[Chassis Conditions That Trigger Alarms](#)

l2-channel-errors (chassis)

IN THIS SECTION

- [Syntax | 329](#)
- [Hierarchy Level | 330](#)
- [Description | 330](#)
- [Options | 330](#)
- [Required Privilege Level | 330](#)
- [Release Information | 330](#)

Syntax

```
l2-channel-errors (ignore |red | yellow);
```


Hierarchy Level

```
[edit chassis alarm l2-chan-err-ethernet]
```

Description

Configure chassis alarm for L2 channel error. When you configure this statement, chassis raises an alarm when the L2 channel error count crosses 50,000 per hour. If you do not configure this statement, chassis do not raise any alarm for L2 channel errors.

Options

ignore—This configuration does not raise any alarm for L2 channel error. This is the default configuration.

red—This configuration raises a red alarm for L2 channel error.

yellow—This configuration raises a red alarm for L2 channel error.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 21.1R1.

RELATED DOCUMENTATION

[Chassis Conditions That Trigger Alarms](#)

major

IN THIS SECTION

- [Syntax | 331](#)
- [Hierarchy Level | 331](#)
- [Description | 332](#)
- [Required Privilege Level | 332](#)
- [Release Information | 332](#)

Syntax

```
major {  
    threshold threshold-value;  
    action {  
        alarm;  
        disable-pfe;  
        get-state;  
        log;  
        offline;  
        reset;  
    }  
}
```

Hierarchy Level

[edit chassis "[fpc](#)" on page 300 *slot-number* "[error](#)" on page 289]

[edit chassis]

Description

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.

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. |

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.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[show chassis fpc errors | 1476](#)

[Configuring FPC Error Levels and Actions | 192](#)

max-power

IN THIS SECTION

- [Syntax | 333](#)
- [PTX10008 | 333](#)

- [PTX10001-36MR | 333](#)
- [Description | 333](#)
- [Options | 334](#)
- [Required Privilege Level | 334](#)
- [Release Information | 334](#)

Syntax

```
max-power watts;
```

PTX10008

```
[edit chassis fpc slot-number]
```

PTX10001-36MR

```
[edit chassis psm]
```

Description

For the PTX10001-36MR router— Override the maximum power value of a power supply module (PSM) by specifying a lesser power value (in watts). You can use this configuration to monitor the power consumed in real time against the configured value. The system raises a chassis alarm when the consumption exceeds the configured power.

For the PTX10008 router—Override the default power budget allocated to the line card by specifying a power value (in watts). You can use the command `show chassis fpc detail` to view the maximum power consumption by a line card.

Options

watts—Specify power value (in watts) with which you want to override the default/maximum power.

NOTE: On the PTX10008 router, if you configure a power value (in watts) that is greater than the maximum value supported by the line card, the power budget for the line card is set to its supported maximum. On the PTX10001-36MR router, if you configure a power value (in watts) that is greater than the maximum value supported by the PSM, the configuration does not work.

Required Privilege Level

system—To view this statement in the configuration.

system-control—To add this statement to the configuration.

Release Information

The `max-power watts` statement introduced in Junos OS Evolved Release 20.1R2 for PTX10008 routers.

The `max-power watts` statement introduced in Junos OS Evolved Release 20.2R1 for PTX10001-36MR routers.

RELATED DOCUMENTATION

| [show chassis fpc](#) | 1402

minor

IN THIS SECTION

- [Syntax | 335](#)
- [Hierarchy Level | 335](#)
- [Description | 336](#)
- [Required Privilege Level | 336](#)
- [Release Information | 336](#)

Syntax

```
minor {  
    threshold threshold-value;  
    action {  
        alarm;  
        disable-pfe;  
        get-state;  
        log;  
        offline;  
        reset;  
    }  
}
```

Hierarchy Level

[edit chassis "[fpc](#)" on page 300 *slot-number* "[error](#)" on page 289]

[edit chassis]

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. |

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.

RELATED DOCUMENTATION

[Fabric Resiliency and Degradation | 26](#)

[show chassis fpc errors | 1476](#)

[Configuring FPC Error Levels and Actions | 192](#)

network-services

IN THIS SECTION

● [Syntax | 337](#)

● [Hierarchy Level | 337](#)

- [Description | 337](#)
- [Default | 337](#)
- [Options | 338](#)
- [Required Privilege Level | 338](#)
- [Release Information | 338](#)

Syntax

```
network-services (ethernet | enhanced-ethernet | ip | enhanced-ip | lan);
```

Hierarchy Level

```
[edit chassis]
```

Description

Set the router's network services to a specific mode of operation. On MX240, MX480, and MX960 routers, MPC5E and MPC7E power on only if the network services mode configured is enhanced-ip or enhanced-ethernet.

MX2010 and MX2020 support only enhanced-ip and enhanced-ethernet network services modes.

Default

- MX80, MX104, MX2010, MX2020—enhanced-ip
- MX240, MX480, MX960—ip

Options

`ethernet`—Set the router's network services to Ethernet and use standard, compiled firewall filter format.

`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.

`ip`—Set the router's network services to Internet Protocol and use standard, compiled firewall filter format.

`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. For MX960 platform, `enhanced-ip` configuration must be enabled on both REs together. After committing the configuration, GRES configuration must be disabled and both REs must be rebooted to ensure that all the FPCs reboot and have the same network-services as REs. Any mismatch in network services between RE0, RE1, FPCs will lead to unexpected results.

`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.

Required Privilege Level

`interface`—To view this statement in the configuration.

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

Release Information

Statement introduced before Junos OS Release 8.5.

`enhanced-ethernet` and `enhanced-ip` options introduced in Junos OS Release 11.4.

`limited-ifl-scaling` option introduced in Junos OS Release 15.1R3 for MX Series routers.

RELATED DOCUMENTATION

[Network Services Mode Overview](#)

[Firewall Filters and Enhanced Network Services Mode Overview](#)

[Configuring Junos OS to Run a Specific Network Services Mode in MX Series Routers](#)

[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](#)

no-power-budget

IN THIS SECTION

- [Syntax | 339](#)
- [Hierarchy Level | 339](#)
- [Description | 340](#)
- [Required Privilege Level | 340](#)
- [Release Information | 340](#)

Syntax

```
no-power-budget;
```

Hierarchy Level

```
[edit chassis]
```


Description

Disable power budgeting. If you disable the power management on the PTX10008, the router keeps all the FRUs powered on by default. The router does not move any of the FRUs to offline state even if it does not have sufficient power. However, in case of a power shortage, a power redundancy alarm is raised as shown in the following example.

```
user@router> show system alarms

1 alarm currently active

Alarm time Class Description

2019-07-25 21:16:25 UTC Major chassis No Redundant Power
```

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Evolved Release 20.1R2.

oam detection-disable

IN THIS SECTION

- [Syntax | 341](#)
- [Hierarchy Level | 341](#)

- [Description | 341](#)
- [Default | 341](#)
- [Required Privilege Level | 342](#)
- [Release Information | 342](#)

Syntax

```
oam detection-disable
```

Hierarchy Level

```
[set chassis fabric]
```

Description

Disable the fabric Operation, Administration, Maintenance (OAM) feature, which helps you detect failures in fabric paths when a switch fabric card (switch interface board or SIB) or an FPC transitions from online to offline state or vice versa.

NOTE: This command is not applicable to Junos OS Evolved Releases 20.4R2 and 21.1R1.

Default

The fabric OAM monitoring feature is enabled by default. However, in Junos OS Evolved Releases 20.4R2 and 21.1R1, this feature is disabled by default.

Required Privilege Level

Interface—To view this statement in the configuration.

Release Information

Interface-control—To add this statement to the configuration.

RELATED DOCUMENTATION

[Error Handling by Fabric OAM](#) | 49

oam runtime-disable

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- [Syntax](#) | 342
- [Hierarchy Level](#) | 343
- [Description](#) | 343
- [Default](#) | 343
- [Required Privilege Level](#) | 343
- [Release Information](#) | 343

Syntax

```
oam runtime-disable
```


Hierarchy Level

[edit chassis fabric]

Description

Disable the runtime fabric Operation, Administration, Maintenance (OAM) feature, which helps you detect and report failures in fabric planes during system runtime.

Default

The runtime Fabric OAM feature is enabled by default.

Required Privilege Level

Interface—To view this statement in the configuration.

Release Information

Interface-control—To add this statement to the configuration.

offline-on-fabric-bandwidth-reduction

IN THIS SECTION

● [Syntax](#) | 344

- [Hierarchy Level | 344](#)
- [Description | 344](#)
- [Required Privilege Level | 344](#)
- [Release Information | 344](#)

Syntax

```
offline-on-fabric-bandwidth-reduction;
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```

Description

Configure an FPC with degraded fabric bandwidth offline, to avoid causing a null route 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.

Release Information

Statement introduced in Junos OS Release 11.4.

RELATED DOCUMENTATION

[Disabling an FPC with Degraded Fabric Bandwidth | 48](#)

[Managing Bandwidth Degradation | 45](#)

on-disk-failure (Chassis Routing Engine)

IN THIS SECTION

- [Syntax | 345](#)
- [Hierarchy Level | 345](#)
- [Description | 346](#)
- [Options | 346](#)
- [Required Privilege Level | 346](#)
- [Release Information | 346](#)

Syntax

```
on-disk-failure {  
    disk-failure-action (halt | reboot);  
}
```

Hierarchy Level

```
[edit chassis routing-engine]
```


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.

Release Information

Statement introduced before JUNOS Release 7.4.

The disk-failure-action statement added in JUNOS Release 9.0.

RELATED DOCUMENTATION

| [Enabling a Routing Engine to Reboot on Hard Disk Errors](#) | 207

on-error

IN THIS SECTION

- [Syntax](#) | 347
- [Hierarchy Level](#) | 347

- [Description | 347](#)
- [Options | 347](#)
- [Required Privilege Level | 348](#)
- [Release Information | 348](#)

Syntax

```
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 sanity-poll]  
[edit chassis lcc number fpc number sanity-poll] (Routing Matrix)
```

Description

Instruct the FPC or FEB or CFEB to perform actions during an error condition.

Options

raise-alarm—Generate and display a chassis alarm in case of an error.

`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.

`power off`—Halt the FPC or FEB or CFEB and keep it offline. This statement is useful in case of permanent hardware failures.



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.

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.

`write-coredump`—Trigger the core file in case of an error.

Required Privilege Level

`interface`—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 11.4.

RELATED DOCUMENTATION

[Configuring Sanity Polling | 203](#)

[sanity-poll | 381](#)

[retry-count | 377](#)

oss-map

IN THIS SECTION

- [Syntax | 349](#)
- [Hierarchy Level | 349](#)
- [Description | 349](#)
- [Options | 350](#)
- [Required Privilege Level | 350](#)
- [Release Information | 350](#)

Syntax

```
oss-map {  
    model-name t640|t1600;  
}
```

Hierarchy Level

```
[edit chassis]
```

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

`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.

`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.

Required Privilege Level

`interface`—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 12.3R3, 13.1R2, and 13.2R1.

RELATED DOCUMENTATION

[Configuring OSS Mapping to Represent a T4000 Chassis as a T1600 or a T640 Chassis | 247](#)

[Example: Configuring a T4000 Chassis to Represent a T640 Chassis | 249](#)

[show chassis oss-map | 1537](#)

packet-scheduling

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● [Syntax | 351](#)

- [Hierarchy Level | 351](#)
- [Description | 351](#)
- [Default | 351](#)
- [Options | 352](#)
- [Required Privilege Level | 352](#)
- [Release Information | 352](#)

Syntax

```
(packet-scheduling | no-packet-scheduling);
```

Hierarchy Level

```
[edit chassis]
```

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

NOTE: The packet-scheduling feature is available on M160 routers only.

Options

no-packet-scheduling—Do not schedule packets.

packet-scheduling—Schedule packets to preserve interpacket gaps.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

| [Enabling an M160 Router to Operate in Packet Scheduling Mode](#) | 245

pem (MX Series Devices, ACX7024 Devices)

IN THIS SECTION

● [Syntax](#) | 353

● [Hierarchy Level](#) | 353

- [Description | 353](#)
- [Options | 353](#)
- [Required Privilege Level | 354](#)
- [Release Information | 354](#)

Syntax

```
pem {  
    minimum number;  
}
```

Hierarchy Level

```
[edit chassis]
```

Description

Configure the minimum number of Power Entry Modules (PEMs) on an M320, MX10004, MX10008 and ACX7024 devices. With this configuration, PEM absent alarms are generated only if the PEM count falls below the minimum specified.

Options

minimum *number*—Minimum number of PEMs on the router. ACX7024 device supports dual PSU (1+1 redundancy) mode by default, and also single PSU mode with one PEM or PSM.

- **Range:** 1 through 4 for M320 device. 1, 2 for ACX7024 device.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 7.4.

RELATED DOCUMENTATION

[Configuring the Junos OS to Support Entry-Level Configuration on an M320 Router with a Minimum Number of SIBs and PIMs](#)

[sib](#) | [385](#)

[show chassis power](#) | [1579](#)

pem (T640, T1600, and T4000 Routers with Six-Input DC Power Supply)

IN THIS SECTION

- [Syntax](#) | [355](#)
- [Hierarchy Level](#) | [355](#)
- [Description](#) | [355](#)
- [Options](#) | [355](#)
- [Required Privilege Level](#) | [355](#)
- [Release Information](#) | [356](#)

Syntax

```
pem {
    feeds number-of-input-feeds;
    input-current amps-in-each-feed;
}
```

Hierarchy Level

```
[edit chassis]
[edit chassis lcc lcc-number] (Routing Matrix)
```

Description

Configure the power supply parameters of the six-input DC power supply on T640, T1600, or T4000 routers.

Options

feeds number-of-input-feeds—Number of input feeds connected to the six-input DC power supply.

(For T4000 routers only) *input-current amps-in-each-feed*—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.

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.

RELATED DOCUMENTATION

[Configuring the Six-Input DC Power Supply on T Series Routers](#) | 224

pem-absence

IN THIS SECTION

- [Syntax](#) | 356
- [Hierarchy Level](#) | 357
- [Description](#) | 357
- [Options](#) | 357
- [Required Privilege Level](#) | 357
- [Release Information](#) | 357

Syntax

```
pem-absence ignore;
```


Hierarchy Level

```
[edit chassis alarm]
```

Description

Configure `pem-absence ignore` to ignore the red alarm of missing power supply unit. To delete the configuration use `[# delete chassis alarm pem-absence]` command.

Options

`ignore`—Ignores the power supply module absence alarm.

Required Privilege Level

Release Information

Statement introduced in Junos OS Release 20.3R1 for SRX4100 and SRX4200.

Statement introduced in Junos OS Release 20.4R1 for SRX1500 and SRX4600.

RELATED DOCUMENTATION

[Chassis Conditions That Trigger Alarms | 128](#)

[show chassis alarms | 501](#)

pfe

IN THIS SECTION

- [Syntax | 358](#)
- [Syntax \(PTX10004, PTX10008, PTX10016 with PTX10K-LC1201-36CD and PTX10K-LC1202-36MR line cards, and PTX10001-36MR\) | 359](#)
- [Hierarchy Level | 359](#)
- [Description | 359](#)
- [Options | 360](#)
- [Required Privilege Level | 360](#)
- [Release Information | 361](#)

Syntax

```
pfe pfe-instance {  
  exception-reporting {  
    category category-name; {  
      inline-monitoring-instance inline-monitoring-instance;  
    }  
  }  
  forwarding-packages {  
    mobility;  
  }  
  power (off | on);  
  tunnel-services;  
}
```


Syntax (PTX10004, PTX10008, PTX10016 with PTX10K-LC1201-36CD and PTX10K-LC1202-36MR line cards, and PTX10001-36MR)

```
pfe pfe-instance {
  exception-reporting {
    category category-name; {
      inline-monitoring-instance inline-monitoring-instance;
    }
  }
  forwarding-packages {
    mobility;
  }
  power (off | on);
  temp-perf-throttle-disable;
  temp-volt-reduction-disable;
  tunnel-services;
}
```

Hierarchy Level

```
[edit chassis fpc slot-number],
[edit chassis lcc name fpc slot-number],
[edit chassis member name fpc slot-number]
```

Description

Configure options for the Packet Forwarding Engine (PFE).

Options

| | |
|------------------------------------|---|
| <i>pfe-instance</i> | PFE identifier or PFE number that represents the PFE ASIC ID ranging from 0-4 for PTX10004 and 0-7 for PTX10008. |
| power | <p>Power PFEs on or off</p> <ul style="list-style-type: none"> off—Power off PFE to save power in scenarios where full system capacity is not required. You can power off the ASICs on PTX10001-36MR device using the set chassis fpc <slot number> pfe <pfe-instance number> power off command. on—Power on PFE <p>By default, PFE is on considered power on. FPC power off supersedes PFE power on.</p> |
| temp-perf-throttle-disable | <p>Disable temperature based PFE performance throttling. By default, the system detects overheat condition at individual PFE level and gradually reduces the performance of the affected PFE. This results in reduction of power consumption, heat dissipation, PFE operating temperature, and prevents line card shutdown.</p> <ul style="list-style-type: none"> Default By default, automatic performance throttling is enabled. |
| temp-volt-reduction-disable | <p>Disable temperature based PFE voltage reduction. By default, the system detects the ASIC temperature at individual PFE level that reaches the safe operating limit and dynamically manages the voltage of the DC-DC converters. This results in reduction of power consumption.</p> <ul style="list-style-type: none"> Default By default, temperature voltage reduction is enabled. |
| tunnel-services | Tunnel services configuration |

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.

Release Information

exception-reporting option added in Junos OS Release 21.2R1.

temp-perf-throttle-disable option added in Junos OS Evolved Release 21.4R1.

temp-volt-reduction-disable option added in Junos OS Evolved Release 22.2R1.

exception-reporting option added in Junos OS Evolved Release 22.2R1.

pfe power off

IN THIS SECTION

- [Syntax | 361](#)
- [Hierarchy Level | 361](#)
- [Description | 362](#)
- [Default | 362](#)
- [Options | 362](#)
- [Required Privilege Level | 362](#)
- [Release Information | 363](#)

Syntax

```
pfe pfe-instance power (off | on);
```

Hierarchy Level

```
[edit chassis fpc slot-number]
```


Description

Power on or power off a Packet Forwarding Engine (PFE) in a running system, or keep the backup PFE powered off when the FPC comes online.

Default

on

Options

pfe *pfe-id* The ID of the Packet Forwarding Engine to be powered off.

NOTE:

- For the MPC10E-15C-MRATE line card, only the Packet Forwarding Engine 2 is applicable.
- Individual PFEs can be configured powered-off when an FPC line card is brought online or during runtime.

The following “set” command is used to configure the PFE power ON or OFF.

```
set chassis fpc slot-number
pfe slot-number power option
```

**power (off
| on)** Power off or on the selected Packet Forwarding Engine.

- **Default:** on

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 19.1R1.

RELATED DOCUMENTATION

[Managing Power | 216](#)

[MPC10E-15C-MRATE](#)

pic (M Series and T Series Routers)

IN THIS SECTION

- [Syntax | 363](#)
- [Hierarchy Level | 364](#)
- [Description | 364](#)
- [Options | 364](#)
- [Required Privilege Level | 365](#)
- [Release Information | 365](#)

Syntax

```
pic pic-number {
  ce1 {
    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]
```

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.

Release Information

Statement introduced before Junos OS Release 7.4.

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)

IN THIS SECTION

- [Syntax | 366](#)
- [Hierarchy Level | 367](#)
- [Description | 367](#)
- [Options | 367](#)
- [Required Privilege Level | 367](#)
- [Release Information | 367](#)

Syntax

```

pic pic-number {
    account-layer2-overhead;
    adaptive-services {
        (layer-2 | layer-3);
    }
    aggregate-ports;
    ce1 {
        e1 port-number {
            channel-group group-number timeslots slot-number;
        }
    }
    channelization;
    ct3 {
        port port-number {
            t1 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]
```

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.

Required Privilege Level

interface—To view this statement in the configuration.

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

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.

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](#)

Enabling Inline Service Interfaces

preserve-fpc-poweron-sequence

IN THIS SECTION

- [Syntax | 368](#)
- [Hierarchy Level | 368](#)
- [Description | 369](#)
- [Required Privilege Level | 369](#)
- [Release Information | 369](#)

Syntax

```
preserve-fpc-poweron-sequence;
```

Hierarchy Level

```
[edit chassis]
```


Description

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 `/var/log/fpc_poweron_seq.log`. When a line card goes offline, its entry is removed from the log file. You can use the `show chassis poweron sequences` command to view the configured power-on sequence.

NOTE:

- If both `preserve-fpc-poweron-sequence` and `fru-poweron-sequence` statements are configured, then the power-on sequence specified in the `fru-poweron-sequence` statement takes precedence.
- If `preserve-fpc-poweron-sequence` is configured and `fru-poweron-sequence` not configured, then the line cards are powered on in the sequence preserved in the system log file `/var/log/fpc_poweron_seq.log`.
- 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.

Required Privilege Level

chassis—To view this statement in the configuration.

chassis-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 15.1.

RELATED DOCUMENTATION

[fru-poweron-sequence](#) | 315

[show chassis power sequence](#) | 1621

[Understanding How Dynamic Power Management Enables Better Utilization of Power](#) | 216

reachability-fault

IN THIS SECTION

- [Syntax \(PTX Series Devices\) | 370](#)
- [Hierarchy Level | 371](#)
- [Description | 371](#)
- [Options | 371](#)
- [Required Privilege Level | 371](#)
- [Release Information | 372](#)

Syntax (PTX Series Devices)

```
reachability-fault {  
    actions {  
        fpc-restart-disable;  
        recovery-failure  
        {  
            pfe-offline;  
        }  
    }  
    degraded {  
        error-threshold {  
            degradation percentage (1-99);  
        }  
    }  
}
```


Hierarchy Level

```
[edit chassis fabric event],
[edit chassis member name fabric event]
```

Description

Fabric reachability fault detection. Configure options that apply to detect fabric reachability fault conditions and trigger automatic fabric connectivity restoration.

Options

- **actions**— Reachability fault recovery actions. Depending on the reachability fault conditions, allow users to configure one or more recovery actions for the router to attempt automatic fabric connectivity restoration.
 - **fpc-restart-disable**— Turn off FPC restart recovery action.
 - **recovery failure (pfe-disable)**— Configure PFE-offline to override the default action of disabling interfaces, if fabric connectivity cannot be restored.
- **degraded**— Degraded fabric configuration. Allow users to configure the error threshold percentage value. The percentage value can range from 1 to 99, and it represents the percentage of fabric degradation at which the recovery action is taken.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Evolved Release 22.2R1(PTX10004, PTX10008, PTX10016).

redundancy-mode

IN THIS SECTION

- [Syntax | 372](#)
- [Hierarchy Level | 372](#)
- [Description | 372](#)
- [Options | 373](#)
- [Required Privilege Level | 373](#)
- [Release Information | 373](#)

Syntax

```
redundancy-mode (increased-bandwidth | redundant)
```

Hierarchy Level

```
[edit chassis fabric]
```

Description

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.

In increased fabric bandwidth mode, which is the default mode on the SRX5600 and SRX5800 Services Gateways with the [SRX5K-SCB4](#) Switch Control Board, six active planes (without any spare planes) are used. With the redundant fabric mode, the SRX5600 and SRX5800 Services Gateways use four active planes and two spare planes.

Options

| | |
|----------------------------|---|
| increased-bandwidth | Enable increased fabric bandwidth mode for the control boards, which causes all the available fabric planes to be used. |
| redundant | Enable redundancy mode for the control boards, which causes all the FPCs to use 4 fabric planes as active planes. |

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 12.2.

RELATED DOCUMENTATION

| |
|---|
| Detection and Corrective Actions of Line Cards on MX Series Routers |
| Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers |
| MX Series Routers Fabric Resiliency |
| show chassis fabric redundancy-mode 1263 |

restart chassis-control

IN THIS SECTION

- [Syntax | 374](#)
- [Syntax \(TX Matrix Routers\) | 374](#)
- [Syntax \(TX Matrix Plus Routers\) | 375](#)
- [Description | 375](#)
- [Options | 375](#)
- [Required Privilege Level | 376](#)
- [Output Fields | 376](#)
- [Sample Output | 376](#)
- [Release Information | 376](#)

Syntax

```
restart chassis-control  
<gracefully | immediately | soft>
```

Syntax (TX Matrix Routers)

```
restart chassis-control  
<all-chassis | all-lcc | lcc number | scc>  
<gracefully | immediately | soft>
```


Syntax (TX Matrix Plus Routers)

```
restart chassis-control
<all-chassis | all-lcc | all-sfc | lcc number | sfc number>
<gracefully | immediately | soft>
```

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 primary. This is due to the `chassisd` restart. The chassis process or `chassisd` is responsible for maintaining and retaining primary role 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 primary.

Options

- lcc number*** (Routing matrix only) (Optional) Restart the software process for a specific routing node that is connected to a PTX Matrix platform. Replace ***number*** with a value from **0** through **3**.
- sfc number*** (PTX routers only) (Optional) Restart the software process on the PTX series 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

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
```

Release Information

Command introduced before JUNOS Release 7.4.

Command added in Junos Evolved Release 21.4R1.

RELATED DOCUMENTATION

No Link Title

retry-count

IN THIS SECTION

- [Syntax | 377](#)
- [Hierarchy Level | 377](#)
- [Description | 378](#)
- [Options | 378](#)
- [Required Privilege Level | 378](#)
- [Release Information | 378](#)

Syntax

```
retry-count number;
```

Hierarchy Level

```
[edit chassis cfeb slot-number]  
[edit chassis cluster redundancy-group group-number ip-monitoring ]  
[edit chassis feb slot-number]  
[edit chassis fpc slot-number sanity-poll]  
[edit chassis lcc number fpc number sanity-poll] (Routing Matrix)
```


Description

Number of times sanity polling periodically checks for an error condition in the FPC.

Options

number—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.

Release Information

Statement introduced in Junos OS Release 11.4.

RELATED DOCUMENTATION

Configuring Sanity Polling

[sanity-poll | 381](#)

[on-error | 346](#)

routing-engine (Chassis)

IN THIS SECTION

- [Syntax | 379](#)
- [Hierarchy Level | 380](#)
- [Description | 380](#)
- [Options | 380](#)
- [Required Privilege Level | 381](#)
- [Release Information | 381](#)

Syntax

```
routing-engine {  
    on-disk-failure (Chassis Routing Engine)  
    {  
        disk-failure-action (halt | reboot);  
    }  
    disk {  
        ssd-series ssd-series-name {  
            id id-num {  
                id-threshold id-threshold-value;  
                id-value (norm | raw);  
                id-flag (high | low);  
            }  
        }  
        smart-check{  
    }  
}
```


Hierarchy Level

[edit chassis]

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. You can also configure the device to perform certain health checks on the Routing Engine solid-state drive (SSD) and log a health event or raise an alarm in case a predefined health attribute threshold is breached.

Options

| | |
|--|--|
| disk | Configure health check parameters for the SSD. |
| ssd-series <i>ssd-series-name</i> | Specify the SSD series name. |
| id <i>id-num</i> | Specify the ID of the SSD smart attribute for which you are configuring the health check. You can view the smart attributes and their IDs of an SSD by using the command <code>show vmhost hard-disk-test status disk /dev/sda</code> . <ul style="list-style-type: none"> • Range: 1 - 255 |
| id-threshold | Specify the SSD smart attribute threshold, breaching which will result in the device logging a health event or raising an alarm. |
| id-value | Choose the attribute value type from the following options: <ul style="list-style-type: none"> • norm—Use this option to instruct the device to consider normalized value for the specified smart attribute. • raw—Use this option to instruct the device to consider raw value for the specified smart attribute. |
| id-flag | Choose the attribute value flag from the following options: |

- **high**—The software considers the threshold to be breached if the value is greater than smart threshold.
- **low**—The software considers the threshold to be breached if the value is less than smart threshold.

smart-check Configure the device to raise alarm when an error occurs. See ["smart-check" on page 388](#).

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced before Junos OS Release 7.4.

The `disk-failure-action` statement added in Junos OS Release 9.0.

RELATED DOCUMENTATION

| [Enabling a Routing Engine to Reboot on Hard Disk Errors](#)

sanity-poll

IN THIS SECTION

- [Syntax | 382](#)
- [Hierarchy Level | 382](#)
- [Description | 382](#)

- [Options | 383](#)
- [Required Privilege Level | 383](#)
- [Release Information | 383](#)

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)
```

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.

Release Information

Statement introduced in Junos OS Release 11.4.

RELATED DOCUMENTATION

[Configuring Sanity Polling](#) | 203

[retry-count](#) | 377

[on-error](#) | 346

sfm (Chassis)

IN THIS SECTION

- [Syntax](#) | 384
- [Hierarchy Level](#) | 384
- [Description](#) | 384
- [Options](#) | 384
- [Required Privilege Level](#) | 384
- [Release Information](#) | 385

Syntax

```
sfm slot-number power off;
```

Hierarchy Level

```
[edit chassis]
```

Description

For routers with SFMs, configure an SFM to stay offline.

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.

Options

slot-number—Slot number in which the SFM is installed.

power off—Take the SFM offline and configure it to remain offline.

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[Configuring an SFM to Stay Offline | 206](#)

[High Availability User Guide](#)

sib

IN THIS SECTION

- [Syntax | 385](#)
- [Hierarchy Level | 386](#)
- [Description | 386](#)
- [Options | 386](#)
- [Required Privilege Level | 386](#)
- [Release Information | 386](#)

Syntax

```
sib {  
    minimum number;  
}
```


Hierarchy Level

[edit chassis]

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

number—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.

Release Information

Statement introduced in Junos OS Release 7.4.

RELATED DOCUMENTATION

[Configuring the Junos OS to Support Entry-Level Configuration on an M320 Router with a Minimum Number of SIBs and PIMs](#)

[pem \(MX Series Devices, ACX7024 Devices\) | 352](#)

slow-pfe-alarm

IN THIS SECTION

- [Syntax | 387](#)
- [Hierarchy Level | 387](#)
- [Description | 387](#)
- [Required Privilege Level | 387](#)
- [Release Information | 388](#)

Syntax

```
slow-pfe-alarm;
```

Hierarchy Level

```
[edit chassis]
```

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.

Release Information

Statement introduced in Junos OS Release 12.1R6, 12.2R5, 12.3R3, 13.1R2, and 13.2R1.

RELATED DOCUMENTATION

[Configuring Slow Packet Forwarding Engine Alarm](#) | 180

smart-check

IN THIS SECTION

- [Syntax](#) | 388
- [Hierarchy Level](#) | 389
- [Description](#) | 389
- [Options](#) | 389
- [Required Privilege Level](#) | 390
- [Release Information](#) | 390

Syntax

```
smart-check {  
  ssd-series ssd-series-name {  
    id id-num {  
      id-threshold id-threshold-value;  
      id-value (norm | raw);  
      id-flag (high | low);  
    }  
  }  
}
```


Hierarchy Level

```
[edit chassis routing-engine disk]
```

Description

Configure the device to perform health monitoring on the Routing Engine disk and raise alarm when an error occurs. You can specify threshold value for each smart attribute of the solid-state drive (SSD). The device raises an alarm when the threshold is breached. You can view the alarms by using the command `show chassis alarms`.

Options

| | |
|--|--|
| disk | Configure health check parameters for the SSD. |
| ssd-series <i>ssd-series-name</i> | Specify the SSD series name. |
| id <i>id-num</i> | Specify the ID of the SSD smart attribute for which you are configuring the health check. You can view the smart attributes and their IDs of an SSD by using the command <code>show vmhost hard-disk-test status disk /dev/sda</code> . <ul style="list-style-type: none"> • Range: 1 - 255 |
| id-threshold | Specify the SSD smart attribute threshold, breaching which will result in the device logging a health event or raising an alarm. |
| id-value | Choose the attribute value type from the following options: <ul style="list-style-type: none"> • norm—Use this option to instruct the device to consider normalized value for the specified smart attribute. • raw—Use this option to instruct the device to consider raw value for the specified smart attribute. |
| id-flag | Choose the attribute value flag from the following options: |

- high—The software considers the threshold to be breached if the value is greater than smart threshold.
- low—The software considers the threshold to be breached if the value is less than smart threshold.

smart-check

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 19.2R1.

RELATED DOCUMENTATION

[Enabling a Routing Engine to Reboot on Hard Disk Errors](#) | 207

syslog (Chassis)

IN THIS SECTION

- [Syntax](#) | 391
- [Hierarchy Level](#) | 391
- [Description](#) | 391
- [Options](#) | 391
- [Required Privilege Level](#) | 392

Syntax

```
syslog {  
    facility {  
        severity;  
        destination destination;  
    }  
}
```

Hierarchy Level

```
[edit chassis fpc slot-number pic pic-number adaptive-services service-package extension-provider]
```

Description

Enable PIC system logging to record or view system log messages on a specific PIC. The system log information is passed to the kernel for logging in the **/var/log** directory.

Options

facility—Group of messages that are either generated by the same software process or concern a similar condition or activity. Possible values include the following: daemon, external, kernel, and pfe.

severity—Classification of effect on functioning. Possible values are the following options:

- any—Include all severity levels.
- none—Disable logging of the associated facility to a destination.

- **emergency**—System panic or other condition that causes the routing platform to stop functioning.
- **alert**—Conditions that require immediate correction, such as a corrupted system database.
- **critical**—Critical conditions, such as hard errors.
- **error**—Error conditions that generally have less serious consequences than errors in the emergency, alert, and critical levels.
- **warning**—Conditions that warrant monitoring.
- **notice**—Conditions that are not errors but might warrant special handling.
- **info**—Events or nonerror conditions of interest.

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.

Release Information

Statement introduced in Junos OS Release 9.2.

Options `daemon` and `kernel` (for *facility*) introduced in Junos OS Release 9.5.

temperature-sensor

IN THIS SECTION

- [Syntax | 393](#)
- [Hierarchy Level | 393](#)
- [Description | 393](#)

- [Options | 394](#)
- [Required Privilege Level | 394](#)
- [Release Information | 394](#)

Syntax

```
temperature-sensor sensor-name {  
  temperature-threshold {  
    fans-on-full-speed 30;  
    fans-on-full-speed-if-failed-fan 28;  
    fans-on-intermediate-speed 20;  
    fans-to-normal-speed 15;  
    fire-shutdown 80;  
    red-alarm 75;  
    red-alarm-if-failed-fan 72;  
    yellow-alarm 65;  
    yellow-alarm-if-failed-fan 62;  
  }  
}
```

Hierarchy Level

```
[edit chassis cb],
```

Description

Use this statement to increase the fan speed. This helps the temperature to remain within thresholds and the ZR and ZR-M modules remain operational.

Options

sensor-name Use **Temp Sensor PSM Inlet** as temperature sensor-name

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.

Release Information

Statement introduced in Junos OS Release 22.3R1.

RELATED DOCUMENTATION

| [Hardware Compatibility Tool](#)

thermal-health-check

IN THIS SECTION

- [Syntax | 395](#)
- [Hierarchy Level | 395](#)
- [Description | 395](#)
- [Options | 395](#)
- [Example | 396](#)
- [Required Privilege Level | 396](#)

Syntax

```
thermal-health-check [fet-failure-check] {  
    action-onfail [auto-shutdown | none]  
    ;  
    power-threshold value;  
}
```

Hierarchy Level

```
[edit chassis]
```

Description

Enable thermal health check, and configure an action to be taken on detection of a thermal health event such as power leakage. The thermal check feature monitors the PSM power output and FRU power consumption and if it detects that the PSM power output exceeds the FRU power consumption by a user-defined threshold, it assumes that there is a thermal health event, and takes an action based on the user configuration.

Use `fet-failure-check` option to shutdown the PSM, raise a Field-effect Transistor (FET) failure alarm and log the events.

Chassis shuts down when power drawn is more than threshold, three times consecutively.

Options

fet-failure-check Enable FET failure detection, and configure an action to be taken upon FET failure.

| | |
|-------------------------------------|---|
| action-onfail | <p>Choose an action to be performed on detection of a thermal health event. The following options are available:</p> <ul style="list-style-type: none"> • auto-shutdown—The software shuts down the system when a thermal health event is detected. • none—The software raises a major alarm when a thermal health event is detected. |
| shutdown-timer <i>value</i> | <p>Duration (in seconds) after which the system is shut down on detection of a thermal health event, if auto-shutdown is set as action-onfail.</p> <ul style="list-style-type: none"> • Range: 10 through 900 seconds • Default: 900 seconds |
| power-threshold <i>value</i> | <p>Power leak threshold (in watts) considered for the configured action to be taken. This means the configured action is taken if the power leak exceeds by the value configured here (or if the PSM output power exceeds the FRU power consumption by the set threshold value).</p> <ul style="list-style-type: none"> • Range: 600W through 1000W • Default: 600W |

Example

The following command enables thermal health check, and shuts down the system after 10 seconds of thermal health check failure.

```
user@host> set chassis thermal-health-check action-onfail auto-shutdown
shutdown-timer 10 power-threshold 700
```

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 20.1R1.

fet-failure-check option introduced in Junos OS Release 21.2R1.

RELATED DOCUMENTATION

[show chassis alarms](#) | 501

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threshold

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Syntax

```
threshold threshold-value;
```


Hierarchy Level

[edit chassis "[fpc](#)" on page 300 *slot-number* "[error](#)" on page 289 "[fatal](#)" on page 296]

[edit chassis "[fpc](#)" on page 300 *slot-number* "[error](#)" on page 289 "[major](#)" on page 331]

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[edit chassis "[error](#)" on page 289 "[fatal](#)" on page 296]

[edit chassis "[error](#)" on page 289 "[major](#)" on page 331]

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Description

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

By default, the error count for fatal and major actions is 1. The default error count for minor actions is 10.

Options

number Specify the threshold of error counts at which to take action.

- **Range:** 0 through 4,294,967,295

Required Privilege Level

| | |
|--------------------------|--|
| interface | To view this statement in the configuration. |
| interface-control | To add this statement to the configuration. |

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.

RELATED DOCUMENTATION

- [Fabric Resiliency and Degradation | 26](#)
- [show chassis fpc errors | 1476](#)
- [Configuring FPC Error Levels and Actions | 192](#)

ucode-imem-remap

IN THIS SECTION

- [Syntax | 400](#)
- [Hierarchy Level | 400](#)
- [Description | 400](#)
- [Required Privilege Level | 400](#)
- [Release Information | 400](#)

Syntax

```
ucode-imem-remap;
```

Hierarchy Level

```
[edit chassis feb slot number]
```

Description

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.

You can enable the microcode remap by using the `ucode-imem-remap` statement at the **[edit chassis feb slot *number*]** hierarchy level. The default microcode map will continue to be available if the `ucode-imem-remap` statement is not configured.

NOTE: On M120 routers, the FEB is automatically restarted once the `ucode-imem-remap` statement is configured and committed.

Required Privilege Level

interfaces—To view this statement in the configuration.

interfaces-control—To add this statement to the configuration.

Release Information

Statement introduced in Junos OS Release 10.4R2.

watchdog (PSM)

IN THIS SECTION

- [Syntax | 401](#)
- [Hierarchy Level | 401](#)
- [Description | 401](#)
- [Options | 402](#)
- [Required Privilege Level | 402](#)
- [Release Information | 402](#)

Syntax

```
watchdog{  
    timeout value;  
    pat-frequency value;  
}
```

Hierarchy Level

```
[edit chassis psm]
```

Description

Enable the power supply module (PSM) watchdog feature. Generally, Junos detects the thermal event health events and takes the required action as per user configuration. However, if a thermal health event causes Junos to go down, the PSM watchdog feature detects it and shuts down the router.

NOTE: The PSM watchdog feature works only if all the online PSMs in the router support the feature.

Options

- timeout *value*** Specify the watchdog timer in seconds. After the specified duration, the watchdog expires.
- **Range:** 600 through 900 seconds
 - **Default:** 900 seconds
- pat-frequency *value*** Specify the frequency (in minutes) at which the software resets the watchdog counter. If the watchdog counter doesn't get reset because of reasons such as Routing Engine crash and system reboot, on watchdog timer expiry, the PSM turns off the output power.
- **Range:** 1 through 3 minutes
 - **Default:** 1 minute

Required Privilege Level

interface—To view this statement in the configuration.

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

Release Information

Statement introduced in Junos OS Release 20.1R1.

RELATED DOCUMENTATION

[Handling Thermal Health Events Using Thermal Health Check and PSM Watchdog](#) | 208

10

CHAPTER

Administrative Commands

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clear chassis alarms fabric degraded

IN THIS SECTION

- Syntax (TX Matrix Plus Router with 3D SIBs) | 406
- Description | 406
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- Required Privilege Level | 407
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Syntax (TX Matrix Plus Router with 3D SIBs)

```
clear chassis alarms fabric degraded lcc number fpc number
```

Description

Clear the fabric degraded alarm for an FPC.

Options

lcc
number Line-card chassis number.

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

- 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.

fpc number 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 number` option and replace `fpc number` with a value from 0 through 7.

Required Privilege Level

clear

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 |

Release Information

Command introduced in Junos OS Release 13.2.

RELATED DOCUMENTATION

| *show system alarms*

clear chassis display message

IN THIS SECTION

- [Syntax | 409](#)
- [Syntax \(TX Matrix Router\) | 409](#)
- [Syntax \(TX Matrix Plus Router\) | 409](#)

- Syntax (QFabric Systems) | 410
- Description | 410
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Syntax

```
clear chassis display message
```

Syntax (TX Matrix Router)

```
clear chassis display message  
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
clear chassis display message  
<lcc number | sfc number>
```


Syntax (QFabric Systems)

```
clear chassis display message
<node-device name | interconnect-device name>
```

Description

(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.

Options

| | |
|--|---|
| none | Clear or stop a text message on the craft interface display. |
| 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. |
| lcc <i>number</i> | <p>(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. |

| | |
|------------------------------------|--|
| node-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 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 <i>number</i> | (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 <i>number</i> with 0. |

Required Privilege Level

clear

Output Fields

See ["show chassis craft-interface" on page 535](#) 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  |
+-----+

```

Release Information

Command introduced in Junos OS Release 7.5.

sfc option for the TX Matrix Plus routers introduced in Junos OS Release 9.6.

RELATED DOCUMENTATION

Configuring the LCD Panel on EX Series Switches (CLI Procedure)

[set chassis display message](#) | 486

[show chassis craft-interface](#) | 535

clear chassis fpc errors

IN THIS SECTION

- [Syntax | 413](#)
- [Description | 413](#)
- [Options | 413](#)
- [Required Privilege Level | 414](#)
- [Output Fields | 414](#)
- [Sample Output | 414](#)
- [Release Information | 415](#)

Syntax

```
clear chassis fpc errors fpc-slot fpc-slot (all | error-id error-id)
```

Description

Clear the FPC errors on the device. You can choose to clear a particular error or all errors on the FPC.

NOTE:

show chassis errors active detail

Options

fpc-slot *fpc-slot* 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

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-slot1 all
Clearing error(s) on fpc 1, option all “/cpu/0/memory/0/memory-uncorrected-error”
```

clear chassis fpc errors error-id *error-id*

```
user@host> clear chassis fpc errors error-id /fpc/0/pfe/0/cm/0/Eth_Port_Error/0/
ETH_CMERROR_MAJOR_0 fpc-slot 0

Clearing error(s) on fpc 0, option error-id error-id=/fpc/0/pfe/0/cm/0/Eth_Port_Error/0/
ETH_CMERROR_MAJOR_0.
```


Release Information

Command introduced in Junos OS Release 18.2R1.

RELATED DOCUMENTATION

| [show chassis errors active](#) | [1051](#)

clear chassis sib errors

IN THIS SECTION

- [Syntax](#) | [415](#)
- [Description](#) | [415](#)
- [Options](#) | [416](#)
- [Required Privilege Level](#) | [416](#)
- [Output Fields](#) | [416](#)
- [Sample Output](#) | [416](#)
- [Release Information](#) | [416](#)

Syntax

```
clear chassis sib errors sib-slot sib-slot (all | error-id error-id)
```

Description

Clear the chassis SIB errors. You can choose to clear a particular error or all errors on the SIB.

Options

| | |
|---------------------------------|---|
| fpc-slot <i>fpc-slot</i> | The slot number of the SIB in which you want to run this command. |
| all | Clear all the errors on the SIB. |
| 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

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

clear chassis sib errors

```
user@host> clear chassis sib errors sib-slot
1 all

Clearing error(s) on sib 1, option all
```

Release Information

Command introduced in Junos OS Evolved Release 19.4R1.

RELATED DOCUMENTATION

[error](#) | [289](#)

request chassis afeb

IN THIS SECTION

- [Syntax](#) | [417](#)
- [Description](#) | [417](#)
- [Options](#) | [417](#)
- [Required Privilege Level](#) | [418](#)
- [Output Fields](#) | [418](#)
- [Sample Output](#) | [418](#)
- [Release Information](#) | [418](#)

Syntax

```
request chassis afeb (offline | online | restart)
```

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

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis afef online (MX104 Router)

```
user@host> request chassis afef online
AFEB is already online
```

Release Information

Command introduced in Junos OS Release 13.2.

RELATED DOCUMENTATION

| [show chassis afef](#) | 498

request chassis cb

IN THIS SECTION

- [Syntax | 419](#)
- [Syntax \(TX Matrix Router\) | 419](#)
- [Syntax \(TX Matrix Plus Router\) | 420](#)
- [Syntax \(QFabric System\) | 420](#)
- [Syntax \(EX9253 Switches\) | 420](#)
- [Output | 420](#)
- [Description | 420](#)
- [Options | 421](#)
- [Required Privilege Level | 422](#)
- [Output Fields | 422](#)
- [Sample Output | 423](#)
- [Usage | 424](#)
- [Release Information | 424](#)

Syntax

```
request chassis cb (offline | online) slot slot-number
```

Syntax (TX Matrix Router)

```
request chassis cb (offline | online) <slot slot-number | lcc number slot cb-slot-number | scc  
number slot cb-slot-number>
```


Syntax (TX Matrix Plus Router)

```
request chassis cb (offline | online) <slot slot-number | lcc number slot cb-slot-number | sfc
number slot cb-slot-number>
```

Syntax (QFabric System)

```
request chassis cb (offline | online) interconnect-device name slot slot-number
<interconnect-device name slot slot-number (offline | online)>
```

Syntax (EX9253 Switches)

```
request chassis cb (offline | online) name slot slot-number
```

Output

The following error message is displayed if user tries to offline a slot when the related node is online.

```
root@re0-re0> request chassis cb slot 1 offline

Error: CB offline is not allowed, when node is in online state.
Try to offline the node using "request node offline [node]"
```

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*

The following options can be configured for CB slots:

- offline —Take the CB slot offline.
- online — Bring the CB slot online.

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

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
```

Usage

When request chassis cb slot 1 offline, is configured before the node is made offline, the following error Error: CB offline is not allowed, when the node is online state. Try to offline the node using "request node offline *node*" is displayed.

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.

RELATED DOCUMENTATION

| [Understanding Switching Control Board Redundancy](#)

request chassis cfeb

IN THIS SECTION

- [Syntax | 425](#)
- [Description | 425](#)
- [Options | 425](#)
- [Required Privilege Level | 425](#)
- [Output Fields | 425](#)

- [Sample Output | 426](#)
- [Release Information | 426](#)

Syntax

```
request chassis cfeb (offline | online | restart)
```

Description

(M7i and M10i routers only) Control the operation of the Compact Forwarding Engine Board (CFEB).

Options

| | |
|----------------|------------------------|
| offline | Take the CFEB offline. |
| online | Bring the CFEB online. |
| restart | Restart the CFEB. |

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

Sample Output

request chassis cfeb

```
user@host> request chassis cfeb offline
CFEB Offlined
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[show chassis cfeb](#) | [531](#)

Configuring CFEB Redundancy on the M10i Router

[CFEB Overview](#)

request chassis fabric plane

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- [Syntax](#) | [427](#)
- [Description](#) | [427](#)
- [Options](#) | [427](#)
- [Required Privilege Level](#) | [428](#)
- [Output Fields](#) | [428](#)
- [Sample Output](#) | [428](#)
- [Release Information](#) | [430](#)

Syntax

```
request chassis fabric plane plane-number (offline | online)
```

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 <i>plane-number</i> offline command to clear a FAULT state on a fabric plane. To bring the fabric plane back online, use the request chassis fabric plane <i>plane-number</i> online command. |
| online | Bring the fabric plane online. |
| plane <i>plane-number</i> | <p>Fabric plane number.</p> <ul style="list-style-type: none"> • For the M120 router, replace <i>plane-number</i> with a value from 0 through 3. • For the MX480 and MX240 routers, replace <i>plane-number</i> 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, MX10004, and MX10008 routers, replace *plane-number* with a value from 0 through 11.
- 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

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 and MX10004 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
```


Release Information

Command introduced in Junos OS Release 8.0.

RELATED DOCUMENTATION

[show chassis fabric plane | 1210](#)

[show chassis fabric plane-location | 1251](#)

[show chassis fabric summary | 1306](#)

request chassis fabric pfe

IN THIS SECTION

- [Syntax | 430](#)
- [Description | 430](#)
- [Options | 431](#)
- [Required Privilege Level | 431](#)
- [Release Information | 431](#)

Syntax

```
request chassis fabric pfe pfe-number fpc fpc-number offline
```

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]

fpc-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.

Release Information

Command introduced in Junos OS Release 17.2.

RELATED DOCUMENTATION

[show chassis fabric plane](#) | [1210](#)

[show chassis fabric fpcs](#) | [1158](#)

request chassis feb

IN THIS SECTION

- [Syntax | 432](#)
- [Syntax \(ACX1000, ACX7509 Devices\) | 432](#)
- [Description | 432](#)
- [Options | 433](#)
- [Required Privilege Level | 433](#)
- [Output Fields | 433](#)
- [request chassis feb \(M120 Router\) | 433](#)
- [request chassis feb \(ACX1000, ACX7509 Routers\) | 434](#)
- [Release Information | 434](#)

Syntax

```
request chassis feb slot slot-number(offline | online | restart)
```

Syntax (ACX1000, ACX7509 Devices)

```
request chassis feb restart slot slot-number
```

Description

(M120 router only) Control the operation of the specified Forwarding Engine Board (FEB).

(ACX1000, ACX7509 routers) Restart the specified FEB. Upon restart, the FEB goes offline and online within the stipulated time. FEB traffic is forwarded before power off. Traffic is recovered after FEB is online.

Options

| | |
|--------------------------------|---|
| slot <i>slot-number</i> | <p>FEB slot number. Replace <i>slot-number</i> with a value from 0 through 5.</p> <p>For ACX7509, the value is 0 or 1 and the offline, online and restart options are not supported in backup routing engine (slot 1), where as all other FRU operations are supported.</p> |
| offline | Bring the specified FEB offline. |
| online | Bring the specified FEB online. |
| restart | Restart the specified FEB. |

Required Privilege Level

maintenance

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 slot 0 offline
Offline initiated, use "show chassis feb" to verify
```


request chassis feb online slot 0

```
user@host> request chassis feb slot 0 online
Online initiated, use "show chassis feb" to verify
```

request chassis feb restart slot 0

```
user@host> request chassis feb slot 0 restart

Restart initiated, use "show chassis feb" to verify
```

request chassis feb (ACX1000, ACX7509 Routers)

```
user@host> request chassis feb slot 0 restart
FEB will be restarted NOW.
```

Release Information

Command introduced in Junos OS Release 8.0.

Command support introduced for ACX7509 devices in Junos OS Evolved Release 21.4.

RELATED DOCUMENTATION

[request chassis feb | 432](#)

[show chassis feb | 1372](#)

[show chassis fabric feb | 1149](#)

[show chassis fpc-feb-connectivity | 1481](#)

No Link Title

set chassis fpc

IN THIS SECTION

- [Syntax | 435](#)
- [Syntax \(ACX7900 Devices\) | 435](#)
- [Syntax \(PTX10003 Devices\) | 436](#)
- [Description | 436](#)
- [Options | 436](#)
- [Usage | 437](#)
- [Required Privilege Level | 437](#)
- [set chassis fpc \(PTX\) | 437](#)
- [Release Information | 437](#)

Syntax

```
set chassis
fpc fpc-slot
{
    error
    max-power <power>
    pfe pfe_id power (off| on)
    no-vlan-tagging
}
```

Syntax (ACX7900 Devices)

```
set chassis
fpc fpc-slot
{
```



```

error
max-power <power>
pfe pfe_id power (off| on)
}

```

Syntax (PTX10003 Devices)

```

set chassis
fpc fpc-slot
{
  error
  pfe pfe_id power (off| on)
  no-vlan-tagging
}

```

Description

(ACX7900 and PTX Series devices) Configure no VLAN tagging for a specific FPC. Additionally, configure power off configuration (PTX10003 devices only).

Options

- | | |
|---|--|
| fpc <i>fpc_id</i> | For PTX devices, <i>fpc_id</i> value is 0 to 15. |
| pfe <i>pfe_id</i> power (off on) | <p>Individual PFE Power off configuration option is available for ACX7900 and PTX10003 devices only. The reset-pfe error action is available for PFE power off and restart.</p> <ul style="list-style-type: none"> • Slot range for FPC is 0 to 1 for PTX10003-8T. Slot range for FPC is 0 to 3 for PTX10003-16T. • PFE number range is 0 to 7 for all the FPCs. • If no power configuration is present, then PFE is considered powered ON. |

- max-power**
<power> Individual PFE maximum power configuration option is available for ACX7900 devices only. Configure maximum power for the FPC slot.
- no-vlan-tagging** Individual PFE maximum power configuration option is available for PTX10003 devices only. Configure maximum power for the FPC slot.

Usage

Use `delete chassis fpc no-vlan-tagging` command to disable **no-vlan-tagging**.

Required Privilege Level

maintenance

set chassis fpc (PTX)

```
user@host> set chassis fpc 1 no-vlan-tagging
```

Release Information

Command introduced in Junos OS Release 21.3R1.

`power-off` option introduced for PTX10003 devices in Junos OS Evolved Release 22.4R1.

`max-power` option introduced for ACX7900 devices in Junos OS Evolved Release 23.1R1.

RELATED DOCUMENTATION

[delete chassis fpc](#) | 448

request chassis fpc

IN THIS SECTION

- [Syntax | 438](#)
- [Syntax \(TX Matrix and TX Matrix Plus Routers\) | 439](#)
- [Syntax \(MX Series Routers\) | 439](#)
- [Syntax \(MX10004\) | 439](#)
- [Syntax \(QFabric Systems\) | 439](#)
- [Syntax \(PTX Series Devices\) | 440](#)
- [Description | 440](#)
- [Options | 441](#)
- [Required Privilege Level | 445](#)
- [Output Fields | 445](#)
- [Sample Output | 445](#)
- [Release Information | 447](#)

Syntax

```
request chassis fpc (offline | online | restart)
<slot slot-number (offline | online | restart)>
<tag>
<pfe-instance pfe-id(offline | online | restart)>
```


Syntax (TX Matrix and TX Matrix Plus Routers)

```
request chassis fpc (offline | online | restart)
<slot slot-number>
<lcc number>
```

Syntax (MX Series Routers)

```
request chassis fpc (offline | online | restart)
<slot slot-number (offline | online | restart)>
<all-members>
<local>
<member member-id>
<tag>
<pfe-instance pfe-number (offline | online | restart)>
```

Syntax (MX10004)

```
request chassis fpc (offline | online | restart)
<slot slot-number (offline | online | restart)>
<tag>
<pfe-instance pfe-number (offline | online | restart)>
```

Syntax (QFabric Systems)

```
request chassis fpc (offline | online | restart)
<interconnect-device name slot slot-number (offline | online | restart)>
<(offline | online) interconnect-device name slot slot-number>
<slot slot-number interconnect-device name (offline | online)>
<pfe-instance pfe-number (offline | online | restart)>
```


Syntax (PTX Series Devices)

```
request chassis fpc <force>
<(offline | online | restart)> <force>
<slot slot-number (offline | online | restart)>
<tag>
<pfe-instance pfe-number (offline | online | restart)>
```

Description

(M20, M40, M40e, M120, M160, M320, MX Series, and TSeries routers, QFabric systems, EX Series switches, and PTX Series Devices only) Control the operation of the Flexible PIC Concentrator (FPC). An error message is displayed when restart, offline, or online is configured using `request chassis fpc slot` command on an FPC with empty slot.

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.
- Starting in Junos OS Evolved Release 19.1R1, PTX10003-80C and PTX10003-160C devices do not support the `request chassis fpc slot <slot-number> online` command. The only way to bring up an FPC (MPC) that is offline is by rebooting the chassis. So, starting in Junos OS Evolved Release 21.1R1, when you take an FPC offline by using the `request chassis fpc slot <slot-number> offline` command, the screen displays the following message.

```
Warning : FPC <slot> cannot be made online using a CLI command. You need to perform router reboot
using "request system reboot" to online the FPC <slot>. Do you wish to continue ? [yes,no] (no).
```

On Junos OS Evolved, an FPC does not restart when you enter a commit command that configures an element of that FPC.

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.

NOTE: On EX9204, EX9208, EX9214, and EX9253 switches, when a line card is brought online, if the aggregate interface is initialized before the child interface is marked as part of the aggregate interface, there might be a loss of traffic from the aggregate interface for up to 30 seconds and the CPU usage of the line card installed on the switch might go up to 100%.

Options

offline Take the FPC offline.

| | |
|--|---|
| online | Bring the FPC online. |
| interconnect-device <i>name</i> | <p>(QFabric systems only) Bring the FPC on the QFX3008-I Interconnect device either offline or online:</p> <ul style="list-style-type: none"> • (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. |
| force | Restart an unresponsive FPC on PTX platforms. The <force> option can be used before or after the <(offline online restart)> options |
| slot <i>slot-number</i> | <p>The following options can be configured for FPC slots:</p> <ul style="list-style-type: none"> • offline —Take the FPC slot offline. • online — Bring the FPC slot online. • restart — Restart the FPC slot. <p>FPC slot number:</p> <ul style="list-style-type: none"> • 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. • MX10004 router—0 through 3. |

MX10008 router—0 through 7.

MX10016 router—0 through 15.

- 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.

| | |
|---------------------------------------|---|
| | <ul style="list-style-type: none"> • EX9208 switches—Replace <i>slot-number</i> with a value from 0 through 5. • EX9214 switches—Replace <i>slot-number</i> with a value from 0 through 11. • PTX5000 Packet Transport Router—Replace <i>slot-number</i> with a value from 0 through 7. |
| tag | This option is used for upgrading the latest firmware for components Mezz, I2CS, CPLD or Boot CPLD on the FPC. |
| pfe-instance <i>pfe-number</i> | <p>PFE instance number for the FPC slot. For PTX10008 device, it is 0 through 4.</p> <p>The following options can be configured for PFEs:</p> <ul style="list-style-type: none"> • offline —Take the PFE instance on the FPC offline. • online — Bring the PFE instance on the FPC online. • restart — Restart the PFE instance on the FPC. |
| 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 <i>member-id</i> | (MX Series routers only) (Optional) Change FPC status of the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| lcc <i>number</i> | <p>(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. |

Required Privilege Level

maintenance

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

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

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

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


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

request chassis fpc (MX10003, MX10004, and MX10008)

```
user@host> request chassis fpc online slot 1
Online initiated, use "show chassis fpc" to verify
```

request chassis fpc (MX204 Router)

```
user@host> request chassis fpc online slot 0
Online initiated, use "show chassis fpc" to verify
```

request chassis fpc (PTX10008 Router)

```
user@host> request chassis fpc online slot 1
Online initiated, use "show chassis fpc" to verify
```

```
user@host> request chassis fpc slot 0 pfe-instance 0 ?
```

Possible completions:

| | |
|---------|------------------|
| offline | Take FPC offline |
| online | Bring FPC online |
| restart | Restart FPC |

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

request chassis fpc (EX9253 Switch)

```
user@switch> request chassis online fpc slot
0
Online initiated, use "show chassis fpc" to verify
```

Release Information

Command introduced before Junos OS Release 7.4.

Command support added to MX10004 device in Junos OS Release 22.3R1.

RELATED DOCUMENTATION

| [MX960 Flexible PIC Concentrator Description](#)

delete chassis fpc

IN THIS SECTION

- [Syntax | 448](#)
- [Description | 448](#)
- [Options | 448](#)
- [Usage | 449](#)
- [Required Privilege Level | 449](#)
- [Output Fields | 449](#)
- [delete chassis fpc \(PTX\) | 449](#)
- [Release Information | 449](#)

Syntax

```
delete chassis fpc fpc_id no-vlan-tagging
```

Description

(PTX Series routers) Disable no VLAN tagging for a specific FPC.

Options

fpc *fpc_id* For PTX devices, *fpc_id* value is 0 to 15.

Usage

Use `set chassis fpc <fpc_id> no-vlan-tagging` command to re-enable **no-vlan-tagging** on a specific FPC.

Required Privilege Level

maintenance

Output Fields

When you enter this command, you are provided feedback on the status of your request.

delete chassis fpc (PTX)

```
user@host> delete chassis fpc 1 no-vlan-tagging
```

Release Information

Command introduced in Junos OS Release 21.3R1.

RELATED DOCUMENTATION

| [set chassis fpc](#) | [435](#)

request chassis fpm resync

IN THIS SECTION

- [Syntax | 450](#)
- [Syntax \(TX Matrix Routers\) | 450](#)
- [Syntax \(TX Matrix Plus Routers\) | 450](#)
- [Syntax \(MX Series Routers\) | 451](#)
- [Description | 451](#)
- [Options | 451](#)
- [Required Privilege Level | 452](#)
- [Output Fields | 452](#)
- [Sample Output | 452](#)
- [Release Information | 453](#)

Syntax

```
request chassis fpm resync
```

Syntax (TX Matrix Routers)

```
request chassis fpm resync (lcc number / scc)
```

Syntax (TX Matrix Plus Routers)

```
request chassis fpm resync (lcc number / sfc number)
```


Syntax (MX Series Routers)

```
request chassis fpm resync
<all-members>
<local>
<member member-id>
```

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

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.
```


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.

RELATED DOCUMENTATION

[show chassis environment fpm | 868](#)

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online | 207](#)

request chassis mcs

IN THIS SECTION

- [Syntax | 453](#)
- [Description | 454](#)
- [Options | 454](#)
- [Required Privilege Level | 454](#)
- [Output Fields | 454](#)
- [Sample Output | 454](#)
- [Release Information | 455](#)

Syntax

```
request chassis mcs (offline | online | restart) slot slot-number
```


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

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
```


Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[show chassis environment mcs](#) | [909](#)

request chassis mic

IN THIS SECTION

- [Syntax](#) | [455](#)
- [Description](#) | [455](#)
- [Options](#) | [456](#)
- [Required Privilege Level](#) | [456](#)
- [Output Fields](#) | [457](#)
- [Sample Output](#) | [457](#)
- [Release Information](#) | [458](#)

Syntax

```
request chassis mic (offline | online) fpc-slot slot-number mic-slot slot-number
```

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

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
```

Release Information

Command introduced in Junos OS Release 10.1.

RELATED DOCUMENTATION

| *show chassis hardware*

request chassis optics

IN THIS SECTION

- [Syntax | 459](#)
- [Description | 459](#)
- [Options | 459](#)
- [Required Privilege Level | 459](#)
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Syntax

```
request chassis optics fpc-slot fpc-slot-number reactivate
```

Description

(MX240, MX480, and MX960 routers) Control the status of the optical transceiver.

Options

| | |
|--|---|
| fpc-slot <i>fpc-slot-number</i> | Slot number of the line card that houses the optical transceiver. <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. |
| reactivate | Reactivate the optical transceiver. |

Required Privilege Level

maintenance

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 switch)

```
user@switch>request chassis optics fpc-slot 0 reactivate  
Enable FPC 0 non-nebs optics.
```

request chassis optics (EX9253 switch)

```
user@switch>request chassis optics fpc-slot 1 reactivate  
Enable FPC 1 non-nebs optics.
```

Release Information

Command introduced in Junos OS Release 12.3.

RELATED DOCUMENTATION

[Determining Transceiver Support and Specifications for M Series and T Series Routers](#)

request chassis pic

IN THIS SECTION

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- [Syntax \(MX Series Routers\) | 461](#)
- [Syntax \(TX Matrix and TX Matrix Plus Routers\) | 462](#)
- [Description | 462](#)
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- [Release Information | 468](#)

Syntax

```
request chassis pic (offline | online) fpc-slot slot-number pic-slot slot-number
```

Syntax (MX Series Routers)

```
request chassis pic (offline | online) fpc-slot slot-number pic-slot slot-number  
<member member-id>
```


Syntax (TX Matrix and TX Matrix Plus Routers)

```
request chassis pic (offline | online) fpc-slot slot-number pic-slot slot-number
<1cc number>
```

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

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
```


Release Information

Command introduced before Junos OS Release 7.4.

Option `member` introduced in Junos OS Release 14.2 for MX Series routers.

RELATED DOCUMENTATION

show chassis hardware

show chassis pic

request chassis port-led

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- [Syntax | 468](#)
- [Description | 469](#)
- [Options | 469](#)
- [Required Privilege Level | 470](#)
- [Output Fields | 470](#)
- [Sample Output | 471](#)
- [Release Information | 472](#)

Syntax

```
request chassis port-led (start | stop) fpc-slot fpc-slot-number pic-slot pic-slot-number port  
(port-number| all-10g | all-25g | all-40g | all-50g | all-100g | all-400g | all-port) duration  
duration
```


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 <i>fpc-slot-number</i> | <p>(MX Series routers) Modular Port Concentrator (MPC) slot number. Replace <i>fpc-slot-number</i> with a value appropriate for your router:</p> <ul style="list-style-type: none"> • 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 <i>pic-slot-number</i> | <p>(MX Series routers) MIC slot number. Replace <i>pic-slot-number</i> with a value from 0 through 3. For MX10008 routers with JNP10K-LC2101 and JNP10K-LC9600 MPC only, replace <i>pic-slot-number</i> with a value from 0 through 5.</p> |
| port <i>port-number</i> | Port number. Replace <i>port-number</i> 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
- MX10K-LC2101 and MX10K-LC9600 MPC—0 through 3 per PIC. MX10K-LC2101 and MX10K-LC9600 supports 6 built-in PICs and each PIC supports 4 ports.

| | |
|------------------------------------|---|
| all-10g | Active ports that support port speed of 10 Gbps. |
| all-25g | Active ports that support port speed of 25 Gbps. |
| all-40g | Active ports that support port speed of 40 Gbps. |
| all-50g | Active ports that support port speed of 50 Gbps. |
| all-100g | Active ports that support port speed of 100 Gbps. |
| all-400g | Active ports that support port speed of 400 Gbps. |
| all-ports | All active ports. |
| duration <i>duration</i> | Duration, in seconds, to perform LED blinking. Replace <i>duration</i> with a value from 0 through 65,535. The default duration is 5 minutes (300 seconds). |

Required Privilege Level

view

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 MX10K-LC2101 and MX10K-LC9600)

```
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.
```

Release Information

Command introduced in Junos OS Release 15.1F4.

RELATED DOCUMENTATION

[Remote Port Identification using LEDs for Cabling Assistance](#) | 211

request chassis sfb

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- [Syntax \(MX10004 and MX10008 \) | 473](#)
- [Description | 474](#)
- [Options | 474](#)
- [Required Privilege Level | 474](#)
- [Output Fields | 474](#)
- [Sample Output | 475](#)
- [Release Information | 476](#)

Syntax

```
request chassis sfb (offline | online) slot slot-number  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX10004 and MX10008)

```
request chassis sfb  
<(offline | online) slot slot-number>  
<slot slot-number (offline | online)>
```


Description

Control the operation of the Switch Fabric Board (SFB). Configure the SFBs on a slot to online or offline.
command.

Options

| | |
|-----------------------------------|--|
| all-members | (Optional) Control the operation of the SFB in all members of the Virtual Chassis configuration. |
| local | (Optional) Control the operation of the SFB in the local Virtual Chassis member. |
| 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. |
| offline | Take the Switch Fabric Board offline. |
| online | Bring the Switch Fabric Board online. |
| slot <i>slot-number</i> | Switch Fabric Board slot number. Replace <i>slot-number</i> with a value of 0 through 7. |
| plane <i>plane-number</i> | Switch Fabric Board plane number. For SFB, the <i>plane-number</i> value range is 0 through 3. For SFB2, the <i>plane-number</i> value range is 0 through 1. |

Required Privilege Level

maintenance

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 fabric sfb (MX10008 Routers)

```
user@host>request chassis fabric sfb slot 1 plane 0 offline  
Offline initiated, use "show chassis fabric plane" to verify
```

request chassis sfb (MX10004 and MX10008 Routers)

```
user@host>request chassis sfb slot 0 online  
Online initiated, use "show chassis sfb" to verify
```

```
user@host>request chassis sfb slot 0 offline  
Offline initiated, use "show chassis sfb" to verify
```


Release Information

Command introduced in Junos OS Release 12.3.

all-members, local, and member *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[show chassis hardware](#)

[show chassis sfb](#) | 1642

request chassis sfm

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- [Description](#) | 477
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Syntax

```
request chassis sfm (offline | online | restart) slot slot-number
```


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

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
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[show chassis sfm | 1650](#)

Configuring SFM Redundancy on M40e and M160 Routers

[M40e Switching and Forwarding Module \(SFM\) Description](#)

request chassis sib

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- [Syntax \(TX Matrix Router\) | 479](#)
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- [Description | 479](#)
- [Options | 479](#)
- [Required Privilege Level | 481](#)
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Syntax

```
request chassis sib (offline | online) slot slot-number
```

Syntax (TX Matrix Router)

```
request chassis sib (all-chassis | lcc number | scc) (offline | online) slot slot-number  
(start-receiver number | stop-receiver number)
```

Syntax (TX Matrix Plus Router)

```
request chassis sib (all-lcc | f13 slot-number | f2s sib-slot/sib-f2s-slot-number | lcc number |  
(offline | online) slot slot-number)
```

Description

(M320 routers and T Series routers only) Control the operation of the specified Switch Interface Board (SIB).

Options

| | |
|-------------------------------|--|
| all-chassis | (TX Matrix routers only) Control the status of the specified SIB. |
| 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. |
| 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. |

**f2s *sib-slot/*
sib-f2s-slot-
*number*** (TX Matrix Plus routers only) (Optional) Control the operation of the SIB F2s. Replace *sib-slot* with a value from 0 through 4, followed by a *sib-f2s-slot-number* value 0, 2, 4 or 6.

lcc *number* (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.

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 null route condition. Taking all SIBs offline in these PTX Series or T Series Routers with active PFE interfaces results in null route 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 null route condition, and the message is not displayed when the last active SIB is taken offline. For details on null route condition, see Fabric Resiliency and Degradation.

online Bring the SIB online.

**slot *slot-*
*number*** SIB slot number. For the T320 router, replace *slot-number* with a value from 0 through 2. For the T640 router, TX Matrix router, and T1600 router in a routing matrix, replace *slot-number* with a value from 0 through 4.

**start-
receiver
*number*** (TX Matrix routers only) Start the SIB optical receiver. Replace *number* with a value from 0 through 3.

stop-receiver
number (TX Matrix routers only) Stop the SIB optical receiver. Replace *number* with a value from 0 through 3.

Required Privilege Level

maintenance

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
```

Release Information

Command introduced before Junos OS Release 7.4.

f13 and f2s options for the TX Matrix Plus router introduced in Junos OS Release 9.6.

RELATED DOCUMENTATION

[Configuring Junos OS to Upgrade and Downgrade Switch Interface Boards on a TX Matrix Router](#)

[M320 SIB Description](#)

[show chassis sibs](#) | [1655](#)

[show chassis environment sib](#) | [1005](#)

request chassis spmb restart

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Syntax

```
request chassis spmb restart slot slot-number
```


Syntax (MX2020, MX2010, and 2008 Routers)

```
request chassis spmb restart slot slot-number
<all-members>
<local>
<member member-id>
```

Syntax (TX Matrix Router)

```
request chassis spmb restart (lcc number | scc) slot slot-number
```

Syntax (TX Matrix Plus Router)

```
request chassis spmb restart (lcc number | sfc number) slot slot-number
```

Description

Restart the specified Switch Processor Mezzanine Board (SPMB) on the Control Board (CB).

Options

all-members (MX2010, MX2020, and MX2008 routers only) (Optional) Restart the SPMB on the CB in 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 | (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 <i>member-id</i> 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 <i>number</i> variable with a value 0. |
| slot slot-number | The SPMB slot number. Replace <i>slot-number</i> with 0 or 1. |

Required Privilege Level

maintenance

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
```

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.

all-members, local, and member *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

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[show chassis spmb sibs](#) | 1688

set chassis display message

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Syntax

```
set chassis display message "message"  
<permanent>
```

Syntax (TX Matrix Router)

```
set chassis display message "message" (lcc number / scc)  
<permanent>
```


Syntax (TX Matrix Plus Router)

```
set chassis display message "message" (fpc-slot slot-number | lcc number / sfc number)
<permanent>
```

Description

Display or stop a text message on the craft interface display, which is on the front of the router, or on the LCD panel display on the switch. The craft interface alternates the display of text messages with standard craft interface messages three times, switching between messages every 60 seconds.

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.

By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.

Options

- | | |
|------------------------------------|---|
| "<i>message</i>" | 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. |
| fpc-slot <i>slot-number</i> | (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 <i>slot-number</i> with a value from 0 through 31 . On the switch, display the text message for a specific member of a Virtual Chassis, where fpc-slot <i>slot-number</i> corresponds to the member ID. Replace <i>slot-number</i> 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

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  |
+-----+
```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option for TX Matrix Plus router introduced in Junos OS Release 9.6.

RELATED DOCUMENTATION

Configuring the LCD Panel on EX Series Switches (CLI Procedure)

[clear chassis display message](#)

[show chassis craft-interface](#)

11

CHAPTER

Monitoring Commands

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show chassis adc

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Syntax

```
show chassis adc
<all-members>
<local>
<member member-id>
```

Description

Display chassis information about the adapter cards (ADCs).

Options

- | | |
|--------------------|--|
| none | Display information about all adapter cards. |
| all-members | (Optional) Display information about the adapter cards (ADCs) in all members of the Virtual Chassis configuration. |

| | |
|-----------------------------------|---|
| local | (Optional) Display information about the ADCs in the local member of the Virtual Chassis. |
| 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. |

Required Privilege Level

view

Output Fields

Table 35 on page 495 lists the output fields for the `show chassis adc` command. Output fields are listed in the approximate order in which they appear.

Table 35: show chassis adc Output Fields

| Field Name | Field Description |
|--------------------|---|
| Slot | Slot number. |
| 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

```

Release Information

Command introduced in Junos OS Release 12.3 for MX2020 and MX2010 Universal Routing Platforms.

all-members, local, and member *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

| [show chassis environment adc](#) | [721](#)

show chassis afeb

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Syntax

```
show chassis afeb
```

Description

Display compact Forwarding Engine Board status.

Options

This command has no options.

Required Privilege Level

view

Output Fields

Table 36 on page 499 lists the output fields for the `show chassis afeb` command. Output fields are listed in the approximate order in which they appear.

Table 36: show chassis afeb

| Field Name | Field Description |
|-----------------------|---|
| State | State of the compact Forwarding Engine Board: <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. |

Table 36: show chassis afeb (Continued)

| Field Name | Field Description |
|--------------------|--|
| 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. |
| 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

```


Release Information

Command introduced in Junos OS Release 13.2.

RELATED DOCUMENTATION

[request chassis afec](#) | [417](#)

show chassis alarms

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- [Syntax](#) | [502](#)
- [Syntax \(MX Series Routers\)](#) | [502](#)
- [Syntax \(SRX1500, SRX4100, and SRX4200\)](#) | [502](#)
- [Syntax \(SRX4600\)](#) | [502](#)
- [Syntax \(SRX5400\)](#) | [503](#)
- [Syntax \(TX Matrix Routers\)](#) | [503](#)
- [Syntax \(TX Matrix Plus Routers\)](#) | [503](#)
- [Syntax \(MX104, MX2010, MX2020, and MX2008 Universal Routing Platforms\)](#) | [503](#)
- [Syntax \(MX204, MX10003, MX10004, MX10008, OCX Series, PTX Series, ACX Series, EX9251, and EX9253\)](#) | [504](#)
- [Syntax \(QFX Series\)](#) | [504](#)
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- [show chassis alarms \(ACX7024\)](#) | [530](#)
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Syntax

```
show chassis alarms
```

Syntax (MX Series Routers)

```
show chassis alarms
<all-members>
<local>
<member member-id>
```

Syntax (SRX1500, SRX4100, and SRX4200)

```
show chassis alarms
1 alarms currently active
Alarm time          Class  Description
2020-02-28 10:07:16 CST  Major  FPC0: PEM 0 Not Present
```

Syntax (SRX4600)

```
show chassis alarms
node0:
-----
2 alarms currently active
Alarm time Class Description
2020-10-08 19:42:06 UTC Major FPC 0 BITS CPLD Version Mismatch
2020-10-08 19:42:06 UTC Minor PEM 1 Not Present
```


Syntax (SRX5400)

```
show chassis alarms
1 alarms currently active
Alarm time           Class  Description
2021-04-16 17:21:02 PDT  Major  Too Few AC PEMs
```

Syntax (TX Matrix Routers)

```
show chassis alarms
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis alarms
<lcc number | sfc number>
```

Syntax (MX104, MX2010, MX2020, and MX2008 Universal Routing Platforms)

```
show chassis alarms
<satellite [slot-id slot-id]>
```


Syntax (MX204, MX10003, MX10004, MX10008, OCX Series, PTX Series, ACX Series, EX9251, and EX9253)

```
show chassis alarms
```

Syntax (QFX Series)

```
show chassis alarms
<interconnect-device name>
<node-device name>
```

Description

Display information about the conditions that have been configured to trigger alarms. In Junos, the chassis alarms are different from the system alarms (viewed by using the `show system alarms` command). The system alarms indicate a missing rescue configuration or software license, where valid. For more information, see [Alarm Overview](#).

Options

| | |
|--|---|
| none | Display information about the conditions that have been configured to trigger alarms. |
| all-members | (MX Series routers only) (Optional) Display information about alarm conditions for all the member routers of the Virtual Chassis configuration. |
| interconnect-device <i>name</i> | (QFabric systems only) (Optional) Display information about alarm conditions for the Interconnect device. |
| lcc <i>number</i> | (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number. Replace <i>number</i> with the following values depending on the LCC configuration: |

- 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 <i>member-id</i> | (MX Series routers only) (Optional) Display information about alarm conditions for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> variable with a value of 0 or 1. |
| node-device <i>name</i> | (QFabric systems only) (Optional) Display information about alarm conditions for the Node device. |
| satellite [slot-id <i>slot-id</i>] | (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 <i>number</i> | (TX Matrix Plus router only) (Optional) Show information about the respective TX Matrix Plus router, which is the switch-fabric chassis. Replace <i>number</i> 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_ILLEGALSIZERR | 4 |
| CMALARM_LCHIP_LOUT_HDRF_TOERR_ERR | 5 |
| CMALARM_LCHIP_LOUT_HDRF_PARITY_ERR | 6 |
| CMALARM_LCHIP_LOUT_HDRF_UCERR_ERR | 7 |
| CMALARM_LCHIP_LOUT_NLIF_CRCDROP_ERR | 8 |
| CMALARM_LCHIP_LOUT_NLIF_CRCERR_ERR | 9 |
| CMALARM_LCHIP_UCODE_TIMEOUT_ERR | 10 |
| CMALARM_LCHIP_LIN_SRCTL_ACCT_DROP_ERR | 11 |
| CMALARM_LCHIP_LIN_SRCTL_ACCT_ADDR_SIZE_ERR | 12 |
| CMALARM_LCHIP_SRAM_PARITY_ERR | 13 |
| CMALARM_LCHIP_UCODE_OVFLW_ERR | 14 |
| CMALARM_LCHIP_LOUT_HDRF_MTU_ERR | 15 |
| 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 = (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

Output Fields

Table 37 on page 511 lists the output fields for the `show chassis alarms` command. Output fields are listed in the approximate order in which they appear.

Table 37: show chassis alarms Output Fields

| Field Name | Field Description |
|------------|--|
| Alarm time | Date and time the alarm was first recorded. |
| Class | Severity class for this alarm: Minor or Major. |

Table 37: show chassis alarms Output Fields (Continued)

| Field Name | Field Description |
|-------------|------------------------------|
| Description | Information about the alarm. |

Sample Output

show chassis alarms (Alarms Active)

```

user@host> show chassis alarms
3 alarms are currently active
Alarm time          Class  Description
2000-02-07 10:12:22 UTC Major fxp0: ethernet link down
2000-02-07 10:11:54 UTC Minor YELLOW ALARM - PEM 1 Removed
2000-02-07 10:11:03 UTC Minor YELLOW ALARM - Lower Fan Tray Removed

```

show chassis alarms (No Alarms Active)

```

user@host> show chassis alarms
No alarms are currently active

```

show chassis alarms (Fan Tray)

```

user@host> show chassis alarms
4 alarms currently active
Alarm time          Class  Description
2010-11-11 20:27:38 UTC Major Side Fan Tray 7 Failure
2010-11-11 20:27:13 UTC Minor Side Fan Tray 7 Overspeed
2010-11-11 20:27:13 UTC Major Side Fan Tray 5 Failure
2010-11-11 20:27:13 UTC Major Side Fan Tray 0 Failure

```


show chassis alarms (MX150)

```

user@host > show chassis alarms
1 alarms currently active
Alarm time          Class  Description
2016-06-04 01:49:43 PDT  Major  Fan Tray 1 Fan 0 failed

```

show chassis alarms (MX104 Router)

```

user@host >show chassis alarms
1 alarms currently active
Alarm time          Class  Description
2013-06-05 14:43:31 IST  Minor  Backup RE Active

```

show chassis alarms (MX2010 Router)

```

user@host> show chassis alarms
7 alarms currently active
Alarm time          Class  Description
2012-08-07 00:46:06 PDT  Major  Fan Tray 2 Failure
2012-08-06 18:24:36 PDT  Minor  Redundant feed missing for PSM 6
2012-08-06 07:41:04 PDT  Minor  Redundant feed missing for PSM 8
2012-08-04 02:42:06 PDT  Minor  Redundant feed missing for PSM 5
2012-08-03 21:14:24 PDT  Minor  Loss of communication with Backup RE
2012-08-03 12:26:03 PDT  Minor  Redundant feed missing for PSM 4
2012-08-03 10:40:18 PDT  Minor  Redundant feed missing for PSM 7

```

show chassis alarms (MX2020 Router)

```

user@host> show chassis alarms
1 alarms currently active
Alarm time Class Description
2012-10-03 12:14:59 PDT Minor Plane 0 not online

```


show chassis alarms (MX10003 Router)

```

user@host> show chassis alarms

9 alarms currently active
Alarm time           Class Description
2017-07-13 21:50:31 PDT Major FPC 1 Temperature Hot
2017-07-13 21:50:04 PDT Minor FPC 1 PIC 1 Invalid port profile configuration
2017-07-13 21:49:13 PDT Minor FPC 1 PIC 0 Invalid port profile configuration
2017-07-13 21:48:54 PDT Major FPC 0 Temperature Hot
2017-07-13 21:43:54 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

```

Starting in Junos OS Release 19.2R1, the MX10003 routers do not raise an alarm if a Power Entry Module (PEM) slot is empty. However, when the number of operational PEMs goes below 2, the router raises a major alarm. This alarm is cleared when the required number of PEMs are made available.

show chassis alarms (MX10004 Router)

```

user@host> show chassis alarms

2 alarms currently active
Alarm time           Class Description
2022-07-05 20:34:40 PDT Major Fan Tray 0 EEPROM Read Error
2021-17-05 11:06:47 PST Minor Check plane 0 Fabric Chip

```

```

user@host> show chassis alarms | match PEM
2021-11-12 13:19:35 UTC Major PEM 2 Not Supported

```

```

user@host> show system alarms | match Fan
2021-09-27 19:13:15 PDT Major Fan Tray 0 Model Not Supported

```

-->

show chassis alarms (MX204 Router)

```

user@host> show chassis alarms

1 alarms currently active
Alarm time          Class  Description
2017-11-05 22:13:03 PST  Major  PEM 0 Not Present

```

show chassis alarms (MX2008 Router)

```

user@host>show chassis alarms
No alarms currently active

```

show chassis alarms (MX960, MX480, and MX240 Routers showing Major CB Failure)

A major CB 0 failure alarm occurs in the event of a bad CB (unknown or mismatched CBs do not trigger this alarm in Junos Release OS 12.3R9 and later). Following GRES or recovery, if the hardware issue persists, the traffic moves to the good CB and continues. If the alarm was triggered by something transient like a power zone budget on GRES, bringing the CB back online can clear the alarm. Otherwise, replace the bad CB. Note that fabric link speed is not impacted by an offline SCB. The alarm might be raised on CB0, CB1, and CB2.

```

user@host> show chassis alarms
6 alarms currently active
Alarm time          Class  Description
2014-10-31 16:49:41 EDT  Major  PEM 3 Not OK
2014-10-31 16:49:41 EDT  Major  PEM 2 Not OK
2014-10-31 16:49:31 EDT  Major  CB 0 Failure
2014-10-31 16:49:31 EDT  Minor  CB 0 Fabric Chip 0 Not Online
2014-10-31 16:49:31 EDT  Minor  CB 0 Fabric Chip 1 Not Online
2014-10-31 16:49:31 EDT  Minor  Backup RE Active

```

show chassis alarms (PTX10008 Router)

```

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

```



```

2017-05-09 01:38:55 PDT Minor Loss of communication with Backup RE
2017-05-05 06:49:57 PDT Major FPC 5 LCPU Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 PE2 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PE1 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 PE0 Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-C Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-B Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Exhaust-A Temp Sensor Hot
2017-05-05 06:49:57 PDT Major FPC 5 Intake-B Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major FPC 5 Intake-A Temp Sensor Access Failed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 5 running at lower speed
2017-05-05 06:49:57 PDT Major Fan Tray 0 Fan 4 running at lower speed

```

show chassis alarms (T4000 Router)

```

user@host> show chassis alarms
9 alarms currently active
Alarm time          Class Description
2007-06-02 01:41:10 UTC Minor RE 0 Not Supported
2007-06-02 01:41:10 UTC Minor CB 0 Not Supported
2007-06-02 01:41:10 UTC Minor Mixed Master and Backup RE types
2007-05-30 19:37:33 UTC Major SPMB 1 not online
2007-05-30 19:37:29 UTC Minor Front Bottom Fan Tray Absent
2007-05-30 19:37:13 UTC Major PEM 1 Input Failure
2007-05-30 19:37:13 UTC Major PEM 0 Not OK
2007-05-30 19:37:03 UTC Major PEM 0 Improper for Platform
2007-05-30 19:37:03 UTC Minor Backup RE Active

```

show chassis alarms (Unreachable Destinations Present on a T Series Router)

```

user@host> show chassis alarms
10 alarms currently active
Alarm time          Class Description
2011-08-30 18:43:53 PDT Major FPC 7 has unreachable destinations
2011-08-30 18:43:53 PDT Major FPC 5 has unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 3 has unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 2 has unreachable destinations
2011-08-30 18:43:52 PDT Minor SIB 0 Not Online
2011-08-30 18:43:33 PDT Minor SIB 4 Not Online
2011-08-30 18:43:28 PDT Minor SIB 3 Not Online

```



```

2011-08-30 18:43:05 PDT Minor SIB 2 Not Online
2011-08-30 18:43:28 PDT Minor SIB 1 Not Online
2011-08-30 18:43:05 PDT Major PEM 1 Not Ok

```

show chassis alarms (FPC Offline Due to Unreachable Destinations on a T Series Router)

```

user@host> show chassis alarms
10 alarms currently active
Alarm time          Class Description
2011-08-30 18:43:53 PDT Major FPC 7 offline due to unreachable destinations
2011-08-30 18:43:53 PDT Major FPC 5 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 3 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Major FPC 2 offline due to unreachable destinations
2011-08-30 18:43:52 PDT Minor SIB 0 Not Online
2011-08-30 18:43:33 PDT Minor SIB 4 Not Online
2011-08-30 18:43:28 PDT Minor SIB 3 Not Online
2011-08-30 18:43:05 PDT Minor SIB 2 Not Online
2011-08-30 18:43:28 PDT Minor SIB 1 Not Online
2011-08-30 18:43:05 PDT Major PEM 1 Not Ok

```

show chassis alarms (SCG Absent on a T Series Router)

```

user@host> show chassis alarms
4 alarms currently active
Alarm time          Class Description
2011-01-23 21:42:46 PST Major SCG 0 NO EXT CLK MEAS-BKUP SCG ABS

```

show chassis alarms (Alarms Active on a TX Matrix Router)

```

user@host> show chassis alarms
scc-re0:
-----
8 alarms currently active
Alarm time          Class Description
2004-08-05 18:43:53 PDT Minor LCC 0 Minor Errors
2004-08-05 18:43:53 PDT Minor SIB 3 Not Online
2004-08-05 18:43:52 PDT Major SIB 2 Absent
2004-08-05 18:43:52 PDT Major SIB 1 Absent

```



```

2004-08-05 18:43:52 PDT Major SIB 0 Absent
2004-08-05 18:43:33 PDT Major LCC 2 Major Errors
2004-08-05 18:43:28 PDT Major LCC 0 Major Errors
2004-08-05 18:43:05 PDT Minor LCC 2 Minor Errors
lcc0-re0:

```

```
-----
5 alarms currently active

```

| Alarm time | Class | Description |
|-------------------------|-------|------------------|
| 2004-08-05 18:43:53 PDT | Minor | SIB 3 Not Online |
| 2004-08-05 18:43:49 PDT | Major | SIB 2 Absent |
| 2004-08-05 18:43:49 PDT | Major | SIB 1 Absent |
| 2004-08-05 18:43:49 PDT | Major | SIB 0 Absent |
| 2004-08-05 18:43:28 PDT | Major | PEM 0 Not OK |

```

lcc2-re0:

```

```
-----
5 alarms currently active

```

| Alarm time | Class | Description |
|-------------------------|-------|------------------|
| 2004-08-05 18:43:35 PDT | Minor | SIB 3 Not Online |
| 2004-08-05 18:43:33 PDT | Major | SIB 2 Absent |
| 2004-08-05 18:43:33 PDT | Major | SIB 1 Absent |
| 2004-08-05 18:43:33 PDT | Major | SIB 0 Absent |
| 2004-08-05 18:43:05 PDT | Minor | PEM 1 Absent |

show chassis alarms (TX Matrix Plus router with 3D SIBs)

```

user@host> show chassis alarms
sfc0-re0:

```

```
-----
```

| Alarm time | Class | Description |
|-------------------------|-------|---------------------------------|
| 2014-04-08 14:35:13 IST | Minor | FPM 0 SFC Config Size Changed |
| 2014-04-08 14:32:58 IST | Major | Fan Tray Failure |
| 2014-04-08 14:31:53 IST | Major | SIB F13 6 Fault |
| 2014-04-08 14:31:43 IST | Major | SIB F13 11 Fault |
| 2014-04-08 14:31:08 IST | Minor | Check SIB F13 12 CXP 14 Fbr Cbl |
| 2014-04-08 14:31:08 IST | Minor | Check SIB F13 12 CXP 8 Fbr Cbl |
| 2014-04-08 14:31:08 IST | Minor | Check SIB F13 12 CXP 3 Fbr Cbl |
| 2014-04-08 14:31:08 IST | Major | SIB F13 12 CXP 15 fault |
| 2014-04-08 14:31:08 IST | Minor | SIB F13 12 CXP 14 LOL |
| 2014-04-08 14:31:08 IST | Minor | Check SIB F13 12 CXP 14 |
| 2014-04-08 14:31:08 IST | Major | SIB F13 12 CXP 10 fault |


```

2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 8 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 8
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 7 fault
2014-04-08 14:31:08 IST Major SIB F13 12 CXP 4 fault
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 3 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 12 CXP 3
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 14 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 12 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 8 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 6 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 4 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2 Fbr Cbl
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0 Fbr Cbl
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 14 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 14
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 12 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 12
2014-04-08 14:31:08 IST Major SIB F13 6 CXP 10 fault
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 8 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 8
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 6 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 6
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 4 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 4
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 2 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 2
2014-04-08 14:31:08 IST Minor SIB F13 6 CXP 0 LOL
2014-04-08 14:31:08 IST Minor Check SIB F13 6 CXP 0
2014-04-08 14:31:08 IST Minor SIB F13 12 CXP 14 XC HSL Link Error
2014-04-08 14:29:27 IST Minor LCC 0 Minor Errors
2014-04-08 14:28:37 IST Major LCC 0 Major Errors
2014-04-08 14:28:37 IST Major LCC 2 Major Errors
2014-04-08 14:28:37 IST Minor LCC 2 Minor Errors
2014-04-08 14:28:24 IST Major SIB F2S 4/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 4/0 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/6 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/4 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/2 Absent
2014-04-08 14:28:24 IST Major SIB F2S 3/0 Absent
2014-04-08 14:28:24 IST Major SIB F13 9 Absent
2014-04-08 14:28:24 IST Major SIB F13 8 Absent

```



```

2014-04-08 14:28:24 IST Major SIB F13 7 Absent
2014-04-08 14:28:24 IST Major SIB F13 4 Absent
2014-04-08 14:28:24 IST Major SIB F13 1 Absent
2014-04-08 14:28:22 IST Major PEM 0 Input Failure
2014-04-08 14:28:22 IST Major PEM 0 Not OK

```

lcc0-re0:

12 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|---|
| 2014-04-08 14:36:08 IST | Minor | CB 1 M/S Switch Changed |
| 2014-04-08 14:36:08 IST | Minor | CB 1 CHASSIS ID Changed |
| 2014-04-08 14:35:43 IST | Minor | CB 0 M/S Switch Changed |
| 2014-04-08 14:35:43 IST | Minor | CB 0 CHASSIS ID Changed |
| 2014-04-08 14:29:30 IST | Minor | SIB 4 Not Online |
| 2014-04-08 14:29:30 IST | Minor | SIB 3 Not Online |
| 2014-04-08 14:29:30 IST | Minor | SIB 2 Not Online |
| 2014-04-08 14:29:24 IST | Major | Rear Fan Tray Failure |
| 2014-04-08 14:29:24 IST | Major | Front Bottom Fan Tray Improper for Platform |
| 2014-04-08 14:29:24 IST | Major | Front Top Fan Tray Improper for Platform |
| 2014-04-08 14:28:37 IST | Major | SIB 4 Absent |
| 2014-04-08 14:28:37 IST | Major | SIB 3 Absent |

lcc2-re0:

12 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|---|
| 2014-04-08 14:36:02 IST | Minor | CB 1 M/S Switch Changed |
| 2014-04-08 14:36:02 IST | Minor | CB 1 CHASSIS ID Changed |
| 2014-04-08 14:35:42 IST | Minor | CB 0 M/S Switch Changed |
| 2014-04-08 14:34:42 IST | Minor | CB 0 CHASSIS ID Changed |
| 2014-04-08 14:29:29 IST | Minor | SIB 0 CXP 7 Unsupported Optics |
| 2014-04-08 14:29:27 IST | Major | Front Bottom Fan Tray Improper for Platform |
| 2014-04-08 14:29:27 IST | Major | Front Top Fan Tray Improper for Platform |
| 2014-04-08 14:29:25 IST | Minor | SIB 4 Not Online |
| 2014-04-08 14:29:25 IST | Minor | SIB 3 Not Online |
| 2014-04-08 14:28:47 IST | Major | PEM 0 Not OK |
| 2014-04-08 14:28:36 IST | Major | SIB 2 Absent |
| 2014-04-08 14:28:36 IST | Minor | Host 0 Boot from alternate media |

lcc6-re0:

2 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|-------------------------------|
| 2013-11-06 04:03:56 PST | Minor | SIB 1 CXP 0 XC HSL Link Error |
| 2013-11-06 03:49:32 PST | Major | PEM 1 Not OK |

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

To enable improved virtual private LAN service (VPLS) MAC address learning on T4000 routers, you must include the enhanced-mode statement at the [edit chassis network-services] hierarchy level and reboot the router. When router reboots, only the T4000 Type 5 FPCs are required to be present on the router. If there are any other FPCs (apart from T4000 Type 5 FPCs) on the T4000 router, such FPCs become offline, and FPC misconfiguration alarms are generated. The show chassis alarm command output displays FPC misconfiguration (FPC *fpc-slot* misconfig) as the reason for the generation of the alarms.

```
user@host> show chassis alarms
2 alarms currently active
Alarm time          Class Description
2011-10-22 10:10:47 PDT Major FPC 1 misconfig
2011-10-22 10:10:46 PDT Major FPC 0 misconfig
```

show chassis alarms (Backup Routing Engine)

```
user@host> show chassis alarms
2 alarms are currently active
Alarm time          Class Description
2005-04-07 10:12:22 PDT Minor Host 1 Boot from alternate media
2005-04-07 10:11:54 PDT Major Host 1 compact-flash missing in Boot List
```

show chassis alarms (EX Series Switch)

```
user@switch> show chassis alarms

4 alarms currently active
Alarm time          Class Description
2014-03-12 15:36:09 UTC Minor Require a Fan Tray upgrade
2014-03-12 15:00:02 UTC Major PEM 0 Input Failure
```



```
2014-03-12 15:00:02 UTC Major PEM 0 Not OK
2014-03-12 14:59:51 UTC Minor Host 1 Boot from alternate media
```

show chassis alarms (Alarms Active on the QFX Series and OCX Series Switches)

```
user@switch> show chassis alarms
1 alarms currently active
Alarm time          Class Description
2012-03-05    2:10:24 UTC Major FPC 0 PEM 0 Airflow not matching Chassis Airflow
```

show chassis alarms node-device (Alarms Active on the QFabric System)

```
user@switch> show chassis alarms node-device
Test
node-device ED3694
3 alarms currently active
Alarm time          Class Description
2011-08-24 16:04:15 UTC Major Test:fte-0/1/2: Link down
2011-08-24 16:04:14 UTC Major Test:fte-0/1/0: Link down
2011-08-24 14:21:14 UTC Major Test PEM 0 is not supported/powered
```

show chassis alarms (Alarms Active on the QFabric System)

```
user@switch> show chassis alarms
IC-1:
-----
1 alarms currently active
Alarm time          Class Description
2011-08-24 16:04:15 UTC Minor Backup RE Active

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


SNG-0:

NW-NG-0:

1 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|-------------------------------------|
| 2011-08-24 15:49:27 UTC | Major | Test PEM 0 is not supported/powered |

show chassis alarms (Alarms Active on an EX8200 Switch)

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

6 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|--|
| 2010-12-02 19:15:22 UTC | Major | Fan Tray Failure |
| 2010-12-02 19:15:22 UTC | Major | Fan Tray Failure |
| 2010-12-02 19:15:14 UTC | Minor | Check CB 0 Fabric Chip 1 on Plane/FPC/PFE: 1/5/0, 1/5/1, 1/5/2, 1/5/3, 1/7/0, 1/7/1, 1/7/2, 1/7/3, 2/5/0, 2/5/1, ... |
| 2010-12-02 19:15:14 UTC | Minor | Check CB 0 Fabric Chip 0 on Plane/FPC/PFE: 1/5/0, 1/5/1, 1/5/2, 1/5/3, 1/7/0, 1/7/1, 1/7/2, 1/7/3, 2/5/0, 2/5/1, ... |
| 2010-12-02 19:14:18 UTC | Major | PSU 1 Output Failure |
| 2010-12-02 19:14:18 UTC | Minor | Loss of communication with Backup RE |

show chassis alarms (EX9251 Switch)

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

2 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|---------------------------|
| 2018-03-08 05:13:10 PST | Major | PEM 0 Not Powered |
| 2018-03-08 05:13:10 PST | Major | Fan Tray 2 is not present |

show chassis alarms (EX9253 Switch)

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


6 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|--------------------------------------|
| 2018-03-07 01:09:01 PST | Major | Power Budget:Insufficient Power |
| 2018-03-06 23:56:34 PST | Minor | Loss of communication with Backup RE |
| 2018-02-15 00:48:10 PST | Minor | PEM 3 Not Present |
| 2018-02-15 00:48:10 PST | Minor | PEM 2 Not Present |
| 2018-02-15 00:48:07 PST | Major | PEM 4 Not Powered |
| 2018-02-15 00:48:07 PST | Major | PEM 1 Not Powered |

show chassis alarms (MX Series for PFE reset)

```
user@host> show chassis alarms
```

1 alarm currently active

| Alarm time | Class | Description |
|-------------------------|-------|-----------------------------|
| 2021-01-04 11:20:42 PST | Major | FPC 0 PFE 0 reset initiated |

show chassis alarms (MX Series for PFE reset error)

```
user@host> show chassis alarms
```

1 alarm currently active

| Alarm time | Class | Description |
|-------------------------|-------|-------------------------|
| 2021-01-04 11:20:42 PST | Major | FPC 0 PFE 0 reset error |

show chassis alarms (Alarms Active on a PTX5000 Packet Transport Router)

```
user@host> show chassis alarms
```

23 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|-------------------------------------|
| 2011-07-12 16:22:05 PDT | Minor | No Redundant Power for Rear Chassis |
| 2011-07-12 16:22:05 PDT | Major | PDU 0 PSM 1 Not OK |
| 2011-07-12 16:21:57 PDT | Minor | No Redundant Power for Fan 0-2 |
| 2011-07-12 16:21:57 PDT | Major | PDU 0 PSM 0 Not OK |
| 2011-07-12 15:56:06 PDT | Major | PDU 1 PSM 2 Not OK |
| 2011-07-12 15:56:06 PDT | Minor | No Redundant Power for FPC 0-7 |
| 2011-07-12 15:56:06 PDT | Major | PDU 0 PSM 3 Not OK |


```
2011-07-12 15:28:20 PDT Major PDU 0 PSM 2 Not OK
2011-07-12 15:19:14 PDT Minor Backup RE Active
```

show chassis alarms (Mix of PDUs Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

All PDUs installed on a PTX5000 router must be of the same type. The Mix of PDUs or Power Manager Non Operational alarm is raised when different types of PDUs are installed on a PTX5000 router.

```
user@host> show chassis alarms
15 alarms currently active
Alarm time          Class Description
2013-03-19 23:03:53 PDT Minor No Redundant Power
2013-03-19 23:03:48 PDT Minor Mix of PDUs
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 3 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 2 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 1 Absent
2013-03-19 23:03:47 PDT Minor PDU 1 PSM 0 Absent
2013-03-19 23:03:46 PDT Major No CG Online
```

show chassis alarms (PDU Converter Failed Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

The PDU Converter Failed alarm is raised when one or more 36 V booster converter of a DC PDU fails. If two or more 36 V booster converter fails, fan trays fail and the router might get over heated. Therefore, when this alarm is raised, check the PDU and replace it, if required.

```
user@host> show chassis alarms
11 alarms currently active
Alarm time          Class Description
2013-12-11 22:14:13 PST Minor No Redundant Power for System
2013-12-11 22:14:10 PST Major PDU 0 PSM 7 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 6 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 5 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 4 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 3 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 2 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 1 Not OK
2013-12-11 22:14:10 PST Major PDU 0 PSM 0 Not OK
```



```
2013-12-11 22:14:10 PST Major PDU 0 Not OK
2013-12-11 22:14:01 PST Major PDU 0 Converter Failed
```

show chassis alarms (No Power for System Alarm on a PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```
user@host> show chassis alarms
8 alarms currently active
Alarm time          Class Description
2013-11-19 01:58:41 PST Major No Power for System
2013-11-19 01:58:37 PST Major PDU 0 PSM 1 Not OK
2013-11-19 01:56:46 PST Major PDU 0 PSM 2 Not OK
2013-11-19 01:54:26 PST Major PDU 0 PSM 3 Not OK
2013-11-19 01:53:30 PST Major PDU 1 PSM 3 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 2 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 1 Not OK
2013-11-19 01:53:29 PST Major PDU 1 PSM 0 Not OK
```

show chassis alarms (Alarms Active on an ACX2000 Universal Metro Router)

```
user@host> show chassis alarms
7 alarms currently active
Alarm time          Class Description
2012-05-22 11:19:09 UTC Major xe-0/3/1: Link down
2012-05-22 11:19:09 UTC Major xe-0/3/0: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/7: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/6: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/3: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/2: Link down
2012-05-22 11:19:09 UTC Major ge-0/1/1: Link down
```

show chassis alarms (Active Alarm to Indicate Status of the Bad SCB Clock on MX Series)

```
user@host> show chassis alarms
1 alarm currently active
Alarm time          Class Description
2013-08-06 07:48:35 PDT Major CB 0 19.44 MHz clock failure
```


show chassis alarms (Alarms active on a PTX1000 Packet Transport Router)

```
user@host> show chassis alarms
2 alarms currently active
Alarm time          Class  Description
2004-08-10 00:55:49 UTC  Major  PEM 1 Not Present
2004-08-10 00:55:49 UTC  Major  PEM 0 Not Present
```

show chassis alarms (MX10003 Router)

If LCMD is down on the backup RE, then the following alarm is seen on the primary.

```
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 primary, 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 primary, 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 primary just gained primary role. When the primary has just gained primary role, 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 alarms (ACX710 Router)

```

user@host> show chassis alarms
Alarm time          Class Description
2011-01-23 21:42:46 PST Major PTP Local Clock 00S
2011-01-23 21:42:46 PST Major PTP No Foreign Master
2011-01-23 21:42:46 PST Major Chassis Loss of all Equipment Clock Synch References
2011-01-23 21:42:46 PST Major Chassis Loss of Equipment Clock Synch Reference 1
2011-01-23 21:42:46 PST Major Chassis Loss of Equipment Clock Synch Reference 2
2011-01-23 21:42:46 PST Major Equipment Clock QL Below Threshold
2011-01-23 21:42:46 PST Major TOD Input A Signal Fail
2011-01-23 21:42:46 PST Major 1PPS lost
2011-01-23 21:42:46 PST Major SyncE Port incompatible Media Type

```

show chassis alarms (MX10008, MX10016, PTX10008, PTX10016, QFX10008,QFX10016) (Junos OS Release)

Starting Junos OS Evolved Release 21.2R1, if PEM or FET Failure detected, a major alarm is raised, and the identified PSM will shutdown or raise alarms as per predefined configuration in the `set chassis thermal-events fet-failure-check` command.

For FET failure detection and action, the `show chassis alarm` output displays a major alarm and information if PSM is shutdown.

For example, for the `show chassis` configuration:

```

user@root> show chassis thermal-health-check
{
    fet-failure-check;
}

```



```

        action-onfail auto-shutdown;
    }

```

The output is displayed as follows:

```
user@root> show chassis alarms
```

```

Alarm time          Class Description
2007-04-10 02:33:11 PDT Minor No Redundant Power for System
2007-04-10 02:33:08 PDT Minor PDU 1 PSM 4 Thermal Check brought it Down
2007-04-10 02:33:08 PDT Major PDU 1 PSM 4 Not OK
2007-04-10 02:33:08 PDT Minor PDU 0 PSM 4 Thermal Check brought it Down
2007-04-10 02:33:08 PDT Major PDU 0 PSM 4 Not OK
2007-04-10 02:32:03 PDT Minor PDU 1 PSM 3 Thermal Check brought it Down
2007-04-10 02:32:03 PDT Major PDU 1 PSM 3 Not OK
...
...

```

show chassis alarms (ACX7024)

On ACX7024 device, when edit chassis pem minimum is set to 1, The following output is displayed. The PSM absent alarm is removed only after a reboot:

```
user@root> show chassis alarms
```

```
4 alarms currently active
```

```

Alarm time          Class Description
2022-05-15 09:12:31 PDT Major No Redundant Power for System
2022-05-15 09:12:31 PDT Major PSM 1 Input1 Failed
2022-05-15 09:12:31 PDT Major PSM 1 Input Failed
2022-05-15 09:12:34 PDT Major PSM 0 Absent
2022-06-04 05:30:11 PDT Minor RE 0 Secure boot disabled or not enforced

```

When the default PSU 1+1 redundancy mode is active, the following output is displayed:

```
user@root> show chassis alarms
```

```
6 alarms currently active
```

```

Alarm time          Class Description
2022-05-15 09:12:31 PDT Major No Redundant Power for System

```



```

2022-05-15 09:12:31 PDT Major PSM 1 Input1 Failed
2022-05-15 09:12:31 PDT Major PSM 1 Input Failed
2022-06-04 05:30:19 PDT Major PSM 0 Absent
2022-06-04 05:30:11 PDT Minor RE 0 Secure boot disabled or not enforced
2022-06-04 05:31:54 PDT Major chassis No Redundant Power

```

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

satellite option introduced in Junos OS Release 14.2R3 for Junos Fusion.

Command introduced in Junos OS Release 18.2R1 for EX9253 Switches and MX10008 Universal Routing Platforms.

RELATED DOCUMENTATION

[Configuring an RMON Alarm Entry and Its Attributes](#)

[Chassis Conditions That Trigger Alarms](#)

show chassis cfeb

IN THIS SECTION

- [Syntax | 532](#)
- [Description | 532](#)
- [Options | 532](#)
- [Required Privilege Level | 532](#)
- [Output Fields | 532](#)
- [Sample Output | 533](#)
- [Release Information | 534](#)

Syntax

```
show chassis cfeb
```

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

Output Fields

[Table 38 on page 532](#) lists the output fields for the `show chassis cfeb` command. Output fields are listed in the approximate order in which they appear.

Table 38: 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. |

Table 38: show chassis cfeb Output Fields *(Continued)*

| Field Name | Field Description |
|------------------------------|---|
| 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). |
| 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 cfeb (M7i)

```
user@host> show chassis cfeb
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 cfeb (M10i)

```

user@host> show chassis cfeb
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

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[request chassis cfeb](#) | 424

Configuring CFEB Redundancy on the M10i Router

[CFEB Overview](#)

show chassis craft-interface

IN THIS SECTION

- [Syntax \(MX Series Routers\)](#) | 535
- [Syntax \(MX104, MX2010, MX2020, MX2008, and ACX Series routers.\)](#) | 536
- [Syntax \(TX Matrix Routers\)](#) | 536
- [Syntax \(TX Matrix Plus Routers\)](#) | 536
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- [Release Information](#) | 561

Syntax (MX Series Routers)

```
show chassis craft-interface  
<all-members>  
<local>  
<member member-id>
```


Syntax (MX104, MX2010, MX2020, MX2008, and ACX Series routers.)

```
show chassis craft-interface
```

Syntax (TX Matrix Routers)

```
show chassis craft-interface  
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis craft-interface  
<lcc number | sfc number>
```

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 primary 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

Output Fields

Table 39 on page 538 lists the output fields for the `show chassis craft-interface` command. Output fields are listed in the approximate order in which they appear.

Table 39: 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"> • <i>router-name</i>—Name of the router. • Up—How long the router has been operational, in days, hours, minutes, and seconds. • <i>message</i>—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 <code>set chassis display</code> 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> |

Table 39: show chassis craft-interface Output Fields (Continued)

| Field Name | Field Description |
|-----------------------------|---|
| Output Relay | Status of the configured output ports—0 or 1. The mode is normally open or closed. The status is clear or raised. |
| 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. |

Table 39: show chassis craft-interface Output Fields *(Continued)*

| Field Name | Field Description |
|-----------------|--|
| 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 * .

lcc0-re0:

FPM Display contents:

```
+-----+
|noname1          |
|1 Alarm active    |
|R: PEM 1 Not OK   |
|                  |
+-----+-----|
```

Front Panel System LEDs:

Routing Engine 0 1

OK * *

Fail . .

Master * .

Front Panel Alarm Indicators:

Red LED *

Yellow LED .

Major relay *

Minor relay .

Front Panel FPC LEDs:

| FPC | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------|---|---|---|---|---|---|---|---|
| ----- | | | | | | | | |
| Red | . | . | . | . | . | . | . | . |
| Green | . | * | . | * | * | . | . | * |

CB LEDs:

| CB | 0 | 1 |
|-------|---|---|
| ----- | | |
| Amber | . | . |
| Green | * | * |
| Blue | * | . |

SCG LEDs:

| SCG | 0 | 1 |
|-------|---|---|
| ----- | | |
| Amber | . | . |
| Green | * | * |
| Blue | * | . |

SIB LEDs:

| SIB | 0 | 1 | 2 | 3 | 4 |
|-------|---|---|---|---|---|
| ----- | | | | | |
| Red | . | . | . | . | . |
| Green | * | * | * | * | * |

lcc1-re0:

FPM Display contents:

| | |
|----------------------|--|
| +-----+ | |
| noname2 | |
| 2 Alarms active | |
| R: FPC 0 PIC 0 Failu | |
| R: PEM 1 Not OK | |
| +----- | |

Front Panel System LEDs:

| Routing Engine | 0 | 1 |
|----------------|---|---|
| ----- | | |
| OK | * | * |
| Fail | . | . |
| Master | * | . |


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

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

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

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

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

show chassis craft-interface (TX Matrix Plus router with 3D SIBs)

```
user@host> show chassis craft-interface
sfc0-re0:
-----
FPM Display Contents:
+-----+
|noname      |
```



```
|48 Alarms active |
|R: LCC 2 Major Error|
|R: LCC 0 Major Error|
+-----+
```

SFC Front Panel Switch Settings:

SFC Chassis Number : 00

Config Size : 3

Front Panel System LEDs:

Routing Engine 0 1

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

Front Panel Alarm Indicators:

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

Front Panel F13 SIB LEDs:

SIB 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

```
Fail . . . . . . . . . . . . . . . .
OK   * . . * . . * . . . . . . . . . .
Active * . . * . . * . . . . . . . . . .
```

PS LEDs:

PS 0 1

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

Fan Tray LEDs:

FT 0 1 2 3 4 5

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

CB LEDs:


```

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

lcc0-re0:
-----

FPM Display contents:
+-----+
|noname1          |
|14 Alarms active  |
|R: PEM 1 Not OK   |
|R: FPC 7 misconfig |
+-----+

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

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

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

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



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

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

show chassis craft-interface (ACX2000 Universal Metro Router)

```
user@host> show chassis craft-interface
Front Panel System LEDs:
Routing Engine
-----
OK                *
Fail              .

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

Input relay:
-----
Port   Mode   Status
0      Open   Clear
1      Open   Clear
2      Open   Clear
3      Open   Clear

Output relay:
-----
Port   Mode   Status
0      Open   Clear
```



```
1      Open      Clear
```

PS Status:

```
PS    0    1
```

```
Red    .    .
```

```
Green  *    *
```

show chassis craft-interface (ACX500 Router)

```
user@host> show chassis craft-interface
```

Front Panel System LEDs:

Routing Engine

```
OK                *
```

```
Fail              .
```

Front Panel Alarm Indicators:

```
Red LED          .
```

```
Yellow LED       .
```

```
Major relay      .
```

```
Minor relay      .
```

Input relay:

| Port | Mode | Status |
|------|------|--------|
|------|------|--------|

| | | |
|---|------|-------|
| 0 | Open | Clear |
|---|------|-------|

| | | |
|---|------|-------|
| 1 | Open | Clear |
|---|------|-------|

| | | |
|---|------|-------|
| 2 | Open | Clear |
|---|------|-------|

| | | |
|---|------|-------|
| 3 | Open | Clear |
|---|------|-------|

Output relay:

| Port | Mode | Status |
|------|------|--------|
|------|------|--------|

| | | |
|---|------|-------|
| 0 | Open | Clear |
|---|------|-------|

| | | |
|---|------|-------|
| 1 | Open | Clear |
|---|------|-------|

PS Status:

```
PS    0    1
```



```

-----
Red      .      .
Green   *      *

```

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.

RELATED DOCUMENTATION

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show chassis pic

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Syntax

```
show chassis pic fpc-slot slot-number pic-slot slot-number
```

Syntax (TX Matrix and TX Matrix Plus Routers)

```
show chassis pic fpc-slot slot-number pic-slot slot-number  
<lcc number>
```

Syntax (MX Series Routers and EX Series Switches)

```
show chassis pic fpc-slot slot-number pic-slot slot-number  
<all-members>  
<local>  
<member member-id>
```

Syntax (PTX Series Packet Transport Router and MX240, MX480, MX960, MX2010, and MX2020 Routers)

```
show chassis pic transport fpc-slot slot-number pic-slot slot-number
```


Syntax (QFX Series)

```
show chassis pic fpc-slot slot-number pic-slot slot-number
<interconnect-device name (fpc-slot slot-number | pic-slot slot-number)>
<node-device name pic-slot slot-number>
```

Syntax (ACX500, ACX5048, ACX5096, and ACX7509 Routers)

```
show chassis pic
(fpc-slot slot-number | pic-slot slot-number)
```

Description

Display status information about the PIC installed in the specified Flexible PIC Concentrator (FPC) and PIC slot.

Options

fpc-slot *slot-number*

Display information about the PIC in this particular FPC slot:

- 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 router by using the `lcc number` option (the recommended method), replace *slot-*

number with a value from 0 through 7. Otherwise, replace *slot-number* with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis pic fpc-slot 1 lcc 1 pic-slot 1
user@host> show chassis pic fpc-slot 9 pic-slot 1
```

- M120 routers only—Replace *slot-number* 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 <i>name</i> | (QFabric systems only) (Optional) Display PIC information for a specified Interconnect device. |
| lcc <i>number</i> | <p>(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.</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 and EX Series switches only) (Optional) Display PIC information for the local Virtual Chassis member. |
| member <i>member-id</i> | (MX Series routers and EX Series switches only) (Optional) Display PIC information for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| node-device <i>name</i> | (QFabric systems only) (Optional) Display PIC information for a specified Node device. |
| pic-slot <i>slot-number</i> | Display information about the PIC in this particular PIC slot. For routers, replace <i>slot-number</i> 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

Output Fields

No Link Title lists the output fields for the `show chassis pic` command. Output fields are listed in the approximate order in which they appear.

Table 40: 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-10C192-XFP. By default, the 1-port OC192/STM64 MICs displays the type as MIC-3D-10C192-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. |

Table 40: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|-------------|--|
| 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. |
| Package | <p>(Multiservices interfaces cards only)</p> <p>The following services package are supported:</p> <ul style="list-style-type: none"> • Layer-2 (not applicable to the MS-MPC and MS-MIC.) • Layer-3 (not applicable to the MS-MPC and MS-MIC.) • extension-provider (PICs of MS-MPC and MS-MIC support only this package.) |
| Port Number | Port number for the PIC. |
| Cable Type | Type of cable connected to the port: LH, LX, or SX. |

Table 40: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|--|---|
| PIC Port Information (MX480 Router 100-Gigabit Ethernet CFP) | <p>Port-level information for the PIC.</p> <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) | <p>Port-level information for the PIC.</p> <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. |

Table 40: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|--|---|
| PIC Port Information (Next-Generation SONET/SDH SFP) | <p>Port-level information for the next-generation SONET/SDH SFP PIC.</p> <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. |
| PIC port information (MX104 router) | <p>Port-level information for the PIC.</p> <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. |
| MSA Version | <p>Multi-source Agreements (MSA) specification version that the specified optics is compliant to. Values supported are:</p> <ul style="list-style-type: none"> • SFP+/SFP28—SFF 8472 (Versions 9.3 through 12.3) • QSFP+/QSFP28—SFF 8363 (Versions 1.3 through 2.10) • QSFP-DD—CMIS (Versions 3.0, 4.0, and 5.0) |

Table 40: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|------------------------|--|
| 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 Number | Cable Type | Xcvr Vendor Name | Xcvr Vendor 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:
  Port Cable type      Fiber type  Xcvr vendor      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 (MX960 Router with Bidirectional Optics)

```
user@host> show chassis pic fpc-slot 4 pic-slot 1
FPC slot 4, PIC slot 1 information:
  Type                10x 1GE(LAN)
  Account Layer2 Overhead Enabled
  State               Online
  PIC version         0.0
  Uptime              18 days, 5 hours, 41 minutes, 54 seconds

PIC port information:
  Port Cable type      Fiber type  Xcvr vendor      Xcvr vendor      Wavelength
  Port Cable type      type   Xcvr vendor      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 | OCF | TRXBG1LXDBBMH-J1 | 1310 nm |
| 8 | SFP-1000BASE-BX10-U SM | OCF | 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:
  Fiber                Xcvr vendor
  Port Cable type      type Xcvr vendor      part number      Wavelength
  0    100GBASE LR4    SM  FINISAR CORP.    FTLC1181RDN5-J3  1310 nm

  Xcvr vendor
  firmware version
  1.8

```

show chassis pic fpc-slot pic-slot (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```

user@host> show chassis pic fpc-slot 1 pic-slot 2
FPC slot 1, PIC slot 2 information:
  Type                AS-MXC
  State                Online
  PIC version          1.0
  Uptime               11 hours, 18 minutes, 3 seconds

```

show chassis pic fpc-slot pic-slot (MX960 Router with MPC5EQ)

```

user@host> show chassis pic fpc-slot 0 pic-slot 3
FPC slot 0, PIC slot 3 information:
  Type                1X100GE CFP2 OTN
  State                Online

```



```
PIC version          0.0
Uptime               1 hour, 22 minutes, 42 seconds
```

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware |
|------|------------|------------|-------------|------------------|-------------------------|---------------|
| 0 | 100G LH | SM | OCLARO | TRB100AJ-01 | 1528.77 nm - 1568.36 nm | 20.10 |

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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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 (PTX1000 and PTX10000)

```
user@host > show chassis pic fpc-slot 0 pic-slot 0
```

FPC slot 0, PIC slot 0 information:

| | |
|-------------|--|
| Type | 288X10GE/72X40GE/24X100GE |
| State | Online |
| PIC version | 1.18 |
| Uptime | 9 day, 5 hours, 10 minutes, 56 seconds |

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware |
|------|--------------|------------|----------------|------------------|-------------|---------------|
| 13 | 100GBASE LR4 | SM | JUNIPER-SOURCE | SPQCELRCD FBJ2 | 1302 nm | 0.0 |
| 25 | 100GBASE LR4 | SM | JUNIPER-SOURCE | SPQCELRCD FAJ2 | 1302 nm | 0.0 |
| 36 | 40GBASE LR4 | SM | FINISAR CORP. | FTL4C1QE1C-J1 | 1301 nm | 0.0 |
| 37 | 40GBASE LR4 | SM | FINISAR CORP. | FTL4C1QE1C-J1 | 1301 nm | 0.0 |
| 54 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |

Port speed information:

| Port | PFE | Capable Port Speeds |
|------|-----|---------------------|
| 0 | | 4x10GE, 40GE |
| 1 | | 4x10GE, 40GE, 100GE |
| 2 | | 4x10GE, 40GE |
| 3 | | 4x10GE, 40GE |
| 4 | | 4x10GE, 40GE |

| | |
|----|---------------------|
| 5 | 4x10GE, 40GE, 100GE |
| 6 | 4x10GE, 40GE |
| 7 | 4x10GE, 40GE, 100GE |
| 8 | 4x10GE, 40GE |
| 9 | 4x10GE, 40GE |
| 10 | 4x10GE, 40GE |
| 11 | 4x10GE, 40GE, 100GE |
| 12 | 4x10GE, 40GE |
| 13 | 4x10GE, 40GE, 100GE |
| 14 | 4x10GE, 40GE |
| 15 | 4x10GE, 40GE |
| 16 | 4x10GE, 40GE |
| 17 | 4x10GE, 40GE, 100GE |
| 18 | 4x10GE, 40GE |
| 19 | 4x10GE, 40GE, 100GE |
| 20 | 4x10GE, 40GE |
| 21 | 4x10GE, 40GE |
| 22 | 4x10GE, 40GE |
| 23 | 4x10GE, 40GE, 100GE |
| 24 | 4x10GE, 40GE |
| 25 | 4x10GE, 40GE, 100GE |
| 26 | 4x10GE, 40GE |
| 27 | 4x10GE, 40GE |
| 28 | 4x10GE, 40GE |
| 29 | 4x10GE, 40GE, 100GE |
| 30 | 4x10GE, 40GE |
| 31 | 4x10GE, 40GE, 100GE |
| 32 | 4x10GE, 40GE |
| 33 | 4x10GE, 40GE |
| 34 | 4x10GE, 40GE |
| 35 | 4x10GE, 40GE, 100GE |
| 36 | 4x10GE, 40GE |
| 37 | 4x10GE, 40GE, 100GE |
| 38 | 4x10GE, 40GE |
| 39 | 4x10GE, 40GE |
| 40 | 4x10GE, 40GE |
| 41 | 4x10GE, 40GE, 100GE |
| 42 | 4x10GE, 40GE |
| 43 | 4x10GE, 40GE, 100GE |
| 44 | 4x10GE, 40GE |
| 45 | 4x10GE, 40GE |
| 46 | 4x10GE, 40GE |
| 47 | 4x10GE, 40GE, 100GE |


```

48          4x10GE, 40GE
49          4x10GE, 40GE, 100GE
50          4x10GE, 40GE
51          4x10GE, 40GE
52          4x10GE, 40GE
53          4x10GE, 40GE, 100GE
54          4x10GE, 40GE
55          4x10GE, 40GE, 100GE
56          4x10GE, 40GE
57          4x10GE, 40GE
58          4x10GE, 40GE
59          4x10GE, 40GE, 100GE
60          4x10GE, 40GE
61          4x10GE, 40GE, 100GE
62          4x10GE, 40GE
63          4x10GE, 40GE
64          4x10GE, 40GE
65          4x10GE, 40GE, 100GE
66          4x10GE, 40GE
67          4x10GE, 40GE, 100GE
68          4x10GE, 40GE
69          4x10GE, 40GE
70          4x10GE, 40GE

```

show chassis pic fpc-slot pic-slot (MSA Version)

```
user@host > show chassis pic fpc-slot pic-slot
```

```
..
```

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware | JNPR Rev | MSA Version |
|------|-----------------|------------|-----------------|------------------|-------------|---------------|----------|-------------------|
| 0 | 2x100GBASE-SR4 | MM | JUNIPER-1X1 | 740-084673 | 850 nm | 6.0 | REV 01 | CMIS 3.0 |
| 1 | 2x100GBASE-SR4 | MM | JUNIPER-1X1 | 740-084673 | 850 nm | 6.0 | REV 01 | CMIS 3.0 |
| 3 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 | REV 01 | SFF-8472 ver 10.2 |
| 4 | 100GBASE SR4 T2 | MM | JUNIPER-FINISAR | FTLC9551REPM-J1 | 850 nm | 0.0 | REV 01 | SFF-8636 ver 2.7 |

show chassis pic fpc-slot pic-slot (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

```

user@host > show chassis pic fpc-slot 4 pic-slot 0
FPC slot 4, PIC slot 0 information:
  Type                5X100GE DWDM CFP2-ACO
  State                Online
  PIC version          1.17
  Uptime               1 day, 5 hours, 15 minutes, 17 seconds

PIC port information:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware |
|------|------------|------------|-----------------|------------------|-------------------------|---------------|
| 0 | 100G LH | SM | MULTILANE SAL | ML4030-ACO-2 | 1528.77 nm - 1568.36 nm | |
| 1.0 | | | | | | |
| 1 | 100G LH | SM | MULTILANE SAL | ML4030-ACO-2 | 1528.77 nm - 1568.36 nm | |
| 1.0 | | | | | | |
| 2 | 100G LH | SM | JUNIPER-FUJITSU | FIM38500/222 | 1528.77 nm - 1568.36 nm | |
| 1.16 | | | | | | |
| 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:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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 | OPNEX, 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:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wave-length | Xcvr 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 QSFPP
  State               Online
  PIC version         0.0
  Uptime              6 minutes, 31 seconds

```

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wave-length | Xcvr 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:
```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:
```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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      Xcvr vendor      Wavelength
  0      100GBASE LR4    SM        Opnext Inc.      TRC5E20ENFSF000F  1310 nm
```

show chassis pic fpc-slot pic-slot lcc (TX Matrix Router)

```
user@host> show chassis pic fpc-slot 1 pic-slot 1 lcc 0
lcc0-re0:
-----
PIC fpc slot 1 pic slot 1 information:
  Type                4x OC-3 SONET, SMIR
  ASIC type           D chip
  State               Online
  PIC version          1.2
  Uptime              5 days, 2 hours, 12 minutes, 8 seconds
```


show chassis pic fpc-slot pic-slot lcc (TX Matrix Plus Router)

```

user@host> show chassis pic pic-slot 0 fpc-slot 8
lcc0-re0:
-----
FPC slot 8, PIC slot 0 information:
  Type                1x 10GE(LAN/WAN)
  State                Online
  Uptime               2 hours, 46 minutes, 23 seconds

PIC port information:

```

| Port | Cable type | Fiber type | Xcvr vendor | part number | Wavelength |
|------|------------|------------|---------------|-----------------|------------|
| 0 | 10GBASE ZR | SM | Opnext Inc. | TRF7061BN-LF150 | 1550 nm |
| 0 | 10GBASE ZR | SM | FINISAR CORP. | FTRX-1811-3-J2 | 1550 nm |

show chassis pic fpc-slot pic-slot (Next-Generation SONET/SDH SFP)

```

user@host> show chassis pic fpc-slot 4 pic-slot 0
FPC slot 4, PIC slot 0 information:
  Type                4x OC-3 1x OC-12 SFP
  ASIC type            D FPGA
  State                Online
  PIC version          1.3
  Uptime               1 day, 50 minutes, 4 seconds

PIC port information:

```

| Port | Cable type | Fiber type | Xcvr vendor | part number | Wavelength |
|------|------------------|------------|---------------|------------------|------------|
| 0 | OC48 short reach | SM | FINISAR CORP. | FTRJ1321P1BTL-J2 | 1310 nm |
| 1 | OC3 short reach | MM | OCP | TRPA03MM3BAS-JE | 1310 nm |
| 2 | OC3 short reach | MM | OCP | 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 part number | Wavelength |
|------|-----------------|------------|-------------|------------------|------------|
| 0 | OC3 short reach | MM | AVAGO | HFBR-57E0P-JU2 | n/a |
| 1 | OC3 short reach | MM | AVAGO | HFBR-57E0P-JU2 | n/a |
| 3 | OC3 long reach | SM | OPNEXT INC | TRF5456AVLB314 | 1310 nm |

show chassis pic fpc-slot 0 pic-slot 0 (SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```

user@host> show chassis pic fpc-slot 0 pic-slot 0
FPC slot 0, PIC slot 0 information:
  Type                               MIC-3D-80C30C12-40C48
  State                              Online
  PIC version                         1.8
  Uptime                              3 days, 22 hours, 3 minutes, 50 seconds

```


PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wavelength |
|------|------------------|------------|--------------|-------------------------|------------|
| 1 | OC12 inter reach | SM | FINISAR CORP | FTRJ1322P1BTR-J3 | 1310 nm |
| 7 | OC12 inter reach | SM | FINISAR CORP | FTRJ1322P1BTR-J3 | 1310 nm |

Multirate Mode Enabled

show chassis pic fpc-slot 3 pic-slot 0 (8-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```
user@host> show chassis pic fpc-slot 3 pic-slot 0
```

FPC slot 3, PIC slot 0 information:

| | |
|-------------|--------------------------------|
| Type | MIC-3D-8CHOC3-4CHOC12 |
| State | Online |
| PIC version | 1.9 |
| Uptime | 1 hour, 21 minutes, 24 seconds |

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wavelength |
|------|------------------|------------|---------------|-------------------------|------------|
| 0 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 1 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 2 | OC12 inter reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J2 | 1310 nm |
| 4 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 5 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 6 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 7 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |

show chassis pic fpc-slot 5 pic-slot 0 (4-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```
user@host> show chassis pic fpc-slot 5 pic-slot 0
```

FPC slot 5, PIC slot 0 information:

| | |
|-------------|-----------------------|
| Type | MIC-3D-4CHOC3-2CHOC12 |
| State | Online |
| PIC version | 1.9 |
| Uptime | 1 hour, 21 minutes |

PIC port information:

| Port | Cable type | Fiber | | Xcvr vendor | | Wavelength |
|------|------------------|-------|---------------|------------------|--|------------|
| | | type | Xcvr vendor | part number | | |
| 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 | | Wavelength |
|------|-------------------|-------|---------------|------------------|--|------------|
| | | type | Xcvr vendor | part number | | |
| 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+ Builtin
State               Online
Uptime              2 hours, 52 minutes, 37 seconds

PIC port information:
```


| Port | Cable type | Fiber | | Xcvr vendor | | Wavelength |
|------|------------|-------|------------------|--------------|--------|------------|
| | | type | Xcvr vendor | part number | | |
| 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 Builtin
  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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware |
|------|-------------|------------|---------------|------------------|-------------|---------------|
| 0 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 10 | GIGE 1000SX | MM | FINISAR CORP. | FTLF8519P3BNL-J1 | 850 nm | 0.0 |
| 14 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 20 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm | 0.0 |
| 30 | GIGE 1000SX | MM | FINISAR CORP. | FTLF8519P2BNL-J1 | 850 nm | 0.0 |
| 41 | 10GBASE SR | MM | OPNEXT, INC. | TRS2001EN-0014 | 850 nm | 0.0 |
| 46 | GIGE 1000SX | MM | FINISAR CORP. | FTLF8519P2BNL-J1 | 850 nm | 0.0 |
| 64 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 |
| 78 | GIGE 1000SX | MM | AVAGO | AFBR-5715PZ-JU2 | 850 nm | 0.0 |
| 96 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |
| 99 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |
| 100 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |

show chassis pic fpc-slot 0 pic-slot 0 (ACX500 Router)

```
user@host> show chassis pic fpc-slot 0 pic-slot 0
```

FPC slot 0, PIC slot 0 information:

| | |
|--------|----------------------------------|
| Type | 2x 1GE(LAN) SFP Builtin |
| State | Online |
| Uptime | 17 hours, 54 minutes, 45 seconds |

show chassis pic fpc-slot 0 pic-slot 1 (ACX500 Router)

```

user@host> show chassis pic fpc-slot 0 pic-slot 1
FPC slot 0, PIC slot 1 information:
  Type                4x 1GE(LAN) RJ45, SFP Built-in
  State                Online
  Uptime               17 hours, 54 minutes, 45 seconds

```

show chassis pic transport fpc-slot pic-slot (PTX Series Packet Transport Routers)

```

user@host> show chassis pic transport fpc-slot 2 pic-slot 0
Administrative State:    In Service
Operational State:      Normal

```

show chassis pic transport fpc-slot pic-slot (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```

user@host> show chassis pic transport fpc-slot 3 pic-slot 0
Administrative State:    In Service
Operational State:      Normal

```

show chassis pic fpc-slot 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-5xQSFP
  State                Online
  PIC version          0.0
  Uptime               3 hours, 33 minutes, 21 seconds

PIC port information:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware | JNPR Rev |
|------|--------------|------------|-----------------|------------------|-------------|---------------|----------|
| 0 | 100GBASE LR4 | SM | JUNIPER-FINISAR | FTLC1151RDPL-J3 | 1302 nm | 0.0 | REV 01 |

```

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 pic fpc-slot 0 pic-slot 1 (PTX10001-36MR) (400G ZR and 400G ZR-M optics)

```
user@router> show chassis pic fpc-slot 0 pic-slot 1
```

FPC slot 0, PIC slot 1 information:

```
Type                8X400GE-MR + 4X100GE-MR
State                Online
PIC version          255.09
Uptime               2 hours, 37 minutes, 52 seconds
```

PIC port information:

| Xcvr | JNPR | Fiber MSA | Xcvr vendor | Wave- | |
|----------|-----------------|-----------|------------------|------------------|-------------------------|
| Port | Cable type | type | Xcvr vendor | part number | length |
| Firmware | Rev | Version | | | |
| 0 | 40GBASE SR4 | MM | FINISAR CORP | FTL410QE3C-J1 | 850 nm |
| 0.0 | REV 01 | | | | |
| 1 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQPZ-JU1 | 850 nm |
| 0.0 | REV 01 | | | | |
| 2 | 400G-ZR | SM | Acacia Comm Inc. | DP04QSDD-E20-00B | 1528.77 nm - 1568.77 nm |
| 161.20 | XXXX | | | | |
| 4 | 100GBASE SR4 T2 | MM | JUNIPER-AVAGO | AFBR-89CDDZ-JU1 | 850 nm |
| 0.0 | REV 01 | | | | |
| 10 | 400G-ZR-M | SM | JUNIPER-1T1 | 740-131169 | 1528.77 nm - 1568.77 nm |
| 61.20 | REV 01 | | | | |

Port speed information:

| Port | PFE | Capable Port Speeds |
|------|-----|---|
| 0 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 1 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 2 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G |


```

1x400G
 3      1      1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G
1x400G
 4      1      1x10G 4x10G 1x40G 4x25G 1x100G
 5      1      1x10G 1x100G
 6      1      1x10G 4x10G 1x40G 4x25G 1x100G
 7      1      1x10G 1x100G
 8      1      1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G
1x400G
 9      1      1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G
1x400G
10      1      1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G
1x400G
11      1      1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G
1x400G

```

show chassis pic fpc-slot 7 pic-slot 0 (ACX7509-FPC-20Y)

```

user@router> show chassis pic fpc-slot 7 pic-slot 0
FPC slot 7, PIC slot 0 information:
  Type                20x1/10/25/50-SFP56
  State                Online
  PIC version          255.09
  Uptime                2 minutes, 16 seconds
PIC port information:

```

| Xcvr | JNPR | Fiber | Xcvr vendor | Wave- |
|----------|--------------------------|-------------------|------------------------------|--------|
| Port | Cable type | MSA type | part number | length |
| Firmware | Rev | Version | | |
| 2 | 10GBASE SR | MM AVAGO | AFBR-709ASMZ-JU3 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 10.2 | | |
| 3 | 10GBASE SR | MM AVAGO | AFBR-709ASMZ-JU3 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 10.2 | | |
| 4 | 10GBASE SR | MM OPNEXT, INC. | TRS2001EM-0014 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 10.2 | | |
| 5 | 10GBASE SR | MM FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 10.2 | | |
| 6 | SFP28-END 100G-4x25G DAC | BO 1M n/a | JUNIPER-AMPHENOL NDAQGF-J101 | n/a |
| 0.0 | REV 01 | SFF-8472 ver n/a | | |
| 7 | SFP28-END 100G-4x25G DAC | BO 1M n/a | JUNIPER-AMPHENOL NDAQGF-J101 | n/a |
| 0.0 | REV 01 | SFF-8472 ver n/a | | |

| | | | |
|-----|------------------------------------|-------------------------------|---------|
| 8 | SFP28-END 100G-4x25G DAC BO 1M n/a | JUNIPER-AMPHENOL NDAQGF-J101 | n/a |
| 0.0 | REV 01 SFF-8472 ver n/a | | |
| 9 | SFP28-END 100G-4x25G DAC BO 1M n/a | JUNIPER-AMPHENOL NDAQGF-J101 | n/a |
| 0.0 | REV 01 SFF-8472 ver n/a | | |
| 10 | GIGE 1000EX n/a | SOURCEPHOTONICS SPGBEXIDFCJNP | 1310 nm |
| 0.0 | REV 01 SFF-8472 ver 9.5 | | |
| 11 | SFP28-25G-BASE-SR SM JUNIPER-1A1 | 1A131A | 850 nm |
| 0.0 | REV 01 SFF-8472 ver 12.3 | | |
| 12 | SFP28-25G-BASE-SR SM JUNIPER-1A1 | 1A131A | 850 nm |
| 0.0 | REV 01 SFF-8472 ver 12.3 | | |
| 13 | SFP28-25G-BASE-SR SM JUNIPER-1A1 | 1A131A | 850 nm |
| 0.0 | REV 01 SFF-8472 ver 12.3 | | |
| 14 | SFP28-25G-BASE-SR SM JUNIPER-1A1 | 1A131A | 850 nm |
| 0.0 | REV 01 SFF-8472 ver 12.3 | | |
| 15 | SFP28-25G-BASE-SR SM JUNIPER-1A1 | 1A131A | 850 nm |
| 0.0 | REV 01 SFF-8472 ver 12.3 | | |
| 16 | GIGE 1000SX n/a | AVAGO AFBR-5715PZ-JU3 | 850 nm |
| 0.0 | REV 01 SFF-8472 ver 9.3 | | |
| 18 | 10GBASE CU 1M n/a | Amphenol 584990001 | n/a |
| 0.0 | REV 01 SFF-8472 ver n/a | | |
| 19 | 10GBASE CU 1M n/a | Amphenol 584990001 | n/a |
| 0.0 | REV 01 SFF-8472 ver n/a | | |

Port speed information:

| Port | PFE | Capable Port Speeds |
|------|-----|---------------------|
| 0 | 1 | 1x1G 1x10G 1x25G |
| 1 | 1 | 1x1G 1x10G 1x25G |
| 2 | 1 | 1x1G 1x10G 1x25G |
| 3 | 1 | 1x1G 1x10G 1x25G |
| 4 | 1 | 1x1G 1x10G 1x25G |
| 5 | 1 | 1x1G 1x10G 1x25G |
| 6 | 1 | 1x1G 1x10G 1x25G |
| 7 | 1 | 1x1G 1x10G 1x25G |
| 8 | 1 | 1x1G 1x10G 1x25G |
| 9 | 1 | 1x1G 1x10G 1x25G |
| 10 | 1 | 1x1G 1x10G 1x25G |
| 11 | 1 | 1x1G 1x10G 1x25G |
| 12 | 1 | 1x1G 1x10G 1x25G |
| 13 | 1 | 1x1G 1x10G 1x25G |
| 14 | 1 | 1x1G 1x10G 1x25G |
| 15 | 1 | 1x1G 1x10G 1x25G |
| 16 | 1 | 1x1G 1x10G 1x25G |
| 17 | 1 | 1x1G 1x10G 1x25G |
| 18 | 1 | 1x1G 1x10G 1x25G |


```
19      1      1x1G 1x10G 1x25G
{master}
```

show chassis pic fpc-slot 0 pic-slot 0 (ACX7509-FPC-16C)

```
user@router> show chassis pic fpc-slot 0 pic-slot 0
Port speed information:
  Port  PFE      Capable Port Speeds
  0      0      1x40G 1x100G 4x25G 4x10G
  1      0      1x40G 1x100G 4x25G 4x10G
  4      0      1x40G 1x100G 4x25G 4x10G
  5      0      1x40G 1x100G 4x25G 4x10G
  8      0      1x40G 1x100G 4x25G 4x10G
  9      0      1x40G 1x100G 4x25G 4x10G
  12     0      1x40G 1x100G 4x25G 4x10G
  13     0      1x40G 1x100G 4x25G 4x10G
```

show chassis pic fpc-slot 0 pic-slot 0 (ACX7509-FPC-4CD)

```
user@router> show chassis pic fpc-slot 0 pic-slot 0
Port speed information:
  Port  PFE      Capable Port Speeds
  0      1      1x400G 4x100G 8x50G
  1      1      1x400G 4x100G 8x50G
  2      1      1x400G 4x100G 8x50G
  3      1      1x400G 4x100G 8x50G
```

Release Information

Command introduced before Junos OS Release 7.4.

transport option introduced in Junos OS Release 16.1R1 for MX Series Routers.

RELATED DOCUMENTATION

[request chassis pic](#)

show chassis hardware

100-Gigabit Ethernet Type 4 PIC with CFP Overview

show chassis environment

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Syntax (T320, T640, T1600, and T4000 Routers)

```
show chassis environment
<cb cb-slot-number>
<feb feb-slot-number>
<fpc fpc-slot-number>
<fpm>
<pem pem-slot-number>
<routing-engine re-slot-number>
<scg scg-slot-number>
<sib sib-slot-number>
```

Syntax (TX Matrix Routers)

```
show chassis environment
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis environment
<cb cb-slot-number>
<cip cip-slot-number>
<fpc fpc-slot-number>
<fpm>
<lcc number>
<pem pem-slot-number>
<routing-engine re-slot-number>
<scg scg-slot-number>
<sfc number>
<sib sib-slot-number>
```


Syntax (MX Series Routers)

```
show chassis environment  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX104 Universal Routing Platforms)

```
show chassis environment  
<cb>  
<pem pem-slot-number>  
<routing-engine re-slot-number>
```

Syntax (MX150 Router Appliance)

```
show chassis environment  
<pem pem-slot-number>  
<routing-engine re-slot-number>
```

Syntax (MX2010, MX2020, and MX2008 Universal Routing Platforms)

```
show chassis environment  
<adc adc-slot-number>  
<all-members>  
<cb cb-slot-number>  
<fan fantray-slot-number>  
<fpc fpc-slot-number>  
<fpm>  
<local>  
<member member-id>
```



```

<monitored>
<psm psm-slot-number>
<routing-engine re-slot-number>
<sfb sfb-slot-number>
<satellite [fpc-slot slot-id |device-alias alias-name]>

```

Syntax (MX10003 and MX204 Universal Routing Platforms)

```

show chassis environment
<cb cb-slot-number>
<fpc fpc-slot-number>
<pem pem-slot-number>
<routing-engine re-slot-number>

```

Syntax (EX8200 Switches)

```

show chassis environment
<all-members>
<cb cb-slot-number>
<fpc fpc-slot-number>
<local>
<member member-id>
<psu psu-slot-number>
<routing-engine re-slot-number>

```

Syntax (EX Series Switches except EX8200)

```

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]>
```

Syntax (QFX Series)

```
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>>
```

Syntax (OCX Series)

```
show chassis environment
```

Syntax (PTX Series Packet Transport Routers)

```
show chassis environment
<cb cb-slot-number>
<ccg ccg-slot-number >
<fpc fpc-slot-number>
<fpm>
<monitored>
<pdu pdu-slot-number>
<routing-engine re-slot-number>
<sib sib-slot-number>
```


Syntax (ACX Series Universal Metro Routers, ACX7509)

```
show chassis environment  
<cb cb-slot-number>  
<feb feb-slot-number>  
<pem pem-slot-number>  
<routing-engine re-slot-number>
```

Syntax (ACX5048 and ACX5096 Routers)

```
show chassis environment  
<fpc slot-number>  
<pem>  
<routing-engine>
```

Syntax (ACX500 Routers)

```
show chassis environment  
<cb cb-slot-number>  
<routing-engine re-slot-number>
```

Syntax (Junos OS Evolved)

```
show chassis environment  
<cb cb-slot-number>  
<fan fan-slot-number>  
<fpc fpc-slot-number>  
<fpm>  
<monitored>  
<psm psm-slot-number>
```



```
<routing-engine routing-engine-slot-number>
<sib sib-slot-number>
```

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-P1A) 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 <i>adc-slot-number</i> | (MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the adapter cards. For MX2020 routers, replace <i>adc-slot-number</i> with a value from 0 through 19. For MX2010 and MX2008 routers, replace <i>adc-slot-number</i> with a value from 0 through 9. |
| cb <i>cb-slot-number</i> | (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 <i>cb-slot</i> with 0 or 1. |
| feb <i>feb-slot-number</i> | (ACX Series Universal Metro Routers, ACX7509 routers only) (Optional) Display chassis environmental information for the FEB. |
| cip <i>cip-slot-number</i> | (TX Matrix Plus routers only) (Optional) Display chassis environmental information for the Connection Interface Panel (CIP). Replace the <i>cip-slot-number</i> variable with a value of 0 or 1. |
| cb <i>interconnect-device name</i> | (QFabric systems only) (Optional) Display chassis environmental information for the Control Board on an Interconnect device. |
| ccg <i>ccg-slot-number</i> | (PTX Series only) (Optional) Display chassis environmental information for the Centralized Clock Generator. Replace <i>cb-slot</i> with a value of 0 or 1. |
| fan <i>fantray-slot-number</i> | (MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the fan trays. Replace <i>fantray-slot-number</i> with a value from 0 through 3. |
| fpc <i>fpc-slot</i> | (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 <i>fpc-slot</i> with a value from 0 through 9. For MX2020 routers, replace <i>fpc-slot</i> with a value from 0 through 19. For information about FPC numbering, see "show chassis environment fpc" on page 787 . 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 <i>fpc-slot</i> 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 <i>name</i> | (QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device. |
| lcc <i>number</i> | (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 <i>member-id</i> | (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 <i>member-id</i> with a value of 0 or 1. For EX Series switches, see <i>member</i> 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 <i>name</i> | (QFabric systems only) (Optional) Display chassis environmental information for the Node device. |
| pdu <i>pdu-slot-number</i> | (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 <i>pem-slot-number</i> | (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" on page 925 . |
| psm <i>psm-slot-number</i> | (MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the 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. |
| psu <i>psu-slot-number</i> | (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. For QFX5700 with Junos OS Evolved, details about CPU and memory utilization are also displayed for RCB slot 0 and slot 1. |
| routing-engine <i>re-slot-number</i> | (Optional) Display chassis environmental information for the specified Routing Engine. For information about the options, see "show chassis environment routing-engine" on page 963 . |
| satellite [<i>fpc-slot slot-id</i> <i>device-alias alias-name</i>] | (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 <i>sfb-slot-number</i> | (MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis environmental information for the switch fabric board. Replace <i>sfb-slot-number</i> with a value from 0 through 7. |
| sfc <i>number</i> | (TX Matrix Plus routers only) (Optional) Display chassis environmental information about the respective TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> variable with 0. |
| sib <i>sib-slot-number</i> | (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

Output Fields

[Table 41 on page 610](#) lists the output fields for the `show chassis environment` command. Output fields are listed in the approximate order in which they appear.

Table 41: 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. <p>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).</p> • 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. |

Table 41: show chassis environment Output Fields *(Continued)*

| Field Name | Field Description |
|------------|--|
| | <ul style="list-style-type: none"> 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 41: show chassis environment Output Fields (Continued)

| Field Name | Field Description |
|-------------|--|
| Status | <p>(MX104, MX2010, MX2020, and MX2008 Routers) Status of the specified chassis component. For example, if the Class is Fan, the fan status can be:</p> <ul style="list-style-type: none"> • OK: The fans are operational. • Testing: The fans are being tested during initial power-on. • Failed: The fans have failed or the fans are not spinning. • Absent: The fan tray is not installed. <p>If the Class is Power, the power supply status can be:</p> <ul style="list-style-type: none"> • OK: The power component is operational. • Testing: The power component is being tested during initial power-on. • Check: There is insufficient power---that is, fewer than the minimum required feeds are connected. • Failed: The inputs leads have failed. • Absent: The power component is not installed. |
| Measurement | <p>(MX104, MX2010, MX2020, and MX2008 Routers) Dependant on the Class. For example, if the Class is Temp, indicates the temperature in degree Celsius and degrees Fahrenheit. If the Class is Fan, indicates actual fan RPM.</p> |

Sample Output

show chassis environment (M5 Router)

```

user@host> show chassis environment
Class Item           Status      Measurement
Power Power Supply A  OK
      Power Supply B  Absent
Temp  FPC 0           OK          30 degrees C / 86 degrees F
      FEB             OK          33 degrees C / 91 degrees F

```


| | | | |
|------|-----------------|----|-----------------------------|
| | PS Intake | OK | 27 degrees C / 80 degrees F |
| | PS Exhaust | OK | 27 degrees C / 80 degrees F |
| | Routing Engine | OK | 34 degrees C / 93 degrees F |
| Fans | Left Fan 1 | OK | Spinning at normal speed |
| | Left Fan 2 | OK | Spinning at normal speed |
| | Left Fan 3 | OK | Spinning at normal speed |
| | Left Fan 4 | OK | Spinning at normal speed |
| Misc | Craft Interface | OK | |

show chassis environment (M7i Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply 0       OK
      Power Supply 1       Absent
Temp  Intake               OK          22 degrees C / 71 degrees F
      FPC 0                OK          23 degrees C / 73 degrees F
      Power Supplies        OK          23 degrees C / 73 degrees F
      CFEB Intake           OK          24 degrees C / 75 degrees F
      CFEB Exhaust          OK          29 degrees C / 84 degrees F
      Routing Engine        OK          26 degrees C / 78 degrees F
Fans  Fan 1                OK          Spinning at normal speed
      Fan 2                OK          Spinning at normal speed
      Fan 3                OK          Spinning at normal speed
      Fan 4                OK          Spinning at normal speed

```

show chassis environment (M10 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A       OK
      Power Supply B       Failed
Temp  FPC 0                OK          36 degrees C / 96 degrees F
      FPC 1                OK          35 degrees C / 95 degrees F
      FEB                  OK          34 degrees C / 93 degrees F
      PS Intake            OK          31 degrees C / 87 degrees F
      PS Exhaust           OK          34 degrees C / 93 degrees F
      Routing Engine        OK          35 degrees C / 95 degrees F

```


| | | | |
|------|-----------------|----|--------------------------|
| Fans | Left Fan 1 | OK | Spinning at normal speed |
| | Left Fan 2 | OK | Spinning at normal speed |
| | Left Fan 3 | OK | Spinning at normal speed |
| | Left Fan 4 | OK | Spinning at normal speed |
| Misc | Craft Interface | OK | |

show chassis environment (M10i Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply 0       OK
      Power Supply 1       OK
      Power Supply 2       Absent
      Power Supply 3       Absent
Temp  Intake               OK          26 degrees C / 78 degrees F
      FPC 0                OK          27 degrees C / 80 degrees F
      FPC 1                OK          28 degrees C / 82 degrees F
      Lower Power Supplies OK          29 degrees C / 84 degrees F
      Upper Power Supplies OK          28 degrees C / 82 degrees F
      CFEB Intake          OK          27 degrees C / 80 degrees F
      CFEB Exhaust         OK          36 degrees C / 96 degrees F
      Routing Engine 0     OK          31 degrees C / 87 degrees F
      Routing Engine 1     OK          27 degrees C / 80 degrees F
Fans  Fan Tray 0 Fan 1     OK          Spinning at normal speed
      Fan Tray 0 Fan 2     OK          Spinning at normal speed
      Fan Tray 0 Fan 3     OK          Spinning at normal speed
      Fan Tray 0 Fan 4     OK          Spinning at normal speed
      Fan Tray 0 Fan 5     OK          Spinning at normal speed
      Fan Tray 0 Fan 6     OK          Spinning at normal speed
      Fan Tray 0 Fan 7     OK          Spinning at normal speed
      Fan Tray 0 Fan 8     OK          Spinning at normal speed
      Fan Tray 1 Fan 1     Absent
      Fan Tray 1 Fan 2     Absent
      Fan Tray 1 Fan 3     Absent
      Fan Tray 1 Fan 4     Absent
      Fan Tray 1 Fan 5     Absent
      Fan Tray 1 Fan 6     Absent
      Fan Tray 1 Fan 7     Absent

```


| | |
|------------------|--------|
| Fan Tray 1 Fan 8 | Absent |
|------------------|--------|

show chassis environment (M20 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A      OK
      Power Supply B      Absent
Temp  FPC 0                OK          28 degrees C / 82 degrees F
      FPC 1                OK          27 degrees C / 80 degrees F
      Power Supply A      OK          22 degrees C / 71 degrees F
      Power Supply B      Absent
      SSB 0                OK          30 degrees C / 86 degrees F
      Backplane            OK          22 degrees C / 71 degrees F
      Routing Engine 0     OK          26 degrees C / 78 degrees F
      Routing Engine 1     Testing
Fans  Rear Fan             OK          Spinning at normal speed
      Front Upper Fan      OK          Spinning at normal speed
      Front Middle Fan     OK          Spinning at normal speed
      Front Bottom Fan     OK          Spinning at normal speed
Misc  Craft Interface      OK

```

show chassis environment (M40 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power Power Supply A      OK
      Power Supply B      Absent
Temp  FPC 3                OK          24 degrees C / 75 degrees F
      FPC 6                OK          26 degrees C / 78 degrees F
      SCB                  OK          26 degrees C / 78 degrees F
      Backplane @ A1       OK          28 degrees C / 82 degrees F
      Backplane @ A2       OK          23 degrees C / 73 degrees F
      Routing Engine       OK          26 degrees C / 78 degrees F
Fans  Top Impeller         OK          Spinning at normal speed
      Bottom impeller      OK          Spinning at normal speed
      Rear Left Fan        OK          Spinning at normal speed
      Rear Center Fan      OK          Spinning at normal speed

```


| | | | |
|------|-----------------|----|--------------------------|
| | Rear Right Fan | OK | Spinning at normal speed |
| Misc | Craft Interface | OK | |

show chassis environment (M40e Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power PEM 0               OK
      PEM 1               Absent
Temp  PCG 0               OK          44 degrees C / 111 degrees F
      PCG 1               OK          47 degrees C / 116 degrees F
      Routing Engine 0    OK          40 degrees C / 104 degrees F
      Routing Engine 1    OK          37 degrees C / 98 degrees F
      MCS 0               OK          45 degrees C / 113 degrees F
      MCS 1               OK          42 degrees C / 107 degrees F
      SFM 0 SPP           OK          40 degrees C / 104 degrees F
      SFM 0 SPR           OK          44 degrees C / 111 degrees F
      SFM 1 SPP           OK          43 degrees C / 109 degrees F
      SFM 1 SPR           OK          45 degrees C / 113 degrees F
      FPC 0               OK          38 degrees C / 100 degrees F
      FPC 1               OK          40 degrees C / 104 degrees F
      FPC 2               OK          38 degrees C / 100 degrees F
      FPC 4               OK          34 degrees C / 93 degrees F
      FPC 5               OK          43 degrees C / 109 degrees F
      FPC 6               OK          41 degrees C / 105 degrees F
      FPC 7               OK          43 degrees C / 109 degrees F
      FPM CMB             OK          28 degrees C / 82 degrees F
      FPM Display         OK          28 degrees C / 82 degrees F
Fans  Rear Bottom Blower  OK          Spinning at normal speed
      Rear Top Blower     OK          Spinning at normal speed
      Front Top Blower    OK          Spinning at normal speed
      Fan Tray Rear Left  OK          Spinning at normal speed
      Fan Tray Rear Right OK          Spinning at normal speed
      Fan Tray Front Left OK          Spinning at normal speed
      Fan Tray Front Right OK         Spinning at normal speed
Misc  CIP                 OK

```


show chassis environment (M120 Router)

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

| Class | Item | Status | Measurement |
|-------|-------------------------|--------|------------------------------|
| Temp | PEM 0 | OK | |
| | PEM 1 | OK | |
| | Routing Engine 0 | OK | 43 degrees C / 109 degrees F |
| | Routing Engine 1 | OK | 44 degrees C / 111 degrees F |
| | CB 0 Intake | OK | 33 degrees C / 91 degrees F |
| | CB 0 Exhaust A | OK | 36 degrees C / 96 degrees F |
| | CB 0 Exhaust B | OK | 35 degrees C / 95 degrees F |
| | CB 1 Intake | OK | 34 degrees C / 93 degrees F |
| | CB 1 Exhaust A | OK | 38 degrees C / 100 degrees F |
| | CB 1 Exhaust B | OK | 35 degrees C / 95 degrees F |
| | FEB 3 Intake | OK | 35 degrees C / 95 degrees F |
| | FEB 3 Exhaust A | OK | 37 degrees C / 98 degrees F |
| | FEB 3 Exhaust B | OK | 39 degrees C / 102 degrees F |
| | FEB 4 Intake | OK | 33 degrees C / 91 degrees F |
| | FEB 4 Exhaust A | OK | 39 degrees C / 102 degrees F |
| | FEB 4 Exhaust B | OK | 36 degrees C / 96 degrees F |
| | FPC 2 Exhaust A | OK | 32 degrees C / 89 degrees F |
| | FPC 2 Exhaust B | OK | 31 degrees C / 87 degrees F |
| | FPC 3 Exhaust A | OK | 32 degrees C / 89 degrees F |
| | FPC 3 Exhaust B | OK | 33 degrees C / 91 degrees F |
| | FPC 4 Exhaust A | OK | 32 degrees C / 89 degrees F |
| | FPC 4 Exhaust B | OK | 30 degrees C / 86 degrees F |
| Fans | Front Top Tray Fan 1 | OK | Spinning at normal speed |
| | Front Top Tray Fan 2 | OK | Spinning at normal speed |
| | Front Top Tray Fan 3 | OK | Spinning at normal speed |
| | Front Top Tray Fan 4 | OK | Spinning at normal speed |
| | Front Top Tray Fan 5 | OK | Spinning at normal speed |
| | Front Top Tray Fan 6 | OK | Spinning at normal speed |
| | Front Top Tray Fan 7 | OK | Spinning at normal speed |
| | Front Top Tray Fan 8 | OK | Spinning at normal speed |
| | Front Bottom Tray Fan 1 | OK | Spinning at normal speed |
| | Front Bottom Tray Fan 2 | OK | Spinning at normal speed |
| | Front Bottom Tray Fan 3 | OK | Spinning at normal speed |
| | Front Bottom Tray Fan 4 | OK | Spinning at normal speed |
| | Front Bottom Tray Fan 5 | OK | Spinning at normal speed |
| | Front Bottom Tray Fan 6 | OK | Spinning at normal speed |
| | Front Bottom Tray Fan 7 | OK | Spinning at normal speed |
| | Front Bottom Tray Fan 8 | OK | Spinning at normal speed |

| | | |
|------------------------|----|--------------------------|
| Rear Top Tray Fan 1 | OK | Spinning at normal speed |
| Rear Top Tray Fan 2 | OK | Spinning at normal speed |
| Rear Top Tray Fan 3 | OK | Spinning at normal speed |
| Rear Top Tray Fan 4 | OK | Spinning at normal speed |
| Rear Top Tray Fan 5 | OK | Spinning at normal speed |
| Rear Top Tray Fan 6 | OK | Spinning at normal speed |
| Rear Top Tray Fan 7 | OK | Spinning at normal speed |
| Rear Top Tray Fan 8 | OK | Spinning at normal speed |
| Rear Bottom Tray Fan 1 | OK | Spinning at normal speed |
| Rear Bottom Tray Fan 2 | OK | Spinning at normal speed |
| Rear Bottom Tray Fan 3 | OK | Spinning at normal speed |
| Rear Bottom Tray Fan 4 | OK | Spinning at normal speed |
| Rear Bottom Tray Fan 5 | OK | Spinning at normal speed |
| Rear Bottom Tray Fan 6 | OK | Spinning at normal speed |
| Rear Bottom Tray Fan 7 | OK | Spinning at normal speed |
| Rear Bottom Tray Fan 8 | OK | Spinning at normal speed |

show chassis environment (M160 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Power PEM 0                OK          PEM 1          Absent
Temp  PCG 0                OK          45 degrees C / 113 degrees F
      PCG 1                Absent
      Routing Engine 0     OK          35 degrees C / 95 degrees F
      Routing Engine 1     Absent
      MCS 0                OK          50 degrees C / 122 degrees F
      SFM 0 SPP            OK          47 degrees C / 116 degrees F
      SFM 0 SPR            OK          49 degrees C / 120 degrees F
      SFM 1 SPP            OK          50 degrees C / 122 degrees F
      SFM 1 SPR            OK          50 degrees C / 122 degrees F
      SFM 2 SPP            OK          51 degrees C / 123 degrees F
      SFM 2 SPR            OK          52 degrees C / 125 degrees F
      SFM 3 SPP            OK          52 degrees C / 125 degrees F
      SFM 3 SPR            OK          48 degrees C / 118 degrees F
      FPC 0                OK          45 degrees C / 113 degrees F
      FPC 6                OK          43 degrees C / 109 degrees F
      FPM CMB              OK          31 degrees C / 87 degrees F
      FPM Display          OK          33 degrees C / 91 degrees F
Fans  Rear Bottom Blower   OK          Spinning at normal speed
      Rear Top Blower      OK          Spinning at normal speed

```


| | | | |
|------|----------------------|----|--------------------------|
| | Front Top Blower | OK | Spinning at normal speed |
| | Fan Tray Rear Left | OK | Spinning at normal speed |
| | Fan Tray Rear Right | OK | Spinning at normal speed |
| | Fan Tray Front Left | OK | Spinning at normal speed |
| | Fan Tray Front Right | OK | Spinning at normal speed |
| Misc | CIP | OK | |

show chassis environment (M320 Router)

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

| Class | Item | Status | Measurement |
|-------|---------------------|--------|------------------------------|
| Temp | PEM 0 | Absent | |
| | PEM 1 | Absent | |
| | PEM 2 | OK | |
| | PEM 3 | OK | |
| | Routing Engine 0 | OK | 33 degrees C / 91 degrees F |
| | Routing Engine 1 | OK | 32 degrees C / 89 degrees F |
| | CB 0 | OK | 36 degrees C / 96 degrees F |
| | CB 1 | OK | 36 degrees C / 96 degrees F |
| | SIB 0 | OK | 38 degrees C / 100 degrees F |
| | SIB 1 | OK | 29 degrees C / 84 degrees F |
| | SIB 2 | OK | 38 degrees C / 100 degrees F |
| | SIB 3 | OK | 41 degrees C / 105 degrees F |
| | FPC 0 Intake | OK | 28 degrees C / 82 degrees F |
| | FPC 0 Exhaust | OK | 40 degrees C / 104 degrees F |
| | FPC 1 Intake | OK | 29 degrees C / 84 degrees F |
| | FPC 1 Exhaust | OK | 39 degrees C / 102 degrees F |
| | FPC 2 Intake | OK | 28 degrees C / 82 degrees F |
| | FPC 2 Exhaust | OK | 38 degrees C / 100 degrees F |
| | FPC 3 Intake | OK | 28 degrees C / 82 degrees F |
| | FPC 3 Exhaust | OK | 39 degrees C / 102 degrees F |
| | FPC 6 Intake | OK | 27 degrees C / 80 degrees F |
| | FPC 6 Exhaust | OK | 39 degrees C / 102 degrees F |
| Fan | 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 |
| | Top Left Front fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |

| | | |
|------------------------|----|--------------------------|
| Bottom Left Front fan | OK | Spinning at normal speed |
| Bottom Right Rear fan | OK | Spinning at normal speed |
| Bottom Right Front fan | OK | Spinning at normal speed |
| Bottom Left Rear fan | OK | Spinning at normal speed |
| Rear Fan 1 (TOP) | OK | Spinning at normal speed |
| Rear Fan 2 | OK | Spinning at normal speed |
| Rear Fan 3 | OK | Spinning at normal speed |
| Rear Fan 4 | OK | Spinning at normal speed |
| Rear Fan 5 | OK | Spinning at normal speed |
| Rear Fan 6 | OK | Spinning at normal speed |
| Rear Fan 7 (Bottom) | OK | Spinning at normal speed |
| Misc CIP | OK | |

show chassis environment (MX150)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Power | FPC 0 Power Supply 0 | OK | |
| Temp | FPC 0 Sensor 1 | OK | 42 degrees C / 107 degrees F |
| | FPC 0 Sensor 2 | OK | 39 degrees C / 102 degrees F |
| | FPC 0 Coretemp | OK | 75 degrees C / 167 degrees F |
| Fans | FPC 0 Fan Tray 0 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 1 | OK | Spinning at normal speed |

show chassis environment (MX104 Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PEM 0 | OK | 34 degrees C / 93 degrees F |
| | PEM 1 | Absent | |
| | ABB 0 Intake | OK | 33 degrees C / 91 degrees F |
| | ABB 0 Exhaust A | OK | 42 degrees C / 107 degrees F |
| | ABB 0 Exhaust B | OK | 43 degrees C / 109 degrees F |
| | ABB 1 Intake | Absent | |
| | ABB 1 Exhaust A | Absent | |
| | ABB 1 Exhaust B | Absent | |
| | Routing Engine 0 | OK | 34 degrees C / 93 degrees F |
| | Routing Engine 0 CPU | OK | 46 degrees C / 114 degrees F |
| | Routing Engine 1 | Absent | |

| | | | |
|------|-----------------------|--------|-----------------------------|
| | Routing Engine 1 CPU | Absent | |
| | AFEB 0 AFEB Processor | OK | 33 degrees C / 91 degrees F |
| Fans | Fan 1 | OK | Spinning at normal speed |
| | Fan 2 | OK | Spinning at normal speed |
| | Fan 3 | OK | Spinning at normal speed |
| | Fan 4 | OK | Spinning at normal speed |
| | Fan 5 | OK | Spinning at normal speed |

show chassis environment (MX240 Router)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Temp PEM 0                              OK          40 degrees C / 104 degrees F
      PEM 1                              OK          45 degrees C / 113 degrees F
      PEM 2                              Absent
      PEM 3                              Absent
      Routing Engine 0                    OK          39 degrees C / 102 degrees F
      Routing Engine 1                    OK          37 degrees C / 98 degrees F
      CB 0 Intake                          OK          36 degrees C / 96 degrees F
      CB 0 Exhaust A                      OK          34 degrees C / 93 degrees F
      CB 0 Exhaust B                      OK          38 degrees C / 100 degrees F
      CB 0 ACBC                           OK          37 degrees C / 98 degrees F
      CB 0 SF A                           OK          49 degrees C / 120 degrees F
      CB 0 SF B                           OK          41 degrees C / 105 degrees F
      CB 1 Intake                          OK          37 degrees C / 98 degrees F
      CB 1 Exhaust A                      OK          34 degrees C / 93 degrees F
      CB 1 Exhaust B                      OK          39 degrees C / 102 degrees F
      CB 1 ACBC                           OK          38 degrees C / 100 degrees F
      CB 1 SF A                           OK          47 degrees C / 116 degrees F
      CB 1 SF B                           OK          41 degrees C / 105 degrees F
      FPC 1 Intake                        OK          33 degrees C / 91 degrees F
      FPC 1 Exhaust A                     OK          38 degrees C / 100 degrees F
      FPC 1 Exhaust B                     OK          53 degrees C / 127 degrees F
      FPC 1 I3 0 TSensor                   OK          50 degrees C / 122 degrees F
      FPC 1 I3 0 Chip                     OK          53 degrees C / 127 degrees F
      FPC 1 I3 1 TSensor                   OK          49 degrees C / 120 degrees F
      FPC 1 I3 1 Chip                     OK          52 degrees C / 125 degrees F
      FPC 1 I3 2 TSensor                   OK          47 degrees C / 116 degrees F
      FPC 1 I3 2 Chip                     OK          49 degrees C / 120 degrees F
      FPC 1 I3 3 TSensor                   OK          44 degrees C / 111 degrees F
      FPC 1 I3 3 Chip                     OK          46 degrees C / 114 degrees F

```


| | | | |
|------|--------------------|----|------------------------------|
| | FPC 1 IA 0 TSensor | OK | 45 degrees C / 113 degrees F |
| | FPC 1 IA 0 Chip | OK | 44 degrees C / 111 degrees F |
| | FPC 1 IA 1 TSensor | OK | 44 degrees C / 111 degrees F |
| | FPC 1 IA 1 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 2 Intake | OK | 32 degrees C / 89 degrees F |
| | FPC 2 Exhaust A | OK | 40 degrees C / 104 degrees F |
| | FPC 2 Exhaust B | OK | 52 degrees C / 125 degrees F |
| | FPC 2 I3 0 TSensor | OK | 52 degrees C / 125 degrees F |
| | FPC 2 I3 0 Chip | OK | 56 degrees C / 132 degrees F |
| | FPC 2 I3 1 TSensor | OK | 52 degrees C / 125 degrees F |
| | FPC 2 I3 1 Chip | OK | 55 degrees C / 131 degrees F |
| | FPC 2 I3 2 TSensor | OK | 49 degrees C / 120 degrees F |
| | FPC 2 I3 2 Chip | OK | 52 degrees C / 125 degrees F |
| | FPC 2 I3 3 TSensor | OK | 44 degrees C / 111 degrees F |
| | FPC 2 I3 3 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 2 IA 0 TSensor | OK | 50 degrees C / 122 degrees F |
| | FPC 2 IA 0 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 2 IA 1 TSensor | OK | 47 degrees C / 116 degrees F |
| | FPC 2 IA 1 Chip | OK | 53 degrees C / 127 degrees F |
| Fans | Front Fan | OK | Spinning at normal speed |
| | Middle Fan | OK | Spinning at normal speed |
| | Rear Fan | OK | Spinning at normal speed |

show chassis environment (MX240 Router with SCBE)

```

user@host> show chassis environment
Class Item                               Status      Measurement
Temp PEM 0                              OK          40 degrees C / 104 degrees F
      PEM 1                              OK          45 degrees C / 113 degrees F
      PEM 2                              Absent
      PEM 3                              Absent
      Routing Engine 0                    OK          39 degrees C / 102 degrees F
      Routing Engine 1                    OK          37 degrees C / 98 degrees F
      CB 0 Intake                         OK          36 degrees C / 96 degrees F
      CB 0 Exhaust A                     OK          34 degrees C / 93 degrees F
      CB 0 Exhaust B                     OK          38 degrees C / 100 degrees F
      CB 0 ACBC                          OK          37 degrees C / 98 degrees F
      CB 0 XF A                          OK          49 degrees C / 120 degrees F
      CB 0 XF B                          OK          41 degrees C / 105 degrees F
      CB 1 Intake                         OK          37 degrees C / 98 degrees F
      CB 1 Exhaust A                     OK          34 degrees C / 93 degrees F

```


| | | | |
|------|--------------------|----|------------------------------|
| | CB 1 Exhaust B | OK | 39 degrees C / 102 degrees F |
| | CB 1 ACBC | OK | 38 degrees C / 100 degrees F |
| | CB 1 XF A | OK | 47 degrees C / 116 degrees F |
| | CB 1 XF B | OK | 41 degrees C / 105 degrees F |
| | FPC 1 Intake | OK | 33 degrees C / 91 degrees F |
| | FPC 1 Exhaust A | OK | 38 degrees C / 100 degrees F |
| | FPC 1 Exhaust B | OK | 53 degrees C / 127 degrees F |
| | FPC 1 I3 0 TSensor | OK | 50 degrees C / 122 degrees F |
| | FPC 1 I3 0 Chip | OK | 53 degrees C / 127 degrees F |
| | FPC 1 I3 1 TSensor | OK | 49 degrees C / 120 degrees F |
| | FPC 1 I3 1 Chip | OK | 52 degrees C / 125 degrees F |
| | FPC 1 I3 2 TSensor | OK | 47 degrees C / 116 degrees F |
| | FPC 1 I3 2 Chip | OK | 49 degrees C / 120 degrees F |
| | FPC 1 I3 3 TSensor | OK | 44 degrees C / 111 degrees F |
| | FPC 1 I3 3 Chip | OK | 46 degrees C / 114 degrees F |
| | FPC 1 IA 0 TSensor | OK | 45 degrees C / 113 degrees F |
| | FPC 1 IA 0 Chip | OK | 44 degrees C / 111 degrees F |
| | FPC 1 IA 1 TSensor | OK | 44 degrees C / 111 degrees F |
| | FPC 1 IA 1 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 2 Intake | OK | 32 degrees C / 89 degrees F |
| | FPC 2 Exhaust A | OK | 40 degrees C / 104 degrees F |
| | FPC 2 Exhaust B | OK | 52 degrees C / 125 degrees F |
| | FPC 2 I3 0 TSensor | OK | 52 degrees C / 125 degrees F |
| | FPC 2 I3 0 Chip | OK | 56 degrees C / 132 degrees F |
| | FPC 2 I3 1 TSensor | OK | 52 degrees C / 125 degrees F |
| | FPC 2 I3 1 Chip | OK | 55 degrees C / 131 degrees F |
| | FPC 2 I3 2 TSensor | OK | 49 degrees C / 120 degrees F |
| | FPC 2 I3 2 Chip | OK | 52 degrees C / 125 degrees F |
| | FPC 2 I3 3 TSensor | OK | 44 degrees C / 111 degrees F |
| | FPC 2 I3 3 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 2 IA 0 TSensor | OK | 50 degrees C / 122 degrees F |
| | FPC 2 IA 0 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 2 IA 1 TSensor | OK | 47 degrees C / 116 degrees F |
| | FPC 2 IA 1 Chip | OK | 53 degrees C / 127 degrees F |
| Fans | Front Fan | OK | Spinning at normal speed |
| | Middle Fan | OK | Spinning at normal speed |
| | Rear Fan | OK | Spinning at normal speed |

show chassis environment (MX480 Router)

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

| Class | Item | Status | Measurement |
|-------|--------------------|--------|------------------------------|
| Temp | PEM 0 | OK | 35 degrees C / 95 degrees F |
| | PEM 1 | OK | 40 degrees C / 104 degrees F |
| | PEM 2 | Absent | |
| | PEM 3 | Absent | |
| | Routing Engine 0 | OK | 44 degrees C / 111 degrees F |
| | Routing Engine 1 | OK | 45 degrees C / 113 degrees F |
| | CB 0 Intake | OK | 36 degrees C / 96 degrees F |
| | CB 0 Exhaust A | OK | 38 degrees C / 100 degrees F |
| | CB 0 Exhaust B | OK | 39 degrees C / 102 degrees F |
| | CB 0 ACBC | OK | 37 degrees C / 98 degrees F |
| | CB 0 SF A | OK | 51 degrees C / 123 degrees F |
| | CB 0 SF B | OK | 44 degrees C / 111 degrees F |
| | CB 1 Intake | OK | 36 degrees C / 96 degrees F |
| | CB 1 Exhaust A | OK | 39 degrees C / 102 degrees F |
| | CB 1 Exhaust B | OK | 40 degrees C / 104 degrees F |
| | CB 1 ACBC | OK | 37 degrees C / 98 degrees F |
| | CB 1 SF A | OK | 50 degrees C / 122 degrees F |
| | CB 1 SF B | OK | 43 degrees C / 109 degrees F |
| | FPC 0 Intake | OK | 36 degrees C / 96 degrees F |
| | FPC 0 Exhaust A | OK | 39 degrees C / 102 degrees F |
| | FPC 0 Exhaust B | OK | 51 degrees C / 123 degrees F |
| | FPC 0 I3 0 TSensor | OK | 49 degrees C / 120 degrees F |
| | FPC 0 I3 0 Chip | OK | 56 degrees C / 132 degrees F |
| | FPC 0 I3 1 TSensor | OK | 47 degrees C / 116 degrees F |
| | FPC 0 I3 1 Chip | OK | 52 degrees C / 125 degrees F |
| | FPC 0 I3 2 TSensor | OK | 46 degrees C / 114 degrees F |
| | FPC 0 I3 2 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 0 I3 3 TSensor | OK | 42 degrees C / 107 degrees F |
| | FPC 0 I3 3 Chip | OK | 45 degrees C / 113 degrees F |
| | FPC 0 IA 0 TSensor | OK | 45 degrees C / 113 degrees F |
| | FPC 0 IA 0 Chip | OK | 45 degrees C / 113 degrees F |
| | FPC 0 IA 1 TSensor | OK | 44 degrees C / 111 degrees F |
| | FPC 0 IA 1 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 1 Intake | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Exhaust A | OK | 41 degrees C / 105 degrees F |
| | FPC 1 Exhaust B | OK | 52 degrees C / 125 degrees F |
| | FPC 1 I3 0 TSensor | OK | 51 degrees C / 123 degrees F |
| | FPC 1 I3 0 Chip | OK | 57 degrees C / 134 degrees F |

| | | | |
|------|--------------------|----|------------------------------|
| | FPC 1 I3 1 TSensor | OK | 48 degrees C / 118 degrees F |
| | FPC 1 I3 1 Chip | OK | 52 degrees C / 125 degrees F |
| | FPC 1 I3 2 TSensor | OK | 46 degrees C / 114 degrees F |
| | FPC 1 I3 2 Chip | OK | 50 degrees C / 122 degrees F |
| | FPC 1 I3 3 TSensor | OK | 42 degrees C / 107 degrees F |
| | FPC 1 I3 3 Chip | OK | 46 degrees C / 114 degrees F |
| | FPC 1 IA 0 TSensor | OK | 49 degrees C / 120 degrees F |
| | FPC 1 IA 0 Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 1 IA 1 TSensor | OK | 46 degrees C / 114 degrees F |
| | FPC 1 IA 1 Chip | OK | 50 degrees C / 122 degrees F |
| Fans | Top Rear Fan | OK | Spinning at normal speed |
| | Bottom Rear Fan | OK | Spinning at normal speed |
| | Top Middle Fan | OK | Spinning at normal speed |
| | Bottom Middle Fan | OK | Spinning at normal speed |
| | Top Front Fan | OK | Spinning at normal speed |
| | Bottom Front Fan | OK | Spinning at normal speed |

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)

```

user@host> show chassis environment
Class Item                               Status    Measurement
Temp  PEM 0                             OK        50 degrees C / 122 degrees F
      PEM 1                             OK        45 degrees C / 113 degrees F
      PEM 2                             OK        45 degrees C / 113 degrees F
      PEM 3                             Absent
      Routing Engine 0                   OK        31 degrees C / 87 degrees F
      Routing Engine 0 CPU                OK        30 degrees C / 86 degrees F
      Routing Engine 1                   Present
      Routing Engine 1 CPU                Present
      CB 0 Intake                        OK        29 degrees C / 84 degrees F
      CB 0 Exhaust A                     OK        29 degrees C / 84 degrees F
      CB 0 Exhaust B                     OK        34 degrees C / 93 degrees F
      CB 0 ACBC                          OK        32 degrees C / 89 degrees F

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| | | |
|---------------------------|----|------------------------------|
| CB 0 XF A | OK | 49 degrees C / 120 degrees F |
| CB 0 XF B | OK | 45 degrees C / 113 degrees F |
| CB 1 Intake | OK | 26 degrees C / 78 degrees F |
| CB 1 Exhaust A | OK | 26 degrees C / 78 degrees F |
| CB 1 Exhaust B | OK | 27 degrees C / 80 degrees F |
| CB 1 ACBC | OK | 26 degrees C / 78 degrees F |
| CB 1 XF A | OK | 32 degrees C / 89 degrees F |
| CB 1 XF B | OK | 32 degrees C / 89 degrees F |
| CB 2 Intake | OK | 28 degrees C / 82 degrees F |
| CB 2 Exhaust A | OK | 27 degrees C / 80 degrees F |
| CB 2 Exhaust B | OK | 33 degrees C / 91 degrees F |
| CB 2 ACBC | OK | 30 degrees C / 86 degrees F |
| CB 2 XF A | OK | 48 degrees C / 118 degrees F |
| CB 2 XF B | OK | 46 degrees C / 114 degrees F |
| FPC 0 Intake | OK | 38 degrees C / 100 degrees F |
| FPC 0 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 0 Exhaust B | OK | 49 degrees C / 120 degrees F |
| FPC 0 XL TSen | OK | 48 degrees C / 118 degrees F |
| FPC 0 XL Chip | OK | 50 degrees C / 122 degrees F |
| FPC 0 XL_XR0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 0 XL_XR0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 XL_XR1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 0 XL_XR1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 0 XQ TSen | OK | 48 degrees C / 118 degrees F |
| FPC 0 XQ Chip | OK | 52 degrees C / 125 degrees F |
| FPC 0 XQ_XR0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 0 XQ_XR0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 0 XQ_XR1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 0 XQ_XR1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 0 XM 0 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 0 XM 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 0 XM 1 TSen | OK | 53 degrees C / 127 degrees F |
| FPC 0 XM 1 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 0 PLX PCIe Switch TSe | OK | 53 degrees C / 127 degrees F |
| FPC 0 PLX PCIe Switch Chi | OK | 66 degrees C / 150 degrees F |
| FPC 1 Intake | OK | 31 degrees C / 87 degrees F |
| FPC 1 Exhaust A | OK | 38 degrees C / 100 degrees F |
| FPC 1 Exhaust B | OK | 49 degrees C / 120 degrees F |
| FPC 1 LU 0 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 1 LU 0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 1 LU 1 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 1 LU 1 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 1 LU 2 TSen | OK | 41 degrees C / 105 degrees F |

| | | |
|-----------------------|----|------------------------------|
| FPC 1 LU 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 1 LU 3 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 1 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 1 XM 0 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 1 XM 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 1 XF 0 TSen | OK | 41 degrees C / 105 degrees F |
| FPC 1 XF 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 1 PLX Switch TSen | OK | 41 degrees C / 105 degrees F |
| FPC 1 PLX Switch Chip | OK | 43 degrees C / 109 degrees F |
| FPC 3 Intake | OK | 31 degrees C / 87 degrees F |
| FPC 3 Exhaust A | OK | 37 degrees C / 98 degrees F |
| FPC 3 Exhaust B | OK | 43 degrees C / 109 degrees F |
| FPC 3 LU 0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 3 LU 0 Chip | OK | 43 degrees C / 109 degrees F |
| FPC 3 LU 1 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 3 LU 1 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 3 LU 2 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 3 LU 2 Chip | OK | 40 degrees C / 104 degrees F |
| FPC 3 LU 3 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 3 LU 3 Chip | OK | 41 degrees C / 105 degrees F |
| FPC 3 MQ 0 TSen | OK | 37 degrees C / 98 degrees F |
| FPC 3 MQ 0 Chip | OK | 37 degrees C / 98 degrees F |
| FPC 3 MQ 1 TSen | OK | 37 degrees C / 98 degrees F |
| FPC 3 MQ 1 Chip | OK | 40 degrees C / 104 degrees F |
| FPC 3 MQ 2 TSen | OK | 37 degrees C / 98 degrees F |
| FPC 3 MQ 2 Chip | OK | 36 degrees C / 96 degrees F |
| FPC 3 MQ 3 TSen | OK | 37 degrees C / 98 degrees F |
| FPC 3 MQ 3 Chip | OK | 38 degrees C / 100 degrees F |
| FPC 4 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 4 Exhaust A | OK | 45 degrees C / 113 degrees F |
| FPC 4 Exhaust B | OK | 47 degrees C / 116 degrees F |
| FPC 4 XL TSen | OK | 44 degrees C / 111 degrees F |
| FPC 4 XL Chip | OK | 47 degrees C / 116 degrees F |
| FPC 4 XL_XR0 TSen | OK | 44 degrees C / 111 degrees F |
| FPC 4 XL_XR0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 4 XL_XR1 TSen | OK | 44 degrees C / 111 degrees F |
| FPC 4 XL_XR1 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 4 XQ TSen | OK | 44 degrees C / 111 degrees F |
| FPC 4 XQ Chip | OK | 47 degrees C / 116 degrees F |
| FPC 4 XQ_XR0 TSen | OK | 44 degrees C / 111 degrees F |
| FPC 4 XQ_XR0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 4 XQ_XR1 TSen | OK | 44 degrees C / 111 degrees F |
| FPC 4 XQ_XR1 Chip | OK | 58 degrees C / 136 degrees F |

| | | |
|---------------------------|----|------------------------------|
| FPC 4 XM 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 4 XM 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 4 XM 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 4 XM 1 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 4 PLX PCIe Switch TSe | OK | 51 degrees C / 123 degrees F |
| FPC 4 PLX PCIe Switch Chi | OK | 60 degrees C / 140 degrees F |
| FPC 5 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 5 Exhaust A | OK | 45 degrees C / 113 degrees F |
| FPC 5 Exhaust B | OK | 47 degrees C / 116 degrees F |
| FPC 5 XL TSen | OK | 45 degrees C / 113 degrees F |
| FPC 5 XL Chip | OK | 47 degrees C / 116 degrees F |
| FPC 5 XL_XR0 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 5 XL_XR0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 5 XL_XR1 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 5 XL_XR1 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 5 XQ TSen | OK | 45 degrees C / 113 degrees F |
| FPC 5 XQ Chip | OK | 48 degrees C / 118 degrees F |
| FPC 5 XQ_XR0 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 5 XQ_XR0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 5 XQ_XR1 TSen | OK | 45 degrees C / 113 degrees F |
| FPC 5 XQ_XR1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 5 XM 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 5 XM 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 5 XM 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 5 XM 1 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 5 PLX PCIe Switch TSe | OK | 50 degrees C / 122 degrees F |
| FPC 5 PLX PCIe Switch Chi | OK | 59 degrees C / 138 degrees F |
| FPC 7 Intake | OK | 32 degrees C / 89 degrees F |
| FPC 7 Exhaust A | OK | 32 degrees C / 89 degrees F |
| FPC 7 Exhaust B | OK | 33 degrees C / 91 degrees F |
| FPC 7 LU 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 LU 0 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 7 LU 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 LU 1 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 7 LU 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 LU 2 Chip | OK | 39 degrees C / 102 degrees F |
| FPC 7 LU 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 LU 3 Chip | OK | 43 degrees C / 109 degrees F |
| FPC 7 XM 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 XM 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 7 XM 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 7 XM 1 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 7 PLX Switch TSen | OK | 49 degrees C / 120 degrees F |

| | | |
|---------------------------|----|------------------------------|
| FPC 7 PLX Switch Chip | OK | 45 degrees C / 113 degrees F |
| FPC 8 Intake | OK | 36 degrees C / 96 degrees F |
| FPC 8 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 8 Exhaust B | OK | 46 degrees C / 114 degrees F |
| FPC 8 XL TSen | OK | 46 degrees C / 114 degrees F |
| FPC 8 XL Chip | OK | 47 degrees C / 116 degrees F |
| FPC 8 XL_XR0 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 8 XL_XR0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 8 XL_XR1 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 8 XL_XR1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 8 XQ TSen | OK | 46 degrees C / 114 degrees F |
| FPC 8 XQ Chip | OK | 46 degrees C / 114 degrees F |
| FPC 8 XQ_XR0 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 8 XQ_XR0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 8 XQ_XR1 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 8 XQ_XR1 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 8 XM 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 8 XM 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 8 XM 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 8 XM 1 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 8 PLX PCIe Switch TSe | OK | 52 degrees C / 125 degrees F |
| FPC 8 PLX PCIe Switch Chi | OK | 63 degrees C / 145 degrees F |
| FPC 9 Intake | OK | 31 degrees C / 87 degrees F |
| FPC 9 Exhaust A | OK | 34 degrees C / 93 degrees F |
| FPC 9 Exhaust B | OK | 35 degrees C / 95 degrees F |
| FPC 9 QX 0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 9 QX 0 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 9 LU 0 TCAM TSen | OK | 42 degrees C / 107 degrees F |
| FPC 9 LU 0 TCAM Chip | OK | 41 degrees C / 105 degrees F |
| FPC 9 LU 0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 9 LU 0 Chip | OK | 43 degrees C / 109 degrees F |
| FPC 9 MQ 0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 9 MQ 0 Chip | OK | 43 degrees C / 109 degrees F |
| FPC 9 QX 1 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 9 QX 1 Chip | OK | 40 degrees C / 104 degrees F |
| FPC 9 LU 1 TCAM TSen | OK | 38 degrees C / 100 degrees F |
| FPC 9 LU 1 TCAM Chip | OK | 38 degrees C / 100 degrees F |
| FPC 9 LU 1 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 9 LU 1 Chip | OK | 41 degrees C / 105 degrees F |
| FPC 9 MQ 1 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 9 MQ 1 Chip | OK | 41 degrees C / 105 degrees F |
| FPC 10 Intake | OK | 35 degrees C / 95 degrees F |
| FPC 10 Exhaust A | OK | 51 degrees C / 123 degrees F |

| | | |
|----------------------------|----|------------------------------|
| FPC 10 Exhaust B | OK | 46 degrees C / 114 degrees F |
| FPC 10 XL TSen | OK | 42 degrees C / 107 degrees F |
| FPC 10 XL Chip | OK | 44 degrees C / 111 degrees F |
| FPC 10 XL_XR0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 10 XL_XR0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 10 XL_XR1 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 10 XL_XR1 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 10 XQ TSen | OK | 42 degrees C / 107 degrees F |
| FPC 10 XQ Chip | OK | 46 degrees C / 114 degrees F |
| FPC 10 XQ_XR0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 10 XQ_XR0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 10 XQ_XR1 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 10 XQ_XR1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 10 XM 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 10 XM 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 10 XM 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 10 XM 1 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 10 PLX PCIe Switch TSe | OK | 51 degrees C / 123 degrees F |
| FPC 10 PLX PCIe Switch Chi | OK | 61 degrees C / 141 degrees F |
| FPC 11 Intake | OK | 33 degrees C / 91 degrees F |
| FPC 11 Exhaust A | OK | 33 degrees C / 91 degrees F |
| FPC 11 Exhaust B | OK | 34 degrees C / 93 degrees F |
| FPC 11 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 11 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 2 Chip | OK | 41 degrees C / 105 degrees F |
| FPC 11 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 LU 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 11 XM 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 XM 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 11 XM 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 XM 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 11 PLX Switch TSen | OK | 50 degrees C / 122 degrees F |
| FPC 11 PLX Switch Chip | OK | 45 degrees C / 113 degrees F |
| Fans Top Fan Tray Temp | OK | 42 degrees C / 107 degrees F |
| Top Tray Fan 1 | OK | Spinning at high speed |
| Top Tray Fan 2 | OK | Spinning at high speed |
| Top Tray Fan 3 | OK | Spinning at high speed |
| Top Tray Fan 4 | OK | Spinning at high speed |
| Top Tray Fan 5 | OK | Spinning at high speed |
| Top Tray Fan 6 | OK | Spinning at high speed |

| | | |
|----------------------|----|-----------------------------|
| Top Tray Fan 7 | OK | Spinning at high speed |
| Top Tray Fan 8 | OK | Spinning at high speed |
| Top Tray Fan 9 | OK | Spinning at high speed |
| Top Tray Fan 10 | OK | Spinning at high speed |
| Top Tray Fan 11 | OK | Spinning at high speed |
| Top Tray Fan 12 | OK | Spinning at high speed |
| Bottom Fan Tray Temp | OK | 33 degrees C / 91 degrees F |
| Bottom Tray Fan 1 | OK | Spinning at high speed |
| Bottom Tray Fan 2 | OK | Spinning at high speed |
| Bottom Tray Fan 3 | OK | Spinning at high speed |
| Bottom Tray Fan 4 | OK | Spinning at high speed |
| Bottom Tray Fan 5 | OK | Spinning at high speed |
| Bottom Tray Fan 6 | OK | Spinning at high speed |
| Bottom Tray Fan 7 | OK | Spinning at high speed |
| Bottom Tray Fan 8 | OK | Spinning at high speed |
| Bottom Tray Fan 9 | OK | Spinning at high speed |
| Bottom Tray Fan 10 | OK | Spinning at high speed |
| Bottom Tray Fan 11 | OK | Spinning at high speed |
| Bottom Tray Fan 12 | OK | Spinning at high speed |

show chassis environment (MX2020 Router)

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

| Class | Item | Status | Measurement |
|-------|--------|--------|------------------------------|
| Temp | PSM 0 | Absent | |
| | PSM 1 | Absent | |
| | PSM 2 | OK | 41 degrees C / 105 degrees F |
| | PSM 3 | OK | 39 degrees C / 102 degrees F |
| | PSM 4 | OK | 39 degrees C / 102 degrees F |
| | PSM 5 | OK | 38 degrees C / 100 degrees F |
| | PSM 6 | OK | 38 degrees C / 100 degrees F |
| | PSM 7 | OK | 38 degrees C / 100 degrees F |
| | PSM 8 | OK | 37 degrees C / 98 degrees F |
| | PSM 9 | Absent | |
| | PSM 10 | Absent | |
| | PSM 11 | OK | 47 degrees C / 116 degrees F |
| | PSM 12 | OK | 45 degrees C / 113 degrees F |
| | PSM 13 | OK | 44 degrees C / 111 degrees F |
| | PSM 14 | OK | 44 degrees C / 111 degrees F |
| | PSM 15 | OK | 43 degrees C / 109 degrees F |
| | PSM 16 | OK | 42 degrees C / 107 degrees F |

| | | |
|----------------------|--------|------------------------------|
| PSM 17 | OK | 41 degrees C / 105 degrees F |
| PDM 0 | OK | |
| PDM 1 | Absent | |
| PDM 2 | Absent | |
| PDM 3 | OK | |
| CB 0 IntakeA-Zone0 | OK | 45 degrees C / 113 degrees F |
| CB 0 IntakeB-Zone1 | OK | 34 degrees C / 93 degrees F |
| CB 0 IntakeC-Zone0 | OK | 48 degrees C / 118 degrees F |
| CB 0 ExhaustA-Zone0 | OK | 45 degrees C / 113 degrees F |
| CB 0 ExhaustB-Zone1 | OK | 37 degrees C / 98 degrees F |
| CB 0 TCBC-Zone0 | OK | 41 degrees C / 105 degrees F |
| CB 1 IntakeA-Zone0 | OK | 46 degrees C / 114 degrees F |
| CB 1 IntakeB-Zone1 | OK | 42 degrees C / 107 degrees F |
| CB 1 IntakeC-Zone0 | OK | 49 degrees C / 120 degrees F |
| CB 1 ExhaustA-Zone0 | OK | 46 degrees C / 114 degrees F |
| CB 1 ExhaustB-Zone1 | OK | 41 degrees C / 105 degrees F |
| CB 1 TCBC-Zone0 | OK | 46 degrees C / 114 degrees F |
| SPMB 0 Intake | OK | 33 degrees C / 91 degrees F |
| SPMB 1 Intake | OK | 42 degrees C / 107 degrees F |
| Routing Engine 0 | OK | 35 degrees C / 95 degrees F |
| Routing Engine 0 CPU | OK | 34 degrees C / 93 degrees F |
| Routing Engine 1 | OK | 44 degrees C / 111 degrees F |
| Routing Engine 1 CPU | OK | 42 degrees C / 107 degrees F |
| SFB 0 Intake-Zone0 | OK | 55 degrees C / 131 degrees F |
| SFB 0 Exhaust-Zone1 | OK | 48 degrees C / 118 degrees F |
| SFB 0 IntakeA-Zone0 | OK | 50 degrees C / 122 degrees F |
| SFB 0 IntakeB-Zone1 | OK | 40 degrees C / 104 degrees F |
| SFB 0 Exhaust-Zone0 | OK | 52 degrees C / 125 degrees F |
| SFB 0 SFB-XF2-Zone1 | OK | 61 degrees C / 141 degrees F |
| SFB 0 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 0 SFB-XF0-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 1 Intake-Zone0 | OK | 56 degrees C / 132 degrees F |
| SFB 1 Exhaust-Zone1 | OK | 47 degrees C / 116 degrees F |
| SFB 1 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 1 IntakeB-Zone1 | OK | 40 degrees C / 104 degrees F |
| SFB 1 Exhaust-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 1 SFB-XF2-Zone1 | OK | 62 degrees C / 143 degrees F |
| SFB 1 SFB-XF1-Zone0 | OK | 67 degrees C / 152 degrees F |
| SFB 1 SFB-XF0-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 2 Intake-Zone0 | OK | 56 degrees C / 132 degrees F |
| SFB 2 Exhaust-Zone1 | OK | 47 degrees C / 116 degrees F |
| SFB 2 IntakeA-Zone0 | OK | 51 degrees C / 123 degrees F |
| SFB 2 IntakeB-Zone1 | OK | 40 degrees C / 104 degrees F |

| | | |
|---------------------|----|------------------------------|
| SFB 2 Exhaust-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 2 SFB-XF2-Zone1 | OK | 65 degrees C / 149 degrees F |
| SFB 2 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 2 SFB-XF0-Zone0 | OK | 70 degrees C / 158 degrees F |
| SFB 3 Intake-Zone0 | OK | 57 degrees C / 134 degrees F |
| SFB 3 Exhaust-Zone1 | OK | 48 degrees C / 118 degrees F |
| SFB 3 IntakeA-Zone0 | OK | 52 degrees C / 125 degrees F |
| SFB 3 IntakeB-Zone1 | OK | 41 degrees C / 105 degrees F |
| SFB 3 Exhaust-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 3 SFB-XF2-Zone1 | OK | 66 degrees C / 150 degrees F |
| SFB 3 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 3 SFB-XF0-Zone0 | OK | 71 degrees C / 159 degrees F |
| SFB 4 Intake-Zone0 | OK | 58 degrees C / 136 degrees F |
| SFB 4 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 4 IntakeA-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 4 IntakeB-Zone1 | OK | 42 degrees C / 107 degrees F |
| SFB 4 Exhaust-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 4 SFB-XF2-Zone1 | OK | 64 degrees C / 147 degrees F |
| SFB 4 SFB-XF1-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 4 SFB-XF0-Zone0 | OK | 71 degrees C / 159 degrees F |
| SFB 5 Intake-Zone0 | OK | 58 degrees C / 136 degrees F |
| SFB 5 Exhaust-Zone1 | OK | 50 degrees C / 122 degrees F |
| SFB 5 IntakeA-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 5 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 5 Exhaust-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 5 SFB-XF2-Zone1 | OK | 66 degrees C / 150 degrees F |
| SFB 5 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |
| SFB 5 SFB-XF0-Zone0 | OK | 74 degrees C / 165 degrees F |
| SFB 6 Intake-Zone0 | OK | 58 degrees C / 136 degrees F |
| SFB 6 Exhaust-Zone1 | OK | 49 degrees C / 120 degrees F |
| SFB 6 IntakeA-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 6 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 6 Exhaust-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 6 SFB-XF2-Zone1 | OK | 65 degrees C / 149 degrees F |
| SFB 6 SFB-XF1-Zone0 | OK | 68 degrees C / 154 degrees F |
| SFB 6 SFB-XF0-Zone0 | OK | 72 degrees C / 161 degrees F |
| SFB 7 Intake-Zone0 | OK | 57 degrees C / 134 degrees F |
| SFB 7 Exhaust-Zone1 | OK | 50 degrees C / 122 degrees F |
| SFB 7 IntakeA-Zone0 | OK | 53 degrees C / 127 degrees F |
| SFB 7 IntakeB-Zone1 | OK | 43 degrees C / 109 degrees F |
| SFB 7 Exhaust-Zone0 | OK | 54 degrees C / 129 degrees F |
| SFB 7 SFB-XF2-Zone1 | OK | 68 degrees C / 154 degrees F |
| SFB 7 SFB-XF1-Zone0 | OK | 69 degrees C / 156 degrees F |

| | | |
|---------------------|----|------------------------------|
| SFB 7 SFB-XF0-Zone0 | OK | 73 degrees C / 163 degrees F |
| FPC 0 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 0 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 0 Exhaust B | OK | 62 degrees C / 143 degrees F |
| FPC 0 LU 0 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 0 LU 1 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 0 LU 2 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 2 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 LU 3 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 0 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 0 MQ 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 0 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 0 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 0 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 0 MQ 2 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 0 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 0 MQ 3 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 1 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 1 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 1 Exhaust B | OK | 58 degrees C / 136 degrees F |
| FPC 1 LU 0 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 1 LU 1 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 1 LU 2 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 1 LU 3 TSen | OK | 55 degrees C / 131 degrees F |
| FPC 1 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 1 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 1 MQ 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 1 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 1 MQ 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 1 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 1 MQ 2 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 1 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 1 MQ 3 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 2 Intake | OK | 39 degrees C / 102 degrees F |
| FPC 2 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 2 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 2 LU 0 TSen | OK | 58 degrees C / 136 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 2 LU 0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 2 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 1 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 2 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 2 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 2 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 2 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 2 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 2 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 2 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 2 MQ 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 3 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 3 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 3 Exhaust B | OK | 61 degrees C / 141 degrees F |
| FPC 3 LU 0 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 3 LU 1 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 3 LU 2 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 2 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 3 LU 3 TSen | OK | 58 degrees C / 136 degrees F |
| FPC 3 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 3 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 3 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 3 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 3 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 3 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 3 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 3 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 3 MQ 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 4 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 4 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 4 Exhaust B | OK | 62 degrees C / 143 degrees F |
| FPC 4 LU 0 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 4 LU 1 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 1 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 4 LU 2 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 2 Chip | OK | 51 degrees C / 123 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 4 LU 3 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 4 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 4 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 4 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 4 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 4 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 4 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 5 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 5 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 5 Exhaust B | OK | 63 degrees C / 145 degrees F |
| FPC 5 LU 0 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 5 LU 0 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 5 LU 1 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 5 LU 1 Chip | OK | 66 degrees C / 150 degrees F |
| FPC 5 LU 2 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 5 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 5 LU 3 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 5 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 5 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 5 MQ 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 5 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 5 MQ 1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 5 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 5 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 5 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 5 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 6 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 6 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 6 Exhaust B | OK | 63 degrees C / 145 degrees F |
| FPC 6 LU 0 TSen | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 0 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 6 LU 1 TSen | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 1 Chip | OK | 66 degrees C / 150 degrees F |
| FPC 6 LU 2 TSen | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 LU 3 TSen | OK | 61 degrees C / 141 degrees F |
| FPC 6 LU 3 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 MQ 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 6 MQ 0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 6 MQ 1 TSen | OK | 50 degrees C / 122 degrees F |

| | | |
|-----------------|----|------------------------------|
| FPC 6 MQ 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 6 MQ 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 6 MQ 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 6 MQ 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 6 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 7 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 7 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 7 Exhaust B | OK | 63 degrees C / 145 degrees F |
| FPC 7 LU 0 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 7 LU 0 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 7 LU 1 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 7 LU 1 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 7 LU 2 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 7 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 LU 3 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 7 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 7 MQ 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 7 MQ 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 7 MQ 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 7 MQ 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 7 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 8 Intake | OK | 41 degrees C / 105 degrees F |
| FPC 8 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 8 Exhaust B | OK | 62 degrees C / 143 degrees F |
| FPC 8 LU 0 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 8 LU 0 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 8 LU 1 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 8 LU 1 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 8 LU 2 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 8 LU 2 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 8 LU 3 TSen | OK | 59 degrees C / 138 degrees F |
| FPC 8 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 8 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 8 MQ 0 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 8 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 8 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 8 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 8 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 8 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 8 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 9 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 9 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 9 Exhaust B | OK | 63 degrees C / 145 degrees F |
| FPC 9 LU 0 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 9 LU 0 Chip | OK | 65 degrees C / 149 degrees F |
| FPC 9 LU 1 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 9 LU 1 Chip | OK | 67 degrees C / 152 degrees F |
| FPC 9 LU 2 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 9 LU 2 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 9 LU 3 TSen | OK | 60 degrees C / 140 degrees F |
| FPC 9 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 9 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 MQ 0 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 9 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 MQ 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 9 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 MQ 2 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 9 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 9 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 10 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 10 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 10 Exhaust B | OK | 55 degrees C / 131 degrees F |
| FPC 10 LU 0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 0 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 10 LU 1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 10 LU 2 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 2 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 10 LU 3 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 10 LU 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 10 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 10 MQ 1 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 1 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 10 MQ 2 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 10 MQ 3 TSen | OK | 48 degrees C / 118 degrees F |
| FPC 10 MQ 3 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 11 Intake | OK | 30 degrees C / 86 degrees F |
| FPC 11 Exhaust A | OK | 35 degrees C / 95 degrees F |
| FPC 11 Exhaust B | OK | 30 degrees C / 86 degrees F |
| FPC 11 LU 0 TSen | OK | 57 degrees C / 134 degrees F |
| FPC 11 LU 0 Chip | OK | 58 degrees C / 136 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 11 LU 1 TSen | OK | 57 degrees C / 134 degrees F |
| FPC 11 LU 1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 11 LU 2 TSen | OK | 57 degrees C / 134 degrees F |
| FPC 11 LU 2 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 11 LU 3 TSen | OK | 57 degrees C / 134 degrees F |
| FPC 11 LU 3 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 11 MQ 0 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 1 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 1 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 11 MQ 2 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 11 MQ 3 TSen | OK | 52 degrees C / 125 degrees F |
| FPC 11 MQ 3 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 12 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 12 Exhaust A | OK | 47 degrees C / 116 degrees F |
| FPC 12 Exhaust B | OK | 52 degrees C / 125 degrees F |
| FPC 12 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 12 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 12 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 12 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 12 LU 3 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 12 MQ 0 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 1 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 12 MQ 2 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 2 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 12 MQ 3 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 12 MQ 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 13 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 13 Exhaust A | OK | 48 degrees C / 118 degrees F |
| FPC 13 Exhaust B | OK | 52 degrees C / 125 degrees F |
| FPC 13 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 13 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 13 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 13 LU 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 13 LU 3 TSen | OK | 51 degrees C / 123 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 13 LU 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 13 MQ 0 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 1 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 13 MQ 2 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 2 Chip | OK | 44 degrees C / 111 degrees F |
| FPC 13 MQ 3 TSen | OK | 46 degrees C / 114 degrees F |
| FPC 13 MQ 3 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 14 Intake | OK | 40 degrees C / 104 degrees F |
| FPC 14 Exhaust A | OK | 50 degrees C / 122 degrees F |
| FPC 14 Exhaust B | OK | 51 degrees C / 123 degrees F |
| FPC 14 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 14 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 14 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 14 LU 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 14 MQ 0 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 0 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 14 MQ 1 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 1 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 14 MQ 2 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 2 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 14 MQ 3 TSen | OK | 47 degrees C / 116 degrees F |
| FPC 14 MQ 3 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 15 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 15 Exhaust A | OK | 49 degrees C / 120 degrees F |
| FPC 15 Exhaust B | OK | 60 degrees C / 140 degrees F |
| FPC 15 LU 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 15 LU 1 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 2 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 2 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 15 LU 3 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 LU 3 Chip | OK | 63 degrees C / 145 degrees F |
| FPC 15 XM 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 XM 0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 15 XF 0 TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 XF 0 Chip | OK | 68 degrees C / 154 degrees F |

| | | |
|------------------------|----|------------------------------|
| FPC 15 PLX Switch TSen | OK | 50 degrees C / 122 degrees F |
| FPC 15 PLX Switch Chip | OK | 56 degrees C / 132 degrees F |
| FPC 16 Intake | OK | 42 degrees C / 107 degrees F |
| FPC 16 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 16 Exhaust B | OK | 53 degrees C / 127 degrees F |
| FPC 16 LU 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 0 Chip | OK | 52 degrees C / 125 degrees F |
| FPC 16 LU 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 1 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 16 LU 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 2 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 16 LU 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 16 LU 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 0 Chip | OK | 48 degrees C / 118 degrees F |
| FPC 16 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 16 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 2 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 16 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 16 MQ 3 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 17 Intake | OK | 43 degrees C / 109 degrees F |
| FPC 17 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 17 Exhaust B | OK | 55 degrees C / 131 degrees F |
| FPC 17 LU 0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 17 LU 1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 1 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 17 LU 2 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 2 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 17 LU 3 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 17 LU 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 17 MQ 0 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 17 MQ 0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 17 MQ 1 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 17 MQ 1 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 17 MQ 2 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 17 MQ 2 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 17 MQ 3 TSen | OK | 49 degrees C / 120 degrees F |
| FPC 17 MQ 3 Chip | OK | 51 degrees C / 123 degrees F |
| FPC 18 Intake | OK | 44 degrees C / 111 degrees F |
| FPC 18 Exhaust A | OK | 53 degrees C / 127 degrees F |
| FPC 18 Exhaust B | OK | 57 degrees C / 134 degrees F |

| | | |
|------------------|----|------------------------------|
| FPC 18 LU 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 18 LU 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 18 LU 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 2 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 18 LU 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 18 LU 3 Chip | OK | 55 degrees C / 131 degrees F |
| FPC 18 MQ 0 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 18 MQ 0 Chip | OK | 54 degrees C / 129 degrees F |
| FPC 18 MQ 1 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 18 MQ 1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 18 MQ 2 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 18 MQ 2 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 18 MQ 3 TSen | OK | 51 degrees C / 123 degrees F |
| FPC 18 MQ 3 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 19 Intake | OK | 48 degrees C / 118 degrees F |
| FPC 19 Exhaust A | OK | 56 degrees C / 132 degrees F |
| FPC 19 Exhaust B | OK | 64 degrees C / 147 degrees F |
| FPC 19 LU 0 TSen | OK | 63 degrees C / 145 degrees F |
| FPC 19 LU 0 Chip | OK | 64 degrees C / 147 degrees F |
| FPC 19 LU 1 TSen | OK | 63 degrees C / 145 degrees F |
| FPC 19 LU 1 Chip | OK | 70 degrees C / 158 degrees F |
| FPC 19 LU 2 TSen | OK | 63 degrees C / 145 degrees F |
| FPC 19 LU 2 Chip | OK | 61 degrees C / 141 degrees F |
| FPC 19 LU 3 TSen | OK | 63 degrees C / 145 degrees F |
| FPC 19 LU 3 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 19 MQ 0 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 19 MQ 0 Chip | OK | 60 degrees C / 140 degrees F |
| FPC 19 MQ 1 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 19 MQ 1 Chip | OK | 62 degrees C / 143 degrees F |
| FPC 19 MQ 2 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 19 MQ 2 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 19 MQ 3 TSen | OK | 56 degrees C / 132 degrees F |
| FPC 19 MQ 3 Chip | OK | 57 degrees C / 134 degrees F |
| ADC 0 Intake | OK | 40 degrees C / 104 degrees F |
| ADC 0 Exhaust | OK | 52 degrees C / 125 degrees F |
| ADC 0 ADC-XF1 | OK | 59 degrees C / 138 degrees F |
| ADC 0 ADC-XF0 | OK | 66 degrees C / 150 degrees F |
| ADC 1 Intake | OK | 38 degrees C / 100 degrees F |
| ADC 1 Exhaust | OK | 50 degrees C / 122 degrees F |
| ADC 1 ADC-XF1 | OK | 59 degrees C / 138 degrees F |
| ADC 1 ADC-XF0 | OK | 63 degrees C / 145 degrees F |

| | | |
|----------------|----|------------------------------|
| ADC 2 Intake | OK | 37 degrees C / 98 degrees F |
| ADC 2 Exhaust | OK | 52 degrees C / 125 degrees F |
| ADC 2 ADC-XF1 | OK | 53 degrees C / 127 degrees F |
| ADC 2 ADC-XF0 | OK | 61 degrees C / 141 degrees F |
| ADC 3 Intake | OK | 40 degrees C / 104 degrees F |
| ADC 3 Exhaust | OK | 51 degrees C / 123 degrees F |
| ADC 3 ADC-XF1 | OK | 61 degrees C / 141 degrees F |
| ADC 3 ADC-XF0 | OK | 64 degrees C / 147 degrees F |
| ADC 4 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 4 Exhaust | OK | 51 degrees C / 123 degrees F |
| ADC 4 ADC-XF1 | OK | 60 degrees C / 140 degrees F |
| ADC 4 ADC-XF0 | OK | 63 degrees C / 145 degrees F |
| ADC 5 Intake | OK | 38 degrees C / 100 degrees F |
| ADC 5 Exhaust | OK | 54 degrees C / 129 degrees F |
| ADC 5 ADC-XF1 | OK | 56 degrees C / 132 degrees F |
| ADC 5 ADC-XF0 | OK | 67 degrees C / 152 degrees F |
| ADC 6 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 6 Exhaust | OK | 52 degrees C / 125 degrees F |
| ADC 6 ADC-XF1 | OK | 59 degrees C / 138 degrees F |
| ADC 6 ADC-XF0 | OK | 66 degrees C / 150 degrees F |
| ADC 7 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 7 Exhaust | OK | 54 degrees C / 129 degrees F |
| ADC 7 ADC-XF1 | OK | 62 degrees C / 143 degrees F |
| ADC 7 ADC-XF0 | OK | 70 degrees C / 158 degrees F |
| ADC 8 Intake | OK | 39 degrees C / 102 degrees F |
| ADC 8 Exhaust | OK | 52 degrees C / 125 degrees F |
| ADC 8 ADC-XF1 | OK | 61 degrees C / 141 degrees F |
| ADC 8 ADC-XF0 | OK | 65 degrees C / 149 degrees F |
| ADC 9 Intake | OK | 41 degrees C / 105 degrees F |
| ADC 9 Exhaust | OK | 51 degrees C / 123 degrees F |
| ADC 9 ADC-XF1 | OK | 63 degrees C / 145 degrees F |
| ADC 9 ADC-XF0 | OK | 63 degrees C / 145 degrees F |
| ADC 10 Intake | OK | 48 degrees C / 118 degrees F |
| ADC 10 Exhaust | OK | 53 degrees C / 127 degrees F |
| ADC 10 ADC-XF1 | OK | 67 degrees C / 152 degrees F |
| ADC 10 ADC-XF0 | OK | 66 degrees C / 150 degrees F |
| ADC 12 Intake | OK | 49 degrees C / 120 degrees F |
| ADC 12 Exhaust | OK | 54 degrees C / 129 degrees F |
| ADC 12 ADC-XF1 | OK | 67 degrees C / 152 degrees F |
| ADC 12 ADC-XF0 | OK | 67 degrees C / 152 degrees F |
| ADC 13 Intake | OK | 49 degrees C / 120 degrees F |
| ADC 13 Exhaust | OK | 57 degrees C / 134 degrees F |
| ADC 13 ADC-XF1 | OK | 66 degrees C / 150 degrees F |

| | | | |
|------|------------------|----|------------------------------|
| | ADC 13 ADC-XF0 | OK | 69 degrees C / 156 degrees F |
| | ADC 14 Intake | OK | 51 degrees C / 123 degrees F |
| | ADC 14 Exhaust | OK | 59 degrees C / 138 degrees F |
| | ADC 14 ADC-XF1 | OK | 69 degrees C / 156 degrees F |
| | ADC 14 ADC-XF0 | OK | 74 degrees C / 165 degrees F |
| | ADC 15 Intake | OK | 50 degrees C / 122 degrees F |
| | ADC 15 Exhaust | OK | 59 degrees C / 138 degrees F |
| | ADC 15 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| | ADC 15 ADC-XF0 | OK | 69 degrees C / 156 degrees F |
| | ADC 16 Intake | OK | 52 degrees C / 125 degrees F |
| | ADC 16 Exhaust | OK | 58 degrees C / 136 degrees F |
| | ADC 16 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| | ADC 16 ADC-XF0 | OK | 70 degrees C / 158 degrees F |
| | ADC 17 Intake | OK | 52 degrees C / 125 degrees F |
| | ADC 17 Exhaust | OK | 59 degrees C / 138 degrees F |
| | ADC 17 ADC-XF1 | OK | 69 degrees C / 156 degrees F |
| | ADC 17 ADC-XF0 | OK | 71 degrees C / 159 degrees F |
| | ADC 18 Intake | OK | 53 degrees C / 127 degrees F |
| | ADC 18 Exhaust | OK | 59 degrees C / 138 degrees F |
| | ADC 18 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| | ADC 18 ADC-XF0 | OK | 73 degrees C / 163 degrees F |
| | ADC 19 Intake | OK | 50 degrees C / 122 degrees F |
| | ADC 19 Exhaust | OK | 59 degrees C / 138 degrees F |
| | ADC 19 ADC-XF1 | OK | 68 degrees C / 154 degrees F |
| | ADC 19 ADC-XF0 | OK | 72 degrees C / 161 degrees F |
| Fans | Fan Tray 0 Fan 1 | OK | 7440 RPM |
| | Fan Tray 0 Fan 2 | OK | 7200 RPM |
| | Fan Tray 0 Fan 3 | OK | 6960 RPM |
| | Fan Tray 0 Fan 4 | OK | 7200 RPM |
| | Fan Tray 0 Fan 5 | OK | 7080 RPM |
| | Fan Tray 0 Fan 6 | OK | 6840 RPM |
| | Fan Tray 1 Fan 1 | OK | 6840 RPM |
| | Fan Tray 1 Fan 2 | OK | 6960 RPM |
| | Fan Tray 1 Fan 3 | OK | 6960 RPM |
| | Fan Tray 1 Fan 4 | OK | 7080 RPM |
| | Fan Tray 1 Fan 5 | OK | 6960 RPM |
| | Fan Tray 1 Fan 6 | OK | 6960 RPM |
| | Fan Tray 2 Fan 1 | OK | 8640 RPM |
| | Fan Tray 2 Fan 2 | OK | 8640 RPM |
| | Fan Tray 2 Fan 3 | OK | 8760 RPM |
| | Fan Tray 2 Fan 4 | OK | 8760 RPM |
| | Fan Tray 2 Fan 5 | OK | 8640 RPM |
| | Fan Tray 2 Fan 6 | OK | 8640 RPM |

| | | |
|------------------|----|----------|
| Fan Tray 3 Fan 1 | OK | 8520 RPM |
| Fan Tray 3 Fan 2 | OK | 8520 RPM |
| Fan Tray 3 Fan 3 | OK | 8640 RPM |
| Fan Tray 3 Fan 4 | OK | 8640 RPM |
| Fan Tray 3 Fan 5 | OK | 8520 RPM |
| Fan Tray 3 Fan 6 | OK | 8520 RPM |

show chassis environment (MX2020 Router with MPC5EQ and MPC6E)

| Class | Item | Status | Measurement |
|-------|------------------|--------|------------------------------|
| Temp | PSM 0 | OK | 32 degrees C / 89 degrees F |
| | PSM 1 | OK | 32 degrees C / 89 degrees F |
| | PSM 2 | OK | 32 degrees C / 89 degrees F |
| | PSM 3 | OK | 32 degrees C / 89 degrees F |
| | PSM 4 | OK | 32 degrees C / 89 degrees F |
| | PSM 5 | OK | 33 degrees C / 91 degrees F |
| | PSM 6 | OK | 32 degrees C / 89 degrees F |
| | PSM 7 | OK | 32 degrees C / 89 degrees F |
| | PSM 8 | OK | 32 degrees C / 89 degrees F |
| | PSM 9 | Absent | |
| | PSM 10 | Absent | |
| | PSM 11 | Absent | |
| | PSM 12 | OK | 33 degrees C / 91 degrees F |
| | PSM 13 | OK | 33 degrees C / 91 degrees F |
| | PSM 14 | OK | 34 degrees C / 93 degrees F |
| | PSM 15 | OK | 34 degrees C / 93 degrees F |
| | PSM 16 | OK | 33 degrees C / 91 degrees F |
| | PSM 17 | OK | 33 degrees C / 91 degrees F |
| | PDM 0 | OK | |
| | PDM 1 | OK | |
| | PDM 2 | OK | |
| | PDM 3 | OK | |
| CB | 0 IntakeA-Zone0 | OK | 34 degrees C / 93 degrees F |
| | 0 IntakeB-Zone1 | OK | 26 degrees C / 78 degrees F |
| | 0 IntakeC-Zone0 | OK | 38 degrees C / 100 degrees F |
| | 0 ExhaustA-Zone0 | OK | 34 degrees C / 93 degrees F |
| | 0 ExhaustB-Zone1 | OK | 27 degrees C / 80 degrees F |
| | 0 TCBC-Zone0 | OK | 32 degrees C / 89 degrees F |
| | 1 IntakeA-Zone0 | OK | 24 degrees C / 75 degrees F |
| | 1 IntakeB-Zone1 | OK | 22 degrees C / 71 degrees F |
| | 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)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PSM 0 | Absent | |
| | PSM 1 | OK | 29 degrees C / 84 degrees F |
| | PSM 2 | OK | 30 degrees C / 86 degrees F |
| | PSM 3 | OK | 29 degrees C / 84 degrees F |
| | PSM 4 | OK | 29 degrees C / 84 degrees F |
| | PSM 5 | OK | 30 degrees C / 86 degrees F |
| | PSM 6 | OK | 29 degrees C / 84 degrees F |
| | PSM 7 | OK | 31 degrees C / 87 degrees F |
| | PSM 8 | Absent | |
| | PDM 0 | OK | |
| | PDM 1 | OK | |
| | CB 0 Inlet1 | OK | 37 degrees C / 98 degrees F |
| | CB 0 Inlet2 | OK | 45 degrees C / 113 degrees F |
| | CB 0 Inlet3 | OK | 44 degrees C / 111 degrees F |
| | CB 0 Inlet4 | OK | 41 degrees C / 105 degrees F |
| | CB 0 Exhaust1 | OK | 30 degrees C / 86 degrees F |
| | CB 0 Exhaust2 | OK | 40 degrees C / 104 degrees F |
| | CB 0 Exhaust3 | OK | 48 degrees C / 118 degrees F |
| | CB 0 Exhaust4 | OK | 46 degrees C / 114 degrees F |
| | CB 1 Inlet1 | OK | 30 degrees C / 86 degrees F |
| | CB 1 Inlet2 | OK | 31 degrees C / 87 degrees F |
| | CB 1 Inlet3 | OK | 29 degrees C / 84 degrees F |
| | CB 1 Inlet4 | OK | 32 degrees C / 89 degrees F |
| | CB 1 Exhaust1 | OK | 30 degrees C / 86 degrees F |
| | CB 1 Exhaust2 | OK | 33 degrees C / 91 degrees F |
| | CB 1 Exhaust3 | OK | 34 degrees C / 93 degrees F |
| | CB 1 Exhaust4 | OK | 34 degrees C / 93 degrees F |
| | Routing Engine 0 | OK | |
| | Routing Engine 0 CPU | OK | 75 degrees C / 167 degrees F |
| | Routing Engine 1 | OK | |

| | | |
|----------------------|----|------------------------------|
| Routing Engine 1 CPU | OK | 46 degrees C / 114 degrees F |
| SFB 0 Inlet2 | OK | 44 degrees C / 111 degrees F |
| SFB 0 Exhaust1 | OK | 39 degrees C / 102 degrees F |
| SFB 0 Inlet1 | OK | 41 degrees C / 105 degrees F |
| SFB 0 Exhaust2 | OK | 45 degrees C / 113 degrees F |
| SFB 0 SFB2-PF-local | OK | 45 degrees C / 113 degrees F |
| SFB 0 SFB2-PF-die | OK | 51 degrees C / 123 degrees F |
| SFB 1 Inlet2 | OK | 30 degrees C / 86 degrees F |
| SFB 1 Exhaust1 | OK | 27 degrees C / 80 degrees F |
| SFB 1 Inlet1 | OK | 28 degrees C / 82 degrees F |
| SFB 1 Exhaust2 | OK | 31 degrees C / 87 degrees F |
| SFB 1 SFB2-PF-local | OK | 30 degrees C / 86 degrees F |
| SFB 1 SFB2-PF-die | OK | 37 degrees C / 98 degrees F |
| SFB 2 Inlet2 | OK | 28 degrees C / 82 degrees F |
| SFB 2 Exhaust1 | OK | 26 degrees C / 78 degrees F |
| SFB 2 Inlet1 | OK | 27 degrees C / 80 degrees F |
| SFB 2 Exhaust2 | OK | 28 degrees C / 82 degrees F |
| SFB 2 SFB2-PF-local | OK | 27 degrees C / 80 degrees F |
| SFB 2 SFB2-PF-die | OK | 33 degrees C / 91 degrees F |
| SFB 3 Inlet2 | OK | 28 degrees C / 82 degrees F |
| SFB 3 Exhaust1 | OK | 26 degrees C / 78 degrees F |
| SFB 3 Inlet1 | OK | 26 degrees C / 78 degrees F |
| SFB 3 Exhaust2 | OK | 28 degrees C / 82 degrees F |
| SFB 3 SFB2-PF-local | OK | 27 degrees C / 80 degrees F |
| SFB 3 SFB2-PF-die | OK | 33 degrees C / 91 degrees F |
| SFB 4 Inlet2 | OK | 28 degrees C / 82 degrees F |
| SFB 4 Exhaust1 | OK | 26 degrees C / 78 degrees F |
| SFB 4 Inlet1 | OK | 26 degrees C / 78 degrees F |
| SFB 4 Exhaust2 | OK | 28 degrees C / 82 degrees F |
| SFB 4 SFB2-PF-local | OK | 27 degrees C / 80 degrees F |
| SFB 4 SFB2-PF-die | OK | 32 degrees C / 89 degrees F |
| SFB 5 Inlet2 | OK | 29 degrees C / 84 degrees F |
| SFB 5 Exhaust1 | OK | 27 degrees C / 80 degrees F |
| SFB 5 Inlet1 | OK | 28 degrees C / 82 degrees F |
| SFB 5 Exhaust2 | OK | 29 degrees C / 84 degrees F |
| SFB 5 SFB2-PF-local | OK | 28 degrees C / 82 degrees F |
| SFB 5 SFB2-PF-die | OK | 34 degrees C / 93 degrees F |
| SFB 6 Inlet2 | OK | 33 degrees C / 91 degrees F |
| SFB 6 Exhaust1 | OK | 32 degrees C / 89 degrees F |
| SFB 6 Inlet1 | OK | 32 degrees C / 89 degrees F |
| SFB 6 Exhaust2 | OK | 34 degrees C / 93 degrees F |
| SFB 6 SFB2-PF-local | OK | 33 degrees C / 91 degrees F |
| SFB 6 SFB2-PF-die | OK | 40 degrees C / 104 degrees F |

| | | |
|------------------------|----|------------------------------|
| SFB 7 Inlet2 | OK | 29 degrees C / 84 degrees F |
| SFB 7 Exhaust1 | OK | 28 degrees C / 82 degrees F |
| SFB 7 Inlet1 | OK | 29 degrees C / 84 degrees F |
| SFB 7 Exhaust2 | OK | 29 degrees C / 84 degrees F |
| SFB 7 SFB2-PF-local | OK | 28 degrees C / 82 degrees F |
| SFB 7 SFB2-PF-die | OK | 33 degrees C / 91 degrees F |
| FPC 0 Intake | OK | 29 degrees C / 84 degrees F |
| FPC 0 Exhaust A | OK | 42 degrees C / 107 degrees F |
| FPC 0 Exhaust B | OK | 42 degrees C / 107 degrees F |
| FPC 0 XL 0 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 0 XL 0 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 0 XL 0 XR2 0 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 0 XL 0 XR2 0 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 0 XL 0 XR2 1 TSen | OK | 38 degrees C / 100 degrees F |
| FPC 0 XL 0 XR2 1 Chip | OK | 59 degrees C / 138 degrees F |
| FPC 0 XL 1 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 0 XL 1 XR2 0 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 XR2 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 0 XL 1 XR2 1 TSen | OK | 30 degrees C / 86 degrees F |
| FPC 0 XL 1 XR2 1 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 0 XM 0 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 0 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 0 XM 1 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 1 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 2 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 2 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 3 TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 XM 3 Chip | OK | 40 degrees C / 104 degrees F |
| FPC 0 PCIe Switch TSen | OK | 42 degrees C / 107 degrees F |
| FPC 0 PCIe Switch Chip | OK | 22 degrees C / 71 degrees F |
| FPC 1 Intake | OK | 29 degrees C / 84 degrees F |
| FPC 1 Exhaust A | OK | 52 degrees C / 125 degrees F |
| FPC 1 Exhaust B | OK | 44 degrees C / 111 degrees F |
| FPC 1 EA0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA0 Chip | OK | 47 degrees C / 116 degrees F |
| FPC 1 EA0_XR0 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA0_XR0 Chip | OK | 56 degrees C / 132 degrees F |
| FPC 1 EA0_XR1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA0_XR1 Chip | OK | 53 degrees C / 127 degrees F |
| FPC 1 EA1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1 Chip | OK | 49 degrees C / 120 degrees F |
| FPC 1 EA1_XR0 TSen | OK | 54 degrees C / 129 degrees F |

| | | |
|--------------------------|----|------------------------------|
| FPC 1 EA1_XR0 Chip | OK | 57 degrees C / 134 degrees F |
| FPC 1 EA1_XR1 TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1_XR1 Chip | OK | 58 degrees C / 136 degrees F |
| FPC 1 PEX TSen | OK | 54 degrees C / 129 degrees F |
| FPC 1 PEX Chip | OK | 39 degrees C / 102 degrees F |
| FPC 1 EA2 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA2 Chip | OK | 39 degrees C / 102 degrees F |
| FPC 1 EA2_XR0 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA2_XR0 Chip | OK | 45 degrees C / 113 degrees F |
| FPC 1 EA2_XR1 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA2_XR1 Chip | OK | 42 degrees C / 107 degrees F |
| FPC 1 EA3 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA3 Chip | OK | 40 degrees C / 104 degrees F |
| FPC 1 EA3_XR0 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA3_XR0 Chip | OK | 50 degrees C / 122 degrees F |
| FPC 1 EA3_XR1 TSen | OK | 43 degrees C / 109 degrees F |
| FPC 1 EA3_XR1 Chip | OK | 46 degrees C / 114 degrees F |
| FPC 1 EA0_HMC0 Logic die | OK | 60 degrees C / 140 degrees F |
| FPC 1 EA0_HMC0 DRAM botm | OK | 57 degrees C / 134 degrees F |
| FPC 1 EA0_HMC1 Logic die | OK | 61 degrees C / 141 degrees F |
| FPC 1 EA0_HMC1 DRAM botm | OK | 58 degrees C / 136 degrees F |
| FPC 1 EA0_HMC2 Logic die | OK | 57 degrees C / 134 degrees F |
| FPC 1 EA0_HMC2 DRAM botm | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA1_HMC0 Logic die | OK | 65 degrees C / 149 degrees F |
| FPC 1 EA1_HMC0 DRAM botm | OK | 62 degrees C / 143 degrees F |
| FPC 1 EA1_HMC1 Logic die | OK | 64 degrees C / 147 degrees F |
| FPC 1 EA1_HMC1 DRAM botm | OK | 61 degrees C / 141 degrees F |
| FPC 1 EA1_HMC2 Logic die | OK | 61 degrees C / 141 degrees F |
| FPC 1 EA1_HMC2 DRAM botm | OK | 58 degrees C / 136 degrees F |
| FPC 1 EA2_HMC0 Logic die | OK | 50 degrees C / 122 degrees F |
| FPC 1 EA2_HMC0 DRAM botm | OK | 47 degrees C / 116 degrees F |
| FPC 1 EA2_HMC1 Logic die | OK | 54 degrees C / 129 degrees F |
| FPC 1 EA2_HMC1 DRAM botm | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA2_HMC2 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA2_HMC2 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA3_HMC0 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA3_HMC0 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA3_HMC1 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA3_HMC1 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 1 EA3_HMC2 Logic die | OK | 51 degrees C / 123 degrees F |
| FPC 1 EA3_HMC2 DRAM botm | OK | 48 degrees C / 118 degrees F |
| FPC 7 Intake | OK | 30 degrees C / 86 degrees F |
| FPC 7 Exhaust A | OK | 45 degrees C / 113 degrees F |

| | | | |
|------|----------------------|----|------------------------------|
| | FPC 7 Exhaust B | OK | 38 degrees C / 100 degrees F |
| | FPC 7 QX 0 TSen | OK | 48 degrees C / 118 degrees F |
| | FPC 7 QX 0 Chip | OK | 51 degrees C / 123 degrees F |
| | FPC 7 LU 0 TCAM TSen | OK | 48 degrees C / 118 degrees F |
| | FPC 7 LU 0 TCAM Chip | OK | 51 degrees C / 123 degrees F |
| | FPC 7 LU 0 TSen | OK | 48 degrees C / 118 degrees F |
| | FPC 7 LU 0 Chip | OK | 50 degrees C / 122 degrees F |
| | FPC 7 MQ 0 TSen | OK | 48 degrees C / 118 degrees F |
| | FPC 7 MQ 0 Chip | OK | 54 degrees C / 129 degrees F |
| | FPC 7 QX 1 TSen | OK | 41 degrees C / 105 degrees F |
| | FPC 7 QX 1 Chip | OK | 42 degrees C / 107 degrees F |
| | FPC 7 LU 1 TCAM TSen | OK | 41 degrees C / 105 degrees F |
| | FPC 7 LU 1 TCAM Chip | OK | 43 degrees C / 109 degrees F |
| | FPC 7 LU 1 TSen | OK | 41 degrees C / 105 degrees F |
| | FPC 7 LU 1 Chip | OK | 46 degrees C / 114 degrees F |
| | FPC 7 MQ 1 TSen | OK | 41 degrees C / 105 degrees F |
| | FPC 7 MQ 1 Chip | OK | 47 degrees C / 116 degrees F |
| | ADC 7 Intake | OK | 32 degrees C / 89 degrees F |
| | ADC 7 Exhaust | OK | 39 degrees C / 102 degrees F |
| | ADC 7 ADC-XF1 | OK | 46 degrees C / 114 degrees F |
| | ADC 7 ADC-XF0 | OK | 54 degrees C / 129 degrees F |
| Fans | Fan Tray 0 Fan 1 | OK | 6240 RPM |
| | Fan Tray 0 Fan 2 | OK | 6120 RPM |
| | Fan Tray 0 Fan 3 | OK | 6120 RPM |
| | Fan Tray 0 Fan 4 | OK | 5760 RPM |
| | Fan Tray 0 Fan 5 | OK | 5880 RPM |
| | Fan Tray 0 Fan 6 | OK | 6000 RPM |
| | Fan Tray 1 Fan 1 | OK | 5880 RPM |
| | Fan Tray 1 Fan 2 | OK | 5880 RPM |
| | Fan Tray 1 Fan 3 | OK | 6000 RPM |
| | Fan Tray 1 Fan 4 | OK | 6000 RPM |
| | Fan Tray 1 Fan 5 | OK | 6000 RPM |
| | Fan Tray 1 Fan 6 | OK | 6000 RPM |

show chassis environment (T320 Router)

```

user@host> show chassis environment
Class Item          Status      Measurement
Power PEM 0         OK
      PEM 1         Absent
Temp  SCG 0         OK          28 degrees C / 82 degrees F

```


| | | | |
|------|-------------------------|----|------------------------------|
| | SCG 1 | OK | 28 degrees C / 82 degrees F |
| | Routing Engine 0 | OK | 31 degrees C / 87 degrees F |
| | Routing Engine 1 | OK | 30 degrees C / 86 degrees F |
| | CB 0 | OK | 32 degrees C / 89 degrees F |
| | CB 1 | OK | 32 degrees C / 89 degrees F |
| | SIB 0 | OK | 33 degrees C / 91 degrees F |
| | SIB 1 | OK | 33 degrees C / 91 degrees F |
| | SIB 2 | OK | 34 degrees C / 93 degrees F |
| | FPC 0 Top | OK | 38 degrees C / 100 degrees F |
| | FPC 0 Bottom | OK | 32 degrees C / 89 degrees F |
| | FPC 1 Top | OK | 38 degrees C / 100 degrees F |
| | FPC 1 Bottom | OK | 33 degrees C / 91 degrees F |
| | FPC 2 Top | OK | 36 degrees C / 96 degrees F |
| | FPC 2 Bottom | OK | 31 degrees C / 87 degrees F |
| | FPM GBUS | OK | 26 degrees C / 78 degrees F |
| | FPM Display | OK | 29 degrees C / 84 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |
| | Top Right Middle fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Bottom Left Front fan | OK | Spinning at normal speed |
| | Bottom Left Middle fan | OK | Spinning at normal speed |
| | Bottom Left Rear fan | OK | Spinning at normal speed |
| | Bottom Right Front fan | OK | Spinning at normal speed |
| | Bottom Right Middle fan | OK | Spinning at normal speed |
| | Bottom Right Rear fan | OK | Spinning at normal speed |
| | Rear Tray Top fan | OK | Spinning at normal speed |
| | Rear Tray Second fan | OK | Spinning at normal speed |
| | Rear Tray Middle fan | OK | Spinning at normal speed |
| | Rear Tray Fourth fan | OK | Spinning at normal speed |
| | Rear Tray Bottom fan | OK | Spinning at normal speed |
| Misc | CIP | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |

show chassis environment (MX10003 Router)

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

| Class | Item | Status | Measurement |
|-------|-------------------------------|--------|------------------------------|
| Temp | CB 0 Exhaust Temp Sensor 0x49 | OK | 36 degrees C / 96 degrees F |
| | CB 0 Inlet Temp Sensor 0x49 | OK | 29 degrees C / 84 degrees F |
| | CB 1 Exhaust Temp Sensor 0x49 | OK | 36 degrees C / 96 degrees F |
| | CB 1 Inlet Temp Sensor 0x49 | OK | 31 degrees C / 87 degrees F |
| | FPC 0 Intake Temp Sensor | OK | 29 degrees C / 84 degrees F |
| | FPC 0 Exhaust-A Temp Sensor | OK | 55 degrees C / 131 degrees F |
| | FPC 0 Exhaust-B Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 0 EA0 Chip | OK | 58 degrees C / 136 degrees F |
| | FPC 0 EA0-XR0 Chip | OK | 61 degrees C / 141 degrees F |
| | FPC 0 EA0-XR1 Chip | OK | 62 degrees C / 143 degrees F |
| | FPC 0 EA1 Chip | OK | 67 degrees C / 152 degrees F |
| | FPC 0 EA1-XR0 Chip | OK | 71 degrees C / 159 degrees F |
| | FPC 0 EA1-XR1 Chip | OK | 72 degrees C / 161 degrees F |
| | FPC 0 PEX Chip | OK | 75 degrees C / 167 degrees F |
| | FPC 0 EA2 Chip | OK | 49 degrees C / 120 degrees F |
| | FPC 0 EA2-XR0 Chip | OK | 55 degrees C / 131 degrees F |
| | FPC 0 EA2-XR1 Chip | OK | 56 degrees C / 132 degrees F |
| | FPC 0 PF Chip | OK | 68 degrees C / 154 degrees F |
| | FPC 0 EA0_HMC0 Logic die | OK | 72 degrees C / 161 degrees F |
| | FPC 0 EA0_HMC0 DRAM botm | OK | 69 degrees C / 156 degrees F |
| | FPC 0 EA0_HMC1 Logic die | OK | 72 degrees C / 161 degrees F |
| | FPC 0 EA0_HMC1 DRAM botm | OK | 69 degrees C / 156 degrees F |
| | FPC 0 EA0_HMC2 Logic die | OK | 75 degrees C / 167 degrees F |
| | FPC 0 EA0_HMC2 DRAM botm | OK | 72 degrees C / 161 degrees F |
| | FPC 0 EA1_HMC0 Logic die | OK | 81 degrees C / 177 degrees F |
| | FPC 0 EA1_HMC0 DRAM botm | OK | 78 degrees C / 172 degrees F |
| | FPC 0 EA1_HMC1 Logic die | OK | 79 degrees C / 174 degrees F |
| | FPC 0 EA1_HMC1 DRAM botm | OK | 76 degrees C / 168 degrees F |
| | FPC 0 EA1_HMC2 Logic die | OK | 82 degrees C / 179 degrees F |
| | FPC 0 EA1_HMC2 DRAM botm | OK | 79 degrees C / 174 degrees F |
| | FPC 0 EA2_HMC0 Logic die | OK | 61 degrees C / 141 degrees F |
| | FPC 0 EA2_HMC0 DRAM botm | OK | 58 degrees C / 136 degrees F |
| | FPC 0 EA2_HMC1 Logic die | OK | 62 degrees C / 143 degrees F |
| | FPC 0 EA2_HMC1 DRAM botm | OK | 59 degrees C / 138 degrees F |
| | FPC 0 EA2_HMC2 Logic die | OK | 64 degrees C / 147 degrees F |
| | FPC 0 EA2_HMC2 DRAM botm | OK | 61 degrees C / 141 degrees F |
| | FPC 1 Intake Temp Sensor | OK | 28 degrees C / 82 degrees F |

| | | | |
|-------|-----------------------------|--------|------------------------------|
| | FPC 1 Exhaust-A Temp Sensor | OK | 58 degrees C / 136 degrees F |
| | FPC 1 Exhaust-B Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | FPC 1 EA0 Chip | OK | 64 degrees C / 147 degrees F |
| | FPC 1 EA0-XR0 Chip | OK | 67 degrees C / 152 degrees F |
| | FPC 1 EA0-XR1 Chip | OK | 68 degrees C / 154 degrees F |
| | FPC 1 EA1 Chip | OK | 70 degrees C / 158 degrees F |
| | FPC 1 EA1-XR0 Chip | OK | 74 degrees C / 165 degrees F |
| | FPC 1 EA1-XR1 Chip | OK | 74 degrees C / 165 degrees F |
| | FPC 1 PEX Chip | OK | 88 degrees C / 190 degrees F |
| | FPC 1 EA2 Chip | OK | 50 degrees C / 122 degrees F |
| | FPC 1 EA2-XR0 Chip | OK | 54 degrees C / 129 degrees F |
| | FPC 1 EA2-XR1 Chip | OK | 56 degrees C / 132 degrees F |
| | FPC 1 PF Chip | OK | 71 degrees C / 159 degrees F |
| | FPC 1 EA0_HMC0 Logic die | OK | 74 degrees C / 165 degrees F |
| | FPC 1 EA0_HMC0 DRAM botm | OK | 71 degrees C / 159 degrees F |
| | FPC 1 EA0_HMC1 Logic die | OK | 78 degrees C / 172 degrees F |
| | FPC 1 EA0_HMC1 DRAM botm | OK | 75 degrees C / 167 degrees F |
| | FPC 1 EA0_HMC2 Logic die | OK | 78 degrees C / 172 degrees F |
| | FPC 1 EA0_HMC2 DRAM botm | OK | 75 degrees C / 167 degrees F |
| | FPC 1 EA1_HMC0 Logic die | OK | 84 degrees C / 183 degrees F |
| | FPC 1 EA1_HMC0 DRAM botm | OK | 81 degrees C / 177 degrees F |
| | FPC 1 EA1_HMC1 Logic die | OK | 81 degrees C / 177 degrees F |
| | FPC 1 EA1_HMC1 DRAM botm | OK | 78 degrees C / 172 degrees F |
| | FPC 1 EA1_HMC2 Logic die | OK | 85 degrees C / 185 degrees F |
| | FPC 1 EA1_HMC2 DRAM botm | OK | 82 degrees C / 179 degrees F |
| | FPC 1 EA2_HMC0 Logic die | OK | 63 degrees C / 145 degrees F |
| | FPC 1 EA2_HMC0 DRAM botm | OK | 60 degrees C / 140 degrees F |
| | FPC 1 EA2_HMC1 Logic die | OK | 60 degrees C / 140 degrees F |
| | FPC 1 EA2_HMC1 DRAM botm | OK | 57 degrees C / 134 degrees F |
| | FPC 1 EA2_HMC2 Logic die | OK | 66 degrees C / 150 degrees F |
| | FPC 1 EA2_HMC2 DRAM botm | OK | 63 degrees C / 145 degrees F |
| Power | PEM 0 | OK | |
| | PEM 1 | OK | |
| | PEM 2 | OK | |
| | PEM 3 | OK | |
| | PEM 4 | Absent | |
| | PEM 5 | Absent | |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |

| | | |
|------------------|----|--------------------------|
| Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| Fan Tray 2 Fan 0 | OK | Spinning at normal speed |
| Fan Tray 2 Fan 1 | OK | Spinning at normal speed |
| Fan Tray 2 Fan 2 | OK | Spinning at normal speed |
| Fan Tray 2 Fan 3 | OK | Spinning at normal speed |
| Fan Tray 3 Fan 0 | OK | Spinning at normal speed |
| Fan Tray 3 Fan 1 | OK | Spinning at normal speed |
| Fan Tray 3 Fan 2 | OK | Spinning at normal speed |
| Fan Tray 3 Fan 3 | OK | Spinning at normal speed |

show chassis environment (MX10008 Router)

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

| Class | Item | Status | Measurement |
|-------|-----------------------------|--------|------------------------------|
| | Routing Engine 0 CPU | OK | 41 degrees C / 105 degrees F |
| | Routing Engine 1 CPU | OK | 40 degrees C / 104 degrees F |
| Temp | CB 0 Intake A Temp Sensor | OK | 24 degrees C / 75 degrees F |
| | CB 0 Intake B Temp Sensor | OK | 24 degrees C / 75 degrees F |
| | CB 0 Exhaust A Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | CB 0 Exhaust B Temp Sensor | OK | 30 degrees C / 86 degrees F |
| | CB 0 Middle Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | CB 1 Intake A Temp Sensor | OK | 24 degrees C / 75 degrees F |
| | CB 1 Intake B Temp Sensor | OK | 23 degrees C / 73 degrees F |
| | CB 1 Exhaust A Temp Sensor | OK | 27 degrees C / 80 degrees F |
| | CB 1 Exhaust B Temp Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 1 Middle Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | FPC 0 Intake-A Temp Sensor | OK | 32 degrees C / 89 degrees F |
| | FPC 0 Exhaust-A Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 0 Exhaust-B Temp Sensor | OK | 49 degrees C / 120 degrees F |
| | FPC 0 EA0 Temp Sensor | OK | 66 degrees C / 150 degrees F |
| | FPC 0 EA0_XR0 Temp Sensor | OK | 69 degrees C / 156 degrees F |
| | FPC 0 EA0_XR1 Temp Sensor | OK | 73 degrees C / 163 degrees F |
| | FPC 0 EA1 Temp Sensor | OK | 60 degrees C / 140 degrees F |
| | FPC 0 EA1_XR0 Temp Sensor | OK | 64 degrees C / 147 degrees F |
| | FPC 0 EA1_XR1 Temp Sensor | OK | 63 degrees C / 145 degrees F |
| | FPC 0 EA2 Temp Sensor | OK | 68 degrees C / 154 degrees F |
| | FPC 0 EA2_XR0 Temp Sensor | OK | 73 degrees C / 163 degrees F |
| | FPC 0 EA2_XR1 Temp Sensor | OK | 72 degrees C / 161 degrees F |
| | FPC 0 EA3 Temp Sensor | OK | 63 degrees C / 145 degrees F |
| | FPC 0 EA3_XR0 Temp Sensor | OK | 66 degrees C / 150 degrees F |

| | | |
|---------------------------|----|------------------------------|
| FPC 0 EA3_XR1 Temp Sensor | OK | 65 degrees C / 149 degrees F |
| FPC 0 EA4 Temp Sensor | OK | 68 degrees C / 154 degrees F |
| FPC 0 EA4_XR0 Temp Sensor | OK | 71 degrees C / 159 degrees F |
| FPC 0 EA4_XR1 Temp Sensor | OK | 70 degrees C / 158 degrees F |
| FPC 0 EA5 Temp Sensor | OK | 56 degrees C / 132 degrees F |
| FPC 0 EA5_XR0 Temp Sensor | OK | 61 degrees C / 141 degrees F |
| FPC 0 EA5_XR1 Temp Sensor | OK | 63 degrees C / 145 degrees F |
| FPC 0 EA0_HMC0 Logic die | OK | 75 degrees C / 167 degrees F |
| FPC 0 EA0_HMC0 DRAM botm | OK | 72 degrees C / 161 degrees F |
| FPC 0 EA0_HMC1 Logic die | OK | 75 degrees C / 167 degrees F |
| FPC 0 EA0_HMC1 DRAM botm | OK | 72 degrees C / 161 degrees F |
| FPC 0 EA0_HMC2 Logic die | OK | 77 degrees C / 170 degrees F |
| FPC 0 EA0_HMC2 DRAM botm | OK | 74 degrees C / 165 degrees F |
| FPC 0 EA1_HMC0 Logic die | OK | 72 degrees C / 161 degrees F |
| FPC 0 EA1_HMC0 DRAM botm | OK | 69 degrees C / 156 degrees F |
| FPC 0 EA1_HMC1 Logic die | OK | 73 degrees C / 163 degrees F |
| FPC 0 EA1_HMC1 DRAM botm | OK | 70 degrees C / 158 degrees F |
| FPC 0 EA1_HMC2 Logic die | OK | 72 degrees C / 161 degrees F |
| FPC 0 EA1_HMC2 DRAM botm | OK | 69 degrees C / 156 degrees F |
| FPC 0 EA2_HMC0 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 0 EA2_HMC0 DRAM botm | OK | 77 degrees C / 170 degrees F |
| FPC 0 EA2_HMC1 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 0 EA2_HMC1 DRAM botm | OK | 77 degrees C / 170 degrees F |
| FPC 0 EA2_HMC2 Logic die | OK | 79 degrees C / 174 degrees F |
| FPC 0 EA2_HMC2 DRAM botm | OK | 76 degrees C / 168 degrees F |
| FPC 0 EA3_HMC0 Logic die | OK | 77 degrees C / 170 degrees F |
| FPC 0 EA3_HMC0 DRAM botm | OK | 74 degrees C / 165 degrees F |
| FPC 0 EA3_HMC1 Logic die | OK | 78 degrees C / 172 degrees F |
| FPC 0 EA3_HMC1 DRAM botm | OK | 75 degrees C / 167 degrees F |
| FPC 0 EA3_HMC2 Logic die | OK | 77 degrees C / 170 degrees F |
| FPC 0 EA3_HMC2 DRAM botm | OK | 74 degrees C / 165 degrees F |
| FPC 0 EA4_HMC0 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 0 EA4_HMC0 DRAM botm | OK | 77 degrees C / 170 degrees F |
| FPC 0 EA4_HMC1 Logic die | OK | 81 degrees C / 177 degrees F |
| FPC 0 EA4_HMC1 DRAM botm | OK | 78 degrees C / 172 degrees F |
| FPC 0 EA4_HMC2 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 0 EA4_HMC2 DRAM botm | OK | 77 degrees C / 170 degrees F |
| FPC 0 EA5_HMC0 Logic die | OK | 68 degrees C / 154 degrees F |
| FPC 0 EA5_HMC0 DRAM botm | OK | 65 degrees C / 149 degrees F |
| FPC 0 EA5_HMC1 Logic die | OK | 68 degrees C / 154 degrees F |
| FPC 0 EA5_HMC1 DRAM botm | OK | 65 degrees C / 149 degrees F |
| FPC 0 EA5_HMC2 Logic die | OK | 67 degrees C / 152 degrees F |
| FPC 0 EA5_HMC2 DRAM botm | OK | 64 degrees C / 147 degrees F |

| | | |
|-----------------------------|----|------------------------------|
| FPC 2 Intake-A Temp Sensor | OK | 32 degrees C / 89 degrees F |
| FPC 2 Exhaust-A Temp Sensor | OK | 52 degrees C / 125 degrees F |
| FPC 2 Exhaust-B Temp Sensor | OK | 50 degrees C / 122 degrees F |
| FPC 2 EA0 Temp Sensor | OK | 71 degrees C / 159 degrees F |
| FPC 2 EA0_XR0 Temp Sensor | OK | 75 degrees C / 167 degrees F |
| FPC 2 EA0_XR1 Temp Sensor | OK | 78 degrees C / 172 degrees F |
| FPC 2 EA1 Temp Sensor | OK | 64 degrees C / 147 degrees F |
| FPC 2 EA1_XR0 Temp Sensor | OK | 67 degrees C / 152 degrees F |
| FPC 2 EA1_XR1 Temp Sensor | OK | 65 degrees C / 149 degrees F |
| FPC 2 EA2 Temp Sensor | OK | 75 degrees C / 167 degrees F |
| FPC 2 EA2_XR0 Temp Sensor | OK | 80 degrees C / 176 degrees F |
| FPC 2 EA2_XR1 Temp Sensor | OK | 80 degrees C / 176 degrees F |
| FPC 2 EA3 Temp Sensor | OK | 66 degrees C / 150 degrees F |
| FPC 2 EA3_XR0 Temp Sensor | OK | 69 degrees C / 156 degrees F |
| FPC 2 EA3_XR1 Temp Sensor | OK | 69 degrees C / 156 degrees F |
| FPC 2 EA4 Temp Sensor | OK | 75 degrees C / 167 degrees F |
| FPC 2 EA4_XR0 Temp Sensor | OK | 76 degrees C / 168 degrees F |
| FPC 2 EA4_XR1 Temp Sensor | OK | 75 degrees C / 167 degrees F |
| FPC 2 EA5 Temp Sensor | OK | 60 degrees C / 140 degrees F |
| FPC 2 EA5_XR0 Temp Sensor | OK | 64 degrees C / 147 degrees F |
| FPC 2 EA5_XR1 Temp Sensor | OK | 64 degrees C / 147 degrees F |
| FPC 2 EA0_HMC0 Logic die | OK | 84 degrees C / 183 degrees F |
| FPC 2 EA0_HMC0 DRAM botm | OK | 81 degrees C / 177 degrees F |
| FPC 2 EA0_HMC1 Logic die | OK | 85 degrees C / 185 degrees F |
| FPC 2 EA0_HMC1 DRAM botm | OK | 82 degrees C / 179 degrees F |
| FPC 2 EA0_HMC2 Logic die | OK | 83 degrees C / 181 degrees F |
| FPC 2 EA0_HMC2 DRAM botm | OK | 80 degrees C / 176 degrees F |
| FPC 2 EA1_HMC0 Logic die | OK | 76 degrees C / 168 degrees F |
| FPC 2 EA1_HMC0 DRAM botm | OK | 73 degrees C / 163 degrees F |
| FPC 2 EA1_HMC1 Logic die | OK | 76 degrees C / 168 degrees F |
| FPC 2 EA1_HMC1 DRAM botm | OK | 73 degrees C / 163 degrees F |
| FPC 2 EA1_HMC2 Logic die | OK | 76 degrees C / 168 degrees F |
| FPC 2 EA1_HMC2 DRAM botm | OK | 73 degrees C / 163 degrees F |
| FPC 2 EA2_HMC0 Logic die | OK | 86 degrees C / 186 degrees F |
| FPC 2 EA2_HMC0 DRAM botm | OK | 83 degrees C / 181 degrees F |
| FPC 2 EA2_HMC1 Logic die | OK | 87 degrees C / 188 degrees F |
| FPC 2 EA2_HMC1 DRAM botm | OK | 84 degrees C / 183 degrees F |
| FPC 2 EA2_HMC2 Logic die | OK | 87 degrees C / 188 degrees F |
| FPC 2 EA2_HMC2 DRAM botm | OK | 84 degrees C / 183 degrees F |
| FPC 2 EA3_HMC0 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 2 EA3_HMC0 DRAM botm | OK | 77 degrees C / 170 degrees F |
| FPC 2 EA3_HMC1 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 2 EA3_HMC1 DRAM botm | OK | 77 degrees C / 170 degrees F |

| | | |
|-----------------------------|----|------------------------------|
| FPC 2 EA3_HMC2 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 2 EA3_HMC2 DRAM botm | OK | 77 degrees C / 170 degrees F |
| FPC 2 EA4_HMC0 Logic die | OK | 88 degrees C / 190 degrees F |
| FPC 2 EA4_HMC0 DRAM botm | OK | 85 degrees C / 185 degrees F |
| FPC 2 EA4_HMC1 Logic die | OK | 89 degrees C / 192 degrees F |
| FPC 2 EA4_HMC1 DRAM botm | OK | 86 degrees C / 186 degrees F |
| FPC 2 EA4_HMC2 Logic die | OK | 80 degrees C / 176 degrees F |
| FPC 2 EA4_HMC2 DRAM botm | OK | 77 degrees C / 170 degrees F |
| FPC 2 EA5_HMC0 Logic die | OK | 72 degrees C / 161 degrees F |
| FPC 2 EA5_HMC0 DRAM botm | OK | 69 degrees C / 156 degrees F |
| FPC 2 EA5_HMC1 Logic die | OK | 69 degrees C / 156 degrees F |
| FPC 2 EA5_HMC1 DRAM botm | OK | 66 degrees C / 150 degrees F |
| FPC 2 EA5_HMC2 Logic die | OK | 72 degrees C / 161 degrees F |
| FPC 2 EA5_HMC2 DRAM botm | OK | 69 degrees C / 156 degrees F |
| FPC 3 Intake-A Temp Sensor | OK | 30 degrees C / 86 degrees F |
| FPC 3 Exhaust-A Temp Sensor | OK | 48 degrees C / 118 degrees F |
| FPC 3 Exhaust-B Temp Sensor | OK | 44 degrees C / 111 degrees F |
| FPC 3 EA0 Temp Sensor | OK | 60 degrees C / 140 degrees F |
| FPC 3 EA0_XR0 Temp Sensor | OK | 65 degrees C / 149 degrees F |
| FPC 3 EA0_XR1 Temp Sensor | OK | 67 degrees C / 152 degrees F |
| FPC 3 EA1 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| FPC 3 EA1_XR0 Temp Sensor | OK | 59 degrees C / 138 degrees F |
| FPC 3 EA1_XR1 Temp Sensor | OK | 58 degrees C / 136 degrees F |
| FPC 3 EA2 Temp Sensor | OK | 62 degrees C / 143 degrees F |
| FPC 3 EA2_XR0 Temp Sensor | OK | 66 degrees C / 150 degrees F |
| FPC 3 EA2_XR1 Temp Sensor | OK | 66 degrees C / 150 degrees F |
| FPC 3 EA3 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| FPC 3 EA3_XR0 Temp Sensor | OK | 57 degrees C / 134 degrees F |
| FPC 3 EA3_XR1 Temp Sensor | OK | 56 degrees C / 132 degrees F |
| FPC 3 EA4 Temp Sensor | OK | 68 degrees C / 154 degrees F |
| FPC 3 EA4_XR0 Temp Sensor | OK | 71 degrees C / 159 degrees F |
| FPC 3 EA4_XR1 Temp Sensor | OK | 70 degrees C / 158 degrees F |
| FPC 3 EA5 Temp Sensor | OK | 55 degrees C / 131 degrees F |
| FPC 3 EA5_XR0 Temp Sensor | OK | 58 degrees C / 136 degrees F |
| FPC 3 EA5_XR1 Temp Sensor | OK | 58 degrees C / 136 degrees F |
| FPC 3 EA0_HMC0 Logic die | OK | 69 degrees C / 156 degrees F |
| FPC 3 EA0_HMC0 DRAM botm | OK | 66 degrees C / 150 degrees F |
| FPC 3 EA0_HMC1 Logic die | OK | 70 degrees C / 158 degrees F |
| FPC 3 EA0_HMC1 DRAM botm | OK | 67 degrees C / 152 degrees F |
| FPC 3 EA0_HMC2 Logic die | OK | 69 degrees C / 156 degrees F |
| FPC 3 EA0_HMC2 DRAM botm | OK | 66 degrees C / 150 degrees F |
| FPC 3 EA1_HMC0 Logic die | OK | 67 degrees C / 152 degrees F |
| FPC 3 EA1_HMC0 DRAM botm | OK | 64 degrees C / 147 degrees F |

| | | | |
|-------|--------------------------|--------|------------------------------|
| | FPC 3 EA1_HMC1 Logic die | OK | 64 degrees C / 147 degrees F |
| | FPC 3 EA1_HMC1 DRAM botm | OK | 61 degrees C / 141 degrees F |
| | FPC 3 EA1_HMC2 Logic die | OK | 64 degrees C / 147 degrees F |
| | FPC 3 EA1_HMC2 DRAM botm | OK | 61 degrees C / 141 degrees F |
| | FPC 3 EA2_HMC0 Logic die | OK | 74 degrees C / 165 degrees F |
| | FPC 3 EA2_HMC0 DRAM botm | OK | 71 degrees C / 159 degrees F |
| | FPC 3 EA2_HMC1 Logic die | OK | 76 degrees C / 168 degrees F |
| | FPC 3 EA2_HMC1 DRAM botm | OK | 73 degrees C / 163 degrees F |
| | FPC 3 EA2_HMC2 Logic die | OK | 74 degrees C / 165 degrees F |
| | FPC 3 EA2_HMC2 DRAM botm | OK | 71 degrees C / 159 degrees F |
| | FPC 3 EA3_HMC0 Logic die | OK | 69 degrees C / 156 degrees F |
| | FPC 3 EA3_HMC0 DRAM botm | OK | 66 degrees C / 150 degrees F |
| | FPC 3 EA3_HMC1 Logic die | OK | 68 degrees C / 154 degrees F |
| | FPC 3 EA3_HMC1 DRAM botm | OK | 65 degrees C / 149 degrees F |
| | FPC 3 EA3_HMC2 Logic die | OK | 68 degrees C / 154 degrees F |
| | FPC 3 EA3_HMC2 DRAM botm | OK | 65 degrees C / 149 degrees F |
| | FPC 3 EA4_HMC0 Logic die | OK | 81 degrees C / 177 degrees F |
| | FPC 3 EA4_HMC0 DRAM botm | OK | 78 degrees C / 172 degrees F |
| | FPC 3 EA4_HMC1 Logic die | OK | 80 degrees C / 176 degrees F |
| | FPC 3 EA4_HMC1 DRAM botm | OK | 77 degrees C / 170 degrees F |
| | FPC 3 EA4_HMC2 Logic die | OK | 81 degrees C / 177 degrees F |
| | FPC 3 EA4_HMC2 DRAM botm | OK | 78 degrees C / 172 degrees F |
| | FPC 3 EA5_HMC0 Logic die | OK | 68 degrees C / 154 degrees F |
| | FPC 3 EA5_HMC0 DRAM botm | OK | 65 degrees C / 149 degrees F |
| | FPC 3 EA5_HMC1 Logic die | OK | 70 degrees C / 158 degrees F |
| | FPC 3 EA5_HMC1 DRAM botm | OK | 67 degrees C / 152 degrees F |
| | FPC 3 EA5_HMC2 Logic die | OK | 69 degrees C / 156 degrees F |
| | FPC 3 EA5_HMC2 DRAM botm | OK | 66 degrees C / 150 degrees F |
| Power | PEM 0 | OK | 29 degrees C / 84 degrees F |
| | PEM 1 | OK | 27 degrees C / 80 degrees F |
| | PEM 2 | OK | 30 degrees C / 86 degrees F |
| | PEM 3 | Check | |
| | PEM 4 | Check | |
| | PEM 5 | Check | |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 4 | Failed | |
| | Fan Tray 0 Fan 5 | Failed | |
| | Fan Tray 0 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 7 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 8 | OK | Spinning at normal speed |

| | | |
|-------------------|----|------------------------------|
| Fan Tray 0 Fan 9 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 10 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 4 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 5 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 6 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 7 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 8 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 9 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 10 | OK | Spinning at normal speed |
| SFB 0 Intake-A | OK | 32 degrees C / 89 degrees F |
| SFB 0 Intake-B | OK | 21 degrees C / 69 degrees F |
| SFB 0 Exhaust-A | OK | 27 degrees C / 80 degrees F |
| SFB 0 Exhaust-B | OK | 32 degrees C / 89 degrees F |
| SFB 0 PF0 | OK | 39 degrees C / 102 degrees F |
| SFB 0 PF1 | OK | 29 degrees C / 84 degrees F |
| SFB 1 Intake-A | OK | 43 degrees C / 109 degrees F |
| SFB 1 Intake-B | OK | 20 degrees C / 68 degrees F |
| SFB 1 Exhaust-A | OK | 25 degrees C / 77 degrees F |
| SFB 1 Exhaust-B | OK | 44 degrees C / 111 degrees F |
| SFB 1 PF0 | OK | 50 degrees C / 122 degrees F |
| SFB 1 PF1 | OK | 29 degrees C / 84 degrees F |
| SFB 2 Intake-A | OK | 39 degrees C / 102 degrees F |
| SFB 2 Intake-B | OK | 20 degrees C / 68 degrees F |
| SFB 2 Exhaust-A | OK | 25 degrees C / 77 degrees F |
| SFB 2 Exhaust-B | OK | 38 degrees C / 100 degrees F |
| SFB 2 PF0 | OK | 45 degrees C / 113 degrees F |
| SFB 2 PF1 | OK | 30 degrees C / 86 degrees F |
| SFB 3 Intake-A | OK | 36 degrees C / 96 degrees F |
| SFB 3 Intake-B | OK | 20 degrees C / 68 degrees F |
| SFB 3 Exhaust-A | OK | 25 degrees C / 77 degrees F |
| SFB 3 Exhaust-B | OK | 35 degrees C / 95 degrees F |
| SFB 3 PF0 | OK | 42 degrees C / 107 degrees F |
| SFB 3 PF1 | OK | 29 degrees C / 84 degrees F |
| SFB 4 Intake-A | OK | 30 degrees C / 86 degrees F |
| SFB 4 Intake-B | OK | 20 degrees C / 68 degrees F |
| SFB 4 Exhaust-A | OK | 25 degrees C / 77 degrees F |
| SFB 4 Exhaust-B | OK | 31 degrees C / 87 degrees F |
| SFB 4 PF0 | OK | 41 degrees C / 105 degrees F |
| SFB 4 PF1 | OK | 29 degrees C / 84 degrees F |

| | | |
|-----------------|----|-----------------------------|
| SFB 5 Intake-A | OK | 30 degrees C / 86 degrees F |
| SFB 5 Intake-B | OK | 21 degrees C / 69 degrees F |
| SFB 5 Exhaust-A | OK | 25 degrees C / 77 degrees F |
| SFB 5 Exhaust-B | OK | 30 degrees C / 86 degrees F |
| SFB 5 PF0 | OK | 35 degrees C / 95 degrees F |
| SFB 5 PF1 | OK | 34 degrees C / 93 degrees F |

show chassis environment (MX204 Router)

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

| Class | Item | Status | Measurement |
|-------|-------------------------------|--------|------------------------------|
| Temp | CB 0 Top Right Inlet Sensor | OK | 35 degrees C / 95 degrees F |
| | CB 0 Top Left Inlet Sensor | OK | 37 degrees C / 98 degrees F |
| | CB 0 Top Right Exhaust Sensor | OK | 43 degrees C / 109 degrees F |
| | CB 0 Top Left Exhaust Sensor | OK | 50 degrees C / 122 degrees F |
| | CB 0 CPU Core-0 Temp | OK | 47 degrees C / 116 degrees F |
| | CB 0 CPU Core-1 Temp | OK | 48 degrees C / 118 degrees F |
| | CB 0 CPU Core-2 Temp | OK | 47 degrees C / 116 degrees F |
| | CB 0 CPU Core-3 Temp | OK | 47 degrees C / 116 degrees F |
| | CB 0 CPU Core-4 Temp | OK | 47 degrees C / 116 degrees F |
| | CB 0 CPU Core-5 Temp | OK | 47 degrees C / 116 degrees F |
| | CB 0 CPU Core-6 Temp | OK | 47 degrees C / 116 degrees F |
| | CB 0 CPU Core-7 Temp | OK | 47 degrees C / 116 degrees F |
| | FPC 0 EA0_HMC0 Logic die | OK | 77 degrees C / 170 degrees F |
| | FPC 0 EA0_HMC0 DRAM botm | OK | 74 degrees C / 165 degrees F |
| | FPC 0 EA0_HMC1 Logic die | OK | 81 degrees C / 177 degrees F |
| | FPC 0 EA0_HMC1 DRAM botm | OK | 78 degrees C / 172 degrees F |
| | FPC 0 EA0 Chip | OK | 94 degrees C / 201 degrees F |
| | FPC 0 EA0-XR0 Chip | OK | 64 degrees C / 147 degrees F |
| | FPC 0 EA0-XR1 Chip | OK | 65 degrees C / 149 degrees F |
| Power | PEM 0 | Absent | |
| | PEM 1 | OK | 48 degrees C / 118 degrees F |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 1 | OK | Spinning at normal speed |

show chassis environment (T640 Router)

```

user@host> show chassis environment
Class Item                Status      Measurement
Temp PEM 0                Absent
    PEM 1                 OK          22 degrees C / 71 degrees F
    SCG 0                 OK          30 degrees C / 86 degrees F
    SCG 1                 OK          30 degrees C / 86 degrees F
    Routing Engine 0      Present
    Routing Engine 1      OK          27 degrees C / 80 degrees F
    CB 0                  Present
    CB 1                  OK          33 degrees C / 91 degrees F
    SIB 0                 Absent
    SIB 1                 Absent
    SIB 2                 Absent
    SIB 3                 Absent
    SIB 4                 Absent
    FPC 4 Top             Testing
    FPC 4 Bottom          Testing
    FPC 5 Top             Testing
    FPC 5 Bottom          Testing
    FPC 6 Top             Testing
    FPC 6 Bottom          Testing
    FPM GBUS              OK          23 degrees C / 73 degrees F
    FPM Display           Absent
Fans  Top Left Front fan   OK          Spinning at normal speed
    Top Left Middle fan   OK          Spinning at normal speed
    Top Left Rear fan     OK          Spinning at normal speed
    Top Right Front fan   OK          Spinning at normal speed
    Top Right Middle fan  OK          Spinning at normal speed
    Top Right Rear fan    OK          Spinning at normal speed
    Bottom Left Front fan  OK          Spinning at normal speed
    Bottom Left Middle fan OK          Spinning at normal speed
    Bottom Left Rear fan   OK          Spinning at normal speed
    Bottom Right Front fan OK          Spinning at normal speed
    Bottom Right Middle fan OK         Spinning at normal speed
    Bottom Right Rear fan  OK          Spinning at normal speed
    Fourth Blower from top OK         Spinning at normal speed
    Bottom Blower          OK          Spinning at normal speed
    Middle Blower          OK          Spinning at normal speed
    Top Blower             OK          Spinning at normal speed
    Second Blower from top OK         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 | |

lcc0-re0:

| Class | Item | Status | Measurement |
|-------|------------------------|--------|------------------------------|
| Temp | PEM 0 | OK | 29 degrees C / 84 degrees F |
| | PEM 1 | Absent | |
| | SCG 0 | OK | 35 degrees C / 95 degrees F |
| | SCG 1 | Absent | |
| | Routing Engine 0 | OK | 39 degrees C / 102 degrees F |
| | Routing Engine 1 | OK | 36 degrees C / 96 degrees F |
| | CB 0 | OK | 32 degrees C / 89 degrees F |
| | CB 1 | OK | 32 degrees C / 89 degrees F |
| | SIB 0 | OK | 40 degrees C / 104 degrees F |
| | SIB 0 (B) | OK | 51 degrees C / 123 degrees F |
| | FPC 0 Top | OK | 45 degrees C / 113 degrees F |
| | FPC 0 Bottom | OK | 31 degrees C / 87 degrees F |
| | FPC 1 Top | OK | 34 degrees C / 93 degrees F |
| | FPC 1 Bottom | OK | 31 degrees C / 87 degrees F |
| | FPM GBUS | OK | 30 degrees C / 86 degrees F |
| | FPM Display | OK | 34 degrees C / 93 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |
| | Top Right Middle fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Bottom Left Front fan | OK | Spinning at normal speed |
| | Bottom Left Middle fan | OK | Spinning at normal speed |

| | | | |
|------|-------------------------|----|--------------------------|
| | Bottom Left Rear fan | OK | Spinning at normal speed |
| | Bottom Right Front fan | OK | Spinning at normal speed |
| | Bottom Right Middle fan | OK | Spinning at normal speed |
| | Bottom Right Rear fan | OK | Spinning at normal speed |
| | Rear Tray Top fan | OK | Spinning at normal speed |
| | Rear Tray Second fan | OK | Spinning at normal speed |
| | Rear Tray Third fan | OK | Spinning at normal speed |
| | Rear Tray Fourth fan | OK | Spinning at normal speed |
| | Rear Tray Fifth fan | OK | Spinning at normal speed |
| | Rear Tray Sixth fan | OK | Spinning at normal speed |
| | Rear Tray Seventh fan | OK | Spinning at normal speed |
| | Rear Tray Bottom fan | OK | Spinning at normal speed |
| Misc | CIP | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |

lcc2-re0:

| Class | Item | Status | Measurement |
|-------|---------------------|--------|------------------------------|
| Temp | PEM 0 | OK | 29 degrees C / 84 degrees F |
| | PEM 1 | Absent | |
| | SCG 0 | OK | 32 degrees C / 89 degrees F |
| | SCG 1 | Absent | |
| | Routing Engine 0 | OK | 31 degrees C / 87 degrees F |
| | Routing Engine 1 | OK | 32 degrees C / 89 degrees F |
| | CB 0 | OK | 30 degrees C / 86 degrees F |
| | SIB 0 | OK | 38 degrees C / 100 degrees F |
| | SIB 0 (B) | OK | 49 degrees C / 120 degrees F |
| | FPC 0 Top | OK | 45 degrees C / 113 degrees F |
| | FPC 0 Bottom | OK | 33 degrees C / 91 degrees F |
| | FPC 1 Top | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Bottom | OK | 33 degrees C / 91 degrees F |
| | FPM GBUS | OK | 30 degrees C / 86 degrees F |
| | FPM Display | OK | 34 degrees C / 93 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |

...

show chassis environment (T1600 Router)

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

| Class | Item | Status | Measurement |
|-------|-------------------------|--------|------------------------------|
| Temp | PEM 0 | OK | 27 degrees C / 80 degrees F |
| | PEM 1 | Absent | |
| | SCG 0 | OK | 31 degrees C / 87 degrees F |
| | SCG 1 | OK | 35 degrees C / 95 degrees F |
| | Routing Engine 0 | OK | 30 degrees C / 86 degrees F |
| | Routing Engine 1 | OK | 30 degrees C / 86 degrees F |
| | CB 0 | OK | 31 degrees C / 87 degrees F |
| | CB 1 | OK | 31 degrees C / 87 degrees F |
| | SIB 0 | OK | 41 degrees C / 105 degrees F |
| | SIB 0 (B) | OK | 34 degrees C / 93 degrees F |
| | SIB 1 | OK | 0 degrees C / 32 degrees F |
| | SIB 1 (B) | OK | 0 degrees C / 32 degrees F |
| | SIB 2 | OK | 0 degrees C / 32 degrees F |
| | SIB 2 (B) | OK | 0 degrees C / 32 degrees F |
| | SIB 3 | OK | 0 degrees C / 32 degrees F |
| | SIB 3 (B) | OK | 0 degrees C / 32 degrees F |
| | SIB 4 | OK | 0 degrees C / 32 degrees F |
| | SIB 4 (B) | OK | 0 degrees C / 32 degrees F |
| | FPC 0 Top | OK | 49 degrees C / 120 degrees F |
| | FPC 0 Bottom | OK | 50 degrees C / 122 degrees F |
| | FPC 1 Top | OK | 48 degrees C / 118 degrees F |
| | FPC 1 Bottom | OK | 49 degrees C / 120 degrees F |
| | FPM GBUS | OK | 27 degrees C / 80 degrees F |
| | FPM Display | OK | 30 degrees C / 86 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |
| | Top Right Middle fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Bottom Left Front fan | OK | Spinning at normal speed |
| | Bottom Left Middle fan | OK | Spinning at normal speed |
| | Bottom Left Rear fan | OK | Spinning at normal speed |
| | Bottom Right Front fan | OK | Spinning at normal speed |
| | Bottom Right Middle fan | OK | Spinning at normal speed |
| | Bottom Right Rear fan | OK | Spinning at normal speed |
| | Rear Tray Top fan | OK | Spinning at normal speed |
| | Rear Tray Second fan | OK | Spinning at normal speed |

| | | | |
|------|-----------------------|----|--------------------------|
| | Rear Tray Third fan | OK | Spinning at normal speed |
| | Rear Tray Fourth fan | OK | Spinning at normal speed |
| | Rear Tray Fifth fan | OK | Spinning at normal speed |
| | Rear Tray Sixth fan | OK | Spinning at normal speed |
| | Rear Tray Seventh fan | OK | Spinning at normal speed |
| | Rear Tray Bottom fan | OK | Spinning at normal speed |
| Misc | CIP | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |

show chassis environment (TX Matrix Plus Router)

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

| ----- | | | |
|-------|------------------|--------|------------------------------|
| Class | Item | Status | Measurement |
| Temp | PEM 0 | OK | 28 degrees C / 82 degrees F |
| | PEM 1 | Absent | |
| | Routing Engine 0 | OK | 27 degrees C / 80 degrees F |
| | Routing Engine 1 | OK | 29 degrees C / 84 degrees F |
| | CB 0 Intake | OK | 26 degrees C / 78 degrees F |
| | CB 0 Exhaust A | OK | 25 degrees C / 77 degrees F |
| | CB 0 Exhaust B | OK | 25 degrees C / 77 degrees F |
| | CB 1 Intake | OK | 26 degrees C / 78 degrees F |
| | CB 1 Exhaust A | OK | 26 degrees C / 78 degrees F |
| | CB 1 Exhaust B | OK | 26 degrees C / 78 degrees F |
| | SIB F13 0 | OK | 47 degrees C / 116 degrees F |
| | SIB F13 0 (B) | OK | 48 degrees C / 118 degrees F |
| | SIB F13 1 | OK | 38 degrees C / 100 degrees F |
| | SIB F13 1 (B) | OK | 37 degrees C / 98 degrees F |
| | SIB F2S 0/0 | OK | 27 degrees C / 80 degrees F |
| | SIB F2S 0/2 | OK | 28 degrees C / 82 degrees F |
| | SIB F2S 0/4 | OK | 27 degrees C / 80 degrees F |
| | SIB F2S 0/6 | OK | 28 degrees C / 82 degrees F |
| | SIB F2S 1/0 | OK | 26 degrees C / 78 degrees F |
| | SIB F2S 1/2 | OK | 26 degrees C / 78 degrees F |
| | SIB F2S 1/4 | OK | 26 degrees C / 78 degrees F |
| | SIB F2S 1/6 | OK | 26 degrees C / 78 degrees F |
| | SIB F2S 2/0 | OK | 25 degrees C / 77 degrees F |
| | SIB F2S 2/2 | OK | 25 degrees C / 77 degrees F |
| | SIB F2S 2/4 | OK | 23 degrees C / 73 degrees F |

| | | | |
|------|------------------|----|-----------------------------|
| | CIP 0 Intake | OK | 23 degrees C / 73 degrees F |
| | CIP 0 Exhaust A | OK | 24 degrees C / 75 degrees F |
| | CIP 0 Exhaust B | OK | 24 degrees C / 75 degrees F |
| | CIP 1 Intake | OK | 24 degrees C / 75 degrees F |
| | CIP 1 Exhaust A | OK | 25 degrees C / 77 degrees F |
| | CIP 1 Exhaust B | OK | 25 degrees C / 77 degrees F |
| Fans | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 4 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 5 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 4 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 5 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 4 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 5 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 7 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 8 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 9 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 4 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 5 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 7 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 8 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 9 | OK | Spinning at normal speed |
| | Fan Tray 4 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 4 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 4 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 4 Fan 4 | OK | Spinning at normal speed |
| | Fan Tray 4 Fan 5 | OK | Spinning at normal speed |
| | Fan Tray 4 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 4 Fan 7 | OK | Spinning at normal speed |

| | | | |
|------|------------------|----|--------------------------|
| | Fan Tray 4 Fan 8 | OK | Spinning at normal speed |
| | Fan Tray 4 Fan 9 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 4 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 5 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 7 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 8 | OK | Spinning at normal speed |
| | Fan Tray 5 Fan 9 | OK | Spinning at normal speed |
| Misc | SPMB 0 | OK | |
| | SPMB 1 | OK | |

lcc0-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 | |

lcc0-re0:

| ----- | | | |
|-------|----------------------|--------|------------------------------|
| Class | Item | Status | Measurement |
| Temp | PEM 0 | OK | 29 degrees C / 84 degrees F |
| | PEM 1 | Check | 29 degrees C / 84 degrees F |
| | SCG 0 | OK | 32 degrees C / 89 degrees F |
| | SCG 1 | OK | 33 degrees C / 91 degrees F |
| | Routing Engine 0 | OK | 32 degrees C / 89 degrees F |
| | Routing Engine 0 CPU | OK | 51 degrees C / 123 degrees F |
| | Routing Engine 1 | OK | 32 degrees C / 89 degrees F |
| | Routing Engine 1 CPU | OK | 49 degrees C / 120 degrees F |
| | CB 0 | OK | 34 degrees C / 93 degrees F |
| | CB 1 | OK | 34 degrees C / 93 degrees F |
| | SIB 0 | OK | 39 degrees C / 102 degrees F |
| | SIB 0 (B) | Absent | |
| | SIB 1 | OK | 39 degrees C / 102 degrees F |
| | SIB 1 (B) | Absent | |
| | SIB 2 | OK | 39 degrees C / 102 degrees F |
| | SIB 2 (B) | Absent | |
| | FPC 4 Top | OK | 43 degrees C / 109 degrees F |
| | FPC 4 Bottom | OK | 43 degrees C / 109 degrees F |
| | FPC 7 Fan Intake | OK | 35 degrees C / 95 degrees F |
| | FPC 7 Fan Exhaust | OK | 50 degrees C / 122 degrees F |
| | FPC 7 PMB | OK | 50 degrees C / 122 degrees F |
| | FPC 7 LMB0 | OK | 55 degrees C / 131 degrees F |
| | FPC 7 LMB1 | OK | 49 degrees C / 120 degrees F |
| | FPC 7 LMB2 | OK | 39 degrees C / 102 degrees F |
| | FPC 7 PFE1 LU2 | OK | 55 degrees C / 131 degrees F |
| | FPC 7 PFE1 LU0 | OK | 45 degrees C / 113 degrees F |
| | FPC 7 PFE0 LU0 | OK | 62 degrees C / 143 degrees F |
| | FPC 7 XF1 | OK | 52 degrees C / 125 degrees F |
| | FPC 7 XF0 | OK | 61 degrees C / 141 degrees F |
| | FPC 7 XM1 | OK | 39 degrees C / 102 degrees F |
| | FPC 7 XM0 | OK | 56 degrees C / 132 degrees F |
| | FPC 7 PFE0 LU1 | OK | 60 degrees C / 140 degrees F |
| | FPC 7 PFE0 LU2 | OK | 55 degrees C / 131 degrees F |
| | FPC 7 PFE1 LU1 | OK | 41 degrees C / 105 degrees F |
| | FPM GBUS | OK | 24 degrees C / 75 degrees F |
| | FPM Display | OK | 28 degrees C / 82 degrees F |
| Fans | Top Left Front fan | OK | Spinning at normal speed |
| | Top Left Middle fan | OK | Spinning at normal speed |
| | Top Left Rear fan | OK | Spinning at normal speed |
| | Top Right Front fan | OK | Spinning at normal speed |

| | | | |
|------|---------------------------|----|--------------------------|
| | Top Right Middle fan | OK | Spinning at normal speed |
| | Top Right Rear fan | OK | Spinning at normal speed |
| | Bottom Left Front fan | OK | Spinning at normal speed |
| | Bottom Left Middle fan | OK | Spinning at normal speed |
| | Bottom Left Rear fan | OK | Spinning at normal speed |
| | Bottom Right Front fan | OK | Spinning at normal speed |
| | Bottom Right Middle fan | OK | Spinning at normal speed |
| | Bottom Right Rear fan | OK | Spinning at normal speed |
| | Rear Tray fan 1 (Top) | OK | Spinning at normal speed |
| | Rear Tray fan 2 | OK | Spinning at normal speed |
| | Rear Tray fan 3 | OK | Spinning at normal speed |
| | Rear Tray fan 4 | OK | Spinning at normal speed |
| | Rear Tray fan 5 | OK | Spinning at normal speed |
| | Rear Tray fan 6 | OK | Spinning at normal speed |
| | Rear Tray fan 7 | OK | Spinning at normal speed |
| | Rear Tray fan 8 | OK | Spinning at normal speed |
| | Rear Tray fan 9 | OK | Spinning at normal speed |
| | Rear Tray fan 10 | OK | Spinning at normal speed |
| | Rear Tray fan 11 | OK | Spinning at normal speed |
| | Rear Tray fan 12 | OK | Spinning at normal speed |
| | Rear Tray fan 13 | OK | Spinning at normal speed |
| | Rear Tray fan 14 | OK | Spinning at normal speed |
| | Rear Tray fan 15 | OK | Spinning at normal speed |
| | Rear Tray fan 16 (Bottom) | OK | Spinning at normal speed |
| Misc | CIP | OK | |
| | SPMB 0 | OK | |
| | SPMB 1 | OK | |

show chassis environment (EX4200 Standalone Switch)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|-------------------------|--------|------------------------------|
| Power | FPC 0 Power Supply 0 | OK | |
| | FPC 0 Power Supply 1 | Absent | |
| Temp | FPC 0 CPU | OK | 41 degrees C / 105 degrees F |
| | FPC 0 EX-PFE1 | OK | 42 degrees C / 107 degrees F |
| | FPC 0 EX-PFE2 | OK | 46 degrees C / 114 degrees F |
| | FPC 0 GEPHY Front Left | OK | 25 degrees C / 77 degrees F |
| | FPC 0 GEPHY Front Right | OK | 27 degrees C / 80 degrees F |
| | FPC 0 Uplink Conn | OK | 29 degrees C / 84 degrees F |
| Fans | FPC 0 Fan 1 | OK | Spinning at normal speed |

| | | |
|-------------|----|--------------------------|
| FPC 0 Fan 2 | OK | Spinning at normal speed |
| FPC 0 Fan 3 | OK | Spinning at normal speed |

show chassis environment (EX8216 Switch)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|---------------|--------|------------------------------|
| Power | PSU 0 | OK | |
| | PSU 1 | OK | |
| | PSU 2 | OK | |
| | PSU 3 | Check | |
| | PSU 4 | Absent | |
| | PSU 5 | Absent | |
| Temp | CB 0 Intake | OK | 23 degrees C / 73 degrees F |
| | CB 0 Exhaust | OK | 26 degrees C / 78 degrees F |
| | CB 1 Intake | OK | 22 degrees C / 71 degrees F |
| | CB 1 Exhaust | OK | 25 degrees C / 77 degrees F |
| | FPC 4 Intake | OK | 49 degrees C / 120 degrees F |
| | FPC 4 Exhaust | OK | 59 degrees C / 138 degrees F |
| | SIB 5 Intake | OK | 25 degrees C / 77 degrees F |
| | SIB 5 Exhaust | OK | 35 degrees C / 95 degrees F |
| | SIB 6 Intake | OK | 25 degrees C / 77 degrees F |
| | SIB 6 Exhaust | OK | 38 degrees C / 100 degrees F |
| Fans | Top Fan 1 | OK | Spinning at normal speed |
| | Top Fan 2 | OK | Spinning at normal speed |
| | Top Fan 3 | OK | Spinning at normal speed |
| | Top Fan 4 | OK | Spinning at normal speed |
| | Top Fan 5 | OK | Spinning at normal speed |
| | Top Fan 6 | OK | Spinning at normal speed |
| | Top Fan 7 | OK | Spinning at normal speed |
| | Top Fan 8 | OK | Spinning at normal speed |
| | Top Fan 9 | OK | Spinning at normal speed |
| | Bottom Fan 1 | OK | Spinning at normal speed |
| | Bottom Fan 2 | OK | Spinning at normal speed |
| | Bottom Fan 3 | OK | Spinning at normal speed |
| | Bottom Fan 4 | OK | Spinning at normal speed |
| | Bottom Fan 5 | OK | Spinning at normal speed |
| | Bottom Fan 6 | OK | Spinning at normal speed |
| | Bottom Fan 7 | OK | Spinning at normal speed |

| | | |
|--------------|----|--------------------------|
| Bottom Fan 8 | OK | Spinning at normal speed |
| Bottom Fan 9 | OK | Spinning at normal speed |

show chassis environment (EX9200 Switch)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PEM 0 | Check | |
| | PEM 1 | OK | 40 degrees C / 104 degrees F |
| | PEM 2 | OK | 40 degrees C / 104 degrees F |
| | PEM 3 | Absent | |
| | Routing Engine 0 | OK | 35 degrees C / 95 degrees F |
| | Routing Engine 0 CPU | OK | 33 degrees C / 91 degrees F |
| | Routing Engine 1 | OK | 38 degrees C / 100 degrees F |
| | Routing Engine 1 CPU | OK | 33 degrees C / 91 degrees F |
| | CB 0 Intake | OK | 35 degrees C / 95 degrees F |
| | CB 0 Exhaust A | OK | 33 degrees C / 91 degrees F |
| | CB 0 Exhaust B | OK | 40 degrees C / 104 degrees F |
| | CB 0 ACBC | OK | 39 degrees C / 102 degrees F |
| | CB 0 XF A | OK | 49 degrees C / 120 degrees F |
| | CB 0 XF B | OK | 46 degrees C / 114 degrees F |
| | CB 1 Intake | OK | 37 degrees C / 98 degrees F |
| | CB 1 Exhaust A | OK | 32 degrees C / 89 degrees F |
| | CB 1 Exhaust B | OK | 39 degrees C / 102 degrees F |
| | CB 1 ACBC | OK | 41 degrees C / 105 degrees F |
| | CB 1 XF A | OK | 49 degrees C / 120 degrees F |
| | CB 1 XF B | OK | 49 degrees C / 120 degrees F |
| | FPC 2 Intake | OK | 37 degrees C / 98 degrees F |
| | FPC 2 Exhaust A | OK | 40 degrees C / 104 degrees F |
| | FPC 2 Exhaust B | OK | 34 degrees C / 93 degrees F |
| | FPC 2 LU 0 TCAM TSen | OK | 44 degrees C / 111 degrees F |
| | FPC 2 LU 0 TCAM Chip | OK | 48 degrees C / 118 degrees F |
| | FPC 2 LU 0 TSen | OK | 44 degrees C / 111 degrees F |
| | FPC 2 LU 0 Chip | OK | 60 degrees C / 140 degrees F |
| | FPC 2 MQ 0 TSen | OK | 44 degrees C / 111 degrees F |
| | FPC 2 MQ 0 Chip | OK | 51 degrees C / 123 degrees F |
| | FPC 3 Intake | OK | 39 degrees C / 102 degrees F |
| | FPC 3 Exhaust A | OK | 51 degrees C / 123 degrees F |

[...Output truncated...]

| | | | |
|------|-------------------|----|--------------------------------|
| Fans | Top Rear Fan | OK | Spinning at intermediate-speed |
| | Bottom Rear Fan | OK | Spinning at intermediate-speed |
| | Top Middle Fan | OK | Spinning at intermediate-speed |
| | Bottom Middle Fan | OK | Spinning at intermediate-speed |
| | Top Front Fan | OK | Spinning at intermediate-speed |
| | Bottom Front Fan | OK | Spinning at intermediate-speed |

show chassis environment (EX9251 Switch)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|-------------------------------|--------|------------------------------|
| Temp | CB 0 Top Right Inlet Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Top Left Inlet Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Top Right Exhaust Sensor | OK | 40 degrees C / 104 degrees F |
| | CB 0 Top Left Exhaust Sensor | OK | 59 degrees C / 138 degrees F |
| | CB 0 CPU Core-0 Temp | OK | 45 degrees C / 113 degrees F |
| | CB 0 CPU Core-1 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-2 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-3 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-4 Temp | OK | 45 degrees C / 113 degrees F |
| | CB 0 CPU Core-5 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-6 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-7 Temp | OK | 43 degrees C / 109 degrees F |
| Power | PEM 0 | Check | |
| | PEM 1 | OK | 36 degrees C / 96 degrees F |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 0 | Absent | |
| | Fan Tray 2 Fan 1 | Absent | |

show chassis environment (EX9253 Switch)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|--------------------------|--------|-----------------------------|
| Temp | CB 0 Exhaust Temp Sensor | OK | 37 degrees C / 98 degrees F |

| | | | |
|-------|-----------------------------|--------|------------------------------|
| | CB 0 Inlet Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | CB 0 CPU DIE Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | CB 1 Exhaust Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | CB 1 Inlet Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | CB 1 CPU DIE Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | FPC 0 Intake Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | FPC 0 Exhaust-A Temp Sensor | OK | 58 degrees C / 136 degrees F |
| | FPC 0 Exhaust-B Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 1 Intake Temp Sensor | OK | 29 degrees C / 84 degrees F |
| | FPC 1 Exhaust-A Temp Sensor | OK | 59 degrees C / 138 degrees F |
| | FPC 1 Exhaust-B Temp Sensor | OK | 48 degrees C / 118 degrees F |
| Power | PEM 0 | OK | 54 degrees C / 129 degrees F |
| | PEM 1 | Check | |
| | PEM 2 | Absent | |
| | PEM 3 | Absent | |
| | PEM 4 | Check | |
| | PEM 5 | OK | 61 degrees C / 141 degrees F |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 3 Fan 3 | OK | Spinning at normal speed |

show chassis environment (QFX Series and OCX Series)

```
user@switch> show chassis environment
```

| Class | Item | Status | Measurement |
|-------|-------------------------------|--------|------------------------------|
| Temp | CB 0 Top Right Inlet Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Top Left Inlet Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Top Right Exhaust Sensor | OK | 40 degrees C / 104 degrees F |

| | | | |
|-------|------------------------------|--------|------------------------------|
| | CB 0 Top Left Exhaust Sensor | OK | 59 degrees C / 138 degrees F |
| | CB 0 CPU Core-0 Temp | OK | 45 degrees C / 113 degrees F |
| | CB 0 CPU Core-1 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-2 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-3 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-4 Temp | OK | 45 degrees C / 113 degrees F |
| | CB 0 CPU Core-5 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-6 Temp | OK | 44 degrees C / 111 degrees F |
| | CB 0 CPU Core-7 Temp | OK | 43 degrees C / 109 degrees F |
| Power | PEM 0 | Check | |
| | PEM 1 | OK | 36 degrees C / 96 degrees F |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 2 Fan 0 | Absent | |
| | Fan Tray 2 Fan 1 | Absent | |

show chassis environment interconnect-device (QFabric System)

```

user@switch> show chassis environment interconnect-device
IC-A0004
Class Item                               Status    Measurement
CB 0
CB 0 L Intake                            OK        30 degrees C / 86 degrees F
CB 0 R Intake                            OK        31 degrees C / 87 degrees F
CB 0 L Exhaust                           OK        32 degrees C / 89 degrees F
CB 0 R Exhaust                           OK        33 degrees C / 91 degrees F
Routing Engine 0 CPU temp                 OK        51 degrees C / 123 degrees F
CB 1
CB 1 L Intake                            OK        27 degrees C / 80 degrees F
CB 1 R Intake                            OK        29 degrees C / 84 degrees F
CB 1 L Exhaust                           OK        31 degrees C / 87 degrees F
CB 1 R Exhaust                           OK        32 degrees C / 89 degrees F
Routing Engine 1 CPU temp                 OK        40 degrees C / 104 degrees F
FC 0 FPC 0
FPC 0 L Intake                           OK        25 degrees C / 77 degrees F
FPC 0 R Intake                           OK        28 degrees C / 82 degrees F
FPC 0 L Exhaust                           OK        28 degrees C / 82 degrees F
FPC 0 R Exhaust                           OK        29 degrees C / 84 degrees F
FC 7 FPC 7

```


| | | |
|--------------------------|-------|-----------------------------|
| FPC 7 L Intake | OK | 25 degrees C / 77 degrees F |
| FPC 7 R Intake | OK | 26 degrees C / 78 degrees F |
| FPC 7 L Exhaust | OK | 28 degrees C / 82 degrees F |
| FPC 7 R Exhaust | OK | 29 degrees C / 84 degrees F |
| RC 0 FPC 8 | | |
| FPC 8 L Intake | OK | 25 degrees C / 77 degrees F |
| FPC 8 R Intake | OK | 26 degrees C / 78 degrees F |
| FPC 8 L Exhaust | OK | 32 degrees C / 89 degrees F |
| FPC 8 R Exhaust | OK | 30 degrees C / 86 degrees F |
| RC 7 FPC 15 | | |
| FPC 15 L Intake | OK | 24 degrees C / 75 degrees F |
| FPC 15 R Intake | OK | 25 degrees C / 77 degrees F |
| FPC 15 L Exhaust | OK | 33 degrees C / 91 degrees F |
| FPC 15 R Exhaust | OK | 31 degrees C / 87 degrees F |
| Fans TFT 0 Fan 0 | OK | Spinning at normal speed |
| Fans TFT 0 Fan 1 | OK | Spinning at normal speed |
| Fans TFT 0 Fan 2 | OK | Spinning at normal speed |
| Fans TFT 0 Fan 3 | OK | Spinning at normal speed |
| Fans TFT 0 Fan 4 | OK | Spinning at normal speed |
| Fans TFT 0 Fan 5 | OK | Spinning at normal speed |
| Fans BFT 1 Fan 0 | OK | Spinning at normal speed |
| Fans BFT 1 Fan 1 | OK | Spinning at normal speed |
| Fans BFT 1 Fan 2 | OK | Spinning at normal speed |
| Fans BFT 1 Fan 3 | Check | |
| Fans BFT 1 Fan 4 | OK | Spinning at normal speed |
| Fans BFT 1 Fan 5 | OK | Spinning at normal speed |
| Fans SFT 0 Fan 0 Rotor 0 | OK | Spinning at normal speed |
| Fans SFT 0 Fan 0 Rotor 1 | OK | Spinning at normal speed |
| Fans SFT 0 Fan 1 Rotor 0 | OK | Spinning at normal speed |
| Fans SFT 0 Fan 1 Rotor 1 | OK | Spinning at normal speed |
| Fans SFT 0 Fan 2 Rotor 0 | OK | Spinning at normal speed |
| Fans SFT 0 Fan 2 Rotor 1 | OK | Spinning at normal speed |
| Fans SFT 0 Fan 3 Rotor 0 | OK | Spinning at normal speed |
| Fans SFT 0 Fan 3 Rotor 1 | OK | Spinning at normal speed |
| Fans SFT 1 Fan 0 Rotor 0 | OK | Spinning at normal speed |
| Fans SFT 1 Fan 0 Rotor 1 | OK | Spinning at normal speed |
| Fans SFT 1 Fan 1 Rotor 0 | OK | Spinning at normal speed |
| Fans SFT 1 Fan 1 Rotor 1 | OK | Spinning at normal speed |
| Fans SFT 1 Fan 2 Rotor 0 | OK | Spinning at normal speed |
| Fans SFT 1 Fan 2 Rotor 1 | OK | Spinning at normal speed |
| Fans SFT 1 Fan 3 Rotor 0 | OK | Spinning at normal speed |
| Fans SFT 1 Fan 3 Rotor 1 | OK | Spinning at normal speed |
| Fans SFT 2 Fan 0 Rotor 0 | OK | Spinning at normal speed |

[illegible]

| | | | |
|-------|---------------------|--------|-----------------------------|
| Fans | SFT 7 Fan 2 Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 7 Fan 2 Rotor 1 | OK | Spinning at normal speed |
| Fans | SFT 7 Fan 3 Rotor 0 | OK | Spinning at normal speed |
| Fans | SFT 7 Fan 3 Rotor 1 | OK | Spinning at normal speed |
| Power | PEM 0 | OK | 30 degrees C / 86 degrees F |
| Power | PEM 1 | OK | 30 degrees C / 86 degrees F |
| Power | PEM 2 | OK | 30 degrees C / 86 degrees F |
| Power | PEM 3 | Absent | |
| Power | PEM 4 | Absent | |
| Power | PEM 5 | Absent | |

show chassis environment node-device (QFabric System)

```
user@switch> show chassis environment node-device
node1
Class Item                               Status    Measurement
Power node1 Power Supply 0              Absent
      node1 Power Supply 1              Absent
Fans  node1 Fan Tray 0                  Testing
      node1 Fan Tray 1                  Testing
      node1 Fan Tray 2                  Testing
```

show chassis environment pem node-device (QFabric System)

```
user@switch> show chassis environment pem node-device
node1
FPC 0 PEM 0 status:
  State          Check
  Airflow        Front to Back
  Temperature    OK
  AC Input:      OK
  DC Output      Voltage(V) Current(A) Power(W) Load(%)
                  12         10         120     18
FPC 0 PEM 1 status:
  State          Online
  Airflow        Back to Front
  Temperature    OK
  AC Input:      OK
```


| DC Output | Voltage(V) | Current(A) | Power(W) | Load(%) |
|-----------|------------|------------|----------|---------|
| | 11 | 10 | 110 | 17 |

show chassis environment (PTX5000 Packet Transport Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| Temp | PDU 0 | OK | |
| | PDU 0 PSM 0 | OK | 36 degrees C / 96 degrees F |
| | PDU 0 PSM 1 | OK | 38 degrees C / 100 degrees F |
| | PDU 0 PSM 2 | OK | 38 degrees C / 100 degrees F |
| | PDU 0 PSM 3 | OK | 37 degrees C / 98 degrees F |
| | PDU 1 | Absent | |
| | CCG 0 | OK | 44 degrees C / 111 degrees F |
| | CCG 1 | OK | 44 degrees C / 111 degrees F |
| | Routing Engine 0 | OK | 62 degrees C / 143 degrees F |
| | Routing Engine 0 CPU | OK | 75 degrees C / 167 degrees F |
| | Routing Engine 1 | OK | 51 degrees C / 123 degrees F |
| | Routing Engine 1 CPU | OK | 64 degrees C / 147 degrees F |
| | CB 0 Intake | OK | 38 degrees C / 100 degrees F |
| | CB 0 Exhaust A | OK | 46 degrees C / 114 degrees F |
| | CB 0 Exhaust B | OK | 42 degrees C / 107 degrees F |
| | CB 1 Intake | OK | 35 degrees C / 95 degrees F |
| | CB 1 Exhaust A | OK | 39 degrees C / 102 degrees F |
| | CB 1 Exhaust B | OK | 36 degrees C / 96 degrees F |
| | SIB 0 Exhaust | OK | 47 degrees C / 116 degrees F |
| | SIB 0 Junction | OK | 45 degrees C / 113 degrees F |
| | SIB 1 Exhaust | OK | 44 degrees C / 111 degrees F |
| | SIB 1 Junction | OK | 43 degrees C / 109 degrees F |
| | SIB 2 Exhaust | OK | 47 degrees C / 116 degrees F |
| | SIB 2 Junction | OK | 42 degrees C / 107 degrees F |
| | SIB 3 Exhaust | OK | 43 degrees C / 109 degrees F |
| | SIB 3 Junction | OK | 43 degrees C / 109 degrees F |
| | SIB 4 Exhaust | OK | 47 degrees C / 116 degrees F |
| | SIB 4 Junction | OK | 42 degrees C / 107 degrees F |
| | SIB 5 Exhaust | OK | 42 degrees C / 107 degrees F |
| | SIB 5 Junction | OK | 40 degrees C / 104 degrees F |
| | SIB 6 Exhaust | OK | 46 degrees C / 114 degrees F |
| | SIB 6 Junction | OK | 42 degrees C / 107 degrees F |
| | SIB 7 Exhaust | OK | 43 degrees C / 109 degrees F |
| | SIB 7 Junction | OK | 39 degrees C / 102 degrees F |

| | | |
|-----------------|--------|------------------------------|
| SIB 8 Exhaust | OK | 44 degrees C / 111 degrees F |
| SIB 8 Junction | OK | 41 degrees C / 105 degrees F |
| FPC 0 PMB | OK | 35 degrees C / 95 degrees F |
| FPC 0 Intake | OK | 33 degrees C / 91 degrees F |
| FPC 0 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 0 Exhaust B | OK | 43 degrees C / 109 degrees F |
| FPC 0 TL0 | OK | 48 degrees C / 118 degrees F |
| FPC 0 TQ0 | OK | 53 degrees C / 127 degrees F |
| FPC 0 TL1 | OK | 56 degrees C / 132 degrees F |
| FPC 0 TQ1 | OK | 58 degrees C / 136 degrees F |
| FPC 0 TL2 | OK | 55 degrees C / 131 degrees F |
| FPC 0 TQ2 | OK | 56 degrees C / 132 degrees F |
| FPC 0 TL3 | OK | 59 degrees C / 138 degrees F |
| FPC 0 TQ3 | OK | 59 degrees C / 138 degrees F |
| FPC 2 PMB | OK | 35 degrees C / 95 degrees F |
| FPC 2 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 2 Exhaust A | OK | 51 degrees C / 123 degrees F |
| FPC 2 Exhaust B | OK | 52 degrees C / 125 degrees F |
| FPC 2 TL0 | OK | 53 degrees C / 127 degrees F |
| FPC 2 TQ0 | OK | 53 degrees C / 127 degrees F |
| FPC 2 TL1 | OK | 57 degrees C / 134 degrees F |
| FPC 2 TQ1 | OK | 58 degrees C / 136 degrees F |
| FPC 2 TL2 | OK | 54 degrees C / 129 degrees F |
| FPC 2 TQ2 | OK | 59 degrees C / 138 degrees F |
| FPC 2 TL3 | OK | 60 degrees C / 140 degrees F |
| FPC 2 TQ3 | OK | 64 degrees C / 147 degrees F |
| PIC 2/0 Ambient | OK | 49 degrees C / 120 degrees F |
| FPC 3 PMB | OK | 34 degrees C / 93 degrees F |
| FPC 3 Intake | OK | 35 degrees C / 95 degrees F |
| FPC 3 Exhaust A | OK | 54 degrees C / 129 degrees F |
| FPC 3 Exhaust B | OK | 49 degrees C / 120 degrees F |
| FPC 3 TL0 | OK | 49 degrees C / 120 degrees F |
| FPC 3 TQ0 | OK | 55 degrees C / 131 degrees F |
| FPC 3 TL1 | OK | 56 degrees C / 132 degrees F |
| FPC 3 TQ1 | OK | 58 degrees C / 136 degrees F |
| FPC 3 TL2 | OK | 56 degrees C / 132 degrees F |
| FPC 3 TQ2 | OK | 59 degrees C / 138 degrees F |
| FPC 3 TL3 | OK | 62 degrees C / 143 degrees F |
| FPC 3 TQ3 | OK | 63 degrees C / 145 degrees F |
| PIC 3/1 | Absent | |
| FPC 5 PMB | OK | 35 degrees C / 95 degrees F |
| FPC 5 Intake | OK | 34 degrees C / 93 degrees F |
| FPC 5 Exhaust A | OK | 51 degrees C / 123 degrees F |

| | | | |
|------|-------------------|----|------------------------------|
| | FPC 5 Exhaust B | OK | 53 degrees C / 127 degrees F |
| | FPC 5 TL0 | OK | 54 degrees C / 129 degrees F |
| | FPC 5 TQ0 | OK | 52 degrees C / 125 degrees F |
| | FPC 5 TL1 | OK | 61 degrees C / 141 degrees F |
| | FPC 5 TQ1 | OK | 60 degrees C / 140 degrees F |
| | FPC 5 TL2 | OK | 55 degrees C / 131 degrees F |
| | FPC 5 TQ2 | OK | 55 degrees C / 131 degrees F |
| | FPC 5 TL3 | OK | 59 degrees C / 138 degrees F |
| | FPC 5 TQ3 | OK | 58 degrees C / 136 degrees F |
| | PIC 5/0 Ambient | OK | 51 degrees C / 123 degrees F |
| | PIC 5/1 Ambient | OK | 34 degrees C / 93 degrees F |
| | PIC 5/1 cfp-5/1/0 | OK | 34 degrees C / 93 degrees F |
| | PIC 5/1 cfp-5/1/1 | OK | 36 degrees C / 96 degrees F |
| | FPC 6 PMB | OK | 36 degrees C / 96 degrees F |
| | FPC 6 Intake | OK | 33 degrees C / 91 degrees F |
| | FPC 6 Exhaust A | OK | 51 degrees C / 123 degrees F |
| | FPC 6 Exhaust B | OK | 39 degrees C / 102 degrees F |
| | FPC 6 TL0 | OK | 44 degrees C / 111 degrees F |
| | FPC 6 TQ0 | OK | 54 degrees C / 129 degrees F |
| | FPC 6 TL1 | OK | 59 degrees C / 138 degrees F |
| | FPC 6 TQ1 | OK | 58 degrees C / 136 degrees F |
| | FPC 6 TL2 | OK | 60 degrees C / 140 degrees F |
| | FPC 6 TQ2 | OK | 57 degrees C / 134 degrees F |
| | FPC 6 TL3 | OK | 65 degrees C / 149 degrees F |
| | FPC 6 TQ3 | OK | 60 degrees C / 140 degrees F |
| | FPC 7 PMB | OK | 35 degrees C / 95 degrees F |
| | FPC 7 Intake | OK | 33 degrees C / 91 degrees F |
| | FPC 7 Exhaust A | OK | 53 degrees C / 127 degrees F |
| | FPC 7 Exhaust B | OK | 40 degrees C / 104 degrees F |
| | FPC 7 TL0 | OK | 46 degrees C / 114 degrees F |
| | FPC 7 TQ0 | OK | 58 degrees C / 136 degrees F |
| | FPC 7 TL1 | OK | 53 degrees C / 127 degrees F |
| | FPC 7 TQ1 | OK | 59 degrees C / 138 degrees F |
| | FPC 7 TL2 | OK | 56 degrees C / 132 degrees F |
| | FPC 7 TQ2 | OK | 61 degrees C / 141 degrees F |
| | FPC 7 TL3 | OK | 63 degrees C / 145 degrees F |
| | FPC 7 TQ3 | OK | 63 degrees C / 145 degrees F |
| | FPM I2CS | OK | 37 degrees C / 98 degrees F |
| Fans | Fan Tray 0 Fan 1 | OK | 3042 RPM |
| | Fan Tray 0 Fan 2 | OK | 3042 RPM |
| | Fan Tray 0 Fan 3 | OK | 3000 RPM |
| | Fan Tray 0 Fan 4 | OK | 3042 RPM |
| | Fan Tray 0 Fan 5 | OK | 3000 RPM |

| | | | |
|------|-------------------|----|------------------------------|
| | Fan Tray 0 Fan 6 | OK | 3042 RPM |
| | Fan Tray 0 Fan 7 | OK | 3085 RPM |
| | Fan Tray 0 Fan 8 | OK | 3042 RPM |
| | Fan Tray 0 Fan 9 | OK | 3042 RPM |
| | Fan Tray 0 Fan 10 | OK | 3085 RPM |
| | Fan Tray 0 Fan 11 | OK | 3085 RPM |
| | Fan Tray 0 Fan 12 | OK | 3128 RPM |
| | Fan Tray 0 Fan 13 | OK | 3128 RPM |
| | Fan Tray 0 Fan 14 | OK | 3042 RPM |
| | Fan Tray 1 Fan 1 | OK | 2299 RPM |
| | Fan Tray 1 Fan 2 | OK | 2399 RPM |
| | Fan Tray 1 Fan 3 | OK | 2299 RPM |
| | Fan Tray 1 Fan 4 | OK | 2266 RPM |
| | Fan Tray 1 Fan 5 | OK | 2266 RPM |
| | Fan Tray 1 Fan 6 | OK | 2366 RPM |
| | Fan Tray 2 Fan 1 | OK | 2199 RPM |
| | Fan Tray 2 Fan 2 | OK | 2133 RPM |
| | Fan Tray 2 Fan 3 | OK | 2366 RPM |
| | Fan Tray 2 Fan 4 | OK | 2233 RPM |
| | Fan Tray 2 Fan 5 | OK | 2399 RPM |
| | Fan Tray 2 Fan 6 | OK | 2233 RPM |
| Misc | SPMB 0 Intake | OK | 50 degrees C / 122 degrees F |
| | SPMB 1 Intake | OK | 40 degrees C / 104 degrees F |

show chassis environment (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis environment
Class Item                               Status    Measurement
Temp  PDU 0                               OK
      PDU 0 PSM 0                         OK        41 degrees C / 105 degrees F
      PDU 0 PSM 1                         Absent
      PDU 0 PSM 2                         OK        43 degrees C / 109 degrees F
      PDU 0 PSM 3                         Absent
      PDU 0 PSM 4                         OK        44 degrees C / 111 degrees F
      PDU 0 PSM 5                         Absent
      PDU 0 PSM 6                         OK        45 degrees C / 113 degrees F
      PDU 0 PSM 7                         Absent
      PDU 1                               OK
      PDU 1 PSM 0                         Absent
      PDU 1 PSM 1                         OK        45 degrees C / 113 degrees F
      PDU 1 PSM 2                         Absent

```


| | | |
|-------------|--------|------------------------------|
| PDU 1 PSM 3 | OK | 43 degrees C / 109 degrees F |
| PDU 1 PSM 4 | Absent | |
| PDU 1 PSM 5 | OK | 46 degrees C / 114 degrees F |
| PDU 1 PSM 6 | Absent | |
| PDU 1 PSM 7 | OK | 46 degrees C / 114 degrees F |
| CCG 0 | OK | 27 degrees C / 80 degrees F |
| CCG 1 | OK | 29 degrees C / 84 degrees F |
| ... | | |

show chassis environment (PTX1000 Packet Transport Router)

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

| Class | Item | Status | Measurement |
|-------|---------------------------|--------|------------------------------|
| Power | FPC 0 Power Supply 0 | Absent | |
| | FPC 0 Power Supply 1 | Absent | |
| | FPC 0 Power Supply 2 | OK | |
| | FPC 0 Power Supply 3 | OK | |
| Temp | FPC 0 Intake Temp Sensor | OK | 25 degrees C / 77 degrees F |
| | FPC 0 Exhaust Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 0 Mezz Temp Sensor 0 | OK | 25 degrees C / 77 degrees F |
| | FPC 0 Mezz Temp Sensor 1 | OK | 34 degrees C / 93 degrees F |
| | FPC 0 PE2 Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 0 PE1 Temp Sensor | OK | 32 degrees C / 89 degrees F |
| | FPC 0 PF0 Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 0 PE0 Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | FPC 0 PE5 Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 0 PE4 Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 0 PF1 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 0 PE3 Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | FPC 0 CPU Die Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 0 OCX0 Temp Sensor | OK | 37 degrees C / 98 degrees F |
| Fans | FPC 0 Fan Tray 0 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 1 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 2 | OK | Spinning at normal speed |

show chassis environment (PTX10008 Router)

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

| Class | Item | Status | Measurement |
|-------|----------------------|--------|------------------------------|
| | Routing Engine 0 CPU | OK | 40 degrees C / 104 degrees F |

| | | | |
|------|-----------------------------|----|------------------------------|
| | Routing Engine 1 CPU | OK | 40 degrees C / 104 degrees F |
| Temp | CB 0 Intake Temp Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Exhaust Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | CB 1 Intake Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | CB 1 Exhaust Temp Sensor | OK | 32 degrees C / 89 degrees F |
| | FPC 0 Intake-A Temp Sensor | OK | 38 degrees C / 100 degrees F |
| | FPC 0 Intake-B Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 0 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | FPC 0 Exhaust-B Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 0 Exhaust-C Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 0 PE0 Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 0 PE1 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | FPC 0 PE2 Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 0 LCPU Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 1 Intake-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Intake-B Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | FPC 1 Exhaust-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Exhaust-B Temp Sensor | OK | 38 degrees C / 100 degrees F |
| | FPC 1 Exhaust-C Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 1 PE0 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 1 PE1 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | FPC 1 PE2 Temp Sensor | OK | 45 degrees C / 113 degrees F |
| | FPC 1 LCPU Temp Sensor | OK | 40 degrees C / 104 degrees F |
| | FPC 2 Intake-A Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 2 Intake-B Temp Sensor | OK | 30 degrees C / 86 degrees F |
| | FPC 2 Exhaust-A Temp Sensor | OK | 52 degrees C / 125 degrees F |
| | FPC 2 Exhaust-B Temp Sensor | OK | 54 degrees C / 129 degrees F |
| | FPC 2 Exhaust-C Temp Sensor | OK | 52 degrees C / 125 degrees F |
| | FPC 2 PE0 Temp Sensor | OK | 49 degrees C / 120 degrees F |
| | FPC 2 PE1 Temp Sensor | OK | 59 degrees C / 138 degrees F |
| | FPC 2 PE2 Temp Sensor | OK | 49 degrees C / 120 degrees F |
| | FPC 2 PE3 Temp Sensor | OK | 60 degrees C / 140 degrees F |
| | FPC 2 PE4 Temp Sensor | OK | 49 degrees C / 120 degrees F |
| | FPC 2 PE5 Temp Sensor | OK | 63 degrees C / 145 degrees F |
| | FPC 2 LCPU Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 3 Intake-A Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | FPC 3 Intake-B Temp Sensor | OK | 30 degrees C / 86 degrees F |
| | FPC 3 Exhaust-A Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | FPC 3 Exhaust-B Temp Sensor | OK | 48 degrees C / 118 degrees F |
| | FPC 3 Exhaust-C Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 3 PE0 Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 3 PE1 Temp Sensor | OK | 53 degrees C / 127 degrees F |
| | FPC 3 PE2 Temp Sensor | OK | 46 degrees C / 114 degrees F |

| | | |
|-----------------------------|--------|------------------------------|
| FPC 3 PE3 Temp Sensor | OK | 53 degrees C / 127 degrees F |
| FPC 3 PE4 Temp Sensor | OK | 48 degrees C / 118 degrees F |
| FPC 3 PE5 Temp Sensor | OK | 57 degrees C / 134 degrees F |
| FPC 3 LCPU Temp Sensor | OK | 47 degrees C / 116 degrees F |
| FPC 5 Intake-A Temp Sensor | Failed | |
| FPC 5 Intake-B Temp Sensor | Failed | |
| FPC 5 Exhaust-A Temp Sensor | OK | 40 degrees C / 104 degrees F |
| FPC 5 Exhaust-B Temp Sensor | OK | 40 degrees C / 104 degrees F |
| FPC 5 Exhaust-C Temp Sensor | OK | 41 degrees C / 105 degrees F |
| FPC 5 PE0 Temp Sensor | OK | 46 degrees C / 114 degrees F |
| FPC 5 PE1 Temp Sensor | OK | 48 degrees C / 118 degrees F |
| FPC 5 PE2 Temp Sensor | OK | 51 degrees C / 123 degrees F |
| FPC 5 LCPU Temp Sensor | Failed | |
| FPC 6 Intake-A Temp Sensor | OK | 40 degrees C / 104 degrees F |
| FPC 6 Intake-B Temp Sensor | OK | 36 degrees C / 96 degrees F |
| FPC 6 Exhaust-A Temp Sensor | OK | 39 degrees C / 102 degrees F |
| FPC 6 Exhaust-B Temp Sensor | OK | 39 degrees C / 102 degrees F |
| FPC 6 Exhaust-C Temp Sensor | OK | 39 degrees C / 102 degrees F |
| FPC 6 PE0 Temp Sensor | OK | 44 degrees C / 111 degrees F |
| FPC 6 PE1 Temp Sensor | OK | 45 degrees C / 113 degrees F |
| FPC 6 PE2 Temp Sensor | OK | 50 degrees C / 122 degrees F |
| FPC 6 LCPU Temp Sensor | OK | 40 degrees C / 104 degrees F |
| SIB 0 Intake-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| SIB 0 Intake-B Temp Sensor | OK | 30 degrees C / 86 degrees F |
| SIB 0 Exhaust-A Temp Sensor | OK | 33 degrees C / 91 degrees F |
| SIB 0 Exhaust-B Temp Sensor | OK | 38 degrees C / 100 degrees F |
| SIB 0 PF0 Temp Sensor | OK | 46 degrees C / 114 degrees F |
| SIB 0 PF1 Temp Sensor | OK | 39 degrees C / 102 degrees F |
| SIB 1 Intake-A Temp Sensor | OK | 43 degrees C / 109 degrees F |
| SIB 1 Intake-B Temp Sensor | OK | 34 degrees C / 93 degrees F |
| SIB 1 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |
| SIB 1 Exhaust-B Temp Sensor | OK | 44 degrees C / 111 degrees F |
| SIB 1 PF0 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| SIB 1 PF1 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| SIB 2 Intake-A Temp Sensor | OK | 46 degrees C / 114 degrees F |
| SIB 2 Intake-B Temp Sensor | OK | 35 degrees C / 95 degrees F |
| SIB 2 Exhaust-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| SIB 2 Exhaust-B Temp Sensor | OK | 47 degrees C / 116 degrees F |
| SIB 2 PF0 Temp Sensor | OK | 55 degrees C / 131 degrees F |
| SIB 2 PF1 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| SIB 3 Intake-A Temp Sensor | OK | 45 degrees C / 113 degrees F |
| SIB 3 Intake-B Temp Sensor | OK | 35 degrees C / 95 degrees F |
| SIB 3 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |

| | | | |
|-------|-----------------------------|--------|------------------------------|
| | SIB 3 Exhaust-B Temp Sensor | OK | 45 degrees C / 113 degrees F |
| | SIB 3 PF0 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| | SIB 3 PF1 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | SIB 4 Intake-A Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | SIB 4 Intake-B Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | SIB 4 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | SIB 4 Exhaust-B Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | SIB 4 PF0 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| | SIB 4 PF1 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| | SIB 5 Intake-A Temp Sensor | OK | 38 degrees C / 100 degrees F |
| | SIB 5 Intake-B Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | SIB 5 Exhaust-A Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | SIB 5 Exhaust-B Temp Sensor | OK | 39 degrees C / 102 degrees F |
| | SIB 5 PF0 Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | SIB 5 PF1 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| Power | Power Supply 0 | OK | |
| | Power Supply 1 | OK | |
| | Power Supply 2 | OK | |
| | Power Supply 3 | OK | |
| | Power Supply 4 | Check | |
| | Power Supply 5 | OK | |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 4 | Failed | |
| | Fan Tray 0 Fan 5 | Failed | |
| | Fan Tray 0 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 7 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 8 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 9 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 10 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 4 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 5 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 7 | OK | Spinning at normal speed |
| | Fan Tray 1 Fan 8 | OK | Spinning at normal speed |

| | | |
|-------------------|----|--------------------------|
| Fan Tray 1 Fan 9 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 10 | OK | Spinning at normal speed |

show chassis environment (PTX10016 Router)

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

| Class | Item | Status | Measurement |
|-------|-----------------------------|--------|------------------------------|
| | Routing Engine 0 CPU | OK | 34 degrees C / 93 degrees F |
| | Routing Engine 1 CPU | OK | 34 degrees C / 93 degrees F |
| Temp | CB 0 Intake Temp Sensor | OK | 20 degrees C / 68 degrees F |
| | CB 0 Exhaust Temp Sensor | OK | 24 degrees C / 75 degrees F |
| | CB 1 Intake Temp Sensor | OK | 20 degrees C / 68 degrees F |
| | CB 1 Exhaust Temp Sensor | OK | 23 degrees C / 73 degrees F |
| | FPC 1 Intake-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Intake-B Temp Sensor | OK | 32 degrees C / 89 degrees F |
| | FPC 1 Exhaust-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 1 Exhaust-B Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | FPC 1 Exhaust-C Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | FPC 1 PE0 Temp Sensor | OK | 45 degrees C / 113 degrees F |
| | FPC 1 PE1 Temp Sensor | OK | 46 degrees C / 114 degrees F |
| | FPC 1 PE2 Temp Sensor | OK | 54 degrees C / 129 degrees F |
| | FPC 1 LCPU Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 3 Intake-A Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 3 Intake-B Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | FPC 3 Exhaust-A Temp Sensor | OK | 36 degrees C / 96 degrees F |
| | FPC 3 Exhaust-B Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 3 Exhaust-C Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | FPC 3 PE0 Temp Sensor | OK | 43 degrees C / 109 degrees F |
| | FPC 3 PE1 Temp Sensor | OK | 45 degrees C / 113 degrees F |
| | FPC 3 PE2 Temp Sensor | OK | 49 degrees C / 120 degrees F |
| | FPC 3 LCPU Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 6 Intake-A Temp Sensor | OK | 34 degrees C / 93 degrees F |
| | FPC 6 Intake-B Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | FPC 6 Exhaust-A Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 6 Exhaust-B Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 6 Exhaust-C Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 6 PE0 Temp Sensor | OK | 43 degrees C / 109 degrees F |
| | FPC 6 PE1 Temp Sensor | OK | 43 degrees C / 109 degrees F |
| | FPC 6 PE2 Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 6 LCPU Temp Sensor | OK | 35 degrees C / 95 degrees F |
| | FPC 8 Intake-A Temp Sensor | OK | 34 degrees C / 93 degrees F |

| | | | |
|-------|-----------------------------|--------|------------------------------|
| | FPC 8 Intake-B Temp Sensor | OK | 31 degrees C / 87 degrees F |
| | FPC 8 Exhaust-A Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 8 Exhaust-B Temp Sensor | OK | 37 degrees C / 98 degrees F |
| | FPC 8 Exhaust-C Temp Sensor | OK | 38 degrees C / 100 degrees F |
| | FPC 8 PE0 Temp Sensor | OK | 42 degrees C / 107 degrees F |
| | FPC 8 PE1 Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 8 PE2 Temp Sensor | OK | 47 degrees C / 116 degrees F |
| | FPC 8 LCPU Temp Sensor | OK | 33 degrees C / 91 degrees F |
| | FPC 9 Intake-A Temp Sensor | OK | 44 degrees C / 111 degrees F |
| | FPC 9 Intake-B Temp Sensor | OK | 28 degrees C / 82 degrees F |
| | FPC 9 Exhaust-A Temp Sensor | OK | 51 degrees C / 123 degrees F |
| | FPC 9 Exhaust-B Temp Sensor | OK | 52 degrees C / 125 degrees F |
| | FPC 9 Exhaust-C Temp Sensor | OK | 48 degrees C / 118 degrees F |
| | FPC 9 PE0 Temp Sensor | OK | 52 degrees C / 125 degrees F |
| | FPC 9 PE1 Temp Sensor | OK | 66 degrees C / 150 degrees F |
| | FPC 9 PE2 Temp Sensor | OK | 50 degrees C / 122 degrees F |
| | FPC 9 PE3 Temp Sensor | OK | 65 degrees C / 149 degrees F |
| | FPC 9 PE4 Temp Sensor | OK | 51 degrees C / 123 degrees F |
| | FPC 9 PE5 Temp Sensor | OK | 68 degrees C / 154 degrees F |
| | FPC 9 LCPU Temp Sensor | OK | 46 degrees C / 114 degrees F |
| Power | Power Supply 0 | OK | 22 degrees C / 71 degrees F |
| | Power Supply 1 | OK | 23 degrees C / 73 degrees F |
| | Power Supply 2 | OK | 23 degrees C / 73 degrees F |
| | Power Supply 3 | OK | 21 degrees C / 69 degrees F |
| | Power Supply 4 | OK | 22 degrees C / 71 degrees F |
| | Power Supply 5 | OK | 25 degrees C / 77 degrees F |
| | Power Supply 6 | OK | 21 degrees C / 69 degrees F |
| | Power Supply 7 | Absent | |
| | Power Supply 8 | Absent | |
| | Power Supply 9 | Absent | |
| Fans | Fan Tray 0 Fan 0 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 1 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 2 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 3 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 4 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 5 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 6 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 7 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 8 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 9 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 10 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 11 | OK | Spinning at normal speed |
| | Fan Tray 0 Fan 12 | OK | Spinning at normal speed |

| | | |
|-----------------------------|----|-----------------------------|
| Fan Tray 0 Fan 13 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 14 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 15 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 16 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 17 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 18 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 19 | OK | Spinning at normal speed |
| Fan Tray 0 Fan 20 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 0 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 1 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 2 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 3 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 4 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 5 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 6 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 7 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 8 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 9 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 10 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 11 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 12 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 13 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 14 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 15 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 16 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 17 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 18 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 19 | OK | Spinning at normal speed |
| Fan Tray 1 Fan 20 | OK | Spinning at normal speed |
| SIB 0 Intake-A Temp Sensor | OK | 20 degrees C / 68 degrees F |
| SIB 0 Intake-B Temp Sensor | OK | 20 degrees C / 68 degrees F |
| SIB 0 Intake-C Temp Sensor | OK | 16 degrees C / 60 degrees F |
| SIB 0 Exhaust-A Temp Sensor | OK | 28 degrees C / 82 degrees F |
| SIB 0 Exhaust-B Temp Sensor | OK | 28 degrees C / 82 degrees F |
| SIB 0 Exhaust-C Temp Sensor | OK | 23 degrees C / 73 degrees F |
| SIB 0 PF0 Temp Sensor | OK | 30 degrees C / 86 degrees F |
| SIB 0 PF1 Temp Sensor | OK | 30 degrees C / 86 degrees F |
| SIB 0 PF2 Temp Sensor | OK | 31 degrees C / 87 degrees F |
| SIB 0 PF3 Temp Sensor | OK | 32 degrees C / 89 degrees F |
| SIB 0 PF4 Temp Sensor | OK | 27 degrees C / 80 degrees F |
| SIB 0 PF5 Temp Sensor | OK | 26 degrees C / 78 degrees F |
| SIB 1 Intake-A Temp Sensor | OK | 22 degrees C / 71 degrees F |
| SIB 1 Intake-B Temp Sensor | OK | 22 degrees C / 71 degrees F |

| | | |
|-----------------------------|----|------------------------------|
| SIB 1 Intake-C Temp Sensor | OK | 16 degrees C / 60 degrees F |
| SIB 1 Exhaust-A Temp Sensor | OK | 29 degrees C / 84 degrees F |
| SIB 1 Exhaust-B Temp Sensor | OK | 31 degrees C / 87 degrees F |
| SIB 1 Exhaust-C Temp Sensor | OK | 23 degrees C / 73 degrees F |
| SIB 1 PF0 Temp Sensor | OK | 32 degrees C / 89 degrees F |
| SIB 1 PF1 Temp Sensor | OK | 31 degrees C / 87 degrees F |
| SIB 1 PF2 Temp Sensor | OK | 33 degrees C / 91 degrees F |
| SIB 1 PF3 Temp Sensor | OK | 38 degrees C / 100 degrees F |
| SIB 1 PF4 Temp Sensor | OK | 28 degrees C / 82 degrees F |
| SIB 1 PF5 Temp Sensor | OK | 26 degrees C / 78 degrees F |
| SIB 2 Intake-A Temp Sensor | OK | 24 degrees C / 75 degrees F |
| SIB 2 Intake-B Temp Sensor | OK | 21 degrees C / 69 degrees F |
| SIB 2 Intake-C Temp Sensor | OK | 16 degrees C / 60 degrees F |
| SIB 2 Exhaust-A Temp Sensor | OK | 28 degrees C / 82 degrees F |
| SIB 2 Exhaust-B Temp Sensor | OK | 32 degrees C / 89 degrees F |
| SIB 2 Exhaust-C Temp Sensor | OK | 23 degrees C / 73 degrees F |
| SIB 2 PF0 Temp Sensor | OK | 31 degrees C / 87 degrees F |
| SIB 2 PF1 Temp Sensor | OK | 30 degrees C / 86 degrees F |
| SIB 2 PF2 Temp Sensor | OK | 33 degrees C / 91 degrees F |
| SIB 2 PF3 Temp Sensor | OK | 41 degrees C / 105 degrees F |
| SIB 2 PF4 Temp Sensor | OK | 27 degrees C / 80 degrees F |
| SIB 2 PF5 Temp Sensor | OK | 26 degrees C / 78 degrees F |
| SIB 3 Intake-A Temp Sensor | OK | 22 degrees C / 71 degrees F |
| SIB 3 Intake-B Temp Sensor | OK | 23 degrees C / 73 degrees F |
| SIB 3 Intake-C Temp Sensor | OK | 16 degrees C / 60 degrees F |
| SIB 3 Exhaust-A Temp Sensor | OK | 29 degrees C / 84 degrees F |
| SIB 3 Exhaust-B Temp Sensor | OK | 31 degrees C / 87 degrees F |
| SIB 3 Exhaust-C Temp Sensor | OK | 24 degrees C / 75 degrees F |
| SIB 3 PF0 Temp Sensor | OK | 32 degrees C / 89 degrees F |
| SIB 3 PF1 Temp Sensor | OK | 30 degrees C / 86 degrees F |
| SIB 3 PF2 Temp Sensor | OK | 31 degrees C / 87 degrees F |
| SIB 3 PF3 Temp Sensor | OK | 39 degrees C / 102 degrees F |
| SIB 3 PF4 Temp Sensor | OK | 27 degrees C / 80 degrees F |
| SIB 3 PF5 Temp Sensor | OK | 26 degrees C / 78 degrees F |
| SIB 4 Intake-A Temp Sensor | OK | 22 degrees C / 71 degrees F |
| SIB 4 Intake-B Temp Sensor | OK | 25 degrees C / 77 degrees F |
| SIB 4 Intake-C Temp Sensor | OK | 16 degrees C / 60 degrees F |
| SIB 4 Exhaust-A Temp Sensor | OK | 29 degrees C / 84 degrees F |
| SIB 4 Exhaust-B Temp Sensor | OK | 32 degrees C / 89 degrees F |
| SIB 4 Exhaust-C Temp Sensor | OK | 23 degrees C / 73 degrees F |
| SIB 4 PF0 Temp Sensor | OK | 32 degrees C / 89 degrees F |
| SIB 4 PF1 Temp Sensor | OK | 31 degrees C / 87 degrees F |
| SIB 4 PF2 Temp Sensor | OK | 32 degrees C / 89 degrees F |

| | | |
|-----------------------------|----|------------------------------|
| SIB 4 PF3 Temp Sensor | OK | 40 degrees C / 104 degrees F |
| SIB 4 PF4 Temp Sensor | OK | 26 degrees C / 78 degrees F |
| SIB 4 PF5 Temp Sensor | OK | 25 degrees C / 77 degrees F |
| SIB 5 Intake-A Temp Sensor | OK | 21 degrees C / 69 degrees F |
| SIB 5 Intake-B Temp Sensor | OK | 20 degrees C / 68 degrees F |
| SIB 5 Intake-C Temp Sensor | OK | 16 degrees C / 60 degrees F |
| SIB 5 Exhaust-A Temp Sensor | OK | 27 degrees C / 80 degrees F |
| SIB 5 Exhaust-B Temp Sensor | OK | 27 degrees C / 80 degrees F |
| SIB 5 Exhaust-C Temp Sensor | OK | 23 degrees C / 73 degrees F |
| SIB 5 PF0 Temp Sensor | OK | 30 degrees C / 86 degrees F |
| SIB 5 PF1 Temp Sensor | OK | 29 degrees C / 84 degrees F |
| SIB 5 PF2 Temp Sensor | OK | 30 degrees C / 86 degrees F |
| SIB 5 PF3 Temp Sensor | OK | 32 degrees C / 89 degrees F |
| SIB 5 PF4 Temp Sensor | OK | 28 degrees C / 82 degrees F |
| SIB 5 PF5 Temp Sensor | OK | 27 degrees C / 80 degrees F |

show chassis environment (ACX2000 Universal Metro Router)

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

| Class | Item | Status | Measurement |
|-------|----------------|--------|------------------------------|
| | PCB Left | OK | 44 degrees C / 111 degrees F |
| | SFP+ Xcvr | OK | 50 degrees C / 122 degrees F |
| | FEB | OK | 70 degrees C / 158 degrees F |
| | PCB Up | OK | 63 degrees C / 145 degrees F |
| | PCB Mid | OK | 66 degrees C / 150 degrees F |
| | Telecom Mod | OK | 65 degrees C / 149 degrees F |
| | Routing Engine | OK | 54 degrees C / 129 degrees F |
| | Heater | off | |

show chassis environment (ACX4000 Universal Metro Router)

On the ACX4000 router, the MIC output of the show chassis environment command varies depending on the number of temperature channels present in the installed MIC.

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

| Class | Item | Status | Measurement |
|-------|------------|--------|-----------------------------|
| Temp | PEM 0 | OK | 33 degrees C / 91 degrees F |
| | PEM 1 | Absent | |
| | PCB Bottom | OK | 30 degrees C / 86 degrees F |

| | | | |
|------|-------------------|----|------------------------------|
| | PCB Middle | OK | 34 degrees C / 93 degrees F |
| | BCM56445 | OK | 33 degrees C / 91 degrees F |
| | SFP+ Xcvr | OK | 32 degrees C / 89 degrees F |
| | Fan tray inlet | OK | 39 degrees C / 102 degrees F |
| | Exhaust | OK | 30 degrees C / 86 degrees F |
| | Routing Engine | OK | 32 degrees C / 89 degrees F |
| | Heater off | | |
| Pic | PIC 0/0 Channel 0 | OK | 28 degrees C / 82 degrees F |
| | PIC 0/0 Channel 1 | OK | 29 degrees C / 84 degrees F |
| | PIC 0/0 Channel 2 | OK | 0 degrees C / 32 degrees F |
| | PIC 0/0 Channel 3 | OK | 0 degrees C / 32 degrees F |
| | PIC 0/0 Channel 4 | OK | 0 degrees C / 32 degrees F |
| | PIC 0/0 Channel 5 | OK | 0 degrees C / 32 degrees F |
| | PIC 0/0 Channel 6 | OK | 0 degrees C / 32 degrees F |
| | PIC 0/0 Channel 7 | OK | 0 degrees C / 32 degrees F |
| | PIC 0/0 Channel 8 | OK | 0 degrees C / 32 degrees F |
| | PIC 0/0 Channel 9 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/0 Channel 0 | OK | 33 degrees C / 91 degrees F |
| | PIC 1/0 Channel 1 | OK | 31 degrees C / 87 degrees F |
| | PIC 1/0 Channel 2 | OK | 30 degrees C / 86 degrees F |
| | PIC 1/0 Channel 3 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/0 Channel 4 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/0 Channel 5 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/0 Channel 6 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/0 Channel 7 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/0 Channel 8 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/1 Channel 0 | OK | 31 degrees C / 87 degrees F |
| | PIC 1/1 Channel 1 | OK | 29 degrees C / 84 degrees F |
| | PIC 1/1 Channel 2 | OK | 28 degrees C / 82 degrees F |
| | PIC 1/1 Channel 3 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/1 Channel 4 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/1 Channel 5 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/1 Channel 6 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/1 Channel 7 | OK | 0 degrees C / 32 degrees F |
| | PIC 1/1 Channel 8 | OK | 0 degrees C / 32 degrees F |
| Fans | Fan 1 | OK | Spinning at normal speed |
| | Fan 2 | OK | Spinning at normal speed |

show chassis environment (ACX5048 Router)

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

| Class | Item | Status | Measurement |
|-------|---------------------------|--------|------------------------------|
| Power | FPC 0 Power Supply 0 | Absent | |
| | FPC 0 Power Supply 1 | OK | |
| Temp | FPC 0 Sensor TopMiddle E | OK | 23 degrees C / 73 degrees F |
| | FPC 0 Sensor TopRight C | OK | 18 degrees C / 64 degrees F |
| | FPC 0 Sensor TopLeft C | OK | 21 degrees C / 69 degrees F |
| | FPC 0 Sensor TopRight E | OK | 20 degrees C / 68 degrees F |
| | FPC 0 Sensor CPURight C | OK | 23 degrees C / 73 degrees F |
| | FPC 0 Sensor CPULeft E | OK | 22 degrees C / 71 degrees F |
| | FPC 0 Sensor CPU Die Temp | OK | 39 degrees C / 102 degrees F |
| Fans | FPC 0 Fan Tray 0 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 1 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 2 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 3 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 4 | OK | Spinning at normal speed |

show chassis environment (ACX5096 Router)

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

| Class | Item | Status | Measurement |
|-------|--------------------------|--------|------------------------------|
| Power | FPC 0 Power Supply 0 | OK | |
| | FPC 0 Power Supply 1 | OK | |
| Temp | FPC 0 Sensor TopMiddle E | OK | 32 degrees C / 89 degrees F |
| | FPC 0 Sensor TopRight I | OK | 29 degrees C / 84 degrees F |
| | FPC 0 Sensor TopLeft I | OK | 23 degrees C / 73 degrees F |
| | FPC 0 Sensor TopRight E | OK | 28 degrees C / 82 degrees F |
| | FPC 0 Sensor CPURight I | OK | 30 degrees C / 86 degrees F |
| | FPC 0 Sensor CPULeft I | OK | 29 degrees C / 84 degrees F |
| | FPC 0 Sensor Die Temp | OK | 46 degrees C / 114 degrees F |
| | FPC 0 Mezz Temp | OK | 23 degrees C / 73 degrees F |
| Fans | FPC 0 Fan Tray 0 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 1 | OK | Spinning at normal speed |
| | FPC 0 Fan Tray 2 | OK | Spinning at normal speed |

show chassis environment (ACX7509)

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

```
FEB 0 status:
```

| State | Online |
|--------------------------|------------------------------|
| Q2C0 Die Temperature 0 | 32 degrees C / 89 degrees F |
| Q2C0 Die Temperature 1 | 33 degrees C / 91 degrees F |
| Q2C0 Die Temperature 2 | 31 degrees C / 87 degrees F |
| Q2C0 Die Temperature 3 | 32 degrees C / 89 degrees F |
| Q2C0 Die Temperature 4 | 31 degrees C / 87 degrees F |
| Q2C0 HBM Temperature | 32 degrees C / 89 degrees F |
| Q2C1 Die Temperature 0 | 35 degrees C / 95 degrees F |
| Q2C1 Die Temperature 1 | 33 degrees C / 91 degrees F |
| Q2C1 Die Temperature 2 | 34 degrees C / 93 degrees F |
| Q2C1 Die Temperature 3 | 33 degrees C / 91 degrees F |
| Q2C1 Die Temperature 4 | 34 degrees C / 93 degrees F |
| Q2C1 HBM Temperature | 33 degrees C / 91 degrees F |
| Intake Rear Left Temp | 28 degrees C / 82 degrees F |
| PEX8725 PCIe Temp | 42 degrees C / 107 degrees F |
| Intake Rear Right Temp | 24 degrees C / 75 degrees F |
| Exhaust Rear Right Temp | 29 degrees C / 84 degrees F |
| Q2C0 Diode Temp | 44 degrees C / 111 degrees F |
| Exhaust Rear Left Temp | 30 degrees C / 86 degrees F |
| Q2C1 Diode Temp | 46 degrees C / 114 degrees F |
| HotSwap0 Temp | 24 degrees C / 75 degrees F |
| HotSwap1 Temp | 25 degrees C / 77 degrees F |
| FPGA_VDD1V0 Temp | 34 degrees C / 93 degrees F |
| PCIE_VDD0V9 Temp | 41 degrees C / 105 degrees F |
| J2VDDIO_1P8 Temp | 30 degrees C / 86 degrees F |
| VDD3V3 Temp | 28 degrees C / 82 degrees F |
| VDD5V0 Temp | 29 degrees C / 84 degrees F |
| VDD2V5 Temp | 32 degrees C / 89 degrees F |
| J2TVDD_1P2 Temp | 36 degrees C / 96 degrees F |
| Q2C0-J2HBMVDD0C_1P2 Temp | 31 degrees C / 87 degrees F |
| Q2C1-J2HBMVDD0C_1P2 Temp | 34 degrees C / 93 degrees F |
| Q2C0 Core Rail 1 Temp | 34 degrees C / 93 degrees F |
| Q2C0 Pwr Reg Intrnl Temp | 29 degrees C / 84 degrees F |
| Q2C1 Core Rail 0 Temp | 37 degrees C / 98 degrees F |
| Q2C0 Core Rail 0 Temp | 38 degrees C / 100 degrees F |
| Q2C1 Core Rail 1 Temp | 35 degrees C / 95 degrees F |
| Q2C1 Pwr Reg Intrnl Temp | 29 degrees C / 84 degrees F |

| | | |
|---------------------|-------|----|
| Power 1 | | |
| BIAS3V3 | 3288 | mV |
| FPGA_VDD1V2 | 1214 | mV |
| FPGA_VDD3V3 | 3320 | mV |
| PFE0_J2HBMVDD_2P5 | 2528 | mV |
| PFE0_J2PHYVDDC_0P88 | 892 | mV |
| PFE0_J2PLLVD_1P8 | 1822 | mV |
| PFE1_J2HBMVDD_2P5 | 2524 | mV |
| PFE1_J2PHYVDDC_0P88 | 894 | mV |
| PFE1_J2PLLVD_1P8 | 1824 | mV |
| VDDCLK_3V3 | 3304 | mV |
| Power 2 | | |
| PFE0_J2PLLAVDD_1P8 | 1794 | mV |
| PFE0_J2PLLVD_0P8 | 838 | mV |
| PFE1_J2PLLAVDD_1P8 | 1802 | mV |
| PFE1_J2PLLVD_0P8 | 836 | mV |
| Power 3 | | |
| Hotswap 0, 12V0 | 11955 | mV |
| Power 4 | | |
| Hotswap 1, 12V0 | 11982 | mV |
| Power 5 | | |
| PFE0_J2TRVDD_0P8 | 835 | mV |
| PFE0_J2VDDC_0P82 | 820 | mV |
| Power 6 | | |
| PFE1_J2TRVDD_0P8 | 835 | mV |
| PFE1_J2VDDC_0P82 | 820 | mV |
| Power 7 | | |
| J2VDDIO_1P8 | 1795 | mV |
| Power 8 | | |
| VDD5V0 | 4961 | mV |
| Power 9 | | |
| VDD2V5 | 2494 | mV |
| Power 10 | | |
| VDD3V3 | 3295 | mV |
| Power 11 | | |
| PCIE_VDD0V9 | 906 | mV |
| Power 12 | | |
| J2TVDD_1P2 | 1274 | mV |
| Power 13 | | |
| FPGA_VDD1V0 | 991 | mV |
| Power 14 | | |
| PFE1_J2HBMVDDOC_1P2 | 1196 | mV |
| Power 15 | | |


```
PFE0_J2HBMVDDOC_1P2      1196 mV
Bus Revision                19
```

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 (Junos OS Evolved)

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

| Class | Item | Status | Measurement |
|-------|----------------------------|--------|-----------------------------|
| Power | PSM 0 | OK | 26 degrees C / 78 degrees F |
| | PSM 1 | OK | 31 degrees C / 87 degrees F |
| | PSM 2 | Failed | |
| Temp | CB 0 Intake A Temp Sensor | OK | 23 degrees C / 73 degrees F |
| | CB 0 Intake B Temp Sensor | OK | 22 degrees C / 71 degrees F |
| | CB 0 Exhaust A Temp Sensor | OK | 26 degrees C / 78 degrees F |
| | CB 0 Exhaust B Temp Sensor | OK | 29 degrees C / 84 degrees F |
| | CB 0 Middle Temp Sensor | OK | 30 degrees C / 86 degrees F |
| | CB 1 Intake A Temp Sensor | OK | 23 degrees C / 73 degrees F |
| | CB 1 Intake B Temp Sensor | OK | 21 degrees C / 69 degrees F |
| | CB 1 Exhaust A Temp Sensor | OK | 26 degrees C / 78 degrees F |
| | CB 1 Exhaust B Temp Sensor | OK | 29 degrees C / 84 degrees F |

| | | |
|-------------------------------|----|------------------------------|
| CB 1 Middle Temp Sensor | OK | 29 degrees C / 84 degrees F |
| Fan Tray 0 Inlet Temp Sensor | OK | 24 degrees C / 75 degrees F |
| Fan Tray 0 Outlet Temp Sensor | OK | 28 degrees C / 82 degrees F |
| Fan Tray 1 Inlet Temp Sensor | OK | 24 degrees C / 75 degrees F |
| Fan Tray 1 Outlet Temp Sensor | OK | 28 degrees C / 82 degrees F |
| FPC 0 BT-0 Temp Sensor 1 | OK | 44 degrees C / 111 degrees F |
| FPC 0 BT-0 Temp Sensor 0 | OK | 44 degrees C / 111 degrees F |
| FPC 0 BT-1 Temp Sensor 0 | OK | 45 degrees C / 113 degrees F |
| FPC 0 BT-1 Temp Sensor 1 | OK | 45 degrees C / 113 degrees F |

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.

monitored option added in Junos OS Release 12.1x48 for PTX Series Packet Transport Routers.

pem option introduced in Junos OS Release 12.3 for ACX4000 Universal Metro Routers.

satellite option introduced in Junos OS Release 14.2R3.

all-members, local, and member *member-id* options introduced in Junos OS Release 15.1 for MX2010 and MX2020 routers.

RELATED DOCUMENTATION

[show chassis environment adc](#)

[show chassis environment cb](#)

[show chassis environment ccg](#)

[show chassis environment cip](#)

[show chassis environment fpc](#) | **787**

[show chassis environment fpm](#)

[show chassis environment lcc](#)

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[show chassis environment pdu](#)

| |
|---|
| show chassis environment pem 925 |
| show chassis environment psm |
| show chassis environment psu |
| show chassis environment routing-engine 963 |
| show chassis environment scg |
| show chassis environment sfb |
| show chassis environment sib |
| show chassis environment sfc |

show chassis environment adc

IN THIS SECTION

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Syntax

```
show chassis environment adc  
  <adc-slot-number>  
  <all-members>  
  <local>  
  <member member-id>
```


Description

Display chassis environmental information about the adapter cards.

Options

| | |
|--|--|
| none | Display environmental information about all adapter cards. |
| <i>adc-slot-number</i> | (Optional) Display environmental information about the specified adapter card. For MX2020 routers, replace <i>adc-slot-number</i> with a value of 0 through 19. For MX2010 and MX2008 routers, replace <i>adc-slot-number</i> with a value of 0 through 9. |
| all-members | (Optional) Display chassis environmental information about the adapter cards (ADCs) in all members of the Virtual Chassis configuration. |
| local | (Optional) Display chassis environmental information about the ADCs in the local member of the Virtual Chassis. |
| member <i>member-id</i> | (Optional) Display chassis environmental information about the ADCs in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1. |

Required Privilege Level

view

Output Fields

[Table 42 on page 723](#) lists the output fields for the `show chassis environment adc` command. Output fields are listed in the approximate order in which they appear.

Table 42: show chassis environment adc Output Fields

| Field Name | Field Description |
|-------------|---|
| State | <p>Status of the adapter card.</p> <ul style="list-style-type: none"> • Online—The adapter card is online and running. • Offline—Adapter card is powered down. |
| Temperature | <p>Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the adapter card.</p> <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 | <p>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.</p> |

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

```

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

`all-members`, `local`, and `member member-id` options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

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show chassis environment cb

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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, MX10004, MX204, MX2008, and MX10008 Universal Routing Platforms; EX9251 and EX9253 Switches)

```
show chassis environment cb  
<slot>
```


Syntax (QFabric System)

```
show chassis environment cb
<slot interconnect-device interconnect-device-name>
< interconnect-device interconnect-device-name slot>
```

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 <i>number</i> | <p>(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. |

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

| | |
|-----------------------------------|---|
| local | (MX Series routers only) (Optional) Display environmental information about the CBs on the local Virtual Chassis member. |
| member <i>member-id</i> | (MX Series routers only) (Optional) Display environmental information about the CBs on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> 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 <i>slot</i> with 0 or 1 . On EX Series switches replace <i>slot</i> with 0 , 1 , or 2 . On QFX Series switches, replace <i>slot</i> with 0 or 1 . |

Required Privilege Level

view

Output Fields

Table 43 on page 742 lists the output fields for the show chassis environment cb command. Output fields are listed in the approximate order in which they appear.

Table 43: 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 primary, 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).The QFabric system and QFX5700 include intake and exhaust temperatures for Intake 1, Intake 2, Exhaust 1, and Exhaust 2.)</p> |
| Power | <p>Power required and measured on the CB. The left column displays the required power, in volts. The right column displays the measured power, in millivolts.</p> |
| BUS Revision | <p>Revision level of the generic bus device. (Not on switches.)</p> |
| FPGA Revision | <p>Revision level of the field-programmable gate array (FPGA). (Not on switches.)</p> |

Table 43: show chassis environment cb Output Fields *(Continued)*

| Field Name | Field Description |
|---|---|
| PMBus device (on MX240, MX480, and MX960 routers with Enhanced MX SCB) | <p>Enhanced SCB on MX 240, MX480, and MX960 routers allows the system to save power by supplying only the amount of voltage that is required. Configurable PMBus devices are used to provide the voltage for each individual device. There is one PMBus device for each XF ASIC so that the output can be customized to each device. The following PMBus device information is displayed for routers with Enhanced MX SCB:</p> <ul style="list-style-type: none"> • Expected voltage • Measured voltage • Measured current • Calculated power |

Sample Output

show chassis environment cb (M120 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State           Online Master
  Temperature      33 degrees C / 91 degrees F
  Power
    1.2 V          1214 mV
    1.5 V          1495 mV
    2.5 V          2494 mV
    3.3 V          3319 mV
    5.0 V          5085 mV
    3.3 V bias     3296 mV
  Bus Revision     12
  FPGA Revision    17
CB 1 status:
  State           Online Standby
  Temperature      34 degrees C / 93 degrees F
  Power
    1.2 V          1195 mV

```


| | |
|---------------|---------|
| 1.5 V | 1495 mV |
| 2.5 V | 2504 mV |
| 3.3 V | 3312 mV |
| 5.0 V | 5111 mV |
| 3.3 V bias | 3296 mV |
| Bus Revision | 12 |
| FPGA Revision | 17 |

show chassis environment cb (M320 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature           29 degrees C / 84 degrees F
  Power:
    1.8 V               1805 mV
    2.5 V               2501 mV
    3.3 V               3293 mV
    4.6 V               4725 mV
    5.0 V               5032 mV
    12.0 V              11975 mV
    3.3 V bias          3286 mV
    8.0 V bias          7589 mV
  BUS Revision          40
  FPGA Revision         7
CB 1 status:
  State                Online Standby
  Temperature           32 degrees C / 89 degrees F
  Power:
    1.8 V               1802 mV
    2.5 V               2482 mV
    3.3 V               3289 mV
    4.6 V               4720 mV
    5.0 V               5001 mV
    12.0 V              11946 mV
    3.3 V bias          3274 mV
    8.0 V bias          7562 mV
  BUS Revision          40
  FPGA Revision         7

```


show chassis environment cb (MX80 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                Online Master
  Temperature           36 degrees C / 96 degrees F
  Power 1
    1.0 V               1034 mV
    1.0 V MQ           1037 mV
    1.0 V LU           1005 mV
    1.2 V               1218 mV
    1.5 V               1524 mV
    1.8 V               1814 mV
    2.5 V               2558 mV
    3.3 V               3296 mV
    5.0 V               5233 mV
    5.0 V bias          5207 mV
    12.0 V              12162 mV

```

show chassis environment cb (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 and MX10004 Router)

```

user@host> show chassis environment cb

CB 0 status:
  State                Online Master
  CB 0 Exhaust Temp Sensor 0x49 35 degrees C / 95 degrees F
  CB 0 Inlet Temp Sensor 0x49 28 degrees C / 82 degrees F
  Power
    VDD1V5_PCH          1489 mV
    VDDIO                940 mV
    VDD3V3_PCH          3332 mV
    VDD2V5_AB           2508 mV
    VDD1V8_CLC          1764 mV
    VDD3V3              3292 mV
    VDD2V5_CD           2508 mV
    VDD1V2_CBC_GTX      0 mV
    VDD1V8_GLS_GTX      0 mV
    VDD1V2_CBC           0 mV
    VDD1V8_GLS           0 mV
    BIAS3V3_BP           0 mV
    VDD1V2_GH            1200 mV
    VDD3V3_CBC           3299 mV
    VDD1V2_CD            1199 mV
    BIAS3V3              3340 mV
    VDD1V2_AB            1200 mV
    VDD5V0               5000 mV
    VDD1V05              1049 mV
    VDD1V05              1050 mV
    VCORE                1780 mV
    12V                  12272 mV   3952 mA   48984 mW

CB 1 status:
  State                Online Standby
  CB 1 Exhaust Temp Sensor 0x49 35 degrees C / 95 degrees F
  CB 1 Inlet Temp Sensor 0x49 31 degrees C / 87 degrees F
  Power
    VDD1V5_PCH          1489 mV
    VDDIO                940 mV
    VDD3V3_PCH          3351 mV
    VDD2V5_AB           2508 mV
    VDD1V8_CLC          1764 mV
    VDD3V3              3312 mV

```


| | |
|----------------|---------------------------------|
| VDD2V5_CD | 2508 mV |
| VDD1V2_CBC_GTX | 1195 mV |
| VDD1V8_GLS_GTX | 1764 mV |
| VDD1V2_CBC | 1195 mV |
| VDD1V8_GLS | 1783 mV |
| BIAS3V3_BP | 4096 mV |
| VDD1V2_GH | 1200 mV |
| VDD3V3_CBC | 3300 mV |
| VDD1V2_CD | 1200 mV |
| BIAS3V3 | 3339 mV |
| VDD1V2_AB | 1200 mV |
| VDD5V0 | 5000 mV |
| VDD1V05 | 1050 mV |
| VDD1V05 | 1050 mV |
| VCORE | 1780 mV |
| 12V | 12351 mV 3823 mA 45007 mW |

show chassis environment cb (MX204 Router)

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

CB 0 status:

| State | Online Master |
|-------------------------------|------------------------------|
| CB 0 Top Right Inlet Sensor | 35 degrees C / 95 degrees F |
| CB 0 Top Left Inlet Sensor | 37 degrees C / 98 degrees F |
| CB 0 Top Right Exhaust Sensor | 43 degrees C / 109 degrees F |
| CB 0 Top Left Exhaust Sensor | 50 degrees C / 122 degrees F |
| CB 0 CPU Core-0 Temp | 48 degrees C / 118 degrees F |
| CB 0 CPU Core-1 Temp | 48 degrees C / 118 degrees F |
| CB 0 CPU Core-2 Temp | 48 degrees C / 118 degrees F |
| CB 0 CPU Core-3 Temp | 47 degrees C / 116 degrees F |
| CB 0 CPU Core-4 Temp | 47 degrees C / 116 degrees F |
| CB 0 CPU Core-5 Temp | 47 degrees C / 116 degrees F |
| CB 0 CPU Core-6 Temp | 47 degrees C / 116 degrees F |
| CB 0 CPU Core-7 Temp | 47 degrees C / 116 degrees F |

Power

| | |
|-------------|---------|
| VDD1V5_PCH | 1509 mV |
| VDDIO | 950 mV |
| VDD3V3_PCH | 3312 mV |
| VDD2V5_AB | 2508 mV |
| VDD1V8_FRMR | 1813 mV |

| | |
|----------------|-----------------------------------|
| VDD3V3 | 3312 mV |
| VDD2V5_CD | 2508 mV |
| VDD1V8_PLL | 1813 mV |
| VDD1V5 | 1499 mV |
| EA0_1V5 | 1499 mV |
| EA0_1V04 | 1038 mV |
| EA0_PLL_1V0 | 999 mV |
| EA0_2V5 | 2508 mV |
| BIAS3V | 3332 mV |
| VDD1V2_CD | 1214 mV |
| VDD1V2_AB | 1215 mV |
| VDD1V05 | 1050 mV |
| BIAS3V3 | 3309 mV |
| VDD1V0 | 1015 mV |
| VDD1V8 | 1804 mV |
| VDD1V2 | 1199 mV |
| VDD2V5 | 2504 mV |
| EA0_VDD0V9 | 949 mV |
| EA0_HM1_VDD0V9 | 899 mV |
| EA0_VDD0V9R2 | 952 mV |
| EA0_VDD1V0 | 1000 mV |
| VDD3V3 | 3304 mV |
| EA0_XR_VDD1V2 | 1199 mV |
| EA0_XR_VDD0V9 | 903 mV |
| EA0_HM_VDDM1V2 | 1199 mV |
| EA0_HM_VDD1V2 | 1199 mV |
| VDDCPU0 | 1770 mV |
| 12V Hotswap A | 11968 mV 4696 mA 55466 mW |
| 12V Hotswap B | 12048 mV 14936 mA 180652 mW |

show chassis environment cb (MX10008 Router)

```

user@host> show chassis environment cb
CB 0 status:
  State                               Online Master
CB 0 Intake A Temp Sensor             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 |

lcc0-re0:

CB 0 status:

| | |
|---------------|------------------------------|
| State | Online Master |
| Temperature | 39 degrees C / 102 degrees F |
| Power 1 | |
| 1.8 V | 1799 mV |
| 2.5 V | 2499 mV |
| 3.3 V | 3327 mV |
| 3.3 V bias | 3299 mV |
| 4.6 V | 4673 mV |
| 5.0 V | 4918 mV |
| 8.0 V bias | 7308 mV |
| 12.0 V | 11887 mV |
| Power 2 | |
| 1.0 V | 996 mV |
| 1.2 V | 1199 mV |
| 3.3 V RE | 3319 mV |
| Bus Revision | 51 |
| FPGA Revision | 3 |

CB 1 status:

| | |
|-------------|------------------------------|
| State | Online Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power 1 | |
| 1.8 V | 1800 mV |

| | |
|---------------|----------|
| 2.5 V | 2496 mV |
| 3.3 V | 3322 mV |
| 3.3 V bias | 3284 mV |
| 4.6 V | 4680 mV |
| 5.0 V | 4954 mV |
| 8.0 V bias | 7284 mV |
| 12.0 V | 11902 mV |
| Power 2 | |
| 1.0 V | 998 mV |
| 1.2 V | 1205 mV |
| 3.3 V RE | 3327 mV |
| Bus Revision | 51 |
| FPGA Revision | 3 |

lcc1-re0:

CB 0 status:

| | |
|---------------|------------------------------|
| State | Online Master |
| Temperature | 41 degrees C / 105 degrees F |
| Power 1 | |
| 1.8 V | 1804 mV |
| 2.5 V | 2517 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3284 mV |
| 4.6 V | 4681 mV |
| 5.0 V | 4927 mV |
| 8.0 V bias | 7357 mV |
| 12.0 V | 11907 mV |
| Power 2 | |
| 1.0 V | 991 mV |
| 1.2 V | 1202 mV |
| 3.3 V RE | 3301 mV |
| Bus Revision | 51 |
| FPGA Revision | 3 |

CB 1 status:

| | |
|-------------|------------------------------|
| State | Online Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power 1 | |
| 1.8 V | 1805 mV |
| 2.5 V | 2528 mV |
| 3.3 V | 3324 mV |
| 3.3 V bias | 3289 mV |
| 4.6 V | 4694 mV |

| | |
|---------------|----------|
| 5.0 V | 4959 mV |
| 8.0 V bias | 7311 mV |
| 12.0 V | 11926 mV |
| Power 2 | |
| 1.0 V | 998 mV |
| 1.2 V | 1200 mV |
| 3.3 V RE | 3313 mV |
| Bus Revision | 51 |
| FPGA Revision | 3 |

lcc2-re0:

CB 0 status:

| | |
|---------------|------------------------------|
| State | Online Master |
| Temperature | 41 degrees C / 105 degrees F |
| Power 1 | |
| 1.8 V | 1805 mV |
| 2.5 V | 2494 mV |
| 3.3 V | 3333 mV |
| 3.3 V bias | 3296 mV |
| 4.6 V | 4673 mV |
| 5.0 V | 4901 mV |
| 8.0 V bias | 7343 mV |
| 12.0 V | 11916 mV |
| Power 2 | |
| 1.0 V | 993 mV |
| 1.2 V | 1213 mV |
| 3.3 V RE | 3328 mV |
| Bus Revision | 51 |
| FPGA Revision | 3 |

CB 1 status:

| | |
|-------------|------------------------------|
| State | Online Standby |
| Temperature | 41 degrees C / 105 degrees F |
| Power 1 | |
| 1.8 V | 1804 mV |
| 2.5 V | 2523 mV |
| 3.3 V | 3334 mV |
| 3.3 V bias | 3291 mV |
| 4.6 V | 4697 mV |
| 5.0 V | 4969 mV |
| 8.0 V bias | 7308 mV |
| 12.0 V | 11936 mV |
| Power 2 | |

| | |
|---------------|---------|
| 1.0 V | 996 mV |
| 1.2 V | 1200 mV |
| 3.3 V RE | 3328 mV |
| Bus Revision | 51 |
| FPGA Revision | 3 |

lcc3-re0:

CB 0 status:

| | |
|---------------|-----------------------------|
| State | Online Master |
| Temperature | 37 degrees C / 98 degrees F |
| Power 1 | |
| 1.8 V | 1809 mV |
| 2.5 V | 2510 mV |
| 3.3 V | 3296 mV |
| 3.3 V bias | 3291 mV |
| 4.6 V | 4670 mV |
| 5.0 V | 4905 mV |
| 8.0 V bias | 7211 mV |
| 12.0 V | 11882 mV |
| Power 2 | |
| 1.0 V | 996 mV |
| 1.2 V | 1188 mV |
| 3.3 V RE | 3326 mV |
| Bus Revision | 51 |
| FPGA Revision | 5 |

CB 1 status:

| | |
|-------------|------------------------------|
| State | Online Standby |
| Temperature | 38 degrees C / 100 degrees F |
| Power 1 | |
| 1.8 V | 1813 mV |
| 2.5 V | 2510 mV |
| 3.3 V | 3322 mV |
| 3.3 V bias | 3289 mV |
| 4.6 V | 4692 mV |
| 5.0 V | 4967 mV |
| 8.0 V bias | 7194 mV |
| 12.0 V | 11916 mV |
| Power 2 | |
| 1.0 V | 996 mV |
| 1.2 V | 1205 mV |
| 3.3 V RE | 3273 mV |

| | |
|---------------|----|
| Bus Revision | 51 |
| FPGA Revision | 5 |

show chassis environment cb (EX8200 Switch)

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

CB 0 status:

| | |
|---------------------|-----------------------------|
| State | Online Master |
| Temperature Intake | 20 degrees C / 68 degrees F |
| Temperature Exhaust | 24 degrees C / 75 degrees F |
| Power 1 | |
| 1.1 V | 1086 mV |
| 1.2 V | 1179 mV |
| 1.2 V * | 1182 mV |
| 1.2 V * | 1182 mV |
| 1.25 V | 1211 mV |
| 1.5 V | 1472 mV |
| 1.8 V | 1756 mV |
| 2.5 V | 2449 mV |
| 3.3 V | 3254 mV |
| 3.3 V bias | 3300 mV |
| 5.0 V | 4911 mV |
| 12.0 V | 11891 mV |

Power 2

| | |
|--------------|---------|
| 3.3 V bias * | 3615 mV |
| 3.3 V bias * | 3615 mV |
| 3.3 V bias * | 3567 mV |
| 3.3 V bias * | 3664 mV |
| 4.3 V bias * | 4224 mV |
| 4.3 V bias * | 4215 mV |
| 4.3 V bias * | 4224 mV |
| 4.3 V bias * | 4205 mV |
| 4.3 V bias * | 4195 mV |
| 4.3 V bias * | 4215 mV |
| 5.0 V bias | 4920 mV |

CB 1 status:

| | |
|---------------------|-----------------------------|
| State | Online Standby |
| Temperature Intake | 19 degrees C / 66 degrees F |
| Temperature Exhaust | 23 degrees C / 73 degrees F |
| Power 1 | |


```

1.1 V          1082 mV
1.2 V          1169 mV
1.2 V *        1179 mV
1.2 V *        1179 mV
1.25 V         1214 mV
1.5 V          1482 mV
1.8 V          1759 mV
2.5 V          2481 mV
3.3 V          3248 mV
3.3 V bias     3306 mV
5.0 V          4911 mV
12.0 V         11910 mV

```

Power 2

```

3.3 V bias *   3644 mV
3.3 V bias *   3664 mV
3.3 V bias *   3586 mV
3.3 V bias *   3654 mV
4.3 V bias *   4224 mV
4.3 V bias *   4215 mV
4.3 V bias *   4224 mV
4.3 V bias *   4205 mV
4.3 V bias *   4244 mV
4.3 V bias *   4215 mV
5.0 V bias     4930 mV

```

CB 2 status:

```

State          Online
Temperature Intake  19 degrees C / 66 degrees F
Temperature Exhaust 23 degrees C / 73 degrees F

```

Power 1

```

1.2 V          1195 mV
1.5 V          1511 mV
1.8 V          1804 mV
2.5 V          2526 mV
3.3 V          3300 mV
3.3 V bias     3306 mV
12.0 V         12220 mV

```

show chassis environment cb (EX8208 Switch)

```

user@host> show chassis environment cb
CB 0 status:

```


| | |
|---------------------|-----------------------------|
| State | Online Master |
| Temperature Intake | 20 degrees C / 68 degrees F |
| Temperature Exhaust | 24 degrees C / 75 degrees F |

Power 1

| | |
|------------|----------|
| 1.1 V | 1086 mV |
| 1.2 V | 1179 mV |
| 1.2 V * | 1182 mV |
| 1.2 V * | 1182 mV |
| 1.25 V | 1211 mV |
| 1.5 V | 1466 mV |
| 1.8 V | 1759 mV |
| 2.5 V | 2455 mV |
| 3.3 V | 3261 mV |
| 3.3 V bias | 3300 mV |
| 5.0 V | 4930 mV |
| 12.0 V | 11891 mV |

Power 2

| | |
|--------------|---------|
| 3.3 V bias * | 3606 mV |
| 3.3 V bias * | 3615 mV |
| 3.3 V bias * | 3567 mV |
| 3.3 V bias * | 3673 mV |
| 4.3 V bias * | 4224 mV |
| 4.3 V bias * | 4215 mV |
| 4.3 V bias * | 4234 mV |
| 4.3 V bias * | 4205 mV |
| 4.3 V bias * | 4186 mV |
| 4.3 V bias * | 4215 mV |
| 5.0 V bias | 4940 mV |

CB 1 status:

| | |
|---------------------|-----------------------------|
| State | Online Standby |
| Temperature Intake | 19 degrees C / 66 degrees F |
| Temperature Exhaust | 23 degrees C / 73 degrees F |

Power 1

| | |
|------------|---------|
| 1.1 V | 1086 mV |
| 1.2 V | 1169 mV |
| 1.2 V * | 1179 mV |
| 1.2 V * | 1179 mV |
| 1.25 V | 1211 mV |
| 1.5 V | 1479 mV |
| 1.8 V | 1759 mV |
| 2.5 V | 2475 mV |
| 3.3 V | 3235 mV |
| 3.3 V bias | 3306 mV |


```

5.0 V          4930 mV
12.0 V          11891 mV
Power 2
3.3 V bias *    3644 mV
3.3 V bias *    3664 mV
3.3 V bias *    3586 mV
3.3 V bias *    3654 mV
4.3 V bias *    4215 mV
4.3 V bias *    4224 mV
4.3 V bias *    4215 mV
4.3 V bias *    4215 mV
4.3 V bias *    4234 mV
4.3 V bias *    4224 mV
5.0 V bias      4920 mV
CB 2 status:
State           Online
Temperature Intake 20 degrees C / 68 degrees F
Temperature Exhaust 24 degrees C / 75 degrees F
Power 1
1.2 V           1202 mV
1.5 V           1508 mV
1.8 V           1804 mV
2.5 V           2520 mV
3.3 V           3300 mV
3.3 V bias      3300 mV
12.0 V          12200 mV

```

show chassis environment cb (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 and QFX5700)

```

user@switch> show chassis environment cb
CB 0 status:
State Online Master
Temp Sensor Inlet 1 52 degrees C / 125 degrees F
Temp Sensor Inlet 2 83 degrees C / 181 degrees F
Temp Sensor Exhaust 1 67 degrees C / 152 degrees F
Temp Sensor Exhaust 2 62 degrees C / 143 degrees F
Power 1
Volt Sensor PVTT0 1494 mV
Volt Sensor PVTT1 1504 mV
Volt Sensor VDD1V8_FPGA 1345 mV
Volt Sensor BIAS3V3 3130 mV
Volt Sensor VDD5V0 4995 mV
Volt Sensor VDD3V3_SATA 3230 mV
Volt Sensor VDD3V3_FPGA 3130 mV

```



```

Volt Sensor VDD3V3_PCH 3130 mV
Volt Sensor VDD2V5 2415 mV
Volt Sensor VDD0V9 910 mV

Volt Sensor VDD1V2_FPGA 1211 mV
Volt Sensor VDD1V8 1791 mV
Power 2
Volt Sensor VDD1V5 1494 mV
Volt Sensor VDD1V7 1704 mV
Volt Sensor VDD1V3 1345 mV
Volt Sensor VDD1V0 1002 mV
...
...
Bus Revision 99
FPGA Revision 10
CB 1 status:
State Online Master
Temp Sensor Inlet 1 52 degrees C / 125 degrees F
Temp Sensor Inlet 2 83 degrees C / 181 degrees F
Temp Sensor Exhaust 1 67 degrees C / 152 degrees F
Temp Sensor Exhaust 2 62 degrees C / 143 degrees F
Power 1
Volt Sensor PVTT0 1494 mV
Volt Sensor PVTT1 1504 mV
Volt Sensor VDD1V8_FPGA 1345 mV
Volt Sensor BIAS3V3 3130 mV
Volt Sensor VDD5V0 4995 mV
Volt Sensor VDD3V3_SATA 3230 mV
Volt Sensor VDD3V3_FPGA 3130 mV
Volt Sensor VDD3V3_PCH 3130 mV
Volt Sensor VDD2V5 2415 mV
Volt Sensor VDD0V9 910 mV
Volt Sensor VDD1V2_FPGA 1211 mV
Volt Sensor VDD1V8 1791 mV
Power 2
Volt Sensor VDD1V5 1494 mV
Volt Sensor VDD1V7 1704 mV
Volt Sensor VDD1V3 1345 mV
Volt Sensor VDD1V0 1002 mV
...
...

```


Bus Revision 99
FPGA Revision 10

```
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 cb 0 (PTX10003-80C and PTX10003-160C Routers)

```
user@router> show chassis environment cb 0

CB 0 status:
  State                      Online Master
  Power 1
    PCIe SW0 power, CORE 0.9 V    894 mV
  Power 2
    CLOCK MAIN, 2.5 V             2495 mV
    PCIe SW0 power, SERDES 0.9 V   897 mV
  Power 3
    PCIe SW1 power, CORE 0.9 V     897 mV
  Power 4
    PCIe SW1 power, SERDES 0.9 V   894 mV
```



```

Power 5
  Ethernet SW0 power, 1.0 V      998 mV
Power 6
  Ethernet SW1 power, CORE 1.0 V  998 mV
Power 7
  12 V                          12034 mV
Bus Revision                      0
FPGA Revision                     0

```

Starting in Junos OS Evolved Release 19.1R1, on PTX10003-80C and PTX10003-160C devices, the `show chassis environment cb` command does not show the Bus and FPGA revision information. If you want to view the FPGA revision or version information for the CB, use the `show system firmware` command.

show chassis environment cb 0 (ACX7024 Routers)

```

user@router> show chassis environment cb 0
CB 0 status:
  State                      Online Master
Main PCBRight                27 degrees C / 80 degrees F
Main PCBLeft                 27 degrees C / 80 degrees F
Main Exhaust                 33 degrees C / 91 degrees F
Main PCBCentral              33 degrees C / 91 degrees F
Main PCBCentral2             32 degrees C / 89 degrees F
Power 1
  Volt 01, VCC12              12082 mV
  Volt 02, VDD5P0             5064 mV
  Volt 03, VDD3P3             3328 mV
  Volt 04, VDD_QDD3P3         3391 mV
  Volt 05, VDD_SFP3P3         3397 mV
  Volt 06, VDD3P3_OCX0        3320 mV
  Volt 07, J2VPP_2P5          2529 mV
  Volt 08, XMC_FPGA_2P5       2516 mV
  Volt 09, TIMUX_2P5          2515 mV
  Volt 10, J2VDD_1P8          1816 mV
  Volt 11, J2TVDD_1P2         1223 mV
  Volt 12, J2VDDC_1P2         1218 mV
  Volt 13, J2VDDO_1P2        1220 mV
  Volt 14, J2VDDC_0P88        884 mV
  Volt 15, J2ROV_0P8          867 mV
  Volt 16, J2PVDD_0P8         800 mV
  Volt 17, J2TRVDD_0P8       813 mV

```


| | |
|-----------------------|---------|
| Volt 18, PTP_FPGA_1P8 | 1819 mV |
| Volt 19, PTP_FPGA_1P2 | 1206 mV |
| Volt 20, PTP_FPGA_1P0 | 1023 mV |
| Volt 21, VDD1P8_CLK | 1827 mV |
| Volt 22, XMC_FPGA_1P1 | 1114 mV |
| Volt 23, TIMUX_1P2 | 1221 mV |
| Volt 24, TIMUX_1P8 | 1839 mV |
| Bus Revision | 0 |
| FPGA Revision | 0 |

Release Information

Command introduced before Junos Release 7.4.

option introduced for the TX Matrix Plus router in Junos Release 9.6.

Command introduced in Junos OS Release 18.2R1 for MX10008 Universal Routing Platforms, and EX9253 switches.

RELATED DOCUMENTATION

[request chassis cb | 419](#)

[Understanding Switching Control Board Redundancy](#)

show chassis environment ccg

IN THIS SECTION

- [Syntax | 779](#)
- [Description | 779](#)
- [Options | 779](#)
- [Required Privilege Level | 779](#)
- [Output Fields | 779](#)

- Sample Output | 780
- Release Information | 781

Syntax

```
show chassis environment ccg  
<slot>
```

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

Output Fields

[Table 44 on page 780](#) lists the output fields for the `show chassis environment ccg` command. Output fields are listed in the approximate order in which they appear.

Table 44: 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 primary 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 |

Release Information

Command introduced in Junos OS Release 12.1.

RELATED DOCUMENTATION

Clock Sources for PTX Series Packet Transport Routers

[show chassis environment](#) | [599](#)

show chassis environment fan

IN THIS SECTION

- [Syntax](#) | [781](#)
- [Description](#) | [782](#)
- [Options](#) | [782](#)
- [Required Privilege Level](#) | [782](#)
- [Output Fields](#) | [782](#)
- [Sample Output](#) | [783](#)
- [Release Information](#) | [786](#)

Syntax

```
show chassis environment fan
<all-members>
<fantray-slot-number>
```



```
<local>  
<member member-id>
```

Description

(MX2020 and MX2010 routers only) Display environmental information about the fans and fan trays.

Options

| | |
|-----------------------------------|---|
| none | Display environmental information about all fans and fan trays. |
| all-members | (Optional) Display environmental information about the fan and fan trays in all members of the Virtual Chassis configuration. |
| <i>fantray-slot-number</i> | (Optional) Display environmental information about the specified fan tray. Replace <i>fantray-slot-number</i> with a value from 0 through 3. |
| local | (Optional) Display environmental information about the fans and fan trays in the local member of the Virtual Chassis. |
| member <i>member-id</i> | (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. |

Required Privilege Level

view

Output Fields

[Table 45 on page 783](#) lists the output fields for the `show chassis environment fan` command. Output fields are listed in the approximate order in which they appear.

Table 45: 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 (MX10004 and 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

```

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

all-members, local, and member *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

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show chassis environment fpc

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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, OCX Series, PTX3000, PTX10008 devices and Junos OS Evolved 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
```


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

| | |
|--|---|
| 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. |
| all-members | (MX Series routers only) (Optional) Display environmental information for the FPCs in all the members of the Virtual Chassis configuration. |
| interconnect-device <i>name</i> | (QFabric systems only) (Optional) Display chassis environmental information for the Interconnect device. |
| lcc <i>number</i> | <p>(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. |
| local | (MX Series routers only) (Optional) Display environmental information for the FPCs in the local Virtual Chassis member. |
| member <i>member-id</i> | (MX Series routers only) (Optional) Display environmental information for the FPCs in the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> 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

Output Fields

[Table 46 on page 792](#) lists the output fields for the `show chassis environment fpc` command. Output fields are listed in the approximate order in which they appear.

Table 46: show chassis environment fpc Output Fields

| Field Name | Field Description |
|---------------------|--|
| State | <p>Status of the FPC:</p> <ul style="list-style-type: none"> • Unknown—FPC is not detected by the router. • Empty—No FPC is present. • Present—FPC is detected by the chassis daemon but is either not supported by the current version of the Junos OS, or the FPC is coming up but not yet online. • Ready—FPC is in intermediate or transition state. • Announce online—Intermediate state during which the FPC is coming up but not yet online, and the chassis manager acknowledges the chassisd FPC online initiative. • Online—FPC is online and running. • Offline—FPC is powered down. • Diagnostics—FPC is set to operate in diagnostics mode. |
| Temperature | (M40e and M160 routers and QFX Series only) Temperature of the air flowing past the FPC. |
| PMB Temperature | <p>(PTX Series only) Temperature of the air flowing past the PMB (bottom of the FPC).</p> <p>The PTX5000 Packet Transport Router with FPC2-PTX-P1A include multiple temperatures for PMB (TEMP0 and TEMP1).</p> |
| PMB CPU Temperature | (PTX5000 Packet Transport Router with FPC2-PTX-P1A only) Temperature of the air flowing past the PMB CPU. |
| Temperature Intake | (M320 routers, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series only) Temperature of the air flowing into the chassis. |
| Temperature Top | (T Series routers only) Temperature of the air flowing past the top of the FPC. |

Table 46: 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 <i>n</i> Temperature | (PTX Series only) Temperature of the air flowing past the specified TL area of the packet forwarding engine (PFE) on the FPC. |
| TQ <i>n</i> Temperature | (PTX Series only) Temperature of the air flowing past the specified TQ area of the packet forwarding engine (PFE) on the FPC. |
| Temperature MMB0 | (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_0V9-vt273m       911 mV
I2C Slave Revision      110
FPC 8 status:
  State                  Online

```



```

Temperature Intake          32 degrees C / 89 degrees F
Temperature Exhaust A       44 degrees C / 111 degrees F
Temperature Exhaust B       37 degrees C / 98 degrees F
Temperature LU 0 TCAM TSen  41 degrees C / 105 degrees F
Temperature LU 0 TCAM Chip  49 degrees C / 120 degrees F
Temperature LU 0 TSen       41 degrees C / 105 degrees F
Temperature LU 0 Chip       52 degrees C / 125 degrees F
Temperature MQ 0 TSen       41 degrees C / 105 degrees F
Temperature MQ 0 Chip       47 degrees C / 116 degrees F
Temperature LU 1 TCAM TSen  39 degrees C / 102 degrees F
Temperature LU 1 TCAM Chip  42 degrees C / 107 degrees F
Temperature LU 1 TSen       39 degrees C / 102 degrees F
Temperature LU 1 Chip       46 degrees C / 114 degrees F
Temperature MQ 1 TSen       39 degrees C / 102 degrees F
Temperature MQ 1 Chip       45 degrees C / 113 degrees F
Power
  MPC-BIAS3V3-z12105       3296 mV
  MPC-VDD3V3-z12006       3298 mV
  MPC-VDD2V5-z12006       2505 mV
  MPC-TCAM_1V0-z12004      997 mV
  MPC-AVDD1V0-z12006      1007 mV
  MPC-VDD1V8-z12006      1803 mV
  MPC-PCIE_1V0-z12006     1004 mV
  MPC-LU0_1V0-z12004     1000 mV
  MPC-MQ0_1V0-z12004      999 mV
  MPC-VDD_1V5-z12004     1498 mV
  MPC-PMB_1V1-z12006     1102 mV
  MPC-9VA-BMR453         9009 mV
  MPC-9VB-BMR453         8960 mV
  MPC-PMB_1V2-z12105     1202 mV
  MPC-LU1_1V0-z12004     1005 mV
  MPC-MQ1_1V0-z12004     1000 mV
I2C Slave Revision        70
FPC 9 status:
  State                    Online
  Temperature Intake       34 degrees C / 93 degrees F
  Temperature Exhaust A    41 degrees C / 105 degrees F
  Temperature Exhaust B    54 degrees C / 129 degrees F
  Temperature LU 0 TSen    51 degrees C / 123 degrees F
  Temperature LU 0 Chip    52 degrees C / 125 degrees F
  Temperature LU 1 TSen    51 degrees C / 123 degrees F
  Temperature LU 1 Chip    55 degrees C / 131 degrees F
  Temperature LU 2 TSen    51 degrees C / 123 degrees F

```



```

Temperature LU 2 Chip      47 degrees C / 116 degrees F
Temperature LU 3 TSen      51 degrees C / 123 degrees F
Temperature LU 3 Chip      47 degrees C / 116 degrees F
Temperature MQ 0 TSen      40 degrees C / 104 degrees F
Temperature MQ 0 Chip      42 degrees C / 107 degrees F
Temperature MQ 1 TSen      40 degrees C / 104 degrees F
Temperature MQ 1 Chip      44 degrees C / 111 degrees F
Temperature MQ 2 TSen      40 degrees C / 104 degrees F
Temperature MQ 2 Chip      38 degrees C / 100 degrees F
Temperature MQ 3 TSen      40 degrees C / 104 degrees F
Temperature MQ 3 Chip      40 degrees C / 104 degrees F
Power
  AS-BIAS3V3-z12105        3302 mV
  AS-VDD1V8-z12006         1808 mV
  AS-VDD2V5-z12006         2513 mV
  AS-AVDD1V0-z12004         997 mV
  AS-PCIE_1V0-z12004         999 mV
  AS-VDD3V3-z12004         3294 mV
  AS-VDD_1V5A-z12004        1503 mV
  AS-VDD_1V5B-z12004        1502 mV
  AS-LU0_1V0-z12004         996 mV
  AS-LU1_1V0-z12004         999 mV
  AS-MQ0_1V0-z12004         997 mV
  AS-MQ1_1V0-z12004         999 mV
  AS-LU2_1V0-z12004         997 mV
  AS-LU3_1V0-z12004         998 mV
  AS-MQ2_1V0-z12004        1000 mV
  AS-MQ3_1V0-z12004        1000 mV
  AS-PMB_1V1-z12006        1102 mV
I2C Slave Revision        68

```

show chassis environment fpc (MX2008 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
  State                Online
  Temperature Intake    29 degrees C / 84 degrees F
  Temperature Exhaust A 43 degrees C / 109 degrees F
  Temperature Exhaust B 42 degrees C / 107 degrees F
  Temperature XL 0 TSen 38 degrees C / 100 degrees F
  Temperature XL 0 Chip 53 degrees C / 127 degrees F

```


Temperature XL 0 XR2 0 TSen38 degrees C / 100 degrees F
 Temperature XL 0 XR2 0 Chip60 degrees C / 140 degrees F
 Temperature XL 0 XR2 1 TSen38 degrees C / 100 degrees F
 Temperature XL 0 XR2 1 Chip60 degrees C / 140 degrees F
 Temperature XL 1 TSen 30 degrees C / 86 degrees F
 Temperature XL 1 Chip 43 degrees C / 109 degrees F
 Temperature XL 1 XR2 0 TSen30 degrees C / 86 degrees F
 Temperature XL 1 XR2 0 Chip50 degrees C / 122 degrees F
 Temperature XL 1 XR2 1 TSen30 degrees C / 86 degrees F
 Temperature XL 1 XR2 1 Chip50 degrees C / 122 degrees F
 Temperature XM 0 TSen 42 degrees C / 107 degrees F
 Temperature XM 0 Chip 49 degrees C / 120 degrees F
 Temperature XM 1 TSen 42 degrees C / 107 degrees F
 Temperature XM 1 Chip 42 degrees C / 107 degrees F
 Temperature XM 2 TSen 42 degrees C / 107 degrees F
 Temperature XM 2 Chip 42 degrees C / 107 degrees F
 Temperature XM 3 TSen 42 degrees C / 107 degrees F
 Temperature XM 3 Chip 40 degrees C / 104 degrees F
 Temperature PCIe Switch TSen42 degrees C / 107 degrees F
 Temperature PCIe Switch Chip22 degrees C / 71 degrees F

Power

| | |
|-------------------------|---------|
| MPC-VDD_3V3-vt273m | 3304 mV |
| MPC-VDD_2V5-vt273m | 2503 mV |
| MPC-VDD_1V5-vt273m | 1499 mV |
| MPC-PCIE_0V9-vt273m | 900 mV |
| MPC-VDD_1V8-vt273m | 1799 mV |
| MPC-VDD_1V2-vt273m | 1203 mV |
| MPC-XM01_AVDD_1V0-vt273 | 1001 mV |
| MPC-XM23_AVDD_1V0-vt273 | 1001 mV |
| MPC-XM0_0V9-vt273m | 900 mV |
| MPC-XM1_0V9-vt273m | 901 mV |
| MPC-XM2_0V9-vt273m | 903 mV |
| MPC-XM3_0V9-vt273m | 899 mV |
| MPC-XL0_XR0_0V9-vt273m | 899 mV |
| MPC-XL0_XR1_0V9-vt273m | 903 mV |
| MPC-XL0_0V9-vt273m | 899 mV |
| MPC-XL0_AVDD_1V0-vt273m | 1000 mV |
| MPC-XL0_VDD_1V5-vt273m | 1498 mV |
| MPC-XL0_XR_1V2-vt273m | 1200 mV |
| MPC-XL1_XR0_0V9-vt273m | 899 mV |
| MPC-XL1_XR1_0V9-vt273m | 899 mV |
| MPC-XL1_0V9-vt273m | 900 mV |
| MPC-XL1_AVDD_1V0-vt273m | 1000 mV |


```

MPC-XL1_VDD_1V5-vt273m      1501 mV
MPC-XL1_XR_1V2-vt273m      1199 mV
MPC-PMB-1V05-ltc2978        1049 mV
MPC-PMB-1V5-ltc2978         1500 mV
MPC-PMB-2V5-ltc2978         2500 mV
MPC-PMB-3V3-ltc2978         3298 mV
I2C Slave Revision          20
FPC 1 status:
State                        Online
Temperature Intake           29 degrees C / 84 degrees F
Temperature Exhaust A       52 degrees C / 125 degrees F
Temperature Exhaust B       44 degrees C / 111 degrees F
Temperature EA0 TSen        55 degrees C / 131 degrees F
Temperature EA0 Chip        48 degrees C / 118 degrees F
Temperature EA0_XR0 TSen    55 degrees C / 131 degrees F
Temperature EA0_XR0 Chip    57 degrees C / 134 degrees F
Temperature EA0_XR1 TSen    55 degrees C / 131 degrees F
Temperature EA0_XR1 Chip    54 degrees C / 129 degrees F
Temperature EA1 TSen        55 degrees C / 131 degrees F
Temperature EA1 Chip        50 degrees C / 122 degrees F
Temperature EA1_XR0 TSen    55 degrees C / 131 degrees F
Temperature EA1_XR0 Chip    59 degrees C / 138 degrees F
Temperature EA1_XR1 TSen    55 degrees C / 131 degrees F
Temperature EA1_XR1 Chip    59 degrees C / 138 degrees F
Temperature PEX TSen        55 degrees C / 131 degrees F
Temperature PEX Chip        39 degrees C / 102 degrees F
Temperature EA2 TSen        43 degrees C / 109 degrees F
Temperature EA2 Chip        39 degrees C / 102 degrees F
Temperature EA2_XR0 TSen    43 degrees C / 109 degrees F
Temperature EA2_XR0 Chip    45 degrees C / 113 degrees F
Temperature EA2_XR1 TSen    43 degrees C / 109 degrees F
Temperature EA2_XR1 Chip    43 degrees C / 109 degrees F
Temperature EA3 TSen        43 degrees C / 109 degrees F
Temperature EA3 Chip        41 degrees C / 105 degrees F
Temperature EA3_XR0 TSen    43 degrees C / 109 degrees F
Temperature EA3_XR0 Chip    50 degrees C / 122 degrees F
Temperature EA3_XR1 TSen    43 degrees C / 109 degrees F
Temperature EA3_XR1 Chip    46 degrees C / 114 degrees F
Temperature EA0_HMC0 Logic die 61 degrees C / 141 degrees F
Temperature EA0_HMC0 DRAM botm 58 degrees C / 136 degrees F
Temperature EA0_HMC1 Logic die 62 degrees C / 143 degrees F
Temperature EA0_HMC1 DRAM botm 59 degrees C / 138 degrees F
Temperature EA0_HMC2 Logic die 59 degrees C / 138 degrees F

```


Temperature EA0_HMC2 DRAM botm 56 degrees C / 132 degrees F
 Temperature EA1_HMC0 Logic die 67 degrees C / 152 degrees F
 Temperature EA1_HMC0 DRAM botm 64 degrees C / 147 degrees F
 Temperature EA1_HMC1 Logic die 65 degrees C / 149 degrees F
 Temperature EA1_HMC1 DRAM botm 62 degrees C / 143 degrees F
 Temperature EA1_HMC2 Logic die 63 degrees C / 145 degrees F
 Temperature EA1_HMC2 DRAM botm 60 degrees C / 140 degrees F
 Temperature EA2_HMC0 Logic die 51 degrees C / 123 degrees F
 Temperature EA2_HMC0 DRAM botm 48 degrees C / 118 degrees F
 Temperature EA2_HMC1 Logic die 55 degrees C / 131 degrees F
 Temperature EA2_HMC1 DRAM botm 52 degrees C / 125 degrees F
 Temperature EA2_HMC2 Logic die 52 degrees C / 125 degrees F
 Temperature EA2_HMC2 DRAM botm 49 degrees C / 120 degrees F
 Temperature EA3_HMC0 Logic die 51 degrees C / 123 degrees F
 Temperature EA3_HMC0 DRAM botm 48 degrees C / 118 degrees F
 Temperature EA3_HMC1 Logic die 52 degrees C / 125 degrees F
 Temperature EA3_HMC1 DRAM botm 49 degrees C / 120 degrees F
 Temperature EA3_HMC2 Logic die 52 degrees C / 125 degrees F
 Temperature EA3_HMC2 DRAM botm 49 degrees C / 120 degrees F

Power

| | |
|----------------------|---------|
| MPC-EA0_0V9-vt1527mb | 950 mV |
| MPC-EA1_0V9-vt1527mb | 950 mV |
| MPC-EA2_0V9-vt1527mb | 925 mV |
| MPC-EA3_0V9-vt1527mb | 924 mV |
| MAX20751-1V0 | 1020 mV |
| MAX20731-0V9 | 891 mV |
| MAX20751-EA0-AVDD1V0 | 1000 mV |
| MAX20731-EA0-1V2 | 1189 mV |
| MAX20731-EA0-HMC-1V2 | 1182 mV |
| MAX20731-EA0-0V906 | 899 mV |
| MAX20731-EA0-HMC-0V9 | 891 mV |
| MAX20751-EA1-AVDD1V0 | 1000 mV |
| MAX20731-EA1-1V2 | 1189 mV |
| MAX20731-EA1-HMC-1V2 | 1182 mV |
| MAX20731-EA1-0V906 | 899 mV |
| MAX20731-EA1-HMC-0V9 | 889 mV |
| MAX20751-EA2-AVDD1V0 | 1000 mV |
| MAX20731-EA2-1V2 | 1186 mV |
| MAX20731-EA2-HMC-1V2 | 1193 mV |
| MAX20731-EA2-0V906 | 899 mV |
| MAX20731-EA2-HMC-0V9 | 889 mV |
| MAX20751-EA3-AVDD1V0 | 1000 mV |
| MAX20731-EA3-1V2 | 1186 mV |

| | |
|-------------------------|------------------------------|
| MAX20731-EA3-HMC-1V2 | 1193 mV |
| MAX20731-EA3-0V906 | 897 mV |
| MAX20731-EA3-HMC-0V9 | 894 mV |
| MAX20731-3V3 | 3268 mV |
| UCD9090_0-CH_1-EA0_PLL_ | 1010 mV |
| UCD9090_0-CH_2-EA0_1V04 | 1038 mV |
| UCD9090_0-CH_3-EA0_2V5 | 2499 mV |
| UCD9090_0-CH_4-EA0_1V5 | 1494 mV |
| UCD9090_0-CH_5-EA1_PLL_ | 1012 mV |
| UCD9090_0-CH_6-EA1_1V04 | 1038 mV |
| UCD9090_0-CH_7-EA1_2V5 | 2497 mV |
| UCD9090_0-CH_8-EA1_1V5 | 1498 mV |
| UCD9090_0-CH_9-VDD_1V8 | 1804 mV |
| UCD9090_0-CH_10-VDD_2V5 | 2499 mV |
| UCD9090_1-CH_1-EA2_PLL_ | 1017 mV |
| UCD9090_1-CH_2-EA2_1V04 | 1041 mV |
| UCD9090_1-CH_3-EA2_2V5 | 2499 mV |
| UCD9090_1-CH_4-EA2_1V5 | 1503 mV |
| UCD9090_1-CH_5-EA3_PLL_ | 1015 mV |
| UCD9090_1-CH_6-EA3_1V04 | 1048 mV |
| UCD9090_1-CH_7-EA3_2V5 | 2499 mV |
| UCD9090_1-CH_8-EA3_1V5 | 1500 mV |
| UCD9090_1-CH_9-VDD_1V5 | 1497 mV |
| UCD9090_1-CH_10-VDD_1V2 | 1216 mV |
| PMB PVCC 0.7V - 1.05V | 802 mV |
| PMB PVNN 0V - 1.02V | 976 mV |
| PMB 1.0V | 1002 mV |
| PMB 1.1V | 1076 mV |
| PMB 1.35V | 1347 mV |
| PMB VDDQ 1.5V | 1504 mV |
| PMB 1.8V | 1804 mV |
| PMB VDD 3.3V | 3292 mV |
| PMB BIAS 5.0V | 5008 mV |
| PMB USB 5.0V | 5000 mV |
| PMB 12V | 10866 mV |
| I2C Slave Revision | 112 |
| FPC 7 status: | |
| State | Online |
| Temperature Intake | 31 degrees C / 87 degrees F |
| Temperature Exhaust A | 46 degrees C / 114 degrees F |
| Temperature Exhaust B | 38 degrees C / 100 degrees F |
| Temperature QX 0 TSen | 49 degrees C / 120 degrees F |
| Temperature QX 0 Chip | 52 degrees C / 125 degrees F |


```

Temperature LU 0 TCAM TSen 49 degrees C / 120 degrees F
Temperature LU 0 TCAM Chip 52 degrees C / 125 degrees F
Temperature LU 0 TSen      49 degrees C / 120 degrees F
Temperature LU 0 Chip      51 degrees C / 123 degrees F
Temperature MQ 0 TSen      49 degrees C / 120 degrees F
Temperature MQ 0 Chip      55 degrees C / 131 degrees F
Temperature QX 1 TSen      41 degrees C / 105 degrees F
Temperature QX 1 Chip      42 degrees C / 107 degrees F
Temperature LU 1 TCAM TSen 41 degrees C / 105 degrees F
Temperature LU 1 TCAM Chip 43 degrees C / 109 degrees F
Temperature LU 1 TSen      41 degrees C / 105 degrees F
Temperature LU 1 Chip      46 degrees C / 114 degrees F
Temperature MQ 1 TSen      41 degrees C / 105 degrees F
Temperature MQ 1 Chip      47 degrees C / 116 degrees F

```

Power

```

MPC-BIAS3V3-z12105      3302 mV
MPC-VDD3V3-z12006      3307 mV
MPC-VDD2V5-z12006      2505 mV
MPC-TCAM_1V0-z12004     1000 mV
MPC-AVDD1V0-z12006     1006 mV
MPC-VDD1V8-z12006     1800 mV
MPC-PCIE_1V0-z12006     1000 mV
MPC-LU0_1V0-z12004      997 mV
MPC-MQ0_1V0-z12004      999 mV
MPC-VDD_1V5-z12004     1495 mV
MPC-PMB_1V1-z12006     1096 mV
MPC-9VA-BMR453          9051 mV
MPC-9VB-BMR453          8990 mV
MPC-PMB_1V2-z12106     1200 mV
MPC-LU1_1V0-z12004      997 mV
MPC-MQ1_1V0-z12004      998 mV
MPC-QXM0_1V0-z12006     1000 mV
MPC-QXM1_1V0-z12006     999 mV

```

```
I2C Slave Revision      70
```

show chassis environment fpc (MX240 Router)

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

```
FPC 1 status:
```

```

State                Online
Temperature Intake    34 degrees C / 93 degrees F

```


| | |
|--------------------------|------------------------------|
| Temperature Exhaust A | 39 degrees C / 102 degrees F |
| Temperature Exhaust B | 53 degrees C / 127 degrees F |
| Temperature I3 0 TSensor | 51 degrees C / 123 degrees F |
| Temperature I3 0 Chip | 54 degrees C / 129 degrees F |
| Temperature I3 1 TSensor | 50 degrees C / 122 degrees F |
| Temperature I3 1 Chip | 53 degrees C / 127 degrees F |
| Temperature I3 2 TSensor | 48 degrees C / 118 degrees F |
| Temperature I3 2 Chip | 51 degrees C / 123 degrees F |
| Temperature I3 3 TSensor | 45 degrees C / 113 degrees F |
| Temperature I3 3 Chip | 48 degrees C / 118 degrees F |
| Temperature IA 0 TSensor | 45 degrees C / 113 degrees F |
| Temperature IA 0 Chip | 45 degrees C / 113 degrees F |
| Temperature IA 1 TSensor | 45 degrees C / 113 degrees F |
| Temperature IA 1 Chip | 49 degrees C / 120 degrees F |

Power

| | |
|-------------|---------|
| 1.5 V | 1492 mV |
| 2.5 V | 2507 mV |
| 3.3 V | 3306 mV |
| 1.8 V PFE 0 | 1801 mV |
| 1.8 V PFE 1 | 1804 mV |
| 1.8 V PFE 2 | 1798 mV |
| 1.8 V PFE 3 | 1798 mV |
| 1.2 V PFE 0 | 1169 mV |
| 1.2 V PFE 1 | 1189 mV |
| 1.2 V PFE 2 | 1182 mV |
| 1.2 V PFE 3 | 1176 mV |

| | |
|--------------------|----|
| I2C Slave Revision | 42 |
|--------------------|----|

FPC 2 status:

| | |
|--------------------------|------------------------------|
| State | Online |
| Temperature Intake | 33 degrees C / 91 degrees F |
| Temperature Exhaust A | 41 degrees C / 105 degrees F |
| Temperature Exhaust B | 53 degrees C / 127 degrees F |
| Temperature I3 0 TSensor | 53 degrees C / 127 degrees F |
| Temperature I3 0 Chip | 58 degrees C / 136 degrees F |
| Temperature I3 1 TSensor | 52 degrees C / 125 degrees F |
| Temperature I3 1 Chip | 56 degrees C / 132 degrees F |
| Temperature I3 2 TSensor | 50 degrees C / 122 degrees F |
| Temperature I3 2 Chip | 52 degrees C / 125 degrees F |
| Temperature I3 3 TSensor | 46 degrees C / 114 degrees F |
| Temperature I3 3 Chip | 49 degrees C / 120 degrees F |
| Temperature IA 0 TSensor | 51 degrees C / 123 degrees F |
| Temperature IA 0 Chip | 49 degrees C / 120 degrees F |
| Temperature IA 1 TSensor | 48 degrees C / 118 degrees F |


```

Temperature IA 1 Chip      53 degrees C / 127 degrees F
Power
  1.5 V                    1492 mV
  2.5 V                    2445 mV
  3.3 V                    3293 mV
  1.8 V PFE 0              1827 mV
  1.8 V PFE 1              1775 mV
  1.8 V PFE 2              1788 mV
  1.8 V PFE 3              1798 mV
  1.2 V PFE 0              1250 mV
  1.2 V PFE 1              1234 mV
  1.2 V PFE 2              1231 mV
  1.2 V PFE 3              1192 mV
I2C Slave Revision        42

```

show chassis environment fpc (MX480 Router)

```

user@host> show chassis environment fpc
FPC 1 status:
  State                Online
  Temperature Intake    36 degrees C / 96 degrees F
  Temperature Exhaust A 41 degrees C / 105 degrees F
  Temperature Exhaust B 55 degrees C / 131 degrees F
  Temperature I3 0 TSensor 55 degrees C / 131 degrees F
  Temperature I3 0 Chip  57 degrees C / 134 degrees F
  Temperature I3 1 TSensor 53 degrees C / 127 degrees F
  Temperature I3 1 Chip  53 degrees C / 127 degrees F
  Temperature I3 2 TSensor 52 degrees C / 125 degrees F
  Temperature I3 2 Chip  49 degrees C / 120 degrees F
  Temperature I3 3 TSensor 47 degrees C / 116 degrees F
  Temperature I3 3 Chip  47 degrees C / 116 degrees F
  Temperature IA 0 TSensor 54 degrees C / 129 degrees F
  Temperature IA 0 Chip  58 degrees C / 136 degrees F
  Temperature IA 1 TSensor 48 degrees C / 118 degrees F
  Temperature IA 1 Chip  53 degrees C / 127 degrees F
Power
  1.5 V                1479 mV
  2.5 V                2542 mV
  3.3 V                3319 mV
  1.8 V PFE 0          1811 mV
  1.8 V PFE 1          1804 mV

```


| | |
|--------------------|---------|
| 1.8 V PFE 2 | 1804 mV |
| 1.8 V PFE 3 | 1814 mV |
| 1.2 V PFE 0 | 1192 mV |
| 1.2 V PFE 1 | 1202 mV |
| 1.2 V PFE 2 | 1205 mV |
| 1.2 V PFE 3 | 1189 mV |
| I2C Slave Revision | 40 |

show chassis environment fpc (MX960 Router 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 HBM0 | 74 degrees C / 165 degrees F |
| Temperature ZT0 HBM1 | 74 degrees C / 165 degrees F |
| Temperature ZT1 HBM0 | 74 degrees C / 165 degrees F |
| Temperature ZT1 HBM1 | 75 degrees C / 167 degrees F |
| Temperature ZT2 HBM0 | 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_PFL | 1009 mV |
| UCD9090_1-CH_6-V1P1 | 1075 mV |
| UCD9090_1-CH_7-V1P5 | 1531 mV |
| UCD9090_1-CH_8-V1P35 | 1359 mV |
| UCD9090_1-CH_9-VDD1V5 | 1511 mV |
| UCD9090_1-CH_10-VDD1V2 | 1210 mV |
| LTC3887-EA0-VDD0V9-RAIL | 949 mV |
| LTC3887-EA0-VDD0V9-DEV0 | 949 mV |
| LTC3887-EA0-VDD0V9-DEV0 | 951 mV |
| LTC3887-EA0-VDD0V9-DEV1 | 949 mV |
| LTC3887-EA0-VDD0V9-DEV1 | 951 mV |
| LTC3887-EA0-VDD0V9R2-RA | 947 mV |

| | |
|-------------------------|---------|
| LTC3887-EA0-VDD0V9R2-CH | 947 mV |
| LTC3887-EA0-VDD0V9R2-CH | 949 mV |
| LTC3887-EA0-VDD1V0-RAIL | 999 mV |
| LTC3887-EA0-VDD1V0-CH0 | 999 mV |
| LTC3887-EA0-VDD1V0-CH1 | 1001 mV |
| LTC3887-EA0-XR-VDD0V9 | 900 mV |
| LTC3887-EA0-XR-VDD1V2 | 1199 mV |
| LTC3887-EA0-HM1-VDD0V9 | 899 mV |
| LTC3887-EA0-HM-VDD1V2 | 1200 mV |
| LTC3887-EA0-HM-VDDM1V2 | 1199 mV |
| LTC3887-EA1-VDD0V9-RAIL | 949 mV |
| LTC3887-EA1-VDD0V9-DEV0 | 952 mV |
| LTC3887-EA1-VDD0V9-DEV0 | 952 mV |
| LTC3887-EA1-VDD0V9-DEV1 | 951 mV |
| LTC3887-EA1-VDD0V9-DEV1 | 951 mV |
| LTC3887-EA1-VDD0V9R2-RA | 948 mV |
| LTC3887-EA1-VDD0V9R2-CH | 948 mV |
| LTC3887-EA1-VDD0V9R2-CH | 950 mV |
| LTC3887-EA1-VDD1V0-RAIL | 1000 mV |
| LTC3887-EA1-VDD1V0-CH0 | 1000 mV |
| LTC3887-EA1-VDD1V0-CH1 | 1001 mV |

I2C Slave Revision 13

FPC 1 status:

| State | Online |
|-----------------------------|------------------------------|
| FPC 1 Intake Temp Sensor | 27 degrees C / 80 degrees F |
| FPC 1 Exhaust-A Temp Sensor | 60 degrees C / 140 degrees F |
| FPC 1 Exhaust-B Temp Sensor | 46 degrees C / 114 degrees F |
| FPC 1 EA0 Chip | 63 degrees C / 145 degrees F |
| FPC 1 EA0-XR0 Chip | 67 degrees C / 152 degrees F |
| FPC 1 EA0-XR1 Chip | 68 degrees C / 154 degrees F |
| FPC 1 EA1 Chip | 70 degrees C / 158 degrees F |
| FPC 1 EA1-XR0 Chip | 75 degrees C / 167 degrees F |
| FPC 1 EA1-XR1 Chip | 75 degrees C / 167 degrees F |
| FPC 1 PEX Chip | 89 degrees C / 192 degrees F |
| FPC 1 EA2 Chip | 49 degrees C / 120 degrees F |
| FPC 1 EA2-XR0 Chip | 53 degrees C / 127 degrees F |
| FPC 1 EA2-XR1 Chip | 56 degrees C / 132 degrees F |
| FPC 1 PF Chip | 71 degrees C / 159 degrees F |
| FPC 1 EA0_HMC0 Logic die | 74 degrees C / 165 degrees F |
| FPC 1 EA0_HMC0 DRAM botm | 71 degrees C / 159 degrees F |
| FPC 1 EA0_HMC1 Logic die | 78 degrees C / 172 degrees F |
| FPC 1 EA0_HMC1 DRAM botm | 75 degrees C / 167 degrees F |
| FPC 1 EA0_HMC2 Logic die | 78 degrees C / 172 degrees F |

| | |
|--------------------------|------------------------------|
| FPC 1 EA0_HMC2 DRAM botm | 75 degrees C / 167 degrees F |
| FPC 1 EA1_HMC0 Logic die | 84 degrees C / 183 degrees F |
| FPC 1 EA1_HMC0 DRAM botm | 81 degrees C / 177 degrees F |
| FPC 1 EA1_HMC1 Logic die | 82 degrees C / 179 degrees F |
| FPC 1 EA1_HMC1 DRAM botm | 79 degrees C / 174 degrees F |
| FPC 1 EA1_HMC2 Logic die | 85 degrees C / 185 degrees F |
| FPC 1 EA1_HMC2 DRAM botm | 82 degrees C / 179 degrees F |
| FPC 1 EA2_HMC0 Logic die | 62 degrees C / 143 degrees F |
| FPC 1 EA2_HMC0 DRAM botm | 59 degrees C / 138 degrees F |
| FPC 1 EA2_HMC1 Logic die | 60 degrees C / 140 degrees F |
| FPC 1 EA2_HMC1 DRAM botm | 57 degrees C / 134 degrees F |
| FPC 1 EA2_HMC2 Logic die | 65 degrees C / 149 degrees F |
| FPC 1 EA2_HMC2 DRAM botm | 62 degrees C / 143 degrees F |

Power

| | |
|-------------------------|---------|
| LTC3887-PF-VDD0V9-RAIL | 899 mV |
| LTC3887-PF-VDD0V9-DEV0- | 899 mV |
| LTC3887-PF-VDD0V9-DEV0- | 901 mV |
| LTC3887-PF-VDD0V9-DEV1- | 899 mV |
| LTC3887-PF-VDD0V9-DEV1- | 901 mV |
| LTC3887-PF-AVDD1V0-RAIL | 998 mV |
| LTC3887-PF-AVDD1V0-CH0 | 998 mV |
| LTC3887-PF-AVDD1V0-CH1 | 999 mV |
| LTC3887-ETHSW-VDD1V0 | 999 mV |
| LTC3887-VDD2V5 | 2499 mV |
| LTC3887-PCIE-VDD0V9 | 900 mV |
| LTC3887-V1P0 | 1000 mV |
| LTC3887-PHY-VDD1V0-A | 1000 mV |
| LTC3887-3V3 | 3300 mV |
| LTC3887-VDD1V8 | 1799 mV |
| UCD9090_0-CH_1-EA0_PLL_ | 1004 mV |
| UCD9090_0-CH_2-EA0_1V4 | 1004 mV |
| UCD9090_0-CH_3-EA0_2V5 | 2499 mV |
| UCD9090_0-CH_4-EA0_1V5 | 1511 mV |
| UCD9090_0-CH_5-EA1_PLL_ | 999 mV |
| UCD9090_0-CH_6-EA1_1V4 | 1008 mV |
| UCD9090_0-CH_7-EA1_2V5 | 2499 mV |
| UCD9090_0-CH_8-EA1_1V5 | 1510 mV |
| UCD9090_0-CH_9-PVCC | 839 mV |
| UCD9090_0-CH_10-PVNN | 1016 mV |
| UCD9090_1-CH_1-EA2_PLL_ | 1011 mV |
| UCD9090_1-CH_2-EA2_1V4 | 1046 mV |
| UCD9090_1-CH_3-EA2_2V5 | 2499 mV |
| UCD9090_1-CH_4-EA2_1V5 | 1501 mV |

| | |
|-------------------------|---------|
| UCD9090_1-CH_5-1V0_PFP | 1000 mV |
| UCD9090_1-CH_6-V1P1 | 1037 mV |
| UCD9090_1-CH_7-V1P5 | 1530 mV |
| UCD9090_1-CH_8-V1P35 | 1360 mV |
| UCD9090_1-CH_9-VDD1V5 | 1513 mV |
| UCD9090_1-CH_10-VDD1V2 | 1217 mV |
| LTC3887-EA0-VDD0V9-RAIL | 949 mV |
| LTC3887-EA0-VDD0V9-DEV0 | 949 mV |
| LTC3887-EA0-VDD0V9-DEV0 | 951 mV |
| LTC3887-EA0-VDD0V9-DEV1 | 949 mV |
| LTC3887-EA0-VDD0V9-DEV1 | 952 mV |
| LTC3887-EA0-VDD0V9R2-RA | 947 mV |
| LTC3887-EA0-VDD0V9R2-CH | 947 mV |
| LTC3887-EA0-VDD0V9R2-CH | 949 mV |
| LTC3887-EA0-VDD1V0-RAIL | 1000 mV |
| LTC3887-EA0-VDD1V0-CH0 | 1000 mV |
| LTC3887-EA0-VDD1V0-CH1 | 1001 mV |
| LTC3887-EA0-XR-VDD0V9 | 899 mV |
| LTC3887-EA0-XR-VDD1V2 | 1200 mV |
| LTC3887-EA0-HM1-VDD0V9 | 899 mV |
| LTC3887-EA0-HM-VDD1V2 | 1199 mV |
| LTC3887-EA0-HM-VDDM1V2 | 1199 mV |
| LTC3887-EA1-VDD0V9-RAIL | 948 mV |
| LTC3887-EA1-VDD0V9-DEV0 | 950 mV |
| LTC3887-EA1-VDD0V9-DEV0 | 950 mV |
| LTC3887-EA1-VDD0V9-DEV1 | 951 mV |
| LTC3887-EA1-VDD0V9-DEV1 | 951 mV |
| LTC3887-EA1-VDD0V9R2-RA | 947 mV |
| LTC3887-EA1-VDD0V9R2-CH | 947 mV |
| LTC3887-EA1-VDD0V9R2-CH | 949 mV |
| LTC3887-EA1-VDD1V0-RAIL | 1000 mV |
| LTC3887-EA1-VDD1V0-CH0 | 1000 mV |
| LTC3887-EA1-VDD1V0-CH1 | 1002 mV |

I2C Slave Revision 99

show chassis environment fpc (MX204 Router)

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

FPC 0 status:

| | |
|-------|--------|
| State | Online |
|-------|--------|


```

FPC 0 EA0_HMC0 Logic die 77 degrees C / 170 degrees F
FPC 0 EA0_HMC0 DRAM botm 74 degrees C / 165 degrees F
FPC 0 EA0_HMC1 Logic die 80 degrees C / 176 degrees F
FPC 0 EA0_HMC1 DRAM botm 77 degrees C / 170 degrees F
FPC 0 EA0 Chip 93 degrees C / 199 degrees F
FPC 0 EA0_XR0 Chip 63 degrees C / 145 degrees F
FPC 0 EA0_XR1 Chip 64 degrees C / 147 degrees F
Power
I2C Slave Revision 0

```

show chassis environment fpc (MX10008 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
State Online
FPC 0 Intake-A Temp Sensor 32 degrees C / 89 degrees F
FPC 0 Exhaust-A Temp Sensor 44 degrees C / 111 degrees F
FPC 0 Exhaust-B Temp Sensor 50 degrees C / 122 degrees F
FPC 0 EA0 Temp Sensor 67 degrees C / 152 degrees F
FPC 0 EA0_XR0 Temp Sensor 69 degrees C / 156 degrees F
FPC 0 EA0_XR1 Temp Sensor 73 degrees C / 163 degrees F
FPC 0 EA1 Temp Sensor 61 degrees C / 141 degrees F
FPC 0 EA1_XR0 Temp Sensor 65 degrees C / 149 degrees F
FPC 0 EA1_XR1 Temp Sensor 63 degrees C / 145 degrees F
FPC 0 EA2 Temp Sensor 69 degrees C / 156 degrees F
FPC 0 EA2_XR0 Temp Sensor 73 degrees C / 163 degrees F
FPC 0 EA2_XR1 Temp Sensor 72 degrees C / 161 degrees F
FPC 0 EA3 Temp Sensor 64 degrees C / 147 degrees F
FPC 0 EA3_XR0 Temp Sensor 66 degrees C / 150 degrees F
FPC 0 EA3_XR1 Temp Sensor 66 degrees C / 150 degrees F
FPC 0 EA4 Temp Sensor 70 degrees C / 158 degrees F
FPC 0 EA4_XR0 Temp Sensor 72 degrees C / 161 degrees F
FPC 0 EA4_XR1 Temp Sensor 72 degrees C / 161 degrees F
FPC 0 EA5 Temp Sensor 58 degrees C / 136 degrees F
FPC 0 EA5_XR0 Temp Sensor 61 degrees C / 141 degrees F
FPC 0 EA5_XR1 Temp Sensor 64 degrees C / 147 degrees F
FPC 0 EA0_HMC0 Logic die 75 degrees C / 167 degrees F
FPC 0 EA0_HMC0 DRAM botm 72 degrees C / 161 degrees F
FPC 0 EA0_HMC1 Logic die 76 degrees C / 168 degrees F
FPC 0 EA0_HMC1 DRAM botm 73 degrees C / 163 degrees F

```


| | |
|--------------------------|------------------------------|
| FPC 0 EA0_HMC2 Logic die | 77 degrees C / 170 degrees F |
| FPC 0 EA0_HMC2 DRAM botm | 74 degrees C / 165 degrees F |
| FPC 0 EA1_HMC0 Logic die | 72 degrees C / 161 degrees F |
| FPC 0 EA1_HMC0 DRAM botm | 69 degrees C / 156 degrees F |
| FPC 0 EA1_HMC1 Logic die | 73 degrees C / 163 degrees F |
| FPC 0 EA1_HMC1 DRAM botm | 70 degrees C / 158 degrees F |
| FPC 0 EA1_HMC2 Logic die | 72 degrees C / 161 degrees F |
| FPC 0 EA1_HMC2 DRAM botm | 69 degrees C / 156 degrees F |
| FPC 0 EA2_HMC0 Logic die | 80 degrees C / 176 degrees F |
| FPC 0 EA2_HMC0 DRAM botm | 77 degrees C / 170 degrees F |
| FPC 0 EA2_HMC1 Logic die | 81 degrees C / 177 degrees F |
| FPC 0 EA2_HMC1 DRAM botm | 78 degrees C / 172 degrees F |
| FPC 0 EA2_HMC2 Logic die | 80 degrees C / 176 degrees F |
| FPC 0 EA2_HMC2 DRAM botm | 77 degrees C / 170 degrees F |
| FPC 0 EA3_HMC0 Logic die | 77 degrees C / 170 degrees F |
| FPC 0 EA3_HMC0 DRAM botm | 74 degrees C / 165 degrees F |
| FPC 0 EA3_HMC1 Logic die | 78 degrees C / 172 degrees F |
| FPC 0 EA3_HMC1 DRAM botm | 75 degrees C / 167 degrees F |
| FPC 0 EA3_HMC2 Logic die | 77 degrees C / 170 degrees F |
| FPC 0 EA3_HMC2 DRAM botm | 74 degrees C / 165 degrees F |
| FPC 0 EA4_HMC0 Logic die | 80 degrees C / 176 degrees F |
| FPC 0 EA4_HMC0 DRAM botm | 77 degrees C / 170 degrees F |
| FPC 0 EA4_HMC1 Logic die | 81 degrees C / 177 degrees F |
| FPC 0 EA4_HMC1 DRAM botm | 78 degrees C / 172 degrees F |
| FPC 0 EA4_HMC2 Logic die | 80 degrees C / 176 degrees F |
| FPC 0 EA4_HMC2 DRAM botm | 77 degrees C / 170 degrees F |
| FPC 0 EA5_HMC0 Logic die | 69 degrees C / 156 degrees F |
| FPC 0 EA5_HMC0 DRAM botm | 66 degrees C / 150 degrees F |
| FPC 0 EA5_HMC1 Logic die | 68 degrees C / 154 degrees F |
| FPC 0 EA5_HMC1 DRAM botm | 65 degrees C / 149 degrees F |
| FPC 0 EA5_HMC2 Logic die | 68 degrees C / 154 degrees F |
| FPC 0 EA5_HMC2 DRAM botm | 65 degrees C / 149 degrees F |

Power

| | | | |
|------------|----------|----------|-----------|
| 12V SS 1 | 12259 mV | 9841 mA | 120642 mW |
| 12V SS 2 | 12259 mV | 21054 mA | 258104 mW |
| 12V SS 3 | 12285 mV | 9841 mA | 120902 mW |
| 12V SS 4 | 12232 mV | 20968 mA | 256496 mW |
| 12V SS 5 | 12179 mV | 14993 mA | 182614 mW |
| VDD 1.0V_A | 1000 mV | 95375 mA | 95375 mW |
| VDD 1.0V_B | 0 mV | 0 mA | 0 mW |
| VDD 3.3V | 3298 mV | 12500 mA | 41235 mW |
| VDD 0.9V | 894 mV | 3569 mA | 3192 mW |
| ETH SW 1V | 980 mV | 4500 mA | 4410 mW |

| | | | |
|--------------------|----------|----------|----------|
| VDD 1.8V | 1809 mV | 895 mA | 1619 mW |
| PVCC | 951 mV | 0 mA | 0 mW |
| PVNN | 1009 mV | 0 mA | 0 mW |
| V1P0 | 1006 mV | 0 mA | 0 mW |
| V1P1 | 1070 mV | 0 mA | 0 mW |
| V1P3 | 1351 mV | 0 mA | 0 mW |
| VDDQ | 1500 mV | 0 mA | 0 mW |
| V1P8 | 1816 mV | 0 mA | 0 mW |
| VDD3V3 | 3296 mV | 0 mA | 0 mW |
| V5V0_BIAS | 5025 mV | 0 mA | 0 mW |
| VDD12V0 | 12174 mV | 0 mA | 0 mW |
| EA0 Core 0.9V | 900 mV | 40625 mA | 36578 mW |
| EA0 AVDD 1.0V | 1000 mV | 32500 mA | 32500 mW |
| EA0 HMC Core 0.9V | 894 mV | 10081 mA | 9017 mW |
| EA0 1.2V | 1189 mV | 15081 mA | 17945 mW |
| EA01_HMC_VDDM 1.2V | 1193 mV | -151 mA | -180 mW |
| EA0_XR 0.906V | 905 mV | 13802 mA | 12496 mW |
| EA1 Core 0.9V | 900 mV | 41000 mA | 36916 mW |
| EA1 AVDD 1.0V | 1000 mV | 28000 mA | 28000 mW |
| EA1 HMC Core 0.9V | 897 mV | 9848 mA | 8835 mW |
| EA1 1.2V | 1197 mV | 15313 mA | 18332 mW |
| EA0_PLL_1V0 | 1003 mV | 0 mA | 0 mW |
| EA0_1V04 | 1032 mV | 0 mA | 0 mW |
| EA0_2V5 | 2445 mV | 0 mA | 0 mW |
| EA0_1V5 | 1512 mV | 0 mA | 0 mW |
| EA1_PLL_1V0 | 1000 mV | 0 mA | 0 mW |
| EA1_1V04 | 1051 mV | 0 mA | 0 mW |
| EA1_2V5 | 2516 mV | 0 mA | 0 mW |
| EA1_1V5 | 1503 mV | 0 mA | 0 mW |
| EA1_XR 0.906V | 908 mV | 14151 mA | 12850 mW |
| EA2 Core 0.9V | 899 mV | 40625 mA | 36538 mW |
| EA2 AVDD 1.0V | 1000 mV | 27250 mA | 27276 mW |
| EA2 HMC Core 0.9V | 897 mV | 9616 mA | 8627 mW |
| EA2 1.2V | 1193 mV | 15779 mA | 18832 mW |
| EA23_HMC_VDDM 1.2V | 1197 mV | 81 mA | 97 mW |
| EA2_XR 0.906V | 908 mV | 14848 mA | 13484 mW |
| EA3 Core 0.9V | 899 mV | 40625 mA | 36538 mW |
| EA3 AVDD 1.0V | 1000 mV | 28000 mA | 28000 mW |
| EA3 HMC Core 0.9V | 897 mV | 10546 mA | 9461 mW |
| EA3 1.2V | 1197 mV | 15895 mA | 19028 mW |
| EA2_PLL_1V0 | 1025 mV | 0 mA | 0 mW |
| EA2_1V04 | 1048 mV | 0 mA | 0 mW |
| EA2_2V5 | 2516 mV | 0 mA | 0 mW |

| | | | |
|--------------------|---------|----------|----------|
| EA2_1V5 | 1500 mV | 0 mA | 0 mW |
| EA3_PLL_1V0 | 1009 mV | 0 mA | 0 mW |
| EA3_1V04 | 1032 mV | 0 mA | 0 mW |
| EA3_2V5 | 2551 mV | 0 mA | 0 mW |
| EA3_1V5 | 1496 mV | 0 mA | 0 mW |
| EA3_XR 0.906V | 908 mV | 15895 mA | 14434 mW |
| EA4 Core 0.9V | 900 mV | 41000 mA | 36916 mW |
| EA4 AVDD 1.0V | 999 mV | 31250 mA | 31219 mW |
| EA4 HMC Core 0.9V | 894 mV | 9965 mA | 8913 mW |
| EA4 1.2V | 1197 mV | 15779 mA | 18889 mW |
| EA45_HMC_VDDM 1.2V | 1197 mV | 546 mA | 654 mW |
| EA4_XR 0.906V | 908 mV | 15197 mA | 13801 mW |
| EA5 Core 0.9V | 900 mV | 39750 mA | 35790 mW |
| EA5 AVDD 1.0V | 1000 mV | 28000 mA | 28000 mW |
| EA5 HMC Core 0.9V | 897 mV | 9965 mA | 8940 mW |
| EA5 1.2V | 1197 mV | 15546 mA | 18610 mW |
| EA4_PLL_1V0 | 1003 mV | 0 mA | 0 mW |
| EA4_1V04 | 1041 mV | 0 mA | 0 mW |
| EA4_2V5 | 2541 mV | 0 mA | 0 mW |
| EA4_1V5 | 1506 mV | 0 mA | 0 mW |
| EA5_PLL_1V0 | 1022 mV | 0 mA | 0 mW |
| EA5_1V04 | 1048 mV | 0 mA | 0 mW |
| EA5_2V5 | 2532 mV | 0 mA | 0 mW |
| EA5_1V5 | 1509 mV | 0 mA | 0 mW |
| VDD2V5 | 2503 mV | 0 mA | 0 mW |
| VDD1V5 | 1509 mV | 0 mA | 0 mW |
| VDD1V2 | 1206 mV | 0 mA | 0 mW |
| EA5_XR 0.906V | 902 mV | 14500 mA | 13088 mW |

FPC 2 status:

| State | Online |
|-----------------------------|------------------------------|
| FPC 2 Intake-A Temp Sensor | 33 degrees C / 91 degrees F |
| FPC 2 Exhaust-A Temp Sensor | 52 degrees C / 125 degrees F |
| FPC 2 Exhaust-B Temp Sensor | 50 degrees C / 122 degrees F |
| FPC 2 EA0 Temp Sensor | 72 degrees C / 161 degrees F |
| FPC 2 EA0_XR0 Temp Sensor | 76 degrees C / 168 degrees F |
| FPC 2 EA0_XR1 Temp Sensor | 79 degrees C / 174 degrees F |
| FPC 2 EA1 Temp Sensor | 64 degrees C / 147 degrees F |
| FPC 2 EA1_XR0 Temp Sensor | 68 degrees C / 154 degrees F |
| FPC 2 EA1_XR1 Temp Sensor | 66 degrees C / 150 degrees F |
| FPC 2 EA2 Temp Sensor | 75 degrees C / 167 degrees F |
| FPC 2 EA2_XR0 Temp Sensor | 81 degrees C / 177 degrees F |
| FPC 2 EA2_XR1 Temp Sensor | 81 degrees C / 177 degrees F |
| FPC 2 EA3 Temp Sensor | 67 degrees C / 152 degrees F |

| | |
|---------------------------|------------------------------|
| FPC 2 EA3_XR0 Temp Sensor | 69 degrees C / 156 degrees F |
| FPC 2 EA3_XR1 Temp Sensor | 69 degrees C / 156 degrees F |
| FPC 2 EA4 Temp Sensor | 76 degrees C / 168 degrees F |
| FPC 2 EA4_XR0 Temp Sensor | 77 degrees C / 170 degrees F |
| FPC 2 EA4_XR1 Temp Sensor | 76 degrees C / 168 degrees F |
| FPC 2 EA5 Temp Sensor | 60 degrees C / 140 degrees F |
| FPC 2 EA5_XR0 Temp Sensor | 65 degrees C / 149 degrees F |
| FPC 2 EA5_XR1 Temp Sensor | 65 degrees C / 149 degrees F |
| FPC 2 EA0_HMC0 Logic die | 84 degrees C / 183 degrees F |
| FPC 2 EA0_HMC0 DRAM botm | 81 degrees C / 177 degrees F |
| FPC 2 EA0_HMC1 Logic die | 86 degrees C / 186 degrees F |
| FPC 2 EA0_HMC1 DRAM botm | 83 degrees C / 181 degrees F |
| FPC 2 EA0_HMC2 Logic die | 83 degrees C / 181 degrees F |
| FPC 2 EA0_HMC2 DRAM botm | 80 degrees C / 176 degrees F |
| FPC 2 EA1_HMC0 Logic die | 76 degrees C / 168 degrees F |
| FPC 2 EA1_HMC0 DRAM botm | 73 degrees C / 163 degrees F |
| FPC 2 EA1_HMC1 Logic die | 77 degrees C / 170 degrees F |
| FPC 2 EA1_HMC1 DRAM botm | 74 degrees C / 165 degrees F |
| FPC 2 EA1_HMC2 Logic die | 76 degrees C / 168 degrees F |
| FPC 2 EA1_HMC2 DRAM botm | 73 degrees C / 163 degrees F |
| FPC 2 EA2_HMC0 Logic die | 87 degrees C / 188 degrees F |
| FPC 2 EA2_HMC0 DRAM botm | 84 degrees C / 183 degrees F |
| FPC 2 EA2_HMC1 Logic die | 89 degrees C / 192 degrees F |
| FPC 2 EA2_HMC1 DRAM botm | 86 degrees C / 186 degrees F |
| FPC 2 EA2_HMC2 Logic die | 88 degrees C / 190 degrees F |
| FPC 2 EA2_HMC2 DRAM botm | 85 degrees C / 185 degrees F |
| FPC 2 EA3_HMC0 Logic die | 80 degrees C / 176 degrees F |
| FPC 2 EA3_HMC0 DRAM botm | 77 degrees C / 170 degrees F |
| FPC 2 EA3_HMC1 Logic die | 81 degrees C / 177 degrees F |
| FPC 2 EA3_HMC1 DRAM botm | 78 degrees C / 172 degrees F |
| FPC 2 EA3_HMC2 Logic die | 81 degrees C / 177 degrees F |
| FPC 2 EA3_HMC2 DRAM botm | 78 degrees C / 172 degrees F |
| FPC 2 EA4_HMC0 Logic die | 88 degrees C / 190 degrees F |
| FPC 2 EA4_HMC0 DRAM botm | 85 degrees C / 185 degrees F |
| FPC 2 EA4_HMC1 Logic die | 90 degrees C / 194 degrees F |
| FPC 2 EA4_HMC1 DRAM botm | 87 degrees C / 188 degrees F |
| FPC 2 EA4_HMC2 Logic die | 81 degrees C / 177 degrees F |
| FPC 2 EA4_HMC2 DRAM botm | 78 degrees C / 172 degrees F |
| FPC 2 EA5_HMC0 Logic die | 73 degrees C / 163 degrees F |
| FPC 2 EA5_HMC0 DRAM botm | 70 degrees C / 158 degrees F |
| FPC 2 EA5_HMC1 Logic die | 69 degrees C / 156 degrees F |
| FPC 2 EA5_HMC1 DRAM botm | 66 degrees C / 150 degrees F |
| FPC 2 EA5_HMC2 Logic die | 73 degrees C / 163 degrees F |

FPC 2 EA5_HMC2 DRAM botm

70 degrees C / 158 degrees F

Power

| | | | |
|--------------------|----------|----------|-----------|
| 12V SS 1 | 12285 mV | 9408 mA | 115582 mW |
| 12V SS 2 | 12338 mV | 20881 mA | 257637 mW |
| 12V SS 3 | 12351 mV | 10317 mA | 127430 mW |
| 12V SS 4 | 12285 mV | 21054 mA | 258660 mW |
| 12V SS 5 | 12153 mV | 13954 mA | 169591 mW |
| VDD 1.0V_A | 1000 mV | 91000 mA | 91000 mW |
| VDD 1.0V_B | 0 mV | 0 mA | 0 mW |
| VDD 3.3V | 3298 mV | 9125 mA | 30101 mW |
| VDD 0.9V | 897 mV | 3337 mA | 2993 mW |
| ETH SW 1V | 0 mV | 0 mA | 0 mW |
| VDD 1.8V | 1809 mV | 1127 mA | 2040 mW |
| PVCC | 835 mV | 0 mA | 0 mW |
| PVNN | 1000 mV | 0 mA | 0 mW |
| V1P0 | 1003 mV | 0 mA | 0 mW |
| V1P1 | 1070 mV | 0 mA | 0 mW |
| V1P3 | 1348 mV | 0 mA | 0 mW |
| VDDQ | 1493 mV | 0 mA | 0 mW |
| V1P8 | 1806 mV | 0 mA | 0 mW |
| VDD3V3 | 3303 mV | 0 mA | 0 mW |
| V5V0_BIAS | 5000 mV | 0 mA | 0 mW |
| VDD12V0 | 12116 mV | 0 mA | 0 mW |
| EA0 Core 0.9V | 900 mV | 38875 mA | 35002 mW |
| EA0 AVDD 1.0V | 999 mV | 31875 mA | 31843 mW |
| EA0 HMC Core 0.9V | 894 mV | 9034 mA | 8081 mW |
| EA0 1.2V | 1197 mV | 15430 mA | 18471 mW |
| EA01_HMC_VDDM 1.2V | 1200 mV | -267 mA | -321 mW |
| EA0_XR 0.906V | 908 mV | 15430 mA | 14012 mW |
| EA1 Core 0.9V | 900 mV | 38875 mA | 35002 mW |
| EA1 AVDD 1.0V | 1000 mV | 28250 mA | 28250 mW |
| EA1 HMC Core 0.9V | 899 mV | 8802 mA | 7920 mW |
| EA1 1.2V | 1197 mV | 15081 mA | 18054 mW |
| EA0_PLL_1V0 | 1003 mV | 0 mA | 0 mW |
| EA0_1V04 | 1048 mV | 0 mA | 0 mW |
| EA0_2V5 | 2425 mV | 0 mA | 0 mW |
| EA0_1V5 | 1483 mV | 0 mA | 0 mW |
| EA1_PLL_1V0 | 1019 mV | 0 mA | 0 mW |
| EA1_1V04 | 1019 mV | 0 mA | 0 mW |
| EA1_2V5 | 2490 mV | 0 mA | 0 mW |
| EA1_1V5 | 1480 mV | 0 mA | 0 mW |
| EA1_XR 0.906V | 908 mV | 14965 mA | 13590 mW |
| EA2 Core 0.9V | 900 mV | 44000 mA | 39617 mW |

| | | | |
|--------------------|---------|----------|----------|
| EA2 AVDD 1.0V | 1000 mV | 28625 mA | 28625 mW |
| EA2 HMC Core 0.9V | 891 mV | 10546 mA | 9404 mW |
| EA2 1.2V | 1200 mV | 15313 mA | 18387 mW |
| EA23_HMC_VDDM 1.2V | 1193 mV | -267 mA | -319 mW |
| EA2_XR 0.906V | 908 mV | 15197 mA | 13801 mW |
| EA3 Core 0.9V | 900 mV | 39750 mA | 35790 mW |
| EA3 AVDD 1.0V | 1000 mV | 27750 mA | 27750 mW |
| EA3 HMC Core 0.9V | 897 mV | 9267 mA | 8314 mW |
| EA3 1.2V | 1197 mV | 15430 mA | 18471 mW |
| EA2_PLL_1V0 | 1009 mV | 0 mA | 0 mW |
| EA2_1V04 | 1041 mV | 0 mA | 0 mW |
| EA2_2V5 | 2496 mV | 0 mA | 0 mW |
| EA2_1V5 | 1493 mV | 0 mA | 0 mW |
| EA3_PLL_1V0 | 1003 mV | 0 mA | 0 mW |
| EA3_1V04 | 1041 mV | 0 mA | 0 mW |
| EA3_2V5 | 2490 mV | 0 mA | 0 mW |
| EA3_1V5 | 1500 mV | 0 mA | 0 mW |
| EA3_XR 0.906V | 908 mV | 15081 mA | 13695 mW |
| EA4 Core 0.9V | 899 mV | 45750 mA | 41148 mW |
| EA4 AVDD 1.0V | 1000 mV | 32250 mA | 32250 mW |
| EA4 HMC Core 0.9V | 897 mV | 10779 mA | 9670 mW |
| EA4 1.2V | 1193 mV | 16011 mA | 19110 mW |
| EA45_HMC_VDDM 1.2V | 1200 mV | -267 mA | -321 mW |
| EA4_XR 0.906V | 905 mV | 15779 mA | 14286 mW |
| EA5 Core 0.9V | 900 mV | 38375 mA | 34552 mW |
| EA5 AVDD 1.0V | 1000 mV | 27750 mA | 27777 mW |
| EA5 HMC Core 0.9V | 899 mV | 8453 mA | 7606 mW |
| EA5 1.2V | 1200 mV | 14732 mA | 17689 mW |
| EA4_PLL_1V0 | 1012 mV | 0 mA | 0 mW |
| EA4_1V04 | 1029 mV | 0 mA | 0 mW |
| EA4_2V5 | 2496 mV | 0 mA | 0 mW |
| EA4_1V5 | 1490 mV | 0 mA | 0 mW |
| EA5_PLL_1V0 | 1003 mV | 0 mA | 0 mW |
| EA5_1V04 | 1032 mV | 0 mA | 0 mW |
| EA5_2V5 | 2503 mV | 0 mA | 0 mW |
| EA5_1V5 | 1480 mV | 0 mA | 0 mW |
| VDD2V5 | 2461 mV | 0 mA | 0 mW |
| VDD1V5 | 1490 mV | 0 mA | 0 mW |
| VDD1V2 | 1212 mV | 0 mA | 0 mW |
| EA5_XR 0.906V | 910 mV | 13686 mA | 12466 mW |

FPC 3 status:

State Online

FPC 3 Intake-A Temp Sensor 30 degrees C / 86 degrees F

| | |
|-----------------------------|------------------------------|
| FPC 3 Exhaust-A Temp Sensor | 48 degrees C / 118 degrees F |
| FPC 3 Exhaust-B Temp Sensor | 45 degrees C / 113 degrees F |
| FPC 3 EA0 Temp Sensor | 60 degrees C / 140 degrees F |
| FPC 3 EA0_XR0 Temp Sensor | 65 degrees C / 149 degrees F |
| FPC 3 EA0_XR1 Temp Sensor | 67 degrees C / 152 degrees F |
| FPC 3 EA1 Temp Sensor | 54 degrees C / 129 degrees F |
| FPC 3 EA1_XR0 Temp Sensor | 60 degrees C / 140 degrees F |
| FPC 3 EA1_XR1 Temp Sensor | 58 degrees C / 136 degrees F |
| FPC 3 EA2 Temp Sensor | 62 degrees C / 143 degrees F |
| FPC 3 EA2_XR0 Temp Sensor | 67 degrees C / 152 degrees F |
| FPC 3 EA2_XR1 Temp Sensor | 67 degrees C / 152 degrees F |
| FPC 3 EA3 Temp Sensor | 55 degrees C / 131 degrees F |
| FPC 3 EA3_XR0 Temp Sensor | 57 degrees C / 134 degrees F |
| FPC 3 EA3_XR1 Temp Sensor | 57 degrees C / 134 degrees F |
| FPC 3 EA4 Temp Sensor | 69 degrees C / 156 degrees F |
| FPC 3 EA4_XR0 Temp Sensor | 71 degrees C / 159 degrees F |
| FPC 3 EA4_XR1 Temp Sensor | 70 degrees C / 158 degrees F |
| FPC 3 EA5 Temp Sensor | 55 degrees C / 131 degrees F |
| FPC 3 EA5_XR0 Temp Sensor | 58 degrees C / 136 degrees F |
| FPC 3 EA5_XR1 Temp Sensor | 59 degrees C / 138 degrees F |
| FPC 3 EA0_HMC0 Logic die | 69 degrees C / 156 degrees F |
| FPC 3 EA0_HMC0 DRAM botm | 66 degrees C / 150 degrees F |
| FPC 3 EA0_HMC1 Logic die | 70 degrees C / 158 degrees F |
| FPC 3 EA0_HMC1 DRAM botm | 67 degrees C / 152 degrees F |
| FPC 3 EA0_HMC2 Logic die | 70 degrees C / 158 degrees F |
| FPC 3 EA0_HMC2 DRAM botm | 67 degrees C / 152 degrees F |
| FPC 3 EA1_HMC0 Logic die | 68 degrees C / 154 degrees F |
| FPC 3 EA1_HMC0 DRAM botm | 65 degrees C / 149 degrees F |
| FPC 3 EA1_HMC1 Logic die | 65 degrees C / 149 degrees F |
| FPC 3 EA1_HMC1 DRAM botm | 62 degrees C / 143 degrees F |
| FPC 3 EA1_HMC2 Logic die | 64 degrees C / 147 degrees F |
| FPC 3 EA1_HMC2 DRAM botm | 61 degrees C / 141 degrees F |
| FPC 3 EA2_HMC0 Logic die | 74 degrees C / 165 degrees F |
| FPC 3 EA2_HMC0 DRAM botm | 71 degrees C / 159 degrees F |
| FPC 3 EA2_HMC1 Logic die | 77 degrees C / 170 degrees F |
| FPC 3 EA2_HMC1 DRAM botm | 74 degrees C / 165 degrees F |
| FPC 3 EA2_HMC2 Logic die | 74 degrees C / 165 degrees F |
| FPC 3 EA2_HMC2 DRAM botm | 71 degrees C / 159 degrees F |
| FPC 3 EA3_HMC0 Logic die | 70 degrees C / 158 degrees F |
| FPC 3 EA3_HMC0 DRAM botm | 67 degrees C / 152 degrees F |
| FPC 3 EA3_HMC1 Logic die | 68 degrees C / 154 degrees F |
| FPC 3 EA3_HMC1 DRAM botm | 65 degrees C / 149 degrees F |
| FPC 3 EA3_HMC2 Logic die | 68 degrees C / 154 degrees F |

| | |
|--------------------------|------------------------------|
| FPC 3 EA3_HMC2 DRAM botm | 65 degrees C / 149 degrees F |
| FPC 3 EA4_HMC0 Logic die | 82 degrees C / 179 degrees F |
| FPC 3 EA4_HMC0 DRAM botm | 79 degrees C / 174 degrees F |
| FPC 3 EA4_HMC1 Logic die | 80 degrees C / 176 degrees F |
| FPC 3 EA4_HMC1 DRAM botm | 77 degrees C / 170 degrees F |
| FPC 3 EA4_HMC2 Logic die | 81 degrees C / 177 degrees F |
| FPC 3 EA4_HMC2 DRAM botm | 78 degrees C / 172 degrees F |
| FPC 3 EA5_HMC0 Logic die | 69 degrees C / 156 degrees F |
| FPC 3 EA5_HMC0 DRAM botm | 66 degrees C / 150 degrees F |
| FPC 3 EA5_HMC1 Logic die | 70 degrees C / 158 degrees F |
| FPC 3 EA5_HMC1 DRAM botm | 67 degrees C / 152 degrees F |
| FPC 3 EA5_HMC2 Logic die | 69 degrees C / 156 degrees F |
| FPC 3 EA5_HMC2 DRAM botm | 66 degrees C / 150 degrees F |

Power

| | | | |
|--------------------|----------|----------|-----------|
| 12V SS 1 | 12259 mV | 9538 mA | 116927 mW |
| 12V SS 2 | 12259 mV | 20491 mA | 251202 mW |
| 12V SS 3 | 12298 mV | 9711 mA | 119433 mW |
| 12V SS 4 | 12219 mV | 20491 mA | 250391 mW |
| 12V SS 5 | 12206 mV | 10447 mA | 127520 mW |
| VDD 1.0V_A | 1000 mV | 42250 mA | 42291 mW |
| VDD 1.0V_B | 996 mV | 8918 mA | 8890 mW |
| VDD 3.3V | 3301 mV | 10375 mA | 34255 mW |
| VDD 0.9V | 897 mV | 3569 mA | 3202 mW |
| ETH SW 1V | 983 mV | 4267 mA | 4195 mW |
| VDD 1.8V | 1812 mV | 1825 mA | 3309 mW |
| PVCC | 974 mV | 0 mA | 0 mW |
| PVNN | 1003 mV | 0 mA | 0 mW |
| V1P0 | 1003 mV | 0 mA | 0 mW |
| V1P1 | 1070 mV | 0 mA | 0 mW |
| V1P3 | 1351 mV | 0 mA | 0 mW |
| VDDQ | 1496 mV | 0 mA | 0 mW |
| V1P8 | 1809 mV | 0 mA | 0 mW |
| VDD3V3 | 3309 mV | 0 mA | 0 mW |
| V5V0_BIAS | 4987 mV | 0 mA | 0 mW |
| VDD12V0 | 12212 mV | 0 mA | 0 mW |
| EA0 Core 0.9V | 900 mV | 38125 mA | 34327 mW |
| EA0 AVDD 1.0V | 999 mV | 31125 mA | 31094 mW |
| EA0 HMC Core 0.9V | 897 mV | 9500 mA | 8522 mW |
| EA0 1.2V | 1193 mV | 15430 mA | 18416 mW |
| EA01_HMC_VDDM 1.2V | 1193 mV | 313 mA | 374 mW |
| EA0_XR 0.906V | 913 mV | 14965 mA | 13671 mW |
| EA1 Core 0.9V | 900 mV | 39750 mA | 35790 mW |
| EA1 AVDD 1.0V | 1000 mV | 26000 mA | 26000 mW |

| | | | |
|--------------------|---------|----------|----------|
| EA1 HMC Core 0.9V | 897 mV | 8918 mA | 8001 mW |
| EA1 1.2V | 1200 mV | 15779 mA | 18946 mW |
| EA0_PLL_1V0 | 1003 mV | 0 mA | 0 mW |
| EA0_1V04 | 1019 mV | 0 mA | 0 mW |
| EA0_2V5 | 2448 mV | 0 mA | 0 mW |
| EA0_1V5 | 1470 mV | 0 mA | 0 mW |
| EA1_PLL_1V0 | 1016 mV | 0 mA | 0 mW |
| EA1_1V04 | 1035 mV | 0 mA | 0 mW |
| EA1_2V5 | 2506 mV | 0 mA | 0 mW |
| EA1_1V5 | 1483 mV | 0 mA | 0 mW |
| EA1_XR 0.906V | 908 mV | 13918 mA | 12639 mW |
| EA2 Core 0.9V | 900 mV | 38625 mA | 34777 mW |
| EA2 AVDD 1.0V | 1000 mV | 26375 mA | 26400 mW |
| EA2 HMC Core 0.9V | 897 mV | 9383 mA | 8418 mW |
| EA2 1.2V | 1200 mV | 15779 mA | 18946 mW |
| EA23_HMC_VDDM 1.2V | 1193 mV | 81 mA | 97 mW |
| EA2_XR 0.906V | 908 mV | 13918 mA | 12639 mW |
| EA3 Core 0.9V | 899 mV | 40250 mA | 36201 mW |
| EA3 AVDD 1.0V | 1000 mV | 26750 mA | 26776 mW |
| EA3 HMC Core 0.9V | 894 mV | 9267 mA | 8289 mW |
| EA3 1.2V | 1197 mV | 16127 mA | 19306 mW |
| EA2_PLL_1V0 | 993 mV | 0 mA | 0 mW |
| EA2_1V04 | 1045 mV | 0 mA | 0 mW |
| EA2_2V5 | 2474 mV | 0 mA | 0 mW |
| EA2_1V5 | 1490 mV | 0 mA | 0 mW |
| EA3_PLL_1V0 | 980 mV | 0 mA | 0 mW |
| EA3_1V04 | 1032 mV | 0 mA | 0 mW |
| EA3_2V5 | 2506 mV | 0 mA | 0 mW |
| EA3_1V5 | 1474 mV | 0 mA | 0 mW |
| EA3_XR 0.906V | 910 mV | 14732 mA | 13419 mW |
| EA4 Core 0.9V | 900 mV | 42500 mA | 38266 mW |
| EA4 AVDD 1.0V | 1000 mV | 32250 mA | 32281 mW |
| EA4 HMC Core 0.9V | 899 mV | 10081 mA | 9071 mW |
| EA4 1.2V | 1193 mV | 16360 mA | 19526 mW |
| EA45_HMC_VDDM 1.2V | 1193 mV | 662 mA | 791 mW |
| EA4_XR 0.906V | 908 mV | 15430 mA | 14012 mW |
| EA5 Core 0.9V | 899 mV | 37000 mA | 33278 mW |
| EA5 AVDD 1.0V | 1000 mV | 26125 mA | 26150 mW |
| EA5 HMC Core 0.9V | 897 mV | 9267 mA | 8314 mW |
| EA5 1.2V | 1197 mV | 15662 mA | 18750 mW |
| EA4_PLL_1V0 | 1000 mV | 0 mA | 0 mW |
| EA4_1V04 | 1029 mV | 0 mA | 0 mW |
| EA4_2V5 | 2487 mV | 0 mA | 0 mW |

| | | | |
|---------------|---------|----------|----------|
| EA4_1V5 | 1496 mV | 0 mA | 0 mW |
| EA5_PLL_1V0 | 1009 mV | 0 mA | 0 mW |
| EA5_1V04 | 1032 mV | 0 mA | 0 mW |
| EA5_2V5 | 2503 mV | 0 mA | 0 mW |
| EA5_1V5 | 1496 mV | 0 mA | 0 mW |
| VDD2V5 | 2483 mV | 0 mA | 0 mW |
| VDD1V5 | 1470 mV | 0 mA | 0 mW |
| VDD1V2 | 1203 mV | 0 mA | 0 mW |
| EA5_XR 0.906V | 908 mV | 14500 mA | 13167 mW |

show chassis environment fpc (T320, T640, and T1600 Routers)

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

FPC 0 status:

| | |
|--------------------|------------------------------|
| State | Online |
| Temperature Top | 42 degrees C / 107 degrees F |
| Temperature Bottom | 36 degrees C / 96 degrees F |
| Temperature MMB1 | 39 degrees C / 102 degrees F |

Power:

| | |
|------------|---------|
| 1.8 V | 1959 mV |
| 2.5 V | 2495 mV |
| 3.3 V | 3344 mV |
| 5.0 V | 5047 mV |
| 1.8 V bias | 1787 mV |
| 3.3 V bias | 3291 mV |
| 5.0 V bias | 4998 mV |
| 8.0 V bias | 7343 mV |

| | |
|--------------|----|
| BUS Revision | 40 |
|--------------|----|

FPC 1 status:

| | |
|--------------------|------------------------------|
| State | Online |
| Temperature Top | 42 degrees C / 107 degrees F |
| Temperature Bottom | 39 degrees C / 102 degrees F |
| Temperature MMB1 | 40 degrees C / 104 degrees F |

Power:

| | |
|------------|---------|
| 1.8 V | 1956 mV |
| 2.5 V | 2498 mV |
| 3.3 V | 3340 mV |
| 5.0 V | 5023 mV |
| 1.8 V bias | 1782 mV |
| 3.3 V bias | 3277 mV |
| 5.0 V bias | 4989 mV |


```

      8.0 V bias      7289 mV
    BUS Revision      40
FPC 2 status:
  State               Online
  Temperature Top      43 degrees C / 109 degrees F
  Temperature Bottom   39 degrees C / 102 degrees F
  Temperature MMB1     41 degrees C / 105 degrees F
Power:
  1.8 V               1963 mV
  2.5 V               2503 mV
  3.3 V               3340 mV
  5.0 V               5042 mV
  1.8 V bias          1797 mV
  3.3 V bias          3311 mV
  5.0 V bias          5013 mV
  8.0 V bias          7221 mV
  BUS Revision        40

```

show chassis environment fpc (T4000 Router)

```

user@host> show chassis environment fpc
FPC 0 status:
  State               Online
  Fan Intake           34 degrees C / 93 degrees F
  Fan Exhaust          48 degrees C / 118 degrees F
  PMB                  47 degrees C / 116 degrees F
  LMB0                 50 degrees C / 122 degrees F
  LMB1                 41 degrees C / 105 degrees F
  LMB2                 35 degrees C / 95 degrees F
  PFE1 LU2             46 degrees C / 114 degrees F
  PFE1 LU0             41 degrees C / 105 degrees F
  PFE0 LU0             57 degrees C / 134 degrees F
  XF1                  47 degrees C / 116 degrees F
  XF0                  52 degrees C / 125 degrees F
  XM1                  41 degrees C / 105 degrees F
  XM0                  50 degrees C / 122 degrees F
  PFE0 LU1             56 degrees C / 132 degrees F
  PFE0 LU2             45 degrees C / 113 degrees F
  PFE1 LU1             37 degrees C / 98 degrees F
Power 1
  1.0 V               991 mV

```


| | |
|-----------------------|----------|
| 1.2 V bias | 1195 mV |
| 1.8 V | 1788 mV |
| 2.5 V | 2483 mV |
| 3.3 V | 3289 mV |
| 3.3 V bias | 3299 mV |
| 12.0 V A | 10608 mV |
| 12.0 V B | 10637 mV |
| Power 2 | |
| 0.9 V | 881 mV |
| 0.9 V PFE0 | 916 mV |
| 0.9 V PFE1 | 903 mV |
| 1.0 V PFE0 | 1012 mV |
| 1.0 V PFE1 | 1002 mV |
| 1.1 V | 1095 mV |
| 1.5 V_0 | 1494 mV |
| 1.5 V_1 | 1479 mV |
| Power 3 | |
| 1.0 V PFE0 | 1000 mV |
| 1.0 V PFE1 | 1002 mV |
| 1.0 V PFE0 * | 995 mV |
| 1.0 V PFE1 * | 995 mV |
| 1.8 V PFE 0 | 1788 mV |
| 1.8 V PFE 1 | 1789 mV |
| 2.5 V | 2482 mV |
| 12.0 V | 11614 mV |
| Power 4 | |
| 1.0 V PFE0 LU0 | 1003 mV |
| 1.0 V PFE1 LU0 | 1003 mV |
| 1.0 V PFE1 LU2 | 1004 mV |
| 1.0 V PFE0 LU0 * | 995 mV |
| 1.0 V PFE1 LU0 * | 998 mV |
| 1.0 V PFE1 LU2 * | 996 mV |
| 12.0 V | 11643 mV |
| 12.0 V C | 11711 mV |
| Power (Base/PMB/MMB) | |
| LMB0 VDD2V5 | 2488 mV |
| LMB0 VDD1V8 | 1788 mV |
| LMB0 VDD1V5 | 1496 mV |
| LMB0 PFE0 LU0 AVDD1V0 | 1002 mV |
| LMB0 PFE0 LU0 VDD1V0 | 1000 mV |
| LMB0 VDD12V0 | 10752 mV |
| LMB1 VDD2V5 | 2472 mV |
| LMB1 VDD1V8 | 1792 mV |

| | |
|-----------------------|------------------------------|
| LMB1 VDD1V5 | 1480 mV |
| LMB1 PFE0 LU2 AVDD1V0 | 994 mV |
| LMB1 PFE0 LU2 VDD1V0 | 1002 mV |
| LMB1 VDD12V0 | 10800 mV |
| LMB2 VDD2V5 | 2472 mV |
| LMB2 VDD1V8 | 1792 mV |
| LMB2 VDD1V5 | 1486 mV |
| LMB2 PFE1 LU1 AVDD1V0 | 996 mV |
| LMB2 PFE1 LU1 VDD1V0 | 998 mV |
| LMB2 VDD12V0 | 10704 mV |
| PMB 1.05v | 1049 mV |
| PMB 1.5v | 1500 mV |
| PMB 2.5v | 2500 mV |
| PMB 3.3v | 3299 mV |
| Bus Revision | 113 |
| FPC 3 status: | |
| State | Online |
| Fan Intake | 37 degrees C / 98 degrees F |
| Fan Exhaust | 51 degrees C / 123 degrees F |
| PMB | 43 degrees C / 109 degrees F |
| LMB0 | 57 degrees C / 134 degrees F |
| LMB1 | 54 degrees C / 129 degrees F |
| LMB2 | 38 degrees C / 100 degrees F |
| PFE1 LU2 | 63 degrees C / 145 degrees F |
| PFE1 LU0 | 45 degrees C / 113 degrees F |
| PFE0 LU0 | 69 degrees C / 156 degrees F |
| XF1 | 62 degrees C / 143 degrees F |
| XF0 | 63 degrees C / 145 degrees F |
| XM1 | 43 degrees C / 109 degrees F |
| 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 Sensor 38 degrees C / 100 degrees F

FPC 1 Exhaust-B Temp Sensor 38 degrees C / 100 degrees F

FPC 1 Exhaust-C Temp Sensor 40 degrees C / 104 degrees F

FPC 1 PE0 Temp Sensor 41 degrees C / 105 degrees F

FPC 1 PE1 Temp Sensor 42 degrees C / 107 degrees F

FPC 1 PE2 Temp Sensor 44 degrees C / 111 degrees F

FPC 1 LCPU Temp Sensor 39 degrees C / 102 degrees F

Power

| | | | |
|--------------------|---------|----------|----------|
| PE0 Core 0.9V | 898 mV | 29351 mA | 26421 mW |
| PE0 HMC0 Core 0.9V | 899 mV | 9734 mA | 8750 mW |
| PE1 Core 0.9V | 873 mV | 28539 mA | 24933 mW |
| PE1 HMC0 Core 0.9V | 899 mV | 9937 mA | 8937 mW |
| PE2 Core 0.9V | 875 mV | 28906 mA | 25316 mW |
| PE2 HMC0 Core 0.9V | 899 mV | 10140 mA | 9125 mW |
| PE0 Serdes 1.0V | 1019 mV | 28312 mA | 28890 mW |
| PE1 Serdes 1.0V | 1020 mV | 28656 mA | 29234 mW |
| PE2 Serdes 1.0V | 1020 mV | 29437 mA | 30015 mW |
| LCPU Platform 1.1V | 1100 mV | 4617 mA | 5078 mW |
| LCPU Core 1.0V | 1000 mV | 8781 mA | 8781 mW |
| PHY VDD B 1.0V | 1000 mV | 15953 mA | 15984 mW |
| PHY VDD A 1.0V | 1000 mV | 15484 mA | 15484 mW |
| BCM Core 1.0V | 999 mV | 7945 mA | 7937 mW |
| BCM PEX 1.0V | 999 mV | 3515 mA | 3515 mW |
| HMC Core 1.2V | 1199 mV | 1269 mA | 1521 mW |
| HMC Serdes 1.2V | 1199 mV | 33000 mA | 39593 mW |
| VDD 1.5V | 1500 mV | 2691 mA | 4062 mW |
| VDD 2.5V | 2449 mV | 3582 mA | 8781 mW |

| | | | |
|----------|----------|----------|-----------|
| VDD 3.3V | 3300 mV | 2563 mA | 8458 mW |
| 12V | 12311 mV | 29002 mA | 357577 mW |

FPC 2 status:

| | |
|-----------------------------|------------------------------|
| State | Online |
| FPC 2 Intake-A Temp Sensor | 43 degrees C / 109 degrees F |
| FPC 2 Intake-B Temp Sensor | 30 degrees C / 86 degrees F |
| FPC 2 Exhaust-A Temp Sensor | 50 degrees C / 122 degrees F |
| FPC 2 Exhaust-B Temp Sensor | 52 degrees C / 125 degrees F |
| FPC 2 Exhaust-C Temp Sensor | 51 degrees C / 123 degrees F |
| FPC 2 PE0 Temp Sensor | 48 degrees C / 118 degrees F |
| FPC 2 PE1 Temp Sensor | 56 degrees C / 132 degrees F |
| FPC 2 PE2 Temp Sensor | 48 degrees C / 118 degrees F |
| FPC 2 PE3 Temp Sensor | 57 degrees C / 134 degrees F |
| FPC 2 PE4 Temp Sensor | 48 degrees C / 118 degrees F |
| FPC 2 PE5 Temp Sensor | 60 degrees C / 140 degrees F |
| FPC 2 LCP CPU 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 Sensor 40 degrees C / 104 degrees F
FPC 6 Exhaust-B Temp Sensor 40 degrees C / 104 degrees F
FPC 6 Exhaust-C Temp Sensor 40 degrees C / 104 degrees F
FPC 6 PE0 Temp Sensor      45 degrees C / 113 degrees F
FPC 6 PE1 Temp Sensor      47 degrees C / 116 degrees F
FPC 6 PE2 Temp Sensor      51 degrees C / 123 degrees F
FPC 6 LCPU Temp Sensor     41 degrees C / 105 degrees F

```

Power

| | | | |
|--------------------|----------|----------|-----------|
| PE0 Core 0.9V | 897 mV | 30214 mA | 27179 mW |
| PE0 HMC0 Core 0.9V | 899 mV | 10000 mA | 8984 mW |
| PE1 Core 0.9V | 873 mV | 29332 mA | 25601 mW |
| PE1 HMC0 Core 0.9V | 899 mV | 9828 mA | 8828 mW |
| PE2 Core 0.9V | 898 mV | 30781 mA | 27675 mW |
| PE2 HMC0 Core 0.9V | 899 mV | 10328 mA | 9296 mW |
| PE0 Serdes 1.0V | 1019 mV | 28921 mA | 29531 mW |
| PE1 Serdes 1.0V | 1020 mV | 29437 mA | 30046 mW |
| PE2 Serdes 1.0V | 1019 mV | 29671 mA | 30281 mW |
| LCPU Platform 1.1V | 1100 mV | 3671 mA | 4039 mW |
| LCPU Core 1.0V | 1000 mV | 8218 mA | 8187 mW |
| PHY VDD B 1.0V | 1000 mV | 15984 mA | 15984 mW |
| PHY VDD A 1.0V | 999 mV | 16093 mA | 16093 mW |
| BCM Core 1.0V | 1000 mV | 8046 mA | 8062 mW |
| BCM PEX 1.0V | 1000 mV | 3500 mA | 3500 mW |
| HMC Core 1.2V | 1199 mV | 1327 mA | 1579 mW |
| HMC Serdes 1.2V | 1199 mV | 33031 mA | 39593 mW |
| VDD 1.5V | 1499 mV | 2722 mA | 4078 mW |
| VDD 2.5V | 2449 mV | 3539 mA | 8671 mW |
| VDD 3.3V | 3299 mV | 8082 mA | 26656 mW |
| 12V | 12311 mV | 31124 mA | 385270 mW |

show chassis environment fpc (PTX10016 router)

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

FPC 1 status:

```

State                               Online
FPC 1 Intake-A Temp Sensor 36 degrees C / 96 degrees F
FPC 1 Intake-B Temp Sensor 32 degrees C / 89 degrees F

```


FPC 1 Exhaust-A Temp Sensor 37 degrees C / 98 degrees F
 FPC 1 Exhaust-B Temp Sensor 36 degrees C / 96 degrees F
 FPC 1 Exhaust-C Temp Sensor 36 degrees C / 96 degrees F
 FPC 1 PE0 Temp Sensor 45 degrees C / 113 degrees F
 FPC 1 PE1 Temp Sensor 46 degrees C / 114 degrees F
 FPC 1 PE2 Temp Sensor 53 degrees C / 127 degrees F
 FPC 1 LCPU Temp Sensor 35 degrees C / 95 degrees F

Power

| | | | |
|--------------------|----------|----------|-----------|
| PE0 Core 0.9V | 897 mV | 28992 mA | 26027 mW |
| PE0 HMC0 Core 0.9V | 899 mV | 10156 mA | 9156 mW |
| PE1 Core 0.9V | 871 mV | 28800 mA | 25164 mW |
| PE1 HMC0 Core 0.9V | 899 mV | 10125 mA | 9109 mW |
| PE2 Core 0.9V | 898 mV | 29914 mA | 26906 mW |
| PE2 HMC0 Core 0.9V | 899 mV | 10343 mA | 9296 mW |
| PE0 Serdes 1.0V | 1019 mV | 27515 mA | 28093 mW |
| PE1 Serdes 1.0V | 1020 mV | 27968 mA | 28546 mW |
| PE2 Serdes 1.0V | 1019 mV | 27796 mA | 28359 mW |
| LCPU Platform 1.1V | 1100 mV | 3347 mA | 3289 mW |
| LCPU Core 1.0V | 1000 mV | 7960 mA | 7960 mW |
| PHY VDD B 1.0V | 1000 mV | 16437 mA | 16437 mW |
| PHY VDD A 1.0V | 999 mV | 15656 mA | 15656 mW |
| BCM Core 1.0V | 1000 mV | 7289 mA | 7335 mW |
| BCM PEX 1.0V | 999 mV | 3453 mA | 3453 mW |
| HMC Core 1.2V | 1199 mV | 1218 mA | 1453 mW |
| HMC Serdes 1.2V | 1199 mV | 32093 mA | 38562 mW |
| VDD 1.5V | 1500 mV | 2859 mA | 4289 mW |
| VDD 2.5V | 2449 mV | 3875 mA | 9500 mW |
| VDD 3.3V | 3299 mV | 2806 mA | 9257 mW |
| 12V | 12351 mV | 28569 mA | 354877 mW |

FPC 3 status:

State Online

FPC 3 Intake-A Temp Sensor 35 degrees C / 95 degrees F
 FPC 3 Intake-B Temp Sensor 31 degrees C / 87 degrees F
 FPC 3 Exhaust-A Temp Sensor 36 degrees C / 96 degrees F
 FPC 3 Exhaust-B Temp Sensor 34 degrees C / 93 degrees F
 FPC 3 Exhaust-C Temp Sensor 33 degrees C / 91 degrees F
 FPC 3 PE0 Temp Sensor 43 degrees C / 109 degrees F
 FPC 3 PE1 Temp Sensor 45 degrees C / 113 degrees F
 FPC 3 PE2 Temp Sensor 49 degrees C / 120 degrees F
 FPC 3 LCPU Temp Sensor 35 degrees C / 95 degrees F

Power

| | | | |
|--------------------|--------|----------|----------|
| PE0 Core 0.9V | 897 mV | 28832 mA | 25871 mW |
| PE0 HMC0 Core 0.9V | 899 mV | 10359 mA | 9328 mW |

| | | | |
|--------------------|----------|----------|-----------|
| PE1 Core 0.9V | 873 mV | 28230 mA | 24671 mW |
| PE1 HMC0 Core 0.9V | 899 mV | 10468 mA | 9421 mW |
| PE2 Core 0.9V | 898 mV | 29539 mA | 26539 mW |
| PE2 HMC0 Core 0.9V | 899 mV | 10656 mA | 9593 mW |
| PE0 Serdes 1.0V | 1020 mV | 27484 mA | 28031 mW |
| PE1 Serdes 1.0V | 1019 mV | 27515 mA | 28078 mW |
| PE2 Serdes 1.0V | 1020 mV | 27625 mA | 28187 mW |
| LCPU Platform 1.1V | 1099 mV | 3050 mA | 3355 mW |
| LCPU Core 1.0V | 999 mV | 7820 mA | 7804 mW |
| PHY VDD B 1.0V | 999 mV | 15406 mA | 15406 mW |
| PHY VDD A 1.0V | 1000 mV | 14953 mA | 14953 mW |
| BCM Core 1.0V | 1000 mV | 7648 mA | 7648 mW |
| BCM PEX 1.0V | 1000 mV | 3531 mA | 3531 mW |
| HMC Core 1.2V | 1200 mV | 1234 mA | 1476 mW |
| HMC Serdes 1.2V | 1199 mV | 34671 mA | 41593 mW |
| VDD 1.5V | 1499 mV | 3484 mA | 5226 mW |
| VDD 2.5V | 2449 mV | 3218 mA | 7890 mW |
| VDD 3.3V | 3299 mV | 2468 mA | 8148 mW |
| 12V | 12311 mV | 28785 mA | 355950 mW |

FPC 6 status:

State Online

FPC 6 Intake-A Temp Sensor 34 degrees C / 93 degrees F

FPC 6 Intake-B Temp Sensor 31 degrees C / 87 degrees F

FPC 6 Exhaust-A Temp Sensor 34 degrees C / 93 degrees F

FPC 6 Exhaust-B Temp Sensor 35 degrees C / 95 degrees F

FPC 6 Exhaust-C Temp Sensor 35 degrees C / 95 degrees F

FPC 6 PE0 Temp Sensor 42 degrees C / 107 degrees F

FPC 6 PE1 Temp Sensor 43 degrees C / 109 degrees F

FPC 6 PE2 Temp Sensor 47 degrees C / 116 degrees F

FPC 6 LCPUI 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 | |
| PIC0 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 |

Release Information

Command introduced before Junos OS Release 7.4.

satellite option introduced in Junos OS Release 14.2R3.

RELATED DOCUMENTATION

[request chassis fpc](#)

[show chassis fpc](#)

[show chassis fpc-feb-connectivity](#)

[Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online](#)

[MX960 Flexible PIC Concentrator Description](#)

show chassis environment fpm

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Syntax

```
show chassis environment fpm
```

Syntax (TX Matrix Routers)

```
show chassis environment fpm
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis environment fpm
<lcc number | sfc number>
```

Description

(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.

Options

- 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.
- 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.

| | |
|---------------|---|
| 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

Output Fields

Table 47 on page 870 lists the output fields for the `show chassis environment fpm` command. Output fields are listed in the approximate order in which they appear.

Table 47: `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. |

Table 47: show chassis environment fpm Output Fields (*Continued*)

| Field Name | Field Description |
|--------------------------------|---|
| FPM CMB Voltage | (M40e and M160 routers only) Information about the voltage supplied to the FPM chassis management bus (CMB) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| FPM GBUS Voltage | (M320 and T Series routers only) Information about the voltage supplied to the FPM generic bus (GBUS) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| FPM I2CS Voltage | (PTX Series only) Information about the voltage supplied to the FPM generic bus (I2CS) device. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| FPM Display Voltage | Information about the voltage supplied to the FPM display. The left column displays the required power, in volts. The right column displays the measured power, in millivolts. |
| FPM CMB Temperature | (M40e and M160 routers only) Temperature of the air flowing past the FPM CMB device |
| FPM GBUS Temperature | (M320 and T Series routers only) Temperature of the air flowing past the FPM GBUS device. |
| FPM I2CS Temperature | (PTX Series only) Temperature of the air flowing past the FPM I2CS device. |
| 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 |

```
lcc0-re0:
```

```
-----
```

```
FPM status:
```

| | |
|-------------------------|-----------------------------|
| State | Online |
| FPM GBUS Voltage: | |
| 1.8 V bias | 1802 mV |
| 3.3 V bias | 3301 mV |
| 5.0 V bias | 4984 mV |
| 8.0 V bias | 7377 mV |
| FPM Display Voltage: | |
| 5.0 V | 5015 mV |
| FPM GBUS temperature | 30 degrees C / 86 degrees F |
| FPM Display temperature | 32 degrees C / 89 degrees F |
| GBUS Revision | 37 |

```
lcc1-re0:
```

```
-----
```

```
FPM status:
```

| | |
|-------------------|---------|
| State | Online |
| FPM GBUS Voltage: | |
| 1.8 V bias | 1789 mV |

| | |
|-------------------------|-----------------------------|
| 3.3 V bias | 3311 mV |
| 5.0 V bias | 5013 mV |
| 8.0 V bias | 7467 mV |
| FPM Display Voltage: | |
| 5.0 V | 5015 mV |
| FPM GBUS temperature | 29 degrees C / 84 degrees F |
| FPM Display temperature | 31 degrees C / 87 degrees F |
| GBUS Revision | 37 |

show chassis environment fpm (T4000 Core Router)

```

user@host> show chassis environment fpm
CB 0 status:
  State                Online Master
  Temperature           34 degrees C / 93 degrees F
  Power 1
    1.8 V                1804 mV
    2.5 V                2499 mV
    3.3 V                3317 mV
    3.3 V bias           3291 mV
    4.6 V                4663 mV
    5.0 V                4905 mV
    8.0 V bias           7658 mV
    12.0 V               11877 mV
  Power 2
    1.0 V                996 mV
    1.2 V                1207 mV
    3.3 V RE             3354 mV
  Bus Revision          51
  FPGA Revision         5
CB 1 status:
  State                Online Standby
  Temperature           36 degrees C / 96 degrees F
  Power 1
    1.8 V                1791 mV
    2.5 V                2494 mV
    3.3 V                3321 mV
    3.3 V bias           3301 mV
    4.6 V                4666 mV
    5.0 V                4945 mV
    8.0 V bias           7645 mV

```



```

12.0 V          11897 mV
Power 2
1.0 V           991 mV
1.2 V          1201 mV
3.3 V RE        3289 mV
Bus Revision    51
FPGA Revision   5

user@host> show chassis environment fpm
FPM status:
State           Online
FPM GBUS Voltage:
1.8 V bias      1802 mV
3.3 V bias      3294 mV
5.0 V bias      5003 mV
8.0 V bias      7306 mV
FPM Display Voltage:
5.0 V           5010 mV
FPM GBUS temperature 26 degrees C / 78 degrees F
FPM Display temperature 29 degrees C / 84 degrees F
GBUS Revision     37

```

show chassis environment fpm (PTX5000 Packet Transport Router)

```

user@host> show chassis environment fpm

FPM status:
State           Online
FPM I2CS Voltage:
3.3 V           3300 mV
5.0 V           4975 mV
FPM I2CS temperature 37 degrees C / 98 degrees F
I2CS Revision    109

```

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.

RELATED DOCUMENTATION

| [request chassis fpm resync](#) | [450](#)

show chassis environment monitored

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Syntax

```
show chassis environment monitored
```

Syntax (MX2020, MX2010, and MX2008 Routers)

```
show chassis environment monitored  
<all-members>  
<local>  
<member member-id>
```


Description

(PTX Series Packet Transport Routers, MX2010, MX2020, MX2008, and MX10008 routers) Display status information for monitored temperatures.

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.

Options

| | |
|-----------------------------------|---|
| none | Display status information for monitored temperatures. |
| all-members | (MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in all members of the Virtual Chassis configuration. |
| local | (MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the local member of the Virtual Chassis. |
| 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. |

Required Privilege Level

view

Output Fields

[Table 48 on page 880](#) lists the output fields for the `show chassis environment monitored` command. Output fields are listed in the approximate order in which they appear.

Table 48: 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)

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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 |

Release Information

Command introduced in Junos OS Release 12.1.

all-members, local, and member *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[show chassis environment | 599](#)

[Chassis-Level User Guide](#)

show chassis environment mcs

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Syntax

```
show chassis environment mcs  
<slot>
```


Description

(M40e and M160 routers only) Display environmental information about the Miscellaneous Control Subsystems (MCSs).

Options

none Display environmental information about both MCSs.

slot (Optional) Display environmental information about an individual MCS. Replace *slot* with **0** or **1**

Required Privilege Level

view

Output Fields

[Table 49 on page 911](#) lists the output fields for the `show chassis environment mcs` command. Output fields are listed in the approximate order in which they appear.

Table 49: 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 primary. • 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. |
| 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

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

| [request chassis mcs](#) | [453](#)

show chassis environment pcg

IN THIS SECTION

- [Syntax](#) | [913](#)
- [Description](#) | [913](#)
- [Options](#) | [914](#)
- [Required Privilege Level](#) | [914](#)
- [Output Fields](#) | [914](#)
- [Sample Output](#) | [915](#)
- [Release Information](#) | [916](#)

Syntax

```
show chassis environment pcg  
<slot>
```

Description

(M40e and M160 routers only) Display environmental information about the Packet Forwarding Engine clock generators (PCGs).

Options

- none** Display environmental information about both PCGs.
- slot** (Optional) Display environmental information about an individual PCG. Replace *slot* with 0 or 1.

Required Privilege Level

view

Output Fields

Table 50 on page 914 lists the output fields for the `show chassis environment pcg` command. Output fields are listed in the approximate order in which they appear.

Table 50: 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. |

Table 50: show chassis environment pcg Output Fields (Continued)

| Field Name | Field Description |
|---------------------|--|
| Frequency | Frequency setting and measurement for the PCG. |
| 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

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

request chassis pcg

show chassis environment pdu

IN THIS SECTION

- [Syntax | 917](#)
- [Description | 917](#)
- [Options | 918](#)
- [Required Privilege Level | 918](#)
- [Output Fields | 918](#)
- [Sample Output | 920](#)
- [Release Information | 925](#)

Syntax

```
show chassis environment pdu  
<none>  
<slot>
```

Description

Display the environmental status information of a power distribution unit (PDU).

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.

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.

Options

- none** Display environmental information about all PDUs.
- slot** (Optional) Display environmental information about an individual PDU. For the PTX5000, replace *slot* with 0 or 1.

Required Privilege Level

view

Output Fields

Table 51 on page 918 lists the output fields for the `show chassis environment pdu` command. Output fields are listed in the approximate order in which they appear.

Table 51: show chassis environment pdu Output Fields

| Field Name | Field Description |
|------------------------|--|
| PDU <i>slot</i> 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. |

Table 51: show chassis environment pdu Output Fields (Continued)

| Field Name | Field Description |
|--------------------------|--|
| PSM <i>number</i> 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 pdu (PTX10003 Router with status of AC Input and DC Output)

```

user@root> show chassis environment pdu
PDU 0 status:
  State                Online
PDU 0 PSM 1 status:
  State                Online
  Temperature           25 degrees C / 77 degrees F
  Fans                  OK
  AC Input               OK
  DC Output              OK

```


| | |
|------------------|-----------|
| Hours Used | 24378 |
| Firmware Version | 9004.9213 |

Release Information

Command introduced in Junos OS Release 12.1X48.

RELATED DOCUMENTATION

[PTX5000 Packet Transport Router Hardware Guide](#)

show chassis environment pem

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- [Syntax | 926](#)
- [Syntax \(ACX4000 Router\) | 926](#)
- [Syntax \(TX Matrix Routers\) | 926](#)
- [Syntax \(TX Matrix Plus Routers\) | 926](#)
- [Syntax \(MX Series Router\) | 926](#)
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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, MX10004, MX10008, OCX Series, EX9251, and EX9253 devices)

```
show chassis environment pem
<slot>
```

Syntax (QFX Series)

```
show chassis environment pem
<slot (interconnect-device name slot ) | (node-device name)>
```


Description

Display Power Entry Module (PEM) environmental status information.

NOTE: The new high-capacity (4100W) enhanced DC PEM on MX960 routers includes a new design that can condition the input voltage. This results in the output voltage differing from the input voltage. The earlier generation of DC PEMs coupled the input power directly to the output, thereby making it safe to assume that the output voltage was equal to the input voltage.

Options

| | |
|--|---|
| none | Display environmental information about both PEMs. For the TX Matrix router, display environmental information about the PEMs, the TX Matrix router, and its attached T640 routers. For the TX Matrix Plus router, display environmental information about the PEMs, the TX Matrix Plus router, and its attached routers. |
| all-members | (MX Series routers only) (Optional) Display environmental information about the PEMs in all the member routers of the Virtual Chassis configuration. |
| interconnect-device <i>name</i> | (QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Interconnect device. |
| lcc <i>number</i> | <p>(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. |

| | |
|---|--|
| local | (MX Series routers only) (Optional) Display environmental information about the PEM in the local Virtual Chassis member. |
| member <i>member-id</i> | (MX Series routers only) (Optional) Display environmental information about the PEM in the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| node-device <i>name</i> | (QFabric systems only) (Optional) Display chassis environmental information about the PEMs in the Node device. |
| satellite [fpc-slot <i>slot-id</i> device-alias <i>alias-name</i>] | (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 <i>slot</i> with 0 or 1. |

Required Privilege Level

view

Output Fields

[Table 52 on page 929](#) lists the output fields for the `show chassis environment pem` command. Output fields are listed in the approximate order in which they appear.

Table 52: show chassis environment pem Output Fields

| Field Name | Field Description |
|------------------------|-------------------------|
| PEM <i>slot</i> status | Number of the PEM slot. |

Table 52: show chassis environment pem Output Fields (*Continued*)

| Field Name | Field Description |
|-------------|--|
| State | <p>Status of the PEM.</p> <p>NOTE: PEM with no feeds connected at bootup on MX10004 and MX10008 devices, continues to stay in "Present" state until feeds are connected to it. PEM with feeds connected at bootup, continues to move to OFFLINE state. "Present" state is only a transitional state that can either move to OFFLINE (or) ONLINE depending on the PEM output. For example, a PEM with no feeds connected at bootup, moves through the states from "Empty" to "Present" to "Offline" state.</p> |
| Temperature | Temperature of the air flowing past the PEM. |
| AC Input | Status of the AC input for the specified component |
| AC Output | Status of the AC output for the specified component. |
| DC input | Status of the DC input for the specified component. |
| DC output | Status of the DC output for the specified component. |
| Load | (Not available on M40e or M160 routers) Information about the load on supply, in percentage of rated current being used. |
| Voltage | <p>(M120, M160, M320, T640, T1600, TX Matrix, and TX Matrix Plus routers only) Information about voltage supplied to the PEM.</p> <p>(MX104 routers only) Information about voltage supplied by the PEM to the system.</p> |
| 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. |

Table 52: show chassis environment pem Output Fields (Continued)

| Field Name | Field Description |
|------------|--|
| 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 0 (MX10004)

```

PEM 0 status:
  State           Online

```



```

Airflow                Front to Back
Temperature             OK   33 degrees C / 91 degrees F
Firmware version        AA17AA17.AB15AB15.AC27
Fan 0                   6848 RPM
Fan 1                   8032 RPM
DC Output               Voltage(V) Current(A) Power(W) Load(%)
                        12.00      72          864      15
Input                  Voltage(V) Current(A) Power(W)
INP 1                   201.4      5.0        1015.1
INP 2                   0.0        0.0         0.0
Health check Information:
  Status: Scheduled
  Last Result: Not Performed Yet
  Last Execution: Empty
  Next Scheduled Run: 2022-08-31 17:29:18

```

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
```

IC1 1

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`.

Release Information

Command introduced before Junos OS Release 7.4.

satellite option introduced in Junos OS Release 14.2R3.

RELATED DOCUMENTATION

| *show chassis hardware*

show chassis environment psu

IN THIS SECTION

- [Syntax | 947](#)
- [Description | 947](#)
- [Options | 947](#)
- [Required Privilege Level | 948](#)
- [Output Fields | 948](#)
- [Sample Output | 948](#)
- [Release Information | 949](#)

Syntax

```
show chassis environment psu  
<slot-number>
```

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

Output Fields

Table 53 on page 948 lists the output fields for the `show chassis environment psu` command. Output fields are listed in the approximate order in which they appear.

Table 53: 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
```

Release Information

Command introduced in Junos OS Release 10.3.

RELATED DOCUMENTATION

Verifying Power Configuration and Use
show chassis power-budget-statistics

show chassis environment psm

IN THIS SECTION

- [Syntax | 950](#)
- [Description | 950](#)
- [Options | 950](#)

- Required Privilege Level | 951
- Output Fields | 951
- Sample Output | 952
- Release Information | 963

Syntax

```
show chassis environment psm
<all-members>
<local>
<member member-id>
<psm-slot-number>
```

Description

Display chassis environmental information about the power supply module (PSM).

To run system health check correctly in Junos evolved versions for PTX series, and to get correct output in the command **show environment psm**, the following prerequisites must be followed:

- System load must be enough to load a PSM to its health check threshold.
- There should be at least one redundant active PSM with no defects.

Options

| | |
|--------------------|---|
| none | Display environmental information about all power supply modules (PSMs). |
| all-members | (Optional) Display chassis environmental information about the PSM in all members of the Virtual Chassis configuration. |
| local | (Optional) Display chassis environmental information about the PSM in the local member of the Virtual Chassis. |

| | |
|-----------------------------------|---|
| 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. |
| psm-slot- <i>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. |

Required Privilege Level

view

Output Fields

[Table 54 on page 951](#) lists the output fields for the `show chassis environment psm` command. Output fields are listed in the approximate order in which they appear.

Table 54: show chassis environment psm Output Fields

| Field Name | Field Description |
|-------------|--|
| State | <p>Status of the PSM.</p> <ul style="list-style-type: none"> • Online—The PSM is online and running. • Offline—PSM is powered down. |
| Temperature | <p>The status of the temperature of the air flowing past the PSM.</p> <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 | <p>State of the DC input power feed for the specified zone at the specified amps and voltage, and load for the PSM.</p> |

Table 54: show chassis environment psm Output Fields (Continued)

| Field Name | Field Description |
|--------------------|---|
| 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. |
| Bootloader Version | Bootloader version for AC PSMs. |

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                2026
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 |
| | 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 | 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 | | | |

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

`all-members`, `local`, and `member member-id` options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

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show chassis environment routing-engine

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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 and PTX Series Devices)

```
show chassis environment routing-engine
<slot>
<all-members>
<local>
<member member-id>
```

Syntax (QFX Series and OCX Series)

```
show chassis environment routing-engine
interconnect-device name
```

Syntax (EX9251 and EX9253 Switches; ACX500, ACX5048 and ACX5096 Routers)

```
show chassis environment routing-engine
```

Description

Display Routing Engine environmental status information.

Options

| | |
|-------------|--|
| none | Display environmental information about all Routing Engines. For a TX Matrix router, display environmental information about all Routing Engines on the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display |
|-------------|--|

environmental information about all Routing Engines on the TX Matrix Plus router and its attached routers.

| | |
|---|--|
| all-members | (MX Series routers only) (Optional) Display environmental information about the Routing Engines in all member routers in the Virtual Chassis configuration. |
| interconnect-device <i>name</i> | (QFabric systems only) (Optional) Display environmental information about the Routing Engines for the Interconnect device. |
| lcc <i>number</i> | <p>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. |
| local | (MX Series routers only) (Optional) Display environmental information about the Routing Engines in the local Virtual Chassis member. |
| member <i>member-id</i> | <p>(MX Series routers only) (Optional) Display environmental information about the Routing Engines in the specified member in the Virtual Chassis configuration.</p> <p>Replace <i>member-id</i> with the value of 0 or 1.</p> |
| satellite [fpc-slot <i>slot-id</i> device-alias <i>alias-name</i>] | (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 | <p>(Optional) Display environmental information about an individual Routing Engine.</p> <p>On M10i, M20, M40e, M120, M160, M320, MX Series, MX104 routers, MX2010</p> |

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 and QFX5700, 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

Output Fields

[Table 55 on page 967](#) 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 55: 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 Primary—Routing Engine is online, operating as Primary. • Online Standby—Routing Engine is online, operating as Standby. • Offline—Routing Engine is offline. |
| Temperature | Temperature of the air flowing past the Routing Engines |
| 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
  CPU Temperature  42 degrees C / 107 degrees F

```


Routing Engine 1 status:

| | |
|-----------------|-----------------------------|
| State | Online Standby |
| CPU Temperature | 34 degrees C / 93 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 |
|-------|---------|

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

RELATED DOCUMENTATION

[request chassis routing-engine master](#)

[show chassis routing-engine](#) | [1627](#)

show chassis environment scg

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Syntax

```
show chassis environment scg  
<slot>
```


Syntax (TX Matrix and TX Matrix Plus Router)

```
show chassis environment scg
<lcc number>
<slot>
```

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. |
| <i>lcc number</i> | <p>(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. |
| <i>slot</i> | (Optional) Display environmental information about the SCG. Replace <i>slot</i> with 0 or 1 . |

Required Privilege Level

view

Output Fields

Table 56 on page 976 lists the output fields for the `show chassis environment scg` command. Output fields are listed in the approximate order in which they appear.

Table 56: `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 primary, 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 |

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

request chassis scg

Configuring the Clock Source

[T320 SONET Clock Generator \(SCG\) Description](#)

show chassis environment sfb

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Syntax

```
show chassis environment sfb
<all-members>
<local>
<member member-id>
<sfb-slot-number>
```

Description

Display chassis environmental information about the Switch Fabric Board (SFB).

Options

| | |
|-----------------------------------|---|
| none | Display environmental information about all Switch Fabric Boards. |
| all-members | (Optional) Display chassis environmental information about the SFB in all members of the Virtual Chassis configuration. |
| local | (Optional) Display chassis environmental information about the SFB in the local member of the Virtual Chassis. |
| 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. |
| <i>sfb-slot-number</i> | (Optional) Display environmental information about the specified Switch Fabric Board. For MX2020, MX2010, MX2008 and MX10008 routers, replace <i>sfb-slot-number</i> with a value from 0 through 7. MX10004 routers provide support for SF2 fabric boards with a value from 0 to 5. |

Required Privilege Level

view

Output Fields

Table 57 on page 983 lists the output fields for the `show chassis environment sfb` command. Output fields are listed in the approximate order in which they appear.

Table 57: show chassis environment sfb Output Fields

| Field Name | Field Description |
|-------------|---|
| State | <p>Status of the SFB.</p> <ul style="list-style-type: none"> • Online—The SFB is online and running. • Offline— SFB is powered down. |
| Temperature | <p>Temperature in Celsius (C) and Fahrenheit (F) of the air flowing past the SFB.</p> <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 | <p>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.</p> |

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 0 (MX10004)

```

user@host> show chassis environment sfb 0
SFB 0 status:
  State                Online
  Intake-A Temp Sensor Temperature    44 degrees C / 111 degrees F
  Intake-B Temp Sensor Temperature    31 degrees C / 87 degrees F
  Exhaust-A Temp Sensor Temperature   38 degrees C / 100 degrees F
  Exhaust-B Temp Sensor Temperature   41 degrees C / 105 degrees F
  ZF0 Temp Sensor Temperature         47 degrees C / 116 degrees F
  ZF1 Temp Sensor Temperature         41 degrees C / 105 degrees F
  Power
    ZF0 Core 0.9V                899 mV
    ZF0 AVDD 1V                  999 mV
    ZF1 Core 0.9V                975 mV
    ZF1 AVDD 1V                  999 mV
    12V                          12311 mV
  ...

```

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

```

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 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 18.2 for MX10008 Universal Routing Platforms.

RELATED DOCUMENTATION

[request chassis sfb](#) | 473

[show chassis sfb](#) | 1642

show chassis environment sfm

IN THIS SECTION

- [Syntax | 1000](#)
- [Description | 1000](#)
- [Options | 1000](#)
- [Required Privilege Level | 1001](#)
- [Output Fields | 1001](#)
- [Sample Output | 1002](#)
- [Release Information | 1004](#)

Syntax

```
show chassis environment sfm  
<slot>
```

Description

(M40e and M160 routers only) Display Switching and Forwarding Module (SFM) environmental information.

Options

none Display environmental information about all SFMs.

slot (Optional) Display environmental information about an individual SFM. Replace *slot* with a value from 0 through 3.

Required Privilege Level

view

Output Fields

Table 58 on page 1001 lists the output fields for the `show chassis environment sfm` command. Output fields are listed in the approximate order in which they appear.

Table 58: show chassis environment sfm Output Fields

| Field Name | Field Description |
|-------------------------------|--|
| SFM <i>slot</i> 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 primary, 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. |
| 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

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[request chassis sfm | 476](#)

request chassis sfm master switch

Configuring SFM Redundancy on M40e and M160 Routers

Switching the Global Primary and Backup Roles in a Virtual Chassis Configuration

show chassis environment sib

IN THIS SECTION

- [Syntax | 1005](#)
- [Syntax \(TX Matrix router\) | 1006](#)
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- [Description | 1006](#)
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- [Required Privilege Level | 1007](#)
- [Output Fields | 1007](#)
- [Sample Output | 1009](#)
- [Release Information | 1051](#)

Syntax

```
show chassis environment sib  
<slot>
```


Syntax (TX Matrix router)

```
show chassis environment sib
<lcc number / scc | slot>
```

Syntax (TX Matrix Plus Router)

```
show chassis environment sib
<sib-slot | lcc number | sfc number | f13 sib-slot | f2s sib-slot/sib-f2s-slot-number>
```

Description

Display Switch Interface Board (SIB) environmental information.

Options

| | |
|---|---|
| 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 . |
| f13 sib-slot | (TX Matrix Plus routers only) (Optional) Display SIB F13 environmental information only. Replace <i>sib-slot</i> 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). |
| f2s sib-slot/sib-f2s-slot-number | (TX Matrix Plus routers only) (Optional) Display SIB F2s environmental information only. Replace <i>sib-slot</i> with a value from 0 through 4 , followed by a <i>sib-f2s-slot-number</i> value of 0, 2, 4 or 6 . |
| lcc number | (TX Matrix router, and TX Matrix Plus router only) (Optional) Line-card chassis number. Replace <i>number</i> with the following values depending on the LCC configuration: |

- 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

Output Fields

Table 59 on page 1008 lists the output fields for the show chassis environment sib command. Output fields are listed in the approximate order in which they appear.

Table 59: 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 |

lcc0-re0:

SIB 0 status:

| | |
|-----------------|------------------------------|
| State | Online - Standby |
| Temperature | 49 degrees C / 120 degrees F |
| Temperature (B) | 42 degrees C / 107 degrees F |
| Power | |

| | |
|-----------------|------------------------------|
| 1.2 V | 1204 mV |
| 1.5 V | 1484 mV |
| 2.5 V | 2500 mV |
| 3.3 V | 3312 mV |
| 3.3 V bias | 3312 mV |
| 5.0 V bias | 4956 mV |
| 8.0 V bias | 7740 mV |
| 9.0 V | 8880 mV |
| Power (B) | |
| 1.2 V | 1206 mV |
| 2.5 V | 2500 mV |
| 3.3 V | 3316 mV |
| 9.0 V | 8988 mV |
| SIB 1 status: | |
| State | Online |
| Temperature | 49 degrees C / 120 degrees F |
| Temperature (B) | 42 degrees C / 107 degrees F |
| Power | |
| 1.2 V | 1202 mV |
| 1.5 V | 1482 mV |
| 2.5 V | 2500 mV |
| 3.3 V | 3296 mV |
| 3.3 V bias | 3288 mV |
| 5.0 V bias | 4986 mV |
| 8.0 V bias | 7800 mV |
| 9.0 V | 8868 mV |
| Power (B) | |
| 1.2 V | 1206 mV |
| 2.5 V | 2512 mV |
| 3.3 V | 3312 mV |
| 9.0 V | 8952 mV |
| SIB 2 status: | |
| State | Online |
| Temperature | 49 degrees C / 120 degrees F |
| Temperature (B) | 42 degrees C / 107 degrees F |
| Power | |
| 1.2 V | 1202 mV |
| 1.5 V | 1480 mV |
| 2.5 V | 2476 mV |
| 3.3 V | 3292 mV |
| 3.3 V bias | 3308 mV |
| 5.0 V bias | 5010 mV |
| 8.0 V bias | 7800 mV |


```

    9.0 V          8880 mV
Power (B)
    1.2 V          1204 mV
    2.5 V          2516 mV
    3.3 V          3308 mV
    9.0 V          8988 mV
SIB 3 status:
State             Online
Temperature        48 degrees C / 118 degrees F
Temperature (B)    42 degrees C / 107 degrees F
Power
    1.2 V          1204 mV
    1.5 V          1480 mV
    2.5 V          2500 mV
    3.3 V          3292 mV
    3.3 V bias     3292 mV
    5.0 V bias     4986 mV
    8.0 V bias     7812 mV
    9.0 V          8892 mV
Power (B)
    1.2 V          1198 mV
    2.5 V          2512 mV
    3.3 V          3308 mV
    9.0 V          8892 mV
SIB 4 status:
State             Online
Temperature        48 degrees C / 118 degrees F
Temperature (B)    42 degrees C / 107 degrees F
Power
    1.2 V          1206 mV
    1.5 V          1482 mV
    2.5 V          2484 mV
    3.3 V          3324 mV
    3.3 V bias     3340 mV
    5.0 V bias     4980 mV
    8.0 V bias     7764 mV
    9.0 V          8784 mV
Power (B)
    1.2 V          1202 mV
    2.5 V          2504 mV
    3.3 V          3308 mV
    9.0 V          8820 mV
lcc1-re0:

```



```

-----
SIB 0 status:
  State                Online - Standby
  Temperature           49 degrees C / 120 degrees F
  Temperature (B)       43 degrees C / 109 degrees F
  Power
    1.2 V               1206 mV
    1.5 V               1506 mV
    2.5 V               2496 mV
    3.3 V               3308 mV
    3.3 V bias          3296 mV
    5.0 V bias          4974 mV
    8.0 V bias          7884 mV
    9.0 V               8820 mV
  Power (B)
    1.2 V               1200 mV
    2.5 V               2508 mV
    3.3 V               3292 mV
    9.0 V               8892 mV
  ...

```

show chassis environment sib sfc (TX Matrix Plus Router)

```

user@host> show chassis environment sib sfc
sfc0-re0:
-----
SIB F13 0 status:
  State                Online - Standby
  Temperature           54 degrees C / 129 degrees F
  Temperature (B)       50 degrees C / 122 degrees F
  Power
    1.2 V_0             1205 mV
    1.2 V_1             1205 mV
    1.2 V_2             1208 mV
    1.2 V_3             1208 mV
    1.5 V_0             1501 mV
    1.5 V_1             1508 mV
    1.8 V               1804 mV
    2.5 V               2504 mV
    3.3 V               3312 mV
    9.0 V               8991 mV

```


| | |
|-------------------|------------------------------|
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2516 mV |
| 3.3 V | 3318 mV |
| 9.0 V | 9048 mV |
| SIB F13 1 status: | |
| State | Online - Standby |
| Temperature | 45 degrees C / 113 degrees F |
| Temperature (B) | 42 degrees C / 107 degrees F |
| Power | |
| 1.2 V_0 | 1202 mV |
| 1.2 V_1 | 1205 mV |
| 1.2 V_2 | 1198 mV |
| 1.2 V_3 | 1205 mV |
| 1.5 V_0 | 1498 mV |
| 1.5 V_1 | 1495 mV |
| 1.8 V | 1801 mV |
| 2.5 V | 2507 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8970 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2507 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8970 mV |
| SIB F13 3 status: | |
| State | Online |
| Temperature | 48 degrees C / 118 degrees F |
| Temperature (B) | 43 degrees C / 109 degrees F |
| Power | |
| 1.2 V_0 | 1208 mV |
| 1.2 V_1 | 1195 mV |
| 1.2 V_2 | 1202 mV |
| 1.2 V_3 | 1198 mV |
| 1.5 V_0 | 1504 mV |
| 1.5 V_1 | 1504 mV |
| 1.8 V | 1801 mV |
| 2.5 V | 2510 mV |
| 3.3 V | 3312 mV |
| 9.0 V | 8970 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2500 mV |


```

3.3 V          3332 mV
9.0 V          8970 mV
SIB F13 4 status:
State          Online
Temperature     44 degrees C / 111 degrees F
Temperature (B) 40 degrees C / 104 degrees F
Power
  1.2 V_0      1205 mV
  1.2 V_1      1202 mV
  1.2 V_2      1205 mV
  1.2 V_3      1202 mV
  1.5 V_0      1508 mV
  1.5 V_1      1511 mV
  1.8 V        1811 mV
  2.5 V        2510 mV
  3.3 V        3312 mV
  9.0 V        8952 mV
  9.0 V bias    0 mV
Power (B)
  2.5 V        2510 mV
  3.3 V        3306 mV
  9.0 V        9024 mV
SIB F13 6 status:
State          Online
Temperature     49 degrees C / 120 degrees F
Temperature (B) 46 degrees C / 114 degrees F
Power
  1.2 V_0      1195 mV
  1.2 V_1      1198 mV
  1.2 V_2      1202 mV
  1.2 V_3      1202 mV
  1.5 V_0      1501 mV
  1.5 V_1      1495 mV
  1.8 V        1801 mV
  2.5 V        2507 mV
  3.3 V        3306 mV
  9.0 V        8979 mV
  9.0 V bias    0 mV
Power (B)
  2.5 V        2497 mV
  3.3 V        3318 mV
  9.0 V        9006 mV
SIB F13 7 status:

```


| | |
|-----------------|------------------------------|
| State | Online |
| Temperature | 52 degrees C / 125 degrees F |
| Temperature (B) | 48 degrees C / 118 degrees F |
| Power | |
| 1.2 V_0 | 1198 mV |
| 1.2 V_1 | 1198 mV |
| 1.2 V_2 | 1202 mV |
| 1.2 V_3 | 1189 mV |
| 1.5 V_0 | 1498 mV |
| 1.5 V_1 | 1498 mV |
| 1.8 V | 1804 mV |
| 2.5 V | 2491 mV |
| 3.3 V | 3292 mV |
| 9.0 V | 8904 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2500 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8952 mV |

SIB F13 8 status:

| | |
|-----------------|------------------------------|
| State | Online |
| Temperature | 54 degrees C / 129 degrees F |
| Temperature (B) | 49 degrees C / 120 degrees F |
| Power | |
| 1.2 V_0 | 1211 mV |
| 1.2 V_1 | 1208 mV |
| 1.2 V_2 | 1208 mV |
| 1.2 V_3 | 1211 mV |
| 1.5 V_0 | 1508 mV |
| 1.5 V_1 | 1511 mV |
| 1.8 V | 1801 mV |
| 2.5 V | 2513 mV |
| 3.3 V | 3324 mV |
| 9.0 V | 9048 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2516 mV |
| 3.3 V | 3318 mV |
| 9.0 V | 9102 mV |

SIB F13 9 status:

| | |
|-----------------|------------------------------|
| State | Online |
| Temperature | 46 degrees C / 114 degrees F |
| Temperature (B) | 41 degrees C / 105 degrees F |

Power

| | |
|------------|---------|
| 1.2 V_0 | 1205 mV |
| 1.2 V_1 | 1202 mV |
| 1.2 V_2 | 1205 mV |
| 1.2 V_3 | 1198 mV |
| 1.5 V_0 | 1504 mV |
| 1.5 V_1 | 1504 mV |
| 1.8 V | 1817 mV |
| 2.5 V | 2507 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8991 mV |
| 9.0 V bias | 0 mV |

Power (B)

| | |
|-------|---------|
| 2.5 V | 2510 mV |
| 3.3 V | 3332 mV |
| 9.0 V | 9006 mV |

SIB F13 11 status:

| | |
|-----------------|------------------------------|
| State | Online |
| Temperature | 47 degrees C / 116 degrees F |
| Temperature (B) | 42 degrees C / 107 degrees F |

Power

| | |
|------------|---------|
| 1.2 V_0 | 1202 mV |
| 1.2 V_1 | 1205 mV |
| 1.2 V_2 | 1202 mV |
| 1.2 V_3 | 1198 mV |
| 1.5 V_0 | 1501 mV |
| 1.5 V_1 | 1504 mV |
| 1.8 V | 1807 mV |
| 2.5 V | 2510 mV |
| 3.3 V | 3306 mV |
| 9.0 V | 8991 mV |
| 9.0 V bias | 0 mV |

Power (B)

| | |
|-------|---------|
| 2.5 V | 2249 mV |
| 3.3 V | 4994 mV |
| 9.0 V | 9936 mV |

SIB F13 12 status:

| | |
|-----------------|------------------------------|
| State | Online |
| Temperature | 44 degrees C / 111 degrees F |
| Temperature (B) | 40 degrees C / 104 degrees F |

Power

| | |
|---------|---------|
| 1.2 V_0 | 1208 mV |
| 1.2 V_1 | 1202 mV |

| | |
|---------------------|------------------------------|
| 1.2 V_2 | 1208 mV |
| 1.2 V_3 | 1205 mV |
| 1.5 V_0 | 1511 mV |
| 1.5 V_1 | 1508 mV |
| 1.8 V | 1814 mV |
| 2.5 V | 2507 mV |
| 3.3 V | 3318 mV |
| 9.0 V | 9039 mV |
| 9.0 V bias | 0 mV |
| Power (B) | |
| 2.5 V | 2516 mV |
| 3.3 V | 3344 mV |
| 9.0 V | 9006 mV |
| SIB F2S 0/0 status: | |
| State | Online - Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1198 mV |
| 1.2 V_ASF_B | 1198 mV |
| 1.2 V_ASF_D | 1202 mV |
| 1.5 V | 1498 mV |
| 1.8 V | 1814 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3286 mV |
| 9.0 V | 8250 mV |
| SIB F2S 0/2 status: | |
| State | Online - Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1198 mV |
| 1.2 V_ASF_B | 1195 mV |
| 1.2 V_ASF_D | 1202 mV |
| 1.5 V | 1498 mV |
| 1.8 V | 1807 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3292 mV |
| 9.0 V | 8250 mV |
| SIB F2S 0/4 status: | |
| State | Online - Standby |

Temperature 40 degrees C / 104 degrees F

Power

| | |
|-------------|---------|
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1198 mV |
| 1.2 V_ASF_B | 1195 mV |
| 1.2 V_ASF_D | 1202 mV |
| 1.5 V | 1501 mV |
| 1.8 V | 1817 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3306 mV |
| 9.0 V | 8250 mV |

SIB F2S 0/6 status:

State Online - Standby

Temperature 39 degrees C / 102 degrees F

Power

| | |
|-------------|---------|
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1202 mV |
| 1.2 V_ASF_B | 1198 mV |
| 1.2 V_ASF_D | 1198 mV |
| 1.5 V | 1495 mV |
| 1.8 V | 1814 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3280 mV |
| 9.0 V | 8250 mV |

SIB F2S 1/0 status:

State Online

Temperature 39 degrees C / 102 degrees F

Power

| | |
|-------------|---------|
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1195 mV |
| 1.2 V_ASF_B | 1192 mV |
| 1.2 V_ASF_D | 1195 mV |
| 1.5 V | 1492 mV |
| 1.8 V | 1798 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3280 mV |
| 9.0 V | 8250 mV |

SIB F2S 1/2 status:

State Online

Temperature 39 degrees C / 102 degrees F

Power

| | |
|-------------|---------|
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1205 mV |
| 1.2 V_ASF_B | 1202 mV |
| 1.2 V_ASF_D | 1205 mV |
| 1.5 V | 1504 mV |
| 1.8 V | 1820 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3306 mV |
| 9.0 V | 8250 mV |

SIB F2S 1/4 status:

| | |
|-------------|------------------------------|
| State | Online |
| Temperature | 39 degrees C / 102 degrees F |

Power

| | |
|-------------|---------|
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1202 mV |
| 1.2 V_ASF_B | 1195 mV |
| 1.2 V_ASF_D | 1198 mV |
| 1.5 V | 1498 mV |
| 1.8 V | 1811 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3300 mV |
| 9.0 V | 8250 mV |

SIB F2S 1/6 status:

| | |
|-------------|------------------------------|
| State | Online |
| Temperature | 39 degrees C / 102 degrees F |

Power

| | |
|-------------|---------|
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1195 mV |
| 1.2 V_ASF_B | 1192 mV |
| 1.2 V_ASF_D | 1198 mV |
| 1.5 V | 1498 mV |
| 1.8 V | 1807 mV |
| 3.3 V | 3306 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3292 mV |
| 9.0 V | 8250 mV |

SIB F2S 2/0 status:

| | |
|-------------|------------------------------|
| State | Online |
| Temperature | 38 degrees C / 100 degrees F |

Power


```

1.2 V_1          0 mV
1.2 V_ASF        1195 mV
1.2 V_ASF_B      1195 mV
1.2 V_ASF_D      1198 mV
1.5 V            1498 mV
1.8 V            1804 mV
3.3 V            3300 mV
3.3 V bias       3300 mV
3.3 V ASF        3292 mV
9.0 V            8250 mV
...

```

show chassis environment sib f13 (TX Matrix Plus Router)

```

user@host> show chassis environment sib f13 0
SIB F13 0 status:
  State                Online - Standby
  Temperature           54 degrees C / 129 degrees F
  Temperature (B)       50 degrees C / 122 degrees F
  Power
    1.2 V_0             1202 mV
    1.2 V_1             1202 mV
    1.2 V_2             1208 mV
    1.2 V_3             1208 mV
    1.5 V_0             1501 mV
    1.5 V_1             1504 mV
    1.8 V               1801 mV
    2.5 V               2504 mV
    3.3 V               3318 mV
    9.0 V               8991 mV
    9.0 V bias          0 mV
  Power (B)
    2.5 V               2510 mV
    3.3 V               3318 mV
    9.0 V               9024 mV

```

show chassis environment sib f2s (TX Matrix Plus Router)

```

user@host> show chassis environment sib f2s 0/2
SIB F2S 0/2 status:

```


| | |
|-------------|------------------------------|
| State | Online - Standby |
| Temperature | 40 degrees C / 104 degrees F |
| Power | |
| 1.2 V_1 | 0 mV |
| 1.2 V_ASF | 1198 mV |
| 1.2 V_ASF_B | 1195 mV |
| 1.2 V_ASF_D | 1202 mV |
| 1.5 V | 1501 mV |
| 1.8 V | 1807 mV |
| 3.3 V | 3300 mV |
| 3.3 V bias | 3300 mV |
| 3.3 V ASF | 3286 mV |
| 9.0 V | 8250 mV |

show chassis environment sib (TX Matrix Plus router with 3D SIBs)

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

SIB F13 0 status:

| | |
|-------------------------|------------------------------|
| State | Online |
| Board Temperature | 44 degrees C / 111 degrees F |
| XF Junction Temperature | 62 degrees C / 143 degrees F |
| Power | |
| XF F1 LCC0 1.0 V | 999 mV |
| PCIe Switch 1.0 V | 1000 mV |
| XF F3 LCC0 1.0 V | 1000 mV |
| XF F1/F3 LCC0 1.2 V | 1199 mV |
| XF F1 LCC1 1.0 V | 1000 mV |
| XF F1/F3 LCC1 1.2 V | 1199 mV |
| XF F3 LCC1 1.0 V | 1000 mV |
| XF F1/F3 1.5 V | 1499 mV |
| XF RC LCC0 Base 1.0 | 1000 mV |
| XF RC Base 1.2 V | 1200 mV |
| XF RC LCC1 Base 1.0 | 1000 mV |
| XF RC Base 1.5 V | 1499 mV |
| 3.3 V Base | 3300 mV |
| VSC8248 Base 1.8V | 1796 mV |
| FPGA Core 0.9 V | 899 mV |
| 2.5 V Base | 2500 mV |
| ltc3880-3.3v-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 |

lcc0-re0:

SIB 0 status:

| | |
|-----------------|------------------------------|
| State | Online |
| Temperature | 41 degrees C / 105 degrees F |
| Temperature (B) | Absent |

Max Jn Temperature 48 degrees C / 118 degrees F

Power

| | |
|-------------------|---------|
| 8.0 V bias | 8156 mV |
| 3.3 V bias | 3284 mV |
| FPGA 0.9 V bias | 908 mV |
| FPGA 1.1 V bias | 1086 mV |
| FPGA 1.5 V bias | 1487 mV |
| FPGA 2.5 V bias | 2525 mV |
| 3.3 V | 3282 mV |
| 1.5 V | 1487 mV |
| XF HSS 1.5 V | 1501 mV |
| XF1 1.0 V | 1001 mV |
| XF2 1.0 V | 1003 mV |
| XF3 1.0 V | 998 mV |
| XF1 1.8 V LDO | 1782 mV |
| XF2 1.8 V LDO | 1792 mV |
| XF3 1.8 V LDO | 1782 mV |
| CLK BUF 2.5 V LDO | 2493 mV |
| XF1 1.0 V LDO | 991 mV |
| XF2 1.0 V LDO | 991 mV |
| XF3 1.0 V LDO | 991 mV |
| PCIe SW 3.3 V | 3274 mV |
| PCIe 1.0 V | 996 mV |
| RETIMER 1.2 V | 1174 mV |
| RETIMER IO 1.8 V | 1770 mV |
| | 0 mV |

Power (B)

| | |
|-------|------|
| 1.2 V | 0 mV |
| 2.5 V | 0 mV |
| 3.3 V | 0 mV |
| 9.0 V | 0 mV |

[...Output Truncated...]

lcc2-re0:

SIB 0 status:

| | |
|--------------------|------------------------------|
| State | Online |
| Temperature | 42 degrees C / 107 degrees F |
| Temperature (B) | Absent |
| Max Jn Temperature | 51 degrees C / 123 degrees F |
| Power | |
| 8.0 V bias | 8146 mV |
| 3.3 V bias | 3277 mV |
| FPGA 0.9 V bias | 903 mV |


```

FPGA 1.1 V bias      1089 mV
FPGA 1.5 V bias      1479 mV
FPGA 2.5 V bias      2515 mV
3.3 V                3277 mV
1.5 V                1482 mV
XF HSS 1.5 V         1501 mV
XF1 1.0 V            1001 mV
XF2 1.0 V            1003 mV
XF3 1.0 V            998 mV
XF1 1.8 V LDO        1787 mV
XF2 1.8 V LDO        1792 mV
XF3 1.8 V LDO        1792 mV
CLK BUF 2.5 V LDO    2481 mV
XF1 1.0 V LDO        986 mV
XF2 1.0 V LDO        993 mV
XF3 1.0 V LDO        991 mV
PCIE SW 3.3 V        3279 mV
PCIE 1.0 V            991 mV
RETIMER 1.2 V        1179 mV
RETIMER IO 1.8 V     1772 mV
0 mV
Power (B)
1.2 V                0 mV
2.5 V                0 mV
3.3 V                0 mV
9.0 V                0 mV
[...Output Truncated...]

```

show chassis environment sib (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 Sensor 34 degrees C / 93 degrees F
```

```
SIB 0 Exhaust-B Temp Sensor 38 degrees C / 100 degrees F
```

```
SIB 0 PF0 Temp Sensor 47 degrees C / 116 degrees F
```

```
SIB 0 PF1 Temp Sensor 40 degrees C / 104 degrees F
```

```
Power
```

```
PF0 Core 0.9V 925 mV 28929 mA 26835 mW
```

```
PF0 AVDD 1V 1000 mV 32656 mA 32718 mW
```

```
PF1 Core 0.9V 922 mV 28351 mA 26210 mW
```

```
PF1 AVDD 1V 1000 mV 30890 mA 30937 mW
```

```
12V 12311 mV 10880 mA 134744 mW
```

```
SIB 1 status:
```

```
State Online
```

```
SIB 1 Intake-A Temp Sensor 43 degrees C / 109 degrees F
```

```
SIB 1 Intake-B Temp Sensor 35 degrees C / 95 degrees F
```

```
SIB 1 Exhaust-A Temp Sensor 37 degrees C / 98 degrees F
```

```
SIB 1 Exhaust-B Temp Sensor 45 degrees C / 113 degrees F
```

```
SIB 1 PF0 Temp Sensor 54 degrees C / 129 degrees F
```

```
SIB 1 PF1 Temp Sensor 42 degrees C / 107 degrees F
```

```
Power
```

```
PF0 Core 0.9V 951 mV 30468 mA 29007 mW
```

```
PF0 AVDD 1V 999 mV 32921 mA 32921 mW
```

```
PF1 Core 0.9V 924 mV 29046 mA 26828 mW
```

```
PF1 AVDD 1V 1000 mV 30796 mA 30796 mW
```

```
12V 12298 mV 11356 mA 140682 mW
```

```
SIB 2 status:
```

```
State Online
```

```
SIB 2 Intake-A Temp Sensor 45 degrees C / 113 degrees F
```

```
SIB 2 Intake-B Temp Sensor 36 degrees C / 96 degrees F
```

```
SIB 2 Exhaust-A Temp Sensor 38 degrees C / 100 degrees F
```

```
SIB 2 Exhaust-B Temp Sensor 46 degrees C / 114 degrees F
```

```
SIB 2 PF0 Temp Sensor 55 degrees C / 131 degrees F
```

```
SIB 2 PF1 Temp Sensor 43 degrees C / 109 degrees F
```

```
Power
```

```
PF0 Core 0.9V 924 mV 28273 mA 26140 mW
```

```
PF0 AVDD 1V 1000 mV 32562 mA 32625 mW
```


| | | | |
|---------------|----------|----------|-----------|
| PF1 Core 0.9V | 925 mV | 29351 mA | 27265 mW |
| PF1 AVDD 1V | 999 mV | 31812 mA | 31859 mW |
| 12V | 12351 mV | 11010 mA | 137481 mW |

SIB 3 status:

| | |
|-------|--------|
| State | Online |
|-------|--------|

SIB 3 Intake-A Temp Sensor 44 degrees C / 111 degrees F

SIB 3 Intake-B Temp Sensor 36 degrees C / 96 degrees F

SIB 3 Exhaust-A Temp Sensor 37 degrees C / 98 degrees F

SIB 3 Exhaust-B Temp Sensor 45 degrees C / 113 degrees F

SIB 3 PF0 Temp Sensor 54 degrees C / 129 degrees F

SIB 3 PF1 Temp Sensor 43 degrees C / 109 degrees F

Power

| | | | |
|---------------|----------|----------|-----------|
| PF0 Core 0.9V | 924 mV | 28820 mA | 26695 mW |
| PF0 AVDD 1V | 999 mV | 32265 mA | 32281 mW |
| PF1 Core 0.9V | 923 mV | 28933 mA | 26757 mW |
| PF1 AVDD 1V | 999 mV | 31281 mA | 31265 mW |
| 12V | 12285 mV | 11096 mA | 137296 mW |

SIB 4 status:

| | |
|-------|--------|
| State | Online |
|-------|--------|

SIB 4 Intake-A Temp Sensor 45 degrees C / 113 degrees F

SIB 4 Intake-B Temp Sensor 36 degrees C / 96 degrees F

SIB 4 Exhaust-A Temp Sensor 37 degrees C / 98 degrees F

SIB 4 Exhaust-B Temp Sensor 46 degrees C / 114 degrees F

SIB 4 PF0 Temp Sensor 54 degrees C / 129 degrees F

SIB 4 PF1 Temp Sensor 43 degrees C / 109 degrees F

Power

| | | | |
|---------------|----------|----------|-----------|
| PF0 Core 0.9V | 950 mV | 29757 mA | 28281 mW |
| PF0 AVDD 1V | 999 mV | 32109 mA | 32093 mW |
| PF1 Core 0.9V | 948 mV | 29460 mA | 27921 mW |
| PF1 AVDD 1V | 999 mV | 30687 mA | 30671 mW |
| 12V | 12193 mV | 11183 mA | 137352 mW |

SIB 5 status:

| | |
|-------|--------|
| State | Online |
|-------|--------|

SIB 5 Intake-A Temp Sensor 38 degrees C / 100 degrees F

SIB 5 Intake-B Temp Sensor 32 degrees C / 89 degrees F

SIB 5 Exhaust-A Temp Sensor 35 degrees C / 95 degrees F

SIB 5 Exhaust-B Temp Sensor 39 degrees C / 102 degrees F

SIB 5 PF0 Temp Sensor 45 degrees C / 113 degrees F

SIB 5 PF1 Temp Sensor 43 degrees C / 109 degrees F

Power

| | | | |
|---------------|--------|----------|----------|
| PF0 Core 0.9V | 951 mV | 29546 mA | 28156 mW |
| PF0 AVDD 1V | 999 mV | 31468 mA | 31468 mW |
| PF1 Core 0.9V | 948 mV | 30007 mA | 28515 mW |

| | | | |
|-------------|----------|----------|-----------|
| PF1 AVDD 1V | 999 mV | 31812 mA | 31859 mW |
| 12V | 12179 mV | 11399 mA | 139720 mW |

show chassis environment sib (PTX10016 Router)

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

SIB 0 status:

| State | Online |
|-----------------------------|-----------------------------|
| SIB 0 Intake-A Temp Sensor | 22 degrees C / 71 degrees F |
| SIB 0 Intake-B Temp Sensor | 21 degrees C / 69 degrees F |
| SIB 0 Intake-C Temp Sensor | 17 degrees C / 62 degrees F |
| SIB 0 Exhaust-A Temp Sensor | 29 degrees C / 84 degrees F |
| SIB 0 Exhaust-B Temp Sensor | 30 degrees C / 86 degrees F |
| SIB 0 Exhaust-C Temp Sensor | 25 degrees C / 77 degrees F |
| SIB 0 PF0 Temp Sensor | 31 degrees C / 87 degrees F |
| SIB 0 PF1 Temp Sensor | 31 degrees C / 87 degrees F |
| SIB 0 PF2 Temp Sensor | 32 degrees C / 89 degrees F |
| SIB 0 PF3 Temp Sensor | 33 degrees C / 91 degrees F |
| SIB 0 PF4 Temp Sensor | 29 degrees C / 84 degrees F |
| SIB 0 PF5 Temp Sensor | 27 degrees C / 80 degrees F |

Power

| | | | |
|---------------|----------|----------|-----------|
| PF0 Core 0.9V | 924 mV | 24429 mA | 22664 mW |
| PF0 AVDD 1V | 999 mV | 19515 mA | 19531 mW |
| PF1 Core 0.9V | 924 mV | 24531 mA | 22679 mW |
| PF1 AVDD 1V | 999 mV | 17796 mA | 17812 mW |
| PF2 Core 0.9V | 924 mV | 24308 mA | 22503 mW |
| PF2 AVDD 1V | 999 mV | 16250 mA | 16265 mW |
| PF3 Core 0.9V | 925 mV | 24414 mA | 22601 mW |
| PF3 AVDD 1V | 999 mV | 15023 mA | 15023 mW |
| PF4 Core 0.9V | 924 mV | 24089 mA | 22285 mW |
| PF4 AVDD 1V | 1000 mV | 15148 mA | 15156 mW |
| PF5 Core 0.9V | 898 mV | 23601 mA | 21273 mW |
| PF5 AVDD 1V | 999 mV | 15453 mA | 15453 mW |
| 12V | 12311 mV | 11399 mA | 141366 mW |
| 12V_1 | 12325 mV | 11053 mA | 137204 mW |

SIB 1 status:

| State | Online |
|-----------------------------|-----------------------------|
| SIB 1 Intake-A Temp Sensor | 23 degrees C / 73 degrees F |
| SIB 1 Intake-B Temp Sensor | 23 degrees C / 73 degrees F |
| SIB 1 Intake-C Temp Sensor | 18 degrees C / 64 degrees F |
| SIB 1 Exhaust-A Temp Sensor | 30 degrees C / 86 degrees F |

SIB 1 Exhaust-B Temp Sensor 32 degrees C / 89 degrees F
 SIB 1 Exhaust-C Temp Sensor 25 degrees C / 77 degrees F
 SIB 1 PF0 Temp Sensor 33 degrees C / 91 degrees F
 SIB 1 PF1 Temp Sensor 32 degrees C / 89 degrees F
 SIB 1 PF2 Temp Sensor 34 degrees C / 93 degrees F
 SIB 1 PF3 Temp Sensor 39 degrees C / 102 degrees F
 SIB 1 PF4 Temp Sensor 29 degrees C / 84 degrees F
 SIB 1 PF5 Temp Sensor 28 degrees C / 82 degrees F

Power

| | | | |
|---------------|----------|----------|-----------|
| PF0 Core 0.9V | 949 mV | 24101 mA | 22910 mW |
| PF0 AVDD 1V | 1000 mV | 19046 mA | 19062 mW |
| PF1 Core 0.9V | 924 mV | 24375 mA | 22546 mW |
| PF1 AVDD 1V | 999 mV | 17843 mA | 17859 mW |
| PF2 Core 0.9V | 923 mV | 24183 mA | 22355 mW |
| PF2 AVDD 1V | 999 mV | 16109 mA | 16117 mW |
| PF3 Core 0.9V | 949 mV | 24246 mA | 23097 mW |
| PF3 AVDD 1V | 1000 mV | 14632 mA | 14632 mW |
| PF4 Core 0.9V | 925 mV | 23613 mA | 21882 mW |
| PF4 AVDD 1V | 1000 mV | 14742 mA | 14710 mW |
| PF5 Core 0.9V | 924 mV | 24328 mA | 22515 mW |
| PF5 AVDD 1V | 1000 mV | 14640 mA | 14664 mW |
| 12V | 12351 mV | 11096 mA | 138036 mW |
| 12V_1 | 12219 mV | 11226 mA | 137500 mW |

SIB 2 status:

State Online

SIB 2 Intake-A Temp Sensor 25 degrees C / 77 degrees F
 SIB 2 Intake-B Temp Sensor 22 degrees C / 71 degrees F
 SIB 2 Intake-C Temp Sensor 18 degrees C / 64 degrees F
 SIB 2 Exhaust-A Temp Sensor 29 degrees C / 84 degrees F
 SIB 2 Exhaust-B Temp Sensor 33 degrees C / 91 degrees F
 SIB 2 Exhaust-C Temp Sensor 24 degrees C / 75 degrees F
 SIB 2 PF0 Temp Sensor 33 degrees C / 91 degrees F
 SIB 2 PF1 Temp Sensor 31 degrees C / 87 degrees F
 SIB 2 PF2 Temp Sensor 34 degrees C / 93 degrees F
 SIB 2 PF3 Temp Sensor 42 degrees C / 107 degrees F
 SIB 2 PF4 Temp Sensor 28 degrees C / 82 degrees F
 SIB 2 PF5 Temp Sensor 27 degrees C / 80 degrees F

Power

| | | | |
|---------------|--------|----------|----------|
| PF0 Core 0.9V | 899 mV | 24046 mA | 21656 mW |
| PF0 AVDD 1V | 999 mV | 19265 mA | 19250 mW |
| PF1 Core 0.9V | 900 mV | 24234 mA | 21867 mW |
| PF1 AVDD 1V | 999 mV | 18000 mA | 18015 mW |
| PF2 Core 0.9V | 900 mV | 23250 mA | 20953 mW |

| | | | |
|---------------|----------|----------|-----------|
| PF2 AVDD 1V | 999 mV | 16328 mA | 16343 mW |
| PF3 Core 0.9V | 899 mV | 23976 mA | 21570 mW |
| PF3 AVDD 1V | 999 mV | 14976 mA | 15007 mW |
| PF4 Core 0.9V | 924 mV | 23718 mA | 21976 mW |
| PF4 AVDD 1V | 1000 mV | 14781 mA | 14765 mW |
| PF5 Core 0.9V | 899 mV | 23265 mA | 20937 mW |
| PF5 AVDD 1V | 999 mV | 15125 mA | 15132 mW |
| 12V | 12298 mV | 10750 mA | 133523 mW |
| 12V_1 | 12245 mV | 10880 mA | 134041 mW |

SIB 3 status:

| | |
|-----------------------------|------------------------------|
| State | Online |
| SIB 3 Intake-A Temp Sensor | 23 degrees C / 73 degrees F |
| SIB 3 Intake-B Temp Sensor | 25 degrees C / 77 degrees F |
| SIB 3 Intake-C Temp Sensor | 17 degrees C / 62 degrees F |
| SIB 3 Exhaust-A Temp Sensor | 30 degrees C / 86 degrees F |
| SIB 3 Exhaust-B Temp Sensor | 32 degrees C / 89 degrees F |
| SIB 3 Exhaust-C Temp Sensor | 25 degrees C / 77 degrees F |
| SIB 3 PF0 Temp Sensor | 33 degrees C / 91 degrees F |
| SIB 3 PF1 Temp Sensor | 31 degrees C / 87 degrees F |
| SIB 3 PF2 Temp Sensor | 32 degrees C / 89 degrees F |
| SIB 3 PF3 Temp Sensor | 40 degrees C / 104 degrees F |
| SIB 3 PF4 Temp Sensor | 28 degrees C / 82 degrees F |
| SIB 3 PF5 Temp Sensor | 27 degrees C / 80 degrees F |

Power

| | | | |
|---------------|----------|----------|-----------|
| PF0 Core 0.9V | 924 mV | 24558 mA | 22734 mW |
| PF0 AVDD 1V | 999 mV | 19500 mA | 19515 mW |
| PF1 Core 0.9V | 925 mV | 24570 mA | 22750 mW |
| PF1 AVDD 1V | 999 mV | 17609 mA | 17625 mW |
| PF2 Core 0.9V | 899 mV | 23144 mA | 20832 mW |
| PF2 AVDD 1V | 1000 mV | 16375 mA | 16390 mW |
| PF3 Core 0.9V | 925 mV | 24203 mA | 22414 mW |
| PF3 AVDD 1V | 1000 mV | 15039 mA | 15023 mW |
| PF4 Core 0.9V | 899 mV | 23523 mA | 21183 mW |
| PF4 AVDD 1V | 999 mV | 15273 mA | 15296 mW |
| PF5 Core 0.9V | 924 mV | 24125 mA | 22367 mW |
| PF5 AVDD 1V | 1000 mV | 14953 mA | 14968 mW |
| 12V | 12245 mV | 10880 mA | 133652 mW |
| 12V_1 | 12259 mV | 11053 mA | 136464 mW |

SIB 4 status:

| | |
|----------------------------|-----------------------------|
| State | Online |
| SIB 4 Intake-A Temp Sensor | 23 degrees C / 73 degrees F |
| SIB 4 Intake-B Temp Sensor | 26 degrees C / 78 degrees F |
| SIB 4 Intake-C Temp Sensor | 18 degrees C / 64 degrees F |

SIB 4 Exhaust-A Temp Sensor 30 degrees C / 86 degrees F
 SIB 4 Exhaust-B Temp Sensor 33 degrees C / 91 degrees F
 SIB 4 Exhaust-C Temp Sensor 24 degrees C / 75 degrees F
 SIB 4 PF0 Temp Sensor 34 degrees C / 93 degrees F
 SIB 4 PF1 Temp Sensor 32 degrees C / 89 degrees F
 SIB 4 PF2 Temp Sensor 33 degrees C / 91 degrees F
 SIB 4 PF3 Temp Sensor 41 degrees C / 105 degrees F
 SIB 4 PF4 Temp Sensor 28 degrees C / 82 degrees F
 SIB 4 PF5 Temp Sensor 27 degrees C / 80 degrees F

Power

| | | | |
|---------------|----------|----------|-----------|
| PF0 Core 0.9V | 925 mV | 24644 mA | 22824 mW |
| PF0 AVDD 1V | 999 mV | 19375 mA | 19390 mW |
| PF1 Core 0.9V | 900 mV | 24109 mA | 21703 mW |
| PF1 AVDD 1V | 999 mV | 17687 mA | 17695 mW |
| PF2 Core 0.9V | 899 mV | 24085 mA | 21710 mW |
| PF2 AVDD 1V | 999 mV | 16578 mA | 16570 mW |
| PF3 Core 0.9V | 949 mV | 24652 mA | 23410 mW |
| PF3 AVDD 1V | 1000 mV | 14445 mA | 14453 mW |
| PF4 Core 0.9V | 924 mV | 23902 mA | 22097 mW |
| PF4 AVDD 1V | 999 mV | 14750 mA | 14742 mW |
| PF5 Core 0.9V | 925 mV | 24082 mA | 22308 mW |
| PF5 AVDD 1V | 999 mV | 14671 mA | 14671 mW |
| 12V | 12338 mV | 11139 mA | 138277 mW |
| 12V_1 | 12325 mV | 11356 mA | 140978 mW |

SIB 5 status:

State Online

SIB 5 Intake-A Temp Sensor 22 degrees C / 71 degrees F
 SIB 5 Intake-B Temp Sensor 22 degrees C / 71 degrees F
 SIB 5 Intake-C Temp Sensor 18 degrees C / 64 degrees F
 SIB 5 Exhaust-A Temp Sensor 28 degrees C / 82 degrees F
 SIB 5 Exhaust-B Temp Sensor 28 degrees C / 82 degrees F
 SIB 5 Exhaust-C Temp Sensor 25 degrees C / 77 degrees F
 SIB 5 PF0 Temp Sensor 32 degrees C / 89 degrees F
 SIB 5 PF1 Temp Sensor 31 degrees C / 87 degrees F
 SIB 5 PF2 Temp Sensor 32 degrees C / 89 degrees F
 SIB 5 PF3 Temp Sensor 33 degrees C / 91 degrees F
 SIB 5 PF4 Temp Sensor 29 degrees C / 84 degrees F
 SIB 5 PF5 Temp Sensor 28 degrees C / 82 degrees F

Power

| | | | |
|---------------|---------|----------|----------|
| PF0 Core 0.9V | 924 mV | 25093 mA | 23210 mW |
| PF0 AVDD 1V | 999 mV | 19781 mA | 19796 mW |
| PF1 Core 0.9V | 899 mV | 24113 mA | 21753 mW |
| PF1 AVDD 1V | 1000 mV | 17968 mA | 17984 mW |

| | | | |
|---------------|----------|----------|-----------|
| PF2 Core 0.9V | 925 mV | 24218 mA | 22437 mW |
| PF2 AVDD 1V | 1000 mV | 16539 mA | 16531 mW |
| PF3 Core 0.9V | 898 mV | 23511 mA | 21164 mW |
| PF3 AVDD 1V | 999 mV | 15015 mA | 15023 mW |
| PF4 Core 0.9V | 975 mV | 25328 mA | 24718 mW |
| PF4 AVDD 1V | 1000 mV | 14578 mA | 14601 mW |
| PF5 Core 0.9V | 923 mV | 24175 mA | 22367 mW |
| PF5 AVDD 1V | 1000 mV | 14789 mA | 14765 mW |
| 12V | 12259 mV | 11053 mA | 136464 mW |
| 12V_1 | 12272 mV | 11226 mA | 138221 mW |

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release 9.6. for the TX Matrix Plus router.

RELATED DOCUMENTATION

[request chassis sib | 478](#)

[show chassis sibs | 1655](#)

[Configuring Junos OS to Upgrade and Downgrade Switch Interface Boards on a TX Matrix Router](#)
[M320 SIB Description](#)

show chassis errors active

IN THIS SECTION

- [Syntax | 1052](#)
- [Description | 1052](#)
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- [Required Privilege Level | 1052](#)

- [Output Fields | 1053](#)
- [Sample Output | 1054](#)
- [show chassis errors active detail \(MX-Series Devices with major error\) | 1056](#)
- [Release Information | 1057](#)

Syntax

```
show chassis errors active
<detail>
<fpc-slot slot>
<detail fpc-slot slot>
```

Description

Display the details of chassis errors. In a high availability application, use these commands on primary RE. If you use these commands on secondary RE, the output shows a warning message to run the commands on primary RE.

Options

| | |
|------------------------------------|---|
| detail | (Optional) Displays detailed system error information. |
| fpc-slot <i>slot</i> | (Optional) Displays the active errors on the selected FPC slot. |
| detail fpc-slot <i>slot</i> | (Optional) Displays the active errors on the selected FPC slot. |

Required Privilege Level

view

Output Fields

Table 60 on page 1053 lists the output fields for the `show chassis errors active detail` command. Output fields are listed in the approximate order in which they appear.

Table 60: Output Fields of `show chassis errors active detail` Command

| Field Name | Field Description |
|------------|--|
| Location | The FPC number. |
| Identifier | The unique identifier of the error. |
| Error | The error type. |
| Scope | Scope of the error. The following scopes are available: <ul style="list-style-type: none"> • board • pfe |
| Category | Error categories include the following: <ul style="list-style-type: none"> • functional • io • storage • memory • processing • switch |
| Severity | 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 |

Table 60: Output Fields of show chassis errors active detail Command (Continued)

| Field Name | Field Description |
|------------|-------------------------------------|
| Details | Details of the error |
| Count | Number of error instances occurred. |
| support | Possible fix for the error |

Sample Output

show chassis errors active (Major error)

```
user@host> show chassis errors active
```

```
Slot 0
```

```
-----
Active Minor Errors: 0
Active Major Errors: 1
Active Fatal Errors: 0
```

NOTE:

```
clear chassis fpc errors error-id <error_id>error-id
```

show chassis errors active detail (MX Series Devices)

```
user@host> show chassis errors active detail
```

```
Slot 0
```

```
-----
Location      : FPC 0
Identifier    : /fpc/0/pfe/0/cm/0/BTCHIP/0/BTCHIP_CMERROR_TEMP_MONITOR
```


Error : BTCHIP_CMERROR_TEMP_MONITOR
 Scope : pfe
 Category : functional
 Severity : Minor
 Details : TEMP_MONITOR: BT Temperature monitor throttled bandwidth
 Count : 1
 Support : No help info provided

 Location : FPC 0
 Identifier : /fpc/0/pfe/0/cm/0/BTCHIP/1/BTCHIP_CMERROR_TEMP_MONITOR
 Error : BTCHIP_CMERROR_TEMP_MONITOR
 Scope : pfe
 Category : functional
 Severity : Minor
 Details : TEMP_MONITOR: BT Temperature monitor throttled bandwidth
 Count : 1
 Support : No help info provided

Slot 1

 Location : FPC 1
 Identifier : /fpc/1/pfe/0/cm/0/PIC0/0/PIC_CMERROR_STORAGE_SMARTD_ERROR
 Error : PIC_CMERROR_STORAGE_SMARTD_ERROR
 Scope : board
 Category : functional
 Severity : Major
 Details : PIC STORAGE SMARTD ERROR
 Count : 1
 Support : No help info provided

 Location : FPC 1
 Identifier : /fpc/1/pfe/0/cm/0/PIC1/0/PIC_CMERROR_DDR_CORRECTABLE_MINOR
 Error : PIC_CMERROR_DDR_CORRECTABLE_MINOR
 Scope : board
 Category : functional
 Severity : Minor
 Details : PIC DDR Correctable Minor Error
 Count : 1
 Support : No help info provided

show chassis errors active detail (MX-Series Devices with major error)

```
user@host> show chassis errors active detail
```

Slot 0

```
-----
Location      : FPC 0
/fpc/0/pfe/0/cm/0/Eth_Port_Error/0/ETH_CMERROR_MAJOR_0
Error         : ETH_CMERROR_MAJOR_0
Scope         : board
Category      : switch
Oc Category   : default
Severity      : Major
Details       : eth0 major error
Count         : 1
Support       : No help info provided
-----
```

show chassis errors active detail fpc-slot

```
user@router> show chassis errors active detail fpc-slot 3
```

Slot 3

```
-----
Location      : FPC 3
Identifier     : /fpc/3/pfe/0/cm/0/XQSS(0)/0/XQSS_CMERROR_CPQW_ERR_INT_FSET_FAST_DEQ_DRY_ERR
Error         : XQSS_CMERROR_CPQW_ERR_INT_FSET_FAST_DEQ_DRY_ERR
Scope         : pfe
Category      : functional
Severity      : Major
Details       : XQSS CPQW FAST DEQ DRY
Count         : 1
Support       : Help for XQSS_CMERROR_CPQW_ERR_INT_FSET_FAST_DEQ_DRY_ERR
```


Release Information

Command introduced in Junos OS Release 17.4R1.

RELATED DOCUMENTATION

[error](#) | [289](#)

[clear chassis fpc errors](#) | [413](#)

show chassis ethernet-switch

IN THIS SECTION

- [Syntax](#) | [1058](#)
- [Syntax \(EX8200 Switch\)](#) | [1058](#)
- [Syntax \(SRX Series Devices\)](#) | [1058](#)
- [Syntax \(T4000 Router\)](#) | [1058](#)
- [Syntax \(TX Matrix Router\)](#) | [1058](#)
- [Syntax \(TX Matrix Plus Router\)](#) | [1059](#)
- [Syntax \(MX Series Router\)](#) | [1059](#)
- [Syntax \(MX2010, MX2020, and MX2008 Universal Routing Platforms\)](#) | [1059](#)
- [Syntax \(MX10008 Universal Routing Platforms\)](#) | [1059](#)
- [Syntax \(PTX Series Packet Transport Routers\)](#) | [1060](#)
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- [Required Privilege Level](#) | [1062](#)
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- [Sample Output](#) | [1069](#)
- [Release Information](#) | [1110](#)

Syntax

```
show chassis ethernet-switch  
<errors <port>>
```

Syntax (EX8200 Switch)

```
show chassis ethernet-switch  
<statistics <port> | switch <number>
```

Syntax (SRX Series Devices)

```
show chassis ethernet-switch  
<errors <port> | statistics <port>>
```

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>>
```

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. Display information about the status of Ethernet switch ports when FPC failures occur and the management Ethernet interface fails on the master RE (MX10008, MX10016, PTX10008, PTX10016, QFX10008, and QFX10016 Switches).

Options

- none** Display information about each connected port on the Ethernet switch. On a TX Matrix router, display information about each connected port on the Ethernet switch on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display information about each connected port on the Ethernet switch on the TX Matrix Plus router and its attached routers.
- all-members** (MX Series routers only) (Optional) Display information about the ports on the CB Ethernet switch on all the members of the Virtual Chassis configuration.
- errors** (Optional) Display the numbers and types of errors accumulated on all ports of the Ethernet switch.
- errors *port*** (Optional) Display the numbers and types of errors accumulated on the specified port (0 through 15) of the Ethernet switch. On the TX Matrix router, replace *port* with a value from 0 through 15. On the TX Matrix Plus router and EX8200 switch, replace *port* with a value from 0 through 27. On the PTX Series Packet Transport 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.

| | |
|---------------------------------------|--|
| errors switch number | (TX Matrix Plus router only) (Optional) Display the numbers and types of errors accumulated on the specified switch. Replace <i>number</i> with a value from 0 through 2. |
| lcc number | (TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number. Replace <i>number</i> with the following values depending on the LCC configuration: <ul style="list-style-type: none"> • 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 <i>member-id</i> 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 <i>number</i> 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 <i>port</i> with a value from 0 through 25. On the TX Matrix Plus router or EX8200 switch, replace <i>port</i> with a value from 0 through 27. On the PTX Series Packet Transport Routers, replace <i>port</i> 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

Output Fields

[Table 61 on page 1063](#) lists the output fields for the `show chassis ethernet-switch` command. Output fields are listed in the approximate order in which they appear.

Table 61: show chassis ethernet-switch Output Fields

| Field Name | Field Description |
|---|--|
| <p>Link is good on port n connected to device</p> <p>or</p> <p>Link is good on Fast Ethernet port n connected to device</p> <p>or</p> <p>Link is good on Gigabit Ethernet port n connected to device</p> <p>or</p> <p>Link is down on Gigabit Ethernet port connected to device</p> | <p>Information about the link between each port on the CB's Ethernet switch and one of the following devices:</p> <ul style="list-style-type: none"> • FPC0 (Flexible PIC Concentrator 0) through FPC7 • Local controller • Routing Engine • Other Routing Engine (on a system with two Routing Engines) • SPMB (Switch Processor Mezzanine Board) • (TX Matrix router only) LCC0 (line-card chassis 0) through LCC3 |
| Speed is | <p>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.</p> <p>NOTE: Irrespective of the device, the speed is 1000 Mb on the MX2010, MX2020, and MX2008 routers.</p> |
| 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>). |

Table 61: show chassis ethernet-switch Output Fields (Continued)

| Field Name | Field Description |
|--|--|
| 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 *n* connected to device FPC*n* (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 *n* connected to device FPC*n* (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. |

Table 61: show chassis ethernet-switch Output Fields (Continued)

| Field Name | Field Description |
|-------------------------------|---|
| 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. |
| 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. |

Table 61: show chassis ethernet-switch Output Fields (Continued)

| Field Name | Field Description |
|----------------------------|--|
| 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. |
| 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. |

Table 61: show chassis ethernet-switch Output Fields (Continued)

| Field Name | Field Description |
|-------------------------------|---|
| 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. |

Table 61: show chassis ethernet-switch Output Fields (Continued)

| Field Name | Field Description |
|--------------------------|---|
| RX FCS Errors | Number of packets discarded because of frame check sequence errors. |
| RX Alignment Errors | Number of incomplete octets received. |
| RX Dropped Packets | Number of incoming packets that were dropped. |
| RX Fragments | Number of fragmented packets received. |
| RX Symbol Errors | Number of symbols received that the router did not correctly decode. |
| RX MAC Control | Number of Media Access Control (MAC) packets received. |
| RX Oversize Packets | Number of oversize packets received. |
| RX Undersize Packets | Number of undersize packets received. |
| RX Jabbers | Total number of frames received that exceed the maximum byte count and contain CRC errors . |
| RX Control Frame Counter | Number of control frames received. |
| RX Pause Frame Counter | Number of pause frames received. |
| RX 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 (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 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 | 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 Xms | 0 |
| TX Frame excessive deferl | 0 |
| TX Oversize Packets | 0 |
| TX Jabbers | 0 |
| TX FCS Error Counter | 0 |
| TX Fragment Counter | 0 |
| TX Byte Counter | 147427010 |
| RX Packets 64 Octets | 181636 |
| RX Packets 65-127 Octets | 517526 |
| RX Packets 128-255 Octets | 1405 |
| RX Packets 256-511 Octets | 42806 |
| RX Packets 512-1023 Octets | 3515 |
| RX Packets 1024-1518 Octets | 8168 |
| RX Packets 1519-2047 Octets | 0 |
| RX Packets 2048-4095 Octets | 0 |
| RX Packets 4096-9216 Octets | 0 |
| RX Octets | 755056 |
| RX Multicast Packets | 0 |
| RX Broadcast Packets | 44490 |
| RX FCS Errors | 0 |
| RX Align Errors | 0 |
| RX Fragments | 0 |
| RX Symbol errors | 0 |
| RX Unsupported opcodes | 0 |
| RX Out of Range Length | 0 |
| RX False Carrier Errors | 0 |
| RX Undersize Packets | 0 |
| RX Oversize Packets | 0 |
| RX Jabbers | 0 |
| RX 1519-1522 Good Vlan frms | 0 |
| RX MTU Exceed Counter | 0 |
| RX Control Frame Counter | 0 |
| RX Pause Frame Counter | 0 |
| RX Byte Counter | 75381869 |

Statistics for port 3 connected to device FPC2:

| | |
|----------------------|---------|
| TX Packets 64 Octets | 1473828 |
|----------------------|---------|

| | |
|-----------------------------|-----------|
| TX Packets 65-127 Octets | 145643 |
| TX Packets 128-255 Octets | 253 |
| TX Packets 256-511 Octets | 285 |
| TX Packets 512-1023 Octets | 612 |
| TX Packets 1024-1518 Octets | 26603 |
| TX Packets 1519-2047 Octets | 0 |
| TX Packets 2048-4095 Octets | 0 |
| TX Packets 4096-9216 Octets | 0 |
| TX 1519-1522 Good Vlan frms | 0 |
| TX Octets | 1647224 |
| TX Multicast Packets | 6 |
| TX Broadcast Packets | 968925 |
| TX Single Collision frames | 0 |
| TX Mult. Collision frames | 0 |
| TX Late Collisions | 0 |
| TX Excessive Collisions | 0 |
| TX Collision frames | 0 |
| TX PAUSEMAC Ctrl Frames | 0 |
| TX MAC ctrl frames | 0 |
| TX Frame deferred 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 | 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 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 | 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 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 | 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 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 | 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 errors (TX Matrix Plus Router)

```

user@host> show chassis ethernet-switch errors
sfc0-re0:
-----
Displaying error for switch 0

Displaying error for switch 1
Accumulated error counts for port 0 connected to device LCC0:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 0
  Disconnects   0
  FX mode       0

lcc0-re0:
-----
Displaying error for switch 0
Accumulated error counts for port 6 connected to device FPC0:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 5
  Disconnects   0
  FX mode       0
Accumulated error counts for port 7 connected to device FPC1:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 7
  Disconnects   0
  FX mode       0
Accumulated error counts for port 19 connected to device Other RE:
  MLT3          0
  Lock          0
  Xmit          0
  ESD           0
  False carrier 0

```



```

Disconnects    0
FX mode        0
Accumulated error counts for port 20 connected to device SFC0:
MLT3           0
Lock           0
Xmit           0
ESD            0
False carrier  0
Disconnects    0
FX mode        0

```

show chassis ethernet-switch sfc errors (TX Matrix Plus Router)

```

user@host> show chassis ethernet-switch errors
switch sfc
sfc0-re0:
-----
Displaying error for switch 1
Accumulated error counts for port 0 connected to device LCC0:
MLT3           0
Lock           0
Xmit           0
ESD            0
False carrier  0
Disconnects    0
FX mode        0
Accumulated error counts for port 2 connected to device LCC1:
MLT3           0
Lock           0
Xmit           0
ESD            0
False carrier  0
Disconnects    0
FX mode        0
Accumulated error counts for port 4 connected to device LCC2:
MLT3           0
Lock           0
Xmit           0
ESD            0
False carrier  0
Disconnects    0

```



```

FX mode          0
Accumulated error counts for port 6 connected to device LCC3:
MLT3             0
Lock             0
Xmit             0
ESD             0
False carrier    0
Disconnects      0
FX mode          0

```

```
lcc0-re0:
```

```
-----
error: command is not valid on the t1600

```

```
lcc1-re0:
```

```
-----
error: command is not valid on the t1600

```

```
lcc2-re0:
```

```
-----
error: command is not valid on the t1600

```

```
lcc3-re0:
```

```
-----
error: command is not valid on the t1600

```

show chassis ethernet-switch statistics (TX Matrix Plus Router)

```

user@host> show chassis ethernet-switch statistics
sfc0-re0:

```

```
-----
Displaying port statistics for switch 0

```

```
Statistics for port 1 connected to device 1GSW:
```

```

TX Packets 64 Octets      5183577
TX Packets 65-127 Octets  67820
TX Packets 128-255 Octets 772
TX Packets 256-511 Octets 136
TX Packets 512-1023 Octets 68
TX Packets 1024-1518 Octets 10881
TX Packets 1519-2047 Octets 0
TX Packets 2048-4095 Octets 0

```



```

TX Packets 4096-9216 Octets  0
TX Packets 9217-16383 Octets  0
TX Octets                    5263254
TX Multicast Packets         16
TX Broadcast Packets         723403
TX PAUSEMAC Ctrl Frames     0
TX Oversize Packets          0
TX FCS Error Counter         0
TX Fragment Counter          0
TX Byte Counter              349922253
TX Packet OK Counter         5263254
TX Pause Packet Counter      0
TX Unicast Counter           4539835
RX Packets 64 Octets         6513629
RX Packets 65-127 Octets     88761
RX Packets 128-255 Octets    6382
RX Packets 256-511 Octets    22027
RX Packets 512-1023 Octets   4319
RX Packets 1024-1518 Octets  49922
RX Packets 1519-2047 Octets  0
RX Packets 2048-4095 Octets  0
RX Packets 4096-9216 Octets  0
RX Packets 9217-16383 Octets  0
RX Octets                    6685040
RX Multicast Packets         4
RX Broadcast Packets         2137376
RX FCS Errors                0
RX Fragments                 0
RX MAC Control Packets       0
RX Out of Range Length       0
RX Undersize Packets         0
RX Oversize Packets          0
RX Jabbers                   0
RX Control Frame Counter     0
RX Pause Frame Counter       0
RX Byte Counter              509224602
RX Unicast Frame Count       4547660
RX Packet OK Count           6685040
Statistics for port 9 connected to device RE1:
TX Packets 64 Octets         2500318
TX Packets 65-127 Octets     443
TX Packets 128-255 Octets    0
TX Packets 256-511 Octets    0

```


| | |
|------------------------------|-----------|
| TX Packets 512-1023 Octets | 0 |
| TX Packets 1024-1518 Octets | 0 |
| TX Packets 1519-2047 Octets | 0 |
| TX Packets 2048-4095 Octets | 0 |
| TX Packets 4096-9216 Octets | 0 |
| TX Packets 9217-16383 Octets | 0 |
| TX Octets | 2500761 |
| TX Multicast Packets | 4 |
| TX Broadcast Packets | 2500757 |
| TX PAUSEMAC Ctrl Frames | 0 |
| TX Oversize Packets | 0 |
| TX FCS Error Counter | 0 |
| TX Fragment Counter | 0 |
| TX Byte Counter | 160049670 |
| TX Packet OK Counter | 0 |
| TX Pause Packet Counter | 0 |
| TX Unicast Counter | 0 |
| RX Packets 64 Octets | 701191 |
| RX Packets 65-127 Octets | 5882 |
| RX Packets 128-255 Octets | 2 |
| RX Packets 256-511 Octets | 0 |
| RX Packets 512-1023 Octets | 17965 |
| RX Packets 1024-1518 Octets | 7 |
| RX Packets 1519-2047 Octets | 0 |
| RX Packets 2048-4095 Octets | 0 |
| RX Packets 4096-9216 Octets | 0 |
| RX Packets 9217-16383 Octets | 0 |
| RX Octets | 725047 |
| RX Multicast Packets | 8 |
| RX Broadcast Packets | 2500757 |
| RX FCS Errors | 0 |
| RX Fragments | 0 |
| RX MAC Control Packets | 0 |
| RX Out of Range Length | 0 |
| RX Undersize Packets | 0 |
| RX Oversize Packets | 0 |
| RX Jabbers | 0 |
| RX Control Frame Counter | 0 |
| RX Pause Frame Counter | 0 |
| RX Byte Counter | 62402656 |
| RX Unicast Frame Count | 0 |
| RX Packet OK Count | 0 |

Statistics for port 17 connected to device RE0:

| | |
|------------------------------|-----------|
| TX Packets 64 Octets | 7214818 |
| TX Packets 65-127 Octets | 94640 |
| TX Packets 128-255 Octets | 6384 |
| TX Packets 256-511 Octets | 22027 |
| TX Packets 512-1023 Octets | 22284 |
| TX Packets 1024-1518 Octets | 49929 |
| TX Packets 1519-2047 Octets | 0 |
| TX Packets 2048-4095 Octets | 0 |
| TX Packets 4096-9216 Octets | 0 |
| TX Packets 9217-16383 Octets | 0 |
| TX Octets | 7410082 |
| TX Multicast Packets | 12 |
| TX Broadcast Packets | 2497247 |
| TX PAUSEMAC Ctrl Frames | 0 |
| TX Oversize Packets | 0 |
| TX FCS Error Counter | 0 |
| TX Fragment Counter | 0 |
| TX Byte Counter | 571626932 |
| TX Packet OK Counter | 0 |
| TX Pause Packet Counter | 0 |
| TX Unicast Counter | 0 |
| RX Packets 64 Octets | 4823701 |
| RX Packets 65-127 Octets | 67812 |
| RX Packets 128-255 Octets | 772 |
| RX Packets 256-511 Octets | 136 |
| RX Packets 512-1023 Octets | 68 |
| RX Packets 1024-1518 Octets | 10881 |
| RX Packets 1519-2047 Octets | 0 |
| RX Packets 2048-4095 Octets | 0 |
| RX Packets 4096-9216 Octets | 0 |
| RX Packets 9217-16383 Octets | 0 |
| RX Octets | 4903370 |
| RX Multicast Packets | 8 |
| RX Broadcast Packets | 2497247 |
| RX FCS Errors | 0 |
| RX Fragments | 0 |
| RX MAC Control Packets | 0 |
| RX Out of Range Length | 0 |
| RX Undersize Packets | 0 |
| RX Oversize Packets | 0 |
| RX Jabbers | 0 |
| RX Control Frame Counter | 0 |
| RX Pause Frame Counter | 0 |

| | |
|------------------------|-----------|
| RX Byte Counter | 326889517 |
| RX Unicast Frame Count | 0 |
| RX Packet OK Count | 0 |

Displaying port statistics for switch 1

Statistics for port 0 connected to device LCC0:

| | |
|-----------------------------|-----------|
| TX Packets 64 Octets | 5053443 |
| TX Packets 65-127 Octets | 59737 |
| TX Packets 128-255 Octets | 768 |
| TX Packets 256-511 Octets | 87 |
| TX Packets 512-1023 Octets | 68 |
| TX Packets 1024-1518 Octets | 85 |
| TX Packets 1519-2047 Octets | 0 |
| TX Packets 2048-4095 Octets | 0 |
| TX Packets 4096-9216 Octets | 0 |
| TX 1519-1522 Good Vlan frms | 0 |
| TX Octets | 5114188 |
| TX Multicast Packets | 16 |
| TX Broadcast Packets | 1125742 |
| TX Single Collision frames | 0 |
| TX Mult. Collision frames | 0 |
| TX Late Collisions | 0 |
| TX Excessive Collisions | 0 |
| TX Collision frames | 0 |
| TX PAUSEMAC Ctrl Frames | 0 |
| TX MAC ctrl frames | 0 |
| TX Frame deferred Xms | 0 |
| TX Frame excessive deferl | 0 |
| TX Oversize Packets | 0 |
| TX Jabbers | 0 |
| TX FCS Error Counter | 0 |
| TX Fragment Counter | 0 |
| TX Byte Counter | 329291449 |
| RX Packets 64 Octets | 5640175 |
| RX Packets 65-127 Octets | 79875 |
| RX Packets 128-255 Octets | 6338 |
| RX Packets 256-511 Octets | 165 |
| RX Packets 512-1023 Octets | 4317 |
| RX Packets 1024-1518 Octets | 10 |
| RX Packets 1519-2047 Octets | 0 |
| RX Packets 2048-4095 Octets | 0 |
| RX Packets 4096-9216 Octets | 0 |
| RX Octets | 5730880 |

| | |
|-----------------------------|-----------|
| RX Multicast Packets | 4 |
| RX Broadcast Packets | 1735007 |
| RX FCS Errors | 0 |
| RX Align Errors | 0 |
| RX Fragments | 0 |
| RX Symbol errors | 0 |
| RX Unsupported opcodes | 0 |
| RX Out of Range Length | 0 |
| RX False Carrier Errors | 0 |
| RX Undersize Packets | 0 |
| RX Oversize Packets | 0 |
| RX Jabbers | 0 |
| RX 1519-1522 Good Vlan frms | 0 |
| RX MTU Exceed Counter | 0 |
| RX Control Frame Counter | 0 |
| RX Pause Frame Counter | 0 |
| RX Byte Counter | 371282850 |

Statistics for port 18 connected to device SPMB:

| | |
|-----------------------------|---------|
| TX Packets 64 Octets | 2990326 |
| TX Packets 65-127 Octets | 8572 |
| TX Packets 128-255 Octets | 4 |
| TX Packets 256-511 Octets | 49 |
| TX Packets 512-1023 Octets | 0 |
| TX Packets 1024-1518 Octets | 10793 |
| TX Packets 1519-2047 Octets | 0 |
| TX Packets 2048-4095 Octets | 0 |
| TX Packets 4096-9216 Octets | 0 |
| TX 1519-1522 Good Vlan frms | 0 |
| TX Octets | 3009744 |
| TX Multicast Packets | 20 |
| TX Broadcast Packets | 2458322 |
| TX Single Collision frames | 0 |
| TX Mult. Collision frames | 0 |
| TX Late Collisions | 0 |
| TX Excessive Collisions | 0 |
| TX Collision frames | 0 |
| TX PAUSEMAC Ctrl Frames | 0 |
| TX MAC ctrl frames | 0 |
| TX Frame deferred 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          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

```

Release Information

Command introduced before Junos OS Release 7.4.

The sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

show chassis fabric degradation

IN THIS SECTION

- Syntax (PTX10004, PTX10008, PTX10016) | 1111
- Description | 1111
- Required Privilege Level | 1111
- Sample Output | 1112

Syntax (PTX10004, PTX10008, PTX10016)

```
show chassis fabric degradation
```

Description

Display the state of fabric degradation for all FPCs.

Required Privilege Level

view

The following table lists the output fields for the `show chassis fabric degradation` command. Output fields are listed in the approximate order in which they appear.

Table 62: show chassis fabric degradation Output Fields

| Field Name | Field Description |
|------------|-------------------|
| FPC | FPC number. |

Table 62: show chassis fabric degradation Output Fields *(Continued)*

| Field Name | Field Description |
|----------------------------|---|
| State | FPC status: Online, Offline, or Empty. |
| Reqd/Curr Planes | Required number of functioning planes / Current number of functioning planes. |
| Configured Degrad(%) | Configured degradation percentage. |
| Time Last Action Initiated | Time stamp when last FPC action was initiated. |

Sample Output

show chassis fabric degradation

```

user@root> show chassis fabric degradation

```

| FPC | State | Reqd/Curr Planes | Configured Degrad(%),action | Current Degrad(%) | Time Last Action Initiated |
|-----|--------|---------------------|--------------------------------|----------------------|-------------------------------|
| 0 | Online | 21/15 | n/a,none | 28 | |
| 1 | Online | 21/15 | n/a,none | 28 | |
| 2 | Online | 21/15 | n/a,none | 28 | |
| 3 | Online | 21/15 | n/a,none | 28 | |
| 4 | Empty | | | | |

RELATED DOCUMENTATION

[show chassis fabric degradation actions](#) | 1113

show chassis fabric degradation actions

IN THIS SECTION

- [Syntax \(PTX10004, PTX10008, PTX10016\) | 1113](#)
- [Description | 1113](#)
- [Options | 1113](#)
- [Required Privilege Level | 1113](#)
- [Sample Output | 1114](#)

Syntax (PTX10004, PTX10008, PTX10016)

```
show chassis fabric degradation actions
```

Description

Display the state of fabric degradation actions for degraded FPCs.

Options

actions Displays information about the fabric degradation actions for all FPCs.

Required Privilege Level

view

The following table lists the output fields for the `show chassis fabric degradation actions` command. Output fields are listed in the approximate order in which they appear.

Table 63: show chassis fabric degradation action Output Fields

| Field Name | Field Description |
|-----------------------|--|
| FPC | Disabled or degraded FPC number. |
| Time Action Started | Time stamp when last FPC action was initiated. |
| Last Action | Last FPC action. |
| Reason | Reason for FPC degradation or FPC offline. |
| Total Actions | Total number of actions initiated on the FPC |
| Time Action Completed | Time stamp when last FPC action was completed. |

Sample Output

show chassis fabric degradation actions

```
user@root> show chassis fabric degradation actions
```

| | | | | | |
|-----|-------------------------|---------|-------------|---------|-------------------------|
| FPC | Time Action | Last | Reason | Total | Time Action |
| | Started | Action | | Actions | Completed |
| 0 | 2020-10-07 10:32:21 PDT | offline | unreachable | 2 | 2020-10-07 10:33:53 PDT |

RELATED DOCUMENTATION

[show chassis fabric degradation](#) | **1111**

show chassis fabric degraded-fabric-reachability

IN THIS SECTION

- [Syntax | 1115](#)
- [Description | 1115](#)
- [Additional Information | 1115](#)
- [Required Privilege Level | 1115](#)
- [Output Fields | 1116](#)
- [Sample Output | 1116](#)
- [Release Information | 1117](#)

Syntax

```
show chassis fabric degraded-fabric-reachability
```

Description

Display the current state of reachability between the Packet Forwarding Engines in the system.

Additional Information

Required Privilege Level

view

Output Fields

Table 64 on page 1116 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 64: show chassis fabric degraded-fabric-reachability Output Fields

| Field Name | Field Description |
|----------------------|--|
| FPC | Display fabric reachability for the displayed FPC slot. PTX10016 supports 16 FPCs and output detail for each 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

```


Release Information

Command introduced in Junos OS Release 12.1X48R4.

RELATED DOCUMENTATION

[show chassis fabric errors](#) | [1151](#)

[show chassis fabric reachability](#) | [1265](#)

[degraded](#) | [280](#)

show chassis fabric destinations

IN THIS SECTION

- [Syntax](#) | [1117](#)
- [Syntax \(MX240, MX480, MX960 , MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms\)](#) | [1118](#)
- [Description](#) | [1118](#)
- [Options](#) | [1118](#)
- [Required Privilege Level](#) | [1118](#)
- [Output Fields](#) | [1118](#)
- [Sample Output](#) | [1119](#)
- [Release Information](#) | [1146](#)

Syntax

```
show chassis fabric destinations
```


Syntax (MX240, MX480, MX960 , MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms)

```
show chassis fabric destinations fpc <fpc-slot-number>
<extended>
```

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

Output Fields

Table 65 on page 1119 lists the output fields for the show chassis fabric destinations command. Output fields are listed in the approximate order in which they appear.

Table 65: show chassis fabric destinations Output Fields

| Field Name | Field Description |
|--|--|
| Fabric destinations state | <p>Indicates the state of the fabric destinations:</p> <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 (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
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 5
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

```

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
Plane 1  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
Plane 3  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
Plane 5  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
2222 2222 2222  2222 2222

```

```
PFE 1
```

```

Plane 0  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
Plane 2  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
2222 2222 2222  2222 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 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  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

```



```

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
```



```

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
FPC 9
PFE 0
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 (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
```

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 MX2010 and MX2020 Universal Routing Platforms.

extended option introduced in Junos OS Release 16.1 for MX2010 and MX2020 Routers.

show chassis fabric faults recovery-actions

IN THIS SECTION

- [Syntax | 1146](#)
- [Description | 1147](#)
- [Required Privilege Level | 1147](#)
- [Output Fields | 1147](#)
- [Sample Output | 1148](#)
- [Release Information | 1148](#)

Syntax

```
show chassis fabric faults recovery-actions
```


Description

Display the last 64 recovery actions related to a fabric null route condition.

Required Privilege Level

view

Output Fields

[Table 66 on page 1147](#) 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 66: show chassis fabric faults recovery-actions Output Fields

| Field Name | Field Description |
|---------------------|--|
| Fault Name | The name of fault detected. The fault name appears in a message such as: 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> |
| Recovery Start Time | The time when recovery actions were initiated. |

Table 66: show chassis fabric faults recovery-actions Output Fields (Continued)

| Field Name | Field Description |
|-----------------|--|
| 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

```

Release Information

Command introduced in Junos OS Release 14.2.

RELATED DOCUMENTATION

[auto-recovery-disable](#)

show chassis fabric feb

IN THIS SECTION

- [Syntax | 1149](#)
- [Description | 1149](#)
- [Options | 1149](#)
- [Required Privilege Level | 1150](#)
- [Output Fields | 1150](#)
- [Sample Output | 1150](#)
- [Release Information | 1151](#)

Syntax

```
show chassis fabric feb
```

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

Output Fields

Table 67 on page 1150 lists the output fields for the `show chassis fabric feb` command.

Table 67: 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
```


Release Information

Command introduced in Junos OS Release 8.0.

show chassis fabric errors

IN THIS SECTION

- [Syntax | 1151](#)
- [Syntax \(PTX Series Packet Transport Routers\) | 1151](#)
- [Description | 1152](#)
- [Options | 1152](#)
- [Required Privilege Level | 1154](#)
- [Output Fields | 1154](#)
- [Sample Output | 1156](#)
- [Release Information | 1158](#)

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)
```


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 primary 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

Output Fields

[Table 68 on page 1154](#) lists the output fields for the `show chassis fabric errors` command. Output fields are listed in the approximate order in which they appear.

Table 68: 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 <code>autoheal</code> was attempted on a SIB that was in fault state. |
| Error log of first 10 errors | List of the first ten errors. |

Table 68: show chassis fabric errors Output Fields (Continued)

| Field Name | Field Description |
|-------------------------------|---|
| Error log of last 10 errors | List of the last ten errors. |
| 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
11Can you provide CLI output for QFX,
depending on which options are available?
```

| 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 Cbl 4 (tx) LCC0-SIB3 Cbl 4 (rx)
2013-03-25 00:16:12 PDT  Action: Plane 3 F13 8 Cbl 4 (autohealing)
2013-03-25 00:17:24 PDT  Req: Plane 3 F13 8 Cbl 4 (tx) LCC0-SIB3 Cbl 4 (rx)
2013-03-25 00:17:24 PDT  Denied: Plane 3 F13 8 Cbl 4 (time < configured)
2013-03-25 00:17:24 PDT  Set info: Plane 3 F13 8 Cbl 4 (skip autoheal)
2013-03-25 01:20:17 PDT  Clear info: Plane 3
```

Release Information

Command introduced in Junos OS Release 10.0.

show chassis fabric fpcs

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Syntax

```
show chassis fabric fpcs  
<lcc number>
```

Syntax (MX Series Routers)

```
show chassis fabric fpcs  
<extended>  
<all-members>  
<local>  
<member member-id>
```

Syntax (T4000, MX2010, MX2020, MX10003, and MX2008 Routers)

```
show chassis fabric fpcs
```


Syntax (PTX Series Packet Transport Routers)

```
show chassis fabric fpcs <slot fpc-slot>
```

Syntax (TX Matrix Plus Router)

```
show chassis fabric fpcs  
<lcc number>
```

Syntax (QFX Series Switches)

```
show chassis fabric fpcs <slot fpc-slot>
```

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 <i>number</i> | (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 <i>number</i> with a following value depending on the LCC configurations: <ul style="list-style-type: none"> • 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 <i>member-id</i> | (MX Series routers only) (Optional) Display the switching fabric link states for the FPCs in the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| slot <i>fpc-slot</i> (Optional) | (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. The FPC slots range from 0-7 in PTX10008 and 0-15 in PTX10016. |

Required Privilege Level

view

Output Fields

Table 69 on page 1162 lists the output fields for the `show chassis fabric fpcs` command. Output fields are listed in the approximate order in which they appear.

Table 69: 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. <p>(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.</p> <ul style="list-style-type: none"> Destination error on PFEs <i>list of PFE numbers</i>—Destination errors to the listed Packet Forwarding Engines. Indicates that the link is not carrying traffic to the listed Packet Forwarding Engines. <p>NOTE: In Junos OS Release 9.6 and later, the list of Packet Forwarding Engines with destination errors is displayed in the output.</p> <p>In Junos OS Releases before 9.6, the output only indicates that there are destination errors. However, the list of Packet Forwarding Engines with destination errors is not displayed.</p> <ul style="list-style-type: none"> Links ok—Link between the spare SIB and FPC is eligible to carry traffic. Link error—Link between the SIB and FPC has CRC errors. However, the link is still eligible to carry traffic. Plane disabled—Fabric plane has been disabled for the following reasons: <ul style="list-style-type: none"> Destination errors have exceeded the thresholds. Run-time link errors have exceeded the thresholds. Initialization time link errors detected, and link training was unsuccessful. Plane Disabled, Links Error (PTX Series Packet Transport 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. |

Table 69: show chassis fabric fpcs Output Fields *(Continued)*

| Field Name | Field Description |
|------------|---|
| | <p>NOTE: On the Enhanced MX SCB with MPC, a maximum of 4 planes are operational and running. On all the other SCBs with MPC, all the planes are operational and running.</p> <ul style="list-style-type: none"> Plane Enabled, Links OK (PTX Series Packet Transport 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 (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 (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 (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 (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 (TX Matrix Router)

```
user@host> show chassis fabric fpcs
lcc0-re0:
-----
Fabric management FPC state:
FPC #0
  PFE #1
    SIB #0
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok
FPC #2
  PFE #1
    SIB #0
      Links ok
    SIB #2
      Links ok
    SIB #3
      Links ok
    SIB #4
      Links ok  FPC #3
FPC #1
  SIB #2
    Plane enabled
  SIB #3
    Link error
    Destination error on PFES
      0  1  2  3  4  5  6  7
      8  9 10 11 12 13 14 15 16 17 18 19 20 21
```



```
SIB #4
      Destination error on PFes      0   1   2   3   4   5   6   7
      8   9  10  11  12  13  14  15  16  17  18  19  20  21
...
FPC #4
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok
FPC #5
  PFE #1
    SIB #4 Links ok
FPC #6
  PFE #1
    SIB #4 Links ok

lcc2-re0:
-----
Fabric management FPC state:
FPC #0
  PFE #1
    SIB #4 Links ok
FPC #1
  PFE #1
    SIB #4 Links ok
FPC #2
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok
FPC #4
  PFE #0
    SIB #4 Links ok
  PFE #1
    SIB #4 Links ok
FPC #5
  PFE #1
    SIB #4 Links ok
```


show chassis fabric fpcs lcc (TX Matrix Router with 3D SIBs)

```
user@host> show chassis fabric fpcs lcc 4
```

```
lcc4-re0:
```

```
-----  
Fabric management FPC state:
```

```
FPC #2
```

```
  PFE #0
```

```
    SIB #0
```

```
      Links ok
```

```
    SIB #1
```

```
      Links ok
```

```
    SIB #2
```

```
      Links ok
```

```
    SIB #3
```

```
      Links ok
```

```
    SIB #4
```

```
      Links ok
```

```
  PFE #1
```

```
    SIB #0
```

```
      Links ok
```

```
    SIB #1
```

```
      Links ok
```

```
    SIB #2
```

```
      Links ok
```

```
    SIB #3
```

```
      Links ok
```

```
    SIB #4
```

```
      Links ok
```

```
FPC #3
```

```
  PFE #0
```

```
    SIB #0
```

```
      Links ok
```

```
    SIB #1
```

```
      Links ok
```

```
    SIB #2
```

```
      Links ok
```

```
    SIB #3
```

```
      Links ok
```

```
    SIB #4
```

```
      Links ok
```

```
  PFE #1
```



```

SIB #0
    Links ok
SIB #1
    Links ok
SIB #2
    Links ok
SIB #3
    Links ok
SIB #4
    Links ok

```

show chassis fabric fpcs (T1600 Router)

```

user@host> show chassis fabric fpcs
Fabric management FPC state:
FPC #0
  PFE #0
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
  PFE #1
    SIB #0
      Links ok
    SIB #1
      Plane enabled
    SIB #2
      Plane enabled
    SIB #3
      Plane enabled
    SIB #4
      Plane enabled
FPC #1
  PFE #0
    SIB #0

```



```
Links ok
SIB #1
    Plane enabled
SIB #2
    Plane enabled
SIB #3
    Plane enabled
SIB #4
    Plane enabled
PFE #1
    SIB #0
        Links ok
    SIB #1
        Plane enabled
    SIB #2
        Plane enabled
    SIB #3
        Plane enabled
    SIB #4
        Plane enabled
FPC #2
    PFE #0
        SIB #0
            Links ok
        SIB #1
            Plane enabled
        SIB #2
            Plane enabled
        SIB #3
            Plane enabled
        SIB #4
            Plane enabled
FPC #4
    PFE #0
        SIB #0
            Links ok
        SIB #1
            Plane enabled
        SIB #2
            Plane enabled
        SIB #3
            Plane enabled
        SIB #4
```



```

    Plane enabled
PFE #1
  SIB #0
    Links ok
  SIB #1
    Plane enabled
  SIB #2
    Plane enabled
  SIB #3
    Plane enabled
  SIB #4
    Plane enabled
FPC #3
  PFE #1
    SIB #2
      Plane enabled
    SIB #3
      Link error
      Destination error on PFEs      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
            Plane enabled
        SIB #3
            Link error
            Destination error on PFEs
            0   1   2   3   4   5   6   7
            8   9  10  11  12  13  14  15  16  17  18  19  20  21
        SIB #4
            Destination error on PFEs
            0   1   2   3   4   5   6   7
            8   9  10  11  12  13  14  15  16  17  18  19  20  21
FPC #4
    PFE #0
        SIB #0
            Unused
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
    PFE #1
        SIB #0
            Unused
        SIB #1
            Links ok
        SIB #2
```



```

        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
FPC #6
    PFE #0
        SIB #0
            Unused
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
    PFE #1
        SIB #0
            Unused
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
FPC #7
    PFE #0
        SIB #0
            Unused
        SIB #1
            Links ok
        SIB #2
            Links ok
        SIB #3
            Links ok
        SIB #4
            Links ok
```

lcc1-re0:

Fabric management FPC state:

FPC #2

PFE #0

SIB #0

Links ok

SIB #1

Links ok

SIB #2

Links ok

SIB #3

Links ok

SIB #4

Links ok

PFE #1

SIB #0

Links ok

SIB #1

Links ok

SIB #2

Links ok

SIB #3

Links ok

SIB #4

Links ok

FPC #4

PFE #0

SIB #0

Links ok

SIB #1

Links ok

SIB #2

Links ok

SIB #3

Links ok

SIB #4

Links ok

PFE #1

SIB #0

Links ok

SIB #1

Links ok

SIB #2

Links ok


```
SIB #3
    Destination error on PFEs      1   8   9  29  40  65  72  73
    93 104
SIB #4
    Links ok
FPC #6
PFE #0
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        Links ok
PFE #1
    SIB #0
        Links ok
    SIB #1
        Links ok
    SIB #2
        Links ok
    SIB #3
        Links ok
    SIB #4
        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 (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 (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. For PTX10008, the ASIC numbering is 0-2 and for PTX10016, ASIC numbering is 0-5.

show chassis fabric fpcs (PTX10008)

```

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 (QFX10008 Switch)

```

user@host> show chassis fabric fpcs slot 0
Fabric management FPC state:
FPC #0
  PFE #0
    SIB0_PF0 (plane 0)  Plane Enabled, Links OK
    SIB0_PF1 (plane 1)  Plane Enabled, Links OK

```



```

SIB1_PFO (plane 2) Plane Enabled, Links OK
SIB1_PFI (plane 3) Plane Enabled, Links OK
SIB2_PFO (plane 4) Plane Enabled, Links OK
SIB2_PFI (plane 5) Plane Enabled, Links OK
SIB3_PFO (plane 6) Plane Enabled, Links OK
SIB3_PFI (plane 7) Plane Enabled, Links OK
SIB4_PFO (plane 8) Plane Enabled, Links OK
SIB4_PFI (plane 9) Plane Enabled, Links OK
SIB5_PFO (plane 10) Plane Enabled, Links OK
SIB5_PFI (plane 11) Plane Enabled, Links OK

```

PFE #1

```

SIB0_PFO (plane 0) Plane Enabled, Links OK
SIB0_PFI (plane 1) Plane Enabled, Links OK
SIB1_PFO (plane 2) Plane Enabled, Links OK
SIB1_PFI (plane 3) Plane Enabled, Links OK
SIB2_PFO (plane 4) Plane Enabled, Links OK
SIB2_PFI (plane 5) Plane Enabled, Links OK
SIB3_PFO (plane 6) Plane Enabled, Links OK
SIB3_PFI (plane 7) Plane Enabled, Links OK
SIB4_PFO (plane 8) Plane Enabled, Links OK
SIB4_PFI (plane 9) Plane Enabled, Links OK
SIB5_PFO (plane 10) Plane Enabled, Links OK
SIB5_PFI (plane 11) Plane Enabled, Links OK

```

PFE #2

```

SIB0_PFO (plane 0) Plane Enabled, Links OK
SIB0_PFI (plane 1) Plane Enabled, Links OK
SIB1_PFO (plane 2) Plane Enabled, Links OK
SIB1_PFI (plane 3) Plane Enabled, Links OK
SIB2_PFO (plane 4) Plane Enabled, Links OK
SIB2_PFI (plane 5) Plane Enabled, Links OK
SIB3_PFO (plane 6) Plane Enabled, Links OK
SIB3_PFI (plane 7) Plane Enabled, Links OK
SIB4_PFO (plane 8) Plane Enabled, Links OK
SIB4_PFI (plane 9) Plane Enabled, Links OK
SIB5_PFO (plane 10) Plane Enabled, Links OK
SIB5_PFI (plane 11) Plane Enabled, Links OK

```

PFE #3

```

SIB0_PFO (plane 0) Plane Enabled, Links OK
SIB0_PFI (plane 1) Plane Enabled, Links OK
SIB1_PFO (plane 2) Plane Enabled, Links OK
SIB1_PFI (plane 3) Plane Enabled, Links OK
SIB2_PFO (plane 4) Plane Enabled, Links OK
SIB2_PFI (plane 5) Plane Enabled, Links OK

```



```
SIB3_PF0 (plane 6)  Plane Enabled, Links OK
SIB3_PF1 (plane 7)  Plane Enabled, Links OK
SIB4_PF0 (plane 8)  Plane Enabled, Links OK
SIB4_PF1 (plane 9)  Plane Enabled, Links OK
SIB5_PF0 (plane 10) Plane Enabled, Links OK
SIB5_PF1 (plane 11) Plane Enabled, Links OK
```

Release Information

Command introduced before Junos OS Release 7.4.

extended option introduced in JunosOS Release 16.1 for MX2020 and MX2010 Routers.

RELATED DOCUMENTATION

[request chassis fpc | 438](#)

[Displaying Information About DPCs or FPCs in an MX Series Router](#)

show chassis fabric map

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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>
```

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

Output Fields

[Table 70 on page 1201](#) lists the output fields for the `show chassis fabric map` command. Output fields are listed in the approximate order in which they appear.

Table 70: 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. |

Table 70: show chassis fabric map Output Fields (*Continued*)

| Field Name | Field Description |
|--------------|--|
| 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 |

Release Information

Command introduced in Junos OS Release 8.0.

show chassis fabric plane

IN THIS SECTION

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Syntax

```
show chassis fabric plane
```


Syntax (TX Matrix Plus Router)

```
show chassis fabric plane
<detail | extensive | terse>
<lcc number | sfc number>
```

Syntax (MX Series Routers)

```
show chassis fabric plane
<extended>
<detail | extensive | terse>
<all-members>
<local>
<member member-id>
```

Description

(TX Matrix Plus router, T4000, T1600, M120, and MX Series routers and EX8200 switches only) On the M120 router, display the state of all fabric plane connections to the Forwarding Engine Boards (FEBs). On MX Series routers, display the state of all fabric plane connections to the Dense Port Concentrators (DPCs) and Packet Forwarding Engines (PFEs) on the Flexible PIC Concentrators (FPCs). On the TX Matrix Plus router, and on T1600 or T4000 routers in a routing matrix, display the state of the fabric management plane and the logical planes on the switch-fabric chassis (SFC) and line-card chassis (LCC). On EX8200 switches, display the state of all fabric planes. This command can be used on the primary 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 <i>number</i> | <p>(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix. • 0 through 7, when T1600 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. • 0, 2, 4, or 6, when T4000 routers are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. |
| local | (MX Series routers only) (Optional) Display the state of all fabric plane connections on the local Virtual Chassis member. |
| member <i>member-id</i> | (MX Series routers only) (Optional) Display the state of all fabric plane connections on the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| sfc <i>number</i> | (TX Matrix Plus router only) (Optional) Show information about the TX Matrix Plus router (SFC). Replace <i>number</i> with 0. |

Required Privilege Level

view

Output Fields

[Table 71 on page 1213](#) lists the output fields for the `show chassis fabric plane` command. Output fields are listed in the approximate order in which they appear.

Table 71: show chassis fabric plane Output Fields

| Field Name | Field Description | Level of output |
|------------|--|-----------------|
| Plane | (TX Matrix Plus, MX Series routers, M120 routers, and EX8200 switches only) Number of the plane. | none |

Table 71: show chassis fabric plane Output Fields (*Continued*)

| Field Name | Field Description | Level of output |
|-------------|---|-----------------|
| Plane state | <p>(MX Series and M120 routers and EX8200 switches only) State of each plane:</p> <ul style="list-style-type: none"> 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 |

Table 71: show chassis fabric plane Output Fields (*Continued*)

| Field Name | Field Description | Level of output |
|------------|---|-----------------|
| 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 |
| 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 |

Table 71: show chassis fabric plane Output Fields (*Continued*)

| Field Name | Field Description | Level of output |
|--------------------|--|-----------------|
| 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. <p>Check state of the SIB can be caused by link errors or destination errors.</p> • 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 71: 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 | | |

Table 71: show chassis fabric plane Output Fields (*Continued*)

| Field Name | Field Description | Level of output |
|---------------------|--|------------------|
| PLANE number | <p>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 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. <p>Check state of the SIB can be caused because of link errors or destination errors.</p> • 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. | extensive |

Table 71: 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 |

Table 71: show chassis fabric plane Output Fields (*Continued*)

| Field Name | Field Description | Level of output |
|---|---|------------------|
| SIB F13 slot-number Odd/Even | 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. | 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 |
| SG number Port number | <p>State of the SG chip ports on the LCC:</p> <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 |

Table 71: show chassis fabric plane Output Fields *(Continued)*

| Field Name | Field Description | Level of output |
|--|-------------------|-----------------|
| Fabric Management SIB State Output Fields for the show chassis fabric plane extensive Command on a TX Matrix Plus Router | | |

Table 71: 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 TX Matrix Plus router (SFC) is still offline. <p>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.</p> <ul style="list-style-type: none"> • 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. <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> <p>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.</p> <p>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.</p> <p>NOTE: The Connected, Disconnected, and SFC Error states are applicable only to the SIBs on an LCC.</p> <ul style="list-style-type: none"> • Online—SIB is operational and running. | extensive |

Table 71: show chassis fabric plane Output Fields (*Continued*)

| Field Name | Field Description | Level of output |
|---------------------------|--|------------------|
| | <ul style="list-style-type: none"> • 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. <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> | |
| LCC SIB Link State | <p>State of the LCC SIB link:</p> <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 |

Table 71: show chassis fabric plane Output Fields (*Continued*)

| Field Name | Field Description | Level of output |
|-------------------------------------|---|------------------|
| SG number Port number | <p>State of the SG chip ports on the LCC:</p> <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 (MX10004 and 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 (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 (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, 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 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 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

```

Release Information

Command introduced in Junos OS Release 8.0.

detail, extensive, lcc, sfc, and terse options introduced for the TX Matrix Plus router in Junos OS Release 9.6.

extended option introduced in Junos OS Release 16.1 for MX2020 and MX2010 Routers.

RELATED DOCUMENTATION

[request chassis fabric plane | 426](#)

[show chassis fabric plane-location | 1251](#)

[Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

show chassis fabric plane-location

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- [Syntax \(MX Series Routers\) | 1252](#)
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Syntax

```
show chassis fabric plane-location
```

Syntax (MX Series Routers)

```
show chassis fabric plane-location  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms)

```
show chassis fabric plane-location  
<extended>
```


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 primary 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 <i>member-id</i> | (MX Series routers only) (Optional) Display the CB location of each fabric plane on the Routing Engines in the specified member in the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| 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

Output Fields

Table 72 on page 1254 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 72: 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 (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 (MX10003 Router)

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

```
-----Fabric Plane Locations-----
```

| | |
|---------|-------|
| Plane 0 | |
| | FPC 0 |
| | FPC 1 |

Plane 1

FPC 0

FPC 1

Plane 2

FPC 0

FPC 1

Plane 3

FPC 0

FPC 1

Plane 4

FPC 0

FPC 1

Plane 5

FPC 0

FPC 1

Plane 6

FPC 0

FPC 1

Plane 7

FPC 0

FPC 1

Plane 8

FPC 0

FPC 1

Plane 9

FPC 0

FPC 1

Plane 10

FPC 0

FPC 1

Plane 11

FPC 0

FPC 1

Plane 12

FPC 0

FPC 1

Plane 13

FPC 0

FPC 1

Plane 14

FPC 0

FPC 1

Plane 15

| | |
|----------|-------|
| | FPC 0 |
| | FPC 1 |
| Plane 16 | |
| | FPC 0 |
| | FPC 1 |
| Plane 17 | |
| | FPC 0 |
| | FPC 1 |
| Plane 18 | |
| | FPC 0 |
| | FPC 1 |
| Plane 19 | |
| | FPC 0 |
| | FPC 1 |
| Plane 20 | |
| | FPC 0 |
| | FPC 1 |
| Plane 21 | |
| | FPC 0 |
| | FPC 1 |

show chassis fabric plane-location (TX Matrix Plus Router)

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

Fabric Plane Locations :

| Plane | SFC ABS-SIB-F13 | SFC ABS-SIB-F2 | LCC ST-SIB-L |
|-------|-----------------|--------------------|--------------|
| 0 | 0, 1 | 0/0, 0/2, 0/4, 0/6 | 0 |
| 1 | 3, 4 | 1/0, 1/2, 1/4, 1/6 | 1 |
| 2 | 6, 7 | 2/0, 2/2, 2/4, 2/6 | 2 |
| 3 | 8, 9 | 3/0, 3/2, 3/4, 3/6 | 3 |
| 4 | 11, 12 | 4/0, 4/2, 4/4, 4/6 | 4 |

show chassis fabric plane-location (TX Matrix Plus Router with 3D SIBs)

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

sfc0-re0

-----Fabric Plane Locations-----

| Plane | SFC SIB F13 | SFC SIB F2 | LCC SIB |
|-------|-------------|--------------------|---------|
| 0 | 0, 1 | 0/0, 0/2, 0/4, 0/6 | 0 |

| | | | |
|---|--------|--------------------|---|
| 1 | 3, 4 | 1/0, 1/2, 1/4, 1/6 | 1 |
| 2 | 6, 7 | 2/0, 2/2, 2/4, 2/6 | 2 |
| 3 | 8, 9 | 3/0, 3/2, 3/4, 3/6 | 3 |
| 4 | 11, 12 | 4/0, 4/2, 4/4, 4/6 | 4 |

show chassis fabric plane-location (EX8200 Switch)

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

-----Fabric Plane Locations-----
Plane 0                Control Board 0
Plane 1                Control Board 0
Plane 2                Control Board 0
Plane 3                Control Board 0
Plane 4                Control Board 1
Plane 5                Control Board 1
Plane 6                Control Board 1
Plane 7                Control Board 1
Plane 8                Control Board 2
Plane 9                Control Board 2
Plane 10               Control Board 2
Plane 11               Control Board 2
```

show chassis fabric plane-location (EX9253 Switch)

```
user@switch> show chassis fabric plane-location

-----Fabric Plane Locations-----
Plane 0
    FPC 0
    FPC 1
Plane 1
    FPC 0
    FPC 1
Plane 2
    FPC 0
    FPC 1
Plane 3
    FPC 0
    FPC 1
```


Plane 4
 FPC 0
 FPC 1
Plane 5
 FPC 0
 FPC 1
Plane 6
 FPC 0
 FPC 1
Plane 7
 FPC 0
 FPC 1
Plane 8
 FPC 0
 FPC 1
Plane 9
 FPC 0
 FPC 1
Plane 10
 FPC 0
 FPC 1
Plane 11
 FPC 0
 FPC 1
Plane 12
 FPC 0
 FPC 1
Plane 13
 FPC 0
 FPC 1
Plane 14
 FPC 0
 FPC 1
Plane 15
 FPC 0
 FPC 1
Plane 16
 FPC 0
 FPC 1
Plane 17
 FPC 0
 FPC 1
Plane 18


```

        FPC 0
        FPC 1
Plane 19
        FPC 0
        FPC 1
Plane 20
        FPC 0
        FPC 1
Plane 21
        FPC 0
        FPC 1
```

show chassis fabric plane-location (PTX Series Packet Transport Routers)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB          Planes
0             0    1
1             2    3
2             4    5
3             6    7
4             8    9
5            10   11
6            12   13
7            14   15
8            16   17
```

show chassis fabric plane-location (PTX10008 Routers)

```

user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB          Planes
0             0    1
1             2    3
2             4    5
3             6    7
4             8    9
5            10   11
```


show chassis fabric plane-location (QFX 10008 Switch)

```
user@host> show chassis fabric plane-location
-----Fabric Plane Locations-----
SIB          Planes
0            0    1
1            2    3
2            4    5
3            6    7
4            8    9
5           10   11
```

Release Information

Command introduced in Junos OS Release 8.0.

extended option introduced in Junos OS Release 16.1R1 for MX2020 and MX2010 Universal Routing Platforms.

show chassis fabric redundancy-mode

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- [Description | 1264](#)
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- [Required Privilege Level | 1264](#)
- [Output Fields | 1264](#)
- [Sample Output | 1265](#)
- [Release Information | 1265](#)

Syntax

```
show chassis fabric redundancy-mode
```

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

Output Fields

[Table 73 on page 1264](#) 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 73: 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
```

Release Information

Command introduced in Junos OS Release 12.2.

RELATED DOCUMENTATION

[Detection and Corrective Actions of Line Cards on MX Series Routers | 35](#)

[Detection and Recovery of Fabric-Related Failures Caused by Loss of Connectivity on MX Series Routers | 32](#)

[MX Series Routers Fabric Resiliency | 29](#)

[redundancy-mode | 372](#)

[Configuring Fabric Redundancy Mode for Active Control Boards on MX Series Routers | 56](#)

show chassis fabric reachability

IN THIS SECTION

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Syntax

```
show chassis fabric reachability
<detail>
<extended>
```

Description

(M320, MX240, MX480, MX960, PTX Series, 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 null-route filtering and attempt healing, and the final resolution of the actions.

Options

- none** Display the state of fabric destination reachability for M320, MX240, MX480, MX960, PTX Series, T640, T1600, and TX Matrix routers, based on periodic reachability checks. Display the system's action phase sequences to stop the null route and attempt healing, and the final resolution.
- detail** (Optional) Display the details of the actions carried out by the system in the different action phases and the final resolution.
- extended** (MX2020 and MX2010 Routers only) (Optional) Display the state of fabric destination reachability for MX2010 and MX2020 routers.

NOTE: Fabric mode cannot be changed dynamically for MX-Series devices. Please reboot the MX device after switching the fabric mode.

Required Privilege Level

view

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 74: show chassis fabric reachability Output Fields

| Field Name | Field Description | Level of Output |
|----------------------------|--|-----------------|
| Fabric reachability status | <p>Display the reachability status of the fabric.</p> <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 |

Table 74: show chassis fabric reachability Output Fields (*Continued*)

| Field Name | Field Description | Level of Output |
|----------------------------|--|-----------------|
| 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 74: show chassis fabric reachability Output Fields (*Continued*)

| Field Name | Field Description | Level of Output |
|---------------------|--|-----------------|
| Initial phase | <p>Starting phase for the healing action.</p> <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 | <p>Current phase for the healing action.</p> <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 | <p>The status of the plane restart phase.</p> <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 |

Table 74: show chassis fabric reachability Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|---------------------------------|---|-----------------|
| 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 |
| 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 |

Table 74: show chassis fabric reachability Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|---------------------------------|--|-----------------|
| 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 |

Table 74: show chassis fabric reachability Output Fields (*Continued*)

| Field Name | Field Description | Level of Output |
|-----------------------|---|-----------------|
| FPC Offline Phase | <p>Status of the FPC offline phase.</p> <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 |
| 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 |

Table 74: show chassis fabric reachability Output Fields (*Continued*)

| Field Name | Field Description | Level of Output |
|--------------------------------|--|-----------------|
| Fabric reachability resolution | <p>Status after the healing actions are performed.</p> <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 (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 reachability (PTX10004, PTX10008, and PTX100016 with PTX10K-LC1202-36MR linecard)

```

user@host> show chassis fabric reachability
Fabric reachability status: No Fabric degradation detected now

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 (PTX10004, PTX10008, and PTX100016 with PTX10K-LC1202-36MR linecard)

```

user@host> show chassis fabric reachability
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

Release Information

Command introduced before Junos OS Release 11.4.

extended option introduced in Junos OS Release 16.1R1 for MX2010 and MX2020 Universal Routing Platforms.

RELATED DOCUMENTATION

[show chassis fabric unreachable-destinations](#) | [1350](#)

show chassis fabric sibs

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Syntax

```
show chassis fabric sibs
<lcc number | scc>
<slot slot-number>
```

Description

(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).

(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.

Options

| | |
|--------------------------------|---|
| 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). (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. |
| <i>lcc number</i> | (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. |
| scc | (Optional) Display the switching fabric link state for the TX-SIBs on the TX Matrix router (switch-card chassis). |
| <i>slot slot-number</i> | (Optional) Display the state of the electrical switch fabric link between the specified SIB slot and the FPCs. |

Required Privilege Level

view

Output Fields

Table 75 on page 1281 lists the output fields for the `show chassis fabric sibs` command. Output fields are listed in the approximate order in which they appear.

Table 75: 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 75: 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. |

Table 75: show chassis fabric sibs Output Fields (Continued)

| Field Name | Field Description |
|------------|--|
| | <ul style="list-style-type: none"> • 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 PTX10008 and PTX10016)

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. Each fabric chip hosts 2 planes (plane 0, 1) in PTX10008. Each fabric chip hosts a single plane (plane 0) in PTX10016.

PTX10008 supports 0-7 FPCs. PTX10016 supports 0-15 FPCs.

```
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

```

Release Information

Command introduced before Junos OS Release 7.4.

Command introduced on QFX Series switches in Junos OS Release 15.1X53-D30

RELATED DOCUMENTATION

[Monitoring the SIBs](#)

[Redundant SIBs Overview](#)

show chassis fabric stream-info

IN THIS SECTION

- [Syntax | 1299](#)
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Syntax

```
show chassis fabric stream-info
```

Description

Display the fabric stream information.

Additional Information

This command provides the fabric stream numbering for all PFEs across all FPC slots in the chassis. The number of PFEs depends on the line card in the chassis.

Required Privilege Level

view

Output Fields

[Table 76 on page 1300](#) lists the output fields for the `show chassis fabric stream-info` command.

The output is displayed independent of the line card and status of the FPC or PFE. The output is based on the chassis and the fabric card. Output displays the maximum PFEs defined for that chassis (for example 8 PFEs for MX2xxx series and 16 PFEs for MX1xxxx series).

Table 76: show chassis fabric stream-info Output Fields

| Field Name | Field Description |
|------------|---|
| FPC | FPC slot number of the Flexible PIC Concentrator (FPC). |

Table 76: show chassis fabric stream-info Output Fields (Continued)

| Field Name | Field Description |
|----------------------------------|--|
| Low/High Priority Fabric Streams | <p>Display fabric stream ID for the PFE ID.</p> <p>Stream is a fabric connection from a source PFE to a destination PFE. There are two fabric streams from every source PFE to the destination PFE, low priority stream and high priority stream. The numbers (values) for low priority streams and high priority streams depend on chassis and the SFB type.</p> <p>The first row displays low priority fabric stream numbers.</p> <ul style="list-style-type: none"> For MX10004, MX10008 and MX10016 devices with SFB2, the numbers are from 0 to 127. In MX2010 and MX2020 chassis with SFB2, the numbers are from 1 to 127 and 256 to 383. <p>The second row displays high priority fabric stream numbers.</p> <ul style="list-style-type: none"> For MX10004, MX10008 and MX10016 devices with SFB2, the numbers are from 128 to 255. In MX2010 and MX2020 chassis with SFB2, the numbers are from 128 to 255 and 384 to 511. <p>Local PFE ID = Unique identifier for a PFE in an FPC.</p> |

Sample Output

show chassis fabric stream-info (MX10008)

```

user@host> show chassis fabric stream-info
Fabric stream info:
  First Row: Low Stream Numbers
  Second Row: High Stream Numbers
FPC                                Low/High Priority Fabric Streams
  PFE0 PFE1 PFE2 PFE3 PFE4 PFE5 PFE6 PFE7 PFE8 PFE9 PFE10 PFE11 PFE12 PFE13
PFE14 PFE15
-----
-----

```


| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | | | | | | | | | | | | | |
| | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 |
| 142 | 143 | | | | | | | | | | | | | |
| 1 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | | | | | | | | | |
| | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 |
| 158 | 159 | | | | | | | | | | | | | |
| 2 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| 46 | 47 | | | | | | | | | | | | | |
| | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 |
| 174 | 175 | | | | | | | | | | | | | |
| 3 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 |
| 62 | 63 | | | | | | | | | | | | | |
| | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 |
| 190 | 191 | | | | | | | | | | | | | |
| 4 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 |
| 78 | 79 | | | | | | | | | | | | | |
| | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 |
| 206 | 207 | | | | | | | | | | | | | |
| 5 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 |
| 94 | 95 | | | | | | | | | | | | | |
| | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 |
| 222 | 223 | | | | | | | | | | | | | |
| 6 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 |
| 110 | 111 | | | | | | | | | | | | | |
| | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 |
| 238 | 239 | | | | | | | | | | | | | |
| 7 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 |
| 126 | 127 | | | | | | | | | | | | | |
| | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 |
| 254 | 255 | | | | | | | | | | | | | |

show chassis fabric stream-info (MX10004)

```
user@host> show chassis fabric stream-info

Fabric stream info:
  First Row:  Low  Stream Numbers
  Second Row: High Stream Numbers
-----
```


| | | | | | | | | | | | | | | |
|-------|-------|----------------------------------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| ----- | | | | | | | | | | | | | | |
| FPC | | Low/High Priority Fabric Streams | | | | | | | | | | | | |
| | PFE0 | PFE1 | PFE2 | PFE3 | PFE4 | PFE5 | PFE6 | PFE7 | PFE8 | PFE9 | PFE10 | PFE11 | PFE12 | PFE13 |
| PFE14 | PFE15 | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | |
| 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | | | | | | | | | | | | | |
| | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 |
| 142 | 143 | | | | | | | | | | | | | |
| 1 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | | | | | | | | | |
| | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 |
| 158 | 159 | | | | | | | | | | | | | |
| 2 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| 46 | 47 | | | | | | | | | | | | | |
| | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 |
| 174 | 175 | | | | | | | | | | | | | |
| 3 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 |
| 62 | 63 | | | | | | | | | | | | | |
| | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 |
| 190 | 191 | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | |
| ----- | | | | | | | | | | | | | | |

show chassis fabric stream-info (MX2020 Routers)

```

user@host> show chassis fabric stream-info
Fabric stream info:
    First Row:  Low  Stream Numbers
    Second Row: High Stream Numbers
-----
FPC              Low/High Priority Fabric Streams
    PFE0  PFE1  PFE2  PFE3  PFE4  PFE5  PFE6  PFE7
-----
0          0    1    2    3   256   257   258   259
          128  129  130  131   384   385   386   387
1          4    5    6    7   260   261   262   263
          132  133  134  135   388   389   390   391
2          8    9   10   11   264   265   266   267
          136  137  138  139   392   393   394   395

```


| | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3 | 12 | 13 | 14 | 15 | 268 | 269 | 270 | 271 |
| | 140 | 141 | 142 | 143 | 396 | 397 | 398 | 399 |
| 4 | 16 | 17 | 18 | 19 | 272 | 273 | 274 | 275 |
| | 144 | 145 | 146 | 147 | 400 | 401 | 402 | 403 |
| 5 | 20 | 21 | 22 | 23 | 276 | 277 | 278 | 279 |
| | 148 | 149 | 150 | 151 | 404 | 405 | 406 | 407 |
| 6 | 24 | 25 | 26 | 27 | 280 | 281 | 282 | 283 |
| | 152 | 153 | 154 | 155 | 408 | 409 | 410 | 411 |
| 7 | 28 | 29 | 30 | 31 | 284 | 285 | 286 | 287 |
| | 156 | 157 | 158 | 159 | 412 | 413 | 414 | 415 |
| 8 | 32 | 33 | 34 | 35 | 288 | 289 | 290 | 291 |
| | 160 | 161 | 162 | 163 | 416 | 417 | 418 | 419 |
| 9 | 36 | 37 | 38 | 39 | 292 | 293 | 294 | 295 |
| | 164 | 165 | 166 | 167 | 420 | 421 | 422 | 423 |
| 10 | 40 | 41 | 42 | 43 | 296 | 297 | 298 | 299 |
| | 168 | 169 | 170 | 171 | 424 | 425 | 426 | 427 |
| 11 | 44 | 45 | 46 | 47 | 300 | 301 | 302 | 303 |
| | 172 | 173 | 174 | 175 | 428 | 429 | 430 | 431 |
| 12 | 48 | 49 | 50 | 51 | 304 | 305 | 306 | 307 |
| | 176 | 177 | 178 | 179 | 432 | 433 | 434 | 435 |
| 13 | 52 | 53 | 54 | 55 | 308 | 309 | 310 | 311 |
| | 180 | 181 | 182 | 183 | 436 | 437 | 438 | 439 |
| 14 | 56 | 57 | 58 | 59 | 312 | 313 | 314 | 315 |
| | 184 | 185 | 186 | 187 | 440 | 441 | 442 | 443 |
| 15 | 60 | 61 | 62 | 63 | 316 | 317 | 318 | 319 |
| | 188 | 189 | 190 | 191 | 444 | 445 | 446 | 447 |
| 16 | 64 | 65 | 66 | 67 | 320 | 321 | 322 | 323 |
| | 192 | 193 | 194 | 195 | 448 | 449 | 450 | 451 |
| 17 | 68 | 69 | 70 | 71 | 324 | 325 | 326 | 327 |
| | 196 | 197 | 198 | 199 | 452 | 453 | 454 | 455 |
| 18 | 72 | 73 | 74 | 75 | 328 | 329 | 330 | 331 |
| | 200 | 201 | 202 | 203 | 456 | 457 | 458 | 459 |
| 19 | 76 | 77 | 78 | 79 | 332 | 333 | 334 | 335 |
| | 204 | 205 | 206 | 207 | 460 | 461 | 462 | 463 |

show chassis fabric stream-info (MX2010 Routers)

```

user@host> show chassis fabric stream-info
Fabric stream info:
  First Row:  Low  Stream Numbers

```


| Second Row: High Stream Numbers | | | | | | | | |
|---------------------------------|----------------------------------|------|------|------|------|------|------|------|
| FPC | Low/High Priority Fabric Streams | | | | | | | |
| | PFE0 | PFE1 | PFE2 | PFE3 | PFE4 | PFE5 | PFE6 | PFE7 |
| 0 | 0 | 1 | 2 | 3 | 256 | 257 | 258 | 259 |
| | 128 | 129 | 130 | 131 | 384 | 385 | 386 | 387 |
| 1 | 4 | 5 | 6 | 7 | 260 | 261 | 262 | 263 |
| | 132 | 133 | 134 | 135 | 388 | 389 | 390 | 391 |
| 2 | 8 | 9 | 10 | 11 | 264 | 265 | 266 | 267 |
| | 136 | 137 | 138 | 139 | 392 | 393 | 394 | 395 |
| 3 | 12 | 13 | 14 | 15 | 268 | 269 | 270 | 271 |
| | 140 | 141 | 142 | 143 | 396 | 397 | 398 | 399 |
| 4 | 16 | 17 | 18 | 19 | 272 | 273 | 274 | 275 |
| | 144 | 145 | 146 | 147 | 400 | 401 | 402 | 403 |
| 5 | 20 | 21 | 22 | 23 | 276 | 277 | 278 | 279 |
| | 148 | 149 | 150 | 151 | 404 | 405 | 406 | 407 |
| 6 | 24 | 25 | 26 | 27 | 280 | 281 | 282 | 283 |
| | 152 | 153 | 154 | 155 | 408 | 409 | 410 | 411 |
| 7 | 28 | 29 | 30 | 31 | 284 | 285 | 286 | 287 |
| | 156 | 157 | 158 | 159 | 412 | 413 | 414 | 415 |
| 8 | 32 | 33 | 34 | 35 | 288 | 289 | 290 | 291 |
| | 160 | 161 | 162 | 163 | 416 | 417 | 418 | 419 |
| 9 | 36 | 37 | 38 | 39 | 292 | 293 | 294 | 295 |
| | 164 | 165 | 166 | 167 | 420 | 421 | 422 | 423 |

Release Information

Command introduced in Junos OS Release 21.4R1.

show chassis fabric summary

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Syntax

```
show chassis fabric summary <extended>
```

Description

(MX Series routers and EX8200 switches only) Display the state of all fabric planes and the elapsed uptime.

(QFX Series devices) Display the state of all fabric planes.

(PTX Series devices) Display the state of all fabric planes. Each fabric chip hosts a single plane in PTX10016. PTX10008 hosts 2 planes per fabric chip.

Options

`extended` —(Optional) Display the extended summary of fabric planes. PTX Series devices do not support the "extended" option.

Required Privilege Level

view

Output Fields

[Table 77 on page 1307](#) lists the output fields for the `show chassis fabric summary` command. Output fields are listed in the approximate order in which they appear.

Table 77: show chassis fabric summary Output Fields

| Field Name | Field Description |
|------------|--|
| Plane | (MX Series, MX2020, MX2010, and MX2008 Routers only) Plane number. |

Table 77: 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 <code>show chassis fabric fpcs</code> command shows <code>Plane disabled</code> 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 <code>show chassis fabric fpcs</code> command shows <code>Link error</code> 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 <code>show chassis fabric fpcs</code> 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> |

Table 77: show chassis fabric summary Output Fields *(Continued)*

| Field Name | Field Description |
|--------------------|---|
| | <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. • 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

show chassis fabric summary (EX and MX Series)

```
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 (MX Series 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 (Junos OS Evolved)

```
user@host> show chassis fabric summary
Plane  State    Link  Link  Reachability errors  Uptime
```


| | | Error | TF | Local / Remote | |
|----|--------|-------|----|----------------|---|
| 0 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 24 seconds |
| 1 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 24 seconds |
| 2 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 24 seconds |
| 3 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 24 seconds |
| 4 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 24 seconds |
| 5 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 24 seconds |
| 6 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 14 seconds |
| 7 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 14 seconds |
| 8 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 14 seconds |
| 9 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 14 seconds |
| 10 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 14 seconds |
| 11 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 14 seconds |
| 12 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 16 seconds |
| 13 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 16 seconds |
| 14 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 16 seconds |
| 15 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 16 seconds |
| 16 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 16 seconds |
| 17 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 16 seconds |
| 18 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 23 seconds |
| 19 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 23 seconds |
| 20 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 23 seconds |
| 21 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 23 seconds |
| 22 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 23 seconds |
| 23 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 23 seconds |
| 24 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 11 seconds |
| 25 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 11 seconds |
| 26 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 11 seconds |
| 27 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 11 seconds |
| 28 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 11 seconds |
| 29 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 11 seconds |
| 30 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 27 seconds |
| 31 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 27 seconds |
| 32 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 27 seconds |
| 33 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 27 seconds |
| 34 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 27 seconds |
| 35 | Online | NO | NO | YES / YES | 2 days, 17 hours, 2 minutes, 27 seconds |

show chassis fabric summary (PTX and QFX Series)

```

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

```

Sample Output - show chassis fabric summary extended**show chassis fabric summary extended (MX Series)**

```

user@host> show chassis fabric summary extended

Plane  State    Link  Link  Destination errors  Uptime
      Error TF   Local / Remote
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 | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 13 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 14 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 15 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 16 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 17 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 18 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 19 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 20 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |
| 21 | Online | NO | NO | NO/ | NO | 1 day, 10 hours, 14 minutes, | 26 |
| seconds | | | | | | | |

Release Information

Command introduced in Junos OS Release 8.4.

extended option added in Junos OS Release 14.1R2.

show chassis fabric topology

IN THIS SECTION

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Syntax (TX Matrix Router)

```
show chassis fabric topology  
<lcc number | scc>  
<sib-slot>
```


Syntax (TX Matrix Plus Router)

```
show chassis fabric topology  
<lcc number | sfc number>  
<sib-slot>
```

Syntax (T4000 Core Router)

```
show chassis fabric topology  
<sib-slot>
```

Syntax (PTX Series Packet Transport Routers and QFX Series Switches)

```
show chassis fabric topology
```

Description

(TX Matrix routers only) Display the state of the switching fabric topology for the Switch Interface Board (SIB) connection between the TX Matrix router and the T640 routers.

(TX Matrix Plus routers only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router and the 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.

(PTX Series Packet Transport Routers and QFX Series switches) Display the input-output link topology.

Options

| | |
|-----------------------|--|
| none | <p>(TX Matrix routers only) Display the state of the switching fabric topology for the Switch Interface Board (SIB) connection between the TX Matrix router and the T640 routers.</p> <p>(TX Matrix Plus routers only) Display the state of the switching fabric topology for the SIB connection between the TX Matrix Plus router and the connected routers.</p> <p>(T320, T640, T1600, and T4000 routers only) Display the state of the switching fabric topology for the connection between the Switch Interface Board (SIB) and the FPCs.</p> <p>For PTX10008 devices, fabric ASIC value ranges from 0-2 and FPC numbering ranges from 0-7.</p> <p>For PTX10016 devices, fabric ASIC ranges from 0-5 and FPC numbering ranges from 0-15.</p> <p>(QFX Series switches) Display the input-output link topology.</p> |
| lcc number | <p>(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.</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 | <p>(TX Matrix routers only) (Optional) Display the fabric topology state for the TX Matrix router (or switch-card chassis).</p> |
| sfc number | <p>(TX Matrix Plus routers only) (Optional) Display the fabric topology for the switch-fabric chassis. Replace <i>number</i> with 0.</p> |
| sib-slot | <p>(Optional) Display the fabric topology state for a specified SIB slot. Replace <i>sib-slot</i> with a value from 0 through 4. On a TX Matrix Plus router, replace <i>sib-slot</i> with a value from 0 through 15.</p> |

Required Privilege Level

view

Output Fields

[Table 78 on page 1317](#) lists the output fields for the `show chassis fabric topology` command. Output fields are listed in the approximate order in which they appear.

Table 78: 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. |

Table 78: show chassis fabric topology Output Fields (*Continued*)

| Field Name | Field Description |
|------------|---|
| 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 78: show chassis fabric topology Output Fields (*Continued*)

| | |
|--|---|
| Out-Links: and In-Links (TX Matrix) | <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> |
|--|---|

Plus
router
only)

- VCSEL Status—Optical (VCSEL channel) link status for the corresponding electrical (HSL2) link. The states include:
 - 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 Channel1—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

- 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, ASIC 0-5 (PTX10016),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, ASIC 0-5 (PTX10016) 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.

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:

- 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-rel:
-----
fchip (mode)
in-links          state      out-links
state
-----
Sib #0 :
-----
SIB0_F0 (F2 ):
LCC0_SIB-L0_F0,03->SIB-S0_F0,00    UP          SIB-S0_F0,00->LCC0_SIB-
L0_F1,00  UP
LCC1_SIB-L0_F0,03->SIB-S0_F0,01    UP          SIB-S0_F0,01->LCC1_SIB-
L0_F1,08  UP
LCC2_SIB-L0_F0,03->SIB-S0_F0,02    RESET       SIB-S0_F0,02->LCC2_SIB-
L0_F1,08  UP
LCC3_SIB-L0_F0,03->SIB-S0_F0,03    RESET       SIB-S0_F0,03->LCC3_SIB-
L0_F1,00  UP
LCC0_SIB-L0_F0,02->SIB-S0_F0,04    UP          SIB-S0_F0,04->LCC0_SIB-
L0_F1,01  UP
LCC1_SIB-L0_F0,02->SIB-S0_F0,05    UP          SIB-S0_F0,05->LCC1_SIB-
L0_F1,09  UP
LCC2_SIB-L0_F0,02->SIB-S0_F0,06    RESET       SIB-S0_F0,06->LCC2_SIB-
L0_F1,09  UP
LCC3_SIB-L0_F0,02->SIB-S0_F0,07    RESET       SIB-S0_F0,07->LCC3_SIB-
L0_F1,01  UP
LCC0_SIB-L0_F0,07->SIB-S0_F0,08    UP          SIB-S0_F0,08->LCC0_SIB-
L0_F1,04  UP
LCC1_SIB-L0_F0,07->SIB-S0_F0,09    UP          SIB-S0_F0,09->LCC1_SIB-
L0_F1,12  UP
LCC2_SIB-L0_F0,07->SIB-S0_F0,10    RESET       SIB-S0_F0,10->LCC2_SIB-
L0_F1,12  UP
LCC3_SIB-L0_F0,07->SIB-S0_F0,11    RESET       SIB-S0_F0,11->LCC3_SIB-
L0_F1,04  UP
LCC0_SIB-L0_F0,06->SIB-S0_F0,12    UP          SIB-S0_F0,12->LCC0_SIB-
L0_F1,05  UP
LCC1_SIB-L0_F0,06->SIB-S0_F0,13    UP          SIB-S0_F0,13->LCC1_SIB-

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L0_F1,13  UP
LCC2_SIB-L0_F0,06->SIB-S0_F0,14  RESET          SIB-S0_F0,14->LCC2_SIB-
L0_F1,13  UP
LCC3_SIB-L0_F0,06->SIB-S0_F0,15  RESET          SIB-S0_F0,15->LCC3_SIB-
L0_F1,05  UP
SIB0_F1 (F2 ):
LCC0_SIB-L0_F0,11->SIB-S0_F1,00  UP              SIB-S0_F1,00->LCC0_SIB-
L0_F1,08  UP
LCC1_SIB-L0_F0,11->SIB-S0_F1,01  UP              SIB-S0_F1,01->LCC1_SIB-
L0_F1,00  UP
LCC2_SIB-L0_F0,11->SIB-S0_F1,02  RESET          SIB-S0_F1,02->LCC2_SIB-
L0_F1,00  UP
LCC3_SIB-L0_F0,11->SIB-S0_F1,03  RESET          SIB-S0_F1,03->LCC3_SIB-
L0_F1,08  UP
LCC0_SIB-L0_F0,10->SIB-S0_F1,04  UP              SIB-S0_F1,04->LCC0_SIB-
L0_F1,09  UP
LCC1_SIB-L0_F0,10->SIB-S0_F1,05  UP              SIB-S0_F1,05->LCC1_SIB-
L0_F1,01  UP
LCC2_SIB-L0_F0,10->SIB-S0_F1,06  RESET          SIB-S0_F1,06->LCC2_SIB-
L0_F1,01  UP
LCC3_SIB-L0_F0,10->SIB-S0_F1,07  RESET          SIB-S0_F1,07->LCC3_SIB-
L0_F1,09  UP
LCC0_SIB-L0_F0,15->SIB-S0_F1,08  UP              SIB-S0_F1,08->LCC0_SIB-
L0_F1,12  UP
LCC1_SIB-L0_F0,15->SIB-S0_F1,09  UP              SIB-S0_F1,09->LCC1_SIB-
L0_F1,04  UP
LCC2_SIB-L0_F0,15->SIB-S0_F1,10  RESET          SIB-S0_F1,10->LCC2_SIB-
L0_F1,04  UP
LCC3_SIB-L0_F0,15->SIB-S0_F1,11  RESET          SIB-S0_F1,11->LCC3_SIB-
L0_F1,12  UP
LCC0_SIB-L0_F0,14->SIB-S0_F1,12  UP              SIB-S0_F1,12->LCC0_SIB-
L0_F1,13  UP
LCC1_SIB-L0_F0,14->SIB-S0_F1,13  UP              SIB-S0_F1,13->LCC1_SIB-
L0_F1,05  UP
LCC2_SIB-L0_F0,14->SIB-S0_F1,14  RESET          SIB-S0_F1,14->LCC2_SIB-
L0_F1,05  UP
LCC3_SIB-L0_F0,14->SIB-S0_F1,15  RESET          SIB-S0_F1,15->LCC3_SIB-
L0_F1,13  UP
SIB0_F2 (F2 ):
LCC3_SIB-L0_F0,13->SIB-S0_F2,00          RESET    SIB-S0_F2,00->LCC3_SIB-
L0_F1,14  UP
LCC2_SIB-L0_F0,13->SIB-S0_F2,01  RESET          SIB-S0_F2,01->LCC2_SIB-
L0_F1,06  UP

```


| | |
|---------------------------------------|-------------------------|
| LCC1_SIB-L0_F0,13->SIB-S0_F2,02 UP | SIB-S0_F2,02->LCC1_SIB- |
| L0_F1,06 UP | |
| LCC0_SIB-L0_F0,13->SIB-S0_F2,03 UP | SIB-S0_F2,03->LCC0_SIB- |
| L0_F1,14 UP | |
| LCC3_SIB-L0_F0,12->SIB-S0_F2,04 RESET | SIB-S0_F2,04->LCC3_SIB- |
| L0_F1,15 UP | |
| LCC2_SIB-L0_F0,12->SIB-S0_F2,05 RESET | SIB-S0_F2,05->LCC2_SIB- |
| L0_F1,07 UP | |
| LCC1_SIB-L0_F0,12->SIB-S0_F2,06 UP | SIB-S0_F2,06->LCC1_SIB- |
| L0_F1,07 UP | |
| LCC0_SIB-L0_F0,12->SIB-S0_F2,07 UP | SIB-S0_F2,07->LCC0_SIB- |
| L0_F1,15 UP | |
| LCC3_SIB-L0_F0,09->SIB-S0_F2,08 RESET | SIB-S0_F2,08->LCC3_SIB- |
| L0_F1,10 UP | |
| LCC2_SIB-L0_F0,09->SIB-S0_F2,09 RESET | SIB-S0_F2,09->LCC2_SIB- |
| L0_F1,02 UP | |
| LCC1_SIB-L0_F0,09->SIB-S0_F2,10 UP | SIB-S0_F2,10->LCC1_SIB- |
| L0_F1,02 UP | |
| LCC0_SIB-L0_F0,09->SIB-S0_F2,11 UP | SIB-S0_F2,11->LCC0_SIB- |
| L0_F1,10 UP | |
| LCC3_SIB-L0_F0,08->SIB-S0_F2,12 RESET | SIB-S0_F2,12->LCC3_SIB- |
| L0_F1,11 UP | |
| LCC2_SIB-L0_F0,08->SIB-S0_F2,13 RESET | SIB-S0_F2,13->LCC2_SIB- |
| L0_F1,03 UP | |
| LCC1_SIB-L0_F0,08->SIB-S0_F2,14 UP | SIB-S0_F2,14->LCC1_SIB- |
| L0_F1,03 UP | |
| LCC0_SIB-L0_F0,08->SIB-S0_F2,15 UP | SIB-S0_F2,15->LCC0_SIB- |
| L0_F1,11 UP | |
| SIB0_F3 (F2): | |
| LCC3_SIB-L0_F0,05->SIB-S0_F3,00 RESET | SIB-S0_F3,00->LCC3_SIB- |
| L0_F1,06 UP | |
| LCC2_SIB-L0_F0,05->SIB-S0_F3,01 RESET | SIB-S0_F3,01->LCC2_SIB- |
| L0_F1,14 UP | |
| LCC1_SIB-L0_F0,05->SIB-S0_F3,02 UP | SIB-S0_F3,02->LCC1_SIB- |
| L0_F1,14 UP | |
| LCC0_SIB-L0_F0,05->SIB-S0_F3,03 UP | SIB-S0_F3,03->LCC0_SIB- |
| L0_F1,06 UP | |
| LCC3_SIB-L0_F0,04->SIB-S0_F3,04 RESET | SIB-S0_F3,04->LCC3_SIB- |
| L0_F1,07 UP | |
| LCC2_SIB-L0_F0,04->SIB-S0_F3,05 RESET | SIB-S0_F3,05->LCC2_SIB- |
| L0_F1,15 UP | |
| LCC1_SIB-L0_F0,04->SIB-S0_F3,06 UP | SIB-S0_F3,06->LCC1_SIB- |
| L0_F1,15 UP | |

| | |
|---------------------------------------|-------------------------|
| LCC0_SIB-L0_F0,04->SIB-S0_F3,07 UP | SIB-S0_F3,07->LCC0_SIB- |
| L0_F1,07 UP | |
| LCC3_SIB-L0_F0,01->SIB-S0_F3,08 RESET | SIB-S0_F3,08->LCC3_SIB- |
| L0_F1,02 UP | |
| LCC2_SIB-L0_F0,01->SIB-S0_F3,09 RESET | SIB-S0_F3,09->LCC2_SIB- |
| L0_F1,10 UP | |
| LCC1_SIB-L0_F0,01->SIB-S0_F3,10 UP | SIB-S0_F3,10->LCC1_SIB- |
| L0_F1,10 UP | |
| LCC0_SIB-L0_F0,01->SIB-S0_F3,11 UP | SIB-S0_F3,11->LCC0_SIB- |
| L0_F1,02 UP | |
| LCC3_SIB-L0_F0,00->SIB-S0_F3,12 RESET | SIB-S0_F3,12->LCC3_SIB- |
| L0_F1,03 UP | |
| LCC2_SIB-L0_F0,00->SIB-S0_F3,13 RESET | SIB-S0_F3,13->LCC2_SIB- |
| L0_F1,11 UP | |
| LCC1_SIB-L0_F0,00->SIB-S0_F3,14 UP | SIB-S0_F3,14->LCC1_SIB- |
| L0_F1,11 UP | |
| LCC0_SIB-L0_F0,00->SIB-S0_F3,15 UP | SIB-S0_F3,15->LCC0_SIB- |
| L0_F1,03 UP | |
| Sib #1 : | |
| ----- | |
| SIB1_F0 (F2): | |
| LCC0_SIB-L1_F0,03->SIB-S1_F0,00 RESET | SIB-S1_F0,00->LCC0_SIB- |
| L1_F1,00 UP | |
| LCC1_SIB-L1_F0,03->SIB-S1_F0,01 RESET | SIB-S1_F0,01->LCC1_SIB- |
| L1_F1,08 UP | |
| LCC2_SIB-L1_F0,03->SIB-S1_F0,02 RESET | SIB-S1_F0,02->LCC2_SIB- |
| L1_F1,08 UP | |
| LCC3_SIB-L1_F0,03->SIB-S1_F0,03 RESET | SIB-S1_F0,03->LCC3_SIB- |
| L1_F1,00 UP | |
| LCC0_SIB-L1_F0,02->SIB-S1_F0,04 RESET | SIB-S1_F0,04->LCC0_SIB- |
| L1_F1,01 UP | |
| LCC1_SIB-L1_F0,02->SIB-S1_F0,05 RESET | SIB-S1_F0,05->LCC1_SIB- |
| L1_F1,09 UP | |
| LCC2_SIB-L1_F0,02->SIB-S1_F0,06 RESET | SIB-S1_F0,06->LCC2_SIB- |
| L1_F1,09 UP | |
| LCC3_SIB-L1_F0,02->SIB-S1_F0,07 RESET | SIB-S1_F0,07->LCC3_SIB- |
| L1_F1,01 UP | |
| LCC0_SIB-L1_F0,07->SIB-S1_F0,08 RESET | SIB-S1_F0,08->LCC0_SIB- |
| L1_F1,04 UP | |
| LCC1_SIB-L1_F0,07->SIB-S1_F0,09 RESET | SIB-S1_F0,09->LCC1_SIB- |
| L1_F1,12 UP | |
| LCC2_SIB-L1_F0,07->SIB-S1_F0,10 RESET | SIB-S1_F0,10->LCC2_SIB- |
| L1_F1,12 UP | |

| | |
|---------------------------------------|-------------------------|
| LCC3_SIB-L1_F0,07->SIB-S1_F0,11 RESET | SIB-S1_F0,11->LCC3_SIB- |
| L1_F1,04 UP | |
| LCC0_SIB-L1_F0,06->SIB-S1_F0,12 RESET | SIB-S1_F0,12->LCC0_SIB- |
| L1_F1,05 UP | |
| LCC1_SIB-L1_F0,06->SIB-S1_F0,13 RESET | SIB-S1_F0,13->LCC1_SIB- |
| L1_F1,13 UP | |
| LCC2_SIB-L1_F0,06->SIB-S1_F0,14 RESET | SIB-S1_F0,14->LCC2_SIB- |
| L1_F1,13 UP | |
| LCC3_SIB-L1_F0,06->SIB-S1_F0,15 RESET | SIB-S1_F0,15->LCC3_SIB- |
| L1_F1,05 UP | |
| SIB1_F1 (F2): | |
| LCC0_SIB-L1_F0,11->SIB-S1_F1,00 RESET | SIB-S1_F1,00->LCC0_SIB- |
| L1_F1,08 UP | |
| LCC1_SIB-L1_F0,11->SIB-S1_F1,01 RESET | SIB-S1_F1,01->LCC1_SIB- |
| L1_F1,00 UP | |
| LCC2_SIB-L1_F0,11->SIB-S1_F1,02 RESET | SIB-S1_F1,02->LCC2_SIB- |
| L1_F1,00 UP | |
| LCC3_SIB-L1_F0,11->SIB-S1_F1,03 RESET | SIB-S1_F1,03->LCC3_SIB- |
| L1_F1,08 UP | |
| LCC0_SIB-L1_F0,10->SIB-S1_F1,04 RESET | SIB-S1_F1,04->LCC0_SIB- |
| L1_F1,09 UP | |
| LCC1_SIB-L1_F0,10->SIB-S1_F1,05 RESET | SIB-S1_F1,05->LCC1_SIB- |
| L1_F1,01 UP | |
| LCC2_SIB-L1_F0,10->SIB-S1_F1,06 RESET | SIB-S1_F1,06->LCC2_SIB- |
| L1_F1,01 UP | |
| LCC3_SIB-L1_F0,10->SIB-S1_F1,07 RESET | SIB-S1_F1,07->LCC3_SIB- |
| L1_F1,09 UP | |
| LCC0_SIB-L1_F0,15->SIB-S1_F1,08 RESET | SIB-S1_F1,08->LCC0_SIB- |
| L1_F1,12 UP | |
| LCC1_SIB-L1_F0,15->SIB-S1_F1,09 RESET | SIB-S1_F1,09->LCC1_SIB- |
| L1_F1,04 UP | |
| LCC2_SIB-L1_F0,15->SIB-S1_F1,10 RESET | SIB-S1_F1,10->LCC2_SIB- |
| L1_F1,04 UP | |
| LCC3_SIB-L1_F0,15->SIB-S1_F1,11 RESET | -S1_F1,11->LCC3_SIB- |
| L1_F1,12,05 UP | |
| LCC0_SIB-L1_F0,14->SIB-S1_F1,12 RESET | SIB-S1_F1,12->LCC0_SIB- |
| L1_F1,13 UP | |
| LCC1_SIB-L1_F0,14->SIB-S1_F1,13 RESET | SIB-S1_F1,13->LCC1_SIB- |
| L1_F1,05 UP | |
| LCC2_SIB-L1_F0,14->SIB-S1_F1,14 RESET | SIB-S1_F1,14->LCC2_SIB- |
| L1_F1,05 UP | |

show chassis fabric topology lcc

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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

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SIB-S2_F1,12->SIB-L2_F1,13 UP      SIB-L2_F1,13->FPC1_T    DOWN
SIB-S2_F2,03->SIB-L2_F1,14 UP      SIB-L2_F1,14->FPC0_B    DOWN
SIB-S2_F2,07->SIB-L2_F1,15 UP      SIB-L2_F1,15->FPC0_T    DOWN
Sib #4 :
-----
SIB4_F0 (F1 ):
FPC0_T->SIB-L4_F0,00  RESET      SIB-L4_F0,00->SIB-S4_F3,15 UP
FPC0_B->SIB-L4_F0,01  UP          SIB-L4_F0,01->SIB-S4_F3,11 UP
FPC1_T->SIB-L4_F0,02  RESET      SIB-L4_F0,02->SIB-S4_F0,04 UP
FPC1_B->SIB-L4_F0,03  RESET      SIB-L4_F0,03->SIB-S4_F0,00 UP
FPC2_T->SIB-L4_F0,04  RESET      SIB-L4_F0,04->SIB-S4_F3,07 UP
FPC2_B->SIB-L4_F0,05  RESET      SIB-L4_F0,05->SIB-S4_F3,03 UP
FPC3_T->SIB-L4_F0,06  RESET      SIB-L4_F0,06->SIB-S4_F0,12 UP
FPC3_B->SIB-L4_F0,07  RESET      SIB-L4_F0,07->SIB-S4_F0,08 UP
FPC4_T->SIB-L4_F0,08  RESET      SIB-L4_F0,08->SIB-S4_F2,15 UP
FPC4_B->SIB-L4_F0,09  RESET      SIB-L4_F0,09->SIB-S4_F2,11 UP
FPC5_T->SIB-L4_F0,10  RESET      SIB-L4_F0,10->SIB-S4_F1,04 UP
FPC5_B->SIB-L4_F0,11  RESET      SIB-L4_F0,11->SIB-S4_F1,00 UP
FPC6_T->SIB-L4_F0,12  RESET      SIB-L4_F0,12->SIB-S4_F2,07 UP
FPC6_B->SIB-L4_F0,13  UP          SIB-L4_F0,13->SIB-S4_F2,03 UP
FPC7_T->SIB-L4_F0,14  RESET      SIB-L4_F0,14->SIB-S4_F1,12 UP
FPC7_B->SIB-L4_F0,15  RESET      SIB-L4_F0,15->SIB-S4_F1,08 UP
SIB4_F1 (F3 ):
SIB-S4_F0,00->SIB-L4_F1,00 UP      SIB-L4_F1,00->FPC7_B    UP
SIB-S4_F0,04->SIB-L4_F1,01 UP      SIB-L4_F1,01->FPC7_T    UP
SIB-S4_F3,11->SIB-L4_F1,02 UP      SIB-L4_F1,02->FPC6_B    UP
SIB-S4_F3,15->SIB-L4_F1,03 UP      SIB-L4_F1,03->FPC6_T    UP
SIB-S4_F0,08->SIB-L4_F1,04 UP      SIB-L4_F1,04->FPC5_B    UP
SIB-S4_F0,12->SIB-L4_F1,05 UP      SIB-L4_F1,05->FPC5_T    UP
SIB-S4_F3,03->SIB-L4_F1,06 UP      SIB-L4_F1,06->FPC4_B    UP
SIB-S4_F3,07->SIB-L4_F1,07 UP      SIB-L4_F1,07->FPC4_T    UP
SIB-S4_F1,00->SIB-L4_F1,08 UP      SIB-L4_F1,08->FPC3_B    UP
SIB-S4_F1,04->SIB-L4_F1,09 UP      SIB-L4_F1,09->FPC3_T    UP
SIB-S4_F2,11->SIB-L4_F1,10 UP      SIB-L4_F1,10->FPC2_B    UP
SIB-S4_F2,15->SIB-L4_F1,11 UP      SIB-L4_F1,11->FPC2_T    UP
SIB-S4_F1,08->SIB-L4_F1,12 UP      SIB-L4_F1,12->FPC1_B    UP
SIB-S4_F1,12->SIB-L4_F1,13 UP      SIB-L4_F1,13->FPC1_T    UP
SIB-S4_F2,03->SIB-L4_F1,14 UP      SIB-L4_F1,14->FPC0_B    UP
SIB-S4_F2,07->SIB-L4_F1,15 UP      SIB-L4_F1,15->FPC0_T    UP

```


show chassis fabric topology (TX Matrix Plus Router)

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

```
sfc0-re0:
```

```
-----
```

```
F13_SIB0
```

```
=====
```

```
Out-Links:
```

```
=====
```

| SFC0_F13_SIB_00 | -> LCC00_ST_SIB_L00 | VCSEL 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    HSL2    HSL2
                               Status    Channel Status
=====
FPC0_T_SG(0,0,0)_FB_D(04,11) -> SF_10_00_FB_D(01,11)    OK      12      Up
FPC0_T_SG(0,0,1)_FB_D(04,10) -> SF_10_00_FB_D(01,10)    OK      12      Up
FPC0_T_SG(0,0,2)_FB_D(04,09) -> SF_10_00_FB_D(01,09)    OK      12      Up
FPC0_T_SG(0,0,3)_FB_D(04,08) -> SF_10_00_FB_D(01,08)    OK      12      Up
FPC0_T_SG(0,0,4)_FB_D(04,07) -> SF_10_00_FB_D(01,07)    OK      12      Up
FPC0_T_SG(0,0,5)_FB_D(04,06) -> SF_10_00_FB_D(01,06)    OK      12      Up
FPC0_T_SG(0,0,6)_FB_D(04,05) -> SF_10_00_FB_D(01,05)    OK      12      Up
FPC0_T_SG(0,0,7)_FB_D(04,04) -> SF_10_00_FB_D(01,04)    OK      12      Up
FPC0_B_SG(0,1,0)_FB_D(03,07) -> SF_10_10_FB_D(00,07)    OK      15      Up

```


| | | | |
|--|----|----|----|
| FPC0_B_SG(0,1,1)_FB_D(03,06) -> SF_10_10_FB_D(00,06) | OK | 15 | Up |
| FPC0_B_SG(0,1,2)_FB_D(03,05) -> SF_10_10_FB_D(00,05) | OK | 15 | Up |
| FPC0_B_SG(0,1,3)_FB_D(03,04) -> SF_10_10_FB_D(00,04) | OK | 15 | Up |
| FPC0_B_SG(0,1,4)_FB_D(03,03) -> SF_10_10_FB_D(00,03) | OK | 15 | Up |
| FPC0_B_SG(0,1,5)_FB_D(03,02) -> SF_10_10_FB_D(00,02) | OK | 15 | Up |
| FPC0_B_SG(0,1,6)_FB_D(03,01) -> SF_10_10_FB_D(00,01) | OK | 15 | Up |
| FPC0_B_SG(0,1,7)_FB_D(03,00) -> SF_10_10_FB_D(00,00) | OK | 15 | Up |
| FPC1_T_SG(0,2,0)_FB_D(05,08) -> SF_10_02_FB_D(02,08) | OK | 18 | Up |
| FPC1_T_SG(0,2,1)_FB_D(05,07) -> SF_10_02_FB_D(02,07) | OK | 18 | Up |
| FPC1_T_SG(0,2,2)_FB_D(05,06) -> SF_10_02_FB_D(02,06) | OK | 18 | Up |
| FPC1_T_SG(0,2,3)_FB_D(05,05) -> SF_10_02_FB_D(02,05) | OK | 18 | Up |
| FPC1_T_SG(0,2,4)_FB_D(05,03) -> SF_10_02_FB_D(02,03) | OK | 18 | Up |
| FPC1_T_SG(0,2,5)_FB_D(05,02) -> SF_10_02_FB_D(02,02) | OK | 18 | Up |
| FPC1_T_SG(0,2,6)_FB_D(05,01) -> SF_10_02_FB_D(02,01) | OK | 18 | Up |
| FPC1_T_SG(0,2,7)_FB_D(05,00) -> SF_10_02_FB_D(02,00) | OK | 18 | Up |
| FPC1_B_SG(0,3,0)_FB_D(04,03) -> SF_10_11_FB_D(01,03) | OK | 21 | Up |
| FPC1_B_SG(0,3,1)_FB_D(04,02) -> SF_10_11_FB_D(01,02) | OK | 21 | Up |
| FPC1_B_SG(0,3,2)_FB_D(04,01) -> SF_10_11_FB_D(01,01) | OK | 21 | Up |
| FPC1_B_SG(0,3,3)_FB_D(04,00) -> SF_10_11_FB_D(01,00) | OK | 21 | Up |
| FPC1_B_SG(0,3,4)_FB_D(03,11) -> SF_10_11_FB_D(00,11) | OK | 21 | Up |
| FPC1_B_SG(0,3,5)_FB_D(03,10) -> SF_10_11_FB_D(00,10) | OK | 21 | Up |
| FPC1_B_SG(0,3,6)_FB_D(03,09) -> SF_10_11_FB_D(00,09) | OK | 21 | Up |
| FPC1_B_SG(0,3,7)_FB_D(03,08) -> SF_10_11_FB_D(00,08) | OK | 21 | Up |
| FPC2_T_SG(1,0,0)_FB_C(10,11) -> SF_10_04_FB_C(07,11) | OK | 12 | Up |
| FPC2_T_SG(1,0,1)_FB_C(10,10) -> SF_10_04_FB_C(07,10) | OK | 12 | Up |
| FPC2_T_SG(1,0,2)_FB_C(10,09) -> SF_10_04_FB_C(07,09) | OK | 12 | Up |
| FPC2_T_SG(1,0,3)_FB_C(10,08) -> SF_10_04_FB_C(07,08) | OK | 12 | Up |
| FPC2_T_SG(1,0,4)_FB_C(10,07) -> SF_10_04_FB_C(07,07) | OK | 12 | Up |
| FPC2_T_SG(1,0,5)_FB_C(10,06) -> SF_10_04_FB_C(07,06) | OK | 12 | Up |
| FPC2_T_SG(1,0,6)_FB_C(10,05) -> SF_10_04_FB_C(07,05) | OK | 12 | Up |
| FPC2_T_SG(1,0,7)_FB_C(10,04) -> SF_10_04_FB_C(07,04) | OK | 12 | Up |
| FPC2_B_SG(1,1,0)_FB_C(09,07) -> SF_10_14_FB_C(06,07) | OK | 15 | Up |
| FPC2_B_SG(1,1,1)_FB_C(09,06) -> SF_10_14_FB_C(06,06) | OK | 15 | Up |
| FPC2_B_SG(1,1,2)_FB_C(09,05) -> SF_10_14_FB_C(06,05) | OK | 15 | Up |
| FPC2_B_SG(1,1,3)_FB_C(09,04) -> SF_10_14_FB_C(06,04) | OK | 15 | Up |
| FPC2_B_SG(1,1,4)_FB_C(09,03) -> SF_10_14_FB_C(06,03) | OK | 15 | Up |
| FPC2_B_SG(1,1,5)_FB_C(09,02) -> SF_10_14_FB_C(06,02) | OK | 15 | Up |
| FPC2_B_SG(1,1,6)_FB_C(09,01) -> SF_10_14_FB_C(06,01) | OK | 15 | Up |
| FPC2_B_SG(1,1,7)_FB_C(09,00) -> SF_10_14_FB_C(06,00) | OK | 15 | Up |
| FPC3_T_SG(1,2,0)_FB_C(11,08) -> SF_10_06_FB_C(08,08) | OK | 18 | Up |
| FPC3_T_SG(1,2,1)_FB_C(11,07) -> SF_10_06_FB_C(08,07) | OK | 18 | Up |
| FPC3_T_SG(1,2,2)_FB_C(11,06) -> SF_10_06_FB_C(08,06) | OK | 18 | Up |
| FPC3_T_SG(1,2,3)_FB_C(11,05) -> SF_10_06_FB_C(08,05) | OK | 18 | Up |


```

FPC3_T_SG(1,2,4)_FB_C(11,03) -> SF_10_06_FB_C(08,03)    OK      18      Up
FPC3_T_SG(1,2,5)_FB_C(11,02) -> SF_10_06_FB_C(08,02)    OK      18      Up
FPC3_T_SG(1,2,6)_FB_C(11,01) -> SF_10_06_FB_C(08,01)    OK      18      Up
...

```

show chassis fabric topology (T4000 Core Router)

```
user@host> show chassis fabric topology 0
```

```
fchip (mode)
```

| In-links | State | Out-links | State |
|-----------------------------|-------|-----------------------------|-------|
| ----- | | | |
| SIB0 : | | | |
| ----- | | | |
| Onboard Links | | | |
| ----- | | | |
| SIB0_XF1,14_0->SIB0_XF,00_0 | Up | SIB0_XF,00_0->SIB0_XF1,14_0 | Up |
| SIB0_XF,00_0->SIB0_XF1,14_0 | Up | SIB0_XF1,14_0->SIB0_XF,00_0 | Up |
| SIB0_XF1,13_0->SIB0_XF,01_0 | Up | SIB0_XF,01_0->SIB0_XF1,13_0 | Up |
| SIB0_XF,01_0->SIB0_XF1,13_0 | Up | SIB0_XF1,13_0->SIB0_XF,01_0 | Up |
| SIB0_XF1,12_0->SIB0_XF,02_0 | Up | SIB0_XF,02_0->SIB0_XF1,12_0 | Up |
| SIB0_XF,02_0->SIB0_XF1,12_0 | Up | SIB0_XF1,12_0->SIB0_XF,02_0 | Up |
| SIB0_XF1,11_0->SIB0_XF,03_0 | Up | SIB0_XF,03_0->SIB0_XF1,11_0 | Up |
| SIB0_XF,03_0->SIB0_XF1,11_0 | Up | SIB0_XF1,11_0->SIB0_XF,03_0 | Up |
| SIB0_XF1,10_0->SIB0_XF,04_0 | Up | SIB0_XF,04_0->SIB0_XF1,10_0 | Up |
| SIB0_XF,04_0->SIB0_XF1,10_0 | Up | SIB0_XF1,10_0->SIB0_XF,04_0 | Up |
| SIB0_XF1,09_0->SIB0_XF,05_0 | Up | SIB0_XF,05_0->SIB0_XF1,09_0 | Up |
| SIB0_XF,05_0->SIB0_XF1,09_0 | Up | SIB0_XF1,09_0->SIB0_XF,05_0 | Up |
| SIB0_XF2,14_0->SIB0_XF,06_0 | Up | SIB0_XF,06_0->SIB0_XF2,14_0 | Up |
| SIB0_XF,06_0->SIB0_XF2,14_0 | Up | SIB0_XF2,14_0->SIB0_XF,06_0 | Up |
| SIB0_XF2,13_0->SIB0_XF,07_0 | Up | SIB0_XF,07_0->SIB0_XF2,13_0 | Up |
| SIB0_XF,07_0->SIB0_XF2,13_0 | Up | SIB0_XF2,13_0->SIB0_XF,07_0 | Up |
| SIB0_XF2,12_0->SIB0_XF,08_0 | Up | SIB0_XF,08_0->SIB0_XF2,12_0 | Up |
| SIB0_XF,08_0->SIB0_XF2,12_0 | Up | SIB0_XF2,12_0->SIB0_XF,08_0 | Up |
| SIB0_XF2,11_0->SIB0_XF,09_0 | Up | SIB0_XF,09_0->SIB0_XF2,11_0 | Up |
| SIB0_XF,09_0->SIB0_XF2,11_0 | Up | SIB0_XF2,11_0->SIB0_XF,09_0 | Up |
| SIB0_XF2,10_0->SIB0_XF,10_0 | Up | SIB0_XF,10_0->SIB0_XF2,10_0 | Up |
| SIB0_XF,10_0->SIB0_XF2,10_0 | Up | SIB0_XF2,10_0->SIB0_XF,10_0 | Up |
| SIB0_XF2,09_0->SIB0_XF,11_0 | Up | SIB0_XF,11_0->SIB0_XF2,09_0 | Up |
| SIB0_XF,11_0->SIB0_XF2,09_0 | Up | SIB0_XF2,09_0->SIB0_XF,11_0 | Up |

| | | | |
|-----------------------------|----|-----------------------------|----|
| SIB0_XF3,13_0->SIB0_XF,12_0 | Up | SIB0_XF,12_0->SIB0_XF3,13_0 | Up |
| SIB0_XF,12_0->SIB0_XF3,13_0 | Up | SIB0_XF3,13_0->SIB0_XF,12_0 | Up |
| SIB0_XF3,12_0->SIB0_XF,13_0 | Up | SIB0_XF,13_0->SIB0_XF3,12_0 | Up |
| SIB0_XF,13_0->SIB0_XF3,12_0 | Up | SIB0_XF3,12_0->SIB0_XF,13_0 | Up |
| SIB0_XF3,11_0->SIB0_XF,14_0 | Up | SIB0_XF,14_0->SIB0_XF3,11_0 | Up |
| SIB0_XF,14_0->SIB0_XF3,11_0 | Up | SIB0_XF3,11_0->SIB0_XF,14_0 | Up |
| SIB0_XF3,10_0->SIB0_XF,15_0 | Up | SIB0_XF,15_0->SIB0_XF3,10_0 | Up |
| SIB0_XF,15_0->SIB0_XF3,10_0 | Up | SIB0_XF3,10_0->SIB0_XF,15_0 | Up |

PFE Links

| | | | |
|-------------------------|----|-------------------------|----|
| FPC2PFE0->SIB0_XF1,05_0 | Up | SIB0_XF1,05_0->FPC2PFE0 | Up |
| FPC3PFE0->SIB0_XF2,15_0 | Up | SIB0_XF2,15_0->FPC3PFE0 | Up |
| FPC5PFE0->SIB0_XF2,05_0 | Up | SIB0_XF2,05_0->FPC5PFE0 | Up |
| FPC5PFE1->SIB0_XF2,07_0 | Up | SIB0_XF2,07_0->FPC5PFE1 | Up |
| FPC6PFE0->SIB0_XF3,01_0 | Up | SIB0_XF3,01_0->FPC6PFE0 | Up |
| FPC6PFE0->SIB0_XF3,01_1 | Up | SIB0_XF3,01_1->FPC6PFE0 | Up |
| FPC6PFE0->SIB0_XF3,02_0 | Up | SIB0_XF3,02_0->FPC6PFE0 | Up |
| FPC6PFE1->SIB0_XF3,03_0 | Up | SIB0_XF3,03_0->FPC6PFE1 | Up |
| FPC6PFE1->SIB0_XF3,03_1 | Up | SIB0_XF3,03_1->FPC6PFE1 | Up |
| FPC6PFE1->SIB0_XF3,02_1 | Up | SIB0_XF3,02_1->FPC6PFE1 | Up |

show chassis fabric topology lcc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fabric topology lcc
```

```
6
```

```
lcc6-re0:
```

```
-----
```

| fchip (mode) | | | |
|-----------------------------|-------|-----------------------------|-------|
| In-links | State | Out-links | State |
| ----- | | | |
| SIB0 : | | | |
| ----- | | | |
| CXP0_Evn->LCC_SIB0_XF3,10_0 | Up | LCC_SIB0_XF3,10_0->CXP0_Evn | Up |
| CXP0_Odd->LCC_SIB0_XF3,11_0 | Up | LCC_SIB0_XF3,11_0->CXP0_Odd | Up |
| CXP1_Evn->LCC_SIB0_XF3,12_0 | Up | LCC_SIB0_XF3,12_0->CXP1_Evn | Up |
| CXP1_Odd->LCC_SIB0_XF3,13_0 | Up | LCC_SIB0_XF3,13_0->CXP1_Odd | Up |
| CXP2_Evn->LCC_SIB0_XF2,09_0 | Up | LCC_SIB0_XF2,09_0->CXP2_Evn | Up |
| CXP2_Odd->LCC_SIB0_XF2,10_0 | Up | LCC_SIB0_XF2,10_0->CXP2_Odd | Up |
| CXP3_Evn->LCC_SIB0_XF2,11_0 | Up | LCC_SIB0_XF2,11_0->CXP3_Evn | Up |
| CXP3_Odd->LCC_SIB0_XF2,12_0 | Up | LCC_SIB0_XF2,12_0->CXP3_Odd | Up |

| | | | |
|-----------------------------|----|-----------------------------|----|
| CXP4_Evn->LCC_SIB0_XF2,13_0 | Up | LCC_SIB0_XF2,13_0->CXP4_Evn | Up |
| CXP4_Odd->LCC_SIB0_XF1,09_0 | Up | LCC_SIB0_XF1,09_0->CXP4_Odd | Up |
| CXP5_Evn->LCC_SIB0_XF2,14_0 | Up | LCC_SIB0_XF2,14_0->CXP5_Evn | Up |
| CXP5_Odd->LCC_SIB0_XF1,10_0 | Up | LCC_SIB0_XF1,10_0->CXP5_Odd | Up |
| CXP6_Evn->LCC_SIB0_XF1,11_0 | Up | LCC_SIB0_XF1,11_0->CXP6_Evn | Up |
| CXP6_Odd->LCC_SIB0_XF1,12_0 | Up | LCC_SIB0_XF1,12_0->CXP6_Odd | Up |
| CXP7_Evn->LCC_SIB0_XF1,13_0 | Up | LCC_SIB0_XF1,13_0->CXP7_Evn | Up |
| CXP7_Odd->LCC_SIB0_XF1,14_0 | Up | LCC_SIB0_XF1,14_0->CXP7_Odd | Up |
| SIB1 : | | | |
| ----- | | | |
| SIB2 : | | | |
| ----- | | | |
| CXP0_Evn->LCC_SIB2_XF3,10_0 | Up | LCC_SIB2_XF3,10_0->CXP0_Evn | Up |
| CXP0_Odd->LCC_SIB2_XF3,11_0 | Up | LCC_SIB2_XF3,11_0->CXP0_Odd | Up |
| CXP1_Evn->LCC_SIB2_XF3,12_0 | Up | LCC_SIB2_XF3,12_0->CXP1_Evn | Up |
| CXP1_Odd->LCC_SIB2_XF3,13_0 | Up | LCC_SIB2_XF3,13_0->CXP1_Odd | Up |
| CXP2_Evn->LCC_SIB2_XF2,09_0 | Up | LCC_SIB2_XF2,09_0->CXP2_Evn | Up |
| CXP2_Odd->LCC_SIB2_XF2,10_0 | Up | LCC_SIB2_XF2,10_0->CXP2_Odd | Up |
| CXP3_Evn->LCC_SIB2_XF2,11_0 | Up | LCC_SIB2_XF2,11_0->CXP3_Evn | Up |
| CXP3_Odd->LCC_SIB2_XF2,12_0 | Up | LCC_SIB2_XF2,12_0->CXP3_Odd | Up |
| CXP4_Evn->LCC_SIB2_XF2,13_0 | Up | LCC_SIB2_XF2,13_0->CXP4_Evn | Up |
| CXP4_Odd->LCC_SIB2_XF1,09_0 | Up | LCC_SIB2_XF1,09_0->CXP4_Odd | Up |
| CXP5_Evn->LCC_SIB2_XF2,14_0 | Up | LCC_SIB2_XF2,14_0->CXP5_Evn | Up |
| CXP5_Odd->LCC_SIB2_XF1,10_0 | Up | LCC_SIB2_XF1,10_0->CXP5_Odd | Up |
| CXP6_Evn->LCC_SIB2_XF1,11_0 | Up | LCC_SIB2_XF1,11_0->CXP6_Evn | Up |
| CXP6_Odd->LCC_SIB2_XF1,12_0 | Up | LCC_SIB2_XF1,12_0->CXP6_Odd | Up |
| CXP7_Evn->LCC_SIB2_XF1,13_0 | Up | LCC_SIB2_XF1,13_0->CXP7_Evn | Up |
| CXP7_Odd->LCC_SIB2_XF1,14_0 | Up | LCC_SIB2_XF1,14_0->CXP7_Odd | Up |
| SIB3 : | | | |
| ----- | | | |
| CXP0_Evn->LCC_SIB3_XF3,10_0 | Up | LCC_SIB3_XF3,10_0->CXP0_Evn | Up |
| CXP0_Odd->LCC_SIB3_XF3,11_0 | Up | LCC_SIB3_XF3,11_0->CXP0_Odd | Up |
| CXP1_Evn->LCC_SIB3_XF3,12_0 | Up | LCC_SIB3_XF3,12_0->CXP1_Evn | Up |
| CXP1_Odd->LCC_SIB3_XF3,13_0 | Up | LCC_SIB3_XF3,13_0->CXP1_Odd | Up |
| CXP2_Evn->LCC_SIB3_XF2,09_0 | Up | LCC_SIB3_XF2,09_0->CXP2_Evn | Up |
| CXP2_Odd->LCC_SIB3_XF2,10_0 | Up | LCC_SIB3_XF2,10_0->CXP2_Odd | Up |
| CXP3_Evn->LCC_SIB3_XF2,11_0 | Up | LCC_SIB3_XF2,11_0->CXP3_Evn | Up |
| CXP3_Odd->LCC_SIB3_XF2,12_0 | Up | LCC_SIB3_XF2,12_0->CXP3_Odd | Up |
| CXP4_Evn->LCC_SIB3_XF2,13_0 | Up | LCC_SIB3_XF2,13_0->CXP4_Evn | Up |
| CXP4_Odd->LCC_SIB3_XF1,09_0 | Up | LCC_SIB3_XF1,09_0->CXP4_Odd | Up |
| CXP5_Evn->LCC_SIB3_XF2,14_0 | Up | LCC_SIB3_XF2,14_0->CXP5_Evn | Up |
| CXP5_Odd->LCC_SIB3_XF1,10_0 | Up | LCC_SIB3_XF1,10_0->CXP5_Odd | Up |
| CXP6_Evn->LCC_SIB3_XF1,11_0 | Up | LCC_SIB3_XF1,11_0->CXP6_Evn | Up |


```

CXP6_Odd->LCC_SIB3_XF1,12_0    Up    LCC_SIB3_XF1,12_0->CXP6_Odd    Up
CXP7_Evn->LCC_SIB3_XF1,13_0    Up    LCC_SIB3_XF1,13_0->CXP7_Evn    Up
CXP7_Odd->LCC_SIB3_XF1,14_0    Up    LCC_SIB3_XF1,14_0->CXP7_Odd    Up
SIB4 :
-----
CXP0_Evn->LCC_SIB4_XF3,10_0    Up    LCC_SIB4_XF3,10_0->CXP0_Evn    Up
CXP0_Odd->LCC_SIB4_XF3,11_0    Up    LCC_SIB4_XF3,11_0->CXP0_Odd    Up
CXP1_Evn->LCC_SIB4_XF3,12_0    Up    LCC_SIB4_XF3,12_0->CXP1_Evn    Up
CXP1_Odd->LCC_SIB4_XF3,13_0    Up    LCC_SIB4_XF3,13_0->CXP1_Odd    Up
CXP2_Evn->LCC_SIB4_XF2,09_0    Up    LCC_SIB4_XF2,09_0->CXP2_Evn    Up
CXP2_Odd->LCC_SIB4_XF2,10_0    Up    LCC_SIB4_XF2,10_0->CXP2_Odd    Up
CXP3_Evn->LCC_SIB4_XF2,11_0    Up    LCC_SIB4_XF2,11_0->CXP3_Evn    Up
CXP3_Odd->LCC_SIB4_XF2,12_0    Up    LCC_SIB4_XF2,12_0->CXP3_Odd    Up
CXP4_Evn->LCC_SIB4_XF2,13_0    Up    LCC_SIB4_XF2,13_0->CXP4_Evn    Up
CXP4_Odd->LCC_SIB4_XF1,09_0    Up    LCC_SIB4_XF1,09_0->CXP4_Odd    Up
CXP5_Evn->LCC_SIB4_XF2,14_0    Up    LCC_SIB4_XF2,14_0->CXP5_Evn    Up
CXP5_Odd->LCC_SIB4_XF1,10_0    Up    LCC_SIB4_XF1,10_0->CXP5_Odd    Up
CXP6_Evn->LCC_SIB4_XF1,11_0    Up    LCC_SIB4_XF1,11_0->CXP6_Evn    Up
CXP6_Odd->LCC_SIB4_XF1,12_0    Up    LCC_SIB4_XF1,12_0->CXP6_Odd    Up
CXP7_Evn->LCC_SIB4_XF1,13_0    Up    LCC_SIB4_XF1,13_0->CXP7_Evn    Up
CXP7_Odd->LCC_SIB4_XF1,14_0    Up    LCC_SIB4_XF1,14_0->CXP7_Odd    Up

```

show chassis fabric topology (PTX5000 Router)

```

user@host> show chassis fabric topology
In-link  : FPC# FE# TQ# (TQ-TX sub-chnl #) ->
           SIB# TF#_FCORE# (TF-RX port#, TF-RX sub-chn#, TF-RX inst#)

Out-link  : SIB# TF#_FCORE# (TF-TX port#, TF-TX sub-chn#, TF-TX inst#) ->
           FPC# FE# TQ# (TQ-RX sub-chnl #)
(6, 4, 06) in FPC02FE0TQ0(02)->S01F0_0(6,4,06) will be TF Rx Port 6, TF CCL Rx Sub-Channel 4, TF
CCL Rx Instance 6.
(2, 7, 10) in S01F0_0(2,7,10)->FPC02FE0TQ0(02) will be TF-Tx Port 2, TF CCL Tx Sub-channel 7, TF
CCL Tx Instance 10.
SIB 0 FCHIP 0 FCORE 0 :
-----

```

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(00)->S00F0_0(7,4,07) | OK | S00F0_0(3,7,11)->FPC00FE0TQ0(00) | OK |
| FPC00FE1TQ1(00)->S00F0_0(7,6,07) | OK | S00F0_0(3,5,11)->FPC00FE1TQ1(00) | OK |
| FPC00FE2TQ2(00)->S00F0_0(7,5,07) | OK | S00F0_0(3,6,11)->FPC00FE2TQ2(00) | OK |

| | |
|---------------------------------------|--|
| FPC00FE3TQ3(00)->S00F0_0(7,7,07) OK | S00F0_0(3,4,11)->FPC00FE3TQ3(00) OK |
| FPC01FE0TQ0(00)->S00F0_0(7,0,07) OK | S00F0_0(3,3,11)->FPC01FE0TQ0(00) OK |
| FPC01FE1TQ1(00)->S00F0_0(7,1,07) OK | S00F0_0(3,1,11)->FPC01FE1TQ1(00) OK |
| FPC01FE2TQ2(00)->S00F0_0(7,2,07) OK | S00F0_0(3,2,11)->FPC01FE2TQ2(00) Error |
| FPC01FE3TQ3(00)->S00F0_0(7,3,07) OK | S00F0_0(3,0,11)->FPC01FE3TQ3(00) OK |
| FPC02FE0TQ0(00)->S00F0_0(6,4,06) OK | S00F0_0(2,7,10)->FPC02FE0TQ0(00) OK |
| FPC02FE1TQ1(00)->S00F0_0(6,5,06) OK | S00F0_0(2,5,10)->FPC02FE1TQ1(00) OK |
| FPC02FE2TQ2(00)->S00F0_0(6,6,06) OK | S00F0_0(2,6,10)->FPC02FE2TQ2(00) OK |
| FPC02FE3TQ3(00)->S00F0_0(6,7,06) OK | S00F0_0(2,4,10)->FPC02FE3TQ3(00) OK |
| FPC03FE0TQ0(00)->S00F0_0(6,0,06) Down | S00F0_0(2,3,10)->FPC03FE0TQ0(00) Down |
| FPC03FE1TQ1(00)->S00F0_0(6,1,06) Down | S00F0_0(2,0,10)->FPC03FE1TQ1(00) Down |
| FPC03FE2TQ2(00)->S00F0_0(6,2,06) Down | S00F0_0(2,2,10)->FPC03FE2TQ2(00) Down |
| FPC03FE3TQ3(00)->S00F0_0(6,3,06) Down | S00F0_0(2,1,10)->FPC03FE3TQ3(00) Down |
| FPC04FE0TQ0(00)->S00F0_0(5,4,05) OK | S00F0_0(1,7,09)->FPC04FE0TQ0(00) OK |
| FPC04FE1TQ1(00)->S00F0_0(5,5,05) OK | S00F0_0(1,6,09)->FPC04FE1TQ1(00) OK |
| FPC04FE2TQ2(00)->S00F0_0(5,6,05) OK | S00F0_0(1,4,09)->FPC04FE2TQ2(00) OK |
| FPC04FE3TQ3(00)->S00F0_0(5,7,05) OK | S00F0_0(1,5,09)->FPC04FE3TQ3(00) OK |
| FPC05FE0TQ0(00)->S00F0_0(5,0,05) OK | S00F0_0(1,3,09)->FPC05FE0TQ0(00) OK |
| FPC05FE1TQ1(00)->S00F0_0(5,1,05) OK | S00F0_0(1,0,09)->FPC05FE1TQ1(00) OK |
| FPC05FE2TQ2(00)->S00F0_0(5,2,05) OK | S00F0_0(1,2,09)->FPC05FE2TQ2(00) OK |
| FPC05FE3TQ3(00)->S00F0_0(5,3,05) OK | S00F0_0(1,1,09)->FPC05FE3TQ3(00) OK |
| FPC06FE0TQ0(00)->S00F0_0(4,4,04) Down | S00F0_0(0,7,08)->FPC06FE0TQ0(00) Down |
| FPC06FE1TQ1(00)->S00F0_0(4,5,04) Down | S00F0_0(0,5,08)->FPC06FE1TQ1(00) Down |
| FPC06FE2TQ2(00)->S00F0_0(4,6,04) Down | S00F0_0(0,6,08)->FPC06FE2TQ2(00) Down |
| FPC06FE3TQ3(00)->S00F0_0(4,7,04) Down | S00F0_0(0,4,08)->FPC06FE3TQ3(00) Down |
| FPC07FE0TQ0(00)->S00F0_0(4,2,04) Down | S00F0_0(0,3,08)->FPC07FE0TQ0(00) Down |
| FPC07FE1TQ1(00)->S00F0_0(4,0,04) Down | S00F0_0(0,0,08)->FPC07FE1TQ1(00) Down |
| FPC07FE2TQ2(00)->S00F0_0(4,1,04) Down | S00F0_0(0,1,08)->FPC07FE2TQ2(00) Down |
| FPC07FE3TQ3(00)->S00F0_0(4,3,04) Down | S00F0_0(0,2,08)->FPC07FE3TQ3(00) Down |

SIB 0 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|-------------------------------------|-------|-------------------------------------|-------|
| FPC00FE0TQ0(01)->S00F0_1(3,4,11) OK | | S00F0_1(7,6,07)->FPC00FE0TQ0(01) OK | |
| FPC00FE1TQ1(01)->S00F0_1(3,5,11) OK | | S00F0_1(7,4,07)->FPC00FE1TQ1(01) OK | |
| FPC00FE2TQ2(01)->S00F0_1(3,6,11) OK | | S00F0_1(7,7,07)->FPC00FE2TQ2(01) OK | |
| FPC00FE3TQ3(01)->S00F0_1(3,7,11) OK | | S00F0_1(7,5,07)->FPC00FE3TQ3(01) OK | |
| FPC01FE0TQ0(01)->S00F0_1(3,0,11) OK | | S00F0_1(7,2,07)->FPC01FE0TQ0(01) OK | |
| FPC01FE1TQ1(01)->S00F0_1(3,1,11) OK | | S00F0_1(7,0,07)->FPC01FE1TQ1(01) OK | |
| FPC01FE2TQ2(01)->S00F0_1(3,2,11) OK | | S00F0_1(7,3,07)->FPC01FE2TQ2(01) OK | |
| FPC01FE3TQ3(01)->S00F0_1(3,3,11) OK | | S00F0_1(7,1,07)->FPC01FE3TQ3(01) OK | |
| FPC02FE0TQ0(01)->S00F0_1(2,4,10) OK | | S00F0_1(6,5,06)->FPC02FE0TQ0(01) OK | |

| | |
|---------------------------------------|---------------------------------------|
| FPC02FE1TQ1(01)->S00F0_1(2,5,10) OK | S00F0_1(6,4,06)->FPC02FE1TQ1(01) OK |
| FPC02FE2TQ2(01)->S00F0_1(2,6,10) OK | S00F0_1(6,7,06)->FPC02FE2TQ2(01) OK |
| FPC02FE3TQ3(01)->S00F0_1(2,7,10) OK | S00F0_1(6,6,06)->FPC02FE3TQ3(01) OK |
| FPC03FE0TQ0(01)->S00F0_1(2,0,10) Down | S00F0_1(6,1,06)->FPC03FE0TQ0(01) Down |
| FPC03FE1TQ1(01)->S00F0_1(2,1,10) Down | S00F0_1(6,0,06)->FPC03FE1TQ1(01) Down |
| FPC03FE2TQ2(01)->S00F0_1(2,2,10) Down | S00F0_1(6,3,06)->FPC03FE2TQ2(01) Down |
| FPC03FE3TQ3(01)->S00F0_1(2,3,10) Down | S00F0_1(6,2,06)->FPC03FE3TQ3(01) Down |
| FPC04FE0TQ0(01)->S00F0_1(1,4,09) OK | S00F0_1(5,5,05)->FPC04FE0TQ0(01) OK |
| FPC04FE1TQ1(01)->S00F0_1(1,5,09) OK | S00F0_1(5,4,05)->FPC04FE1TQ1(01) OK |
| FPC04FE2TQ2(01)->S00F0_1(1,6,09) OK | S00F0_1(5,7,05)->FPC04FE2TQ2(01) OK |
| FPC04FE3TQ3(01)->S00F0_1(1,7,09) OK | S00F0_1(5,6,05)->FPC04FE3TQ3(01) OK |
| FPC05FE0TQ0(01)->S00F0_1(1,0,09) OK | S00F0_1(5,1,05)->FPC05FE0TQ0(01) OK |
| FPC05FE1TQ1(01)->S00F0_1(1,1,09) OK | S00F0_1(5,0,05)->FPC05FE1TQ1(01) OK |
| FPC05FE2TQ2(01)->S00F0_1(1,2,09) OK | S00F0_1(5,3,05)->FPC05FE2TQ2(01) OK |
| FPC05FE3TQ3(01)->S00F0_1(1,3,09) OK | S00F0_1(5,2,05)->FPC05FE3TQ3(01) OK |
| FPC06FE0TQ0(01)->S00F0_1(0,4,08) Down | S00F0_1(4,7,04)->FPC06FE0TQ0(01) Down |
| FPC06FE1TQ1(01)->S00F0_1(0,5,08) Down | S00F0_1(4,0,04)->FPC06FE1TQ1(01) Down |
| FPC06FE2TQ2(01)->S00F0_1(0,6,08) Down | S00F0_1(4,6,04)->FPC06FE2TQ2(01) Down |
| FPC06FE3TQ3(01)->S00F0_1(0,7,08) Down | S00F0_1(4,1,04)->FPC06FE3TQ3(01) Down |
| FPC07FE0TQ0(01)->S00F0_1(0,0,08) Down | S00F0_1(4,3,04)->FPC07FE0TQ0(01) Down |
| FPC07FE1TQ1(01)->S00F0_1(0,1,08) Down | S00F0_1(4,4,04)->FPC07FE1TQ1(01) Down |
| FPC07FE2TQ2(01)->S00F0_1(0,2,08) Down | S00F0_1(4,2,04)->FPC07FE2TQ2(01) Down |
| FPC07FE3TQ3(01)->S00F0_1(0,3,08) Down | S00F0_1(4,5,04)->FPC07FE3TQ3(01) Down |

SIB 1 FCHIP 0 FCORE 0 :

| In-links | State | Out-links | State |
|----------------------------------|-------|----------------------------------|-------|
| FPC00FE0TQ0(02)->S01F0_0(7,4,07) | Error | S01F0_0(3,7,11)->FPC00FE0TQ0(02) | Down |
| FPC00FE1TQ1(02)->S01F0_0(7,6,07) | OK | S01F0_0(3,5,11)->FPC00FE1TQ1(02) | OK |
| FPC00FE2TQ2(02)->S01F0_0(7,5,07) | OK | S01F0_0(3,6,11)->FPC00FE2TQ2(02) | OK |
| FPC00FE3TQ3(02)->S01F0_0(7,7,07) | OK | S01F0_0(3,4,11)->FPC00FE3TQ3(02) | OK |
| FPC01FE0TQ0(02)->S01F0_0(7,0,07) | OK | S01F0_0(3,3,11)->FPC01FE0TQ0(02) | OK |
| FPC01FE1TQ1(02)->S01F0_0(7,1,07) | OK | S01F0_0(3,1,11)->FPC01FE1TQ1(02) | OK |
| FPC01FE2TQ2(02)->S01F0_0(7,2,07) | OK | S01F0_0(3,2,11)->FPC01FE2TQ2(02) | OK |
| FPC01FE3TQ3(02)->S01F0_0(7,3,07) | OK | S01F0_0(3,0,11)->FPC01FE3TQ3(02) | OK |
| FPC02FE0TQ0(02)->S01F0_0(6,4,06) | OK | S01F0_0(2,7,10)->FPC02FE0TQ0(02) | OK |
| FPC02FE1TQ1(02)->S01F0_0(6,5,06) | OK | S01F0_0(2,5,10)->FPC02FE1TQ1(02) | OK |
| FPC02FE2TQ2(02)->S01F0_0(6,6,06) | OK | S01F0_0(2,6,10)->FPC02FE2TQ2(02) | OK |
| FPC02FE3TQ3(02)->S01F0_0(6,7,06) | OK | S01F0_0(2,4,10)->FPC02FE3TQ3(02) | OK |
| FPC03FE0TQ0(02)->S01F0_0(6,0,06) | Down | S01F0_0(2,3,10)->FPC03FE0TQ0(02) | Down |
| FPC03FE1TQ1(02)->S01F0_0(6,1,06) | Down | S01F0_0(2,0,10)->FPC03FE1TQ1(02) | Down |
| FPC03FE2TQ2(02)->S01F0_0(6,2,06) | Down | S01F0_0(2,2,10)->FPC03FE2TQ2(02) | Down |

| | |
|---------------------------------------|---------------------------------------|
| FPC03FE3TQ3(02)->S01F0_0(6,3,06) Down | S01F0_0(2,1,10)->FPC03FE3TQ3(02) Down |
| FPC04FE0TQ0(02)->S01F0_0(5,4,05) OK | S01F0_0(1,7,09)->FPC04FE0TQ0(02) OK |
| FPC04FE1TQ1(02)->S01F0_0(5,5,05) OK | S01F0_0(1,6,09)->FPC04FE1TQ1(02) OK |
| FPC04FE2TQ2(02)->S01F0_0(5,6,05) OK | S01F0_0(1,4,09)->FPC04FE2TQ2(02) OK |
| FPC04FE3TQ3(02)->S01F0_0(5,7,05) OK | S01F0_0(1,5,09)->FPC04FE3TQ3(02) OK |
| FPC05FE0TQ0(02)->S01F0_0(5,0,05) OK | S01F0_0(1,3,09)->FPC05FE0TQ0(02) OK |
| FPC05FE1TQ1(02)->S01F0_0(5,1,05) OK | S01F0_0(1,0,09)->FPC05FE1TQ1(02) OK |
| FPC05FE2TQ2(02)->S01F0_0(5,2,05) OK | S01F0_0(1,2,09)->FPC05FE2TQ2(02) OK |
| FPC05FE3TQ3(02)->S01F0_0(5,3,05) OK | S01F0_0(1,1,09)->FPC05FE3TQ3(02) OK |
| FPC06FE0TQ0(02)->S01F0_0(4,4,04) Down | S01F0_0(0,7,08)->FPC06FE0TQ0(02) Down |
| FPC06FE1TQ1(02)->S01F0_0(4,5,04) Down | S01F0_0(0,5,08)->FPC06FE1TQ1(02) Down |
| FPC06FE2TQ2(02)->S01F0_0(4,6,04) Down | S01F0_0(0,6,08)->FPC06FE2TQ2(02) Down |
| FPC06FE3TQ3(02)->S01F0_0(4,7,04) Down | S01F0_0(0,4,08)->FPC06FE3TQ3(02) Down |
| FPC07FE0TQ0(02)->S01F0_0(4,2,04) Down | S01F0_0(0,3,08)->FPC07FE0TQ0(02) Down |
| FPC07FE1TQ1(02)->S01F0_0(4,0,04) Down | S01F0_0(0,0,08)->FPC07FE1TQ1(02) Down |
| FPC07FE2TQ2(02)->S01F0_0(4,1,04) Down | S01F0_0(0,1,08)->FPC07FE2TQ2(02) Down |
| FPC07FE3TQ3(02)->S01F0_0(4,3,04) Down | S01F0_0(0,2,08)->FPC07FE3TQ3(02) Down |

SIB 1 FCHIP 0 FCORE 1 :

| In-links | State | Out-links | State |
|---------------------------------------|-------|---------------------------------------|-------|
| ----- | | | |
| FPC00FE0TQ0(03)->S01F0_1(3,4,11) OK | | S01F0_1(7,6,07)->FPC00FE0TQ0(03) OK | |
| FPC00FE1TQ1(03)->S01F0_1(3,5,11) OK | | S01F0_1(7,4,07)->FPC00FE1TQ1(03) OK | |
| FPC00FE2TQ2(03)->S01F0_1(3,6,11) OK | | S01F0_1(7,7,07)->FPC00FE2TQ2(03) OK | |
| FPC00FE3TQ3(03)->S01F0_1(3,7,11) OK | | S01F0_1(7,5,07)->FPC00FE3TQ3(03) OK | |
| FPC01FE0TQ0(03)->S01F0_1(3,0,11) OK | | S01F0_1(7,2,07)->FPC01FE0TQ0(03) OK | |
| FPC01FE1TQ1(03)->S01F0_1(3,1,11) OK | | S01F0_1(7,0,07)->FPC01FE1TQ1(03) OK | |
| FPC01FE2TQ2(03)->S01F0_1(3,2,11) OK | | S01F0_1(7,3,07)->FPC01FE2TQ2(03) OK | |
| FPC01FE3TQ3(03)->S01F0_1(3,3,11) OK | | S01F0_1(7,1,07)->FPC01FE3TQ3(03) OK | |
| FPC02FE0TQ0(03)->S01F0_1(2,4,10) OK | | S01F0_1(6,5,06)->FPC02FE0TQ0(03) OK | |
| FPC02FE1TQ1(03)->S01F0_1(2,5,10) OK | | S01F0_1(6,4,06)->FPC02FE1TQ1(03) OK | |
| FPC02FE2TQ2(03)->S01F0_1(2,6,10) OK | | S01F0_1(6,7,06)->FPC02FE2TQ2(03) OK | |
| FPC02FE3TQ3(03)->S01F0_1(2,7,10) OK | | S01F0_1(6,6,06)->FPC02FE3TQ3(03) OK | |
| FPC03FE0TQ0(03)->S01F0_1(2,0,10) Down | | S01F0_1(6,1,06)->FPC03FE0TQ0(03) Down | |
| FPC03FE1TQ1(03)->S01F0_1(2,1,10) Down | | S01F0_1(6,0,06)->FPC03FE1TQ1(03) Down | |
| FPC03FE2TQ2(03)->S01F0_1(2,2,10) Down | | S01F0_1(6,3,06)->FPC03FE2TQ2(03) Down | |
| FPC03FE3TQ3(03)->S01F0_1(2,3,10) Down | | S01F0_1(6,2,06)->FPC03FE3TQ3(03) Down | |
| FPC04FE0TQ0(03)->S01F0_1(1,4,09) OK | | S01F0_1(5,5,05)->FPC04FE0TQ0(03) OK | |
| FPC04FE1TQ1(03)->S01F0_1(1,5,09) OK | | S01F0_1(5,4,05)->FPC04FE1TQ1(03) OK | |
| FPC04FE2TQ2(03)->S01F0_1(1,6,09) OK | | S01F0_1(5,7,05)->FPC04FE2TQ2(03) OK | |
| FPC04FE3TQ3(03)->S01F0_1(1,7,09) OK | | S01F0_1(5,6,05)->FPC04FE3TQ3(03) OK | |
| FPC05FE0TQ0(03)->S01F0_1(1,0,09) OK | | S01F0_1(5,1,05)->FPC05FE0TQ0(03) OK | |


```

FPC05FE1TQ1(03)->S01F0_1(1,1,09) OK      S01F0_1(5,0,05)->FPC05FE1TQ1(03) OK
FPC05FE2TQ2(03)->S01F0_1(1,2,09) OK      S01F0_1(5,3,05)->FPC05FE2TQ2(03) OK
FPC05FE3TQ3(03)->S01F0_1(1,3,09) OK      S01F0_1(5,2,05)->FPC05FE3TQ3(03) OK
FPC06FE0TQ0(03)->S01F0_1(0,4,08) Down    S01F0_1(4,7,04)->FPC06FE0TQ0(03) Down
FPC06FE1TQ1(03)->S01F0_1(0,5,08) Down    S01F0_1(4,0,04)->FPC06FE1TQ1(03) Down
FPC06FE2TQ2(03)->S01F0_1(0,6,08) Down    S01F0_1(4,6,04)->FPC06FE2TQ2(03) Down
FPC06FE3TQ3(03)->S01F0_1(0,7,08) Down    S01F0_1(4,1,04)->FPC06FE3TQ3(03) Down
FPC07FE0TQ0(03)->S01F0_1(0,0,08) Down    S01F0_1(4,3,04)->FPC07FE0TQ0(03) Down
FPC07FE1TQ1(03)->S01F0_1(0,1,08) Down    S01F0_1(4,4,04)->FPC07FE1TQ1(03) Down
FPC07FE2TQ2(03)->S01F0_1(0,2,08) Down    S01F0_1(4,2,04)->FPC07FE2TQ2(03) Down
FPC07FE3TQ3(03)->S01F0_1(0,3,08) Down    S01F0_1(4,5,04)->FPC07FE3TQ3(03) Down

```

show chassis fabric topology (PTX10016 Router)

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

```

In-link  : FPC# FE# (TX inst#, TX sub-chnl #) ->
           SIB# ASIC#_FCORE# (RX port#,RX sub-chn#, RX inst#)

```

```

Out-link : SIB# ASIC#_FCORE#(TX port#, TX sub-chn#, TX inst#) ->
           FPC# FE# (RX inst#, RX sub-chnl #)

```

```
SIB 0 FCHIP 0 FCORE 0 :
```

```

-----
              In-links              State              Out-links              State
-----
FPC00FE1(0,05)->S00F0_0(46,0,46) DOWN    S00F0_0(46,0,46)->FPC00FE1(0,05) FAULT
FPC00FE1(0,07)->S00F0_0(46,1,46) UP      S00F0_0(46,1,46)->FPC00FE1(0,07) UP

```

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

```

In-link  : FPC# FE# ASIC# (TX inst#, TX sub-chnl #) ->
           SIB# ASIC#_FCORE# (RX port#, RX sub-chn#, RX inst#)

```

```

Out-link : SIB# ASIC#_FCORE# (TX port#, TX sub-chn#, TX inst#) ->
           FPC# FE# ASIC# (RX inst#, RX sub-chnl #)

```

```
SIB 0 FCHIP 0 FCORE 0 :
```

```

-----
              In-links              State              Out-links              State
-----
FPC00FE0(1,17)->S00F0_0(01,0,01) OK      S00F0_0(00,0,00)->FPC00FE0(1,09) OK
FPC00FE0(1,09)->S00F0_0(02,0,02) OK      S00F0_0(00,1,00)->FPC00FE0(1,17) OK
FPC00FE0(1,07)->S00F0_0(02,2,02) OK      S00F0_0(00,2,00)->FPC00FE0(1,07) OK

```


| | |
|-------------------------------------|-------------------------------------|
| FPC00FE1(1,12)->S00F0_0(01,1,01) OK | S00F0_0(00,3,00)->FPC00FE1(1,06) OK |
| FPC00FE1(1,06)->S00F0_0(01,2,01) OK | S00F0_0(01,1,01)->FPC00FE1(1,12) OK |
| FPC00FE1(1,10)->S00F0_0(01,3,01) OK | S00F0_0(01,3,01)->FPC00FE1(1,10) OK |
| FPC00FE2(1,16)->S00F0_0(00,4,00) OK | S00F0_0(00,4,00)->FPC00FE2(1,08) OK |
| FPC00FE2(1,08)->S00F0_0(01,6,01) OK | S00F0_0(00,5,00)->FPC00FE2(1,16) OK |
| FPC00FE2(1,06)->S00F0_0(01,7,01) OK | S00F0_0(00,6,00)->FPC00FE2(1,06) OK |
| FPC05FE0(1,07)->S00F0_0(05,5,05) OK | S00F0_0(05,2,05)->FPC05FE0(1,17) OK |
| FPC05FE0(1,09)->S00F0_0(05,7,05) OK | S00F0_0(06,4,06)->FPC05FE0(1,07) OK |
| FPC05FE0(1,17)->S00F0_0(09,3,09) OK | S00F0_0(06,7,06)->FPC05FE0(1,09) OK |
| FPC05FE1(1,06)->S00F0_0(06,1,06) OK | S00F0_0(06,0,06)->FPC05FE1(1,06) OK |
| FPC05FE1(1,08)->S00F0_0(06,3,06) OK | S00F0_0(06,2,06)->FPC05FE1(1,08) OK |
| FPC05FE1(1,16)->S00F0_0(09,7,09) OK | S00F0_0(09,6,09)->FPC05FE1(1,16) OK |
| FPC05FE2(1,10)->S00F0_0(09,0,09) OK | S00F0_0(05,0,05)->FPC05FE2(1,06) OK |
| FPC05FE2(1,06)->S00F0_0(09,1,09) OK | S00F0_0(05,1,05)->FPC05FE2(1,10) OK |
| FPC05FE2(1,12)->S00F0_0(09,2,09) OK | S00F0_0(05,3,05)->FPC05FE2(1,12) OK |
| FPC05FE3(1,11)->S00F0_0(09,4,09) OK | S00F0_0(09,4,09)->FPC05FE3(1,07) OK |
| FPC05FE3(1,07)->S00F0_0(09,5,09) OK | S00F0_0(09,5,09)->FPC05FE3(1,11) OK |
| FPC05FE3(1,13)->S00F0_0(09,6,09) OK | S00F0_0(09,7,09)->FPC05FE3(1,13) OK |
| FPC05FE4(1,16)->S00F0_0(05,3,05) OK | S00F0_0(05,4,05)->FPC05FE4(1,06) OK |
| FPC05FE4(1,06)->S00F0_0(06,5,06) OK | S00F0_0(05,6,05)->FPC05FE4(1,08) OK |
| FPC05FE4(1,08)->S00F0_0(06,7,06) OK | S00F0_0(09,2,09)->FPC05FE4(1,16) OK |
| FPC05FE5(1,10)->S00F0_0(05,0,05) OK | S00F0_0(09,0,09)->FPC05FE5(1,06) OK |
| FPC05FE5(1,06)->S00F0_0(05,1,05) OK | S00F0_0(09,1,09)->FPC05FE5(1,10) OK |
| FPC05FE5(1,12)->S00F0_0(05,2,05) OK | S00F0_0(09,3,09)->FPC05FE5(1,12) OK |
| FPC06FE0(1,17)->S00F0_0(05,6,05) OK | S00F0_0(06,6,06)->FPC06FE0(1,17) OK |
| FPC06FE0(1,07)->S00F0_0(07,0,07) OK | S00F0_0(08,0,08)->FPC06FE0(1,07) OK |
| FPC06FE0(1,09)->S00F0_0(07,2,07) OK | S00F0_0(08,2,08)->FPC06FE0(1,09) OK |
| FPC06FE1(1,16)->S00F0_0(06,2,06) OK | S00F0_0(06,3,06)->FPC06FE1(1,16) OK |
| FPC06FE1(1,06)->S00F0_0(07,4,07) OK | S00F0_0(07,4,07)->FPC06FE1(1,06) OK |
| FPC06FE1(1,08)->S00F0_0(07,6,07) OK | S00F0_0(07,6,07)->FPC06FE1(1,08) OK |
| FPC06FE2(1,06)->S00F0_0(05,4,05) OK | S00F0_0(06,5,06)->FPC06FE2(1,06) OK |
| FPC06FE2(1,10)->S00F0_0(07,1,07) OK | S00F0_0(08,1,08)->FPC06FE2(1,10) OK |
| FPC06FE2(1,12)->S00F0_0(07,3,07) OK | S00F0_0(08,3,08)->FPC06FE2(1,12) OK |
| FPC06FE3(1,07)->S00F0_0(06,0,06) OK | S00F0_0(06,1,06)->FPC06FE3(1,07) OK |
| FPC06FE3(1,11)->S00F0_0(07,5,07) OK | S00F0_0(07,5,07)->FPC06FE3(1,11) OK |
| FPC06FE3(1,13)->S00F0_0(07,7,07) OK | S00F0_0(07,7,07)->FPC06FE3(1,13) OK |
| FPC06FE4(1,16)->S00F0_0(06,6,06) OK | S00F0_0(05,7,05)->FPC06FE4(1,16) OK |
| FPC06FE4(1,06)->S00F0_0(08,0,08) OK | S00F0_0(07,0,07)->FPC06FE4(1,06) OK |
| FPC06FE4(1,08)->S00F0_0(08,2,08) OK | S00F0_0(07,2,07)->FPC06FE4(1,08) OK |
| FPC06FE5(1,06)->S00F0_0(06,4,06) OK | S00F0_0(05,5,05)->FPC06FE5(1,06) OK |
| FPC06FE5(1,10)->S00F0_0(08,1,08) OK | S00F0_0(07,1,07)->FPC06FE5(1,10) OK |
| FPC06FE5(1,12)->S00F0_0(08,3,08) OK | S00F0_0(07,3,07)->FPC06FE5(1,12) OK |

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FPC05FE5(1,01)->S01F0_0(08,3,08) OK S01F0_0(07,3,07)->FPC06FE5(1,01) 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 | |
| FPC05FE0(1,11)->S00F1_0(02,0,02) OK | | S00F1_0(02,1,02)->FPC05FE0(1,13) OK | |
| FPC05FE0(1,13)->S00F1_0(02,2,02) OK | | S00F1_0(02,3,02)->FPC05FE0(1,11) 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(1,12) OK | |
| FPC05FE1(1,12)->S00F1_0(02,6,02) OK | | S00F1_0(02,7,02)->FPC05FE1(1,10) 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(1,08) OK | |
| FPC05FE2(1,08)->S00F1_0(04,5,04) OK | | S00F1_0(03,5,03)->FPC05FE2(1,16) 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(1,09) OK | |
| FPC05FE3(1,09)->S00F1_0(04,1,04) OK | | S00F1_0(04,1,04)->FPC05FE3(1,17) 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(1,12) OK | |
| FPC05FE4(1,12)->S00F1_0(03,2,03) OK | | S00F1_0(03,3,03)->FPC05FE4(1,10) 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(1,08) OK | |
| FPC05FE5(1,08)->S00F1_0(03,5,03) OK | | S00F1_0(04,5,04)->FPC05FE5(1,16) 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 | |
| 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 | |

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| 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 |
| ... | |
| ... | |
| FPC15FE5(1,01)->S01F0_0(08,3,08) OK | S01F0_0(07,3,07)->FPC06FE5(1,01) 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 | |

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| 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 |
| ... | |
| ... | |
| FPC15FE5(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 | |

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|-------------------------------------|-------------------------------------|
| 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 |
| ... | |
| ... | |
| FPC15FE5(1,01)->S01F0_0(08,3,08) OK | S01F0_0(07,3,07)->FPC06FE5(1,01) 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
Not Online
```

```
SIB 4
Not Online
```

```
SIB 5
Not Online
```

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.

RELATED DOCUMENTATION

No Link Title

show chassis fabric unreachable-destinations

IN THIS SECTION

- [Syntax | 1351](#)
- [Description | 1351](#)
- [Required Privilege Level | 1351](#)
- [Output Fields | 1351](#)
- [Sample Output | 1352](#)
- [Release Information | 1354](#)

Syntax

```
show chassis fabric unreachable-destinations
```

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

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 79: 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 |

Release Information

Command introduced before Junos OS Release 11.4.

RELATED DOCUMENTATION

[show chassis fabric reachability](#) | 1265

show chassis fan

IN THIS SECTION

- [Syntax](#) | 1354
- [Syntax \(MX Series Routers\)](#) | 1355
- [Syntax \(MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform\)](#) | 1355
- [Syntax \(QFX Series\)](#) | 1355
- [Syntax \(TX Matrix Router\)](#) | 1355
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Syntax

```
show chassis fan
```


Syntax (MX Series Routers)

```
show chassis fan
<all-members>
<local>
<member member-id>
```

Syntax (MX104, MX204, MX2010, MX2020, MX2008, and MX10003 Universal Routing Platform)

```
show chassis fan
<satellite [slot-id slot-id | device-alias alias-name]>
```

Syntax (QFX Series)

```
show chassis fan
<interconnect-device name>
```

Syntax (TX Matrix Router)

```
show chassis fan
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis fan
<lcc number | sfc number>
```


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 <i>member-id</i> | (MX Series routers only) (Optional) Display information about the fan tray and fans for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace <i>member-id</i> variable with a value 0 or 1. |
| interconnect-device <i>name</i> | (QFX3000-G QFabric systems only) (Optional) Display information about the fan tray and fans for the specified QFX3008-I Interconnect device. |
| lcc <i>number</i> | (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 <i>slot-id</i> device-alias <i>alias-name</i>] | (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 <i>number</i> variable with 0. |

Required Privilege Level

view

Output Fields

Table 80 on page 1357 lists the output fields for the `show chassis fan` command. Output fields are listed in the approximate order in which they appear.

Table 80: 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). |

Table 80: show chassis fan Output Fields (Continued)

| Field Name | Field Description |
|-------------|---|
| % RPM | (PTX10003, MX2010 routers, MX2020 routers, MX2008 routers, and PTX Series Packet Transport Routers only) Percentage of the fan speed being used. |
| 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 (T4000 Core Router)

```
user@host> show chassis fan
```

| Item | Status | RPM | Measurement |
|------------------------|--------|------|------------------------|
| Top Left Front fan | OK | 5190 | Spinning at high speed |
| Top Left Middle fan | OK | 5220 | Spinning at high speed |
| Top Left Rear fan | OK | 5190 | Spinning at high speed |
| Top Right Front fan | OK | 5160 | Spinning at high speed |
| Top Right Middle fan | OK | 5190 | Spinning at high speed |
| Top Right Rear fan | OK | 5160 | Spinning at high speed |
| Bottom Left Front fan | OK | 6030 | Spinning at high speed |
| Bottom Left Middle fan | OK | 6090 | Spinning at high speed |
| Bottom Left Rear fan | OK | 6090 | Spinning at high speed |

| | | | |
|-------------------------|----|-------|------------------------|
| Bottom Right Front fan | OK | 6030 | Spinning at high speed |
| Bottom Right Middle fan | OK | 6060 | Spinning at high speed |
| Bottom Right Rear fan | OK | 6060 | Spinning at high speed |
| Rear Tray Top fan | OK | 10000 | Spinning at high speed |
| Rear Tray Second fan | OK | 10000 | Spinning at high speed |
| Rear Tray Third fan | OK | 10000 | Spinning at high speed |
| Rear Tray Fourth fan | OK | 10000 | Spinning at high speed |
| Rear Tray Fifth fan | OK | 10000 | Spinning at high speed |
| Rear Tray Sixth fan | OK | 10000 | Spinning at high speed |
| Rear Tray Seventh fan | OK | 10000 | Spinning at high speed |
| Rear Tray Bottom fan | OK | 10000 | Spinning at high speed |

show chassis fan (TX Matrix Router)

```
user@host> show chassis fan
```

```
scc-re0:
```

```
-----
```

| Item | Status | RPM | Measurement |
|-------------------------|--------|------|--------------------------|
| Top Left Front fan | OK | 3420 | Spinning at normal speed |
| Top Left Middle fan | OK | 3390 | Spinning at normal speed |
| Top Left Rear fan | OK | 3420 | Spinning at normal speed |
| Top Right Front fan | OK | 3390 | Spinning at normal speed |
| Top Right Middle fan | OK | 3420 | Spinning at normal speed |
| Top Right Rear fan | OK | 3390 | Spinning at normal speed |
| Bottom Left Front fan | OK | 3420 | Spinning at normal speed |
| Bottom Left Middle fan | OK | 3450 | Spinning at normal speed |
| Bottom Left Rear fan | OK | 3420 | Spinning at normal speed |
| Bottom Right Front fan | OK | 3420 | Spinning at normal speed |
| Bottom Right Middle fan | OK | 3420 | Spinning at normal speed |
| Bottom Right Rear fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Top fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Second fan | OK | 5190 | Spinning at normal speed |
| Rear Tray Third fan | OK | 5190 | Spinning at normal speed |
| Rear Tray Fourth fan | OK | 5190 | Spinning at normal speed |
| Rear Tray Fifth fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Sixth fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Seventh fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Bottom fan | OK | 3420 | Spinning at normal speed |

```
lcc2-re0:
```

```
-----
```


| Item | Status | RPM | Measurement |
|-------------------------|--------|------|--------------------------|
| Top Left Front fan | OK | 3420 | Spinning at normal speed |
| Top Left Middle fan | OK | 3420 | Spinning at normal speed |
| Top Left Rear fan | OK | 3450 | Spinning at normal speed |
| Top Right Front fan | OK | 3420 | Spinning at normal speed |
| Top Right Middle fan | OK | 3450 | Spinning at normal speed |
| Top Right Rear fan | OK | 3360 | Spinning at normal speed |
| Bottom Left Front fan | OK | 3420 | Spinning at normal speed |
| Bottom Left Middle fan | OK | 3480 | Spinning at normal speed |
| Bottom Left Rear fan | OK | 3420 | Spinning at normal speed |
| Bottom Right Front fan | OK | 3420 | Spinning at normal speed |
| Bottom Right Middle fan | OK | 3390 | Spinning at normal speed |
| Bottom Right Rear fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Top fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Second fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Third fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Fourth fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Fifth fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Sixth fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Seventh fan | OK | 3420 | Spinning at normal speed |
| Rear Tray Bottom fan | OK | 3420 | Spinning at normal speed |

show chassis fan (TX Matrix Plus Router)

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

| Item | Status | RPM | Measurement |
|------------------|--------|------|--------------------------|
| Fan Tray 0 Fan 1 | OK | 4350 | Spinning at normal speed |
| Fan Tray 0 Fan 2 | OK | 4380 | Spinning at normal speed |
| Fan Tray 0 Fan 3 | OK | 4410 | Spinning at normal speed |
| Fan Tray 0 Fan 4 | OK | 4380 | Spinning at normal speed |
| Fan Tray 0 Fan 5 | OK | 4350 | Spinning at normal speed |
| Fan Tray 0 Fan 6 | OK | 4380 | Spinning at normal speed |
| Fan Tray 1 Fan 1 | OK | 4410 | Spinning at normal speed |
| Fan Tray 1 Fan 2 | OK | 4380 | Spinning at normal speed |
| Fan Tray 1 Fan 3 | OK | 4410 | Spinning at normal speed |
| Fan Tray 1 Fan 4 | OK | 4380 | Spinning at normal speed |
| Fan Tray 1 Fan 5 | OK | 4410 | Spinning at normal speed |
| Fan Tray 1 Fan 6 | OK | 4410 | Spinning at normal speed |
| Fan Tray 2 Fan 1 | OK | 4380 | Spinning at normal speed |

| | | | |
|------------------|----|------|--------------------------|
| Fan Tray 2 Fan 2 | OK | 4380 | Spinning at normal speed |
| Fan Tray 2 Fan 3 | OK | 4380 | Spinning at normal speed |
| Fan Tray 2 Fan 4 | OK | 4410 | Spinning at normal speed |
| Fan Tray 2 Fan 5 | OK | 4380 | Spinning at normal speed |
| Fan Tray 2 Fan 6 | OK | 4410 | Spinning at normal speed |
| Fan Tray 2 Fan 7 | OK | 4410 | Spinning at normal speed |
| Fan Tray 2 Fan 8 | OK | 4380 | Spinning at normal speed |
| Fan Tray 2 Fan 9 | OK | 4380 | Spinning at normal speed |
| Fan Tray 3 Fan 1 | OK | 4350 | Spinning at normal speed |
| Fan Tray 3 Fan 2 | OK | 4380 | Spinning at normal speed |
| Fan Tray 3 Fan 3 | OK | 4410 | Spinning at normal speed |
| Fan Tray 3 Fan 4 | OK | 4440 | Spinning at normal speed |
| Fan Tray 3 Fan 5 | OK | 4380 | Spinning at normal speed |
| Fan Tray 3 Fan 6 | OK | 4410 | Spinning at normal speed |
| Fan Tray 3 Fan 7 | OK | 4410 | Spinning at normal speed |
| Fan Tray 3 Fan 8 | OK | 4380 | Spinning at normal speed |
| Fan Tray 3 Fan 9 | OK | 4410 | Spinning at normal speed |
| Fan Tray 4 Fan 1 | OK | 4410 | Spinning at normal speed |
| Fan Tray 4 Fan 2 | OK | 4410 | Spinning at normal speed |
| Fan Tray 4 Fan 3 | OK | 4380 | Spinning at normal speed |
| Fan Tray 4 Fan 4 | OK | 4380 | Spinning at normal speed |
| Fan Tray 4 Fan 5 | OK | 4410 | Spinning at normal speed |
| Fan Tray 4 Fan 6 | OK | 4410 | Spinning at normal speed |
| Fan Tray 4 Fan 7 | OK | 4410 | Spinning at normal speed |
| Fan Tray 4 Fan 8 | OK | 4410 | Spinning at normal speed |
| Fan Tray 4 Fan 9 | OK | 4410 | Spinning at normal speed |
| Fan Tray 5 Fan 1 | OK | 4350 | Spinning at normal speed |
| Fan Tray 5 Fan 2 | OK | 4380 | Spinning at normal speed |
| Fan Tray 5 Fan 3 | OK | 4380 | Spinning at normal speed |
| Fan Tray 5 Fan 4 | OK | 4350 | Spinning at normal speed |
| Fan Tray 5 Fan 5 | OK | 4380 | Spinning at normal speed |
| Fan Tray 5 Fan 6 | OK | 4410 | Spinning at normal speed |
| Fan Tray 5 Fan 7 | OK | 4410 | Spinning at normal speed |
| Fan Tray 5 Fan 8 | OK | 4380 | Spinning at normal speed |
| Fan Tray 5 Fan 9 | OK | 4410 | Spinning at normal speed |

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 | |

lcc0-re0:

| Item | Status | RPM | Measurement |
|------------------------|--------|------|--------------------------|
| Top Left Front fan | OK | 3420 | Spinning at normal speed |
| Top Left Middle fan | OK | 3390 | Spinning at normal speed |
| Top Left Rear fan | OK | 3390 | Spinning at normal speed |
| Top Right Front fan | OK | 3420 | Spinning at normal speed |
| Top Right Middle fan | OK | 3420 | Spinning at normal speed |
| Top Right Rear fan | OK | 3450 | Spinning at normal speed |
| Bottom Left Front fan | OK | 3420 | Spinning at normal speed |
| Bottom Left Middle fan | OK | 3390 | Spinning at normal speed |
| Bottom Left Rear fan | OK | 3420 | Spinning at normal speed |

| | | | |
|---------------------------|----|------|--------------------------|
| Bottom Right Front fan | OK | 3420 | Spinning at normal speed |
| Bottom Right Middle fan | OK | 3390 | Spinning at normal speed |
| Bottom Right Rear fan | OK | 3420 | Spinning at normal speed |
| Rear Tray fan 1 (Top) | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 2 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 3 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 4 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 5 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 6 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 7 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 8 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 9 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 10 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 11 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 12 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 13 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 14 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 15 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 16 (Bottom) | OK | 7740 | Spinning at normal speed |

lcc2-re0:

| Item | Status | RPM | Measurement |
|-------------------------|--------|------|--------------------------|
| Top Left Front fan | OK | 3420 | Spinning at normal speed |
| Top Left Middle fan | OK | 3390 | Spinning at normal speed |
| Top Left Rear fan | OK | 3420 | Spinning at normal speed |
| Top Right Front fan | OK | 3420 | Spinning at normal speed |
| Top Right Middle fan | OK | 3420 | Spinning at normal speed |
| Top Right Rear fan | OK | 3450 | Spinning at normal speed |
| Bottom Left Front fan | OK | 3420 | Spinning at normal speed |
| Bottom Left Middle fan | OK | 3390 | Spinning at normal speed |
| Bottom Left Rear fan | OK | 3420 | Spinning at normal speed |
| Bottom Right Front fan | OK | 3420 | Spinning at normal speed |
| Bottom Right Middle fan | OK | 3390 | Spinning at normal speed |
| Bottom Right Rear fan | OK | 3420 | Spinning at normal speed |
| Rear Tray fan 1 (Top) | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 2 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 3 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 4 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 5 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 6 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 7 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 8 | OK | 7740 | Spinning at normal speed |

| | | | |
|---------------------------|----|------|--------------------------|
| Rear Tray fan 9 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 10 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 11 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 12 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 13 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 14 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 15 | OK | 7740 | Spinning at normal speed |
| Rear Tray fan 16 (Bottom) | OK | 7740 | Spinning at normal speed |

show chassis fan (PTX5000 Packet Transport 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 (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 (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 |

Release Information

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.

satellite option introduced in Junos OS Release 14.2R3.

Command output introduced for Junos OS Evolved Release 19.1R1.

show chassis feb

IN THIS SECTION

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Syntax

```
show chassis feb
```

Description

(ACX1000, ACX7509, M5, M10, and M120 routers only) Display Forwarding Engine Board (FEB) status information. Use this command to identify the memory allocated for each PFE (Packet Forwarding Engine).

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 81 on page 1374](#) lists the output fields for the `show chassis feb` command. Output fields are listed in the approximate order in which they appear.

Table 81: show chassis feb

| Field Name | Field Description |
|---------------------------------------|---|
| State | <p>State of the FEB:</p> <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. |
| CPU Utilization (%) | <p>Percentage of CPU being used:</p> <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 (%) | <p>Percentage of memory utilization:</p> <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. |

Table 81: show chassis feb (Continued)

| Field Name | Field Description |
|--|---|
| 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 RLDRAM | Amount of reduced latency dynamic random access memory (RLDRAM) 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 (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) 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 RLDRAM          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 RLDRAM          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 RLDRAM          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 RLDRAM              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 RLDRAM              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 (ACX1000 Universal Metro Router)

```

user@host> show chassis feb detail
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 feb (ACX7509 Universal Metro Router)

```
user@host> show chassis feb
Slot 0 information:
  State                Online
  Start time:          2022-06-13 21:30:00 PDT
  Uptime:              2 hours, 58 minutes, 40 seconds
Slot 1 information:
  State                Online Standby
  Start time:          2022-06-13 21:30:00 PDT
  Uptime:              2 hours, 58 minutes, 40 seconds
```

Release Information

Command introduced before Junos OS Release 7.4.

Command support added for ACX7509 platform in Junos OS Evolved Release 22.2. Detail option is not supported on ACX7509 platform.

RELATED DOCUMENTATION

| |
|--|
| No Link Title |
| No Link Title |
| request chassis feb 432 |
| show chassis fabric feb 1149 |
| show chassis fpc-feb-connectivity 1481 |
| show chassis routing-engine 1627 |

show chassis firmware

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Syntax

```
show chassis firmware
```

Syntax (TX Matrix Routers)

```
show chassis firmware  
<lcc number | scc>
```


Syntax (TX Matrix Plus Routers)

```
show chassis firmware  
<lcc number | sfc number>
```

Syntax (MX Series Routers)

```
show chassis firmware  
<all-members>  
<local>  
<member member-id>
```

Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms)

```
show chassis firmware  
<satellite [slot-id slot-id | device-alias alias-name]>
```

Syntax (QFX Series)

```
show chassis firmware  
interconnect-device name  
node-device name
```


Syntax (ACX5048 and ACX5096 Routers)

```
show chassis firmware
interconnect-device name
node-device name
```

Syntax (EX Series Switches)

```
show chassis firmware
<detail>
<satellite [slot-id slot-id |device-alias alias-name]>
```

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 <i>name</i> | (QFabric systems) (Optional) Display the version levels of the firmware running on the Interconnect device. |
| lcc <i>number</i> | <p>(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.</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 the version levels of the firmware running for the local Virtual Chassis member. |
| member <i>member-id</i> | (MX Series routers only) (Optional) Display the version levels of the firmware running for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> 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 <i>slot-id</i>] device-alias <i>alias-name</i> | (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

Output Fields

[Table 82 on page 1383](#) lists the output fields for the show chassis firmware command. Output fields are listed in the approximate order in which they appear.

Table 82: 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. |

Table 82: show chassis firmware Output Fields (Continued)

| Field Name | Field Description |
|---------------|--|
| 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 (M160 Router)

```
user@host> show chassis firmware
```

| Part | Type | Version |
|-------|------|--|
| SFM 0 | ROM | Juniper ROM Monitor Version 4.0b2 |
| | O/S | Version 4.0I1 by usera on 2000-02-29 11:50 |
| SFM 1 | ROM | Juniper ROM Monitor Version 4.0b2 |
| | O/S | Version 4.0I1 by usera on 2000-02-29 11:50 |
| FPC 0 | ROM | Juniper ROM Monitor Version 4.0b2 |
| | O/S | Version 4.0I1 by usera on 2000-02-29 11:56 |
| FPC 1 | ROM | Juniper ROM Monitor Version 4.0b2 |
| | O/S | Version 4.0I1 by usera on 2000-02-29 11:56 |
| FPC 2 | ROM | Juniper ROM Monitor Version 4.0b3 |
| | O/S | Version 4.0I1 by usera on 2000-02-29 11:56 |

show chassis firmware (MX150)

```
user@host > show chassis firmware
```

| Part | Type | Version |
|------|------|---------|
| FPC | ROM | PC Bios |

09:38:59 UTC O/S Version 17.2I20170220_0929_rohitn by rohitn on 2017-02-20

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 (MX2020 Router)

```
user@host> show chassis firmware
```

| Part | Type | Version |
|--------|------|---|
| FPC 0 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 1 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 2 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 3 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 4 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 5 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 6 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 7 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 8 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 9 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 10 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 11 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 12 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 13 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 14 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 15 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |

| | | |
|--------|-----|---|
| FPC 16 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 17 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 18 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| FPC 19 | ROM | Juniper ROM Monitor Version 10.0b39 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| SPMB 0 | ROM | Juniper ROM Monitor Version 12.1b1 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |
| SPMB 1 | ROM | Juniper ROM Monitor Version 12.1b1 |
| | O/S | Version 12.3-20130415.0 by userb on 2013- |

show chassis firmware (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 | Juniper ROM Monitor Version 12.1b1 |
| | O/S | Version 12.2I21 by user1 on 2012-06-19 17: |

show chassis firmware (EX4200 Switch)

```
user@switch> show chassis firmware
```

| Part | Type | Version |
|-------|--------|---|
| FPC 0 | uboot | U-Boot 1.1.6 (Feb 6 2008 - 11:27:42) |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.1 |
| FPC 1 | uboot | U-Boot 1.1.6 (Feb 6 2008 - 11:27:42) |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.1 |
| FPC 2 | uboot | U-Boot 1.1.6 (Feb 6 2008 - 11:27:42) |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.1 |

show chassis firmware (EX8200 Switch)

```
user@switch> show chassis firmware
```

| Part | Type | Version |
|------------------|--------|---|
| FPC 0 | U-Boot | U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| FPC 3 | U-Boot | U-Boot 1.1.6 (Dec 4 2009 - 13:17:34) 3.1.0 |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| FPC 5 | U-Boot | U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| FPC 7 | U-Boot | U-Boot 1.1.6 (Feb 6 2009 - 05:31:46) 2.4.0 |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| Routing Engine 0 | U-Boot | U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |
| Routing Engine 1 | U-Boot | U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 |
| | loader | FreeBSD/PowerPC U-Boot bootstrap loader 2.2 |

show chassis firmware (EX9200 Switch)

```
user@switch> show chassis firmware
```

| Part | Type | Version |
|-------|------|---------------------------------------|
| FPC 2 | ROM | Juniper ROM Monitor Version 11.4b2 |
| | O/S | Version 14.1I20140312_0741 by userd o |
| FPC 3 | ROM | Juniper ROM Monitor Version 10.4b1 |
| | O/S | Version 14.1I20140312_0741 by userd o |

show chassis firmware (EX9251 Switch)

```
user@switch> show chassis firmware
```

| Part | Type | Version |
|------|----------|--|
| RE 0 | PRI BIOS | CBEP_P_SUM1_00.11.01 |
| | RE-FPGA | 301 |
| FPC | ROM | PC Bios |
| | O/S | Version 18.1R1.4 by builder on 2018-03-06 00:31:54 UTC |

show chassis firmware (EX9253 Switch)

```
user@switch> show chassis firmware
```

| Part | Type | Version |
|-------|----------|--|
| RE 0 | PRI BIOS | CBEP_P_SUM1_00.11.01 |
| | RE-FPGA | 402 |
| RE 1 | PRI BIOS | CBEP_P_SUM1_00.11.01 |
| | RE-FPGA | 402 |
| FPC 0 | ROM | PC Bios |
| | O/S | Version 18.2-20180129_dev_common.1 by builder on 2018-01-29 13:35:11 UTC |
| FPC 1 | ROM | PC Bios |
| | O/S | Version 18.2-20180129_dev_common.1 by builder on 2018-01-29 13:35:11 UTC |

show chassis firmware lcc (TX Matrix Router)

```

user@host> show chassis firmware lcc 0
lcc0-re0:
-----
Part                Type      Version
FPC 1               ROM      Juniper ROM Monitor Version 6.4b18
                   O/S      Version 7.0-20040804.0 by userb on 2004-0
FPC 2               ROM      Juniper ROM Monitor Version 6.4b20
                   O/S      Version 7.0-20040804.0 by userb on 2004-0
SPMB 0              ROM      Juniper ROM Monitor Version 6.4b18
                   O/S      Version 7.0-20040804.0 by userb on 2004-0

```

show chassis firmware scc (TX Matrix Router)

```

user@host> show chassis firmware scc

scc-re0:
-----
Part                Type      Version
SPMB 0              ROM      Juniper ROM Monitor Version 6.4b18
                   O/S      Version 7.0-20040804.0 by userb on 2004-0

```

show chassis firmware (TX Matrix Plus Router)

```

user@host> show chassis firmware
sfc0-re0:
-----
Part                Type      Version
Global FPC 4
Global FPC 6
Global FPC 7
Global FPC 12
Global FPC 14
Global FPC 15
Global FPC 20
Global FPC 21
Global FPC 22
Global FPC 23

```


Global FPC 24

Global FPC 25

Global FPC 26

Global FPC 28

Global FPC 29

Global FPC 31

| | | |
|--------|-----|---|
| SPMB 0 | ROM | Juniper ROM Monitor Version 9.5b1 |
| | O/S | Version 9.6-20090507.0 by userb on 2009-0 |
| SPMB 1 | ROM | Juniper ROM Monitor Version 9.5b1 |
| | O/S | Version 9.6-20090507.0 by userb on 2009-0 |

lcc0-rel:

| 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-rel:

| 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-rel:

| Part | Type | Version |
|-------|------|-----------------------------------|
| FPC 4 | ROM | Juniper ROM Monitor Version 9.0b2 |


```

FPC 5      O/S      Version 9.6-20090507.0 by userb on 2009-0
           ROM      Juniper ROM Monitor Version 9.0b2
FPC 6      O/S      Version 9.6-20090507.0 by userb on 2009-0
           ROM      Juniper ROM Monitor Version 9.0b2
FPC 7      O/S      Version 9.6-20090507.0 by userb on 2009-0
           ROM      Juniper ROM Monitor Version 7.5b4
SPMB 0     O/S      Version 9.6-20090507.0 by userb on 2009-0
           ROM      Juniper ROM Monitor Version 9.5b1
SPMB 1     O/S      Version 9.6-20090507.0 by userb on 2009-0
           ROM      Juniper ROM Monitor Version 9.5b1
           O/S      Version 9.6-20090507.0 by userb on 2009-0

```

lcc3-rel:

```

-----
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-rel:

```

-----
Part      Type      Version
FPC 4     ROM      Juniper ROM Monitor Version 9.0b2
           O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 6     ROM      Juniper ROM Monitor Version 9.0b2

```


| | | |
|--------|-----|---|
| | O/S | Version 9.6-20090507.0 by userb on 2009-0 |
| FPC 7 | ROM | Juniper ROM Monitor Version 9.0b2 |
| | O/S | Version 9.6-20090507.0 by userb on 2009-0 |
| SPMB 0 | ROM | Juniper ROM Monitor Version 9.5b1 |
| | O/S | Version 9.6-20090507.0 by userb on 2009-0 |
| SPMB 1 | ROM | Juniper ROM Monitor Version 9.5b1 |
| | O/S | Version 9.6-20090507.0 by userb on 2009-0 |

show chassis firmware sfc (TX Matrix Plus Router)

```
user@host> show chassis firmware sfc 0
sfc0-re0:
-----
Part                Type      Version
Global FPC 4
Global FPC 6
Global FPC 7
Global FPC 12
Global FPC 14
Global FPC 15
Global FPC 20
Global FPC 21
Global FPC 22
Global FPC 23
Global FPC 24
Global FPC 25
Global FPC 26
Global FPC 28
Global FPC 29
Global FPC 31
SPMB 0              ROM      Juniper ROM Monitor Version 9.5b1
                   O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1              ROM      Juniper ROM Monitor Version 9.5b1
                   O/S      Version 9.6-20090507.0 by userb on 2009-0
```

show chassis firmware (QFX Series and OCX Series)

```
user@switch> show chassis firmware
Part                Type      Version
FPC 0
```


| | | |
|------------------|--------|---|
| Routing Engine 0 | U-Boot | U-Boot 1.1.6 (Sep 15 2010 - 02:11:11) 1.0.5 |
| | loader | FreeBSD/MIPS U-Boot bootstrap loader 0.1 |

show chassis firmware (PTX1000 Packet Transport Routers)

```
user@host> show chassis firmware
```

| Part | Type | Version |
|-------|-----------|-----------------------------------|
| FPC 0 | U-Boot | *** |
| | loader | FreeBSD/i386 bootstrap loader 1.2 |
| | BIOS | V0018.2U |
| | EC FPGA | 2.0 |
| | MAIN_CPLD | 1.f |
| | MEZZ_CPLD | 1.f |
| | RE FPGA | 2.3 |

show chassis firmware (PTX10008 Routers)

```
user@host> show chassis firmware
```

| Part | Type | Version |
|-------|-----------|--|
| RE 0 | PRI BIOS | QFXS_SFP_00.31_01.01 |
| | GDN BIOS | QFXS_SFP_00.31_01.01 |
| | FPGA | 2.4 |
| | RE-FPGA | 3.2 |
| RE 1 | PRI BIOS | QFXS_SFP_00.31_01.01 |
| | GDN BIOS | QFXS_SFP_00.31_01.01 |
| | FPGA | 2.3 |
| | RE-FPGA | 3.2 |
| FPC 0 | U-Boot | Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016 - 22:56:52) |
| | CTRL FPGA | 4.1 |
| | PORT FPGA | 2.0 |
| FPC 5 | U-Boot | Bank A: U-Boot 2011.12-gfbea47a (Feb 26 2016 - 22:56:52) |
| | CTRL FPGA | 3.1 |
| | PORT FPGA | 2.0 |
| FPC 6 | U-Boot | Bank B: U-Boot 2011.12-gfbea47a (Feb 26 2016 - 22:56:52) |
| | CTRL FPGA | 3.1 |
| | PORT FPGA | 2.0 |
| FPM | FPGA | 1.9 |
| FTC 0 | FPGA | 2.0 |
| FTC 1 | FPGA | 2.0 |

| | | |
|-------|------|-----|
| SIB 0 | FPGA | 3.0 |
| SIB 1 | FPGA | 3.0 |

show chassis firmware interconnect-device (QFabric System)

```

user@switch> show chassis firmware interconnect-device
interconnect1
Part                Type      Version
Routing Engine 0    U-Boot    U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
                   loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1
Routing Engine 1    U-Boot    U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
                   loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1

```

show chassis firmware (ACX2000 Universal Metro Router)

```

user@switch> show chassis firmware
Part                Type      Version
FPC                 O/S       Version 12.2I13 by user2 on 2012-05-29 06:
FEB                 O/S       Version 12.2I13 by user2 on 2012-05-29 06:

```

show chassis firmware detail (EX3300 Switch)

```

user@switch> show chassis firmware detail
FPC 0
  Boot SYSPLD        3
  PoE firmware       4.1.6
  PFE-0              3
  PFE-1              3
  PHY
    microcode        0x514
  Boot Firmware
    uboot             U-Boot 1.1.6 (Aug 21 2011 - 01:45:26) 1.0.0
    loader            FreeBSD/arm U-Boot loader 1.0

```


show chassis firmware (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis firmware
Part           Type      Version
FPC 1          ROM       Juniper ROM Monitor Version 12.1b1
               O/S       Version 12.2I21 by user1 on 2012-06-19 17:

```

show chassis firmware (ACX5048 Router)

```

user@host> show chassis firmware
Part           Type      Version
FPC            loader      FreeBSD/i386 bootstrap loader 1.2
               BIOS       V0018.7
               TMC FPGA   6.d8
               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 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 | | |

Release Information

Command introduced before Junos OS Release 7.4.

sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

Command introduced for EX8200 switches in Junos OS Release 10.2 for EX Series switches.

satellite option introduced in Junos OS Release 14.2R3.

show chassis forwarding

IN THIS SECTION

- [Syntax | 1400](#)
- [Description | 1400](#)
- [Options | 1400](#)
- [Required Privilege Level | 1401](#)
- [Output Fields | 1401](#)
- [Sample Output | 1402](#)
- [Release Information | 1402](#)

Syntax

```
show chassis forwarding
```

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

Output Fields

Table 83 on page 1401 lists the output fields for the `show chassis forwarding` command. Output fields are listed in the approximate order in which they appear.

Table 83: show chassis forwarding Output Fields

| Field Name | Field Description |
|-------------|---|
| FWWD status | <div>Forwarding status:</div> <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
```

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

show chassis fpc

IN THIS SECTION

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- [Syntax \(EX Series Switches, PTX Series Routers, ACX Universal Series Routers, ACX500, ACX7509, TX Matrix and TX Matrix Plus Routers\) | 1404](#)
- [Syntax \(T4000 Routers\) | 1404](#)
- [Syntax \(MX Series Routers, EX Series, and PTX Series switches\) | 1404](#)
- [Syntax \(PTX10008 and PTX10001-36MR\) | 1404](#)
- [Syntax \(MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms\) | 1405](#)
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- Syntax (MX10004) | 1405
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- Description | 1406
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- Sample Output (Node Slicing) | 1467
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- Usage | 1475
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Syntax

```
show chassis fpc
<detail <slot>> | <pic-status <slot>> | <pfe-instance <pfe-id>>
all
```


Syntax (EX Series Switches, PTX Series Routers, ACX Universal Series Routers, ACX500, ACX7509, TX Matrix and TX Matrix Plus Routers)

```
show chassis fpc
<detail <fpc-slot>> | <pic-status <fpc-slot>>
<fpc-slot> | <pfe <pfe-id>>
```

Syntax (T4000 Routers)

```
show chassis fpc
<detail <fpc-slot>>
<pic-status <fpc-slot>>
```

Syntax (MX Series Routers, EX Series, and PTX Series switches)

```
show chassis fpc
< <slot>> | <pic-status <slot>>
<all-members>
<local>
<member member-id>
```

Syntax (PTX10008 and PTX10001-36MR)

```
show chassis fpc
<slot> | <pic-status <slot>> | <pfe-instance <pfe-id>>
all
```


Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 Universal Routing Platforms)

```
show chassis fpc
<slot> detail | <detail <slot>> | <pic-status <slot>>
<fpc-slot>
```

Syntax (MX10008 Universal Routing Platforms)

```
show chassis fpc
<detail>
<errors>
<fpc-slot>
pic-status <fpc-slot>
```

Syntax (MX10004)

```
show chassis fpc
<fpc-slot>
<detail>
<errors>
<global-pfe-id>
pic-status <fpc-slot>
```

Syntax (QFX Series)

```
show chassis fpc
<detail>
<interconnect-device name <fpc-slot fpc-slot>>
<node-device name>
```


Syntax (OCX Series)

```
show chassis fpc  
<detail>
```

Syntax (ACX500 Routers)

```
show chassis fpc  
  <fpc-slot>  
  detail <fpc-slot>  
  pic-status <fpc-slot>
```

Syntax (SRX Series)

```
show chassis fpc  
  <fpc-slot>  
  detail <fpc-slot> | <node (node-id | local | primary)>>  
  pic-status <fpc-slot> | <node (node-id | local | primary)>>
```

Syntax (Junos OS Evolved)

```
show chassis fpc <fpc-slot>  
<detail | pic-status | <pfe-instance <pfe-id>> | errors> all
```

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 communication failure with /fpc8/hwdfpc/... 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
```

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap | Buffer |
|------|---------|----------------------------|--|---------------------|-------------------------|--------|
| 0 | Empty | | | | | |
| 1 | Empty | | | | | |
| 2 | Empty | | | | | |
| 3 | Empty | | | | | |
| 4 | Offline | ---Configured power off--- | | | | |
| 5 | Offline | ---Hard FPC error--- | | | | |
| 6 | Empty | | | | | |
| 7 | Online | 26 | 4 | 0 | 1024 | 0 32 |

error: communication failure with /fpc8/hwdfpc/

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
```

| Slot | State | Temp (C) | CPU Utilization (%) Total | Interrupt | Memory DRAM (MB) | Utilization (%) Heap | Buffer |
|------|---------|----------------------------|---------------------------|-----------|------------------|----------------------|--------|
| 0 | offline | ---FPC misconfiguration--- | | | | | |
| 1 | offline | ---FPC misconfiguration--- | | | | | |
| 2 | offline | ---FPC misconfiguration--- | | | | | |
| 3 | Empty | | | | | | |
| 4 | Empty | | | | | | |
| 5 | Online | 66 | 50 | 0 | 2816 | 29 | 27 |

The following sample output shows FPC misconfiguration alarms:

```
user@host> show chassis alarms
```

3 alarms currently active

| Alarm time | Class | Description |
|-------------------------|-------|-----------------|
| 2011-03-24 00:52:51 PST | Major | FPC 1 misconfig |
| 2011-03-24 00:52:31 PST | Major | FPC 2 misconfig |
| 2011-03-24 00:52:31 PST | Major | FPC 3 misconfig |

The following sample output shows FPC communication errors and error messages:

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

| Slot | State | Temp (C) | CPU Utilization (%) Total | Interrupt | CPU Utilization (%) 15min | CPU Utilization (%) 5min |
|------|--------|----------|---------------------------|-----------|---------------------------|--------------------------|
| 3 | Online | 57 | 3 | 0 | 3 | 3 |


```

3   31561   16   0
      8 Offlining   ---Configured power off---
      12 Online     49    2    0    2    2
2   31561   15   0
      13 Online     49    2    0    2    2
2   31561   14   0
      14 Offline    ---Configured power off---
      15 Offline    ---Configured power off---
error: communication failure with /fpc8/hwdfpc/
1. The producer app is either down or unresponsive
Run "show system processes node <node> | grep <app>" to check if app is
running
Run "show system application app <app>" to check the state of the app
2. If there is a change in mastership recently, please wait for the
switchover to complete for the app to be online
Run "request chassis routing-engine master switch check" to check the
status of switchover

```

- 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, EX Series switches, PTX10016 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.
 - PTX10016 Packet Transport Router—Replace *fpc-slot* with a value from 0 through 15.
- ACX Universal Metro Routers, ACX7509:
 - ACX1000 and ACX2000 Universal Metro Routers—Replace *fpc-slot* with 0.
- SRX Series:
 - none—Display status information for all FPCs.
 - detail—(Optional) Display detailed FPC status information.
 - *fpc-slot* —(Optional) Display information about the FPC in this slot.
 - node—(Optional) For chassis cluster configurations, display status information for all FPCs or for the specified FPC on a specific node (device) in the cluster.
 - *node-id* —Identification number of the node. It can be 0 or 1.
 - local—Display information about the local node.
 - primary—Display information about the primary node.
 - pic-status—(Optional) Display status information for all FPCs or for the FPC in the specified slot (see *fpc-slot*).

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 <i>member-id</i> | (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 <i>member-id</i> with a value of 0 or 1. |
| node-device <i>name</i> | (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 <i>fpc-slot</i>). |

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.

NOTE: When there is a double-bit ECC error in a network processor's memory, the Channelized OC3/STM1 (Multi-Rate) Circuit Emulation MIC with SFP or Channelized E1/T1 Circuit Emulation MIC is switched to the offline state.

```

user@host> show chassis fpc pic-status
Slot 1   Online      MPC Type 2 3D Q
PIC 0   Offline      1xCOC12/4xCOC3 CH-CE- ECC error detected

```

pfe-instance

- *pfe-id*— (PTX Series Devices) (Optional) Display status information for the specific PFE instance on the FPCs.
- *all*—(PTX10008 and PTX10001-36MR) (Optional) Display status information for all PFE instances on the FPCs.

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.

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.

Required Privilege Level

view

Output Fields

[Table 84 on page 1415](#) lists the output fields for the `show chassis fpc` command. Output fields are listed in the approximate order in which they appear.

Table 84: 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. | all levels |

Table 84: show chassis fpc Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|-------------------------------|--|--------------------------|
| | <ul style="list-style-type: none"> 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. | |
| Logical slot | Slot number. | all levels |
| Temp (C) or Temperature | Temperature of the air passing by the FPC, in degrees Celsius or in both Celsius and Fahrenheit. | all levels all levels |
| Temperature (PTX Series) | <p>On PTX Series Packet Transport Routers, temperature details are provided in degrees Celsius and Fahrenheit. Output includes:</p> <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 (TL<i>n</i>)--Temperature of the specified Lookup ASIC (TL) of the packet forwarding engine on the FPC. Temperature (TQ<i>n</i>)--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 |

Table 84: show chassis fpc Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|--|--|-----------------|
| 1 min CPU utilization (%) NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008. | Information about the Routing Engine's CPU utilization in the past 1 minute. | none specified |
| 5 min CPU utilization (%) NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008. | Information about the Routing Engine's CPU utilization in the past 5 minutes. | none specified |
| 15 min CPU utilization (%) NOTE: Supported only on MX240, MX480, MX960, MX2010, MX2020, and MX2008. | Information about the Routing Engine's CPU utilization in the past 15 minutes. | none specified |
| Memory DRAM (MB) | Total DRAM, in megabytes, available to the FPC's processor. | none specified |

Table 84: show chassis fpc Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|-------------------------------|---|-----------------|
| Heap Utilization (%) | <p>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).</p> <p>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.</p> | 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 |

Table 84: show chassis fpc Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|--|---|-------------------|
| PFE-Instance (PTX10008 and PTX10001-36M R) | The PFE instance ID for the specific FPC. | |
| PFE-State (PTX10008 and PTX10001-36M R) | <p>The state of PFE, The possible PFE-States are:</p> <p>ONLINE: PFE is online.</p> <p>Configured power off: PFE Offlined through configuration.</p> <p>Offlined by CLI: PFE is offlined through the request command in CLI.</p> <p>Offlined by CmError: PFE offlined through CM-Error action.</p> <p>Transition Offline: Status During PFE Transition.</p> <p>Fault: If disable-pfe cmerror action is taken by system on Major/Fatal errors.</p> | |
| GNF (Node slicing) | <p>GNF identifier associated with each line card.</p> <p>(pic-status output only) GNF identifier associated with each PIC.</p> | all levels |
| Temperature Performance Throttle (only for PTX10004, PTX10008, PTX10001-36M R, and PTX100016 with PTX10K- LC1201-36CD and PTX10K- LC1202-36MR line cards, and PTX10001-36M R FPC Junos Evolved) | Temperature performance throttle status associated with an FPC and PFE ID : "Enabled" or "Disabled". This feature is enabled by default on all PFE instances. | <i>pfe pfe_id</i> |

Table 84: show chassis fpc Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|---|---|-------------------|
| Temperature voltage reduction (only for PTX10004, PTX10008, PTX10001-36MR and PTX100016 with PTX10K-LC1201-36CD and PTX10K-LC1202-36MR line cards, and PTX10001-36MR FPC Junos Evolved) | Temperature voltage reduction status associated with an FPC and PFE ID: "Enabled" or "Disabled". This feature is enabled by default on all PFE instances. | <i>pfe pfe_id</i> |
| PFE-Instance | (PFE-instance output only) PFE instance ID. | none specified |
| PFE-State | State of PFE. (Enabled or Disabled) | all levels |
| PPFE-ID | Per PFE ID. | <i>pfe pfe_id</i> |

Sample Output (Junos OS)

show chassis fpc (MX10004 Universal Routing Platform)

```

user@host> show chassis fpc

```

| Slot | State | Temp (C) | CPU Utilization (%) Total | CPU Utilization (%) Interrupt | CPU Utilization (%) 1min | CPU Utilization (%) 5min | CPU Utilization (%) 15min | Memory DRAM (MB) | Utilization (%) Heap | Utilization (%) Buffer |
|------|--------|----------|---------------------------|-------------------------------|--------------------------|--------------------------|---------------------------|------------------|----------------------|------------------------|
| 0 | Empty | | | | | | | | | |
| 1 | Online | 25 | 2 | 0 | 2 | 2 | 2 | 32768 | 33 | 2 |

| | | | | | | | | | | |
|---|--------|----|----|---|----|----|----|------|---|----|
| 2 | Online | 30 | 20 | 0 | 21 | 21 | 21 | 3168 | 9 | 22 |
| 3 | Empty | | | | | | | | | |

show chassis fpc (EX6210 Switch)

```
user@switch> show chassis fpc
```

| Slot | State | Temp (C) | CPU Utilization (%) Total | Interrupt | Memory DRAM (MB) | Utilization (%) Heap | Buffer |
|------|--------|-------------|------------------------------|-----------|---------------------|-------------------------|--------|
| 0 | Empty | | | | | | |
| 1 | Online | 7 | 5 | 0 | 1024 | 0 | 32 |
| 2 | Empty | | | | | | |
| 3 | Empty | | | | | | |
| 4 | Online | 25 | 17 | 2 | 2048 | 0 | 30 |
| 5 | Online | 25 | 3 | 0 | 2048 | 0 | 24 |
| 6 | Online | 6 | 5 | 0 | 1024 | 0 | 32 |
| 7 | Empty | | | | | | |
| 8 | Empty | | | | | | |
| 9 | Online | 8 | 7 | 0 | 1024 | 0 | 32 |

show chassis fpc (M20 Router)

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

FPC status:

| Slot | State | Temp (C) | CPU Utilization (%) Total | Interrupt | Memory DRAM (MB) | Utilization (%) Heap | Buffer |
|------|--------|-------------|------------------------------|-----------|---------------------|-------------------------|--------|
| 0 | Empty | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | Online | 38 | 0 | 0 | 8 | 0 | 4 |
| 2 | Online | 35 | 0 | 0 | 8 | 0 | 3 |
| 3 | Empty | 0 | 0 | 0 | 0 | 0 | 0 |

show chassis fpc detail (M Series Routers)

```
user@host> show chassis fpc detail 1
```

Slot 1 information:

| | |
|----------------|--------------|
| State | Online |
| Temperature | 48 degrees C |
| Total CPU DRAM | 32 MB |
| Total SRAM | 4 MB |


```

Total SDRAM                256 MB
I/O Manager ASICs information  Version 2.0, Foundry IBM, Part number 0
I/O Manager ASICs information  Version 2.0, Foundry IBM, Part number 0
Start time                  2000-02-08 02:18:49 UTC
Uptime                      14 hours, 41 minutes, 41 seconds

```

show chassis fpc detail (MX150)

```

user@host> show chassis fpc detail
Slot 0 information:
  State                Online
  Temperature           42 degrees C / 107 degrees F
  Total CPU DRAM        2048 MB
  Total RLDRAM          10 MB
  Total DDR DRAM        0 MB
  Start time            2017-04-04 04:44:04 PDT
  Uptime                7 days, 19 hours, 45 minutes, 50 seconds

```

show chassis fpc (MX104 Router)

```

user@host> show chassis fpc
Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State      (C)  Total  Interrupt    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 DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|-----------------|--------|
| | | | Total | Interrupt | | Heap | Buffer |
| 0 | Empty | | | | | | |
| 1 | Online | 34 | 6 | 0 | 1024 | 18 | 30 |
| 2 | Online | 33 | 9 | 0 | 1024 | 24 | 30 |

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 detail (EX9200 Switch)

```

user@switch> show chassis fpc detail

Slot 2 information:
  State                Online
  Temperature           37
  Total CPU DRAM        2048 MB
  Total RLDRAM          331 MB
  Total DDR DRAM        1536 MB
  Start time:           2014-03-12 15:35:28 UTC
  Uptime:               1 hour, 4 minutes, 29 seconds
  Max Power Consumption 239 Watts

Slot 3 information:
  State                Online
  Temperature           39
  Total CPU DRAM        2048 MB
  Total RLDRAM          1036 MB
  Total DDR DRAM        6656 MB
  Start time:           2014-03-12 15:00:18 UTC
  Uptime:               1 hour, 39 minutes, 39 seconds
  Max Power Consumption 520 Watts

```

show chassis fpc (MX480 Router)

```

user@host> show chassis fpc

```

| Slot | State | Temp (C) | CPU Utilization (%) | | CPU Utilization (%) | | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|------|-------|---------------------|-----------------|--------|
| | | | Total | Interrupt | 1min | 5min | 15min | | 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

```

| Slot | State | Temp (C) | CPU Utilization (%) | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|-----------------|--------|
| | | | Total | Interrupt | | 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 (MX960 Router with MPC5EQ)

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

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 0 | Online | 38 | 16 0 | 3584 | 7 13 |
| 1 | Online | 31 | 15 0 | 2048 | 17 13 |
| 2 | Empty | | | | |
| 3 | Online | 31 | 14 0 | 2048 | 20 13 |
| 4 | Online | 34 | 16 0 | 3584 | 7 13 |
| 5 | Online | 34 | 16 0 | 3584 | 7 13 |
| 6 | Empty | | | | |
| 7 | Online | 32 | 9 0 | 2048 | 18 14 |
| 8 | Online | 36 | 19 0 | 3584 | 7 13 |
| 9 | Online | 31 | 9 0 | 2048 | 13 13 |
| 10 | Online | 35 | 14 0 | 3584 | 7 13 |
| 11 | Online | 33 | 11 0 | 2048 | 18 14 |

show chassis fpc (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 MIC0 Power Consumption    50 Watts
Max MIC1 Power Consumption    50 Watts
Max MPC Total Power Consumption 585 Watts

```

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
Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State              (C)  Total  Interrupt    DRAM (MB) Heap    Buffer
0  Online                34    20      0        2048      9      14
1  Offline               33    22      0         0      2048      9      14
2  Online                33    17      0        2048      9      14
3  Offline               34    25      0         0      2048      9      14
4  Online                32    27      0        2048      9      14
5  Offline               32    26      0         0      2048      9      14
6  Empty
7  Empty
8  Empty
9  Empty

```

show chassis fpc (MX2010 Router with Fabric Grant Bypass Disabled)

Following is the output of the `show chassis fpc` command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been disabled. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable fabric grant bypass and reboot the router. Also, FPC misconfiguration alarms are generated.

```

user@host> show chassis fpc
Temp  CPU Utilization (%)  Memory  Utilization (%)
Slot State              (C)  Total  Interrupt    DRAM (MB) Heap    Buffer
0  Online                34    20      0        2048      9      14

```



```

 1 Offline      ---FPC misconfiguration---
 2 Online       33    17          0      2048      9      14
 3 Offline      ---FPC misconfiguration---
 4 Online       32    27          0      2048      9      14
 5 Offline      ---FPC misconfiguration---
 6 Empty
 7 Empty
 8 Empty
 9 Empty

```

show chassis fpc pic-status (MX2010 Router with Fabric Grant Bypass Enabled)

Following is the output of the `show chassis fpc pic-status` command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been enabled by default. All MPCs power on.

```

user@host> show chassis fpc pic-status
Slot 0   Present      MPCE Type 3 3D
Slot 1   Present      MPC Type 2 3D EQ
Slot 2   Present      MPCE Type 3 3D
Slot 3   Present      MPC 3D 16x 10GE
Slot 4   Present      MPCE Type 3 3D
Slot 5   Present      MPCE Type 1 3D Q

```

show chassis fpc pic-status (MX2010 Router with Fabric Grant Bypass Disabled)

Following is the output of the `show chassis fpc pic-status` command on an MX2010 router with Switch Fabric Board (SFB), where fabric grant bypass has been disabled. MPC1 (MX-MPC1-3D), MPC2 (MX-MPC2-3D), and the 16-port 10-Gigabit Ethernet MPC (MPC-3D-16XGE-SFP) do not power on after you disable fabric grant bypass mode and reboot the router.

```

user@host> show chassis fpc pic-status
Slot 0   Present      MPCE Type 3 3D
Slot 1   Offline      MPC Type 2 3D EQ
Slot 2   Present      MPCE Type 3 3D
Slot 3   Offline      MPC 3D 16x 10GE
Slot 4   Present      MPCE Type 3 3D
Slot 5   Offline      MPCE Type 1 3D Q

```


show chassis fpc (MX2020 Routers)

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

| Slot | State | Temp (C) | CPU Utilization (%) | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|-----------------|--------|
| | | | Total | Interrupt | | 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 (MX10003 Router)

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

| Slot | State | Temp (C) | CPU Utilization (%) | | CPU Utilization (%) | | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|------|-------|---------------------|-----------------|--------|
| | | | Total | Interrupt | 1min | 5min | 15min | | Heap | Buffer |
| 0 | Online | 59 | 25 | 0 | 25 | 24 | 23 | 3136 | 12 | 11 |
| 1 | Online | 62 | 29 | 0 | 26 | 24 | 23 | 3136 | 12 | 11 |

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
```

| Slot | State | Temp (C) | CPU Utilization (%) | | CPU Utilization (%) | | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|------|-------|---------------------|-----------------|--------|
| | | | Total | Interrupt | 1min | 5min | 15min | | Heap | Buffer |
| 0 | Online | 49 | 26 | 0 | 22 | 22 | 23 | 3136 | 12 | 11 |

show chassis fpc (MX204 Router)

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

| Slot | State | Temp (C) | CPU Utilization (%) | | CPU Utilization (%) | | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|------|-------|---------------------|-----------------|--------|
| | | | Total | Interrupt | 1min | 5min | 15min | | 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

```

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | CPU Utilization (%) 1min 5min 15min | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|--|---------------------|--------------------------------|
| 0 | Online | Absent | 8 0 | 8 8 8 | 3136 | 8 8 |

show chassis fpc (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc

```

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 0 | Online | 31 | 20 0 | 3584 | 7 13 |
| 1 | Online | 28 | 19 0 | 2048 | 17 13 |
| 2 | Online | 27 | 10 0 | 2048 | 18 14 |
| 3 | Online | 26 | 10 0 | 2048 | 13 13 |
| 4 | Online | 29 | 19 0 | 3584 | 7 13 |
| 5 | Online | 28 | 68 0 | 2048 | 20 13 |
| 6 | Empty | | | | |
| 7 | Empty | | | | |
| 8 | Empty | | | | |
| 9 | Online | 36 | 19 0 | 3584 | 10 13 |
| 10 | Online | 37 | 26 0 | 3584 | 10 13 |
| 11 | Empty | | | | |
| 12 | Empty | | | | |
| 13 | Empty | | | | |

| | | | | | | |
|----|--------|----|----|---|------|----|
| 14 | Empty | | | | | |
| 15 | Empty | | | | | |
| 16 | Empty | | | | | |
| 17 | Online | 28 | 43 | 0 | 3584 | 10 |
| 18 | Online | 29 | 19 | 0 | 3584 | 7 |
| 19 | Online | 31 | 19 | 0 | 3584 | 7 |

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 pic-status (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis fpc pic-status
Slot 0  Online      MPC5E 3D Q 24XGE+6XLGE
  PIC 0  Online      12X10GE SFPP OTN
  PIC 1  Online      12X10GE SFPP OTN
  PIC 2  Offline     3X40GE QSFPP
  PIC 3  Offline     3X40GE QSFPP
Slot 1  Online      MPCE Type 3 3D
  PIC 0  Online      10X10GE SFPP
  PIC 2  Online      1X100GE CXP
Slot 2  Online      MPC4E 3D 2CGE+8XGE
  PIC 0  Online      4x10GE SFPP
  PIC 1  Online      1X100GE CFP

```



```

    PIC 2 Online      4x10GE SFPP
    PIC 3 Online      1X100GE CFP
Slot 3  Online      MPCE Type 2 3D P
    PIC 0 Online      2x 10GE  XFP
    PIC 1 Online      2x 10GE  XFP
Slot 4  Online      MPC5E 3D Q 2CGE+4XGE
    PIC 0 Online      2X10GE SFPP OTN
    PIC 1 Online      1X100GE CFP2 OTN
    PIC 2 Online      2X10GE SFPP OTN
    PIC 3 Online      1X100GE CFP2 OTN
Slot 5  Online      MPC 3D 16x 10GE
    PIC 0 Online      4x 10GE(LAN) SFP+
    PIC 1 Online      4x 10GE(LAN) SFP+
    PIC 2 Online      4x 10GE(LAN) SFP+
    PIC 3 Online      4x 10GE(LAN) SFP+
Slot 9  Online      MPC6E 3D
    PIC 0 Online      2X100GE CFP2 OTN
    PIC 1 Online      2X100GE CFP2 OTN
Slot 10 Online      MPC6E 3D
    PIC 0 Online      24X10GE SFPP OTN
    PIC 1 Online      4X100GE CXP
Slot 17 Online      MPC6E 3D
    PIC 0 Online      24X10GE SFPP
    PIC 1 Online      4X100GE CXP
Slot 18 Online      MPC5E 3D Q 24XGE+6XLGE
    PIC 0 Offline     12X10GE SFPP OTN
    PIC 1 Offline     12X10GE SFPP OTN
    PIC 2 Online      3X40GE QSFPP
    PIC 3 Online      3X40GE QSFPP
Slot 19 Online      MPC5E 3D Q 24XGE+6XLGE
    PIC 0 Online      12X10GE SFPP OTN
    PIC 1 Offline     12X10GE SFPP OTN
    PIC 2 Offline     3X40GE QSFPP
    PIC 3 Online      3X40GE QSFPP

```

show chassis fpc detail (MX Series Routers)

```

user@host> show chassis fpc detail 2
Slot 0 information:
  State                Online
  Temperature          36 degrees C / 96 degrees F

```


| | |
|-----------------------|--------------------------------|
| Total CPU DRAM | 1024 MB |
| Total RLDRAM | 256 MB |
| Total DDR DRAM | 4096 MB |
| Start time: | 2009-08-11 21:20:30 PDT |
| Uptime: | 2 hours, 8 minutes, 50 seconds |
| Max Power Consumption | 335 Watts |

show chassis fpc detail (EX Series Switches)

```
user@host> show chassis fpc detail 2
```

Slot 1 information:

| | |
|-----------------------|---|
| State | Online |
| Temperature | 41 |
| Total CPU DRAM | 2048 MB |
| Total RLDRAM | 1036 MB |
| Total DDR DRAM | 11264 MB |
| Start time: | 2013-04-02 00:04:52 PDT |
| Uptime: | 7 days, 9 hours, 47 minutes, 46 seconds |
| Max Power Consumption | 610 Watts |

Slot 2 information:

| | |
|-----------------------|---|
| State | Online |
| Temperature | 41 |
| Total CPU DRAM | 2048 MB |
| Total RLDRAM | 1036 MB |
| Total DDR DRAM | 11264 MB |
| Start time: | 2013-04-02 00:04:56 PDT |
| Uptime: | 7 days, 9 hours, 47 minutes, 42 seconds |
| Max Power Consumption | 610 Watts |

show chassis fpc detail (EX9251 Switches)

```
user@switch> show chassis fpc detail 2
```

Slot 0 information:

| | |
|----------------|---------|
| State | Online |
| Total CPU DRAM | 3136 MB |
| Total RLDRAM | 257 MB |
| Total DDR DRAM | 4096 MB |
| Temperature | Absent |


```

Start time          2018-03-12 14:59:49 PDT
Uptime              1 day, 1 hour, 10 minutes, 48 seconds

```

show chassis fpc detail (EX9253 Switches)

```

user@switch> show chassis fpc detail 1
Slot 1 information:
  State                Online
  Total CPU DRAM        3136 MB
  Total RLDRAM          771 MB
  Total DDR DRAM        18432 MB
  Temperature           59 degrees C / 138 degrees F
  Start time            2018-03-04 14:20:42 PST
  Uptime                3 days, 10 hours, 40 minutes, 57 seconds
  Max MPC base power consumption 910 Watts
  Max MIC1 power consumption  95 Watts
  Max MPC total power consumption 1005 Watts

```

show chassis fpc (Hardware Not Supported)

```

user@host> show chassis fpc
show chassis fpc

```

| Slot | State | Temp (C) | CPU Utilization (%) | Memory Utilization (%) |
|------|---------|----------|----------------------------|------------------------|
| | | | Total Interrupt | DRAM (MB) Heap Buffer |
| 0 | Online | ----- | CPU less FPC | ----- |
| 1 | Present | ----- | Hardware Not In Right Slot | ----- |
| 2 | Online | 0 | 0 | 0 0 0 |
| 3 | Present | ----- | Hardware Not Supported | ----- |
| 4 | Empty | | | |
| 5 | Empty | | | |
| 6 | Online | 0 | 0 | 0 0 0 |

show chassis fpc detail (Hardware Not Supported)

```

user@host> show chassis fpc detail
Slot 0 information:
  State                Online
  Total CPU DRAM        ---- CPU less FPC ----

```



```

Start time                2006-07-07 03:21:00 UTC
Uptime                    27 minutes, 51 seconds
Slot 1 information:
  State                    Present
  Reason                   --- Hardware Not In Right Slot ---
Slot 2 information:
  State                    Online
  Total CPU DRAM           32 MB
  Start time               2006-07-07 03:20:59 UTC
  Uptime                   27 minutes, 52 seconds
Slot 3 information:
  State                    Present
  Reason                   --- Hardware Not Supported ---
  Total CPU DRAM           0 MB
Slot 6 information:
  State                    Online
  Total CPU DRAM           32 MB
  Start time               2006-07-07 03:21:01 UTC
  Uptime                   27 minutes, 50 seconds

```

show chassis fpc pic-status

```

user@host> show chassis fpc pic-status
Slot 0 Online
  PIC 1    1x OC-12 ATM, MM
  PIC 2    1x OC-12 ATM, MM
  PIC 3    1x OC-12 ATM, MM
Slot 1 Online
  PIC 0    1x OC-48 SONET, SMIR
Slot 2 Online
  PIC 0    1x OC-192 SONET, SMSR

```

show chassis fpc pic-status (M Series Routers)

```

user@host> show chassis fpc pic-status
Slot 1  Online      FPC Type 1
  PIC 0  Present    2x OC-3 ATM, MM- Hardware Error
  PIC 1  Online     4x OC-3 SONET, SMIR
Slot 2  Online      E-FPC Type 2

```



```

    PIC 0 Online      4x G/E, 1000 BASE-SX
    PIC 1 Online      2x G/E SFP, 1000 BASE
    PIC 3 Online      1x Tunnel
Slot 3  Online      E-FPC Type 1
    PIC 0 Online      1x G/E IQ, 1000 BASE
    PIC 2 Online      1x G/E SFP, 1000 BASE
Slot 4  Online      E-FPC Type 2
    PIC 0 Online      4x G/E SFP, 1000 BASE
    PIC 1 Online      4x G/E SFP, 1000 BASE
    PIC 2 Online      4x G/E SFP, 1000 BASE
    PIC 3 Online      4x G/E SFP, 1000 BASE
Slot 5  Online      FPC Type 2
...

```

show chassis fpc pic-status (M120 Router)

```

user@host> show chassis fpc pic-status
Slot 1  Online      M120 CFPC 10GE
    PIC 0 Online      1x 10GE(LAN/WAN) XFP
Slot 3  Online      M120 FPC Type 2 (proto)
    PIC 0 Online      2x G/E IQ, 1000 BASE
    PIC 1 Online      4x OC-3 SONET, SMIR
    PIC 2 Online      2x G/E IQ, 1000 BASE
    PIC 3 Online      8x 1GE(LAN), IQ2
Slot 4  Online      M120 FPC Type 3 (proto)
    PIC 0 Online      10x 1GE(LAN), 1000 BASE
Slot 5  Online      M120 FPC Type 1 (proto)
    PIC 0 Present     1x G/E, 1000 BASE-LX- Not Supported
    PIC 1 Online      1x CHOC3 IQ SONET, SMLR
    PIC 2 Online      4x CHDS3 IQ
    PIC 3 Online      1x G/E SFP, 1000 BASE

```


show chassis fpc pic-status (MX240, MX480, and MX960 Routers with Application Services Modular Line Card)

In the following output **Slot 1 and Slot 5** are the Application Services Modular Carrier Cards (AS MCC), **PIC 0** is the Application Services Modular Storage Card (AS MSC), and **PIC 2** is the Application Services Modular Processing Card (AS MXC).

```

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

```

show chassis fpc lcc (TX Matrix Router)

```

user@host> show chassis fpc lcc 0
lcc0-re0:
-----

```

| | Temp | CPU | Utilization (%) | | Memory | Utilization |
|------------|------|-------|-----------------|-----------|--------|-------------|
| (%) | | | | | | |
| Slot State | (C) | Total | Interrupt | DRAM (MB) | | |
| Heap | | | | | | |
| Buffer | | | | | | |
| 0 Empty | | | | | | |
| 1 Online | 27 | 2 | 0 | 256 | 8 | 44 |
| 2 Online | 27 | 3 | 0 | 256 | 15 | 44 |
| 3 Empty | | | | | | |
| 4 Empty | | | | | | |
| 5 Empty | | | | | | |
| 6 Empty | | | | | | |
| 7 Empty | | | | | | |

show chassis fpc pic-status (TX Matrix Router)

```

user@host> show chassis fpc pic-status
lcc0-re0:
-----
Slot 0   Online      FPC Type 3

```



```

PIC 0 Online      1x OC-192 SM SR1
PIC 1 Online      1x OC-192 SM SR2
PIC 2 Online      1x OC-192 SM SR1
PIC 3 Online      1x Tunnel
Slot 1 Online     FPC Type 2
  PIC 0 Online     1x OC-48 SONET, SMSR
  PIC 1 Online     1x OC-48 SONET, SMSR

```

```
lcc1-re0:
-----
```

```
lcc2-re0:
-----
```

```

Slot 1 Online     FPC Type 3
  PIC 0 Online     1x OC-192 SM SR1
Slot 5 Online     FPC Type 2
  PIC 0 Online     1x OC-48 SONET, SMSR
  PIC 1 Online     2x G/E, 1000 BASE-LX
  PIC 2 Online     2x G/E, 1000 BASE-LX
  PIC 3 Online     1x OC-48 SONET, SMSR

```

```
lcc3-re0:
-----
```

show chassis fpc pic-status lcc (TX Matrix Router)

```

user@host> show chassis fpc pic-status lcc 0
lcc0-re0:
-----

```

```

Slot 0 Online     FPC Type 3
  PIC 0 Online     1x OC-192 SM SR2
Slot 1 Online     FPC Type 2
  PIC 0 Online     2x OC-12 ATM2 IQ, MM
  PIC 1 Online     1x OC-48 SONET, SMSR
  PIC 2 Online     1x OC-48 SONET, SMSR
  PIC 3 Online     4x G/E, 1000 BASE-SX

```


show chassis fpc (TX Matrix Plus Router)

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

```
lcc0-re0:
```

```
-----
Slot State      Temp  CPU Utilization (%)  Memory  Utilization (%)
                (C)  Total  Interrupt          DRAM (MB) 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  CPU Utilization (%)  Memory  Utilization (%)
                (C)  Total  Interrupt          DRAM (MB) 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  CPU Utilization (%)  Memory  Utilization (%)
                (C)  Total  Interrupt          DRAM (MB) 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 | CPU Utilization (%) | | Memory | Utilization (%) | |
|------|--------|------|---------------------|-----------|-----------|-----------------|--------|
| | | (C) | Total | Interrupt | DRAM (MB) | Heap | Buffer |
| 0 | Empty | | | | | | |
| 1 | Online | 38 | 4 | 0 | 2048 | 3 | 24 |
| 2 | Online | 43 | 8 | 0 | 2048 | 6 | 24 |
| 3 | Empty | | | | | | |
| 4 | Online | 43 | 6 | 0 | 2048 | 6 | 24 |
| 5 | Empty | | | | | | |
| 6 | Online | 42 | 14 | 0 | 2048 | 6 | 24 |
| 7 | Online | 45 | 6 | 0 | 2048 | 3 | 24 |

show chassis fpc detail (TX Matrix Plus Router)

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

```
lcc0-re0:
```

```
-----
```

Slot 1 information:

```

State                Online
Temperature           38 degrees C / 100 degrees F
Total CPU DRAM        2048 MB
Total SRAM             64 MB
Total SDRAM           1280 MB
Start time            2010-10-04 20:06:22 PDT
Uptime                1 hour, 32 minutes, 51 seconds

```

Slot 2 information:

```

State                Online
Temperature           43 degrees C / 109 degrees F
Total CPU DRAM        2048 MB
Total SRAM             128 MB
Total SDRAM           2560 MB
Start time            2010-10-04 20:06:37 PDT
Uptime                1 hour, 32 minutes, 36 seconds

```

Slot 4 information:

```

State                Online

```



```

Temperature          43 degrees C / 109 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:06:40 PDT
Uptime               1 hour, 32 minutes, 33 seconds

```

Slot 6 information:

```

State                Online
Temperature          42 degrees C / 107 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:06:42 PDT
Uptime               1 hour, 32 minutes, 31 seconds

```

Slot 7 information:

```

State                Online
Temperature          45 degrees C / 113 degrees F
Total CPU DRAM       2048 MB
Total SRAM           64 MB
Total SDRAM          1280 MB
Start time           2010-10-04 20:06:43 PDT
Uptime               1 hour, 32 minutes, 30 seconds

```

lcc2-re0:

Slot 0 information:

```

State                Online
Temperature          42 degrees C / 107 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:06:35 PDT
Uptime               1 hour, 32 minutes, 38 seconds

```

Slot 2 information:

```

State                Online
Temperature          42 degrees C / 107 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:06:37 PDT
Uptime               1 hour, 32 minutes, 36 seconds

```

Slot 3 information:

```

State                Online

```



```

Temperature          40 degrees C / 104 degrees F
Total CPU DRAM       2048 MB
Total SRAM           64 MB
Total SDRAM          1280 MB
Start time           2010-10-04 20:06:28 PDT
Uptime               1 hour, 32 minutes, 45 seconds

```

Slot 4 information:

```

State                Online
Temperature          33 degrees C / 91 degrees F
Total CPU DRAM       1024 MB
Total SRAM           64 MB
Total SDRAM          1280 MB
Start time           2010-10-04 20:08:03 PDT
Uptime               1 hour, 31 minutes, 10 seconds

```

Slot 6 information:

```

State                Online
Temperature          43 degrees C / 109 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:06:44 PDT
Uptime               1 hour, 32 minutes, 29 seconds

```

Slot 7 information:

```

State                Online
Temperature          46 degrees C / 114 degrees F
Total CPU DRAM       2048 MB
Total SRAM           64 MB
Total SDRAM          1280 MB
Start time           2010-10-04 20:06:46 PDT
Uptime               1 hour, 32 minutes, 27 seconds

```

lcc3-re0:

Slot 2 information:

```

State                Online
Temperature          38 degrees C / 100 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:17:31 PDT
Uptime               1 hour, 21 minutes, 42 seconds

```

Slot 4 information:

```

State                Online

```



```

Temperature          41 degrees C / 105 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2010-10-04 20:17:34 PDT
Uptime               1 hour, 21 minutes, 39 seconds
Slot 5 information:
  State              Online
  Temperature        41 degrees C / 105 degrees F
  Total CPU DRAM     2048 MB
  Total SRAM         128 MB
  Total SDRAM        2560 MB
  Start time         2010-10-04 20:17:36 PDT
  Uptime             1 hour, 21 minutes, 37 seconds
Slot 6 information:
  State              Online
  Temperature        40 degrees C / 104 degrees F
  Total CPU DRAM     2048 MB
  Total SRAM         128 MB
  Total SDRAM        2560 MB
  Start time         2010-10-04 20:17:39 PDT
  Uptime             1 hour, 21 minutes, 34 seconds
Slot 7 information:
  State              Online
  Temperature        42 degrees C / 107 degrees F
  Total CPU DRAM     2048 MB
  Total SRAM         64 MB
  Total SDRAM        1280 MB
  Start time         2010-10-04 20:17:41 PDT
  Uptime             1 hour, 21 minutes, 32 seconds

```

show chassis fpc pic-status (TX Matrix Plus Router)

```
user@host> show chassis fpc pic-status
```

```
lcc0-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 |

lcc2-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 |

lcc3-re0:

| | | |
|--------|--------|-------------------------|
| Slot 2 | Online | FPC Type 4-ES |
| PIC 0 | Online | 10x10GE(LAN/WAN) SFPP |
| Slot 4 | Online | FPC Type 4-ES |
| PIC 0 | Online | 4x OC-192 SONET XFP |
| Slot 5 | Online | FPC Type 4-ES |
| PIC 0 | Online | 4x OC-192 SONET XFP |
| PIC 1 | Online | 4x 10GE (LAN/WAN) XFP |
| Slot 6 | Online | FPC Type 4-ES |
| PIC 1 | Online | 4x 10GE (LAN/WAN) XFP |
| Slot 7 | Online | FPC Type 3-ES |
| PIC 0 | Online | 10x 1GE(LAN), 1000 BASE |


```
PIC 1 Online      8x 1GE(TYPE3), IQ2E
PIC 2 Online      4x OC-48 SONET
```

show chassis fpc (T1600 Router)

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

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 0 | Empty | | | | |
| 1 | Empty | | | | |
| 2 | Online | 49 | 3 0 | 2048 | 3 24 |
| 3 | Online | 46 | 6 0 | 2048 | 6 24 |
| 4 | Empty | | | | |
| 5 | Online | 46 | 5 0 | 2048 | 3 24 |
| 6 | Empty | | | | |
| 7 | Online | 44 | 8 0 | 1024 | 7 49 |

show chassis fpc detail (T1600 Router)

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

```
show chassis fpc detail
```

Slot 2 information:

| | |
|----------------|------------------------------|
| State | Online |
| Temperature | 49 degrees C / 120 degrees F |
| Total CPU DRAM | 2048 MB |
| Total SRAM | 64 MB |
| Total SDRAM | 1280 MB |
| Start time | 2010-10-04 21:12:52 PDT |
| Uptime | 32 minutes, 9 seconds |

Slot 3 information:

| | |
|----------------|------------------------------|
| State | Online |
| Temperature | 47 degrees C / 116 degrees F |
| Total CPU DRAM | 2048 MB |
| Total SRAM | 128 MB |
| Total SDRAM | 2560 MB |
| Start time | 2010-10-04 21:13:06 PDT |
| Uptime | 31 minutes, 55 seconds |

Slot 5 information:

| | |
|-------|--------|
| State | Online |
|-------|--------|


```

Temperature          46 degrees C / 114 degrees F
Total CPU DRAM       2048 MB
Total SRAM           64 MB
Total SDRAM          1280 MB
Start time           2010-10-04 21:12:56 PDT
Uptime               32 minutes, 5 seconds
Slot 7 information:
State                Online
Temperature          44 degrees C / 111 degrees F
Total CPU DRAM       1024 MB
Total SRAM           64 MB
Total SDRAM          1280 MB
Start time           2010-10-04 21:14:34 PDT
Uptime               30 minutes, 27 seconds

```

show chassis fpc <fpc-slot> (EX Series Switch)

```
user@host> show chassis fpc 2
```

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 2 | Online | 40 | 12 0 | 2048 | 19 14 |

show chassis fpc slot (T1600 Router)

```
user@host> show chassis fpc slot 2
```

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 2 | Online | 49 | 3 0 | 2048 | 3 24 |

show chassis fpc pic-status (T1600 Router)

```
user@host> show chassis fpc pic-status
```

| | | |
|--------|--------|-------------------|
| Slot 2 | Online | FPC Type 1-ES |
| PIC 0 | Online | Load Type 1 |
| PIC 1 | Online | 4x 1GE(LAN), IQ2E |


```

    PIC 3 Online      1x OC-12-3 SFP
Slot 3 Online      FPC Type 4-ES
    PIC 0 Online      4x 10GE (LAN/WAN) XFP
    PIC 1 Online      4x OC-192 SONET XFP
Slot 5 Online      FPC Type 2-ES
    PIC 0 Online      Load Type 2
    PIC 1 Online      8x 1GE(LAN), IQ2E
    PIC 2 Online      8x 1GE(LAN), IQ2E
    PIC 3 Online      1x OC-48-12-3 SFP
Slot 7 Online      FPC Type 4
    PIC 0 Online      4x 10GE (LAN/WAN) XFP

```

show chassis fpc (T4000 Router)

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

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | Memory DRAM (MB) | Utilization (%) Heap Buffer |
|------|--------|-------------|--|---------------------|--------------------------------|
| 0 | Online | 48 | 15 0 | 2816 | 21 27 |
| 1 | Empty | | | | |
| 2 | Empty | | | | |
| 3 | Online | 51 | 15 0 | 2816 | 21 27 |
| 4 | Empty | | | | |
| 5 | Online | 39 | 8 0 | 2048 | 6 23 |
| 6 | Online | 49 | 15 0 | 2816 | 21 27 |
| 7 | Empty | | | | |

show chassis fpc detail (T4000 Router)

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

Slot 0 information:

```

State                               Online
Temperature                         48 degrees C / 118 degrees F
Total CPU DRAM                      2816 MB
Total SRAM                          1554 MB
Total SDRAM                         10752 MB
Start time                          2012-02-09 22:56:25 PST
Uptime                              2 hours, 40 minutes, 52 seconds

```

Slot 3 information:

```

State                               Online

```



```

Temperature          51 degrees C / 123 degrees F
Total CPU DRAM       2816 MB
Total SRAM           1554 MB
Total SDRAM          10752 MB
Start time           2012-02-09 22:56:22 PST
Uptime               2 hours, 40 minutes, 55 seconds

Slot 5 information:
State                Online
Temperature          39 degrees C / 102 degrees F
Total CPU DRAM       2048 MB
Total SRAM           128 MB
Total SDRAM          2560 MB
Start time           2012-02-09 22:51:27 PST
Uptime               2 hours, 45 minutes, 50 seconds

Slot 6 information:
State                Online
Temperature          49 degrees C / 120 degrees F
Total CPU DRAM       2816 MB
Total SRAM           1554 MB
Total SDRAM          10752 MB
Start time           2012-02-09 22:56:29 PST
Uptime               2 hours, 40 minutes, 48 seconds

```

show chassis fpc pic-status (T4000 Router)

```

user@host> show chassis fpc pic-status

Slot 0  Online      FPC Type 5-3D
  PIC 0  Online      12x10GE (LAN/WAN) SFPP
  PIC 1  Online      12x10GE (LAN/WAN) SFPP
Slot 3  Online      FPC Type 5-3D
  PIC 0  Online      1x100GE
  PIC 1  Online      12x10GE (LAN/WAN) SFPP
Slot 5  Online      FPC Type 4-ES
  PIC 0  Online      100GE
  PIC 1  Online      100GE CFP
Slot 6  Online      FPC Type 5-3D
  PIC 0  Online      12x10GE (LAN/WAN) SFPP
  PIC 1  Online      12x10GE (LAN/WAN) SFPP

```


show chassis fpc (MX10008 Router with MX10K-LC9600 and SFB)

MX10K-LC9600 supports SFB2 only. The following output indicates that MX10K-LC9600 does not support SFB.

```
user@host> show chassis fpc
Temp  CPU Utilization (%)  Memory    Utilization (%)
Slot State                (C) Total  Interrupt    DRAM (MB) Heap    Buffer
0  Offline                Offlined due to Unsupported fabric
```

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) |


```
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 |

[illegible]

show chassis fpc pfe-instance all (PTX10008 and PTX10001-36MR Router)

To view the PFE state information for all FPCs and PFEs on the device:

```
user@host> show chassis fpc pfe-instance all
```

FPC 0

| PFE-Instance | PFE-State |
|--------------|----------------------|
| 0 | Configured power off |
| 1 | Configured power off |
| 2 | Configured power off |
| 3 | Configured power off |
| 4 | Configured power off |

FPC 2

| PFE-Instance | PFE-State |
|--------------|----------------------|
| 0 | Configured power off |
| 1 | Configured power off |
| 2 | Configured power off |
| 3 | Configured power off |
| 4 | TRANSITION_OFFLINE |

FPC 3

| PFE-Instance | PFE-State |
|--------------|---------------------|
| 0 | ONLINE |
| 1 | ONLINE |
| 2 | Offlined by CmError |
| 3 | ONLINE |
| 4 | Offlined by CLI |

show chassis fpc detail (PTX10008 and PTX10001-36MR 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
```

| Slot | State | Temp (C) | CPU Utilization (%) | | CPU Utilization (%) | | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|---------------------|-----------|---------------------|------|-------|---------------------|-----------------|--------|
| | | | Total | Interrupt | 1min | 5min | 15min | | Heap | Buffer |
| 0 | Empty | | | | | | | | | |
| 1 | Online | 36 | 27 | 2 | 27 | 27 | 27 | 1953 | 22 | 32 |
| 2 | Empty | | | | | | | | | |
| 3 | Online | 36 | 27 | 2 | 27 | 27 | 27 | 1953 | 22 | 32 |
| 4 | Empty | | | | | | | | | |
| 5 | Empty | | | | | | | | | |
| 6 | Online | 35 | 27 | 2 | 27 | 27 | 27 | 1953 | 22 | 32 |
| 7 | Empty | | | | | | | | | |
| 8 | Online | 34 | 27 | 2 | 27 | 27 | 27 | 1953 | 22 | 32 |
| 9 | Online | 46 | 24 | 2 | 24 | 24 | 24 | 1953 | 26 | 32 |
| 10 | Empty | | | | | | | | | |
| 11 | Empty | | | | | | | | | |
| 12 | Empty | | | | | | | | | |
| 13 | Empty | | | | | | | | | |
| 14 | Empty | | | | | | | | | |
| 15 | Empty | | | | | | | | | |

show chassis fpc 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, ACX7900 Router)

```

user@host> show chassis fpc

          Temp CPU Utilization (%)  Memory  Utilization (%)
Slot State (C) Total Interrupt  DRAM (MB) Heap    Buffer
0 Online   61    17         6    512      21     37

```

show chassis fpc 0 (ACX2000 Universal Metro Router, ACX7900 Router)

```

user@host> show chassis fpc 0

          Temp CPU Utilization (%)  Memory  Utilization (%)
Slot State (C) Total Interrupt  DRAM (MB) Heap    Buffer
0 Online   61    17         6    512      21     37

```

show chassis fpc detail (ACX2000 Universal Metro Router, ACX7900 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 , ACX7900 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

```


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 detail (MX304)

```
user@router> show chassis fpc detail
```

```
Slot 0 information:
```

```
State                               Online
Total CPU DRAM                      32768 MB
Total HBM                           65536 MB
FIPS Capable                        True
Temperature                         52 degrees C / 125 degrees F
Start time                          2022-06-06 16:47:31 IST
Uptime                             19 hours, 2 minutes, 33 seconds
Max MPC base power consumption 1105 Watts
Max MIC0 power consumption          95 Watts
Max MIC1 power consumption          95 Watts
Max MPC total power consumption 1295 Watts
```

```
PFE Information:
```

| PFE | Power ON/OFF | Bandwidth | SLC |
|-----|--------------|-----------|-----|
| 0 | ON | 800G | |
| 1 | ON | 800G | |
| 2 | ON | 800G | |
| 3 | ON | 800G | |
| 4 | OFF | — | |
| 5 | OFF | — | |

Sample Output (Junos OS Evolved)

show chassis fpc (Junos OS Evolved)

```
user@router> show chassis fpc
```

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | CPU Utilization (%) | | | Memory DRAM (MB) | Utilization (%) | |
|------|--------|-------------|--|---------------------|------|-------|---------------------|-----------------|--|
| | | | | 1min | 5min | 15min | Heap | Buffer | |
| 0 | Online | | | | | | | | |
| 1 | Online | | | | | | | | |
| 2 | Online | | | | | | | | |
| 3 | Online | | | | | | | | |

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
```

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | CPU Utilization (%) | | | Memory DRAM (MB) | Utilization (%) | |
|------|---------|----------------------------|--|---------------------|------|-------|---------------------|-----------------|--|
| | | | | 1min | 5min | 15min | Heap | Buffer | |
| 0 | Present | ---Configured power off--- | | | | | | | |
| 1 | Online | | | | | | | | |

The show chassis fpc output 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 following output:

```
user@router> show chassis fpc
```

| Slot | State | Temp (C) | CPU Utilization (%) Total Interrupt | CPU Utilization (%) | | | Memory DRAM (MB) | Utilization (%) | |
|------|---------|-------------------------------|--|---------------------|------|-------|---------------------|-----------------|--|
| | | | | 1min | 5min | 15min | Heap | Buffer | |
| 0 | Offline | ---Offlined by cli command--- | | | | | | | |
| 1 | Online | | | | | | | | |

show chassis fpc pfe-instance (PTX1008, Junos OS Evolved)

```

user@host> run show chassis fpc pfe-instance all
FPC 0
PFE-Instance      PFE-State
  0                Configured power off    <<< PFE Offline via
Config
  1                ONLINE
  2                ONLINE
  3                ONLINE
  4                ONLINE

```

show chassis fpc pic-status (PTX10016, Junos OS Evolved)

```

user@host> show chassis fpc pic-status
Slot 0  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 1  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 2  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 3  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 4  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 5  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 6  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 7  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 8  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 9  Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 10 Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 11 Online      JNP10K-LC1201
  PIC 0  Online      JNP10K-36QDD-LC-PIC
Slot 12 Online      JNP10K-LC1201

```



```

    PIC 0 Online JNP10K-36QDD-LC-PIC
Slot 13 Online JNP10K-LC1201
    PIC 0 Online JNP10K-36QDD-LC-PIC
Slot 14 Online JNP10K-LC1201
    PIC 0 Online JNP10K-36QDD-LC-PIC
Slot 15 Online JNP10K-LC1201
    PIC 0 Online JNP10K-36QDD-LC-PIC

```

show chassis fpc pfe (PTX10004, PTX10008, PTX100016 with PTX10K-LC1201-36CD and PTX10K-LC1202-36MR line cards, and PTX10001-36MR)

```
user@router> show chassis fpc 0 pfe-instance all
```

```

FPC 0
PFE-Instance PFE-State
  0          ONLINE
  1          ONLINE
  2          ONLINE

```

```
user@router> show chassis fpc 0 pfe-instance all detail
```

```

FPC 0
PFE-Instance PFE-State PPFE-ID Temp-Perf-Throttle Temp-Volt-Reduction
  0          ONLINE    0, 1    Enabled          Enabled|Nominal
  1          ONLINE    2, 3    Enabled          Enabled|Nominal
  2          ONLINE    4, 5    Enabled          Enabled|Nominal
  3          ONLINE    6, 7    Enabled          Enabled|Optimized
  4          ONLINE    8      Enabled          Enabled|Nominal

```

```
user@router> show chassis fpc 0 pfe-instance 0 detail
```

```

FPC 0
PFE-Instance PFE-State PPFE-ID Temp-Perf-Throttle Temp-Volt-Reduction
  0          ONLINE    0, 1    Enabled          Enabled

```


Sample Output (Node Slicing)

show chassis fpc (Node Slicing)

user@router>show chassis fpc

| | | Temp | CPU Utilization (%) | | CPU Utilization (%) | | | Memory | Utilization (%) |
|-----------------|--------|------|---------------------|-----------|---------------------|------|-------|-----------|-----------------|
| Slot | State | (C) | Total | Interrupt | 1min | 5min | 15min | DRAM (MB) | Heap |
| Buffer GNF | | | | | | | | | |
| 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 | | | | | | | | |

show chassis fpc pic-status (Node Slicing)

user@router> show chassis fpc pic-status

| | | | |
|--------|---------|----------------------|-------|
| Slot 0 | Online | MPC5E 3D 24XGE+6XLGE | GNF 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 | GNF 2 |

| | | | |
|--------|--------|--------------------------------------|-------|
| PIC 1 | Online | MRATE-12xQSFPF-XGE-XLGE-CGE | |
| Slot 2 | Online | MPC5E 3D Q 2CGE+4XGE | GNF 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 | GNF 6 |
| Slot 4 | Online | MPC6E 3D | GNF 6 |
| PIC 0 | Online | 24X10GE SFPP | |
| PIC 1 | Online | 2X100GE CFP2 OTN | |
| Slot 5 | Online | MPC9E 3D | GNF 4 |
| PIC 0 | Online | MRATE-12xQSFPF-XGE-XLGE-CGE | |
| Slot 6 | Online | MPC7E 3D MRATE-12xQSFPF-XGE-XLGE-CGE | GNF 1 |
| PIC 0 | Online | MRATE-6xQSFPF-XGE-XLGE-CGE | |
| PIC 1 | Online | MRATE-6xQSFPF-XGE-XLGE-CGE | |
| Slot 7 | Online | MPC5E 3D 2CGE+4XGE | GNF 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 | GNF 5 |
| PIC 0 | Online | 24X10GE SFPP OTN | |
| Slot 9 | Online | MPC6E 3D | GNF 5 |
| PIC 0 | Online | 24X10GE SFPP | |
| PIC 1 | Online | 4X100GE CXP | |

show chassis fpc (SRX5600 and SRX5800 devices)

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

| Slot State | Temp (C) | CPU Utilization (%) | | Memory DRAM (MB) | Utilization (%) | |
|------------|-------------|---------------------|-----------|---------------------|-----------------|--------|
| | | Total | Interrupt | | Heap | Buffer |
| 0 Empty | | | | | | |
| 1 Empty | | | | | | |
| 2 Empty | | | | | | |
| 3 Online | 37 | 3 | 0 | 1024 | 7 | 42 |
| 4 Empty | | | | | | |
| 5 Empty | | | | | | |
| 6 Online | 30 | 8 | 0 | 1024 | 23 | 30 |
| 7 Empty | | | | | | |
| 8 Empty | | | | | | |

9 Empty
10 Empty
11 Empty

show chassis fpc (SRX5400, SRX5600, and SRX5800 devices with SRX5K-MPC3-100G10G (IOC3) or SRX5K-MPC3-40G10G (IOC3))

```
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 | 36 | 20 | 0 | 20 | 19 | 19 | |
| 1024 | | | 4 | 26 | | | | |
| 1 | Online | 35 | 8 | 0 | 8 | 8 | 8 | |
| 2048 | | | 12 | 14 | | | | |
| 2 | Online | 40 | 21 | 0 | 20 | 20 | 20 | |
| 3584 | | | 5 | 13 | | | | |

Sample Output

show chassis fpc detail 2

```
user@host> show chassis fpc detail 2
```

Slot 2 information:

| | |
|----------------|-------------------------|
| State | Online |
| Temperature | 37 |
| Total CPU DRAM | 1024 MB |
| Total RLDRAM | 0 MB |
| Total DDR DRAM | 0 MB |
| Start time: | 2012-07-18 07:18:50 PDT |

| | |
|-----------------------|--|
| Uptime: | 4 days, 21 hours, 51 minutes, 59 seconds |
| Max Power Consumption | 0 Watts |

Sample Output

show chassis fpc pic-status (SRX5600 and SRX5800 devices)

```
user@host> show chassis fpc pic-status
Slot 3   Online      SRX5k SPC
  PIC 0   Online      SPU Cp
  PIC 1   Online      SPU Flow
Slot 6   Online      SRX5k DPC 4x 10GE
  PIC 0   Online      1x 10GE(LAN/WAN) RichQ
  PIC 1   Online      1x 10GE(LAN/WAN) RichQ
  PIC 2   Online      1x 10GE(LAN/WAN) RichQ
  PIC 3   Online      1x 10GE(LAN/WAN) RichQ
```

show chassis fpc pic-status (SRX5600 and SRX5800 devices with SPC2)

```
user@host> show chassis fpc pic-status

Slot 0   Online      SRX5k DPC 40x 1GE
  PIC 0   Online      10x 1GE RichQ
  PIC 1   Online      10x 1GE RichQ
  PIC 2   Online      10x 1GE RichQ
  PIC 3   Online      10x 1GE RichQ
Slot 2   Online      SRX5k SPC II
  PIC 0   Online      SPU Cp
  PIC 1   Online      SPU Flow
  PIC 2   Online      SPU Flow
  PIC 3   Online      SPU Flow
Slot 3   Online      SRX5k SPC II
  PIC 0   Online      SPU Flow
  PIC 1   Online      SPU Flow
  PIC 2   Online      SPU Flow
  PIC 3   Online      SPU Flow
Slot 5   Online      SRX5k SPC
```


| | | |
|-------|--------|----------|
| PIC 0 | Online | SPU Flow |
| PIC 1 | Online | SPU Flow |

show chassis fpc pic-status (SRX5600 and SRX5800 devices with SRX5K-MPC)

```
user@host> show chassis fpc pic-status
```

```
Slot 0  Online      SRX5k SPC II
  PIC 0  Online      SPU Cp
  PIC 1  Online      SPU Flow
  PIC 2  Online      SPU Flow
  PIC 3  Online      SPU Flow
Slot 1  Online      SRX5k SPC II
  PIC 0  Online      SPU Flow
  PIC 1  Online      SPU Flow
  PIC 2  Online      SPU Flow
  PIC 3  Online      SPU Flow
Slot 2  Online      SRX5k DPC 4X 10GE
  PIC 0  Online      1x 10GE(LAN/WAN) RichQ
  PIC 1  Online      1x 10GE(LAN/WAN) RichQ
  PIC 2  Online      1x 10GE(LAN/WAN) RichQ
  PIC 3  Online      1x 10GE(LAN/WAN) RichQ
Slot 6  Offline     SRX5k SPC II
Slot 9  Online      SRX5k SPC II
  PIC 0  Online      SPU Flow
  PIC 1  Online      SPU Flow
  PIC 2  Online      SPU Flow
  PIC 3  Online      SPU Flow
Slot 10 Online      SRX5k IOC II
  PIC 0  Online      10x 10GE SFP+
  PIC 2  Online      1x 100GE CFP
Slot 11 Online      SRX5k IOC II
  PIC 0  Online      1x 100GE CFP
  PIC 2  Online      2x 40GE QSFP+
```


show chassis fpc pic-status (SRX5600 and SRX5800 devices when Express Path [formerly known as services offloading] is configured)

```
user@host> show chassis fpc pic-status
```

```
Slot 0  Offline      SRX5k DPC 40x 1GE
Slot 1  Online       SRX5k SPC II
  PIC 0  Online      SPU Cp
  PIC 1  Online      SPU Flow
  PIC 2  Online      SPU Flow
  PIC 3  Online      SPU Flow
Slot 2  Offline      SRX5k SPC
Slot 4  Online       SRX5k IOC3 24XGE+6XLG
  PIC 2  Online      3x 40GE QSFP+- np-cache/services-offload
  PIC 3  Online      3x 40GE QSFP+- np-cache/services-offload
Slot 5  Online       SRX5k IOC II
  PIC 0  Online      10x 1GE(LAN) SFP- np-cache/services-offload
  PIC 1  Online      10x 1GE(LAN) SFP- np-cache/services-offload
  PIC 2  Online      10x 10GE SFP+- np-cache/services-offload
```

show chassis fpc pic-status (with 20-Gigabit Ethernet MIC with SFP)

```
user@host> show chassis fpc pic-status
```

```
node0:
```

```
-----
Slot 0  Online      SRX5k SPC II
  PIC 0  Online      SPU Cp
  PIC 1  Online      SPU Flow
  PIC 2  Online      SPU Flow
  PIC 3  Online      SPU Flow
Slot 1  Offline      SRX5k SPC II
Slot 2  Online       SRX5k DPC 4X 10GE
  PIC 0  Online      1x 10GE(LAN/WAN) RichQ
  PIC 1  Online      1x 10GE(LAN/WAN) RichQ
  PIC 2  Online      1x 10GE(LAN/WAN) RichQ
  PIC 3  Online      1x 10GE(LAN/WAN) RichQ
Slot 9  Online       SRX5k IOC II
  PIC 0  Online      10x 1GE(LAN) SFP
  PIC 1  Online      10x 1GE(LAN) SFP
```


| | | |
|---------|---------|------------------|
| PIC 2 | Online | 10x 1GE(LAN) SFP |
| PIC 3 | Online | 10x 1GE(LAN) SFP |
| Slot 10 | Online | SRX5k IOC II |
| PIC 0 | Online | 10x 10GE SFP+ |
| PIC 2 | Online | 1x 100GE CFP |
| Slot 11 | Offline | SRX5k IOC II |

show chassis fpc pic-status (SRX5400, SRX5600, and SRX5800 devices with SRX5K-MPC3-100G10G (IOC3) or SRX5K-MPC3-40G10G (IOC3 and when Express Path [formerly known as services offloading] is configured)

```
user@host> show chassis fpc pic-status
Slot 0  Offline      SRX5k DPC 40x 1GE
Slot 1  Online       SRX5k SPC II
  PIC 0  Online      SPU Cp
  PIC 1  Online      SPU Flow
  PIC 2  Online      SPU Flow
  PIC 3  Online      SPU Flow
Slot 2  Offline      SRX5k SPC
Slot 4  Online       SRX5k IOC3 24XGE+6XLG
  PIC 2  Online      3x 40GE QSFP+- np-cache/services-offload
  PIC 3  Online      3x 40GE QSFP+- np-cache/services-offload
Slot 5  Online       SRX5k IOC II
  PIC 0  Online      10x 1GE(LAN) SFP- np-cache/services-offload
  PIC 1  Online      10x 1GE(LAN) SFP- np-cache/services-offload
  PIC 2  Online      10x 10GE SFP+- np-cache/services-offload
```

Sample Output

show chassis fpc pic-status for HA (SRX5600 and SRX5800 devices)

```
user@host> show chassis fpc pic-status
node0:
-----
Slot 4  Online      SRX5k DPC 40x 1GE
  PIC 0  Online      10x 1GE RichQ
```



```

    PIC 1 Online      10x 1GE RichQ
    PIC 2 Online      10x 1GE RichQ
    PIC 3 Online      10x 1GE RichQ
Slot 5 Online      SRX5k SPC
    PIC 0 Online      SPU Cp-Flow
    PIC 1 Online      SPU Flow

```

```
node1:
```

```

-----
Slot 4 Online      SRX5k DPC 40x 1GE
    PIC 0 Online      10x 1GE RichQ
    PIC 1 Online      10x 1GE RichQ
    PIC 2 Online      10x 1GE RichQ
    PIC 3 Online      10x 1GE RichQ
Slot 5 Online      SRX5k SPC
    PIC 0 Online      SPU Cp-Flow
    PIC 1 Online      SPU Flow

```

show chassis fpc pic-status for HA (SRX5400, SRX5600, and SRX5800 devices with SRX5K-MPC3-100G10G (IOC3) or SRX5K-MPC3-40G10G (IOC3))

```
user@host> show chassis fpc pic-status
```

```
user@host> show chassis fpc pic-status
```

```
node0:
```

```

-----
Slot 2 Online      SRX5k IOC3 24XGE+6XLG
    PIC 0 Online      12x 10GE SFP+
    PIC 1 Online      12x 10GE SFP+
    PIC 2 Offline     3x 40GE QSFP+
    PIC 3 Offline     3x 40GE QSFP+
Slot 4 Online      SRX5k IOC II
    PIC 2 Online      10x 10GE SFP+
Slot 5 Online      SRX5k SPC II
    PIC 0 Online      SPU Cp
    PIC 1 Online      SPU Flow
    PIC 2 Offline
    PIC 3 Offline

```

```
node1:
```

```

-----
Slot 2 Online      SRX5k IOC3 24XGE+6XLG

```



```

PIC 0 Online      12x 10GE SFP+
PIC 1 Online      12x 10GE SFP+
PIC 2 Offline     3x 40GE QSFP+
PIC 3 Offline     3x 40GE QSFP+
Slot 4 Online     SRX5k IOC II
  PIC 2 Online     10x 10GE SFP+
Slot 5 Online     SRX5k SPC II
  PIC 0 Online     SPU Cp
  PIC 1 Online     SPU Flow
  PIC 2 Offline
  PIC 3 Offline

```

Usage

- To display all PFE information along with temperature performance throttle status for FPC slot 1 (FPC 0), use the command `show chassis fpc 0 pfe-instance all detail`.
- To display only PFE 0 information along with temperature performance throttle status for FPC slot 1 (FPC 0), use the command `show chassis fpc 0 pfe-instance 0 detail`.

Release Information

Command introduced before Junos OS Release 7.4.

pfe-instance option added in Junos OS Evolved Release 21.4R1.

RELATED DOCUMENTATION

[request chassis fpc](#) | 438

[show chassis fabric fpcs](#) | 1158

show chassis fpc errors

IN THIS SECTION

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Syntax

```
show chassis fpc errors;
```

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. |

NOTE: The MX104 router does not support the `show chassis fpc error` CLI command. This command is not available in MX104 in the Junos OS releases 13.3R7, 15.1R2, 14.1R5, 14.2R4, 13.3R8, and later.

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

Output Fields

Table 85 on page 1477 lists the output fields for the `show chassis fpc errors` command. Output fields are listed in the approximate order in which they appear.

Table 85: show chassis fpc errors Output Fields

| Field Name | Field Description |
|------------|--|
| FPC | The FPC number. |
| Level | The severity of the error. It can be configured as follows: <ul style="list-style-type: none">fatal—Fatal error on FPCmajor—Major error on FPCminor—Minor error on FPC |

Table 85: show chassis fpc errors Output Fields (Continued)

| Field Name | Field Description |
|--------------|--|
| 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-Taken | The number of instances of action taken. |
| Action | <p>The detection and recovery actions that are triggered when the threshold value is crossed.</p> <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. • Disable PFE. • Reset PFE. |

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        TRAP
      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      TRAP
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      TRAP
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      TRAP
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      TRAP
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      TRAP
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      TRAP
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 (MX Series Routers)

```

user@host> show chassis fpc errors 0
FPC Scope   Category   Level Occurred Cleared Threshold Action-Taken Action
0 board     functional Minor      1        0        1        2      LOG|CM ALARM|
              Major      0        0        1        0      GET STATE|CM ALARM|
              Fatal      0        0        1        0      GET STATE|RESET
              memory    Minor      0        0        1        0      LOG|CM ALARM|
              Major      0        0        1        0      GET STATE|CM ALARM|
              Fatal      0        0        1        0      GET STATE|RESET
              io        Minor      0        0        1        0      LOG|CM ALARM|

```


| | | | | | | | |
|---------------|----------------|-------|---|---|---|---|----------------------------|
| | | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | storage | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | switch | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | processing | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | internal | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | pfe functional | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM DISABLE |
| PFE RESET PFE | | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | memory | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM DISABLE |
| PFE RESET PFE | | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | io | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM DISABLE |
| PFE RESET PFE | | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | storage | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM DISABLE |
| PFE RESET PFE | | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | switch | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM DISABLE |
| PFE RESET PFE | | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | processing | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM DISABLE |
| PFE RESET PFE | | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |
| | | Minor | 0 | 0 | 1 | 0 | LOG CM ALARM |
| | internal | Major | 0 | 0 | 1 | 0 | GET STATE CM ALARM DISABLE |
| PFE RESET PFE | | | | | | | |
| | | Fatal | 0 | 0 | 1 | 0 | GET STATE RESET |


```
Pfe-State: pfe-0 -ENABLED | pfe-1 -ENABLED | pfe-2 -ENABLED | pfe-3 -  
ENABLED | pfe-4 -ENABLED
```

Release Information

Command introduced in Junos OS Release 12.3.

Reset PFE output option added in Junos OS Release 21.4R3.

RELATED DOCUMENTATION

[error](#) | [289](#)

show chassis fpc-feb-connectivity

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- [Options](#) | [1482](#)
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Syntax

```
show chassis fpc-feb-connectivity
```


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

Output Fields

[Table 86 on page 1482](#) 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 86: 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 86: 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 | <p>Slot number of the Forwarding Engine Board (FEB) connected to the FPC or None if the FPC is not connected to a FEB.</p> |
| 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. |

Table 86: show chassis fpc-feb-connectivity Output Fields (Continued)

| Field Name | Field Description |
|--------------------|---|
| Link status | Status of the link connecting the R-FEB and R-FPC: <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 |

Release Information

Command introduced in Junos OS Release 8.0.

RELATED DOCUMENTATION

| |
|--|
| request chassis fpc 438 |
| show chassis fpc 1402 |
| show chassis fabric fpcs 1158 |
| Resynchronizing FPC Sequence Numbers with Active FPCs when an FPC Comes Online 207 |
| MX960 Flexible PIC Concentrator Description |

show chassis fpc global pfe-id

IN THIS SECTION

- [Syntax | 1486](#)
- [Description | 1486](#)
- [Additional Information | 1486](#)
- [Required Privilege Level | 1486](#)
- [Output Fields | 1486](#)
- [Sample Output | 1487](#)
- [Release Information | 1489](#)

Syntax

```
show chassis fpc global pfe-id
```

Description

Display the global pfe-id. The devices supported are MX10004, MX10008, MX10016, MX2010, and MX2020. The outputs are independent of the line card and the status of the FPC or PFE. This output is based on the chassis and the fabric card.

Additional Information

The output is displayed independent of the line card and the status of the FPC or PFE. This output is based on the chassis and the fabric card.

Required Privilege Level

view

Output Fields

[Table 87 on page 1486](#) lists the output fields for the `show chassis fpc global pfe-id` command.

Table 87: show chassis fpc global pfe-id Output Fields

| Field Name | Field Description |
|------------|---|
| FPC | FPC slot number of the Flexible PIC Concentrator (FPC). |

Table 87: show chassis fpc global pfe-id Output Fields *(Continued)*

| Field Name | Field Description |
|---------------|--|
| Global PFE ID | Unique Identifier for a PFE in a chassis. Local PFE ID = Unique identifier for a PFE in an FPC. |

Sample Output

show chassis fpc global pfe-id (MX10008)

```
user@host> show chassis fpc global pfe-id
FPC                                     Global PFE ID
    PFE0 PFE1 PFE2 PFE3 PFE4 PFE5 PFE6 PFE7 PFE8 PFE9 PFE10 PFE11 PFE12 PFE13
PFE14 PFE15
-----
-----
0      0      1      2      3      4      5      6      7      8      9      10      11      12      13
14     15
1      16     17     18     19     20     21     22     23     24     25     26     27     28     29
30     31
2      32     33     34     35     36     37     38     39     40     41     42     43     44     45
46     47
3      48     49     50     51     52     53     54     55     56     57     58     59     60     61
62     63
4      64     65     66     67     68     69     70     71     72     73     74     75     76     77
78     79
5      80     81     82     83     84     85     86     87     88     89     90     91     92     93
94     95
6      96     97     98     99     100    101    102    103    104    105    106    107    108    109
110    111
7      112    113    114    115    116    117    118    119    120    121    122    123    124    125
126    127
-----
-----
```


show chassis fpc global pfe-id (MX10004)

```

user@host> show chassis fpc global-pfe-id
-----
-----
FPC                                     Global PFE ID
  PFE0 PFE1 PFE2 PFE3 PFE4 PFE5 PFE6 PFE7 PFE8 PFE9 PFE10 PFE11 PFE12 PFE13
PFE14 PFE15
-----
-----
0  0    1    2    3    4    5    6    7    8    9   10   11   12   13
14   15
1 16   17   18   19   20   21   22   23   24   25   26   27   28   29
30   31
2 32   33   34   35   36   37   38   39   40   41   42   43   44   45
46   47
3 48   49   50   51   52   53   54   55   56   57   58   59   60   61
62   63
-----
-----

```

show chassis fpc global pfe-id (MX2020 Routers)

```

user@host> show chassis fpc global pfe-id
FPC                                     Global PFE ID
  PFE0 PFE1 PFE2 PFE3 PFE4 PFE5 PFE6 PFE7
-----
0      0    1    2    3   80   81   82   83
1      4    5    6    7   84   85   86   87
2      8    9   10   11   88   89   90   91
3     12   13   14   15   92   93   94   95
4     16   17   18   19   96   97   98   99
5     20   21   22   23  100  101  102  103
6     24   25   26   27  104  105  106  107
7     28   29   30   31  108  109  110  111
8     32   33   34   35  112  113  114  115
9     36   37   38   39  116  117  118  119
10    40   41   42   43  120  121  122  123
11    44   45   46   47  124  125  126  127
12    48   49   50   51  128  129  130  131

```


| | | | | | | | | |
|-------|----|----|----|----|-----|-----|-----|-----|
| 13 | 52 | 53 | 54 | 55 | 132 | 133 | 134 | 135 |
| 14 | 56 | 57 | 58 | 59 | 136 | 137 | 138 | 139 |
| 15 | 60 | 61 | 62 | 63 | 140 | 141 | 142 | 143 |
| 16 | 64 | 65 | 66 | 67 | 144 | 145 | 146 | 147 |
| 17 | 68 | 69 | 70 | 71 | 148 | 149 | 150 | 151 |
| 18 | 72 | 73 | 74 | 75 | 152 | 153 | 154 | 155 |
| 19 | 76 | 77 | 78 | 79 | 156 | 157 | 158 | 159 |
| ----- | | | | | | | | |

show chassis fpc global pfe-id (MX2010 Routers)

```
user@host> show chassis fpc global pfe-id
```

| FPC | | Global PFE ID | | | | | | |
|-------|------|---------------|------|------|------|------|------|------|
| | PFE0 | PFE1 | PFE2 | PFE3 | PFE4 | PFE5 | PFE6 | PFE7 |
| ----- | | | | | | | | |
| 0 | 0 | 1 | 2 | 3 | 80 | 81 | 82 | 83 |
| 1 | 4 | 5 | 6 | 7 | 84 | 85 | 86 | 87 |
| 2 | 8 | 9 | 10 | 11 | 88 | 89 | 90 | 91 |
| 3 | 12 | 13 | 14 | 15 | 92 | 93 | 94 | 95 |
| 4 | 16 | 17 | 18 | 19 | 96 | 97 | 98 | 99 |
| 5 | 20 | 21 | 22 | 23 | 100 | 101 | 102 | 103 |
| 6 | 24 | 25 | 26 | 27 | 104 | 105 | 106 | 107 |
| 7 | 28 | 29 | 30 | 31 | 108 | 109 | 110 | 111 |
| 8 | 32 | 33 | 34 | 35 | 112 | 113 | 114 | 115 |
| 9 | 36 | 37 | 38 | 39 | 116 | 117 | 118 | 119 |
| ----- | | | | | | | | |

Release Information

Command introduced in Junos OS Release 21.4R1.

show chassis hardware

IN THIS SECTION

- [Syntax | 1490](#)
- [Syntax \(EX Series Devices, MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms\) | 1491](#)
- [Syntax \(TX Matrix Router\) | 1491](#)
- [Syntax \(TX Matrix Plus Router\) | 1491](#)
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Syntax

```
show chassis hardware
<detail | extensive>
<clei-models>
<models>
```


Syntax (EX Series Devices, MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 Universal Routing Platforms)

```
show chassis hardware
<clei-models>
<detail | extensive>
<models>
<satellite [slot-id slot-id |device-alias alias-name]>
```

Syntax (TX Matrix Router)

```
show chassis hardware
<clei-models>
<detail | extensive>
<models>
<lcc number / scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis hardware
<clei-models>
<detail | extensive>
<models>
<lcc number / sfc number>
```

Syntax (MX Series Devices)

```
show chassis hardware
<detail | extensive>
<clei-models>
<models>
```



```
<all-members>
<local>
<member member-id>
```

Syntax (QFX Series)

```
show chassis hardware
<detail | extensive>
<clei-models>
<interconnect-device name>
<node-device name>
<models>
```

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 devices 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 devices. For a TX Matrix Plus router, display information about the TX Matrix Plus router and its attached devices. |
| 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 devices only) (Optional) Display hardware-specific information for all the members of the Virtual Chassis configuration. |
| interconnect-device <i>name</i> | (QFabric systems only) (Optional) Display hardware-specific information for the Interconnect device. |
| lcc <i>number</i> | <p>(TX Matrix devices 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.</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 devices are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 devices are connected to a TX Matrix Plus router in a routing matrix. |

| | |
|--|--|
| | <ul style="list-style-type: none"> 0 through 7, when T1600 devices are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. 0, 2, 4, or 6, when T4000 devices are connected to a TX Matrix Plus router with 3D SIBs in a routing matrix. |
| local | (MX Series devices only) (Optional) Display hardware-specific information for the local Virtual Chassis members. |
| member <i>member-id</i> | (MX Series devices and EX Series switches) (Optional) Display hardware-specific information for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> 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 <i>name</i> | (QFabric systems only) (Optional) Display hardware-specific information for the Node device. |
| satellite [<i>slot-id slot-id</i> <i>device-alias alias-name</i>] | (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 <i>number</i> | (TX Matrix Plus router only) (Optional) Display hardware information for the TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> variable with 0. |

Additional Information

The `show chassis hardware detail` command now displays DIMM information for the following Routing Engines, as shown in No Link Title.

Table 88: Routing Engines Displaying DIMM Information

| Routing Engines | Devices |
|-----------------------------|---------------------------------|
| RE-S-1800x2 and RE-S-1800x4 | MX240, MX480, and MX960 devices |

Table 88: Routing Engines Displaying DIMM Information (Continued)

| Routing Engines | Devices |
|-----------------|-----------------------|
| RE-A-1800x2 | M120 and M320 devices |

In Junos OS Release 11.4 and later, the output for the `show chassis hardware models operational mode` command for MX Series devices 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.

Starting with Junos OS Release 22.2R1, the RE-S-X6-128G-K Routing Engine (RE) is supported for MX240, MX480, and MX960 devices. View the details of the RE in the command output.

Required Privilege Level

view

Output Fields

No Link Title lists the output fields for the `show chassis hardware` command. Output fields are listed in the approximate order in which they appear.

Table 89: show chassis hardware Output Fields

| Field Name | Field Description | Level of Output |
|------------|---|-----------------|
| Item | Show information about the device hardware. | All levels |
| Version | Revision level of the chassis component. | All levels |

Table 89: show chassis hardware Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|------------------------|---|-----------------|
| Part number | Part number of the chassis component. | All levels |
| Serial number | Serial number of the chassis component. The serial number of the backplane is also the serial number of the router chassis. Use this serial number when you need to contact Juniper Networks Customer Support about the router or switch chassis. | All levels |
| Assb ID or Assembly ID | (extensive keyword only) Identification number that describes the FRU hardware. | extensive |
| Assembly Version | (extensive keyword only) Version number of the FRU hardware. | extensive |
| Assembly Flags | (extensive keyword only) Flags. | extensive |
| FRU model number | (clei-models, extensive, and models keyword only) Model number of the FRU hardware component. | none specified |
| CLEI code | (clei-models and extensive keyword only) Common Language Equipment Identifier code. This value is displayed only for hardware components that use ID EEPROM format v2. This value is not displayed for components that use ID EEPROM format v1. | none specified |
| EEPROM Version | ID EEPROM version used by the hardware component: 0x00 (version 0), 0x01 (version 1), or 0x02 (version 2). | extensive |

Table 89: show chassis hardware Output Fields (*Continued*)

| Field Name | Field Description | Level of Output |
|-------------|---|-----------------|
| 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 Type0C192. <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 89: 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, 4xFX0, 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 M 16x 10GE—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 devices. 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 | |

Table 89: show chassis hardware Output Fields (Continued)

| Field Name | Field Description | Level of Output |
|------------|--|-----------------|
| | <ul style="list-style-type: none"> • 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 devices. • LCD description for MX Series devices | |

Sample Output

show chassis hardware (MX240, MX480, MX960 Devices)

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|------------------------------|
| Chassis | | | JN1230686AFB | MX480 |
| Midplane | REV 05 | 710-017414 | ACRB7717 | MX480 Midplane |
| FPM Board | REV 02 | 710-017254 | CADF2017 | Front Panel Display |
| PEM 0 | Rev 03 | 740-022697 | QCS1142C0HJ | PS 1.2-1.7kW; 100-240V AC in |
| PEM 1 | Rev 01 | 740-022697 | QCS1035C0CM | PS 1.2-1.7kW; 100-240V AC in |
| Routing Engine 0 | REV 06 | 711-145342 | CASE0160 | RE-S-X6-128G-K |
| CB 0 | REV 05 | 750-055976 | CAES7891 | Enhanced MX SCB 2 |
| CB 1 | REV 12 | 750-062572 | CALM3310 | Enhanced MX SCB 2 |
| Fan Tray | | | | Enhanced Left Fan Tray |

show chassis hardware (MX10008 Router)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|----------------|---------------------|
| Chassis | | | DE538 | JNP10008 [MX10008] |
| Midplane | REV 27 | 750-054097 | ACPD6954 | Midplane 8 |
| Routing Engine 0 | | BUILTIN | BUILTIN | RE X10 |
| Routing Engine 1 | | BUILTIN | BUILTIN | RE X10 128 |
| CB 0 | REV 10 | 750-079562 | CAKF2158 | Control Board |
| CB 1 | REV 05 | 711-065897 | CAJG2680 | Control Board |
| FPC 1 | REV 04 | 750-084779 | CAKN5706 | JNP10K-LC2101 |
| CPU | REV 05 | 750-073391 | CAKJ2864 | LC 2101 PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4xQSFP28 SYNCE |
| Xcvr 0 | REV 01 | 740-046565 | XXL0BQM | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-032986 | QB350242 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-054053 | QE408285 | QSFP+-4X10G-SR |
| Xcvr 3 | REV 01 | 740-046565 | QF3300Z9 | QSFP+-40G-SR4 |
| PIC 1 | | BUILTIN | BUILTIN | 4xQSFP28 SYNCE |
| Xcvr 0 | REV 01 | 740-067442 | QJ2200LD | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-038153 | APF170500382DP | QSFP+-40G-CU3M |
| Xcvr 2 | REV 01 | 740-067442 | QI4302LC | QSFP+-40G-SR4 |
| PIC 2 | | BUILTIN | BUILTIN | 4xQSFP28 SYNCE |
| Xcvr 0 | REV 01 | 740-067442 | 1ACP1335119 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-067442 | 1ACP1313156 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-067442 | QK050040 | QSFP+-40G-SR4 |
| Xcvr 3 | REV 01 | 740-067442 | QJ2201BG | QSFP+-40G-SR4 |
| PIC 3 | | BUILTIN | BUILTIN | 4xQSFP28 SYNCE |
| Xcvr 0 | REV 01 | 740-058734 | 1ECQ12400CS | QSFP-100GBASE-SR4 |
| Xcvr 1 | REV 01 | 740-046565 | QF3300ZX | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-061405 | 1ECQ12510FH | QSFP-100G-SR4-T2 |
| Xcvr 3 | REV 01 | 740-032986 | QB491182 | QSFP+-40G-SR4 |
| PIC 4 | | BUILTIN | BUILTIN | 4xQSFP28 SYNCE |
| Xcvr 0 | REV 01 | 740-067442 | QJ2200D5 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-054053 | XXS0L95 | QSFP+-4X10G-SR |
| PIC 5 | | BUILTIN | BUILTIN | 4xQSFP28 SYNCE |
| Xcvr 0 | REV 01 | 740-054053 | QE251550 | QSFP+-4X10G-SR |
| Xcvr 1 | REV 01 | 740-054053 | XZB01D5 | QSFP+-4X10G-SR |
| Xcvr 3 | REV 01 | 740-046565 | QI1402F9 | QSFP+-40G-SR4 |
| FPD Board | REV 07 | 711-054687 | ACPF2896 | Front Panel Display |
| PEM 1 | REV 02 | 740-049388 | 1EDL62102PR | Power Supply AC |

| | | | | |
|------------|--------|------------|-------------|-----------------------|
| PEM 2 | REV 02 | 740-049388 | 1EDL60300H2 | Power Supply AC |
| PEM 4 | REV 02 | 740-049388 | 1EDL603003Z | Power Supply AC |
| PEM 5 | REV 01 | 740-049388 | 1EDL339001B | Power Supply AC |
| FTC 0 | REV 14 | 750-050108 | ACNW3344 | Fan Controller 8 |
| FTC 1 | REV 14 | 750-050108 | ACPE3978 | Fan Controller 8 |
| Fan Tray 0 | REV 09 | 760-054372 | ACNV5507 | Fan Tray 8 |
| Fan Tray 1 | REV 09 | 760-054372 | ACNV5371 | Fan Tray 8 |
| SFB 0 | REV 25 | 750-050058 | ACPH6821 | Switch Fabric (SIB) 8 |
| SFB 1 | | | | |
| SFB 2 | REV 24 | 750-050058 | ACNZ0641 | Switch Fabric (SIB) 8 |
| SFB 3 | REV 27 | 750-050058 | ACPH9127 | Switch Fabric (SIB) 8 |
| SFB 5 | REV 24 | 750-050058 | ACNX7396 | Switch Fabric (SIB) 8 |

show chassis hardware (PTX10008 Router)

```
root@host> show chassis hardware
```

Hardware inventory:

| Item | Version | Part number | Serial number | Description | |
|------------------|---------|-------------|---------------|----------------------|----|
| Chassis | | | DK404 | JNP10008 [PTX10008] | |
| Midplane | REV 28 | 750-054097 | ACPP2394 | Midplane 8 | |
| Routing Engine 0 | | BUILTIN | BUILTIN | RE-PTX-2X00x4 | |
| Routing Engine 1 | | BUILTIN | BUILTIN | RE-PTX-2X00x4 | |
| CB 0 | REV 04 | 750-068820 | ACPT5303 | Control Board | |
| CB 1 | REV 04 | 750-068820 | ACPR1627 | Control Board | |
| FPC 6 | REV 13 | 750-068822 | ACPB2753 | LC1102 - 12C / 36Q / | |
| 14 | | | | | 4X |
| CPU | | BUILTIN | BUILTIN | FPC CPU | |
| PIC 0 | | BUILTIN | BUILTIN | 12x100GE/36x40GE/ | |
| 144x10 | | | | | GE |
| Xcvr 0 | REV 01 | 740-067442 | XV304N6 | QSFP+-40G-SR4 | |
| Xcvr 1 | REV 01 | 740-067442 | XV30A5M | QSFP+-40G-SR4 | |
| Xcvr 2 | REV 01 | 740-067442 | XV300HC | QSFP+-40G-SR4 | |
| Xcvr 3 | REV 01 | 740-067443 | XU20L17 | QSFP+-40G-SR4 | |
| Xcvr 4 | REV 01 | 740-067442 | XV303XG | QSFP+-40G-SR4 | |
| Xcvr 5 | REV 01 | 740-067443 | XV306QC | QSFP+-40G-SR4 | |
| Xcvr 6 | REV 01 | 740-067442 | XV303Y7 | QSFP+-40G-SR4 | |
| Xcvr 7 | REV 01 | 740-067443 | XX60DMR | QSFP+-40G-SR4 | |
| Xcvr 9 | REV 01 | 740-067443 | XX60DNY | QSFP+-40G-SR4 | |
| Xcvr 10 | REV 01 | 740-054053 | QF4605WF | QSFP+-4X10G-SR | |
| Xcvr 13 | REV 01 | 740-058734 | 1ECQ115007D | QSFP-100GBASE-SR4 | |
| Xcvr 15 | REV 01 | 740-046565 | QH06035R | QSFP+-40G-SR4 | |

| | | | | |
|----------------|--------|------------|-------------|--------------------------|
| Xcvr 16 | REV 01 | 740-046565 | QH0602KC | QSFP+-40G-SR4 |
| Xcvr 17 | REV 01 | 740-046565 | QH0507PA | QSFP+-40G-SR4 |
| Xcvr 18 | REV 01 | 740-046565 | QH06035M | QSFP+-40G-SR4 |
| Xcvr 24 | REV 01 | 740-046565 | QH0507QL | QSFP+-40G-SR4 |
| Xcvr 25 | REV 01 | 740-067443 | XV20CWP | QSFP+-40G-SR4 |
| Xcvr 34 | REV 01 | 740-046565 | QH06035U | QSFP+-40G-SR4 |
| Xcvr 35 | REV 01 | 740-067443 | XX60DN9 | QSFP+-40G-SR4 |
| FPC 7 | REV 41 | 750-051357 | ACPL3446 | LC1101 - 30C / 30Q / 96X |
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | | BUILTIN | BUILTIN | 30x100GE/30x40GE/96x10GE |
| Xcvr 0 | REV 01 | 740-067443 | XX60DPC | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-054053 | QF4605W7 | QSFP+-4X10G-SR |
| Xcvr 2 | REV 01 | 740-067443 | XX60DP8 | QSFP+-40G-SR4 |
| Xcvr 3 | REV 01 | 740-067442 | XV30FYM | QSFP+-40G-SR4 |
| Xcvr 4 | REV 01 | 740-067442 | 1ACP133406Z | QSFP+-40G-SR4 |
| Xcvr 5 | REV 01 | 740-067443 | XX60DP5 | QSFP+-40G-SR4 |
| Xcvr 8 | REV 01 | 740-046565 | QH060355 | QSFP+-40G-SR4 |
| Xcvr 12 | REV 01 | 740-058734 | 1ECQ115008C | QSFP-100GBASE-SR4 |
| Xcvr 15 | REV 01 | 740-046565 | QH0602KG | QSFP+-40G-SR4 |
| Xcvr 16 | REV 01 | 740-046565 | QH0602LG | QSFP+-40G-SR4 |
| Xcvr 17 | REV 01 | 740-046565 | QH06035S | QSFP+-40G-SR4 |
| Xcvr 18 | REV 01 | 740-046565 | QH0602KS | QSFP+-40G-SR4 |
| Xcvr 24 | REV 01 | 740-067443 | QI2902DP | QSFP+-40G-SR4 |
| Power Supply 2 | REV 02 | 740-049388 | 1EDL70200NP | Power Supply AC |
| Power Supply 3 | REV 02 | 740-049388 | 1EDL603005C | Power Supply AC |
| Power Supply 4 | REV 02 | 740-049388 | 1EDL70200P1 | Power Supply AC |
| Power Supply 5 | REV 02 | 740-049388 | 1EDL70200B7 | Power Supply AC |
| FTC 0 | REV 16 | 750-050108 | ACPK8682 | Fan Controller 8 |
| FTC 1 | REV 16 | 750-050108 | ACPR9530 | Fan Controller 8 |
| Fan Tray 0 | REV 10 | 760-054372 | ACPR9509 | Fan Tray 8 |
| Fan Tray 1 | REV 10 | 760-054372 | ACPV7260 | Fan Tray 8 |
| SIB 1 | REV 28 | 750-050058 | ACPV6306 | Switch Fabric 8 |
| SIB 2 | REV 28 | | ACPR2569 | Switch Fabric 8 |
| SIB 3 | REV 28 | 750-05 | ACPW7402 | Switch Fabric 8 |
| SIB 4 | REV 28 | 750-050058 | ACPR2577 | Switch Fabric 8 |
| FPD Board | REV 07 | 711-054687 | ACPM4965 | Front Panel Display |

show chassis hardware (PTX10016 Router Junos OS Evolved Release)

```
user@host> show chassis hardware
Hardware inventory:
```


| Item | Version | Part number | Serial number | Description |
|------------------|---------|------------------|---------------|--|
| Chassis | | | DY814 | JNP10016 [PTX10016] |
| Midplane 0 | REV 02 | 750-085608 | BCAW3258 | Midplane 16 |
| FPM 0 | REV 01 | 711-086964 | BCAR0775 | Front Panel Display |
| PSM 0 | Rev 03 | 740-069994 | 1F269200046 | JNP10K 5500W AC/HVDC Power Supply Unit |
| PSM 1 | Rev 03 | 740-069994 | 1F269170144 | JNP10K 5500W AC/HVDC Power Supply Unit |
| PSM 2 | REV 02 | 740-049388 | 1EDL60300C6 | JNP10K 5500W AC/HVDC Power Supply Unit |
| PSM 3 | REV 02 | 740-049388 | 1EDL603005X | JNP10K 5500W AC/HVDC Power Supply Unit |
| PSM 4 | REV 02 | 740-049388 | 1EDL6170275 | JNP10K 5500W AC/HVDC Power Supply Unit |
| PSM 5 | REV 02 | 740-049388 | 1EDL61701WD | JNP10K 5500W AC/HVDC Power Supply Unit |
| Routing Engine 0 | | BUILTIN | BUILTIN | JNP10K-RE1-E |
| CB 0 | REV 15 | 750-079562 | BCAW3941 | Control Board |
| Routing Engine 1 | | BUILTIN | BUILTIN | JNP10K-RE1-E |
| CB 1 | REV 15 | 750-079562 | BCAW3942 | Control Board |
| FPC 0 | REV 07 | 750-093524 | BCAY8271 | JNP10K-LC1201 |
| CPU | REV 14 | 710-001726 | HM1084 | FPC CPU |
| FPC 10 | REV 07 | 750-093524 | BCAY8277 | JNP10K-LC1201CPU |
| 710-010169 | HZ3219 | FPC CPU-Enhanced | | |
| SIB 0 | REV 02 | 750-083426 | BCAV7680 | SIB-JNP10016 |
| SIB 1 | REV 02 | 750-083426 | BCAV7682 | SIB-JNP10016 |
| SIB 2 | REV 02 | 750-083426 | BCAV7681 | SIB-JNP10016 |
| SIB 3 | REV 02 | 750-083426 | BCAV7684 | SIB-JNP10016 |
| SIB 4 | REV 02 | 750-083426 | BCAV7683 | SIB-JNP10016 |
| SIB 5 | REV 02 | 750-083426 | BCAV7685 | SIB-JNP10016 |
| FTC 0 | REV 10 | 750-086270 | BCAV0609 | Fan Controller 16 |
| Fan Tray 0 | REV 02 | 750-103311 | BCAY1793 | Fan Tray 16 |
| Fan Tray 1 | REV 02 | 750-103311 | BCAY1797 | Fan Tray 16 |

show chassis hardware clei-models (PTX10016 Router)

```

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 (QFX5700 Router)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------|---------|-------------|---------------|-------------|
|------|---------|-------------|---------------|-------------|


```

Chassis                EC819          JNP5700          [QFX5700]
....
....
....
Routing Engine 0        BUILTIN        BUILTIN          JNP5700-RCB
Routing Engine 1        BUILTIN        BUILTIN          JNP5700-RCB
CB 0                    REV 15         750-079562       BCAV5526         Control Board
CB 1                    REV 15         750-079562       BCAW0403         Control Board

```

show chassis hardware (SRX5800 Router)

```

user@host> show chassis hardware
show chassis hardware
Hardware inventory:
Item            Version  Part number  Serial number  Description
Chassis                               JN1080B50AFA  MX960
Midplane        REV 02   710-013698   CC6226         MX960 Backplane
Fan Extender    REV 02   710-018051   JY5235         Extended Cable Manager
FPM Board       REV 01   710-014974   JS4207         Front Panel Display
PEM 0           Rev 01   740-080280   1F238510008    MX960-UNIVERSAL-HV-PSM
PEM 1           Rev 01   740-080280   1F238510030    MX960-UNIVERSAL-HV-PSM
PEM 2           Rev 01   740-080280   1F238510023    MX960-UNIVERSAL-HV-PSM
PEM 3           Rev 01   740-080280   1F238510047    MX960-UNIVERSAL-HV-PSM

```

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        4XQSFP28 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                                     T640
Jedec Code:      0x7fb0                    EEPROM Version:  0x01
P/N:             .....                    S/N:            .....
Assembly ID:     0x0507                    Assembly Version: 00.00
Date:            00-00-0000                Assembly Flags:  0x00
Version:         .....
ID: Gibson LCC Chassis
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 05 07 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x20: ff ff ff ff ff ff ff ff ff ff ff ff 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

| | | | | |
|------------------|--------|------------|--------------|--------------------|
| 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      BUILTIN      FPC CPU
PIC 0            BUILTIN      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 hardware (ACX7100-48L)

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|---------|---------|-------------|---------------|-------------|
| Chassis | | | YW0220320039 | JNP7100-48L |

[ACX7100-48

L]

| | | | | | |
|--------------------|--------|------------|---------------|---------------------|------|
| PSM 1 | REV 04 | 740-085431 | 1ED79520221 | PSU 1600W AC, Front | Back |
| to | | | | | |
| Airflow | | | | | |
| Routing Engine 0 | REV 04 | 611-112446 | YY0220320013 | RE-JNP-7100 | |
| CB 0 | REV 05 | 650-113149 | YW0220320039 | Control Board | |
| FPC 0 | | BUILTIN | BUILTIN | ACX7100-48L | |
| PIC 0 | | BUILTIN | BUILTIN | MRATE- 48xSFP56 + | P56- |
| 6xQSF | | | | | |
| DD | | | | | |
| Xcvr 0 | REV 01 | 740-068639 | 1A1M31A311008 | SFP28-25G-BASE-SR | |
| Xcvr 1 | REV 01 | 740-030658 | AA1230AZYWW | SFP+-10G-USR | |
| Xcvr 2 | REV 01 | 740-031980 | AP42G0C | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | ARN2FS9 | SFP+-10G-SR | |
| Xcvr 4 | REV 01 | 740-031980 | AP4150P | SFP+-10G-SR | |
| Xcvr 5 | REV 01 | 740-031980 | 123363A01134 | SFP+-10G-SR | |
| Xcvr 6 | REV 01 | 740-031980 | B11E02539 | SFP+-10G-SR | |
| Xcvr 7 | REV 01 | 740-031980 | ARQ0WRX | SFP+-10G-SR | |
| Xcvr 12 | REV 01 | 740-031980 | 193363A00707 | SFP+-10G-SR | |
| Xcvr 15 | REV 01 | 740-031980 | AMS15RT | SFP+-10G-SR | |
| Xcvr 18 | REV 01 | 740-068639 | 1A1M31A5370MX | SFP28-25G-BASE-SR | |
| Xcvr 19 | REV 01 | 740-068639 | 1A1M31A5370MS | SFP28-25G-BASE-SR | |
| Xcvr 21 | REV 01 | 740-068639 | 1A1M31A5370MW | SFP28-25G-BASE-SR | |
| Xcvr 22 | REV 01 | 740-068639 | 1A1M31A5370MT | SFP28-25G-BASE-SR | |
| Xcvr 43 | REV 01 | 740-031980 | CH09KN1H4 | SFP+-10G-SR | |
| Xcvr 44 | REV 01 | 740-031980 | AMB0TC1 | SFP+-10G-SR | |
| Xcvr 46 | REV 01 | 740-031980 | AP40WQN | SFP+-10G-SR | |
| Xcvr 47 | REV 01 | 740-031980 | APR1BCS | SFP+-10G-SR | |
| Xcvr 48 | REV 01 | 740-054053 | XXH0KH1 | QSFP+-4X10G-SR | |
| Xcvr 49 | REV 01 | 740-058734 | 1ECQ144605L | QSFP-100GBASE-SR4 | |
| Xcvr 50 | REV 01 | 740-054053 | XWP0Q7D | QSFP+-4X10G-SR | |
| Xcvr 51 | REV 01 | 740-058734 | 1ECQ144604H | QSFP-100GBASE-SR4 | |
| Xcvr 52 | REV 01 | 740-054053 | XXH0KGC | QSFP+-4X10G-SR | |
| Xcvr 53 | REV 01 | 740-058734 | 1ECQ144605K | QSFP-100GBASE-SR4 | |
| Fan Tray 0 | | | | JNP7100 Fan Tray, | |
| Front | | | | | to |
| Back Airflow - AFO | | | | | |
| Fan Tray 1 | | | | JNP7100 Fan Tray, | |
| Front | | | | | to |
| Back Airflow - AFO | | | | | |
| Fan Tray 2 | | | | JNP7100 Fan Tray, | |
| Front | | | | | to |

The `show chassis hardware` command output does not include information about the fan tray serial number and part number of MX204 routers. This does not affect the fan's functionality.

```

user@host> show chassis hardware
Hardware inventory:Item                Version  Part number  Serial number  Description
Chassis                               CV190      JNP204 [MX204]
Routing Engine 0                      BUILTIN   BUILTIN       RE-S-1600x8
CB 0      REV 40  750-069579  CARN0542    JNP204 [MX204]
FPC 0                      BUILTIN   BUILTIN       MPC
  PIC 0                      BUILTIN   BUILTIN       4XSFP28 PIC
    Xcvr 0      REV 01  740-067443  1ACP16161C7  QSFP+-40G-SR4
    Xcvr 1      REV 01  740-067443  1ACP16161E7  QSFP+-40G-SR4
    Xcvr 2      REV 01  740-067443  1ACP16161DV  QSFP+-40G-SR4
    Xcvr 3      REV 01  740-099582  1A1CQ1B6350DC  QSFP-100GBASE-SR4
  PIC 1                      BUILTIN   BUILTIN       8XSFP PIC
    Xcvr 0      REV 01  740-031980  AJJ036G      SFP+-10G-SR
    Xcvr 1      REV 01  740-031980  AN20CP8      SFP+-10G-SR
PEM 1      REV 04  740-043886  1GA4A380672  JPSU-650W-DC-AFO
Fan Tray 0                                Fan Tray, Front to Back Airflow - AFO
Fan Tray 1                                Fan Tray, Front to Back Airflow - AFO
Fan Tray 2                                Fan Tray, Front to Back Airflow -
AFO
Back Airflow - AFO

```


show chassis hardware (SRX5800)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|--------------|---------|-------------|---------------|--------------------------|
| Chassis | | | JN1080B50AFA | MX960 |
| Midplane | REV 02 | 710-013698 | CC6226 | MX960 Backplane |
| Fan Extender | REV 02 | 710-018051 | JY5235 | Extended Cable Manager |
| FPM Board | REV 01 | 710-014974 | JS4207 | Front Panel Display |
| PEM 0 | Rev 01 | 740-080280 | 1F238510008 | SRX5800-UNIVERSAL-HV-PSM |
| PEM 1 | Rev 01 | 740-080280 | 1F238510030 | SRX5800-UNIVERSAL-HV-PSM |
| PEM 2 | Rev 01 | 740-080280 | 1F238510023 | SRX5800-UNIVERSAL-HV-PSM |
| PEM 3 | Rev 01 | 740-080280 | 1F238510047 | SRX5800-UNIVERSAL-HV-PSM |

show chassis hardware (PTX10001-36MR) (400G ZR and 400G ZR-M optics)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-------------------------------|
| Chassis | | | EM436 | JNP10001-36MR [PTX10001-36MR] |
| PSM 0 | REV 07 | 740-073765 | 1GE29391099 | AC AFO 3000W PSU |
| Routing Engine 0 | REV 08 | 750-100243 | BCBH4788 | RE-JNP10001-36MR |
| CB 0 | REV 16 | 750-099260 | BCBJ1424 | Control Board |
| FPC 0 | | BUILTIN | BUILTIN | FPC-JNP10001-36MR |
| PIC 0 | | BUILTIN | BUILTIN | 8X400GE-MR + 4X100GE-MR |
| Xcvr 0 | REV 01 | 740-032986 | ECX40K80042 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-032986 | QF4804ZM | QSFP+-40G-SR4 |
| Xcvr 3 | REV 01 | 740-046565 | QD190447 | QSFP+-40G-SR4 |
| Xcvr 4 | REV 01 | 740-038624 | S1810376855-1 | QSFP+-40G-CU3M |
| Xcvr 5 | REV 01 | 740-032986 | ECX40K80028 | QSFP+-40G-SR4 |
| Xcvr 10 | REV 01 | 740-131169 | 1T1TZFA70500D | QSFP56-DD-400G-ZR-M |
| PIC 1 | | BUILTIN | BUILTIN | 8X400GE-MR + 4X100GE-MR |
| Xcvr 0 | REV 01 | 740-032986 | XV303SF | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-067442 | QI1202B5 | QSFP+-40G-SR4 |
| Xcvr 2 | XXXX | NON-JNPR | 204053396 | QSFP56-DD-400G-ZR |
| Xcvr 4 | REV 01 | 740-061405 | 1ECQ13150KE | QSFP-100GBASE-SR4-T2 |
| Xcvr 10 | REV 01 | 740-131169 | 1T1TZFA70500C | QSFP56-DD-400G-ZR-M |
| PIC 2 | | BUILTIN | BUILTIN | 8X400GE-MR + 4X100GE-MR |
| Xcvr 0 | REV 01 | 740-032986 | QD481959 | QSFP+-40G-SR4 |

| | | | | |
|---------------|--------|------------|----------------|----------------------------------|
| Xcvr 1 | REV 01 | 740-038624 | C1909242760-1 | QSFP+-40G-CU3M |
| Xcvr 3 | REV 01 | 740-032986 | ECX02IC0146 | QSFP+-40G-SR4 |
| Xcvr 4 | REV 01 | 740-065631 | 1ACS12510R3 | QSFP28-100G-AOC-3M |
| Xcvr 5 | REV 01 | 740-065631 | 1ACS1251023 | QSFP28-100G-AOC-3M |
| Xcvr 9 | REV 01 | 740-061405 | 1ECQ13150A5 | QSFP-100GBASE-SR4-T2 |
| Xcvr 10 | XXXX | NON-JNPR | 204053387 | QSFP56-DD-400G-ZR |
| Xcvr 11 | REV 01 | 740-038623 | MOC14256230865 | QSFP+-40G-CU1M |
| SIB 0 | | BUILTIN | BUILTIN | SIB-JNP10001-36MR |
| Fan Tray 0 | | | | JNP10001 Fan Tray, Front to Back |
| Airflow - AF0 | | | | |
| Fan Tray 1 | | | | JNP10001 Fan Tray, Front to Back |
| Airflow - AF0 | | | | |
| Fan Tray 2 | | | | JNP10001 Fan Tray, Front to Back |
| Airflow - AF0 | | | | |
| Fan Tray 3 | | | | JNP10001 Fan Tray, Front to Back |
| Airflow - AF0 | | | | |
| Fan Tray 4 | | | | JNP10001 Fan Tray, Front to Back |
| Airflow - AF0 | | | | |
| Fan Tray 5 | | | | JNP10001 Fan Tray, Front to Back |
| Airflow - AF0 | | | | |

show chassis hardware (MX304)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|---------------------------|
| Chassis | | | EU591 | JNP304 [MX304] |
| Routing Engine 0 | REV 01 | 750-123749 | BCBZ3334 | RE 2400 8C 128G |
| Routing Engine 1 | REV 06 | 750-123749 | BCCE2842 | RE 2400 8C 128G |
| CB 0 | REV 01 | 750-123404 | BCBY2022 | Control Board |
| FPC 0 | | BUILTIN | BUILTIN | FPC-BUILTIN |
| CPU | REV 01 | 750-122877 | BCBX9348 | JNP304 PMB |
| PIC 0 | REV 04 | 750-122718 | BCBY7928 | MRATE LMIC 16x100G/4x400G |
| Xcvr 0 | REV 01 | 740-065632 | 1FCS251700J | QSFP28-100G-AOC-5M |
| Xcvr 3 | REV 01 | 740-058734 | 1ACQ113404W | QSFP-100GBASE-SR4 |
| Xcvr 4 | REV01 | 740-061002 | LE015180024 | QSFP28-100G-CU5M |
| Xcvr 5 | REV 01 | 740-061405 | 1ECQ15200A9 | QSFP-100G-SR4-T2 |
| Xcvr 7 | REV 01 | 740-061405 | 1ECQ151819K | QSFP-100G-SR4-T2 |
| Xcvr 8 | REV 01 | 740-058734 | 1ACQ11470MW | QSFP-100GBASE-SR4 |
| Xcvr 12 | REV 01 | 740-065630 | 1FCS044402M | QSFP28-100G-AOC-1M |
| PIC 1 | REV 04 | 750-122718 | BCBY7930 | MRATE LMIC 16x100G/4x400G |

| | | | | |
|------------|--------|------------|---------------|--|
| Xcvr 0 | REV 01 | 740-090165 | 1W1CSAA539002 | QSFP56-DD-400G-AOC-3M |
| Xcvr 4 | REV 01 | 740-067443 | 1ACP16161CQ | QSFP+-40G-SR4 |
| Xcvr 12 | REV 01 | 740-065632 | 1FCS2517005 | QSFP28-100G-AOC-5M |
| Xcvr 14 | REV 01 | 740-061405 | 1F1CQ1A5201F7 | QSFP-100G-SR4-T2 |
| PEM 0 | Rev 01 | 740-110419 | 1F27B040062 | AC AFO 2200W Power Supply |
| PEM 1 | | | | |
| Fan Tray 0 | REV 02 | 760-126744 | BCCB3869 | JNP304 Fan Tray, Front to Back Airflow |
| Fan Tray 1 | REV 02 | 760-126744 | BCCB3870 | JNP304 Fan Tray, Front to Back Airflow |
| Fan Tray 2 | REV 01 | 760-126744 | BCBY4493 | JNP304 Fan Tray, Front to Back Airflow |
| SFB 0 | REV 01 | 750-122847 | BCBX1427 | Switch Fabric Board |
| TIB | REV 01 | 750-126514 | BCBX9919 | Timing Interface Board |

show chassis hardware (ACX7509-FPC-20Y)

```

user@host show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
FPC 5         REV 04   750-120787   CARH7889      JNP-FPC-20Y
  PIC 0              BUILTIN     BUILTIN       20x1/10/25/50-SFP56
    Xcvr 0         REV 01   740-071562   1A1M3AA5480F8 SFP28-25G-BASE-LR
    Xcvr 1         REV 01   720-120775   1P1C54A628HVN SFP56-50G-DAC-3M
    Xcvr 2         REV 01   720-120775   1P1C54A629JCQ SFP56-50G-DAC-3M
    Xcvr 5         REV 01   740-031980   A55B20R       SFP+-10G-SR
    Xcvr 6         REV 01   720-120775   1P1C54A629JCS SFP56-50G-DAC-3M
    Xcvr 7         REV 01   720-120775   1P1C54A628HWR SFP56-50G-DAC-3M
    Xcvr 8         REV 01   740-068639   1A1M31A31105D SFP28-25G-BASE-SR
    Xcvr 9         REV 01   740-068639   1A1M31A31105A SFP28-25G-BASE-SR
    Xcvr 10        REV 01   720-120775   1P1C54A628HZR SFP56-50G-DAC-3M
    Xcvr 11        REV 01   720-120775   1P1C54A628J00 SFP56-50G-DAC-3M
    Xcvr 12        REV 01   720-120775   1P1C54A628HW4 SFP56-50G-DAC-3M
    Xcvr 16        REV 01   740-031980   MXA0NHJ       SFP+-10G-SR
    Xcvr 17        REV 01   740-031980   AP41HCV       SFP+-10G-SR
    Xcvr 18        REV 01   740-031980   A54BA6S       SFP+-10G-SR
    Xcvr 19        REV 01   740-031980   AP40WRE       SFP+-10G-SR

```

Release Information

Command introduced before Junos OS Release 7.4.

models option introduced in Junos OS Release 8.2.

sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

Information for disk and usb introduced in Junos OS Release 15.1X53-D60 for QFX10002, QFX10008, and QFX10016 switches.

pem detail output added in Junos OS Release 21.4R1 for SRX5800.

NOTE: Devices and routing platforms use the basic syntax, unless otherwise listed. For example, the EX Series has an additional satellite parameter available.

RELATED DOCUMENTATION

| [show chassis power](#)

show chassis location

IN THIS SECTION

- [Syntax | 1519](#)
- [Syntax \(TX Matrix Router\) | 1519](#)
- [Syntax \(TX Matrix Plus Router\) | 1519](#)
- [Syntax \(MX Series Router\) | 1519](#)
- [Syntax \(QFX Series\) | 1519](#)
- [Description | 1520](#)
- [Options | 1520](#)
- [Required Privilege Level | 1521](#)
- [Output Fields | 1522](#)
- [Sample Output | 1523](#)
- [Release Information | 1524](#)

Syntax

```
show chassis location
```

Syntax (TX Matrix Router)

```
show chassis location  
<fpc | interface (by-name name | by-slot fpc number lcc number) | lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis location  
<fpc | interface (by-name name | by-slot fpc number lcc number) | lcc number | sfc number>
```

Syntax (MX Series Router)

```
show chassis location  
<all-members>  
<local>  
<member member-id>
```

Syntax (QFX Series)

```
show chassis location  
<interconnect-device name>  
<node-device name>
```


Description

Display the physical location of the chassis. This command can only be used on the primary 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 <i>name</i> | (QFabric systems only) (Optional) Display the physical location of the Interconnect device. |
| interface by-name <i>name</i> | (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 <i>number</i> lcc <i>number</i> | <p>(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.</p> <ul style="list-style-type: none"> • 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 <i>number</i> with a value from 0 through 7. • For lcc, replace <i>number</i> with a value from 0 through 7. |

| | |
|------------------------------------|--|
| lcc <i>number</i> | <p>(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.</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 the physical location of the chassis for the local Virtual Chassis member. |
| member <i>member-id</i> | (MX Series routers only) (Optional) Display the physical location of the chassis for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| node-device <i>name</i> | (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

Output Fields

Table 90 on page 1522 lists the output fields for the `show chassis location` command. Output fields are listed in the approximate order in which they appear.

Table 90: show chassis location Output Fields

| Field Name | Field Description |
|---------------------|--|
| country-code | Country code information. |
| postal-code | Postal code information. |
| Building | Building information. |
| Floor | Floor information. |
| Global FPC | Global FPC number. The FPC slot number, when all FPC slots in the routing matrix are considered. The range of values is 0 through 31 . On TX Matrix Plus router with 3D SIBs the value is 0 through 63. |
| LATA | Local access transport area information. |
| LCC | Line-card chassis number. On a TX Matrix router, the number of a particular T640 router connected to the TX Matrix router. On a TX Matrix Plus router, the number of a particular router connected to the TX Matrix Plus router. |
| 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
```

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.

RELATED DOCUMENTATION

[Displaying Chassis Physical Locations for a Routing Matrix with a TX Matrix Plus Router](#)

show chassis mac-addresses

IN THIS SECTION

- [Syntax | 1525](#)
- [Syntax \(TX Matrix Router\) | 1525](#)

- [Syntax \(TX Matrix Plus Router\) | 1525](#)
- [Syntax \(MX Series Router\) | 1526](#)
- [Syntax \(QFX Series\) | 1526](#)
- [Description | 1526](#)
- [Options | 1526](#)
- [Required Privilege Level | 1527](#)
- [Output Fields | 1528](#)
- [Sample Output | 1529](#)
- [Release Information | 1533](#)

Syntax

```
show chassis mac-addresses
```

Syntax (TX Matrix Router)

```
show chassis mac-addresses  
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis mac-addresses  
<lcc number | sfc number>
```


Syntax (MX Series Router)

```
show chassis mac-addresses
<all-members>
<local>
<member member-id>
```

Syntax (QFX Series)

```
show chassis mac-addresses
<interconnect-device name>
<node-group name>
```

Description

Display the media access control (MAC) addresses for the router, switch chassis, or switch.

Options

| | |
|--|---|
| none | (TX Matrix, TX Matrix Plus routers, QFX Series, and OCX Series Switches) Display the MAC addresses for the router chassis or switch. On a TX Matrix router, display MAC addresses on the TX Matrix router and its attached T640 routers. On a TX Matrix Plus router, display MAC addresses on the TX Matrix Plus router and its attached routers. |
| all-members | (MX Series routers only) (Optional) Display the MAC addresses for all the member routers of the Virtual Chassis configuration. |
| interconnect-device <i>name</i> | (QFabric switches only) (Optional) Display the MAC addresses for the Interconnect device. |
| lcc <i>number</i> | (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 <i>member-id</i> | (MX Series routers only) (Optional) Display the MAC addresses for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| node-group <i>name</i> | (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 <i>number</i> | (TX Matrix Plus routers only) (Optional) Display MAC addresses for the TX Matrix Plus router (or switch-fabric chassis). |

Required Privilege Level

view

Output Fields

Table 91 on page 1528 lists the output fields for the `show chassis mac-addresses` command. Output fields are listed in the approximate order in which they appear.

Table 91: show chassis mac-addresses Output Fields

| Field Name | Field Description |
|--------------------------------|--|
| MAC address information | |
| Public base address | <p>Base address of the MAC addresses allocated to this router or switch, for example 00:24:dc:18:09:40. This address is also printed on the box of the device.</p> <p>Public MAC addresses are those addresses your switch/router assigns to Ethernet interfaces. The public base address is the first MAC address your device assigns to an interface. Consecutive public count MAC addresses are reserved for additional interfaces.</p> |
| | <p>Number of allocated public addresses, for example 64. Public addresses are calculated starting with the public base address. If the public base address is 00:24:dc:18:09:40, then The MAC address of ge-0/0/0 on this device is 00:24:dc:18:09:40, and ge-0/0/1 is 00:24:dc:18:09:41, and so on, up to 64 available addresses.</p> |
| Private base address | <p>Base address of the private MAC addresses allocated to this router or switch. The private base address is the first MAC address after the allocated consecutive public count addresses. For example, if 00:24:dc:18:09:40 is the public base and 0x40 is the public count in hex, then 00:24:dc:18:09:80 would be the private base.</p> |
| Private count | <p>Number of allocated private addresses.</p> |

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 (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 (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 (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
```

Release Information

Command introduced before JUNOS Release 7.4.

sfc option introduced for the TX Matrix Plus router in JUNOS Release 9.6.

RELATED DOCUMENTATION

| *ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping*

show chassis network-services

IN THIS SECTION

- [Syntax | 1534](#)
- [Description | 1534](#)
- [Options | 1534](#)
- [Required Privilege Level | 1535](#)

- [Output Fields | 1535](#)
- [Sample Output | 1535](#)
- [Release Information | 1537](#)

Syntax

```
show chassis network-services
```

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

| | |
|--------------------------|------------------------------------|
| all-ethernet | All Ethernet network services |
| all-ip | All IP network services |
| enhanced-ethernet | Enhanced ethernet network services |
| enhanced-ip | Enhanced IP network services |
| enhanced-mode | Enhanced network services |
| ethernet | Ethernet network services |
| ip | IP network services |
| lan | Ethernet LAN services |

Required Privilege Level

view

Output Fields

Table 92 on page 1535 lists the output fields for the `show chassis network services` command. Output fields are listed in the approximate order in which they appear.

Table 92: `show chassis network services` Output Fields

| Field Name | Field Description |
|------------------------------|---|
| Network Services Mode | <p>Network services mode configured for the router:</p> <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" on page 286. |

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
```

Release Information

Command introduced in Junos OS Release 9.4.

RELATED DOCUMENTATION

| [enhanced-mode \(Network Services\)](#) | [286](#)

show chassis oss-map

IN THIS SECTION

- [Syntax](#) | [1538](#)
- [Description](#) | [1538](#)
- [Required Privilege Level](#) | [1538](#)
- [Output Fields](#) | [1538](#)
- [Sample Output](#) | [1539](#)
- [Release Information](#) | [1539](#)

Syntax

```
show chassis oss-map
```

Description

(T4000 routers only) Display the operations support systems (OSS) mapping details.

Required Privilege Level

view

Output Fields

[Table 93 on page 1538](#) lists the output fields for the `show chassis oss-map` command. Output fields are listed in the approximate order in which they appear.

Table 93: 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

command-name

```
user@T4000# show chassis oss-map
Chassis type      Oss-map
T4000             T640
```

Release Information

Command introduced in Junos OS Release 12.3R3, 13.1R2, and 13.2R1.

RELATED DOCUMENTATION

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show chassis pic

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Syntax

```
show chassis pic fpc-slot slot-number pic-slot slot-number
```

Syntax (TX Matrix and TX Matrix Plus Routers)

```
show chassis pic fpc-slot slot-number pic-slot slot-number  
<lcc number>
```

Syntax (MX Series Routers and EX Series Switches)

```
show chassis pic fpc-slot slot-number pic-slot slot-number  
<all-members>  
<local>  
<member member-id>
```


Syntax (PTX Series Packet Transport Router and MX240, MX480, MX960, MX2010, and MX2020 Routers)

```
show chassis pic transport fpc-slot slot-number pic-slot slot-number
```

Syntax (QFX Series)

```
show chassis pic fpc-slot slot-number pic-slot slot-number
<interconnect-device name (fpc-slot slot-number | pic-slot slot-number)>
<node-device name pic-slot slot-number>
```

Syntax (ACX500, ACX5048, ACX5096, and ACX7509 Routers)

```
show chassis pic
(fpc-slot slot-number | pic-slot slot-number)
```

Description

Display status information about the PIC installed in the specified Flexible PIC Concentrator (FPC) and PIC slot.

Options

fpc-slot *slot-number* Display information about the PIC in this particular FPC slot:

- 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 router by using the `lcc number` option (the recommended method), replace *slot-number* with a value from 0 through 7. Otherwise, replace *slot-number* with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis pic fpc-slot 1 lcc 1 pic-slot 1
user@host> show chassis pic fpc-slot 9 pic-slot 1
```

- M120 routers only—Replace *slot-number* 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 <i>name</i> | (QFabric systems only) (Optional) Display PIC information for a specified Interconnect device. |
| lcc <i>number</i> | <p>(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.</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 and EX Series switches only) (Optional) Display PIC information for the local Virtual Chassis member. |

| | |
|------------------------------------|--|
| member <i>member-id</i> | (MX Series routers and EX Series switches only) (Optional) Display PIC information for the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |
| node-device <i>name</i> | (QFabric systems only) (Optional) Display PIC information for a specified Node device. |
| pic-slot <i>slot-number</i> | Display information about the PIC in this particular PIC slot. For routers, replace <i>slot-number</i> with a value from 0 through 3. For EX3200 and EX4200 switches, replace <i>slot-number</i> with 0 for built-in network interfaces and 1 for interfaces on uplink modules. For EX8208 and EX8216 switches, replace <i>slot-number</i> with 0. For the QFX3500 standalone switch and the QFabric system, replace <i>slot-number</i> with 0 or 1. |
| transport | Display PIC information for optical transport network. |

Required Privilege Level

view

Output Fields

[Table 94 on page 1544](#) lists the output fields for the `show chassis pic` command. Output fields are listed in the approximate order in which they appear.

Table 94: 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-10C192-XFP. By default, the 1-port OC192/STM64 MICs displays the type as MIC-3D-10C192-XFP.</p> |

Table 94: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|-------------------------|---|
| 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. |
| Package | <p>(Multiservices interfaces cards only)</p> <p>The following services package are supported:</p> <ul style="list-style-type: none"> • Layer-2 (not applicable to the MS-MPC and MS-MIC.) • Layer-3 (not applicable to the MS-MPC and MS-MIC.) • extension-provider (PICs of MS-MPC and MS-MIC support only this package.) |

Table 94: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|--|---|
| 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) | <p>Port-level information for the PIC.</p> <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. |

Table 94: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|---|---|
| PIC Port Information (MX960 Router Bidirectional Optics) | <p>Port-level information for the PIC.</p> <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) | <p>Port-level information for the next-generation SONET/SDH SFP PIC.</p> <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 94: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|-------------------------------------|---|
| PIC port information (MX104 router) | <p>Port-level information for the PIC.</p> <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. |
| MSA Version | <p>Multi-source Agreements (MSA) specification version that the specified optics is compliant to. Values supported are:</p> <ul style="list-style-type: none"> • SFP+/SFP28—SFF 8472 (Versions 9.3 through 12,3) • QSFP+/QSFP28—SFF 8363 (Versions 1.3 through 2.10) • QSFP-DD—CMIS (Versions 3.0, 4.0, and 5.0) |
| Port speed information | <p>Information pertaining to port speed:</p> <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. |

Table 94: show chassis pic Output Fields (Continued)

| Field Name | Field Description |
|-------------------|--|
| 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 (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 | 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 | 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:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware |
|------|------------|------------|-------------|------------------|-------------------------|---------------|
| 0 | 100G LH | SM | OCLARO | TRB100AJ-01 | 1528.77 nm - 1568.36 nm | 20.10 |

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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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 (PTX1000 and PTX10000)

```
user@host > show chassis pic fpc-slot 0 pic-slot 0
```

```
FPC slot 0, PIC slot 0 information:
```

```

Type                288X10GE/72X40GE/24X100GE
State                Online
PIC version          1.18
Uptime               9 day, 5 hours, 10 minutes, 56 seconds

```

```
PIC port information:
```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware |
|------|--------------|------------|----------------|------------------|-------------|---------------|
| 13 | 100GBASE LR4 | SM | JUNIPER-SOURCE | SPQCELRCD FBJ2 | 1302 nm | 0.0 |
| 25 | 100GBASE LR4 | SM | JUNIPER-SOURCE | SPQCELRCD FAJ2 | 1302 nm | 0.0 |
| 36 | 40GBASE LR4 | SM | FINISAR CORP. | FTL4C1QE1C-J1 | 1301 nm | 0.0 |
| 37 | 40GBASE LR4 | SM | FINISAR CORP. | FTL4C1QE1C-J1 | 1301 nm | 0.0 |
| 54 | 40GBASE SR4 | MM | AVAGO | AFBR-79EQDZ-JU1 | 850 nm | 0.0 |

```
Port speed information:
```

| Port | PFE | Capable Port Speeds |
|------|-----|---------------------|
| 0 | | 4x10GE, 40GE |
| 1 | | 4x10GE, 40GE, 100GE |
| 2 | | 4x10GE, 40GE |
| 3 | | 4x10GE, 40GE |
| 4 | | 4x10GE, 40GE |
| 5 | | 4x10GE, 40GE, 100GE |
| 6 | | 4x10GE, 40GE |
| 7 | | 4x10GE, 40GE, 100GE |
| 8 | | 4x10GE, 40GE |
| 9 | | 4x10GE, 40GE |
| 10 | | 4x10GE, 40GE |
| 11 | | 4x10GE, 40GE, 100GE |
| 12 | | 4x10GE, 40GE |
| 13 | | 4x10GE, 40GE, 100GE |
| 14 | | 4x10GE, 40GE |
| 15 | | 4x10GE, 40GE |
| 16 | | 4x10GE, 40GE |
| 17 | | 4x10GE, 40GE, 100GE |
| 18 | | 4x10GE, 40GE |
| 19 | | 4x10GE, 40GE, 100GE |
| 20 | | 4x10GE, 40GE |
| 21 | | 4x10GE, 40GE |

| | |
|----|---------------------|
| 22 | 4x10GE, 40GE |
| 23 | 4x10GE, 40GE, 100GE |
| 24 | 4x10GE, 40GE |
| 25 | 4x10GE, 40GE, 100GE |
| 26 | 4x10GE, 40GE |
| 27 | 4x10GE, 40GE |
| 28 | 4x10GE, 40GE |
| 29 | 4x10GE, 40GE, 100GE |
| 30 | 4x10GE, 40GE |
| 31 | 4x10GE, 40GE, 100GE |
| 32 | 4x10GE, 40GE |
| 33 | 4x10GE, 40GE |
| 34 | 4x10GE, 40GE |
| 35 | 4x10GE, 40GE, 100GE |
| 36 | 4x10GE, 40GE |
| 37 | 4x10GE, 40GE, 100GE |
| 38 | 4x10GE, 40GE |
| 39 | 4x10GE, 40GE |
| 40 | 4x10GE, 40GE |
| 41 | 4x10GE, 40GE, 100GE |
| 42 | 4x10GE, 40GE |
| 43 | 4x10GE, 40GE, 100GE |
| 44 | 4x10GE, 40GE |
| 45 | 4x10GE, 40GE |
| 46 | 4x10GE, 40GE |
| 47 | 4x10GE, 40GE, 100GE |
| 48 | 4x10GE, 40GE |
| 49 | 4x10GE, 40GE, 100GE |
| 50 | 4x10GE, 40GE |
| 51 | 4x10GE, 40GE |
| 52 | 4x10GE, 40GE |
| 53 | 4x10GE, 40GE, 100GE |
| 54 | 4x10GE, 40GE |
| 55 | 4x10GE, 40GE, 100GE |
| 56 | 4x10GE, 40GE |
| 57 | 4x10GE, 40GE |
| 58 | 4x10GE, 40GE |
| 59 | 4x10GE, 40GE, 100GE |
| 60 | 4x10GE, 40GE |
| 61 | 4x10GE, 40GE, 100GE |
| 62 | 4x10GE, 40GE |
| 63 | 4x10GE, 40GE |
| 64 | 4x10GE, 40GE |


```

65          4x10GE, 40GE, 100GE
66          4x10GE, 40GE
67          4x10GE, 40GE, 100GE
68          4x10GE, 40GE
69          4x10GE, 40GE
70          4x10GE, 40GE

```

show chassis pic fpc-slot pic-slot (MSA Version)

```

user@host > show chassis pic fpc-slot pic-slot
..
PIC port information:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware | JNPR Rev | MSA Version |
|------|-----------------|------------|-----------------|------------------|-------------|---------------|----------|-------------------|
| 0 | 2x100GBASE-SR4 | MM | JUNIPER-1X1 | 740-084673 | 850 nm | 6.0 | REV 01 | CMIS 3.0 |
| 1 | 2x100GBASE-SR4 | MM | JUNIPER-1X1 | 740-084673 | 850 nm | 6.0 | REV 01 | CMIS 3.0 |
| 3 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BNL-J1 | 850 nm | 0.0 | REV 01 | SFF-8472 ver 10.2 |
| 4 | 100GBASE SR4 T2 | MM | JUNIPER-FINISAR | FTLC9551REPM-J1 | 850 nm | 0.0 | REV 01 | SFF-8636 ver 2.7 |

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 | State | PIC version | Uptime |
|-----------------------|--------|-------------|--|
| 5X100GE DWDM CFP2-ACO | Online | 1.17 | 1 day, 5 hours, 15 minutes, 17 seconds |

```

PIC port information:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware |
|------|------------|------------|-----------------|------------------|-------------------------|---------------|
| 0 | 100G LH | SM | MULTILANE SAL | ML4030-ACO-2 | 1528.77 nm - 1568.36 nm | 1.0 |
| 1 | 100G LH | SM | MULTILANE SAL | ML4030-ACO-2 | 1528.77 nm - 1568.36 nm | 1.0 |
| 2 | 100G LH | SM | JUNIPER-FUJITSU | FIM38500/222 | 1528.77 nm - 1568.36 nm | 1.16 |
| 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:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

```

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Fiber | Xcvr vendor |
|-------|-------------|
|-------|-------------|

| Port | Cable type | type | Xcvr vendor | part number | Wavelength |
|------|-------------|------|-------------|------------------|------------|
| 0 | 10GBASE 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:

| | | Fiber | | | |
|------|------------|-------|---------------|-----------------|------------|
| Port | Cable type | 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 | OCP | TRPA03MM3BAS-JE | 1310 nm |
| 2 | OC3 short reach | MM | OCP | 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 | | Xcvr vendor | | Wavelength |
|------|-----------------|-------|-------------|----------------|--|------------|
| | | type | Xcvr vendor | part number | | |
| 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 | | Xcvr vendor | | Wavelength |
|----------------|------------------|-------|--------------|------------------|--|------------|
| | | type | Xcvr vendor | part number | | |
| 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 | | Xcvr vendor | | Wavelength |
|------|------------------|-------|---------------|------------------|--|------------|
| | | type | Xcvr vendor | part number | | |
| 0 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | | 1310 nm |
| 1 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | | 1310 nm |

| | | | | | |
|---|------------------|----|---------------|------------------|---------|
| 2 | OC12 inter reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J2 | 1310 nm |
| 4 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 5 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 6 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 7 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |

show chassis pic fpc-slot 5 pic-slot 0 (4-port Channelized SONET/SDH OC3/STM1 [Multi-Rate] MIC with SFP)

```
user@host> show chassis pic fpc-slot 5 pic-slot 0
```

FPC slot 5, PIC slot 0 information:

| | |
|-------------|-----------------------|
| Type | MIC-3D-4CHOC3-2CHOC12 |
| State | Online |
| PIC version | 1.9 |
| Uptime | 1 hour, 21 minutes |

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | Wavelength |
|------|------------------|------------|---------------|-------------------------|------------|
| 1 | OC12 inter reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 2 | OC12 inter reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |
| 3 | OC12 short reach | SM | FINISAR CORP. | FTRJ1322P1BTR-J3 | 1310 nm |

show chassis pic fpc-slot 1 pic-slot 0 (1-port OC192/STM64 MIC with XFP)

```
user@host> show chassis pic fpc-slot 1 pic-slot 0
```

FPC slot 1, PIC slot 0 information:

| | |
|-------------|---------------------------------------|
| Type | MIC-3D-10C192-XFP |
| State | Online |
| PIC version | 1.2 |
| Uptime | 1 day, 11 hours, 4 minutes, 6 seconds |

PIC port information:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr vendor part number | 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-GEBuiltIn
  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+BuiltIn
  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 Builtin
  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-MSC |
| 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr 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:

| Port | Cable type | Fiber type | Xcvr vendor | Xcvr part number | Wave-length | Xcvr Firmware |
|------|-------------|------------|---------------|------------------|-------------|---------------|
| 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-5xQSFP
  State                              Online
  PIC version                        0.0
  Uptime                            3 hours, 33 minutes, 21 seconds

PIC port information:
  Port Cable type      Fiber      Xcvr vendor      Wave-   Xcvr      JNPR
  0    100GBASE LR4    SM    JUNIPER-FINISAR  FTLC1151RDPL-J3  1302 nm  0.0      REV 01

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 pic fpc-slot 0 pic-slot 1 (PTX10001-36MR) (400G ZR and 400G ZR-M optics)

```

user@router> show chassis pic fpc-slot 0 pic-slot 1

FPC slot 0, PIC slot 1 information:
  Type                               8X400GE-MR + 4X100GE-MR
  State                              Online
  PIC version                        255.09
  Uptime                            2 hours, 37 minutes, 52 seconds

PIC port information:
  Xcvr      JNPR      Fiber      Xcvr vendor      Wave-
  0         MSA      type      part number      length
  Port Cable type      Xcvr vendor      length
  Firmware      Rev      Version
  0    40GBASE SR4    MM    FINISAR CORP    FTL410QE3C-J1    850 nm
  0.0          REV 01

```



```

 1  40GBASE SR4      MM  AVAGO          AFBR-79EQPZ-JU1  850 nm
0.0      REV 01
 2  400G-ZR         SM  Acacia Comm Inc. DP04QSDD-E20-00B 1528.77 nm - 1568.77 nm
161.20   XXXX
 4  100GBASE SR4 T2 MM  JUNIPER-AVAGO   AFBR-89CDDZ-JU1  850 nm
0.0      REV 01
10  400G-ZR-M       SM  JUNIPER-1T1     740-131169       1528.77 nm - 1568.77 nm
61.20    REV 01

```

Port speed information:

| Port | PFE | Capable Port Speeds |
|------|-----|---|
| 0 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 1 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 2 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 3 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 4 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G |
| 5 | 1 | 1x10G 1x100G |
| 6 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G |
| 7 | 1 | 1x10G 1x100G |
| 8 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 9 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 10 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |
| 11 | 1 | 1x10G 4x10G 1x40G 4x25G 1x100G 2x50G 8x25G 8x50G 2x100G 1x200G 4x100G 2x200G 1x400G |

show chassis pic fpc-slot 7 pic-slot 0 (ACX7509-FPC-20Y)

```

user@router> show chassis pic fpc-slot 7 pic-slot 0
FPC slot 7, PIC slot 0 information:
Type                               20x1/10/25/50-SFP56
State                               Online
PIC version                         255.09
Uptime                             2 minutes, 16 seconds

```


PIC port information:

| | | Fiber | | Xcvr vendor | Wave- |
|----------|------------------------------------|-------------------|-----------------|------------------|---------|
| Xcvr | JNPR | MSA | | | |
| Port | Cable type | type | Xcvr vendor | part number | length |
| Firmware | Rev | Version | | | |
| 2 | 10GBASE SR | MM | AVAGO | AFBR-709ASMZ-JU3 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 10.2 | | | |
| 3 | 10GBASE SR | MM | AVAGO | AFBR-709ASMZ-JU3 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 10.2 | | | |
| 4 | 10GBASE SR | MM | OPNEXT, INC. | TRS2001EM-0014 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 10.2 | | | |
| 5 | 10GBASE SR | MM | FINISAR CORP. | FTLX8571D3BCL-J1 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 10.2 | | | |
| 6 | SFP28-END 100G-4x25G DAC BO 1M n/a | JUNIPER-AMPHENOL | NDAQGF-J101 | n/a | |
| 0.0 | REV 01 | SFF-8472 ver n/a | | | |
| 7 | SFP28-END 100G-4x25G DAC BO 1M n/a | JUNIPER-AMPHENOL | NDAQGF-J101 | n/a | |
| 0.0 | REV 01 | SFF-8472 ver n/a | | | |
| 8 | SFP28-END 100G-4x25G DAC BO 1M n/a | JUNIPER-AMPHENOL | NDAQGF-J101 | n/a | |
| 0.0 | REV 01 | SFF-8472 ver n/a | | | |
| 9 | SFP28-END 100G-4x25G DAC BO 1M n/a | JUNIPER-AMPHENOL | NDAQGF-J101 | n/a | |
| 0.0 | REV 01 | SFF-8472 ver n/a | | | |
| 10 | GIGE 1000EX | n/a | SOURCEPHOTONICS | SPGBEXIDFCJNP | 1310 nm |
| 0.0 | REV 01 | SFF-8472 ver 9.5 | | | |
| 11 | SFP28-25G-BASE-SR SM | JUNIPER-1A1 | 1A131A | 850 nm | |
| 0.0 | REV 01 | SFF-8472 ver 12.3 | | | |
| 12 | SFP28-25G-BASE-SR SM | JUNIPER-1A1 | 1A131A | 850 nm | |
| 0.0 | REV 01 | SFF-8472 ver 12.3 | | | |
| 13 | SFP28-25G-BASE-SR SM | JUNIPER-1A1 | 1A131A | 850 nm | |
| 0.0 | REV 01 | SFF-8472 ver 12.3 | | | |
| 14 | SFP28-25G-BASE-SR SM | JUNIPER-1A1 | 1A131A | 850 nm | |
| 0.0 | REV 01 | SFF-8472 ver 12.3 | | | |
| 15 | SFP28-25G-BASE-SR SM | JUNIPER-1A1 | 1A131A | 850 nm | |
| 0.0 | REV 01 | SFF-8472 ver 12.3 | | | |
| 16 | GIGE 1000SX | n/a | AVAGO | AFBR-5715PZ-JU3 | 850 nm |
| 0.0 | REV 01 | SFF-8472 ver 9.3 | | | |
| 18 | 10GBASE CU 1M | n/a | Amphenol | 584990001 | n/a |
| 0.0 | REV 01 | SFF-8472 ver n/a | | | |
| 19 | 10GBASE CU 1M | n/a | Amphenol | 584990001 | n/a |
| 0.0 | REV 01 | SFF-8472 ver n/a | | | |

Port speed information:

| Port | PFE | Capable Port Speeds |
|------|-----|---------------------|
| 0 | 1 | 1x1G 1x10G 1x25G |
| 1 | 1 | 1x1G 1x10G 1x25G |


```

2      1      1x1G 1x10G 1x25G
3      1      1x1G 1x10G 1x25G
4      1      1x1G 1x10G 1x25G
5      1      1x1G 1x10G 1x25G
6      1      1x1G 1x10G 1x25G
7      1      1x1G 1x10G 1x25G
8      1      1x1G 1x10G 1x25G
9      1      1x1G 1x10G 1x25G
10     1      1x1G 1x10G 1x25G
11     1      1x1G 1x10G 1x25G
12     1      1x1G 1x10G 1x25G
13     1      1x1G 1x10G 1x25G
14     1      1x1G 1x10G 1x25G
15     1      1x1G 1x10G 1x25G
16     1      1x1G 1x10G 1x25G
17     1      1x1G 1x10G 1x25G
18     1      1x1G 1x10G 1x25G
19     1      1x1G 1x10G 1x25G
{master}

```

show chassis pic fpc-slot 0 pic-slot 0 (ACX7509-FPC-16C)

```

user@router> show chassis pic fpc-slot 0 pic-slot 0
Port speed information:
  Port  PFE      Capable Port Speeds
  0      0      1x40G 1x100G 4x25G 4x10G
  1      0      1x40G 1x100G 4x25G 4x10G
  4      0      1x40G 1x100G 4x25G 4x10G
  5      0      1x40G 1x100G 4x25G 4x10G
  8      0      1x40G 1x100G 4x25G 4x10G
  9      0      1x40G 1x100G 4x25G 4x10G
  12     0      1x40G 1x100G 4x25G 4x10G
  13     0      1x40G 1x100G 4x25G 4x10G

```

show chassis pic fpc-slot 0 pic-slot 0 (ACX7509-FPC-4CD)

```

user@router> show chassis pic fpc-slot 0 pic-slot 0
Port speed information:
  Port  PFE      Capable Port Speeds
  0      1      1x400G 4x100G 8x50G

```


| | | |
|---|---|---------------------|
| 1 | 1 | 1x400G 4x100G 8x50G |
| 2 | 1 | 1x400G 4x100G 8x50G |
| 3 | 1 | 1x400G 4x100G 8x50G |

show chassis pic fpc-slot pic-slot (MX304)

```
user@router>show chassis pic fpc-slot 0 pic-slot 0
```

FPC slot 0, PIC slot 0 information:

| | |
|-------------|---------------------------------|
| Type | MRATE LMIC 16x100G/4x400G |
| State | Online |
| PIC version | 0.0 |
| Uptime | 2 hours, 39 minutes, 16 seconds |

PIC port information:

| Xcvr | JNPR | Fiber | Xcvr vendor | Wave- |
|----------|-------------------|--------------------|--------------|---------|
| Port | Cable type | MSA type | part number | length |
| Firmware | Rev | Version | | |
| 0 | 100GBASE LR4 | SM JUNIPER-1F3 | 1F3QAA | 1302 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.7 | | |
| 1 | 100GBASE SR4 | MM JUNIPER-1F1 | 1F1Q1A | 850 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.7 | | |
| 2 | 100G AOC 3M | MM JUNIPER-INNO | TF-FC003-NJC | 850 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.7 | | |
| 3 | 100G CWD4 | SM JUNIPER-1F2 | 1F2Q5A | 1301 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.7 | | |
| 4 | 100GBASE LR4 | SM JUNIPER-1F3 | 1F3QAA | 1302 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.7 | | |
| 5 | 100GBASE DR | SM JUNIPER-2J1 | 2J1Q8A | 1311 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.10 | | |
| 6 | 100GBASE DR | SM JUNIPER-2J1 | 2J1Q8A | 1311 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.10 | | |
| 7 | 100G FR | SM JUNIPER-1W2 | 1W2Q9A | 1311 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.10 | | |
| 8 | 100G PSM4 | SM JUNIPER-1F1 | 1F1Q3A | 1310 nm |
| 0.0 | REV 02 | SFF-8636 ver 2.7 | | |
| 9 | 100G FR | SM JUNIPER-1W2 | 1W2Q9A | 1311 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.10 | | |
| 10 | 100G AOC 3M | MM JUNIPER-INNO | TF-FC003-NJC | 850 nm |
| 0.0 | REV 01 | SFF-8636 ver 2.7 | | |
| 11 | 100GBASE ER4 Lite | SM JUNIPER-FUJITSU | FIM37801/223 | 1302 nm |


```

0.0          REV 02  SFF-8636 ver 2.7
 12  100G AOC 3M    MM    JUNIPER-INNO    TF-FC003-NJC    850 nm
0.0          REV 01  SFF-8636 ver 2.7
 13  100GBASE CU 3M  n/a    JUNIPER-AMPHENOL  NDAAFJ-J102    n/a
0.0          REV 01  SFF-8636 ver 2.7
 14  100GBASE LR4    SM    JUNIPER-1G3    1G3QAA    1302 nm
0.0          REV 01  SFF-8636 ver 2.10
 15  100GBASE LR4    SM    JUNIPER-1G3    1G3QAA    1302 nm
0.0          REV 01  SFF-8636 ver 2.10

```

Port speed information:

| Port | PFE | Capable Port Speeds |
|------|-----|---|
| 0 | 1 | 1x1GE, 1x10GE, 1x25GE, 8x50GE, 100GE, 2x100GE, 4x100GE, 400GE |
| 1 | 1 | 1x1GE, 1x10GE, 1x25GE, 4x1GE, 4x10GE, 4x25GE, 40GE, 100GE |
| 2 | 1 | 1x1GE, 1x10GE, 1x25GE, 100GE |
| 3 | 1 | 1x1GE, 1x10GE, 1x25GE, 4x1GE, 4x10GE, 4x25GE, 40GE, 100GE |
| 4 | 1 | 1x1GE, 1x10GE, 1x25GE, 100GE |
| 5 | 1 | 1x1GE, 1x10GE, 1x25GE, 4x1GE, 4x10GE, 4x25GE, 40GE, 100GE |
| 6 | 1 | 1x1GE, 1x10GE, 1x25GE, 8x50GE, 100GE, 2x100GE, 4x100GE, 400GE |
| 7 | 1 | 1x1GE, 1x10GE, 1x25GE, 4x1GE, 4x10GE, 4x25GE, 40GE, 100GE |
| 8 | 0 | 1x1GE, 1x10GE, 1x25GE, 8x50GE, 100GE, 2x100GE, 4x100GE, 400GE |
| 9 | 0 | 1x1GE, 1x10GE, 1x25GE, 4x1GE, 4x10GE, 4x25GE, 40GE, 100GE |
| 10 | 0 | 1x1GE, 1x10GE, 1x25GE, 100GE |
| 11 | 0 | 1x1GE, 1x10GE, 1x25GE, 4x1GE, 4x10GE, 4x25GE, 40GE, 100GE |
| 12 | 0 | 1x1GE, 1x10GE, 1x25GE, 100GE |
| 13 | 0 | 1x1GE, 1x10GE, 1x25GE, 4x1GE, 4x10GE, 4x25GE, 40GE, 100GE |
| 14 | 0 | 1x1GE, 1x10GE, 1x25GE, 8x50GE, 100GE, 2x100GE, 4x100GE, 400GE |
| 15 | 0 | 1x1GE, 1x10GE, 1x25GE, 4x1GE, 4x10GE, 4x25GE, 40GE, 100GE |

Release Information

Command introduced before Junos OS Release 7.4.

transport option introduced in Junos OS Release 16.1R1 for MX Series Routers.

RELATED DOCUMENTATION

[request chassis pic](#)

show chassis hardware

100-Gigabit Ethernet Type 4 PIC with CFP Overview

show chassis power

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Syntax

```
show chassis power
```


Syntax (MX Series Router)

```
show chassis power
<all-members>
<local>
<member member-id>
<detail>
```

Syntax (MX320, MX2010, MX2020, MX10003, MX10004, MX2008, PTX Series, ACX7024, and SRX5400 routers; EX9200 and EX9253 Switches)

```
show chassis power
<detail>
```

Syntax (MX10008 Universal Routing Platforms)

```
show chassis power
<detail>
<sequence>
```

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, MX Series, ACX7024, and SRX5800 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.

- Starting from Junos OS Release 21.4R1, SRX5800 power system consists of high-capacity second-generation AC power supply module (PSM). This single or dual PSM provides a maximum output power of 5100 W. In the single-feed mode, the PSM provides power at a reduced capacity (2550 W). In dualfeed mode, the PSM provides power at full capacity (5100W). The PSM supports 1+1 redundancy.
- Starting from Junos OS Evolved Release 22.3R1, ACX7024 supports single PSM mode and PSM 1+1 redundancy.
- 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.
- Starting in Junos OS release 21.4R1, on SRX5400 routers the AC redundancy mode for high capacity high line PEMs is increased from 1+1 to 2+2 with a capacity of 4100W from earlier 2050W.

NOTE: The MX204 routers do not support the `show chassis power` command.

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 <i>member-id</i> | (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 <i>member-id</i> with a value of 0 or 1. |

Required Privilege Level

view

Output Fields

[Table 95 on page 1583](#) lists the output fields for the `show chassis power` command. Output fields are listed in the approximate order in which they appear.

Table 95: show chassis power Output Fields:

| Field Name | Field Description | Level of Output |
|-------------------|---|-----------------|
| PEM <i>number</i> | <p>(EX9200 switches, SRX5800 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). <p>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.</p> 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. | All levels |

Table 95: show chassis power Output Fields: *(Continued)*

| Field Name | Field Description | Level of Output |
|------------|---|-----------------|
| | <ul style="list-style-type: none"> 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. | |

Table 95: 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 <i>number</i> | (PTX5000 only) ID number of the power distribution unit (PDU) on the chassis. | All levels |

Table 95: show chassis power Output Fields: *(Continued)*

| Field Name | Field Description | Level of Output |
|-------------------|---|-----------------|
| PSM <i>number</i> | <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 parantheses). • Capacity—Actual power input capacity and maximum capacity (in parantheses) 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 |

Table 95: show chassis power Output Fields: (Continued)

| Field Name | Field Description | Level of Output |
|------------|--|-----------------|
| Item | <p>Actual power usage (measured in watts) for the following FRUs:</p> <ul style="list-style-type: none"> Fan Tray <i>n</i>—Power usage for the specified fan tray. RE/<i>n</i>/CB/<i>n</i>—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 <i>n</i>—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 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 (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 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 (MX10004 and 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 detail (MX10004)

```

PEM 0:
  State:      Online
  Capacity:   2800 W (maximum 5500 W)
  AC input:   OK (INP2 feed expected, INP2 feed connected)
  Feed2:      AC input
  DC output:  744 W (zone 0, 62 A at 12 V, 13% of capacity)

```

```

PEM 1:
  State:      Online
  Capacity:   2800 W (maximum 5500 W)
  AC input:   OK (INP2 feed expected, INP2 feed connected)
  Feed2:      AC input
  DC output:  756 W (zone 0, 63 A at 12 V, 13% of capacity)

```

```

PEM 2:
  State:      Online
  Capacity:   2800 W (maximum 5500 W)
  AC input:   OK (INP2 feed expected, INP2 feed connected)
  Feed2:      AC input
  DC output:  744 W (zone 0, 62 A at 12 V, 13% of capacity)

```

```

System:
  Zone 0:
    Capacity:      8400 W (maximum 8400 W)
    Allocated power: 6197 W (2203 W remaining)
    Actual usage:   2244 W
    Total system capacity: 8400 W (maximum 8400 W)
    Total remaining power: 2203 W

```

| Item | Used(W) |
|------------|---------|
| Fan Tray 0 | 138 |

| | |
|------------|-----|
| Fan Tray 1 | 136 |
| RE0/CB0 | 86 |
| RE1/CB1 | 96 |

| Item | Used(W) | Max(W) |
|-------|---------|--------|
| SFB 0 | 94 | 225 |
| SFB 1 | 91 | 225 |
| SFB 2 | 91 | 225 |
| SFB 3 | 93 | 225 |
| SFB 4 | 90 | 225 |
| SFB 5 | 94 | 225 |

| Item | Used(W) |
|-------|---------|
| FPC 0 | 775 |

| Item | Used(W) | Max(W) |
|-------|---------|--------|
| FPC 3 | 522 | 1770 |

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 (PTX10008 with JNP10K-PWR-DC2 Power Supply Unit - Junos OS Evolved)

```
user@router> show chassis power
```

| Chassis Power | Voltage(V) | Power(W) | |
|-------------------|------------|----------|--------------------|
| Total Input Power | | 10176 | |
| PSM 0 | | | |
| State: Online | | | |
| PS0 | 51 | 912 | |
| A0 | 52 | | |
| B0 | 52 | | |
| PS1 | 51 | 936 | |
| A1 | 52 | | |
| B1 | 52 | | |
| Output | 12.29 | 1752.57 | (80A input select) |
| PSM 1 | | | |
| State: Online | | | |
| PS0 | 51 | 912 | |
| A0 | 52 | | |
| B0 | 52 | | |
| PS1 | 51 | 936 | |
| A1 | 52 | | |
| B1 | 52 | | |
| Output | 12.25 | 1747 | (80A input select) |
| PSM 2 | | | |
| State: Online | | | |
| PS0 | 51 | 888 | |
| A0 | 52 | | |
| B0 | 52 | | |
| PS1 | 51 | 912 | |
| A1 | 52 | | |
| B1 | 52 | | |
| Output | 12.51 | 1766.71 | (80A input select) |
| PSM 3 | | | |
| State: Online | | | |
| PS0 | 51 | 936 | |
| B0 | 50 | | |
| PS1 | 51 | 984 | |
| A1 | 51 | | |
| B1 | 51 | | |
| Output | 12.49 | 1807.91 | (80A input select) |


```

PSM 4
  State: Online
    PS0      51      864
      A0      51
      B0      52
    PS1      51      936
      A1      51
      B1      52
  Output    12.45    1763.9  (80A input select)
PSM 5
  State: Fault
    PS0      51      960
      A0      52
      B0      52
    PS1      52        0
      A1      52
      B1      52
  Output    12.43    913.38  (80A input select)

```

System:

Zone 0:

```

  Capacity:      27500 W (maximum 27500 W)
  Allocated power: 19840 W (7660 W remaining)
  Actual usage:   9216 W
  Total system capacity: 27500 W (maximum 27500 W)
  Total remaining power: 7660 W

```

show chassis power detail (PTX10008 with JNP10K-PWR-DC2 Power Supply Unit - Junos OS Evolved)

```

user@router> show chassis power detail
Chassis Power      Voltage(V)    Power(W)

Total Input Power              10176
PSM 0
  State: Online
    PS0      52      912
      A0      52
      B0      52
    PS1      52      936
      A1      52

```


| | | | |
|---------------|-------------------------|---------|--------------------|
| B1 | 52 | | |
| Output | 12.29 | 1741.75 | (80A input select) |
| Capacity | 5500 W (maximum 5500 W) | | |
| PSM 1 | | | |
| State: Online | | | |
| PS0 | 51 | 912 | |
| A0 | 52 | | |
| B0 | 52 | | |
| PS1 | 51 | 936 | |
| A1 | 52 | | |
| B1 | 52 | | |
| Output | 12.25 | 1747 | (80A input select) |
| Capacity | 5500 W (maximum 5500 W) | | |
| PSM 2 | | | |
| State: Online | | | |
| PS0 | 52 | 888 | |
| A0 | 52 | | |
| B0 | 52 | | |
| PS1 | 51 | 912 | |
| A1 | 52 | | |
| B1 | 52 | | |
| Output | 12.51 | 1766.71 | (80A input select) |
| Capacity | 5500 W (maximum 5500 W) | | |
| PSM 3 | | | |
| State: Online | | | |
| PS0 | 51 | 936 | |
| B0 | 50 | | |
| PS1 | 51 | 984 | |
| A1 | 52 | | |
| B1 | 52 | | |
| Output | 12.49 | 1785.93 | (80A input select) |
| Capacity | 5500 W (maximum 5500 W) | | |
| PSM 4 | | | |
| State: Online | | | |
| PS0 | 51 | 864 | |
| A0 | 52 | | |
| B0 | 52 | | |
| PS1 | 51 | 936 | |
| A1 | 52 | | |
| B1 | 52 | | |
| Output | 12.47 | 1766.67 | (80A input select) |
| Capacity | 5500 W (maximum 5500 W) | | |
| PSM 5 | | | |

State: Fault

| | | | |
|----------|-------------------|--------|--------------------|
| PS0 | 52 | 960 | |
| A0 | 52 | | |
| B0 | 52 | | |
| PS1 | 52 | 0 | |
| A1 | 52 | | |
| B1 | 52 | | |
| Output | 12.43 | 896.97 | (80A input select) |
| Capacity | 0 W (maximum 0 W) | | |

| Item | Used(W) |
|------------|---------|
| CB 0 | 80 |
| CB 1 | 73 |
| FPC 0 | 1116 |
| FPC 1 | 1153 |
| FPC 2 | 457 |
| FPC 3 | 476 |
| FPC 4 | 468 |
| FPC 5 | 446 |
| FPC 6 | 1100 |
| FPC 7 | 477 |
| SIB 0 | 392 |
| SIB 1 | 374 |
| SIB 2 | 395 |
| SIB 3 | 385 |
| SIB 4 | 380 |
| SIB 5 | 389 |
| Fan Tray 0 | 629 |
| Fan Tray 1 | 609 |

System:

Zone 0:

| | |
|--|----------------------------|
| Capacity: | 27500 W (maximum 27500 W) |
| Allocated power: | 19840 W (7660 W remaining) |
| Actual usage: | 9264 W |
| Total system capacity: 27500 W (maximum 27500 W) | |
| Total remaining power: 7660 W | |

show chassis power (PTX10008 with JNP10K-PWR-AC2 Power Supply - Junos OS Evolved)

```
user@router> show chassis power
```

| Chassis Power | Voltage(V) | Power(W) | |
|-------------------|------------|----------|--------------------|
| Total Input Power | | 7248 | |
| PSM 0 | | | |
| State: | Online | | |
| INP1 | 203 | 600 | |
| INP2 | 203 | 600 | |
| Output | 12.25 | 1105.35 | (30A input select) |
| PSM 1 | | | |
| State: | Online | | |
| INP1 | 203 | 600 | |
| INP2 | 201 | 600 | |
| Output | 12.29 | 1092.65 | (30A input select) |
| PSM 2 | | | |
| State: | Online | | |
| INP1 | 205 | 600 | |
| INP2 | 201 | 600 | |
| Output | 12.27 | 1117.92 | (30A input select) |
| PSM 3 | | | |
| State: | Online | | |
| INP1 | 205 | 624 | |
| INP2 | 201 | 624 | |
| Output | 12.27 | 1155.72 | (30A input select) |
| PSM 4 | | | |
| State: | Online | | |
| INP1 | 203 | 600 | |
| INP2 | 203 | 600 | |
| Output | 12.25 | 1094.57 | (30A input select) |
| PSM 5 | | | |
| State: | Online | | |
| INP1 | 201 | 600 | |
| INP2 | 201 | 600 | |
| Output | 12.25 | 1094.57 | (30A input select) |

```
System:
```

```
Zone 0:
```

| | |
|------------------|-----------------------------|
| Capacity: | 33000 W (maximum 33000 W) |
| Allocated power: | 18810 W (14190 W remaining) |
| Actual usage: | 7248 W |

Total system capacity: 33000 W (maximum 33000 W)

Total remaining power: 14190 W

show chassis power detail (PTX10008 with JNP10K-PWR-AC2 Power Supply - Junos OS Evolved)

```

user@router> show chassis power detail
Chassis Power      Voltage(V)   Power(W)

Total Input Power              7248
PSM 0
  State: Online
  INP1          201          600
  INP2          205          600
  Output        12.25       1094.57 (30A input select)
  Capacity      5500 W (maximum 5500 W)
PSM 1
  State: Online
  INP1          203          600
  INP2          201          600
  Output        12.29       1087.24 (30A input select)
  Capacity      5500 W (maximum 5500 W)
PSM 2
  State: Online
  INP1          201          600
  INP2          201          600
  Output        12.27       1112.52 (30A input select)
  Capacity      5500 W (maximum 5500 W)
PSM 3
  State: Online
  INP1          203          624
  INP2          203          624
  Output        12.27       1155.72 (30A input select)
  Capacity      5500 W (maximum 5500 W)
PSM 4
  State: Online
  INP1          203          600
  INP2          201          600
  Output        12.25       1094.57 (30A input select)
  Capacity      5500 W (maximum 5500 W)
PSM 5

```



```

State: Online
INP1          201          600
INP2          203          600
Output        12.25        1099.96 (30A input select)
Capacity      5500 W (maximum 5500 W)

```

| Item | Used(W) |
|------------|---------|
| CB 0 | 86 |
| CB 1 | 75 |
| FPC 0 | 966 |
| FPC 2 | 995 |
| FPC 3 | 793 |
| FPC 5 | 809 |
| FPC 7 | 856 |
| SIB 0 | 353 |
| SIB 1 | 330 |
| SIB 2 | 190 |
| SIB 3 | 333 |
| SIB 4 | 0 |
| SIB 5 | 343 |
| Fan Tray 0 | 304 |
| Fan Tray 1 | 305 |

System:

Zone 0:

```

Capacity:      33000 W (maximum 33000 W)
Allocated power: 18810 W (14190 W remaining)
Actual usage:   7248 W
Total system capacity: 33000 W (maximum 33000 W)
Total remaining power: 14190 W

```

show chassis power (SRX5400)

```

user@router> show chassis power
PEM 0:
  State:      Online
  AC input:   OK (1 feed expected, 1 feed connected)
  Capacity:   2050 W (maximum 2050 W)
  DC output:  342 W (zone 0, 6 A at 57 V, 16% of capacity)

PEM 1:

```



```

State:      Online
AC input:   OK (1 feed expected, 1 feed connected)
Capacity:   2050 W (maximum 2050 W)
DC output:  232 W (zone 0, 4 A at 58 V, 11% of capacity)

PEM 2:
State:      Online
AC input:   OK (1 feed expected, 1 feed connected)
Capacity:   2050 W (maximum 2050 W)
DC output:  228 W (zone 0, 4 A at 57 V, 11% of capacity)

PEM 3:
State:      Online
AC input:   OK (1 feed expected, 1 feed connected)
Capacity:   2050 W (maximum 2050 W)
DC output:  171 W (zone 0, 3 A at 57 V, 8% of capacity)

System:
Zone 0:
Capacity:      4100 W (maximum 4100 W)
Allocated power: 1442 W (2658 W remaining)
Actual usage:   973 W
Total system capacity: 4100 W (maximum 4100 W)
Total remaining power: 2658 W

```

show chassis power (SRX5800)

```

user@root> show chassis power

PEM 0:
State:      Online
AC input:   Check (2 feed expected, 2 feed connected)
Capacity:   5100 W (maximum 5100 W)
DC output:  114 W (zone 0, 2 A at 57 V, 2% of capacity)

PEM 1:
State:      Online
AC input:   Check (2 feed expected, 2 feed connected)
Capacity:   5100 W (maximum 5100 W)

```


DC output: 1197 W (zone 1, 21 A at 57 V, 29% of capacity)

PEM 2:

State: Online
 AC input: OK (2 feed expected, 2 feed connected)
 Capacity: 5100 W (maximum 5100 W)
 DC output: 171 W (zone 0, 3 A at 57 V, 4% of capacity)

PEM 3:

State: Empty
 Input: Absent

System:

Zone 0:
 Capacity: 5100 W (maximum 5100 W)
 Allocated power: 595 W (4505 W remaining)
 Actual usage: 285 W
 Zone 1:
 Capacity: 5100 W (maximum 5100 W)
 Allocated power: 1815 W (3285 W remaining)
 Actual usage: 1197 W
 Total system capacity: 10200 W (maximum 10200 W)
 Total remaining power: 7790 W

show chassis power (ACX7024)

The command output is as follows when the default PSU 1+1 mode is active.

```
user@root> show chassis power
Chassis Power      Voltage(V)   Power(W)
Total Input Power              109
PSM 0
  State: Online
  Input      229          61
  Output     12.15       51.75
  Capacity   400 W (maximum 400 W)
PSM 1
  State: Online
  Input      230          48
  Output     12.17       38.79
  Capacity   400 W (maximum 400 W)

System:
```



```
Zone 0:
  Capacity:      800 W (maximum 800 W)
  Actual usage:  109 W
  Total system capacity: 800 W (maximum 800 W)
```

Release Information

Command introduced in Junos OS Release 10.0.

RELATED DOCUMENTATION

[show chassis power sequence](#) | 1621

[Checklist for Monitoring Power Supplies](#)

show chassis power sequence

IN THIS SECTION

- [Syntax](#) | 1622
- [Description](#) | 1622
- [Options](#) | 1622
- [Required Privilege Level](#) | 1622
- [Output Fields](#) | 1622
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Syntax

```
show chassis power sequence
```

Description

(MX Series 5G Universal Routing Platforms only) Show power-on sequence for the chassis Dense Port Concentrators (DPCs).

(PTX Series Packet Transport Routers, MX2010 and MX2020 routers only) Show power-on sequence for FPCs installed in the chassis.

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 96 on page 1623](#) lists the output fields for the `show chassis power sequence` command. Output fields are listed in the approximate order in which they appear.

Table 96: 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
```


Release Information

Command introduced in Junos OS Release 10.0.

Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.

RELATED DOCUMENTATION

| [show chassis power](#) | [1579](#)

show chassis psd

IN THIS SECTION

- [Syntax](#) | [1624](#)
- [Description](#) | [1625](#)
- [Options](#) | [1625](#)
- [Additional Information](#) | [1625](#)
- [Required Privilege Level](#) | [1625](#)
- [Output Fields](#) | [1625](#)
- [Sample Output](#) | [1626](#)
- [Release Information](#) | [1626](#)

Syntax

```
show chassis psd
```


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 User Guide for Routing Devices*.

Required Privilege Level

view

Output Fields

[Table 97 on page 1626](#) lists the output fields for the `show chassis psd` command. Output fields are listed in the approximate order in which they appear.

Table 97: 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 |

Release Information

Command introduced in Junos OS Release 9.1.

show chassis routing-engine

IN THIS SECTION

- [Syntax | 1627](#)
- [Syntax \(ACX Series, PTX Series, and MX104 Universal Routing Platforms.\) | 1628](#)
- [Syntax \(EX Series Switches\) | 1628](#)
- [Syntax \(QFX Series\) | 1628](#)
- [Syntax \(MX Series Routers\) | 1628](#)
- [Syntax \(MX204 and MX10003 Universal Routing Platforms\) | 1629](#)
- [Syntax \(TX Matrix Routers\) | 1629](#)
- [Syntax \(TX Matrix Plus Routers\) | 1629](#)
- [Syntax \(Junos OS Evolved\) | 1629](#)
- [Description | 1630](#)
- [Options | 1630](#)
- [Required Privilege Level | 1631](#)
- [Output Fields | 1631](#)
- [Sample Output | 1636](#)
- [show chassis routing engine \(QFX5700 Switches\) \(Junos OS Evolved Release\) | 1637](#)
- [Usage | 1638](#)
- [Release Information | 1638](#)

Syntax

```
show chassis routing-engine  
<bios | slot>
```


Syntax (ACX Series, PTX Series, and MX104 Universal Routing Platforms.)

```
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 (MX204 and MX10003 Universal Routing Platforms)

```
show chassis routing-engine  
<slot>  
<bios>  
<errors>
```

Syntax (TX Matrix Routers)

```
show chassis routing-engine  
<bios | slot>  
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis routing-engine  
<bios | slot>  
<lcc number | sfc number>
```

Syntax (Junos OS Evolved)

```
show chassis routing-engine  
<slot>  
<bios>  
<hard-disk-test>
```


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. |
| hard-disk-test | (Junos OS Evolved only) (Optional) Display the health of the hard disk. Use <code>disk /dev/disk-name</code> status to display the status of a particular disk. |
| interconnect-device <i>number</i> | (QFabric systems only) (Optional) Display Routing Engine information for a specified Interconnect device. |
| lcc <i>number</i> | <p>(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.</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 Routing Engine information for the local Virtual Chassis member. |
| member <i>member-id</i> | (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 <i>member-id</i> with a value of 0 or 1. |
| node-device <i>number</i> | (QFabric systems only) (Optional) Display Routing Engine information for a specified Node device. |
| satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>] | (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 <i>number</i> | (TX Matrix Plus routers only) (Optional) Display Routing Engine information for the TX Matrix Plus router (or switch-fabric chassis). Replace <i>number</i> with 0. |
| slot | (Systems with multiple Routing Engines) (Optional) Display information for an individual Routing Engine. Replace <i>slot</i> 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

Output Fields

Table 98 on page 1632 lists the output fields for the `show chassis routing-engine` command. Output fields are listed in the approximate order in which they appear.

Table 98: 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 | <p>Total DRAM available to the Routing Engine's processor.</p> <p>NOTE: When the chassis has two Routing Engines, the amount of DRAM should be the same on both. A DRAM size mismatch error can result when the Routing Engines have different amounts of DRAM.</p> <p>Starting with Junos OS Release 12.3R1, the DRAM field displays both available memory and installed memory.</p> |
| Memory utilization | <p>Percentage of Routing Engine memory being used.</p> <p>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 calculating memory utilization. Inactive memory is considered as free. 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 Release Information for Junos OS with Upgraded FreeBSD.</p> |

Table 98: show chassis routing-engine Output Fields (Continued)

| Field Name | Field Description |
|-----------------------|---|
| CPU utilization | <p>Information about the Routing Engine's CPU utilization:</p> <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 | <p>Information about the Routing Engine's CPU utilization in the past 5 seconds:</p> <ul style="list-style-type: none"> • User—Percentage of CPU time being used by user processes. • Background—Percentage of CPU time being used by background processes. • Kernel—Percentage of CPU time being used by kernel processes. • Interrupt—Percentage of CPU time being used by interrupts. • Idle—Percentage of CPU time that is idle. |
| 1 min CPU Utilization | <p>Information about the Routing Engine's CPU utilization in the past 1 minute:</p> <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 98: show chassis routing-engine Output Fields (Continued)

| Field Name | Field Description |
|-----------------------------|--|
| 5 min CPU Utilization | <p>Information about the Routing Engine's CPU utilization in the past 5 minutes:</p> <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 | <p>Information about the Routing Engine's CPU utilization in the past 15 minutes:</p> <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 98: 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. |

Table 98: show chassis routing-engine Output Fields (*Continued*)

| Field Name | Field Description |
|---------------|---|
| | <ul style="list-style-type: none"> 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. Low battery detected This reason is displayed if the Routing Engine is powered down due to detection of low battery and powered back when battery is charged. Catastrophic error This reason is displayed if the Routing Engine is powered down due to catastrophic error (for example, link failure between FPC line card and PFE(packet forwarding engine)) and powered back. <p>QFX5700 displays the following additional reboot reasons:</p> <ul style="list-style-type: none"> FPGA reset Reboot due to FPGA reset. MSMI error/hw misc Reboot due to hardware MSMI (Microsoft Mail Connector interchange) Service Returned Service-Specific error. swizzle reset Reboot due to swizzle reset, power off and turning back on. PCH cold reset Reboot due to complete removal of power and restart of Intel PCH (Platform Controller Hub). software reboot Reboot of system due to software reboot process. Straight to s5 reset Reboot due to system in S5 state and does not retain memory state. iTCO watchdog Linux TCO hardware watchdog reboots the system automatically when there is a systems pause. |
| Load averages | Routing Engine load averages for the last 1, 5, and 15 minutes. |

Sample Output

The sample outputs for show chassis routing engine are as follows:

show chassis routing engine (QFX5700 Switches) (Junos OS Evolved Release)

```
user@switch> show chassis routing-engine
Routing Engine status:
  Slot 0:
    Current state      Master
    Election priority  Master
    Temperature        35 degrees C / 95 degrees F
    CPU temperature     39 degrees C / 102 degrees F
    DRAM                25825 MB (31566 MB installed)
    Memory utilization  18 percent
    5 sec CPU utilization:
      User              2 percent
      Background        0 percent
      Kernel            2 percent
      Interrupt         0 percent
      Idle              94 percent
    1 min CPU utilization:
      User              2 percent
      Background        0 percent
      Kernel            2 percent
      Interrupt         0 percent
      Idle              94 percent
    5 min CPU utilization:
      User              2 percent
      Background        0 percent
      Kernel            2 percent
      Interrupt         0 percent
      Idle              94 percent
    15 min CPU utilization:
      User              2 percent
      Background        0 percent
      Kernel            2 percent
      Interrupt         0 percent
      Idle              94 percent
    Model              QFX5700-RE
    Serial ID          BUILTIN
    Start time 2021-06-09 02:50:08 PDT
    Uptime 42 minutes, 48 seconds
    Load averages: 1 minute 5 minute 15 minute
```



```

1.48 1.71 1.83
Last reboot reason      power cycle

```

Usage

The `show chassis routing-engine` and `show chassis feb` commands can be used to find the memory allocated for each RE (Routing Engine) and Packet Forwarding Engine components.

Release Information

Command introduced before Junos OS Release 7.4.

`sfc` option introduced in Junos OS Release in 9.6 for the TX Matrix Plus router.

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.

`satellite` option introduced in Junos OS Release 14.2R3.

RELATED DOCUMENTATION

[request chassis routing-engine master](#)

[Configuring Routing Engine Redundancy](#)

[Switching the Global Primary and Backup Roles in a Virtual Chassis Configuration](#)

[show chassis feb](#) | 1372

show chassis scb

IN THIS SECTION

● [Syntax](#) | 1639

● [Description](#) | 1639

- Options | 1639
- Required Privilege Level | 1639
- Output Fields | 1639
- Sample Output | 1641
- Release Information | 1641

Syntax

```
show chassis scb
```

Description

(M40 router only) Display System Control Board (SCB) status information.

Options

This command has no options.

Required Privilege Level

view

Output Fields

[Table 99 on page 1640](#) lists the output fields for the `show chassis scb` command. Output fields are listed in the approximate order in which they appear.

Table 99: 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. |
| 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
```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[Checklist for Monitoring the SCB](#)

show chassis sfb

IN THIS SECTION

- [Syntax | 1642](#)
- [Syntax \(MX10004, MX10008 Universal Edge Routers\) | 1642](#)
- [Description | 1643](#)
- [Options | 1643](#)
- [Required Privilege Level | 1643](#)
- [Output Fields | 1643](#)
- [Sample Output | 1644](#)
- [Release Information | 1646](#)

Syntax

```
show chassis sfb
<all-members>
<local>
<member member-id>
<slot sfb-slot-number>
```

Syntax (MX10004, MX10008 Universal Edge Routers)

```
show chassis sfb
<errors>
<slot sfb-slot-number>
```


Description

Display chassis information about the Switch Fabric Board (SFB, SFB2).

Options

| | |
|-----------------------------------|--|
| none | Display chassis information about all Switch Fabric Boards. |
| all-members | (Optional) Display chassis information about the SFB in all members of the Virtual Chassis configuration. |
| local | (Optional) Display chassis information about the SFB in the local member of the Virtual Chassis. |
| 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. |
| errors | Show ASIC errors on sfb. |
| <i>sfb-slot-number</i> | (Optional) Display chassis information about the specified Switch Fabric Board, and specified SFB2 for MX10004. For MX2020, MX2010, and MX2008 routers, replace <i>sfb-slot-number</i> with a value from 0 through 7. For MX10004, value from 0 through 5. |

Required Privilege Level

view

Output Fields

[Table 100 on page 1644](#) lists the output fields for the `show chassis sfb` command. Output fields are listed in the approximate order in which they appear.

Table 100: 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 (MX10004 Router)

```
user@router> show chassis sfb
```

| Slot | State | Uptime |
|------|--------|---|
| 0 | Online | 3 days, 5 hours, 19 minutes, 1 second |
| 1 | Online | 3 days, 5 hours, 18 minutes, 31 seconds |
| 2 | Online | 3 days, 5 hours, 18 minutes, 2 seconds |
| 3 | Online | 3 days, 5 hours, 17 minutes, 31 seconds |
| 4 | Online | 3 days, 5 hours, 17 minutes, 1 second |
| 5 | Online | 3 days, 5 hours, 16 minutes, 31 seconds |

show chassis sfb slot (MX10004 Router)

MX10004 router supports chassis slots from 0 to 5.

```
user@router> show chassis sfb slot 0
slot  State          Uptime
  0    Online          3 days, 5 hours, 27 minutes, 57 seconds
```

```
user@router> show chassis sfb slot 2
slot  State          Uptime
  2    Offline          --- Offlined due to unsupported fabric ---
```

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
```

Release Information

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 Universal Routing Platforms.

`all-members`, `local`, and `member member-id` options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[request chassis sfb](#) | 473

show chassis sfb errors

IN THIS SECTION

- [Syntax | 1647](#)
- [Description | 1647](#)
- [Options | 1647](#)
- [Required Privilege Level | 1648](#)
- [Output Fields | 1648](#)
- [Sample Output | 1649](#)
- [Release Information | 1649](#)

Syntax

```
show chassis sfb errors  
< slot sfb-slot-number>
```

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. |
| <i>sfb-slot-number</i> | (Optional) Display information about error for the specified Switch Fabric Board. <ul style="list-style-type: none">• Range: 0–5 |

Required Privilege Level

view

Output Fields

Table 101 on page 1648 lists the output fields for the `show chassis sfb errors` command. Output fields are listed in the approximate order in which they appear.

Table 101: 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 and MX10004 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 |
| | 09204FFFFFF | 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 |

Release Information

Command introduced in Junos OS Release 18.2.

RELATED DOCUMENTATION

[request chassis sfb](#) | 473

show chassis sfm

IN THIS SECTION

- [Syntax | 1650](#)
- [Description | 1650](#)
- [Options | 1650](#)
- [Required Privilege Level | 1651](#)
- [Output Fields | 1651](#)
- [Sample Output | 1653](#)
- [Release Information | 1654](#)

Syntax

```
show chassis sfm  
<detail <sfm-slot>>
```

Description

(M40e and M160 routers only) Display Switching and Forwarding Module (SFM) status information.

Options

- | | |
|---------------|---|
| none | Display standard status information about all SFMs. |
| detail | (Optional) Display detailed SFM status information. |

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**.

Required Privilege Level

view

Output Fields

Table 102 on page 1651 lists the output fields for the `show chassis sfm` command. Output fields are listed in the approximate order in which they appear.

Table 102: 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 |
| Temp | Temperature of air passing by the SFM, in degrees Celsius. | none specified |
| CPU Utilization (%) | Information about CPU usage. | none specified |

Table 102: show chassis sfm Output Fields *(Continued)*

| Field Name | Field Description | Level of Output |
|------------------------------|---|-----------------|
| 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 |

Table 102: show chassis sfm Output Fields *(Continued)*

| Field Name | Field Description | Level of Output |
|-------------------------------|---|-----------------|
| 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 (C) | CPU Utilization (%) | Memory Utilization (%) |
|------|--------|----------|---------------------|------------------------|
| | | | 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

```

Release Information

Command introduced before Junos OS Release 7.4.

RELATED DOCUMENTATION

[request chassis sfm | 476](#)

request chassis sfm master switch

Switching the Global Primary and Backup Roles in a Virtual Chassis Configuration

show chassis sibs

IN THIS SECTION

- [Syntax | 1655](#)
- [Syntax \(TX Matrix Router\) | 1655](#)
- [Syntax \(TX Matrix Plus Router\) | 1656](#)
- [Syntax \(PTX Series Packet Transport Routers\) | 1656](#)
- [Description | 1656](#)
- [Options | 1656](#)
- [Required Privilege Level | 1657](#)
- [Output Fields | 1657](#)
- [Sample Output | 1663](#)
- [Release Information | 1672](#)

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>
```

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

- 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.
- detail** (PTX Series) (Optional) Display detailed SIB status information.
- 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.

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 <i>number</i> 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

Output Fields

Table 103 on page 1657 lists the output fields for the `show chassis sibs` command. Output fields are listed in the approximate order in which they appear.

Table 103: show chassis sibs Output Fields

| Field Name | Field Description |
|-------------|--|
| Slot | SIB slot number. |
| Type | (TX Matrix Plus router only) SIB type. |

Table 103: show chassis sibs Output Fields *(Continued)*

| Field Name | Field Description |
|---------------|---|
| Uptime | How long the SIB has been up and running. |

Table 103: show chassis sibs Output Fields *(Continued)*

| Field Name | Field Description |
|--------------|---|
| 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. |

Table 103: show chassis sibs Output Fields (*Continued*)

| Field Name | Field Description |
|------------|--|
| | <ul style="list-style-type: none"> • 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. • 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). |

Table 103: show chassis sibs Output Fields (*Continued*)

| Field Name | Field Description |
|------------|--|
| | <ul style="list-style-type: none"> 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> <ul style="list-style-type: none"> SFC Error—If an F13 SIB on the TX Matrix Plus router (SFC) transitions to the Fault state (for instance, because of link errors), and then if an LCC SIB (connected to the F13 SIB) comes online, the LCC SIB transitions to the SFC Error state. This state indicates that the F13 SIB to which the LCC SIB is connected has errors. <p>NOTE: The Connected, Disconnected, and SFC Error states are only applicable to the SIBs on an LCC.</p> <ul style="list-style-type: none"> Invalid—The specific SIB slot is not valid for 4-LCC chassis configuration. See the <i>TX Matrix Plus Hardware Guide</i> for more information about the supported SIB slots. |

Table 103: show chassis sibs Output Fields *(Continued)*

| Field Name | Field Description |
|---------------------------|--|
| | <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
Slot  State                      Uptime
0    Check (destination errors)  2 hours, 23 minutes, 2 seconds
1    Offline                      --- Offlined by cli command ---
2    Check (destination errors)  2 hours, 23 minutes, 3 seconds
3    Check (destination errors)  2 hours, 23 minutes, 3 seconds
4    Check (destination errors)  2 hours, 23 minutes, 3 seconds

use "show chassis fabric fpcs" and "show chassis fabric sibs" for more details

```

show chassis sibs (TX Matrix Plus Router)

```

user@host> show chassis sibs
sfc0-re0:
-----
Slot  State          Type      Link errors  Destination errors  Uptime
0    Spare          SIB F13    NONE         NONE
1    Empty
2    Invalid
3    Online          SIB F13    NONE         NONE              1 hour, 53 minutes, 19
seconds
4    Empty
5    Invalid
6    Online          SIB F13    NONE         NONE              1 hour, 53 minutes, 8
seconds
7    Empty

```


| | | | | | |
|-----|---------|---------|------|------|--------------------------------|
| 8 | Online | SIB F13 | NONE | NONE | 1 hour, 52 minutes, 57 seconds |
| 9 | Empty | | NONE | NONE | |
| 10 | Invalid | | NONE | NONE | |
| 11 | Online | SIB F13 | NONE | NONE | 1 hour, 52 minutes, 46 seconds |
| 12 | Empty | | NONE | NONE | |
| 13 | Invalid | | NONE | NONE | |
| 14 | Invalid | | NONE | NONE | |
| 15 | Invalid | | NONE | NONE | |
| 0/0 | Spare | SIB F2S | NONE | NONE | |
| 0/2 | Spare | SIB F2S | NONE | NONE | |
| 0/4 | Spare | SIB F2S | NONE | NONE | |
| 0/6 | Spare | SIB F2S | NONE | NONE | |
| 1/0 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 29 seconds |
| 1/2 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 28 seconds |
| 1/4 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 27 seconds |
| 1/6 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 26 seconds |
| 2/0 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 18 seconds |
| 2/2 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 17 seconds |
| 2/4 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 16 seconds |
| 2/6 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 14 seconds |
| 3/0 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 7 seconds |
| 3/2 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 5 seconds |
| 3/4 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 4 seconds |
| 3/6 | Online | SIB F2S | NONE | NONE | 1 hour, 53 minutes, 3 seconds |
| 4/0 | Online | SIB F2S | NONE | NONE | 1 hour, 52 minutes, 56 seconds |
| 4/2 | Online | SIB F2S | NONE | NONE | 1 hour, 52 minutes, 54 seconds |
| 4/4 | Online | SIB F2S | NONE | NONE | 1 hour, 52 minutes, 53 seconds |


```
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 | | NONE | NONE | NONE | |
| 15 | Invalid | | NONE | NONE | NONE | |
| 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 | | NONE | NONE | |
| 2 | Invalid | | NONE | NONE | |
| 3 | Online | SIB F13 | NONE | NONE | 12 hours, 6 minutes, 22 seconds |
| 4 | Empty | | NONE | NONE | |
| 5 | Invalid | | NONE | NONE | |
| 6 | Online | SIB F13 | NONE | NONE | 12 hours, 6 minutes, 11 seconds |
| 7 | Empty | | NONE | NONE | |
| 8 | Online | SIB F13 | NONE | NONE | 12 hours, 6 minutes |
| 9 | Empty | | NONE | NONE | |
| 10 | Invalid | | NONE | NONE | |
| 11 | Online | SIB F13 | NONE | NONE | 12 hours, 5 minutes, 49 seconds |
| 12 | Empty | | NONE | NONE | |
| 13 | Invalid | | NONE | NONE | |
| 14 | Invalid | | NONE | NONE | |
| 15 | Invalid | | NONE | NONE | |
| 0/0 | Spare | SIB F2S | NONE | NONE | |
| 0/2 | Spare | SIB F2S | NONE | NONE | |
| 0/4 | Spare | SIB F2S | NONE | NONE | |
| 0/6 | Spare | SIB F2S | NONE | NONE | |
| 1/0 | Online | SIB F2S | NONE | NONE | 12 hours, 6 minutes, 32 seconds |
| 1/2 | Online | SIB F2S | NONE | NONE | 12 hours, 6 minutes, 31 seconds |
| 1/4 | Online | SIB F2S | NONE | NONE | 12 hours, 6 minutes, 30 seconds |
| 1/6 | Online | SIB F2S | NONE | NONE | 12 hours, 6 minutes, 29 seconds |
| 2/0 | Online | SIB F2S | NONE | NONE | 12 hours, 6 minutes, 21 seconds |
| 2/2 | Online | SIB F2S | NONE | NONE | 12 hours, 6 minutes, 20 seconds |
| 2/4 | Online | SIB F2S | NONE | NONE | 12 hours, 6 minutes, 19 seconds |

| | | | | | |
|---------|--------|---------|------|------|---------------------------------|
| 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
```

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.

detail and **sib-slot** options introduced for the PTX Packet Transport Router in Junos OS Release 12.1

Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

RELATED DOCUMENTATION

- [Monitoring the SIBs](#)
- [M320 SIB Description](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

show chassis spmb

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- [Syntax \(TX Matrix Plus Routers\) | 1674](#)
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Syntax

```
show chassis spmb
```

Syntax (MX Series Routers)

```
show chassis spmb  
<all-members>  
<local>  
<member member-id>
```


Syntax (T4000 Routers)

```
show chassis spmb
<sibs>
```

Syntax (TX Matrix Routers)

```
show chassis spmb
<sibs>
<lcc number | scc>
```

Syntax (TX Matrix Plus Routers)

```
show chassis spmb
<sibs>
<lcc number | sfc number>
```

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 <i>number</i> | <p>(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.</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) Display status information for the SPMB in the local member of the Virtual Chassis. |
| member <i>member-id</i> | (MX2010, MX2020, and MX2008 routers only) (Optional) Display status information for the SPMB in the specified member of the Virtual Chassis. Replace <i>member-id</i> 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 <i>number</i> | (TX Matrix Plus router only) (Optional) Display information about the SPMB on the TX Matrix Plus router (switch-fabric chassis). Replace <i>number</i> with 0. |
| sibs | <p>(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 <i>sibs</i> option has the following sub-options:</p> <p><i>lcc number</i> (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.</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 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

Output Fields

Table 104 on page 1676 lists the output fields for the `show chassis spmb` command. Output fields are listed in the approximate order in which they appear.

Table 104: show chassis spmb Output Fields

| Field Name | Field Description |
|------------|---------------------------|
| Slot | SPMB slot number: 0 or 1. |

Table 104: show chassis spmb Output Fields (Continued)

| Field Name | Field Description |
|-------------------------------|--|
| 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-rel:

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-rel:

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-rel:

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-rel:
```

```
-----
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-rel:
```

```
-----
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-rel:
```

```
-----
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-rel:
```

```
-----
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-rel:
```



```

-----
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

```


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.

all-members, local, and member *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[request chassis sib | 478](#)

[request chassis spmb restart | 482](#)

[show chassis spmb sibs | 1688](#)

show chassis spmb sibs

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Syntax

```
show chassis spmb sibs
```

Syntax (TX Matrix Router)

```
show chassis spmb sibs
<lcc number | scc>
```

Syntax (TX Matrix Plus Router)

```
show chassis spmb sibs
<lcc number | sfc number>
```

Description

(T Series routers only) Display Switch Processor Mezzanine Board (SPMB) Switch Interface Board (SIB) status information.

Options

- | | |
|------------------------------|---|
| 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. |
| <i>lcc 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. |

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

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

| | |
|------------|--|
| scc | (TX Matrix router only) (Optional) Display SIB status information for the TX Matrix router (switch-card chassis). |
| 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

Output Fields

[Table 105 on page 1691](#) lists the output fields for the `show chassis spmb sibs` command. Output fields are listed in the approximate order in which they appear.

Table 105: 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 105: 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

```

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.

RELATED DOCUMENTATION

[show chassis sibs](#) | 1655

[request chassis sib](#) | 478

[request chassis spmb restart](#) | 482

show chassis temperature-thresholds

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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 (QFX Series)

```
show chassis temperature-thresholds  
<interconnect-device name>  
<node-device name>
```

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 | <p>(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.</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 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 <i>member-id</i> 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

Output Fields

Table 106 on page 1700 lists the output fields for the `show chassis temperature-thresholds` command. Output fields are listed in the approximate order in which they appear.

Table 106: 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, CPUs, 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. |

Table 106: show chassis temperature-thresholds Output Fields (Continued)

| Field name | Field Description |
|--------------|--|
| 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. |

Table 106: show chassis temperature-thresholds Output Fields (Continued)

| Field name | Field Description |
|---------------|--|
| 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
```

| | | | |
|-----------|--------------|-----------|---------------|
| Fan speed | Yellow alarm | Red alarm | Fire Shutdown |
|-----------|--------------|-----------|---------------|

| Item | (degrees C) | | (degrees C) | | (degrees C) | | (degrees C) |
|----------------|-------------|------|-------------|---------|-------------|---------|-------------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| FPC 0 Sensor 1 | 43 | 65 | 68 | 68 | 70 | 70 | 72 |
| FPC 0 Sensor 2 | 43 | 65 | 68 | 68 | 70 | 70 | 72 |
| FPC 0 Coretemp | 78 | 94 | 100 | 100 | 105 | 105 | 110 |

show chassis temperature-thresholds (MX104 Router)

```
user@host> show chassis temperature-thresholds
```

| 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 | 80 | 95 | 95 | 105 | 100 | 108 |

show chassis temperature-thresholds (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

```
user@host> show chassis temperature-thresholds
```

| 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 | 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
```

| 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 | 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
```

| | Fan speed | | Yellow alarm | | Red alarm | | Fire |
|--------------------------|-------------|------|--------------|---------|-------------|---------|--------|
| Shutdown | (degrees C) | | (degrees C) | | (degrees C) | | |
| (degrees C) | | | | | | | |
| Item | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| 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 (MX2020 Router with MPC4E)

```
user@host> show chassis temperature-thresholds
```

| Item | Fan speed | | Yellow alarm | | Red alarm | | Fire Shutdown |
|---------------------|-------------|------|--------------|---------|-------------|---------|---------------|
| | (degrees C) | | (degrees C) | | (degrees C) | | (degrees C) |
| | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| Routing Engine 0 | 70 | 80 | 95 | 95 | 110 | 110 | 112 |
| Routing Engine 1 | 70 | 80 | 95 | 95 | 110 | 110 | 112 |
| CB 0 IntakeA-Zone0 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 0 IntakeB-Zone1 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 0 IntakeC-Zone0 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 0 ExhaustA-Zone0 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 0 ExhaustB-Zone1 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |

| | | | | | | | |
|---------------------|----|----|----|----|----|----|-----|
| CB 0 TCBC-Zone0 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 1 IntakeA-Zone0 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 1 IntakeB-Zone1 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 1 IntakeC-Zone0 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 1 ExhaustA-Zone0 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 1 ExhaustB-Zone1 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| CB 1 TCBC-Zone0 | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SPMB 0 Intake | 56 | 62 | 75 | 63 | 83 | 76 | 95 |
| SPMB 1 Intake | 56 | 62 | 75 | 63 | 83 | 76 | 95 |
| SFB 0 Intake-Zone0 | 56 | 62 | 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
```

| 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 CPU | 58 | 63 | 78 | 75 | 93 | 90 | 98 |
| Routing Engine 1 CPU | 58 | 63 | 78 | 75 | 93 | 90 | 98 |
| CB 0 Inlet1 | 55 | 60 | 65 | 62 | 75 | 72 | 85 |
| CB 0 Inlet2 | 45 | 50 | 61 | 58 | 80 | 77 | 90 |
| CB 0 Inlet3 | 57 | 62 | 68 | 65 | 80 | 77 | 90 |
| CB 0 Inlet4 | 55 | 60 | 80 | 77 | 90 | 87 | 95 |
| CB 0 Exhaust1 | 55 | 60 | 65 | 62 | 75 | 72 | 85 |
| CB 0 Exhaust2 | 50 | 55 | 60 | 57 | 80 | 77 | 90 |
| CB 0 Exhaust3 | 70 | 75 | 81 | 78 | 91 | 88 | 96 |
| CB 0 Exhaust4 | 75 | 80 | 90 | 87 | 100 | 97 | 105 |
| CB 1 Inlet1 | 55 | 60 | 65 | 62 | 75 | 72 | 85 |
| CB 1 Inlet2 | 45 | 50 | 61 | 58 | 80 | 77 | 90 |
| CB 1 Inlet3 | 57 | 62 | 68 | 65 | 80 | 77 | 90 |
| CB 1 Inlet4 | 55 | 60 | 80 | 77 | 90 | 87 | 95 |
| CB 1 Exhaust1 | 55 | 60 | 65 | 62 | 75 | 72 | 85 |
| CB 1 Exhaust2 | 50 | 55 | 60 | 57 | 80 | 77 | 90 |
| CB 1 Exhaust3 | 70 | 75 | 81 | 78 | 91 | 88 | 96 |
| CB 1 Exhaust4 | 75 | 80 | 90 | 87 | 100 | 97 | 105 |
| SFB 0 Inlet1 | 49 | 54 | 62 | 59 | 76 | 73 | 81 |
| SFB 0 Inlet2 | 65 | 70 | 71 | 68 | 83 | 80 | 88 |
| SFB 0 Exhaust1 | 45 | 50 | 61 | 58 | 75 | 72 | 80 |
| SFB 0 Exhaust2 | 60 | 65 | 69 | 66 | 80 | 77 | 85 |

| | | | | | | | |
|---------------------|----|----|----|----|-----|-----|-----|
| SFB 0 SFB2-PF-local | 65 | 70 | 75 | 72 | 95 | 92 | 100 |
| SFB 0 SFB2-PF-die | 88 | 93 | 98 | 95 | 118 | 115 | 120 |
| SFB 1 Inlet1 | 49 | 54 | 62 | 59 | 76 | 73 | 81 |
| SFB 1 Inlet2 | 65 | 70 | 71 | 68 | 83 | 80 | 88 |
| SFB 1 Exhaust1 | 45 | 50 | 61 | 58 | 75 | 72 | 80 |
| SFB 1 Exhaust2 | 60 | 65 | 69 | 66 | 80 | 77 | 85 |
| SFB 1 SFB2-PF-local | 65 | 70 | 75 | 72 | 95 | 92 | 100 |
| SFB 1 SFB2-PF-die | 88 | 93 | 98 | 95 | 118 | 115 | 120 |
| SFB 2 Inlet1 | 49 | 54 | 62 | 59 | 76 | 73 | 81 |
| SFB 2 Inlet2 | 65 | 70 | 71 | 68 | 83 | 80 | 88 |
| SFB 2 Exhaust1 | 45 | 50 | 61 | 58 | 75 | 72 | 80 |
| SFB 2 Exhaust2 | 60 | 65 | 69 | 66 | 80 | 77 | 85 |
| SFB 2 SFB2-PF-local | 65 | 70 | 75 | 72 | 95 | 92 | 100 |
| SFB 2 SFB2-PF-die | 88 | 93 | 98 | 95 | 118 | 115 | 120 |
| SFB 3 Inlet1 | 49 | 54 | 62 | 59 | 76 | 73 | 81 |
| SFB 3 Inlet2 | 65 | 70 | 71 | 68 | 83 | 80 | 88 |
| SFB 3 Exhaust1 | 45 | 50 | 61 | 58 | 75 | 72 | 80 |
| SFB 3 Exhaust2 | 60 | 65 | 69 | 66 | 80 | 77 | 85 |
| SFB 3 SFB2-PF-local | 65 | 70 | 75 | 72 | 95 | 92 | 100 |
| SFB 3 SFB2-PF-die | 88 | 93 | 98 | 95 | 118 | 115 | 120 |
| SFB 4 Inlet1 | 49 | 54 | 62 | 59 | 76 | 73 | 81 |
| SFB 4 Inlet2 | 65 | 70 | 71 | 68 | 83 | 80 | 88 |
| SFB 4 Exhaust1 | 45 | 50 | 61 | 58 | 75 | 72 | 80 |
| SFB 4 Exhaust2 | 60 | 65 | 69 | 66 | 80 | 77 | 85 |
| SFB 4 SFB2-PF-local | 65 | 70 | 75 | 72 | 95 | 92 | 100 |
| SFB 4 SFB2-PF-die | 88 | 93 | 98 | 95 | 118 | 115 | 120 |
| SFB 5 Inlet1 | 49 | 54 | 62 | 59 | 76 | 73 | 81 |
| SFB 5 Inlet2 | 65 | 70 | 71 | 68 | 83 | 80 | 88 |
| SFB 5 Exhaust1 | 45 | 50 | 61 | 58 | 75 | 72 | 80 |
| SFB 5 Exhaust2 | 60 | 65 | 69 | 66 | 80 | 77 | 85 |
| SFB 5 SFB2-PF-local | 65 | 70 | 75 | 72 | 95 | 92 | 100 |
| SFB 5 SFB2-PF-die | 88 | 93 | 98 | 95 | 118 | 115 | 120 |
| SFB 6 Inlet1 | 49 | 54 | 62 | 59 | 76 | 73 | 81 |
| SFB 6 Inlet2 | 65 | 70 | 71 | 68 | 83 | 80 | 88 |
| SFB 6 Exhaust1 | 45 | 50 | 61 | 58 | 75 | 72 | 80 |
| SFB 6 Exhaust2 | 60 | 65 | 69 | 66 | 80 | 77 | 85 |
| SFB 6 SFB2-PF-local | 65 | 70 | 75 | 72 | 95 | 92 | 100 |
| SFB 6 SFB2-PF-die | 88 | 93 | 98 | 95 | 118 | 115 | 120 |
| SFB 7 Inlet1 | 49 | 54 | 62 | 59 | 76 | 73 | 81 |
| SFB 7 Inlet2 | 65 | 70 | 71 | 68 | 83 | 80 | 88 |
| SFB 7 Exhaust1 | 45 | 50 | 61 | 58 | 75 | 72 | 80 |
| SFB 7 Exhaust2 | 60 | 65 | 69 | 66 | 80 | 77 | 85 |
| SFB 7 SFB2-PF-local | 65 | 70 | 75 | 72 | 95 | 92 | 100 |

| | | | | | | | |
|------------------------|----|----|----|----|-----|-----|-----|
| SFB 7 SFB2-PF-die | 88 | 93 | 98 | 95 | 118 | 115 | 120 |
| FPC 0 | 55 | 60 | 75 | 65 | 90 | 80 | 95 |
| FPC 3 | 55 | 60 | 75 | 65 | 105 | 80 | 110 |
| FPC 5 | 55 | 60 | 75 | 65 | 105 | 80 | 110 |
| FPC 7 | 55 | 60 | 75 | 65 | 90 | 80 | 95 |
| FPC 9 Intake | 60 | 65 | 75 | 75 | 85 | 85 | 95 |
| FPC 9 Exhaust A | 60 | 65 | 75 | 75 | 85 | 85 | 95 |
| FPC 9 Exhaust B | 60 | 65 | 75 | 75 | 85 | 85 | 95 |
| FPC 9 XL 0 Chip | 70 | 75 | 85 | 85 | 102 | 102 | 110 |
| FPC 9 XL 0 XR2 0 Chip | 75 | 80 | 90 | 90 | 105 | 105 | 115 |
| FPC 9 XL 0 XR2 1 Chip | 75 | 80 | 90 | 90 | 105 | 105 | 115 |
| FPC 9 XL 1 Chip | 70 | 75 | 85 | 85 | 102 | 102 | 110 |
| FPC 9 XL 1 XR2 0 Chip | 75 | 80 | 90 | 90 | 105 | 105 | 115 |
| FPC 9 XL 1 XR2 1 Chip | 75 | 80 | 90 | 90 | 105 | 105 | 115 |
| FPC 9 XM 0 Chip | 70 | 75 | 85 | 85 | 100 | 100 | 110 |
| FPC 9 XM 1 Chip | 70 | 75 | 85 | 85 | 100 | 100 | 110 |
| FPC 9 XM 2 Chip | 70 | 75 | 85 | 85 | 100 | 100 | 110 |
| FPC 9 XM 3 Chip | 70 | 75 | 85 | 85 | 100 | 100 | 110 |
| FPC 9 PCIe Switch Chip | 80 | 85 | 95 | 95 | 105 | 105 | 120 |
| ADC 0 Intake | 50 | 55 | 65 | 65 | 75 | 75 | 80 |
| ADC 0 Exhaust | 50 | 55 | 65 | 65 | 75 | 75 | 80 |
| ADC 0 ADC-XF1 | 70 | 75 | 90 | 85 | 95 | 90 | 100 |
| ADC 0 ADC-XF0 | 70 | 75 | 90 | 85 | 95 | 90 | 100 |
| ADC 3 Intake | 50 | 55 | 65 | 65 | 75 | 75 | 80 |
| ADC 3 Exhaust | 50 | 55 | 65 | 65 | 75 | 75 | 80 |
| ADC 3 ADC-XF1 | 70 | 75 | 90 | 85 | 95 | 90 | 100 |
| ADC 3 ADC-XF0 | 70 | 75 | 90 | 85 | 95 | 90 | 100 |
| ADC 5 Intake | 50 | 55 | 65 | 65 | 75 | 75 | 80 |
| ADC 5 Exhaust | 50 | 55 | 65 | 65 | 75 | 75 | 80 |
| ADC 5 ADC-XF1 | 70 | 75 | 90 | 85 | 95 | 90 | 100 |
| ADC 5 ADC-XF0 | 70 | 75 | 90 | 85 | 95 | 90 | 100 |
| ADC 7 Intake | 50 | 55 | 65 | 65 | 75 | 75 | 80 |
| ADC 7 Exhaust | 50 | 55 | 65 | 65 | 75 | 75 | 80 |
| ADC 7 ADC-XF1 | 70 | 75 | 90 | 85 | 95 | 90 | 100 |
| ADC 7 ADC-XF0 | 70 | 75 | 90 | 85 | 95 | 90 | 100 |

show chassis temperature-thresholds (MX204 Router)

```
user@host> show chassis temperature-thresholds
```

| | | | |
|-----------|--------------|-----------|------|
| Fan speed | Yellow alarm | Red alarm | Fire |
|-----------|--------------|-----------|------|

| Shutdown | | | | | | | |
|-----------------------------|-------------|------|-------------|---------|-------------|---------|--------|
| | (degrees C) | | (degrees C) | | (degrees C) | | |
| (degrees C) | | | | | | | |
| Item | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| Routing Engine | 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 (MX10004 and MX10008 Router)

| user@host> show chassis temperature-thresholds | | | | | | | |
|--|-------------|------|--------------|---------|-------------|---------|--------|
| | Fan speed | | Yellow alarm | | Red alarm | | Fire |
| Shutdown | | | | | | | |
| (degrees C) | (degrees C) | | (degrees C) | | (degrees C) | | |
| Item | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| SFB 0 Intake-Top Temp | 58 | 63 | 100 | 100 | 105 | 105 | 115 |
| SFB 0 Intake-Middle-High Temp | 63 | 68 | 100 | 100 | 105 | 105 | 115 |
| SFB 0 Intake-Middle-Low Temp | 66 | 71 | 100 | 100 | 105 | 105 | 115 |
| SFB 0 Intake-Bottom Temp | 65 | 70 | 100 | 100 | 105 | 105 | 115 |
| SFB 0 Exhaust-Top Temp | 82 | 87 | 100 | 100 | 105 | 105 | 115 |
| SFB 0 Exhaust-Middle Temp | 76 | 81 | 100 | 100 | 105 | 105 | 115 |
| SFB 0 Exhaust-Bottom Temp | 77 | 82 | 100 | 100 | 105 | 105 | 115 |
| SFB 0 PCIe Switch Temp | 70 | 75 | 110 | 110 | 115 | 115 | 125 |
| SFB 0 ZF0 External Temp | 85 | 90 | 95 | 95 | 116 | 116 | 121 |

| | | | | | | | |
|-----------------------------|----|----|----|----|-----|-----|-----|
| SFB 0 ZF1 External Temp | 84 | 89 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF0 Internal Main | 85 | 90 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF0 Internal Remote 0 | 87 | 92 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF0 Internal Remote 1 | 89 | 94 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF0 Internal Remote 2 | 86 | 91 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF0 Internal Remote 3 | 88 | 93 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF0 Internal Remote 4 | 88 | 93 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF0 Internal Remote 5 | 87 | 92 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF0 Internal Remote 6 | 86 | 91 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF1 Internal Main | 84 | 89 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF1 Internal Remote 0 | 85 | 90 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF1 Internal Remote 1 | 88 | 93 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF1 Internal Remote 2 | 86 | 91 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF1 Internal Remote 3 | 88 | 93 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF1 Internal Remote 4 | 87 | 92 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF1 Internal Remote 5 | 85 | 90 | 95 | 95 | 116 | 116 | 121 |
| SFB 0 ZF1 Internal Remote 6 | 87 | 92 | 95 | 95 | 116 | 116 | 121 |

show chassis temperature-thresholds (PTX10008 Routers)

```
user@host> show chassis temperature-thresholds
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) |
|-----------------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|------------------------------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| 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 (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) |
|------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|------------------------------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 | 100 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 | 102 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 | 102 |
| FPC 0 | 63 | 68 | 75 | 70 | 90 | 83 | 95 |
| FPC 3 | 63 | 68 | 75 | 70 | 90 | 83 | 95 |
| FPC 5 | 56 | 62 | 75 | 63 | 83 | 76 | 95 |
| FPC 6 | 63 | 68 | 75 | 70 | 90 | 83 | 95 |
| SIB 0 | 64 | 70 | 76 | 72 | 87 | 84 | 95 |
| SIB 1 | 64 | 70 | 76 | 72 | 87 | 84 | 95 |
| SIB 2 | 64 | 70 | 76 | 72 | 87 | 84 | 95 |
| SIB 3 | 64 | 70 | 76 | 72 | 87 | 84 | 95 |
| SIB 4 | 64 | 70 | 76 | 72 | 87 | 84 | 95 |

show chassis temperature-thresholds (TX Matrix Plus Router)

```
user@host> show chassis temperature-thresholds
sfc0-re0:
```

```
-----
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | |
|------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 |
| SIB F13 0 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 3 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 6 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 8 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 11 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 12 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 16 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 17 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 18 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 19 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 20 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 21 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 22 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 23 | 64 | 70 | 76 | 72 | 90 | 84 |

| | | | | | | |
|------------|----|----|----|----|----|----|
| SIB F2S 24 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 25 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 26 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 27 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 28 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 29 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 30 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 31 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 32 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 33 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 34 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 35 | 64 | 70 | 76 | 72 | 90 | 84 |

lcc0-re0:

| Item | Fan speed | | Yellow alarm | | Red alarm | |
|------------------|-------------|------|--------------|---------|-------------|---------|
| | (degrees C) | | (degrees C) | | (degrees C) | |
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 |
| FPC 1 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 3 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 4 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 6 | 56 | 62 | 75 | 63 | 83 | 76 |
| 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 | | Yellow alarm | | Red alarm | |
|------------------|-------------|------|--------------|---------|-------------|---------|
| | (degrees C) | | (degrees C) | | (degrees C) | |
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 |
| FPC 1 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 3 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 4 | 56 | 62 | 75 | 63 | 83 | 76 |

| | | | | | | |
|-------|----|----|----|----|----|----|
| FPC 6 | 56 | 62 | 75 | 63 | 83 | 76 |
| ... | | | | | | |

show chassis temperature-thresholds lcc (TX Matrix Plus Router)

```
user@host> show chassis temperature-thresholds lcc 1
lcc1-re0:
```

```
-----
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | |
|------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 |
| FPC 1 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 3 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 4 | 56 | 62 | 75 | 63 | 83 | 76 |
| FPC 6 | 56 | 62 | 75 | 63 | 83 | 76 |
| SIB 0 | 48 | 54 | 65 | 60 | 80 | 75 |
| SIB 1 | 48 | 54 | 65 | 60 | 80 | 75 |
| SIB 2 | 48 | 54 | 65 | 60 | 80 | 75 |
| SIB 3 | 48 | 54 | 65 | 60 | 80 | 75 |
| SIB 4 | 48 | 54 | 65 | 60 | 80 | 75 |

show chassis temperature-thresholds sfc (TX Matrix Plus Router)

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

```
-----
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | |
|------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 |
| Routing Engine 1 | 55 | 65 | 85 | 85 | 100 | 100 |
| SIB F13 0 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 3 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 6 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 8 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F13 11 | 64 | 70 | 76 | 72 | 90 | 84 |

| | | | | | | |
|------------|----|----|----|----|----|----|
| SIB F13 12 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 16 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 17 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 18 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 19 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 20 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 21 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 22 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 23 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 24 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 25 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 26 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 27 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 28 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 29 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 30 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 31 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 32 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 33 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 34 | 64 | 70 | 76 | 72 | 90 | 84 |
| SIB F2S 35 | 64 | 70 | 76 | 72 | 90 | 84 |

show chassis temperature-thresholds (TX Matrix Plus routers with 3D SIBs)

```
user@host> show chassis temperature-thresholds
```

```
sfc0-re0:
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) |
|------------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|------------------------------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 | 100 |
| Routing Engine 0 | 70 | 75 | 90 | 87 | 102 | 97 | 115 |
| Routing Engine 1 | 70 | 75 | 90 | 87 | 102 | 97 | 115 |
| SIB F13 0 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F13 0 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F13 4 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F13 4 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F13 6 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F13 6 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F2S 16 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F2S 16 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |

| | | | | | | | |
|------------------------|----|----|----|----|-----|-----|-----|
| SIB F2S 17 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F2S 17 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F2S 18 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F2S 18 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F2S 19 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F2S 19 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F2S 24 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F2S 24 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F2S 25 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F2S 25 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F2S 26 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F2S 26 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |
| SIB F2S 27 Board | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB F2S 27 XF Junction | 70 | 75 | 82 | 74 | 105 | 100 | 107 |

lcc0-re0:

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) |
|---------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|------------------------------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 | 100 |
| Routing Engine 0 | 55 | 65 | 85 | 85 | 100 | 100 | 102 |
| FPC 0 | 63 | 68 | 75 | 70 | 90 | 83 | 95 |
| FPC 1 | 56 | 62 | 75 | 63 | 83 | 76 | 95 |
| FPC 7 | 56 | 62 | 75 | 63 | 83 | 76 | 95 |
| SIB 0 | 64 | 70 | 76 | 72 | 87 | 84 | 95 |
| SIB 0 ASIC Junction | 63 | 68 | 75 | 70 | 105 | 100 | 107 |
| SIB 2 | 64 | 70 | 76 | 72 | 87 | 84 | 95 |
| SIB 2 ASIC Junction | 63 | 68 | 75 | 70 | 105 | 100 | 107 |
| SIB 3 | 64 | 70 | 76 | 72 | 87 | 84 | 95 |
| SIB 3 ASIC Junction | 63 | 68 | 75 | 70 | 105 | 100 | 107 |

show chassis temperature-thresholds (QFX3500 Switch and QFX3600)

```
user@switch> show chassis temperature-thresholds
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | |
|-----------------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| FPC Sensor TopLeft I | 48 | 56 | 53 | 43 | 56 | 46 |
| FPC Sensor TopRight I | 46 | 54 | 51 | 41 | 54 | 44 |

| | | | | | | |
|------------------------|----|----|----|----|----|----|
| FPC Sensor TopLeft E | 58 | 65 | 62 | 52 | 65 | 55 |
| FPC Sensor TopRight E | 56 | 64 | 61 | 51 | 64 | 54 |
| FPC Sensor TopMiddle I | 58 | 64 | 61 | 51 | 64 | 54 |
| FPC Sensor TopMiddle E | 67 | 74 | 71 | 61 | 74 | 64 |
| FPC Sensor Bottom I | 59 | 67 | 64 | 54 | 67 | 57 |
| FPC Sensor Bottom E | 66 | 73 | 70 | 60 | 73 | 63 |
| FPC Sensor Die Temp | 69 | 75 | 72 | 62 | 75 | 65 |
| FPC Sensor Mgmnt Brd I | 46 | 54 | 51 | 41 | 54 | 44 |
| FPC Sensor Switch I | 56 | 63 | 60 | 50 | 63 | 53 |

show chassis temperature-thresholds interconnect-device (QFabric System)

```

user@switch> show chassis temperature-thresholds interconnect-device
interconnect1
temperature-thresholds interconnect-device interconnect1

```

| Item | Fan speed | | Yellow alarm | | Red alarm | |
|-----------------|-----------|------|--------------|---------|-----------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 |

show chassis temperature-thresholds (QFX5700)

```

user@switch> show chassis temperature-thresholds

```

| Item | Fan speed | | Yellow alarm | | Red alarm | |
|----------------------------------|-----------|------|--------------|---------|-----------|---------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan |
| Routing Engine 0 CPU Temperature | 48 | 54 | 85 | 85 | 100 | 102 |
| Routing Engine 1 CPU Temperature | 48 | 54 | 85 | 85 | 100 | 102 |
| CB 0 Intake 1 Temp Sensor | 60 | 65 | 75 | 75 | 85 | 95 |
| CB 0 Intake 2 Temp Sensor | 60 | 65 | 75 | 75 | 85 | 95 |
| CB 0 Middle Temp Sensor | 83 | 90 | 98 | 98 | 105 | 110 |
| CB 1 Intake 1 Temp Sensor | 60 | 65 | 75 | 75 | 85 | 95 |
| CB 1 Intake 2 Temp Sensor | 60 | 65 | 75 | 75 | 85 | 95 |
| CB 1 Exhaust 1 Temp Sensor | 83 | 90 | 98 | 98 | 105 | 110 |
| CB 1 Exhaust 2 Temp Sensor | 83 | 90 | 98 | 98 | 105 | 110 |
| CB 1 Middle Temp Sensor | 83 | 90 | 98 | 98 | 105 | 110 |

show chassis temperature-thresholds (PTX5000 Packet Transport Router)

```
user@switch> show chassis temperature-thresholds
```

```
user@switch> 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 | 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 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TL5 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TQ5 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TL6 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TQ6 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TL1 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TQ1 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TL2 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TQ2 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TL4 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TQ4 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TL7 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TQ7 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TL0 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TQ0 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TL3 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| FPC 3 TQ3 | 80 | 90 | 95 | 85 | 105 | 95 | 115 |
| SIB 0 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB 0 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |
| SIB 1 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB 1 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |
| SIB 2 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB 2 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |
| SIB 3 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB 3 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |
| SIB 4 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB 4 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |
| SIB 5 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |

| | | | | | | | |
|----------------|----|----|----|----|-----|----|-----|
| SIB 5 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |
| SIB 6 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB 6 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |
| SIB 7 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB 7 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |
| SIB 8 Exhaust | 60 | 65 | 78 | 75 | 85 | 80 | 95 |
| SIB 8 Junction | 75 | 80 | 90 | 85 | 105 | 95 | 115 |

show chassis temperature-thresholds (PTX1000 Packet Transport 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 |
| FPC 0 Intake Temp Sensor | 30 | 65 | 65 | 65 | 70 | 70 | 75 |
| FPC 0 Exhaust Temp Sensor | 30 | 65 | 65 | 65 | 70 | 70 | 75 |
| FPC 0 Mezz Temp Sensor 0 | 30 | 65 | 65 | 65 | 70 | 70 | 75 |
| FPC 0 Mezz Temp Sensor 1 | 30 | 65 | 65 | 65 | 70 | 70 | 75 |
| FPC 0 PE2 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 PE1 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 PF0 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 PE0 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 PE5 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 PE4 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 PF1 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 PE3 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 CPU Die Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |
| FPC 0 OCX0 Temp Sensor | 50 | 90 | 90 | 90 | 100 | 100 | 103 |

show chassis temperature-thresholds (MX Routers with Media Services Blade [MSB])

```
user@switch> show chassis temperature-thresholds
```

| Item | Fan speed (degrees C) | | Yellow alarm (degrees C) | | Red alarm (degrees C) | | Fire Shutdown (degrees C) |
|-----------------|--------------------------|------|-----------------------------|---------|--------------------------|---------|------------------------------|
| | Normal | High | Normal | Bad fan | Normal | Bad fan | Normal |
| Chassis default | 48 | 54 | 65 | 55 | 75 | 65 | 100 |

| | | | | | | | |
|------------------|----|----|----|----|-----|-----|-----|
| Routing Engine 0 | 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
```

| 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 | | | 48 | 54 | 85 | 85 | 100 | 102 |
| CB Top Right Inlet Sensor | | | 35 | 40 | 63 | 63 | 85 | 95 |
| CB Top Left Inlet Sensor | | | 40 | 45 | 65 | 65 | 85 | 95 |
| CB Top Right Exhaust Sensor | | | 45 | 50 | 68 | 68 | 85 | 95 |
| CB Top Left Exhaust Sensor | | | 65 | 70 | 78 | 78 | 85 | 95 |
| CB CPU Core-0 Temp | | | 65 | 70 | 80 | 80 | 90 | 100 |
| CB CPU Core-1 Temp | | | 65 | 70 | 80 | 80 | 90 | 100 |
| CB CPU Core-2 Temp | | | 65 | 70 | 80 | 80 | 90 | 100 |
| CB CPU Core-3 Temp | | | 65 | 70 | 80 | 80 | 90 | 100 |
| CB CPU Core-4 Temp | | | 65 | 70 | 80 | 80 | 90 | 100 |
| CB CPU Core-5 Temp | | | 65 | 70 | 80 | 80 | 90 | 100 |
| CB CPU Core-6 Temp | | | 65 | 70 | 80 | 80 | 90 | 100 |
| CB CPU Core-7 Temp | | | 65 | 70 | 80 | 80 | 90 | 100 |
| FPC EA0_HMC0 Logic die | | | 85 | 90 | 95 | 95 | 105 | 110 |
| FPC EA0_HMC0 DRAM botm | | | 80 | 85 | 90 | 90 | 105 | 110 |
| FPC EA0_HMC1 Logic die | | | 85 | 90 | 95 | 95 | 105 | 110 |
| FPC EA0_HMC1 DRAM botm | | | 80 | 85 | 90 | 90 | 105 | 110 |
| FPC EA0 Chip | | | 92 | 97 | 103 | 103 | 109 | 115 |
| FPC EA0-XR0 Chip | | | 85 | 90 | 98 | 98 | 103 | 110 |
| FPC EA0-XR1 Chip | | | 85 | 90 | 98 | 98 | 103 | 110 |

show chassis temperature-thresholds (EX9253 witches)

```
user@switch> 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 | | | 48 | 54 | 85 | 85 | 100 | 102 |
| CB 0 Exhaust Temp Sensor | | | 60 | 65 | 75 | 75 | 85 | 95 |
| CB 0 Inlet Temp Sensor | | | 60 | 65 | 75 | 75 | 85 | 95 |
| CB 0 CPU DIE Temp Sensor | | | 83 | 90 | 98 | 98 | 105 | 110 |
| CB 1 Exhaust Temp Sensor | | | 60 | 65 | 75 | 75 | 85 | 95 |
| CB 1 Inlet Temp Sensor | | | 60 | 65 | 75 | 75 | 85 | 95 |
| CB 1 CPU DIE Temp Sensor | | | 83 | 90 | 98 | 98 | 105 | 110 |
| FPC 0 Intake Temp Sensor | | | 40 | 45 | 75 | 70 | 85 | 80 |
| FPC 0 Exhaust-A Temp Sensor | | | 55 | 60 | 85 | 80 | 90 | 90 |
| FPC 0 Exhaust-B Temp Sensor | | | 55 | 60 | 85 | 80 | 90 | 90 |
| FPC 0 EA0 Chip | | | 87 | 92 | 97 | 97 | 105 | 105 |
| FPC 0 EA0-XR0 Chip | | | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 0 EA0-XR1 Chip | | | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 0 EA1 Chip | | | 87 | 92 | 97 | 97 | 105 | 105 |
| FPC 0 EA1-XR0 Chip | | | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 0 EA1-XR1 Chip | | | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 0 EA2 Chip | | | 87 | 92 | 97 | 97 | 105 | 105 |
| FPC 0 EA2-XR0 Chip | | | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 0 EA2-XR1 Chip | | | 88 | 93 | 98 | 98 | 120 | 120 |
| FPC 0 PF Chip | | | 89 | 94 | 104 | 104 | 120 | 120 |
| FPC 0 EA0_HMC0 Logic die | | | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA0_HMC0 DRAM botm | | | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA0_HMC1 Logic die | | | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA0_HMC1 DRAM botm | | | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA0_HMC2 Logic die | | | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA0_HMC2 DRAM botm | | | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA1_HMC0 Logic die | | | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA1_HMC0 DRAM botm | | | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA1_HMC1 Logic die | | | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA1_HMC1 DRAM botm | | | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA1_HMC2 Logic die | | | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA1_HMC2 DRAM botm | | | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA2_HMC0 Logic die | | | 88 | 93 | 103 | 103 | 120 | 120 |
| FPC 0 EA2_HMC0 DRAM botm | | | 83 | 88 | 98 | 98 | 120 | 120 |
| FPC 0 EA2_HMC1 Logic die | | | 88 | 93 | 103 | 103 | 120 | 120 |

| | | | | | | | |
|-----------------------------|----|----|-----|-----|-----|-----|-----|
| 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 |

Release Information

Command introduced in Junos OS Release 8.0.

sfc command introduced in Junos OS Release 9.6 for the TX Matrix Plus router.

satellite option introduced in Junos OS Release 14.2R3.

Command introduced in Junos OS Release 18.2R1 for MX10008 Routers and EX9253 Switches.

show chassis zones

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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>
```

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.

(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

| | |
|--------------------|--|
| 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 <i>device-name</i> | (QFabric systems only) (Optional) Display detailed status of the two cooling systems on the Interconnect device. |
| interconnect-device <i>name</i> | (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 <i>member-id</i> | (MX2010, MX2020, and MX2008 routers only) (Optional) Display the status of the cooling system zones in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1. |

Required Privilege Level

view

Output Fields

[Table 107 on page 1728](#) lists the output fields for the `show chassis zones` command. Output fields are listed in the approximate order in which they appear.

Table 107: 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:

Table 107: show chassis zones Output Fields (Continued)

| Field Name | Field Description |
|------------------|---|
| Driving FRU | Field replacable unit (FRU). |
| Temperature | Temperature of the specified FRU in degrees Celsius and degrees Fahrenheit. |
| 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 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 |

Release Information

Command introduced in Junos OS Release 11.3.

all-members, local, and member *member-id* options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.

RELATED DOCUMENTATION

[show chassis fan | 1354](#)

[show chassis temperature-thresholds | 1697](#)

show pfe cfeb

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- [Description | 1739](#)
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- [Release Information | 1745](#)

Syntax

```
show pfe cfeb
```


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

Output Fields

[Table 108 on page 1740](#) lists the output fields for the `show pfe cfeb` command. Output fields are listed in the approximate order in which they appear.

Table 108: 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 <code>policer-drop-probability-low</code> 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 108: show pfe cfeb Output Fields (*Continued*)

| Field Name | Field Description |
|--|--|
| PFE listener statistics | <p>PFE listener statistics:</p> <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 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 | 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 |

Release Information

Command introduced before Junos OS Release 7.4.

show pfe feb

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- [Release Information | 1755](#)

Syntax

```
show pfe feb
```


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

Output Fields

[Table 109 on page 1747](#) lists the output fields for the `show pfe feb` command. Output fields are listed in the approximate order in which they appear.

Table 109: 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 <code>policer-drop-probability-low</code> 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 109: show pfe feb Output Fields *(Continued)*

| Field Name | Field Description |
|--|--|
| PFE listener statistics | <p>PFE listener statistics:</p> <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 | 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 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 |

Release Information

Command introduced before Junos OS Release 7.4.

show pfe fpc

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Syntax

```
show pfe fpc slot  
<detail | extensive>
```


Syntax (TX Matrix and TX Matrix Plus Router)

```
show pfe fpc
<lcc number>
```

Syntax (MX Series Router)

```
show pfe fpc slot
<detail | extensive>
<all-members>
<local>
<member member-id>
```

Description

Display Packet Forwarding Engine statistics for the specified Flexible PIC Concentrator (FPC).

Options

| | |
|---------------------------|---|
| <i>slot</i> | FPC slot number. Replace <i>slot</i> with a value from 0 through 2 . |
| detail extensive | (Optional) Display the specified level of detail. |
| all-members | (MX Series routers only) (Optional) Display Packet Forwarding Engine statistics for the specified FPC in all members of the Virtual Chassis configuration. |
| 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. |

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 Packet Forwarding Engine statistics for the specified FPC in the local Virtual Chassis member. |
| member <i>member-id</i> | (MX Series routers only) (Optional) Display Packet Forwarding Engine statistics for the specified FPC in the specified member of the Virtual Chassis configuration. Replace <i>member-id</i> with a value of 0 or 1. |

Required Privilege Level

admin

Output Fields

[Table 110 on page 1758](#) lists the output fields for the `show pfe fpc` command. Output fields are listed in the approximate order in which they appear.

Table 110: 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 <code>memory-enhanced</code> statement. |

Table 110: show pfe fpc Output Fields (Continued)

| Field Name | Field Description |
|---|--|
| PFE listener statistics | <p>PFE listener statistics:</p> <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 | <p>Status of GFPC 0:</p> <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. |

Table 110: show pfe fpc Output Fields (Continued)

| Field Name | Field Description |
|--|--|
| PFE listener statistics | <p>PFE listener statistics:</p> <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 110: 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 <code>memory-enhanced</code> 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 <code>memory-enhanced</code> 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 <code>memory-enhanced</code> statement. • Policer Drop Probability—Current policer drop probability. The default is high, and can be configured using the <code>policer-drop-probability-low</code> 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) | All |

| | | |
|-----------|-------|-----|
| Interface | (173) | All |
| Interface | (174) | All |
| Interface | (175) | All |
| Interface | (176) | All |
| Interface | (177) | All |
| Interface | (178) | All |
| Interface | (179) | All |
| Interface | (180) | All |
| Interface | (181) | All |
| Interface | (182) | All |
| Interface | (183) | All |
| Interface | (184) | All |
| Interface | (185) | All |
| Interface | (186) | All |
| Interface | (187) | All |
| Interface | (188) | All |
| Interface | (189) | All |
| Interface | (190) | All |
| Interface | (191) | All |
| Interface | (192) | All |
| Interface | (193) | All |
| Interface | (194) | All |
| Interface | (195) | All |
| Interface | (196) | All |
| Interface | (197) | All |
| Interface | (198) | All |
| Interface | (199) | All |
| Interface | (200) | All |
| Interface | (201) | All |
| Interface | (202) | All |
| Interface | (204) | All |
| Interface | (205) | All |
| Interface | (206) | All |
| Interface | (207) | All |
| Interface | (208) | All |
| Interface | (209) | All |
| Interface | (210) | All |
| Interface | (211) | All |
| Interface | (212) | All |
| Interface | (213) | All |
| Interface | (214) | All |
| Interface | (215) | All |
| Interface | (216) | All |

| | | |
|-----------|-------|-----|
| Interface | (217) | All |
| Interface | (218) | All |
| Interface | (219) | All |
| Interface | (220) | All |
| Interface | (221) | All |
| Interface | (222) | All |
| Interface | (223) | All |
| Interface | (224) | All |
| Interface | (225) | All |
| Interface | (226) | All |
| Interface | (227) | All |
| Interface | (229) | All |
| Interface | (230) | All |
| Interface | (231) | All |
| Interface | (232) | All |
| 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 |

Release Information

Command introduced before Junos OS Release 7.4.

show system errors active

IN THIS SECTION

- [Syntax | 1782](#)
- [Description | 1783](#)
- [Options | 1783](#)
- [Required Privilege Level | 1783](#)
- [Output Fields | 1784](#)
- [Sample Output | 1785](#)
- [Release Information | 1789](#)

Syntax

```
show system errors active
<detail [fru slot-number [scope error-scope] [category error-category]]>
<fru slot-number>
```


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.

NOTE: In PTX Series routers with Junos OS Evolved, the details of the Packet Forwarding Engine errors (reported through CMEError), when set and cleared, are moved from the output of `show system errors active` command to the output of `show system errors inactive` command. However, the output of the `show system errors inactive detail` does not contain the details of the active FRU board errors that are cleared.

Options

| | |
|---------------------------------------|---|
| none | Display a brief summary of the system error information for all applicable FRUs. |
| 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. |
| detail | (Optional) Display detailed system error information. |
| fru slot-number | (Optional) Display system error information for a specific FRU. For devices running Junos OS, output displays error details for FPC FRUs. For devices running Junos OS Evolved, output displays error details for FPC and other components such as fan, PSM, CB, and chassis. |
| 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. |

Required Privilege Level

admin

Output Fields

Table 111 on page 1784 list the output fields for the `show system errors active` command. Output fields are listed in the approximate order in which they appear.

Table 111: 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. |

Table 111: show system errors active Output Fields (Continued)

| Field Name | Field Description |
|------------------------|--|
| Last occurred (ms ago) | Amount of time (in milliseconds) passed since the error last occurred. |

Sample Output

show system errors active

For devices running Junos OS, output displays error details for FPC FRUs. For devices running Junos OS Evolved, output displays error details for FPC and other components such as fan, PSM, CB, and chassis.

```
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
```

```
FPC 7
```

```
-----
```

```
Error Name : btchip_temp_monitor_pfe_throttled_bandwidth
```

```
Identifier : /fpc/7/evo-cda-bt/0/cm/0/btchip/0/btchip_temp_monitor_pfe_throttled_bandwidth
```

```
Description : btchip_temp_monitor_pfe_throttled_bandwidth
```

```
State : enabled
```

```
Scope : pfe
```

```
Category : functional
```

```
Level : minor
```

```
Threshold : 10
```

```
Error limit : 30
```

```
Occur count : 1
```

```
Clear count : 0
```

```
Last occurred(ms ago) : 2021-07-07 18:32:43 PDT (211961 ms ago)
```


show system errors active detail (PTX series: PTX10004, PTX10008, and PTX10016)

```

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

```

Release Information

Command introduced in Junos OS Release 18.2R1.

Command enhanced to include automatic temperature performance throttle and "btchip_temp_monitor_pfe_throttled_bandwidth" option error display in Junos OS Release 21.4R1.

RELATED DOCUMENTATION

[show system errors count | 1790](#)

[show system errors error-id | 1792](#)

[show system errors fru | 1796](#)

show system errors count

IN THIS SECTION

- [Syntax | 1790](#)
- [Description | 1790](#)
- [Options | 1790](#)
- [Required Privilege Level | 1791](#)
- [Output Fields | 1791](#)
- [Sample Output | 1791](#)
- [Release Information | 1792](#)

Syntax

```
show system errors count
```

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

Output Fields

Table 112 on page 1791 lists the output fields for the `show system errors count` command. Output fields are listed in the approximate order in which they appear.

Table 112: 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
```


Release Information

Command introduced in Junos OS Release 18.2R1.

RELATED DOCUMENTATION

[show system errors active | 1782](#)

[show system errors error-id | 1792](#)

[show system errors fru | 1796](#)

show system errors error-id

IN THIS SECTION

- [Syntax | 1792](#)
- [Description | 1793](#)
- [Options | 1793](#)
- [Additional Information | 1793](#)
- [Required Privilege Level | 1793](#)
- [Output Fields | 1793](#)
- [Sample Output | 1795](#)
- [Release Information | 1795](#)

Syntax

```
show system errors error-id error-id-uri
```


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). For devices running Junos OS Evolved, output displays only errors that have occurred at least once in the system.

Options

This command has no options.

Additional Information

Required Privilege Level

admin

Output Fields

[Table 113 on page 1793](#) 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 113: 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). |

Table 113: show system errors error-id Output Fields (Continued)

| Field Name | Field Description |
|------------------------|--|
| 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 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

```

Release Information

Command introduced in Junos OS Release 19.1R1.

RELATED DOCUMENTATION

[show system errors active](#) | [1782](#)

[show system errors count](#) | [1790](#)

[show system errors fru](#) | [1796](#)

show system errors fru

IN THIS SECTION

- [Syntax | 1796](#)
- [Description | 1796](#)
- [Options | 1796](#)
- [Required Privilege Level | 1797](#)
- [Output Fields | 1797](#)
- [Sample Output \(Junos OS\) | 1798](#)
- [Sample Output \(Junos OS Evolved\) | 1801](#)
- [Release Information | 1803](#)

Syntax

```
show system errors fru detail [fru slot-number]
```

Description

Display information collected by the J-Insight fault monitoring feature. Specifically, display information about detected errors based on the FRU.

Options

- | | |
|---------------|--|
| none | Display a brief summary of the system error information for the FRU. |
| detail | (Optional) Display detailed system error information. |

fru slot-number (Optional) Display system error information for a specific FRU. For devices running Junos OS, output displays error details for FPC FRUs. For devices running Junos OS Evolved, output displays error details for FPC and other components such as fan, PSM, CB, and chassis.

Required Privilege Level

admin

Output Fields

Table 114 on page 1797 lists the output fields for the `show system errors fru` command. Output fields are listed in the approximate order in which they appear.

Table 114: `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. |
| 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. |

Table 114: show system errors fru Output Fields (Continued)

| Field Name | Field Description |
|--------------|---|
| 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 (Junos OS)

show system errors fru detail

```

user@host> show system errors fru detail

```

| Fru | Scope | Category | Level | Occurred | Cleared | Threshold | Action-Taken | Action |
|-------|-------|------------|-------|----------|---------|-----------|--------------|----------------|
| FPC 0 | | | | | | | | |
| | board | | | | | | | |
| | | functional | Minor | 0 | 0 | 10 | 0 | LOG |
| | | | Major | 0 | 0 | 1 | 0 | GET |
| | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| | | | | | | | | STATE CM ALARM |
| PFE | | memory | Minor | 0 | 0 | 10 | 0 | LOG |
| | | | Major | 0 | 0 | 1 | 0 | GET |
| | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| | | | | | | | | STATE CM ALARM |
| PFE | | io | Minor | 0 | 0 | 10 | 0 | LOG |
| | | | Major | 0 | 0 | 1 | 0 | GET |
| | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| | | | | | | | | STATE CM ALARM |
| PFE | | storage | Minor | 0 | 0 | 10 | 0 | LOG |
| | | | Major | 0 | 0 | 1 | 0 | GET |
| | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| | | | | | | | | STATE CM ALARM |
| PFE | | switch | Minor | 0 | 0 | 10 | 0 | LOG |

show system errors fru detail (MX240, MX480, MX960, MX2008, MX2010, MX2020)

```
user@host> show system errors fru detail
```

| Fru | Scope | Category | Level | Occurred | Cleared | Threshold | Action-Taken | Action |
|----------------|-------|------------|-------|----------|---------|-----------|--------------|---------|
| FPC 0 | | | | | | | | |
| | board | | | | | | | |
| | | functional | Minor | 0 | 0 | 1 | 0 | LOG CM |
| ALARM | | | Major | 0 | 0 | 1 | 0 | GET |
| STATE CM ALARM | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| PFE | | memory | Minor | 0 | 0 | 1 | 0 | LOG CM |
| ALARM | | | Major | 0 | 0 | 1 | 0 | GET |
| STATE CM ALARM | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| PFE | | io | Minor | 0 | 0 | 1 | 0 | LOG CM |
| ALARM | | | Major | 0 | 0 | 1 | 0 | GET |
| STATE CM ALARM | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| PFE | | storage | Minor | 0 | 0 | 1 | 0 | LOG CM |
| ALARM | | | Major | 0 | 0 | 1 | 0 | GET |
| STATE CM ALARM | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| PFE | | switch | Minor | 0 | 0 | 1 | 0 | LOG CM |
| ALARM | | | Major | 0 | 0 | 1 | 0 | GET |
| STATE CM ALARM | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| PFE | | processing | Minor | 0 | 0 | 1 | 0 | LOG CM |
| ALARM | | | Major | 0 | 0 | 1 | 0 | GET |
| STATE CM ALARM | | | Fatal | 0 | 0 | 1 | 0 | DISABLE |
| PFE | | | | | | | | |

| | | | | | | | |
|-------|------------|-------|---|---|---|---|--------|
| pfe | | | | | | | |
| | functional | Minor | 0 | 0 | 1 | 0 | LOG CM |
| ALARM | | Major | 0 | 0 | 1 | 0 | LOG |
| RESET | PFE | | | | | | |

Sample Output (Junos OS Evolved)

show system errors fru detail (PTX10003)

The following output has been shortened for clarity. For each part of a FRU, the full output displays any errors in the functional, io, memory, processing, storage, and switch categories, similar to the CB 0 FRU below.

```
user@host> show system errors fru detail
```

| Fru | Scope | Category | Level | Occurred | Cleared | Threshold | Action-Taken | Action |
|----------|-------|------------|-------|----------|---------|-----------|--------------|----------|
| 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 | | | | | | | | |

| | | | | | | | |
|----------------|---------|-------|---|---|----|---|----------|
| STATE CM ALARM | storage | Minor | 0 | 0 | 10 | 0 | LOG |
| | | Major | 0 | 0 | 1 | 0 | GET |
| | | Fatal | 0 | 0 | 1 | 0 | CM ALARM |
| STATE CM ALARM | switch | Minor | 0 | 0 | 10 | 0 | LOG |
| | | Major | 0 | 0 | 1 | 0 | GET |
| | | Fatal | 0 | 0 | 1 | 0 | CM ALARM |
| RESET | | | | | | | |
| CHASSIS 0 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |
| FAN 0 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |
| FAN 1 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |
| FPC 0 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |
| pfe | | | | | | | |
| ... | | | | | | | |
| FPC 1 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |
| pfe | | | | | | | |
| ... | | | | | | | |
| FPM 0 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |
| PDU 0 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |
| PICS 0 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |
| PICS 1 | | | | | | | |
| board | | | | | | | |
| ... | | | | | | | |


```
PSM 0
    board
...
PSM 1
    board
...
RE 0
    board
...
SIB 0
    board
...
    switch
...
SIB 1
    board
...
    switch
...
```

Release Information

Command introduced in Junos OS Release 18.2R1.

Reset-pfe option added in Junos OS Release 21.4R1.

RELATED DOCUMENTATION

[show system errors active](#) | 1782

[show system errors count](#) | 1790

[show system errors error-id](#) | 1792

show system errors inactive

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Syntax

```
show system errors inactive  
<detail>
```

Description

Display information collected by the J-Insight fault monitoring feature. Specifically, display summary or detailed information about the inactive errors in the system. This commands shows the information about errors that had occurred and were then cleared.

Options

- none** Display a brief summary of the system error information for all applicable FRUs.
- detail** (Optional) Display detailed system error information.

Required Privilege Level

admin

Output Fields

Table 115 on page 1805 list the output fields for the `show system errors inactive` command. Output fields are listed in the approximate order in which they appear.

Table 115: show system errors inactive 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. |

Table 115: show system errors inactive Output Fields (Continued)

| Field Name | Field Description |
|------------------------|--|
| 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 inactive

```

user@host> show system errors inactive
System Inactive Errors Information
CB 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors      : 0
CB 1
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors      : 0
CHASSIS 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors      : 0
FAN 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors     : 0
Inactive Fatal Errors      : 0

```


FAN 1

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 0

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 1

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 2

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 3

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 4

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 5

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 6

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

FPC 7

Inactive Minor Errors : 0


```

Inactive Major Errors      : 0
Inactive Fatal Errors     : 0
FPM 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors      : 0
Inactive Fatal Errors      : 0
PICS 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors      : 0
Inactive Fatal Errors      : 0
PSM 0
-----
Inactive Minor Errors      : 0
Inactive Major Errors      : 0
Inactive Fatal Errors      : 0
PSM 1
-----
Inactive Minor Errors      : 0
Inactive Major Errors      : 0
Inactive Fatal Errors      : 0
PSM 2
-----
Inactive Minor Errors      : 0
Inactive Major Errors      : 0
Inactive Fatal Errors      : 0
PSM 3
-----
Inactive Minor Errors      : 0
Inactive Major Errors      : 0
Inactive Fatal Errors      : 0
PSM 4
-----
Inactive Minor Errors      : 0
Inactive Major Errors      : 0
Inactive Fatal Errors      : 0
PSM 5
-----
Inactive Minor Errors      : 0
Inactive Major Errors      : 0
Inactive Fatal Errors      : 0
RE 0

```

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

RE 1

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

SIB 0

Inactive Minor Errors : 0
Inactive Major Errors : 3
Inactive Fatal Errors : 0

SIB 1

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

SIB 2

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

SIB 3

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

SIB 4

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

SIB 5

Inactive Minor Errors : 0
Inactive Major Errors : 0
Inactive Fatal Errors : 0

show system errors inactive detail

```
user@host> show system errors inactive detail
```

```
System Inactive Errors Detail Information
```

```
SIB 0
```

```
-----
Error Name           : Cell_drop_errors
Identifier            : /sib/0/fabspoked-fchip/0/cm/0/fchip/0/Cell_drop_errors
Description           : Cell drop errors
State                 : enabled
Scope                 : board
Category              : internal
Level                 : major
Threshold             : 10
Error limit           : 0
Support               : No help info provided
Occur count           : 1
Clear count           : 1
Last occurred(ms ago) : 973151
```

```
System Inactive Errors Detail Information
```

```
SIB 0
```

```
-----
Error Name           : Sib_Asic_PIO_Fault
Identifier            : /sib/0/fabspoked-fchip/0/cm/0/fchip/0/Sib_Asic_PIO_Fault
Description           : Sib Asic PIO Fault
State                 : enabled
Scope                 : switch
Category              : internal
Level                 : major
Threshold             : 10
Error limit           : 0
Support               : No help info provided
Occur count           : 1
Clear count           : 1
Last occurred(ms ago) : 777971
```

```
System Inactive Errors Detail Information
```

```
SIB 0
```

```
-----
Error Name           : sib_link_to_fpc_fault
Identifier            : /sib/0/fabspoked-fchip/0/cm/0/fchip/0/sib_link_to_fpc_fault
Description           : sib_link_to_fpc_fault
State                 : enabled
```



```
Scope          : board
Category       : internal
Level          : major
Threshold      : 10
Error limit    : 0
Support        : No help info provided
Occur count    : 1
Clear count    : 1
Last occurred(ms ago) : 862333
```

Release Information

Command introduced in Junos OS Evolved Release 19.4R1.

RELATED DOCUMENTATION

[show system errors count](#) | [1790](#)

[show system errors error-id](#) | [1792](#)

[show system errors fru](#) | [1796](#)