



Junos[®] OS

PTX3000 Integrated Photonic Line System Feature Guide



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Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, California 94089
USA
408-745-2000
www.juniper.net

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About the Documentation

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- Using the Examples in This Manual on page xi
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- Requesting Technical Support on page xv

Documentation and Release Notes

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

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

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Using the Examples in This Manual

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

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

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

Merging a Full Example

To merge a full example, follow these steps:

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

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

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

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

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

Merging a Snippet

To merge a snippet, follow these steps:

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

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

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

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

```
[edit]
```

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

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

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

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

Documentation Conventions

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

Table 1: Notice Icons







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

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

Table 2: Text and Syntax Conventions

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

Table 2: Text and Syntax Conventions (continued)

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

Table 2: Text and Syntax Conventions (continued)

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

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- Find solutions and answer questions using our Knowledge Base: <https://kb.juniper.net/>

- Download the latest versions of software and review release notes:
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- Join and participate in the Juniper Networks Community Forum:
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To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://entitlementsearch.juniper.net/entitlementsearch/>

Opening a Case with JTAC

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

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

PART 1

Overview

- Understanding the PTX3000 Integrated Photonic Line System Architecture and Configuration on page 3
- Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11

CHAPTER 1

Understanding the PTX3000 Integrated Photonic Line System Architecture and Configuration

- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
- [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)

Integrated Photonic Line Card Base and Expansion Module Overview

The PTX3000 integrated photonic line system is a fully integrated photonic line system for converged core and metro core packet optical networks running point-to-point and ring topologies. The PTX3000 integrated photonic line system includes the following optional components:

- Integrated photonic line card (IPLC) base module
- Integrated photonic line card (IPLC) expansion module

The external optical inline amplifier (ILA) provides periodic amplification of the optical line signal to enable long distance transmission.

A comprehensive management strategy enables complete management through both the Junos OS CLI and optionally through the Connectivity Services Director (CSD) application running on the Junos Space Network Management Platform.

To complete the optical solution, Juniper Networks integrated 100G Coherent transponders can be leveraged, along with the IPLC base module, IPLC expansion module, optical ILA and CSD to provide an end-to-end, fully managed packet optical solution.

This topic provides an overview of the integrated photonic line card (IPLC) base module and expansion module and includes the following sections:

- [Overview on page 4](#)
- [Configuring, Managing, and Monitoring the IPLC on page 4](#)
- [High Availability, Resiliency, and Integrity on page 5](#)
- [Usability, Serviceability, Security and Troubleshooting on page 5](#)

Overview

The IPLC base module provides the combined functionality of a 32-port reconfigurable optical add/drop multiplexer (ROADM), optical amplifier, optical equalizer, and optical channel monitor on a single card. It enables ad-hoc allocation of network bandwidth for high-demand, real-time applications, and network services that are delivered over an optical fiber infrastructure. You can use the IPLC expansion module to increase the system capacity to 64 channels.

Figure 1: IPLC Point-to-Point Configuration

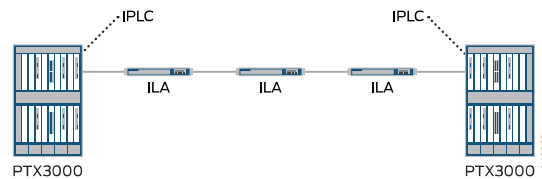


Figure 1 on page 4 shows a typical IPLC point-to-point configuration. In this configuration, the **Line IN** and **Line OUT** ports on the front of the IPLC base modules are connected to the IPLC base modules in the optical fiber network. Optical ILA nodes are typically placed into the network where the fiber length is greater than 80–100 km. For a complete description of the IPLC hardware and optical ILA, see the [PTX3000 Packet Transport Router with Integrated Photonic Line Card](#).

For ring configurations and other configurations that require east-west communications, you can connect two IPLC base modules together to form a two-degree node that consists of two 32-port ROADMs, each with its own line termination. You can also express traffic east-west on a wavelength-by-wavelength basis. You configure all channel routing through software.

Configuring, Managing, and Monitoring the IPLC

You can configure, manage, and monitor the components of the PTX3000 integrated photonic line system in several ways. This section provides an overview of these methods and their capabilities.

Junos OS CLI

Using the Junos OS CLI, you can configure, manage, and monitor IPLC modules in a similar way to standard PTX3000 Series line cards—that is, by entering a minimum set of CLI commands and making the proper physical connections between the various components on the front panel of the line system.

Starting with Junos OS Release 17.1R1, you can configure and manage optical ILAs across the optical supervisory channel (OSC) of the amplifier chain of the PTX3000 integrated photonic line system.

Junos Space Connectivity Services Director

Optionally, you can use the GUI-based Junos Space Connectivity Services Director to configure, manage, and monitor the IPLC. For a complete description of the Junos Space Connectivity Services Director software, see [Junos Space Connectivity Services Director](#).

SNMP

You can use SNMP to configure and manage both IPLC modules and the optical ILA.

Optical Supervisory Channel

An integrated optical supervisory channel (OSC) automates control of the optical layer by providing control and management of the line system components, as well as optical ILAs in the amplifier chain.

High Availability, Resiliency, and Integrity

The integrated photonic line system is a standalone appliance that resides in the PTX3000 chassis. There is no data path between IPLC modules and the high-speed backplane or the interface cards in the chassis. Because the IPLC modules are not connected to the PTX3000 high-speed backplane, resets and upgrades to the system software do not affect traffic running on the IPLC modules. From an optical perspective, the IPLC modules tolerate both fast and slow changes in physical conditions. For example, if a large number of optical channels disappear due to a fiber cut, the IPLC has sophisticated control circuitry that prevents any errors on the remaining channels. Similarly, slow degradation of the fiber plant is also accommodated to ensure optimal performance across the lifespan of the system. To ensure error-free transmission across both long fiber runs and large numbers of wavelengths on spans, IPLC modules and optical ILAs automatically controls the power of each channel.

Usability, Serviceability, Security and Troubleshooting

Traditionally, wavelength-division multiplexing (WDM) systems and subsystems have relied on a high degree of manual configuration and fine-tuning from expert users to enable signals to be transmitted error free across the inherently analog medium of optical fiber. The IPLC automates these activities to the point that adding a wavelength is as simple as configuring a port on the router. No optical expertise is required because the IPLC automates the introduction, removal, and balancing of optical channels and you simply need to enable the traffic-carrying port by setting some basic Junos OS CLI commands.

WDM networks typically contain many elements and identifying underlying failure points is often complex. With the IPLC, if at any point traffic is interrupted, the system raises a number of alarms to notify the management and control layers of the system and also to help quickly and easily identify the root cause of the failure.

Performance Monitors

Alarms and analog performance monitors are available to allow expert or non-expert users easily identify and localize faults. Performance monitors monitor analog data and

alarms enabling you to quickly view the health of the line system as well as the amplifier chain. You can quickly and easily configure and enable alarm thresholds at the various monitoring points on both IPLC modules and the optical ILA.

Release History Table

Release	Description
17.1R1	Starting with Junos OS Release 17.1R1

Related Documentation

- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
- [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)

Understanding the Integrated Photonic Line Card Architecture

This topic provides an architectural and functional overview of the IPLC and includes the following sections:

- [Architecture Overview on page 6](#)
- [Functional Component Overview on page 7](#)

Architecture Overview

You can use the integrated photonic line system to transport 100 Gbps coherent DWDM optics located in either the same or different PTX3000 chassis, a PTX5000 chassis, or an MX Series chassis—simply make the proper physical connections between the **ADD** and **DROP** ports on the IPLC module and the interface in the chassis. All connections between the DWDM optics and the IPLC are made through the front panel. The IPLC base module accepts and then multiplexes 32 individual wavelengths (connected through the **ADD** and **DROP** ports on the front panel) into a single fiber pair. If you require more than 32 channels, you can connect the optional IPLC expansion module to the IPLC base module to increase the port capacity of the node to 64 ports.

The wavelengths from the **ADD** and **DROP** ports are then amplified, monitored, and controlled and then transmitted towards the optical network over the **Line OUT** port on front panel of the IPLC base module. In the reverse direction, the received signals from the optical network on the **Line IN** port are amplified to overcome for loss in the optical fiber and then demultiplexed into individual wavelengths and sent to the configured **ADD** and **DROP** ports on the front panel.

The 32 channels provided by the IPLC base module are known as the *odd* channels. The 32 channels provided by the optional IPLC expansion module are known as the *even* channels. This odd and even designation reflects the default wavelengths the channels support.

In the multiplexing-add path, the 32 even channels from the IPLC expansion module are interleaved with the 32 odd channels from the IPLC base module. In the demultiplexing-drop path, the 32 even channels are separated from the odd channels using a deinterleaver. All 64 channels go through the main common components used

for amplification and equalization. All 32 channels on the IPLC base module are 100 GHz spaced, per the ITU-T Grid Specifications (G.694.1). The 32 channels on the IPLC expansion module are offset from the IPLC base module channels by 50 GHz.

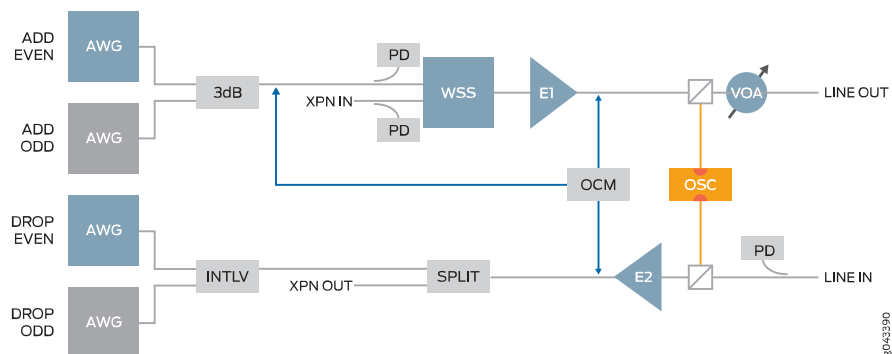
Two-Degree Node

For ring topologies and other network topologies that require a two-degree node for east-and west communications, you can connect two IPLC base modules together through the **PT IN-PT OUT** ports on the front panel and enter a few CLI commands to form a two-degree node. Two-degree nodes enable you to route wavelengths in both directions.

Functional Component Overview

The high-level optical functional block diagram of the combined functions of both the IPLC base module and the IPLC expansion module are shown in [Figure 2 on page 7](#).

Figure 2: Combined Functions of the IPLC Base and Expansion Modules



IPLC Base Module Functional Components

The main building blocks of the IPLC base module architecture are as follows:

- A 2x1 wavelength selective switch (WSS) on the add path selects wavelengths from among all channels presented from the 32 **Add** ports of the IPLC base module (shown in blue in [Figure 2 on page 7](#)) and from the 32 **Add** ports on the IPLC expansion module (shown in gray in [Figure 2 on page 7](#)).
- A booster erbium-doped fiber amplifier (EDFA) (E1) followed by a variable optical attenuator (VOA) compensate for the loss of the WSS, multiplexer, and 3 dB coupler.
- A variable gain preamplifier EDFA (E2) to compensate for the loss of the preceding fiber span.
- An optical channel monitor (OCM) with three points of observation including the following:
 - Booster EDFA (E1) output
 - Preamplifier EDFA (E2) output
 - The combined channels of the local add function at the input of the WSS, which indicates which channels (both odd and even channels) are being added locally

- An optical supervisory channel (OSC) communicates inband with the remote IPLC modules, as well as the optical ILA and is used for the analysis of the fiber span characteristics, performance monitoring, and IPLC fault handling.
- An optical splitter is used to broadcast the received signal from the output of the preamplifier (E2) toward both **DROP** and **PT IN** and **PT OUT** ports
- Four power monitors:
 - **AWG Add**—Monitors the input of the WSS measuring the total input power of the combined channels of the local add function
 - **Express In**—Monitors the input of the WSS measuring the total input power at the input to the WSS coming from the **PT IN** and **PT OUT** express ports
 - **Line IN**—Monitors the input at the **Line IN** port, for detection of the incoming line signal optical power
 - **Line OUT**—Monitors the output at the **Line OUT** port, for detection of the outgoing line signal optical power
 - **OSC ADD**—Monitors OSC power at **Line OUT**
 - **OSC DROP**—Monitors OSC power at **Line IN**

IPLC Expansion Module Functional Components

The IPLC expansion module is a passive multiplexer/demultiplexer that interfaces only with the IPLC base module. The IPLC expansion module receives its sole input from and delivers its sole output to the IPLC base module through the **XPN IN** and **XPN OUT** ports. As such, it does not interface directly with the network or the high-speed backplane of the PTX3000 Series router. [Figure 2 on page 7](#) shows the main building blocks for both the IPLC base module and expansion module, which include:

- Add filter capable of multiplexing 32 DWDM channels of certain wavelengths
- Drop filter capable of demultiplexing 32 DWDM channels having the same certain wavelengths
- Demultiplexing filter whose input (which is also the sole input to the expansion module) is monitored through a power detector. The power detector determines whether light is present. If light is present, the power detector determines whether the light has reached the expansion module through the patch cord between the IPLC base module and the IPLC expansion module.

Related Documentation

- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)

Understanding How to Configure the Integrated Photonic Line Card

This topic describes the basic configuration process for the IPLC modules and includes the following sections:

- [Understanding the Front Panel Connections on page 9](#)
- [Recommended Slot Placement on page 9](#)
- [Understanding How to Configure Wavelengths on the IPLC Ports on page 10](#)
- [Understanding How to Configure the Wavelength Operational Mode on page 10](#)

Understanding the Front Panel Connections

The IPLC base module and expansion module are slide-in cards that each occupy a single slot within the PTX3000 chassis. Unlike line cards, the IPLC does not connect into the high-speed data backplane of the chassis, but rather provides the following optical functions that you connect through the front panel:

- **Line IN** and **Line OUT** ports—An input and an output port to connect to the optical line system, such as the optical ILA, or to another IPLC module.
- **PT IN** and **PT OUT** ports—An input and an output port to connect to another IPLC base module. You can use these ports to connect two IPLC base modules together to form a two-degree node.
- **XPN IN** and **XPN OUT** ports—An input and an output port to connect to an IPLC expansion module.
- **ADD** and **DROP** ports—A total of 32 pairs of ports (32 **ADD** ports and 32 **DROP** ports) for 32 DWDM channels on the IPLC base module. The optional expansion module doubles the number of **ADD** and **DROP** ports to 64 ports, labeled 32 through 63 on the front panel.

The IPLC modules are designed to connect the **ADD** and **DROP** ports on the front panel to compatible DWDM PICs in the same chassis, or to PICs or MICs in a remote chassis. [PTX Series IPLC Compatibility](#) provides a complete list of the PICs and MICs that are compatible with the IPLC ports.

Recommended Slot Placement

To minimize slot requirements and maximize shelf capacity, each IPLC module requires only a single FPC or PIC slot. These slot requirements are especially important if you are configuring a two-degree node or increasing the channel capacity to 64 channels.



BEST PRACTICE: We recommend that you place the IPLC modules into the same FPC/PIC slot pair on the PTX3000 chassis.

Understanding How to Configure Wavelengths on the IPLC Ports

The WSS on the IPLC base module controls all port wavelengths, which you configure on a wavelength-by-wavelength basis. IPLC port mapping is fixed to a specific wavelength and frequency; each port accepts a single, preset wavelength depending on whether the port is located on the IPLC base module or expansion module. For a complete list of IPLC port mapping, see [wavelength \(IPLC\)](#).

Understanding How to Configure the Wavelength Operational Mode

The IPLC supports three possible modes of operation for IPLC wavelengths on the add and drop ports as follows:

- **blocked**—(Default) If there is no explicit configuration for the IPLC wavelength, the wavelength is in blocked mode.
- **switch**—Switches the specified IPLC wavelength to an optical interface on the same or different chassis, including a remote chassis.

To switch a wavelength to an optical interface on the same chassis, enter the following in the CLI:

```
user@host# set chassis fpc fpc-slot optical-options wavelength nm switch  
interface-name
```

To switch a wavelength to an optical interface on a remote chassis, enter the following in the CLI:

```
user@host# set chassis fpc fpc-slot optical-options wavelength nm switch remote
```

For complete details on switching a wavelength to an optical interface, see “[Configuring the Integrated Photonic Line Card to Switch Wavelengths to Local or Remote Optical Interfaces](#)” on page 29.

- **wss-express-in**—Bypass the specified wavelength.

For example, to bypass wavelength 1550.12 on the IPLC in slot 1:

```
user@host# set chassis fpc 1 optical-options wavelength 1550.12 wss-express-in
```



NOTE: Bypassing wavelengths is supported only on IPLC two-degree nodes running express traffic. For more information, see “[Configuring a Two-Degree Node for Express Traffic](#)” on page 21.

Related Documentation

- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)

CHAPTER 2

Understanding Optical Supervisory Channel Communication in the Amplifier Chain

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)

Understanding Optical Supervisory Channel Communication in the Amplifier Chain

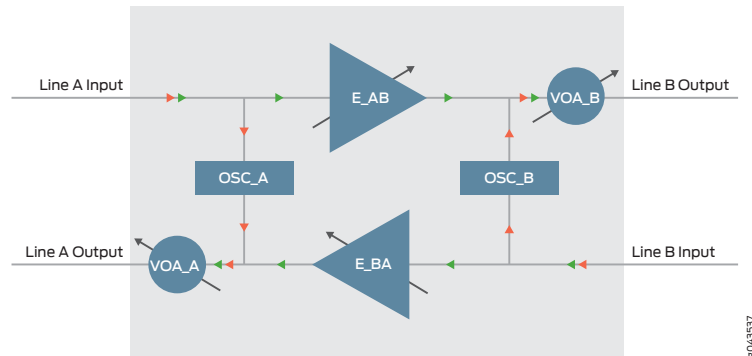
Starting with Junos OS release 17.1, you can control and manage optical inline amplifiers (ILA) over the optical supervisory channel (OSC) of the PTX3000 integrated photonic line system. This topic provides an overview of the OSC communication across the PTX3000 integrated photonic line system when you are using Juniper Networks optical inline amplifiers (ILA)s in the amplifier chain. It also describes the control and manage capabilities of the optical ILA through the Junos OS CLI. The following sections are included:

- [Understanding the Functional Components of the Optical Inline Amplifier on page 11](#)
- [Understanding How the Optical ILA is Managed and Controlled on page 12](#)

Understanding the Functional Components of the Optical Inline Amplifier

To understand OSC communications, it is helpful to understand the functional components of the optical ILA. Understanding these components also helps when you are configuring the optical ILA or interpreting status output through the Junos OS CLI.

The optical ILA is a bidirectional amplifier that provides optical gain for the dense wavelength division multiplexing (DWDM) signal traversing the amplifier in each direction. You can use the optical ILA in packet optical multispan linear networks, as well as multispan ring networks.

Figure 3: Functional Overview of Optical Inline Amplifier

As illustrated in [Figure 3 on page 12](#), the optical ILA is functionally two separate amplifiers; the E_AB amplifier provides optical gain for the DWDM signals traversing the unit east to west and the E_BA amplifier provides optical gain for the DWDM signals traversing the unit west to east.

There are two independent optical paths on the optical ILA:

- Line A Input to Line A Output
- Line B Input and Line B Output

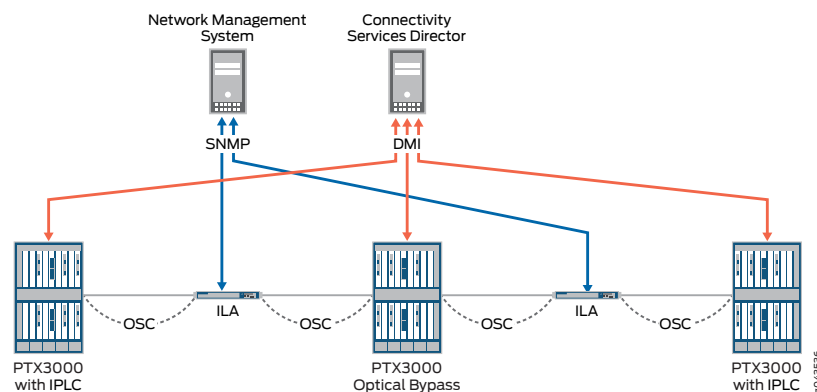
Channels, shown as green arrows in [Figure 3 on page 12](#), received at Line A Input are amplified by E_AB, a variable gain erbium-doped fiber amplifier (EDFA), attenuated by VOA_B, a variable optical amplifier (VOA), and transmitted out Line B Output. Channels received at Line B Input are amplified by a second variable gain EDFA (E_BA), attenuated by VOA_A, and transmitted out Line A Output.

Understanding How the Optical ILA is Managed and Controlled

For OSC communications, the optical ILA uses two OSC channels: OSC_A and OSC_B. The OSC channel (shown in red arrows in [Figure 3 on page 12](#), is bidirectional in a given direction; OSC_A uses Line A Input and Line A Output, whereas OSC_B uses Line B Input and Line B Output. When an OSC message is received from a downstream node on Line A Input, the amplifier responds to the message over Line A Output. For upstream OSC communications, Line B Input receives an OSC message and responds to it over Line B Output. OSC communications are sent over an inband optical channel. Nodes can be either an optical ILA or an IPLC module in the PTX3000 integrated photonic line system.

[Figure 4 on page 13](#) illustrates the management, control, and communication of the optical ILA in the amplifier chain. You can manage the optical ILA using an SNMP network management system (NMS), Juniper Networks Connectivity Services Director over the DMI interface, the user interface of the optical ILA, or through the Junos OS CLI.

Figure 4: Management, Control and Communication of the Optical Inline Amplifier Chain



For OSC communications across the amplifier chain, the PTX3000 integrated photonic line system uses an *anchor* IPLC module, which communicates directly with each optical ILA. Because IPLC modules are standalone appliances in the chassis, they have no host path connectivity to the routing engine or switch fabric and thus have no connectivity to other FPC interfaces, as such, all OSC communications go through the anchor IPLC. You can designate only one IPLC in the line system as the anchor of the amplifier chain.

For OSC communications and identification purposes, you assign each IPLC module and each optical ILA a unique, private IP address. OSC communications use an internal private LAN and IPLC modules and optical ILAs must be on the same, private IP subnet. OSC management IP addresses are not advertised by the PTX3000 Series router and are not auto-discoverable. You can further identify optical ILAs by specifying a unique identification number. IPLC modules are also identified by their MAC address.



NOTE: You can configure only one IPLC module as the anchor IPLC of the PTX3000 integrated photonic line system and you must specify that the remote PTX3000 router as not an anchor IPLC.



NOTE: For OSC communications, all optical ILAs and IPLC modules must be on the same, private IP subnet as the anchor IPLC.

SNMP Management Overview and Configuration

If you are using an SNMP network management system (NMS) to manage the optical ILAs in the amplifier chain, there is no direct communication between the optical ILAs in the amplifier chain and the SNMP NMS. All communication to and from the SNMP NMS and optical ILAs in the chain is handled by the anchor IPLC module. The IPLC modules relays the command to the specified optical ILA. Each command from the NMS must include a community string indicating the unique identification number of the optical ILA in the amplifier chain. SNMP traps are propagated from each optical ILA to the anchor IPLC and out to the SNMP NMS.

The following various get/set commands are supported from the SNMP NMS:

- Commands: Save a configuration, restore a configuration, upgrade firmware
- Set the optical ILA: power threshold crossing alerts (TCA)s for the optical ILA performance monitors
- Get the specified optical ILA: part number, serial number, uptime, temperature, fan speed, firmware upgrade status, SNMP user information, EDFA (module type, part number, working status, gain, temperature), optical power, VOA attenuation, and OSC (index).
- View active alarms and historical alarms

Optical ILA Control and Management Features Available in the Junos OS CLI

The OSC enables you to control and manage certain capabilities on the optical ILA through the Junos OS CLI. [Table 3 on page 14](#) describes the Junos OS CLI capabilities for the optical ILA.



NOTE: To configure all other optical ILA parameters not supported in the Junos OS CLI, see [PTX3000 Packet Transport Router with Integrated Photonic Line Card](#).

Table 3: Summary of Optical ILA Configuration Capabilities in Junos OS CLI

Optical ILA Configuration Capability in Junos OS CLI	What it is and Where to Find it in the Guide
Unique identification number	Configure a unique ID for the optical ILA for OSC communication, see “Configuring the Optical ILA Identification Number” on page 37
IP address	Configure the optical ILA IP address for OSC communication, see “Configuring the IP Address of an Optical Inline Amplifier” on page 39
Security, software upgrades, and resets	Configure user authentication, perform software upgrades and soft and hard reset, see “Configuring Optical ILA Authentication Through the Junos OS CLI” on page 40 and “Upgrading the Optical Inline Amplifier from the Junos OS CLI” on page 41
Status	View statistics for the following components on the optical ILA: <ul style="list-style-type: none"> • View manufacturing details, power and temperature information, fan information, and so on: show chassis fpc optical-properties amplifier-chain ila summary • EDFA (E_AB or E_BA), see show chassis fpc optical-properties amplifier-chain ila edfa • OSC (OSC_A and OSC_B), see show chassis fpc optical-properties amplifier-chain ila osc • VOA (VOA_A and VOA_B), see show chassis fpc optical-properties amplifier-chain ila voa • Alarms, see show chassis fpc optical-properties amplifier-chain ila alarms

Table 3: Summary of Optical ILA Configuration Capabilities in Junos OS CLI (continued)

Optical ILA Configuration Capability in Junos OS CLI	What it is and Where to Find it in the Guide
Performance monitors	<p>Configure and view threshold crossing alerts (TCAs) for the optical ILA performance monitors. Performance monitors monitor the health of the optical ILA at various points on the optical ILA hardware based on threshold levels. TCAs can give the management system an early indication as to the state of the associated entity when it crosses a certain threshold. You can use the CLI to configure and manage these items on the optical ILA performance monitors:</p> <ul style="list-style-type: none"> • Enable and configure TCAs on an optical ILA, see “Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors” on page 51. • View statistics for the optical ILA performance monitors including: <ul style="list-style-type: none"> • <code>show chassis fpc optical-properties amplifier-chain ila pm-current</code> • <code>show chassis fpc optical-properties amplifier-chain ila pm-currentday</code> • <code>show chassis fpc optical-properties amplifier-chain ila pm-previousday</code>

Understanding How to Configure the OSC Using the Junos OS CLI

To configure the OSC in the PTX3000 integrated photonic line system and amplifier chain:

1. Configure one of the IPLC modules in the line system as the anchor IPLC, see [“Configuring the Anchor IPLC of the Amplifier Chain”](#) on page 34.
2. Configure a unique IP address on the anchor IPLC module, see [“Configuring the IP Address of the Anchor IPLC”](#) on page 35.
3. Configure the MAC address of the anchor IPLC, see [“Configuring the MAC Address of the Anchor IPLC”](#) on page 36.
4. Configure a unique identification number for each optical ILA in the amplifier chain, see [“Configuring the Optical ILA Identification Number”](#) on page 37.
5. Configure a unique IP address for each optical ILA in the amplifier chain, see [“Configuring the IP Address of an Optical Inline Amplifier”](#) on page 39.

For the complete procedure, see [“Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System”](#) on page 33.

Related Documentation

- [Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors](#) on page 51
- [Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors](#) on page 45
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System](#) on page 33
- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier](#) on page 73

PART 2

Integrated Photonic Line Card and Optical Inline Amplifier Configuration

- [Configuring Integrated Photonic Line Card Nodes on page 19](#)
- [Configuring and Managing Express Traffic on Two-Degree IPLC Nodes on page 25](#)
- [Switching Wavelengths on the IPLC to Optical Interfaces in a Local or Remote Chassis on page 27](#)
- [Configuring the Optical Supervisory Channel in the Amplifier Chain When Using the Optical Inline Amplifier on page 33](#)
- [Configuring Performance Monitor Thresholds on page 45](#)

CHAPTER 3

Configuring Integrated Photonic Line Card Nodes

- [Increasing the Channel Capacity of the Node on page 19](#)
- [Configuring a Two-Degree Node for Express Traffic on page 21](#)
- [Configuring Wavelengths on the Integrated Photonic Line Card Add and Drop Ports on page 22](#)

Increasing the Channel Capacity of the Node

The IPLC base module can accept and multiplex (add) and demultiplex (drop) up to 32 individual wavelengths into a single fiber pair. If you require more than 32 channels, you can increase the IPLC node capacity to 64 channels by connecting the IPLC expansion module to the IPLC base module. This procedure describes how to connect these two modules and configure the IPLC node to support 64 channels.

Before you begin, you must physically connect the IPLC base module and expansion module together as follows:

- Install the IPLC base module and the IPLC expansion module into the PTX3000 chassis.



BEST PRACTICE: We recommend that you place the IPLC modules into the same FPC/PIC slot pair in the PTX3000 chassis.

- Connect the two IPLC modules together as follows:
 - Connect the **XPN IN** port of the IPLC base module to the **XPN OUT** of the IPLC expansion module.
 - Connect the **XPN OUT** port of the IPLC base module to the **XPN IN** of the IPLC expansion module.



BEST PRACTICE: Always refer to the PTX3000 Packet Transport Router Hardware Guide when connecting or disconnecting cables on the IPLC modules. See [PTX3000 Packet Transport Router Hardware Guide](#).

To upgrade an IPLC configuration to 64 channels, create a logical association between the IPLC base module and the IPLC expansion module:

1. From configuration mode, specify the slot location of the IPLC base module and access the IPLC configuration hierarchy.

```
[edit]
user@host# edit chassis fpc slot optical-options
```

For example, if the IPLC base module resides in slot 1:

```
[edit]
user@host# edit chassis fpc 1 optical-options
```

2. Specify the slot location of the IPLC expansion module resides.

```
[edit chassis edit chassis fpc 1 optical-options]
user@host# set expansion-card fpc fpc-slot
```

For example, if the IPLC expansion module resides in slot 2:

```
[edit chassis edit chassis fpc 1 optical-options]
user@host# set expansion-card fpc 2
```

3. Verify the logical connection between the IPLC base module and expansion module.

```
user@host> show chassis fpc 1
```

```
optical-options {
  expansion-card {
    fpc {
      2;
    }
  }
}
```

4. If the configuration is correct, save it.

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

5. Configure the wavelengths on the IPLC ports, see either [“Switching a Wavelength to an Optical Interface on a Remote Chassis” on page 28](#), [“Switching a Wavelength to an Optical Interface in the Same Chassis” on page 27](#), or [“Bypassing a Wavelength” on page 25](#).

Related Documentation

- [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)
- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

Configuring a Two-Degree Node for Express Traffic

For metro linear and metro ring topologies that require a two-degree node, you can connect two IPLC base modules together to form a two-degree IPLC node. This enables you to run express traffic in two directions. This topic describes how to setup and configure an IPLC two-degree node.

Before you begin, complete the following hardware tasks:

- Install and connect the two IPLC base modules together through the **PT IN** and **PT OUT** ports. These two IPLC modules form the two-degree IPLC node.



BEST PRACTICE: We recommend that you place the IPLC modules into the same FPC/PIC slot pair on the PTX3000 chassis.

- Connect the **Line IN** and **Line OUT** ports on the two IPLC modules to the fiber span in each direction.



BEST PRACTICE: Anytime you need to disconnect or connect the fiber span from the **Line IN** and **Line OUT** ports on the IPLC module, we recommend you disable the optical supervisory channel and the erbium-doped fiber amplifiers on the IPLC.

Always refer to the PTX3000 Packet Transport Router Hardware Guide when connecting or disconnecting cables on the IPLC modules. See [PTX3000 Packet Transport Router Hardware Guide](#).

To configure a two-degree IPLC node:

1. On the first IPLC base module, specify that the traffic on the **PT IN** and **PT OUT** ports is express traffic.

[edit]

```
user@host# set chassis fpc slot optical-options express-in fpc slot
```

For example, if the first IPLC base module resides in slot 1 and the second IPLC base module resides in slot 2, enter the following:

[edit]

```
user@host# set chassis fpc 1 optical-options express-in fpc 2
```

2. On the second IPLC base module, specify that the traffic on the **PT IN** and **PT OUT** ports is express traffic.

[edit]

```
user@host# set chassis fpc slot optical-options express-in fpc slot
```

For example, if the second IPLC base module resides in slot 2 and the first IPLC base module resides in slot 1:

```
[edit]
user@host# set chassis fpc 2 optical-options express-in fpc 1
```



NOTE: You can have only one association between two IPLC base modules running in [express-in](#) mode.

3. Verify that the two IPLC base modules are now associated together. For example:

```
[edit chassis fpc 1]
user@host# show
```

```
optical-options {
  express-in {
    fpc {
      2;
    }
  }
}
```

```
[edit chassis fpc 2]
user@host# show
```

```
optical-options {
  express-in {
    fpc {
      1;
    }
  }
}
```

4. If the configuration is correct, save it.

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

5. Configure the wavelengths on the IPLC ports, see [“Bypassing a Wavelength” on page 25](#).

Related Documentation

- [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
- [Example: Integrated Photonic Line Card in a Metro Linear Packet Optical Configuration on page 59](#)

Configuring Wavelengths on the Integrated Photonic Line Card Add and Drop Ports

To configure the IPLC to add or drop a specific wavelength:

1. Specify the slot location of the IPLC module and access the IPLC configuration hierarchy.

```
[edit]
user@host# edit chassis fpc slot optical-options
```

For example, if the IPLC module resides in slot 1, enter the following:

```
[edit]
user@host# edit chassis fpc 1 optical-options
```

- Specify the wavelength you want to support.

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength nm
```

For example, to support wavelength 1550.12, enter:

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1550.12
```



NOTE: You can only specify the wavelengths listed here [wavelength](#). If you enter an unsupported value you are prompted with an error message.

- Verify that the configuration. For example:

```
[edit chassis fpc 1 optical-options]
user@host# show
```

```
wavelength 1550.12 {
}
```

- If the configuration is correct, save it.

```
[edit chassis fpc 1 optical-options]
user@host# commit
```

- Complete your configuration by configuring the port to switch the wavelengths to an optical interface on the local or remote chassis. See, [“Configuring the Integrated Photonic Line Card to Switch Wavelengths to Local or Remote Optical Interfaces”](#) on page 29.

Related Documentation

- [Configuring the Integrated Photonic Line Card to Switch Wavelengths to Local or Remote Optical Interfaces on page 29](#)
- [Bypassing a Wavelength on page 25](#)
- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

Configuring and Managing Express Traffic on Two-Degree IPLC Nodes

- [Bypassing a Wavelength on page 25](#)

Bypassing a Wavelength

The IPLC enables you to optically bypass a wavelength by entering a few simple configuration statements. Bypassing a wavelength does not terminate the wavelength at the local IPLC but instead passes the wavelength on to the next downstream IPLC node. Optical bypasses are software configurable and controlled through the IPLC's wavelength selective switch (WSS) so there is no need for manually swapping cables or other manual intervention. The IPLC's software optical bypass enables wavelengths that do not terminate on the given node to be passed-through to the remote IPLC node without optical-electrical-optical (OEO) conversion.

You can use this procedure to manage express traffic at intermediate, two-degree IPLC nodes. This topic describes how to bypass a wavelength on the IPLC module.



NOTE: Bypassing wavelengths is supported only on IPLC two-degree nodes running express traffic. For more information, see [“Configuring a Two-Degree Node for Express Traffic” on page 21](#).

Before you begin, configure the IPLC two-degree intermediate node for express traffic. See [“Configuring a Two-Degree Node for Express Traffic” on page 21](#).

To configure the IPLC to bypass a wavelength:

1. Access the IPLC configuration hierarchy and specify the wavelength you want to bypass.

For example, to bypass wavelength 1532.29 on the IPLC in slot 1:

[edit]

```
user@host# set chassis fpc 1 optical-options wavelength 1532.29 wss-express-in
```

2. Verify that the configuration is correct. For example:

```
[edit chassis fpc 1 optical-options]
```

```
user@host# show
```

```
wavelength 1532.29 {  
    wss-express-in;  
}
```

3. If the configuration is correct, save it.

```
[edit chassis fpc 1 optical-options]  
user@host# commit
```

**Related
Documentation**

- [Configuring Wavelengths on the Integrated Photonic Line Card Add and Drop Ports on page 22](#)
- [Configuring the Integrated Photonic Line Card to Switch Wavelengths to Local or Remote Optical Interfaces on page 29](#)
- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

CHAPTER 5

Switching Wavelengths on the IPLC to Optical Interfaces in a Local or Remote Chassis

- [Switching a Wavelength to an Optical Interface in the Same Chassis on page 27](#)
- [Switching a Wavelength to an Optical Interface on a Remote Chassis on page 28](#)
- [Configuring the Integrated Photonic Line Card to Switch Wavelengths to Local or Remote Optical Interfaces on page 29](#)

Switching a Wavelength to an Optical Interface in the Same Chassis

This topic describes how to configure the IPLC to switch the wavelengths on the **ADD** and **DROP** ports to compatible optical interfaces on the local chassis.



NOTE: For a list of compatible optical interfaces that are compatible with the IPLC ports, see [PTX Series IPLC Compatibility](#).

Before you begin, complete the following tasks:

- Install the optical interface cards and configure the wavelength on the local optical interface so that it is compatible with the wavelength on the IPLC. See [Configuring the 10-Gigabit or 100-Gigabit Ethernet DWDM Interface Wavelength](#).
- Install the IPLC module and connect the **ADD** and **DROP** ports to the respective local optical interfaces.

To configure the IPLC to add or drop a wavelength to an optical interface on the local chassis:

1. Specify the slot of the local IPLC module and access the IPLC configuration hierarchy.

```
[edit]
user@host# edit chassis fpc slot optical-options
```

For example, if the IPLC base module resides in slot 1:

```
[edit]
user@host# edit chassis fpc 1 optical-options
```

2. Specify the wavelength number and the name of the physical optical interface to which you want to switch the wavelength.

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength nm switch interface-name
```

For example, if you want to switch wavelength 1550.12 running on the local IPLC module in slot 1 to the optical interface in slot 3, PIC 0, port 0:

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1550.12 switch et-3/0/0
```

This step creates the association between the wavelength on the IPLC and the local optical interface.

3. Verify that the configuration is correct. For example:

```
[edit chassis fpc 1 optical-options]
user@host# show

wavelength 1550.12 {
  switch {
    et-3/0/0;
  }
}
```

4. If the configuration is correct, save it.

```
[edit chassis fpc 1 optical-options]
user@host# commit
```

Related Documentation

- [Switching a Wavelength to an Optical Interface on a Remote Chassis on page 28](#)
- [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

Switching a Wavelength to an Optical Interface on a Remote Chassis

This topic describes how to configure the IPLC module to switch a wavelength on the **ADD** and **DROP** ports to a compatible optical interface on a remote chassis.



NOTE: For a list of compatible optical interfaces that are compatible with the IPLC ports, see [PTX Series IPLC Compatibility](#).

Before you begin, complete the following tasks:

- Install the optical interfaces and configure the wavelength number on the interface so that it is compatible with the wavelength number on the IPLC. See [Configuring the 10-Gigabit or 100-Gigabit Ethernet DWDM Interface Wavelength](#).
- Install the IPLC module at the remote location and connect the **ADD** and **DROP** ports to the respective remote optical interfaces.

To configure the IPLC to switch a wavelength to an optical interface on a remote chassis:

1. Specify the slot of the local IPLC module and access the IPLC configuration hierarchy.

```
[edit]
user@host# edit chassis fpc slot optical-options
```

For example, if the IPLC module resides in slot 1:

```
[edit]
user@host# edit chassis fpc 1 optical-options
```

2. Specify the wavelength to switch to the remote optical interface.

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength nm switch remote
```

For example, if you want to add or drop wavelength 1550.12 to a remote optical interface:

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1550.12 switch remote
```

3. Verify that the configuration is correct. For example:

```
[edit chassis fpc 1 optical-options]
user@host# show
```

```
wavelength 1550.12 {
  switch {
    remote;
  }
}
```

4. If the configuration is correct, save it.

```
[edit chassis fpc 1 optical-options]
user@host# commit
```

Related Documentation

- [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)
- [Bypassing a Wavelength on page 25](#)
- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

Configuring the Integrated Photonic Line Card to Switch Wavelengths to Local or Remote Optical Interfaces

The IPLC is designed to connect the **ADD** and **DROP** ports on the front panel to compatible optical PICs or MICs on the local or remote chassis. Wavelengths configured on the local IPLC **ADD** ports are multiplexed and sent over the **Line OUT** port of the IPLC base module. The remote IPLC base module receives the signal on the **Line IN** port and demultiplexes the wavelengths to the **DROP** ports on the front panel of the IPLC according to the

configuration of the remote IPLC. After you have made the physical connections between the IPLC ports and the local and remote optical interfaces, you need to configure the IPLC to switch the wavelengths the optical interfaces. This topic describes how to configure the IPLC to switch the wavelengths on the **ADD** and **DROP** ports to compatible optical interfaces on the local chassis or a remote chassis.



NOTE: For a list of compatible optical interfaces that are compatible with the IPLC ports, see [PTX Series IPLC Compatibility](#).

This topic includes the following sections:

- [Switching a Wavelength to an Optical Interface in the Same Chassis on page 30](#)
- [Switching a Wavelength to an Optical Interface on a Remote Chassis on page 31](#)

Switching a Wavelength to an Optical Interface in the Same Chassis

This topic describes how to configure the IPLC to switch the wavelengths on the **ADD** and **DROP** ports to compatible optical interfaces on the local chassis.



NOTE: For a list of compatible optical interfaces that are compatible with the IPLC ports, see [PTX Series IPLC Compatibility](#).

Before you begin, complete the following tasks:

- Install the optical interface cards and configure the wavelength on the local optical interface so that it is compatible with the wavelength on the IPLC. See [Configuring the 10-Gigabit or 100-Gigabit Ethernet DWDM Interface Wavelength](#).
- Install the IPLC module and connect the **ADD** and **DROP** ports to the respective local optical interfaces.

To configure the IPLC to add or drop a wavelength to an optical interface on the local chassis:

1. Specify the slot of the local IPLC module and access the IPLC configuration hierarchy.

[edit]

user@host# **edit chassis fpc slot optical-options**

For example, if the IPLC base module resides in slot 1:

[edit]

user@host# **edit chassis fpc 1 optical-options**

2. Specify the wavelength number and the name of the physical optical interface to which you want to switch the wavelength.

[edit chassis fpc 1 optical-options]

user@host# **set wavelength nm switch interface-name**

For example, if you want to switch wavelength 1550.12 running on the local IPLC module in slot 1 to the optical interface in slot 3, PIC 0, port 0:

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1550.12 switch et-3/0/0
```

This step creates the association between the wavelength on the IPLC and the local optical interface.

3. Verify that the configuration is correct. For example:

```
[edit chassis fpc 1 optical-options]
user@host# show
```

```
wavelength 1550.12 {
  switch {
    et-3/0/0;
  }
}
```

4. If the configuration is correct, save it.

```
[edit chassis fpc 1 optical-options]
user@host# commit
```

- See Also**
- [Switching a Wavelength to an Optical Interface on a Remote Chassis on page 28](#)
 - [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)
 - [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

Switching a Wavelength to an Optical Interface on a Remote Chassis

This topic describes how to configure the IPLC module to switch a wavelength on the **ADD** and **DROP** ports to a compatible optical interface on a remote chassis.



NOTE: For a list of compatible optical interfaces that are compatible with the IPLC ports, see [PTX Series IPLC Compatibility](#).

Before you begin, complete the following tasks:

- Install the optical interfaces and configure the wavelength number on the interface so that it is compatible with the wavelength number on the IPLC. See [Configuring the 10-Gigabit or 100-Gigabit Ethernet DWDM Interface Wavelength](#).
- Install the IPLC module at the remote location and connect the **ADD** and **DROP** ports to the respective remote optical interfaces.

To configure the IPLC to switch a wavelength to an optical interface on a remote chassis:

1. Specify the slot of the local IPLC module and access the IPLC configuration hierarchy.
[edit]

```
user@host# edit chassis fpc slot optical-options
```

For example, if the IPLC module resides in slot 1:

```
[edit]
user@host# edit chassis fpc 1 optical-options
```

2. Specify the wavelength to switch to the remote optical interface.

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength nm switch remote
```

For example, if you want to add or drop wavelength 1550.12 to a remote optical interface:

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1550.12 switch remote
```

3. Verify that the configuration is correct. For example:

```
[edit chassis fpc 1 optical-options]
user@host# show

wavelength 1550.12 {
    switch {
        remote;
    }
}
```

4. If the configuration is correct, save it.

```
[edit chassis fpc 1 optical-options]
user@host# commit
```

- See Also**
- [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)
 - [Bypassing a Wavelength on page 25](#)
 - [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
 - [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

- Related Documentation**
- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
 - [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
 - [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)
 - [Bypassing a Wavelength on page 25](#)

CHAPTER 6

Configuring the Optical Supervisory Channel in the Amplifier Chain When Using the Optical Inline Amplifier

- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Configuring the Anchor IPLC of the Amplifier Chain on page 34](#)
- [Configuring the IP Address of the Anchor IPLC on page 35](#)
- [Configuring the MAC Address of the Anchor IPLC on page 36](#)
- [Configuring the Optical ILA Identification Number on page 37](#)
- [Configuring the IP Address of an Optical Inline Amplifier on page 39](#)
- [Configuring Optical ILA Authentication Through the Junos OS CLI on page 40](#)
- [Upgrading the Optical Inline Amplifier from the Junos OS CLI on page 41](#)

Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System

The optical supervisory channel (OSC) of the PTX3000 integrated photonic line system automates control of the optical layer by providing control and management of the remote IPLC. If you are using Juniper Networks optical inline amplifiers (ILA)s in the amplifier chain, this automated control is extend to the entire amplifier chain. This procedure describes how to configure the OSC on both the PTX3000 integrated photonic line system and the optical ILA.

To configure the OSC in the PTX3000 integrated photonic line system and amplifier chain:

1. Configure one of the IPLC modules in the line system as the anchor IPLC, see [“Configuring the Anchor IPLC of the Amplifier Chain” on page 34](#).
2. Configure a unique IP address on the anchor IPLC module, see [“Configuring the IP Address of the Anchor IPLC” on page 35](#).

3. Configure the MAC address of the anchor IPLC, see [“Configuring the MAC Address of the Anchor IPLC” on page 36](#).
4. Configure a unique identification number for each optical ILA in the amplifier chain, see [“Configuring the Optical ILA Identification Number” on page 37](#).
5. Configure a unique IP address for each optical ILA in the amplifier chain, see [“Configuring the IP Address of an Optical Inline Amplifier” on page 39](#).

Related Documentation

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73](#)

Configuring the Anchor IPLC of the Amplifier Chain

To enable optical supervisory channel (OSC) communications and manage optical inline amplifiers (ILA)s in the amplifier chain, you need to configure one of the IPLCs in the PTX3000 integrated photonic line system as the anchor of the amplifier chain. All communications to and from any optical ILA in the amplifier chain is handled by the anchor IPLC. Use this procedure when you are using the PTX3000 integrated photonic line system with the optical ILA to enable OSC communication across the optical network or to enable management of certain optical ILA parameters through the Junos OS CLI.



NOTE: There can be only one anchor IPLC in the amplifier chain and all IP addresses within the chain must be on the same private subnet.

Before you begin, make sure you complete the following tasks:

1. Configure the IP address of the anchor IPLC. See, [“Configuring the IP Address of the Anchor IPLC” on page 35](#)
2. Configure the MAC address of the anchor IPLC. See, [“Configuring the MAC Address of the Anchor IPLC” on page 36](#)

To configure an IPLC as the anchor of the amplifier chain:

1. Specify the slot in which the IPLC resides and access the IPLC amplifier chain configuration hierarchy.

[edit]

```
user@host# edit chassis fpc fpc-slot optical-options amplifier-chain
```

For example:

[edit]

```
user@host# edit chassis fpc 3 optical-options amplifier-chain
```

2. Specify the MAC address for the IPLC OSC management interface.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# set anchor-iplc
```

3. Verify the configuration.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# show chassis fpc optical-properties amplifier-chain ila summary
```

4. Save the configuration.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# commit
```

Related Documentation

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73](#)
- [show chassis fpc optical-properties amplifier-chain ila osc on page 468](#)

Configuring the IP Address of the Anchor IPLC

To enable optical supervisory channel (OSC) communications and manage optical inline amplifiers (ILA)s in the amplifier chain, you need to configure the IP address of both the anchor IPLC and the IPLC in the remote PTX3000 chassis. Use this procedure when you are using the PTX3000 integrated photonic line system with the optical ILA to enable OSC communication across the amplifier chain or to enable management of certain optical ILA parameters through the Junos OS CLI.



NOTE: All IP addresses associated with the OSC and amplifier chain must be on the same, private subnet.



NOTE: You must also configure the IP address on the IPLC module in the remote PTX3000 integrated photonic line system.

To configure the IP address of the IPLC OSC management interface:

1. Specify the slot in which the IPLC resides and access the IPLC amplifier chain configuration hierarchy.

```
[edit]
user@host# edit chassis fpc fpc-slot optical-options amplifier-chain
```

For example:

```
[edit]
user@host# edit chassis fpc 3 optical-options amplifier-chain
```

2. Specify the IP address for the IPLC OSC management interface.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# set osc-ip ip-address/CIDR
```

3. Verify the configuration.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# show chassis fpc optical-properties amplifier-chain ila osc
```

4. Save the configuration.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# commit
```

Related Documentation

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73](#)
- [show chassis fpc optical-properties amplifier-chain ila osc on page 468](#)

Configuring the MAC Address of the Anchor IPLC

To enable optical supervisory channel (OSC) communications and manage optical inline amplifiers (ILA)s in the amplifier chain, you need to configure the MAC address of both the anchor IPLC and the IPLC in the remote PTX3000 chassis. Use this procedure when you are using the PTX3000 integrated photonic line system with the optical ILA to enable OSC communication across the entire optical amplifier chain or to enable management of certain optical ILA parameters through the Junos OS CLI.



TIP: Be sure to perform this procedure on both the anchor IPLC and the remote IPLC.

To configure the MAC address of the IPLC OSC management interface:

1. Specify the slot in which the IPLC resides and access the IPLC amplifier chain configuration hierarchy.

```
[edit]
user@host# edit chassis fpc fpc-slot optical-options amplifier-chain
```

For example:

```
[edit]
user@host# edit chassis fpc 3 optical-options amplifier-chain
```

2. Specify the MAC address for the IPLC OSC management interface.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# set osc-mac osc-mac
```

3. Verify the configuration.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# show chassis fpc optical-properties amplifier-chain ila osc
```

4. Save the configuration.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# commit
```

Related Documentation

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73](#)
- [show chassis fpc optical-properties amplifier-chain ila osc on page 468](#)

Configuring the Optical ILA Identification Number

To enable optical supervisory channel (OSC) communications and manage optical inline amplifiers (ILA)s in the amplifier chain through the Junos CLI, you need to configure each optical ILA with a unique number. This number identifies the optical ILA within the PTX3000 integrated photonic line system and Junos CLI. Use this procedure when you are using the PTX3000 integrated photonic line system with the optical ILA to enable OSC communication across the optical network or to enable management of certain optical ILA parameters through the Junos OS CLI.



TIP: Remember that all communication to and from an optical ILA is through the anchor IPLC, so when you configure any options on an optical ILA, you must specify the FPC number in which the anchor IPLC resides.



NOTE: To configure any other optical ILA options, use the login procedures describe in the [Optical Inline Amplifier Hardware Guide](#).

Before you begin, make sure you complete the following tasks:

1. Configure the IPLC anchor for the amplifier chain, see [“Configuring the Anchor IPLC of the Amplifier Chain” on page 34](#).
2. Configure the IP address of the anchor IPLC. See, [“Configuring the IP Address of the Anchor IPLC” on page 35](#).

3. Configure the MAC address of the anchor IPLC. See, [“Configuring the MAC Address of the Anchor IPLC” on page 36](#)
4. Configure the IP address of the optical ILA. See, [“Configuring the IP Address of an Optical Inline Amplifier” on page 39](#)

To configure the identification number for the optical ILA:

1. Specify the slot in which the IPLC resides and access the IPLC amplifier chain configuration hierarchy.

[edit]

user@host# edit chassis fpc *fpc-number* optical-options amplifier-chain ila ila-number

2. Specify the identification number for the optical ILA

**Related
Documentation**

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73](#)

Configuring the IP Address of an Optical Inline Amplifier

To enable optical supervisory channel (OSC) communications and manage optical inline amplifiers (ILA)s in the amplifier chain through the Junos CLI, you need to configure each optical ILA with a unique IP address. This address is used for OSC communications to and from the anchor IPLC, as well as for configuring certain optical ILA parameters through the Junos OS CLI. Use this procedure when you are using the PTX3000 integrated photonic line system with the optical ILA to enable OSC communication across the optical network or to enable management of certain optical ILA parameters through the Junos OS CLI.



TIP: Remember that all communication to and from an optical ILA is through the anchor IPLC, so when you configure any options on an optical ILA, you must specify the FPC number in which the anchor IPLC resides.



NOTE: To configure any other optical ILA options, use the login procedures describe in the [Optical Inline Amplifier Hardware Guide](#).

Before you begin, make sure you complete the following tasks:

1. Configure the IP address of the anchor IPLC. See, “[Configuring the IP Address of the Anchor IPLC](#)” on page 35
2. Configure the MAC address of the anchor IPLC. See, “[Configuring the MAC Address of the Anchor IPLC](#)” on page 36
3. Configure the IPLC as the anchor in the amplifier chain. See, “[Configuring the Anchor IPLC of the Amplifier Chain](#)” on page 34
4. Configure a unique identification number for the optical ILA. See “[Configuring the Optical ILA Identification Number](#)” on page 37

To configure the IP address of the optical ILA:

1. Specify the slot in which the IPLC resides and access the IPLC amplifier chain configuration hierarchy.

[edit]

```
user@host# edit chassis fpc fpc-slot optical-options amplifier-chain
```

For example:

[edit]

```
user@host# edit chassis fpc 3 optical-options amplifier-chain
```

2. Specify the IP address for the optical ILA interface.

[edit chassis fpc 3 optical-options amplifier-chain]

```
user@host# set ila 1 ila-options ila-ipv4-address 10.0.0.11/24
```

3. Verify the configuration.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# show chassis fpc optical-properties amplifier-chain ila summary
```

4. Save the configuration.

```
[edit chassis fpc 3 optical-options amplifier-chain]
user@host# commit
```

Related Documentation

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73](#)

Configuring Optical ILA Authentication Through the Junos OS CLI

Starting with Junos OS 17.1, you can configure authentication on optical ILAs in the amplifier chain through the Junos OS CLI. This topic describes how to configure user authentication on optical ILAs in the amplifier chain of the PTX3000 integrated photonic line system.

Before you begin this task, ensure that:

- The PTX3000 integrated photonic line system is up and running and can pass optical wavelengths end to end.
- The OSC is up and running across the amplifier chain of the PTX3000 integrated photonic line system. This process includes specifying a unique identification number for each optical ILA in the chain.

To configure authentication on an optical ILA:

1. Access the amplifier chain configuration hierarchy and set the username of the optical ILA,

```
[edit]
user@host# set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options ila-user admin
```

2. Specify the password for the optical ILA.

```
[edit]
user@host# set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options ila-password $ABC123
```

3. Commit your configuration.

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

- Related Documentation**
- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
 - [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
 - [Configuring the IP Address of an Optical Inline Amplifier on page 39](#)
 - [Upgrading the Optical Inline Amplifier from the Junos OS CLI on page 41](#)

Upgrading the Optical Inline Amplifier from the Junos OS CLI

Starting with Junos OS Release 17.1R1, you can upgrade Juniper Networks optical inline amplifiers (ILA)s using the Junos OS CLI. This topic describes how to upgrade optical ILAs in the amplifier chain of the PTX3000 integrated photonic line system.

Before you begin:

- Make sure the PTX3000 integrated photonic line system is up and operational and passing traffic.
- Make sure the optical supervisory channel is up and operational on all optical ILAs in the amplifier chain, see [“Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System” on page 33](#).
- Make sure a user and password is configured on each optical ILA in the amplifier chain, see, [“Configuring Optical ILA Authentication Through the Junos OS CLI” on page 40](#).



NOTE: You must perform this upgrade on all optical ILAs in the amplifier chain and all units must be running the same software release.

To upgrade the software on the optical ILA from the Junos OS CLI:

1. Download the correct optical ILA software package. Optical ILA software images are released separately and are not part of Junos OS releases. The optical ILA software image filename is: *IlaFirmwareBundle*. Before entering CLI mode on the router, copy the optical ILA software image to the **/var/tmp/** directory on the PTX3000 master routing engine.

2. Verify that the optical ILA software image is now located in the **/var/tmp/** directory of the PTX3000.

```
user@router% ls -ltr /var/tmp/IlaFirmwareBundle
```

```
-rw----- 1 field 11455488 Nov 21 14:26 /var/tmp/IlaFirmwareBundle
user@router%
```

3. Enter CLI mode and from the **[edit]** configuration hierarchy, run the upgrade command. In the following example, the IPLC module resides in FPC slot 5 and the optical ILA being upgraded is *ila-2*.

```

user@router% cli
[edit]
user@router# run request chassis fpc optical-module amplifier-chain ila
firmware-upgrade fpc-slot 5 ila-number 2

```

Upon completion, the following message displays on the Junos OS CLI:

Firmware upgrade command was successfully issued to the requested ILA

4. Verify that the upgrade process is complete on the optical ILA by issuing the following command:

```

user@router# run show chassis fpc optical-properties amplifier-chain ila summary
fpc-slot 5 ila-number 2

```

```

ILA Number                2
ILA Name                   ILA-2
ILA Position               3
OSC IP Address             10.0.0.13/255.255.255.0
Manufacture Name           oplk
Manufacture Date           2016-04-07
Part Number                EDFA128ILAJUP01
Serial Num                 3D2L6140005
Calibration Date           2016-04-07
Firmware Version           2.10.0001
Hardware Version           2.01
FPGA Version               5.0
X86CPLD Version            28
Board CPLD Version         41
System Date                2015-09-22
System Time                18:43:03 GMT+0000
Up Time                    2363
IP v4 Address/Mask/Gateway 192.168.7.136/255.255.0.0/ 192.168.7.254
OSC MAC Address            aa:bb:cc:dd:ee:02
Board Temperature (C)      33.6
Temperature Threshold High/Low (C) 55.0/-5.0
Power and Fan Plug Status (Fan 0/1/2, Power 0/1) Fan0: 1 Fan1: 1
Fan2: 1 Power0: 0 Power1: 1
Fan Speed (Fan 0/1/2)     9984 / 9984 / 9984

System Mode (auto/manual)  Auto
Firmware Upgrade Status (none/in progress/done) Status: Successful
Percent: 100

```

The last line of the output must indicate 100 percent complete as follows:

```

Firmware Upgrade Status (none/in progress/done) Status: Successful Percent:
100

```

5. Reset the optical ILA.

```

user@router# run request chassis fpc optical-module amplifier-chain ila soft-reset
fpc-slot 5 ila-number 2

```

Reset command was successfully issued to the requested ILA

6. Verify that the software is now running.

```
user@router# run show chassis fpc optical-properties amplifier-chain ila summary
fpc-slot 5 ila-number 2
```

```

ILA Number                2
ILA Name                   ILA-2
ILA Position               3
OSC IP Address             10.0.0.13/255.255.255.0
Manufacture Name           oplk
Manufacture Date           2016-04-07
Part Number                EDFA128ILAJP01
Serial Num                 3D2L6140005
Calibration Date           2016-04-07
Firmware Version           2.10.0002      #new
version shown here
Hardware Version            2.01
FPGA Version               5.0
X86CPLD Version            28
Board CPLD Version         41
System Date                2015-09-22
System Time                18:43:03 GMT+0000
Up Time                    2363
IP v4 Address/Mask/Gateway 192.168.7.136/255.255.0.0/ 192.168.7.254
OSC MAC Address            aa:bb:cc:dd:ee:02
Board Temperature (C)      33.6
Temperature Threshold High/Low (C) 55.0/-5.0
Power and Fan Plug Status (Fan 0/1/2, Power 0/1) Fan0: 1 Fan1: 1
Fan2: 1 Power0: 0 Power1: 1
Fan Speed (Fan 0/1/2)      9984 / 9984 / 9984

System Mode (auto/manual)  Auto
Firmware Upgrade Status (none/in progress/done) Status: Successful
Percent: 100

```

- Related Documentation**
- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
 - [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)

CHAPTER 7

Configuring Performance Monitor Thresholds

- [Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45](#)
- [Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors on page 51](#)

Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors

Performance monitors monitor the health of the IPLC modules at various points on the IPLC hardware based on threshold crossing alerts (TCA)s. This topic describes how to enable and configure TCAs for the IPLC performance monitors.

TCAs can give the management system an early indication as to the state of the associated entity when it crosses a certain threshold. TCAs are alarms that are activated when a certain configurable threshold—near-end measurement threshold or far-end measurement threshold—is crossed and remains so until the end of the 15-minute interval and the 24-hour interval for parameters such as OTU and ODU.

The timely detection of TCAs is essential to proactively manage an IPLC. TCAs are not an indication of a fault, but rather an indication that the entity may be close to a fault. You can enable the TCA that you want monitor. You can keep the default threshold settings or change the settings.



NOTE: By default, TCAs are disabled.

The IPLC supports the performance monitors listed in [Table 4 on page 45](#).

Table 4: IPLC Optical Performance Monitors

Performance Monitor	15 Min Bin	24 Hr Bin	TCA High	TCA Low
OSC TX power	Yes	Yes	Yes	Yes
OSC RX power	Yes	Yes	Yes	Yes

Table 4: IPLC Optical Performance Monitors (continued)

Performance Monitor	15 Min Bin	24 Hr Bin	TCA High	TCA Low
OSC estimated fiber loss	Yes	Yes	No	No
Line OUT VOA attenuation	Yes	Yes	Yes	Yes
EDFA Input power (for both EDFAs)	Yes	Yes	Yes	Yes
EDFA Output power (for both EDFAs)	Yes	Yes	Yes	Yes
EDFA Signal output power (for both EDFAs)	Yes	Yes	Yes	Yes
OCM power readings	Yes	Yes	Yes	Yes
Power monitor at ADD port	Yes	Yes	Yes	Yes
Power monitor at PT IN port	Yes	Yes	Yes	Yes

Each performance monitor supports:

- 15-minute and 24-hour binning
- Low and high threshold levels as described in [Table 5 on page 46](#).

Table 5: IPLC Threshold Crossing Alert Minimum and Maximum Values

TCA	Description	Granularity	Range Minimum/Maximum Default and Recommended Value
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)			
edfa1-awg-high-tca	Ingress EDFA pump AWG high TCA	5s	390/440 mW 400 mW
edfa1-awg-low-tca	Ingress EDFA pump AWG low TCA		5/15 mW 5 mW
edfa1-express-high-tca	Ingress EDFA pump express high TCA		390/440 mW 400 mW
edfa1-express-low-tca	Ingress EDFA pump express low TCA		5/15 mW 5 mW

Table 5: IPLC Threshold Crossing Alert Minimum and Maximum Values (continued)

TCA	Description	Granularity	Range Minimum/Maximum Default and Recommended Value
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)			
edfa1-in-power-high-tca	Ingress EDFA input power high TCA	0.5s	10/12 dBm 11 dBm
edfa1-in-power-low-tca	Ingress EDFA input power low TCA		–38/–34 dBm –35 dBm
edfa1-out-power-high-tca	Ingress EDFA output power high TCA		20/21 dBm 20.5 dBm
edfa1-out-power-low-tca	Ingress EDFA output power low TCA		–1/0.5 dBm
edfa1-pump-current-high-tca	Ingress EDFA pump current high TCA	1s	10/300 mA
edfa1-pump-current-low-tca	Ingress EDFA pump current low TCA		
edfa1-sig-power-high-tca	Ingress EDFA signal power high TCA	0.5s	10/12 dBm 11 dBm
edfa1-sig-power-low-tca	Ingress EDFA signal power low TCA >		–39/–35 dBm –36 dBm
Erbium-Doped Fiber Amplifier (EDFA) Output Power (for Both EDFAs)			
edfa2-awg-high-tca	Egress EDFA pump AWG high TCA	5s	390/440 mW 400 mW
edfa2-awg-low-tca	Egress EDFA pump AWG low TCA		5/15 mW 5 mW
edfa2-express-high-tca	Egress EDFA pump express high TCA		390/440 mW 400 mW
edfa2-express-low-tca	Egress EDFA pump express low TCA		5/15 mW 5 mW

Table 5: IPLC Threshold Crossing Alert Minimum and Maximum Values (continued)

TCA	Description	Granularity	Range Minimum/Maximum Default and Recommended Value
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)			
edfa2-in-power-high-tca	Egress EDFA input power high TCA	0.5s	10/12 dBm 11 dBm
edfa2-in-power-low-tca	Egress EDFA input power low TCA		−38/−34 dBm −35 dBm
edfa2-out-power-high-tca	Egress EDFA output power high TCA		20/21 dBm 20.5 dBm
edfa2-out-power-low-tca	Egress EDFA output power low TCA		−1/0.5 dBm −0.5 dBm
edfa2-pump-current-high-tca	Egress EDFA pump current high TCA	1s	10/300 mA
edfa2-pump-current-low-tca	Egress EDFA pump current low TCA		
edfa2-sig-power-high-tca	Egress EDFA signal power high TCA	0.5s	10/12 dBm 11 dBm
edfa2-sig-power-low-tca	Egress EDFA signal power low TCA		−39/−35 dBm −36 dBm
Line OUT Variable Optical Attenuation (VOA)			
lout-voa-high-tca	LOUT VOA high TCA	0.5	16/25 dBm 17 dBm
lout-voa-low-tca	LOUT VOA low TCA		N/A
Optical Channel Monitor (OCM) Power Readings (64 channels x 1 Monitoring Points)			

Table 5: IPLC Threshold Crossing Alert Minimum and Maximum Values (continued)

TCA	Description	Granularity	Range Minimum/Maximum Default and Recommended Value
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)			
ocm-power-high-line-out-tca	OCM Power Line Out high TCA	0.5 dBm	1/2 dBm per channel 1.5 dBm per channel <i>NOTE:</i> Assumes VOA setting =0
ocm-power-low-line-out-tca	OCM Power Line Out low TCA		–2/–1 dBm per channel –1.5 dBm per channel <i>NOTE:</i> Assumes VOA setting =0
Optical Supervisory Channel (OSC) Estimated Fiber Loss			
osc-fiber-loss-high-tca	OSC fiber loss high TCA	0.5 dB	36/39 dB 37 dB
osc-fiber-loss-low-tca	OSC fiber loss low TCA	N/A	N/A
Optical Supervisory Channel (OSC) RX Power			
osc-rx-power-high-tca	OSC RX power high TCA	0.5 dBm	5/7 dBm 6 dBm
osc-rx-power-low-tca	OSC RX power low TCA		–47/–46 dBm –46 dBm
Optical Supervisory Channel (OSC) TX Power			
osc-tx-power-high-tca	OSC TX power high TCA	0.5 dBm	5.5/7 dBm 6 dBm
osc-tx-power-low-tca	OSC TX power low TCA		–2/–0.5 dBm –1 dBm

To configure a TCA, specify the TCA low and high thresholds and then enable the TCA. This example enables the **osc-rx-power-high-tca** and **osc-rx-power-low-tca** TCA in the **OSC RX power** performance monitor.

To configure a TCA:

1. Navigate to the IPLC TCA configuration. For example:

```
[edit]
user@host# edit chassis fpc 2 optical-options tca
```

2. Configure the 15-minute, low threshold. For example:

```
[edit chassis fpc 2 optical-options tca]
user@host# set osc-rx-power-low-tca threshold -46 enable-tca
```

3. Configure the 15-minute, high threshold. For example:

```
[edit chassis fpc 2 optical-options tca]
user@host# set osc-rx-power-high-tca threshold 7 enable-tca
```

4. Configure the 24-hour, low threshold. For example:

```
[edit chassis fpc 2 optical-options tca]
user@host# set osc-rx-power-low-tca threshold-24hrs -46 enable-tca
```

5. Configure the 24-hour, high threshold. For example:

```
[edit chassis fpc 2 optical-options tca]
user@host# set osc-rx-power-high-tca threshold-24hrs 7 enable-tca
```

6. Verify the configuration.

```
[edit chassis fpc 2 optical-options tca]
user@host# show
```

```
osc-rx-power-high-tca {
    enable-tca;
    threshold 7;
    threshold-24hrs 7;
}
osc-rx-power-low-tca {
    enable-tca;
    threshold -46;
    threshold-24hrs -46;
}
```

7. Save your configuration.

```
[edit chassis fpc 2 optical-options tca]
user@host# commit
```

8. You can use the following commands to view information about performance monitors and TCA alarms:

- To view the status of the IPLC module, use the `show chassis fpc optical-properties status` command.
- To view the current alerts, use the `show chassis fpc optical-properties pm-current` command.
- To display alerts in 15-minute intervals, use the `show chassis fpc optical-properties pm-interval` command.
- To view the 24-hour alerts, use the `show chassis fpc optical-properties pm-currentday` command.
- To view the alerts from the previous day, use the `show chassis fpc optical-properties pm-previousday` command.

Related Documentation

- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors on page 51](#)

Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors

Performance monitors monitor the health of the optical inline amplifier (ILA) at various points on the optical ILA hardware based on threshold crossing alerts (TCAs). TCAs can give the management system an early indication as to the state of the associated entity when it crosses a certain threshold. TCAs are alerts that are activated when a certain configurable threshold—near-end measurement threshold or far-end measurement threshold—is crossed and remains so until the end of the 15-minute interval and the 24-hour interval. The timely detection of TCAs is essential to proactively manage the optical ILA. TCAs are not an indication of a fault, but rather an indication that the entity may be close to a fault. You can enable the TCA that you want monitor. You can keep the default threshold settings or change the settings. This topic describes how to configure TCAs for the optical ILA performance monitors.



NOTE: By default, TCAs are disabled.



NOTE: The optical supervisory channel (OSC) must be operational across the amplifier chain to enable and configure TCAs for the performance monitors on the optical ILA. For details on configuring the OSC, see [“Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System” on page 33.](#)

The optical ILA supports the performance monitors listed in [Table 6 on page 52.](#)

Table 6: Optical ILA Performance Monitors

Performance Monitor	15 Min Bin	24 Hr Bin	TCA High	TCA Low
OSC TX power	Yes	Yes	Yes	Yes
OSC RX power	Yes	Yes	Yes	Yes
OSC estimated fiber loss	Yes	Yes	No	No
Line OUT VOA attenuation	Yes	Yes	Yes	Yes
EDFA Input power (for both EDFAs)	Yes	Yes	Yes	Yes
EDFA Output power (for both EDFAs)	Yes	Yes	Yes	Yes
EDFA Signal output power (for both EDFAs)	Yes	Yes	Yes	Yes
EDFA Pump current (for both EDFAs)				
EDFA Pump temperature (for both EDFAs)	Yes	Yes	Yes	Yes

Each performance monitor supports:

- 15-minute and 24-hour binning
- Low and high threshold levels as described in [Table 7 on page 53.](#)



NOTE: You can configure 15-minute and 24-hour performance monitor TCA thresholds on the optical ILA. When you configure the 15-minute and 24-hour performance monitor TCA thresholds through the user interface of the optical ILA, the optical ILA performs checking to ensure that the threshold values are within valid ranges. Starting with Junos OS Release 17.1R1, the optical ILA supports an inband optical supervisory channel that enables you to configure these same performance monitor TCA thresholds through the Junos OS CLI, in addition to the optical ILA user interface. However, when you configure the optical ILA TCA thresholds through the Junos OS CLI, no range checking is performed and if the thresholds are outside of the valid ranges, the configuration is still accepted by Junos OS and the failure messages are placed in the `/var/log/messages` directory of the PTX3000 router. However, the Junos OS CLI displays the previously configured threshold values when you run the `show chassis fpc optical-properties pm-current` command from the Junos OS CLI. Range checking is imposed only when the optical ILA is in Auto mode, which is the default setting.

Table 7: Optical ILA Threshold Crossing Alert Minimum and Maximum Values

TCA	Description	Range Minimum/Maximum
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)		
edfa-ab-input-power	EDFA Input power (for both EDFAs)	12/—38 dBm
edfa-ba-input-power		
Erbium-Doped Fiber Amplifier (EDFA) Output Power (for Both EDFAs)		
edfa-ab-output-power	EDFA Output power (for both EDFAs)	21/—13 dBm
edfa-ba-output-power		
edfa-ab-pump0-temperature	EDFA Pump temperature (for both EDFAs, 2 pumps per direction)	30/20 Degrees C
edfa-ba-pump0-temperature		
edfa-ab-pump1-temperature		
edfa-ba-pump1-temperature		

Table 7: Optical ILA Threshold Crossing Alert Minimum and Maximum Values (continued)

TCA	Description	Range Minimum/Maximum
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)		
edfa-ab-pump1-current	EDFA Pump current (for both EDFAs, pump1)	0/790 mA
edfa-ba-pump1-current		NOTE: There is no single general fixed value for the EDFA pump current TCA threshold high limit. For a given EDFA in operation, the software and firmware read a programmed value for the EOL Pump current for that specific pump, and raises the appropriate alarms when that value is approached.
edfa-ab-pump0-current	EDFA Pump current (for both EDFAs, pump0)	0/1160 mA
edfa-ba-pump0-current		NOTE: There is no one general fixed value for the EDFA pump current TCA threshold high limit. For a given EDFA in operation, the software reads a programmed value for the EOL pump current for that specific pump, and raises the appropriate alarms when that value is approached.
edfa-ab-signal-output-power	EDFA Signal output power (for both EDFAs)	21/—13 dBm
edfa-ba-signal-output-power		
Line OUT Variable Optical Attenuation (VOA)		
voa-a-attenuation	Line OUT Variable Optical Attenuation (VOA)	—1/26 dB
voa-b-attenuation		
Optical Supervisory Channel (OSC)/FPGA Estimated Fiber Loss		
osc-a-estimated-fiber-loss	OSC/FPGA estimated fiber loss	—1/36 dB
osc-b-estimated-fiber-loss		
Optical Supervisory Channel (OSC) RX Power		
osc-rx-a-power-high-tca	OSC RX power	2/—45 dBm
osc-rx-b-power-low-tca		

Table 7: Optical ILA Threshold Crossing Alert Minimum and Maximum Values (continued)

TCA	Description	Range Minimum/Maximum
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)		
Optical Supervisory Channel (OSC) TX Power		
osc-a-tx-power-high-tca	OSC TX power	0/6 dBm
osc-b-tx-power-low-tca		
EDFA Input/Output Power Monitors		
Power monitor at Input port	Input port power monitor	12/—38 dBm
Power monitor at output port	Output port power monitor	21/—13 dBm

To configure a TCA, specify the TCA low and high thresholds for the TCA. This example enables the **osc-a-tx-power-high-tca** and **osc-b-tx-power-low-tca** TCA in the TX Power performance monitor for optical ILA number 3.

To configure a TCA:

1. Navigate to the optical ILA amplifier chain configuration hierarchy. For example:

```
[edit]
user@host# edit chassis fpc 2 optical-options amplifier-chain ila 3 ila-options
```

2. Configure the 15-minute, low threshold. For example:

```
[edit chassis fpc 2 optical-options amplifier-chain ila 3 ila-options]
user@host# set osc-b-tx-power-low-tca threshold 2 enable-tca
```

3. Configure the 15-minute, high threshold. For example:

```
[edit chassis fpc 2 optical-options amplifier-chain ila 3 ila-options]
user@host# set osc-a-tx-power-high-tca threshold 4 enable-tca
```

4. Configure the 24-hour, low threshold. For example:

```
[edit chassis fpc 2 optical-options amplifier-chain ila 3 ila-options]
user@host# set osc-b-tx-power-low-tca threshold-24hrs 1 enable-tca
```

5. Configure the 24-hour, high threshold. For example:

```
[edit chassis fpc 2 optical-options amplifier-chain ila 3 ila-options]
user@host# set osc-a-tx-power-high-tca threshold-24hrs 5 enable-tca
```

6. Verify the configuration.

```
[edit chassis fpc 2 optical-options amplifier-chain ila 3 ila-options]
```

```
user@host# show
```

```
osc-a-tx-power-high-tca {
    enable-tca;
    threshold 4;
    threshold-24hrs 5;
}
osc-b-tx-power-low-tca {
    enable-tca;
    threshold 2;
    threshold-24hrs 1;
}
```

7. Save your configuration.

```
[edit chassis fpc 2 optical-options tca]
user@host# commit
```

8. You can use the following commands to view information about optical ILA performance monitors:

- [show chassis fpc optical-properties amplifier-chain ila pm-current](#)
- [show chassis fpc optical-properties amplifier-chain ila pm-currentday](#)
- [show chassis fpc optical-properties amplifier-chain ila pm-previousday](#)

Release History Table

Release	Description
17.1	Starting with Junos OS Release 17.1R1

Related Documentation

- [Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45](#)
- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)

PART 3

Example Configurations

- [Example: Configuring the PTX3000 Integrated Photonic Line System in a Metro Linear Packet Optical Network on page 59](#)
- [Example: Configuring the Optical Supervisory Channel on page 73](#)

CHAPTER 8

Example: Configuring the PTX3000 Integrated Photonic Line System in a Metro Linear Packet Optical Network

- [Example: Integrated Photonic Line Card in a Metro Linear Packet Optical Configuration on page 59](#)

Example: Integrated Photonic Line Card in a Metro Linear Packet Optical Configuration

This example shows how to configure Junos OS to support the integrated photonic line card (IPLC) base modules in a Metro linear packet optical configuration.

- [Requirements on page 59](#)
- [Overview on page 60](#)
- [Configuration on page 63](#)
- [Verification on page 70](#)

Requirements

This example uses the following hardware and software components:

- Four IPLC base modules
- Compatible 10-Gigabit or 100-Gigabit Ethernet OTN PICs. For a list of compatible optical interfaces that are compatible with the IPLC ports, see [PTX Series IPLC Compatibility](#).
- Three PTX3000 Packet Transport Routers running Junos OS 15.1F6

For complete information on all PTX Series Packet Transport Routers hardware components, see [PTX Series Packet Transport Routers](#).

For complete information on all PTX Series Packet Transport Routers software features, see [Junos OS for PTX Series Packet Transport Routers, Release 15.1](#).

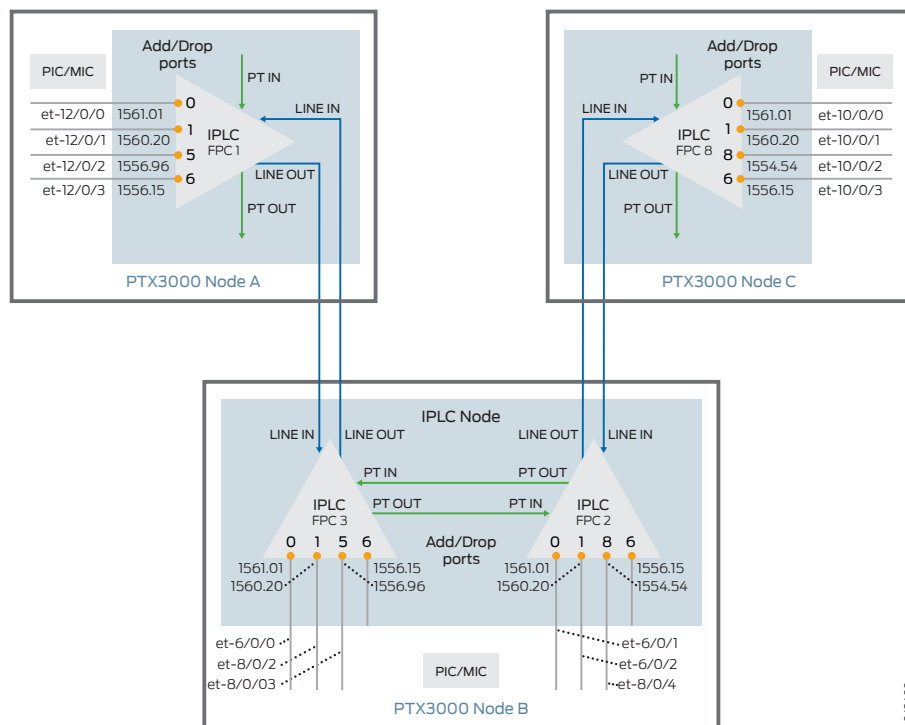
Overview

This examples describes how to configure Junos OS to support IPLC base modules in a metro linear packet optical deployment. The **Add** and **Drop** ports of the IPLC modules are physically connected to interfaces housed in the same PTX3000 chassis.

Topology

Figure 5 on page 60 shows the configuration of the IPLC modules and interfaces for this example.

Figure 5: IPLC in Metro Linear Packet Optical Deployment



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This procedure describes how to configure Junos OS for the IPLC modules. This is not a complete configuration and does not include full instructions for configuring the router or the associated line cards. Before you start this procedure, complete the following hardware and software tasks on the PTX3000 router:

- Install the IPLC modules, associated line cards, and PICs into the PTX3000 chassis so that the hardware configuration matches what is shown in [Figure 5 on page 60](#). If you need to make changes to the positions of the cards in the chassis, adjust the FPC numbers referenced in [Figure 5 on page 60](#) and configure them accordingly.



BEST PRACTICE: We recommend that you place the two IPLC modules at Node B into the same FPC/PIC slot pair on the PTX3000 chassis. In this example the IPLCs at Node B are located in FPC slots 2 and 3.

- Configure the associated wavelengths on the interfaces of the PTX3000 by using the following procedure:

1. Specify the interface to configure.

```
[edit]
user@host# edit interfaces interface-name
```

For example:

```
[edit]
user@host# edit interfaces et-6/0/0]
```

2. Specify the wavelength value supported on the interface.

```
[edit interfaces et-6/0/0]
user@host# set wavelength
```



NOTE: Be sure to specify wavelength values on each interface as shown in [Figure 5 on page 60](#). If you must adjust the wavelength values, make sure that you enter a value supported on the IPLC. For information on the wavelengths supported by the IPLC, see “[Understanding the Integrated Photonic Line Card Architecture](#)” on page 6.

- Make all connections to and from the PICs in the PTX3000 chassis to the **Add** and **Drop** ports on front panel of each IPLC node as shown in [Figure 5 on page 60](#).
- Connect your fiber pairs to the **Line IN** and **Line OUT** ports on the front panel of each IPLC node as shown in [Figure 5 on page 60](#).

For simplicity, [Figure 5 on page 60](#) does not show the optical ILAs between the three IPLC nodes.

- On Node B, connect the two IPLC modules together using the **PT IN** and **PT OUT** ports on the front panel of the IPLC as shown in [Figure 5 on page 60](#).



BEST PRACTICE: Anytime you need to disconnect or connect the fiber span from the Line IN and Line OUT ports on the IPLC module, we recommend you disable the optical supervisory channel and the erbium-doped fiber amplifiers on the IPLC.

Always refer to the PTX3000 Packet Transport Router Hardware Guide when connecting or disconnecting cables on the IPLC modules. See [PTX3000 Packet Transport Router Hardware Guide](#).

This example results in the following configuration:

Table 8: Example Configuration Summary

Wavelength	Node A		Node B		Node C	
	Optical Interface Waveform is Switched to on PTX3000 Chassis	IPLC Slot: Port: Mode:	Optical Interface Waveform is Switched to on PTX3000 Chassis	IPLC Slot: Port: Mode:	Optical Interface Waveform is Switched to on PTX3000 Chassis	IPLC Slot: Port: Mode:
1554.54	—	—	et-8/0/4	Slot: 2 Port: 8 Mode: switch	et-10/0/2	Slot: 8 Port: 8 Mode: switch
1556.15	et-12/0/3	Slot: 1 Port: 6 Mode: switch	—	Slot: 2 Port: 6 Mode: wss-express-in(bypass) Slot: 3 Port: 6 Mode: wss-express-in(bypass)	et-10/0/3	Slot: 8 Port: 6 Mode: switch
1556.96	et-12/0/2	Slot: 1 Port: 5 Mode: switch	et-8/0/3	Slot: 3 Port: 5 Mode: switch	—	—

Table 8: Example Configuration Summary (continued)

Wavelength	Node A		Node B		Node C	
	Optical Interface Waveform is Switched to on PTX3000 Chassis	IPLC Slot: Port: Mode:	Optical Interface Waveform is Switched to on PTX3000 Chassis	IPLC Slot: Port: Mode:	Optical Interface Waveform is Switched to on PTX3000 Chassis	IPLC Slot: Port: Mode:
1560.20	et-12/0/1	Slot: 1	et-6/0/2	Slot: 2	et-10/0/1	Slot: 8
		Port: 1	et-8/0/2	Port: 1		Port: 1
		Mode: switch		Mode: switch		Mode: switch
				Slot: 3		
				Port: 1		
1561.01	et-12/0/0			Mode: switch	et-10/0/0	
		Slot: 1	et-6/0/1	Slot: 2		Slot: 8
		Port: 0	et-6/0/0	Port: 0		Port: 0
		Mode: switch		Mode: switch		Mode: switch
				Slot: 3		
				Port: 0		
				Mode: switch		

Configuration

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*.

Before you start this procedure, be sure to complete the tasks described in the “[Topology](#)” on [page 60](#) section of this example.

To configure the IPLC base modules in this example, perform these tasks:

- [Configuring the IPLC Base Module at Node A on page 64](#)
- [Configuring the Two IPLC Base Modules at Node B on page 66](#)
- [Configuring the IPLC Base Module at Node C on page 69](#)
- [Results on page ?](#)

CLI Quick Configuration To quickly configure the IPLC modules in this example, copy the following commands into a text file, remove any line breaks, and then paste the commands into the CLI at the **[edit]** hierarchy level.

```
set chassis fpc 1 optical-options wavelength 1556.15 switch et-12/0/3
set chassis fpc 1 optical-options wavelength 1556.96 switch et-12/0/2
set chassis fpc 1 optical-options wavelength 1560.20 switch et-12/0/1
set chassis fpc 1 optical-options wavelength 1561.01 switch et-12/0/0
set chassis fpc 2 optical-options wavelength 1554.54 switch et-8/0/4
set chassis fpc 2 optical-options wavelength 1556.15 wss-express-in
set chassis fpc 2 optical-options wavelength 1560.20 switch et-6/0/2
set chassis fpc 2 optical-options wavelength 1561.01 switch et-6/0/1
set chassis fpc 2 optical-options express-in fpc 3
set chassis fpc 3 optical-options wavelength 1556.15 wss-express-in
set chassis fpc 3 optical-options wavelength 1556.96 switch et-8/0/3
set chassis fpc 3 optical-options wavelength 1560.20 switch et-8/0/2
set chassis fpc 3 optical-options wavelength 1561.01 switch et-6/0/0
set chassis fpc 3 optical-options express-in fpc 2
set chassis fpc 8 optical-options wavelength 1554.54 switch et-10/0/2
set chassis fpc 8 optical-options wavelength 1556.15 switch et-10/0/3
set chassis fpc 8 optical-options wavelength 1560.20 switch et-10/0/1
set chassis fpc 8 optical-options wavelength 1561.01 switch et-10/0/0
```

Configuring the IPLC Base Module at Node A

Step-by-Step Procedure This procedure describes how to configure the IPLC base module in slot 1 of Node A in this example.

Before you start this procedure, be sure to complete the tasks described in the [“Topology” on page 60](#) section of this example.

To configure the IPLC base module in slot 1 of Node A:

1. Specify the slot location of the IPLC base module in Node A and access the IPLC configuration hierarchy.

```
[edit]
user@host# edit chassis fpc 1 optical-options
```
2. Configure wavelength 1561.01 on port 0 of the IPLC base module to be switched to optical interface et-12/0/0.

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1561.01 switch et-12/0/0
```
3. Configure wavelength 1560.20 on port 1 of the IPLC base module to be switched to optical interface et-12/0/1.

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1560.20 switch et-12/0/1
```
4. Configure wavelength 1556.96 on port 5 of the IPLC base module to be switched to optical interface et-12/0/2.

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1556.96 switch et-12/0/2
```

5. Configure wavelength 1556.15 on port 6 of the IPLC base module to be switched to optical interface et-12/0/3.

```
[edit chassis fpc 1 optical-options]
user@host# set wavelength 1556.15 switch et-12/0/3
```

Results Confirm the configuration of the IPLC modules for Node A. If the command output does not display the intended configuration, repeat the instructions in this procedure to correct the configuration.

```
[edit chassis fpc 1 optical-options]
user@host# show

wavelength 1556.15 {
  switch {
    et-12/0/3;
  }
}
wavelength 1556.96 {
  switch {
    et-12/0/2;
  }
}
wavelength 1560.20 {
  switch {
    et-12/0/1;
  }
}
wavelength 1561.01 {
  switch {
    et-12/0/0;
  }
}
```

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

Configuring the Two IPLC Base Modules at Node B

Step-by-Step Procedure

This procedure describes how to configure the IPLC base module in slot 2 of Node B in this example.

Before you start this procedure, be sure to complete the tasks described in the “Topology” on page 60 section of this example.



BEST PRACTICE: We recommend that you place the two IPLC modules in the same FPC/PIC slot pair on the PTX3000 chassis.

To configure the IPLC base module in slot 2 of Node B:

1. Specify the slot location of the IPLC base module and access the IPLC configuration hierarchy.

```
[edit]
user@host# edit chassis fpc 2 optical-options
```

2. Create a logical connection between this IPLC base module and the IPLC base module in slot 3.

```
[edit chassis fpc 2 optical-options]
user@host# set express-in fpc 3
```

3. Configure wavelength 1561.01 on port 0 of the IPLC base module in slot 2 to be switched to local optical interface et-6/0/1.

```
[edit chassis fpc 2 optical-options]
user@host# set wavelength 1561.01 switch et-6/0/1
```

4. Configure wavelength 1560.20 on port 1 of the IPLC base module in slot 2 to be switched to local optical interface et-6/0/2.

```
[edit chassis fpc 2 optical-options]
user@host# set wavelength 1560.20 switch et-6/0/2
```

5. Configure wavelength 1554.54 on port 8 of the IPLC base module in slot 2 to be switched to local optical interface et-8/0/4.

```
[edit chassis fpc 2 optical-options]
user@host# set wavelength 1554.54 switch et-8/0/4
```

6. Configure wavelength 1556.15 on port 6 of the IPLC base module in slot 2 to be bypassed:

```
[edit chassis fpc 2 optical-options]
user@host# set wavelength 1556.15 wss-express-in
```

Step-by-Step Procedure This procedure describes how to configure the IPLC base module in slot 3 of Node B in this example.

Before you start this procedure, be sure to complete the tasks described in the [“Topology” on page 60](#) section of this example.

To configure the IPLC base module in slot 3 of Node B:

1. Specify the slot location of the IPLC base module and access the IPLC configuration hierarchy.

```
[edit]
user@host# edit chassis fpc 3 optical-options
```

2. Create a logical connection between this IPLC base module and the IPLC base module in slot 2.

```
[edit chassis fpc 3 optical-options]
user@host# set express-in fpc 2
```

3. Configure wavelength 1561.01 on port 0 of the IPLC base module to be switched to optical interface et-6/0/0.

```
[edit chassis fpc 3 optical-options]
user@host# set wavelength 1561.01 switch et-6/0/0
```

4. Configure wavelength 1560.20 on port 1 of the IPLC base module to be switched to optical interface et-8/0/2.

```
[edit chassis fpc 3 optical-options]
user@host# set wavelength 1560.20 switch et-8/0/02
```

5. Configure wavelength 1556.96 on port 5 of the IPLC base module to be switched to optical interface et-8/0/3.

```
[edit chassis fpc 3 optical-options]
user@host# set wavelength 1556.96 switch et-8/0/3
```

6. Configure wavelength 1556.15 on port 6 of the IPLC base module in slot 3 to be bypassed:

```
[edit chassis fpc 3 optical-options]
user@host# set wavelength 1556.15 wss-express-in
```

Results Confirm the configuration of the IPLC module located in slot 2 of Node B. If the command output does not display the intended configuration, repeat the instructions in this procedure to correct the configuration.

```
[edit chassis fpc 2 optical-options]
```

```
user@host# show

wavelength 1554.54 {
    switch {
        et-8/0/4;
    }
}
wavelength 1556.15 {
    wss-express-in;
}
wavelength 1560.20 {
    switch {
        et-6/0/2;
    }
}
wavelength 1561.01 {
    switch {
        et-6/0/1;
    }
}
express-in {
    fpc {
        3;
    }
}
```

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

Confirm the configuration of the IPLC module located in slot 3 of Node B. If the command output does not display the intended configuration, repeat the instructions in this procedure to correct the configuration.

```
[edit chassis fpc 3 optical-options]
user@host# show

wavelength 1556.15 {
    wss-express-in;
}
wavelength 1556.96 {
    switch {
        et-8/0/3;
    }
}
wavelength 1560.20 {
    switch {
        et-8/0/2;
    }
}
wavelength 1561.01 {
    switch {
        et-6/0/0;
    }
}
express-in {
    fpc {
        2;
    }
}
```

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

Configuring the IPLC Base Module at Node C

Step-by-Step Procedure	<p>This procedure describes how to configure the IPLC base module in slot 8 of Node C in this example.</p> <p>Before you start this procedure, be sure to complete the tasks described in the “Topology” on page 60 section of this example.</p>
Step-by-Step Procedure	<p>To configure the IPLC base module in slot 8 of Node C:</p> <ol style="list-style-type: none">1. Specify the slot location of the IPLC base module in Node C and access the IPLC configuration hierarchy. [edit] user@host# edit chassis fpc 8 optical-options2. Configure wavelength 1561.01 on port 0 of the IPLC base module to be switched to optical interface et-10/0/0. [edit chassis fpc 8 optical-options] user@host# set wavelength 1561.01 switch et-10/0/03. Configure wavelength 1560.20 on port 1 of the IPLC base module to be switched to optical interface et-10/0/1. [edit chassis fpc 8 optical-options] user@host# set wavelength 1560.20 switch et-10/0/14. Configure wavelength 1554.54 on port 8 of the IPLC base module to be switched to optical interface et-10/0/2. [edit chassis fpc 8 optical-options] user@host# set wavelength 1554.54 switch et-10/0/25. Configure wavelength 1556.15 on port 6 of the IPLC base module to be switched to optical interface et-10/0/3. [edit chassis fpc 8 optical-options] user@host# set wavelength 1556.15 switch et-10/0/3
Results	<p>Confirm the configuration of the IPLC module located in slot 8 of Node C. If the command output does not display the intended configuration, repeat the instructions in this procedure to correct the configuration.</p> <p>[edit chassis fpc 8 optical-options]</p>

```
user@host# show

wavelength 1554.54 {
    switch {
        et-10/0/2;
    }
}
wavelength 1556.15 {
    switch {
        et-10/0/3;
    }
}
wavelength 1560.20 {
    switch {
        et-10/0/1;
    }
}
wavelength 1561.01 {
    switch {
        et-10/0/0;
    }
}
```

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

Verification

Confirm that the configuration is working properly.

- [Verifying the Topology of Each IPLC Node on page 70](#)

Verifying the Topology of Each IPLC Node

Purpose Verify the topology of each IPLC node.

Action Run the [show chassis fpc optical-properties topology](#) command with the **detail** output level at each IPLC node and verify that the following fields match the values listed in [Table 8 on page 62](#).

- **Port/Wavelength**—Verify that this field lists the proper wavelength values and IPLC port numbers for each node in this example.
- **State**—Verify that the values for this field match what is listed in [Table 8 on page 62](#) for the mode value of each IPLC port for each node in this example.
- **Connected To**—If the wavelength is being switched, verify that this field lists the correct interface the wavelength is being switched to.

Verify the topology of each IPLC node.

1. For example, at IPLC Node A, enter the following.

```
user@host>show chassis fpc optical-properties topology detail fpc-slot 1
```

```
IPLC Topology Information
Wavelength(nm) / Port / Frequency(THz)      State      Connected
```

To	Express-in Port	Expansion Port	DOWN	NA
1561.01	0	192.05	Switched	et-12/0/0
1560.20	1	192.15	Switched	et-12/0/1
1559.39	2	192.25	Blocked	NA
1558.58	3	192.35	Blocked	NA
1557.77	4	192.45	Blocked	NA
1556.96	5	192.55	Switched	et-12/0/2
1556.15	6	192.65	Switched	et-12/0/3
1555.34	7	192.75	Blocked	NA
1554.54	8	192.85	Blocked	NA
1553.73	9	192.95	Blocked	NA
1552.93	10	193.05	Blocked	NA
1552.12	11	193.15	Blocked	NA
1551.32	12	193.25	Blocked	NA
1550.52	13	193.35	Blocked	NA
1549.72	14	193.45	Blocked	NA
1548.91	15	193.55	Blocked	NA
1548.11	16	193.65	Blocked	NA
1547.32	17	193.75	Blocked	NA
1546.52	18	193.85	Blocked	NA
1545.72	19	193.95	Blocked	NA
1544.92	20	194.05	Blocked	NA
1544.13	21	194.15	Blocked	NA
1543.33	22	194.25	Blocked	NA
1542.54	23	194.35	Blocked	NA
1541.75	24	194.45	Blocked	NA
1540.95	25	194.55	Blocked	NA
1540.16	26	194.65	Blocked	NA
1539.37	27	194.75	Blocked	NA
1538.58	28	194.85	Blocked	NA
1537.79	29	194.95	Blocked	NA
1537.00	30	195.05	Blocked	NA
1536.22	31	195.15	Blocked	NA

2. At Node B, enter the following:

```
user@host> show chassis fpc optical-properties topology detail fpc-slot 2
user@host> show chassis fpc optical-properties topology detail fpc-slot 3
```

3. At Node C:

```
user@host> show chassis fpc optical-properties topology detail fpc-slot 8
```

Meaning For example, in Step 1 for Node A, you can see that the IPLC module in slot 1 includes the following configuration:

- Wavelength 1561.01 is switched to optical interface et-12/0/0
- Wavelength 1560.20 is switched to optical interface et-12/0/1
- Wavelength 1556.96 is switched to optical interface et-12/0/2
- Wavelength 1556.16 is switched to optical interface et-12/0/3

This matches what is listed in [Table 8 on page 62](#) for Node A and confirms the configuration is operating correctly.

**Related
Documentation**

- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
- [Configuring Wavelengths on the Integrated Photonic Line Card Add and Drop Ports on page 22](#)
- [Configuring a Two-Degree Node for Express Traffic on page 21](#)

CHAPTER 9

Example: Configuring the Optical Supervisory Channel

- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73](#)

Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier

This example shows you how to configure optical supervisory channel (OSC) communication across the PTX3000 integrated photonic line system when you are using the Juniper Networks optical ILA in the amplifier chain.

- [Requirements on page 73](#)
- [Overview on page 73](#)
- [Configuration on page 74](#)
- [Configuring the PTX3000 Integrated Photonic Line System at Site B on page 78](#)
- [Verification on page 78](#)

Requirements

This example uses the following hardware and software components:

- Two PTX3000 Packet Transport Routers with the Integrated Photonic Line System installed and running Junos OS Release 17.1 or later.
- Three optical inline amplifiers.

Before you configure the optical supervisory channel, be sure you have:

- Installed and configured the integrated photonic line system in the PTX3000 router and that you are able to pass optical traffic end to end over the three optical ILAs.

Overview

This example shows you how to configure optical supervisory channel (OSC) communications on the PTX3000 integrated photonic line system when using the optical ILA in the amplifier chain.

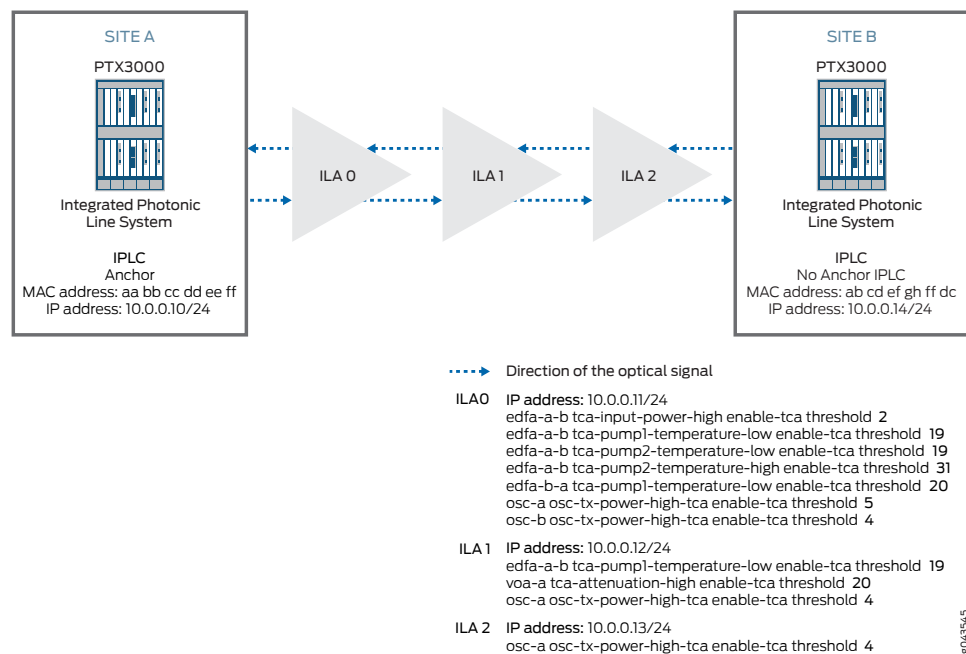
Topology

Figure 6 on page 74 shows the topology for this example. At Site A, there is a PTX3000 router with an IPLC module installed in FPC slot 3. The IPLC module at Site A is the anchor for the OSC. Three optical inline amplifiers configured as: ILA 0, ILA 1, and ILA 2 connect Site A to Site B, where another PTX3000 is running an IPLC module. The IPLC module at Site B is specifically configured as a non-anchor IPLC.

This topology also includes an example of configuring threshold crossing alerts (TCA)s on the optical ILAs through the Junos OS CLI on the PTX3000 at Site A.

For this example, it is irrelevant what optical signals you are passing over the line system. However, the line system must be up and operational.

Figure 6: Example Topology and Configuration



Configuration

To configure OSC communication for the PTX3000 integrated photonic line system and optical ILAs in the amplifier chain, perform these tasks:

- [Configuring the PTX3000 Integrated Photonic Line System at Site A and the Optical ILAs in the Amplifier Chain on page 75](#)

CLI Quick Configuration

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

**PTX3000 Integrated
Photonic Line System
at Site A**

```

set chassis fpc 3 optical-options amplifier-chain anchor-iplc
set chassis fpc 3 optical-options amplifier-chain osc-ip 10.0.0.10/24
set chassis fpc 3 optical-options amplifier-chain osc-mac aa:bb:cc:dd:ee:ff
set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options ila-ipv4-address
10.0.0.11/24
set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options edfa-a-b
tca-input-power-high enable-tca threshold 2
set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options edfa-a-b
tca-pump0-temperature-low enable-tca threshold 19
set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options edfa-a-b
tca-pump1-temperature-low enable-tca threshold 19
set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options edfa-a-b
tca-pump1-temperature-high enable-tca threshold 31
set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options edfa-b-a
tca-pump0-temperature-low enable-tca threshold 20
set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options osc-a
osc-tx-power-high-tca enable-tca threshold 5
set chassis fpc 3 optical-options amplifier-chain ila 0 ila-options osc-b
osc-tx-power-high-tca enable-tca threshold 4
set chassis fpc 3 optical-options amplifier-chain ila 1 ila-options ila-ipv4-address
10.0.0.12/24
set chassis fpc 3 optical-options amplifier-chain ila 1 ila-options edfa-a-b
tca-pump0-temperature-low enable-tca threshold 19
set chassis fpc 3 optical-options amplifier-chain ila 1 ila-options voa-a tca-attenuation-high
enable-tca threshold 20
set chassis fpc 3 optical-options amplifier-chain ila 1 ila-options osc-a
osc-tx-power-high-tca enable-tca threshold 4
set chassis fpc 3 optical-options amplifier-chain ila 2 ila-options ila-ipv4-address
10.0.0.13/24
set chassis fpc 3 optical-options amplifier-chain ila 2 ila-options osc-a
osc-tx-power-high-tca enable-tca threshold 4

```

**PTX3000 Integrated
Photonic Line System
at Site B**

```

set chassis fpc 3 optical-options amplifier-chain anchor-iplc
set chassis fpc 3 optical-options amplifier-chain osc-ip 10.0.0.10/24
set chassis fpc 3 optical-options amplifier-chain osc-mac aa:bb:cc:dd:ee:ff

```

Configuring the PTX3000 Integrated Photonic Line System at Site A and the Optical ILAs in the Amplifier Chain

**Step-by-Step
Procedure**

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

To configure the PTX3000 integrated photonic line system at Site A and the optical ILAs in the amplifier chain:

1. Configure the anchor IPLC.


```

[edit chassis fpc 3 optical-options amplifier-chain]
set anchor-iplc
set osc-ip 10.0.0.10/24
set osc-mac aa:bb:cc:dd:ee:ff

```

2. Configure optical ILA 0.

```
[edit chassis fpc 3 optical-options amplifier-chain]
set ila 0 ila-options ila-ipv4-address 10.0.0.11/24
set ila 0 ila-options edfa-a-b tca-input-power-high enable-tca threshold 2
set ila 0 ila-options edfa-a-b tca-pump0-temperature-low enable-tca threshold 19
set ila 0 ila-options edfa-a-b tca-pump1-temperature-low enable-tca threshold 19
set ila 0 ila-options edfa-a-b tca-pump1-temperature-high enable-tca threshold 31
set ila 0 ila-options edfa-b-a tca-pump0-temperature-low enable-tca threshold 20
set ila 0 ila-options osc-a osc-tx-power-high-tca enable-tca threshold 5
set ila 0 ila-options osc-b osc-tx-power-high-tca enable-tca threshold 4
```

3. Configure optical ILA 1.

```
[edit chassis fpc 3 optical-options amplifier-chain]
set ila 1 ila-options ila-ipv4-address 10.0.0.12/24
set ila 1 ila-options edfa-a-b tca-pump1-temperature-low enable-tca threshold 19
set ila 1 ila-options voa-a tca-attenuation-high enable-tca threshold 20
set ila 1 ila-options osc-a osc-tx-power-high-tca enable-tca threshold 4
```

4. Configure optical ILA 2.

```
[edit chassis fpc 3 optical-options amplifier-chain]
set ila 2 ila-options ila-ipv4-address 10.0.0.13/24
set ila 2 ila-options osc-a osc-tx-power-high-tca enable-tca threshold 4
```

5. Verify the configuration is correct.

```
[edit chassis fpc 3]
user@host# show chassis fpc 3
```

```
user@host# show chassis fpc 3
optical-options {
  amplifier-chain {
    anchor-ip1c;
    osc-ip 10.0.0.10/24;
    osc-mac aa:bb:cc:dd:ee:ff;
    ila 0 {
      ila-options {
        ila-ipv4-address 10.0.0.11/24;
        edfa-a-b {
          tca-input-power-high {
            enable-tca;
            threshold 2;
          }
          tca-pump1-temperature-low {
            enable-tca;
            threshold 19;
          }
          tca-pump1-temperature-low {
            threshold 19;
          }
          tca-pump1-temperature-high {
            threshold 31;
          }
        }
      }
      osc-a {
        osc-tx-power-high-tca {
```

```

        enable-tca;
        threshold 5;
    }
}
edfa-b-a {
    tca-pump1-temperature-low {
        threshold 20;
    }
}
osc-b {
    osc-tx-power-high-tca {
        enable-tca;
        threshold 4;
    }
}
}
}
ila 1 {
    ila-options {
        ila-ipv4-address 10.0.0.12/24;
        edfa-a-b {
            tca-pump0-temperature-low {
                enable-tca;
                threshold 19;
            }
        }
        voa-a {
            tca-attenuation-high {
                enable-tca;
                threshold 20;
            }
        }
        osc-a {
            osc-tx-power-high-tca {
                enable-tca;
                threshold 4;
            }
        }
    }
}
ila 2 {
    ila-options {
        ila-ipv4-address 10.0.0.13/24;
        osc-a {
            osc-tx-power-high-tca {
                enable-tca;
                threshold 4;
            }
        }
    }
}
}
}
}

```

6. If the configuration is correct, save it.

```
user@host# commit
```

Configuring the PTX3000 Integrated Photonic Line System at Site B

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

PTX3000 Integrated Photonic Line System at Site

```
set chassis fpc 3 optical-options amplifier-chain anchor-iplc
set chassis fpc 3 optical-options amplifier-chain osc-ip 10.0.0.10/24
set chassis fpc 3 optical-options amplifier-chain osc-mac aa:bb:cc:dd:ee:ff
```

Step-by-Step Procedure To configure the PTX3000 integrated photonic line system at Site B:

1. Configure the IPLC module at Site B.

```
[edit chassis fpc 3 optical-options amplifier-chain]
set no-anchor-iplc
set osc-ip 10.0.0.14/24
set osc-mac ab:cd:ef:gh:ff:dc
```

2. Verify the configuration is correct.

```
[edit chassis fpc 3]
user@host# show chassis fpc 3

user@host# show chassis fpc 3
optical-options {
  amplifier-chain {
    no-anchor-iplc;
    osc-ip 10.0.0.14/24;
    osc-mac ab:cd:ef:gh:ff:dc;
  }
}
```

3. If the configuration is correct, save it.

```
user@host# commit
```

Verification

Confirm the configuration is working properly.

- [Verifying the Topology of the Amplifier Chain on page 78](#)

Verifying the Topology of the Amplifier Chain

Purpose Display the IPLC and optical ILA basic information for the complete amplifier chain including the •

Display the IP addresses, names, reachability, and connection status for the anchor IPLC

- Anchor IPLC and OSC IP address

- Optical ILA name, OSC IP address/IP mask, status: Up/Down, and where the optical ILA is connected to from IPLC's perspective

Action On the PTX 3000 at Site A, from operational mode, run the **show chassis fpc optical-properties amplifier-topology** command to display the OSC topology for the amplifier chain.

```
user@host> show chassis fpc optical-properties amplifier-topology fpc-slot 3
```

```
IPLC Amplifier Topology Information
Name          IP Addr/Subnet    Reachable    Connected To
Anchor IPLC   10.0.0.10/255.255.255.0 UP             N/A
ILA-0         10.0.0.11/255.255.255.0 UP             IPLC-3
ILA-1         10.0.0.12/255.255.255.0 UP             ILA-0
ILA-2         10.0.0.13/255.255.255.0 UP             ILA-1
```

On the PTX 3000 at Site B, from operational mode, run the **show chassis fpc optical-properties amplifier-topology** command to display the OSC topology for the amplifier chain.

```
user@host> show chassis fpc optical-properties amplifier-topology fpc-slot 3
```

```
IPLC Amplifier Topology Information
Name          IP Addr/Subnet    Reachable    Connected To
No-Anchor IPLC 10.0.0.14/255.255.255.0 UP             N/A
ILA-0         10.0.0.11/255.255.255.0 UP             ILA-1
ILA-1         10.0.0.12/255.255.255.0 UP             ILA-2
ILA-2         10.0.0.13/255.255.255.0 UP             IPLC-3
```

Meaning The output shows the correct topology based on [Figure 6 on page 74](#). In addition, all optical ILAs show are reachable indicating OSC communications are functioning properly.

Related Documentation

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)

Troubleshooting and Maintenance

- [Enabling or Disabling Erbium-Doped Fiber Amplifiers on page 81](#)
- [Enabling or Disabling the Optical Supervisory Channel Laser on page 82](#)
- [Resetting an Optical Inline Amplifier Through the Junos OS CLI on page 83](#)

Enabling or Disabling Erbium-Doped Fiber Amplifiers

When you need to perform maintenance or troubleshooting, you can disable the erbium-doped fiber amplifiers on the IPLC.



BEST PRACTICE: Anytime you need to disconnect or connect the fiber span from the Line IN and Line OUT ports on the IPLC module, we recommend you disable the optical supervisory channel and the erbium-doped fiber amplifiers on the IPLC.

Always refer to the PTX3000 Packet Transport Router Hardware Guide when connecting or disconnecting cables on the IPLC modules. See [PTX3000 Packet Transport Router Hardware Guide](#).

To enable or disable the erbium-doped fiber amplifiers on the IPLC:

1. Access the IPLC configuration hierarchy.

For example, if the IPLC resides in slot 2:

```
[edit]
user@host# edit chassis fpc 2 optical-options
```

2. (Optional), To enable the erbium-doped fiber amplifiers on the IPLC.

```
[edit chassis fpc 2 optical-options]
user@host# set no-disable-edfa
```

3. (Optional), To disable the erbium-doped fiber amplifiers on the IPLC.

```
[edit chassis fpc 2 optical-options]
user@host# set disable-edfa
```

4. Confirm the configuration.

```
[edit chassis fpc 2 optical-options]
user@host# show
```

```
no-disable-edfa;
}
```

5. Save your configuration.

```
[edit chassis fpc 2 optical-options]
user@host# commit
```

**Related
Documentation**

- [Enabling or Disabling the Optical Supervisory Channel Laser on page 82](#)
- [optical-options on page 100](#)

Enabling or Disabling the Optical Supervisory Channel Laser

When you need to perform maintenance or troubleshooting, you can disable the optical supervisory channel laser on the IPLC module.



BEST PRACTICE: Anytime you need to disconnect or connect the fiber span from the Line IN and Line OUT ports on the IPLC module, we recommend you disable the optical supervisory channel laser and the erbium-doped fiber amplifiers on the IPLC.

Always refer to the PTX3000 Packet Transport Router Hardware Guide when connecting or disconnecting cables on the IPLC modules. See [PTX3000 Packet Transport Router Hardware Guide](#).

To enable or disable the optical supervisory channel laser:

1. Access the IPLC configuration hierarchy.

```
[edit]
user@host# edit chassis fpc 2 optical-options
```

2. (Optional), To enable the optical supervisory channel laser.

```
[edit chassis fpc 2 optical-options]
user@host# set no-disable-osc
```

3. (Optional), To disable the optical supervisory channel laser.

```
[edit chassis fpc 2 optical-options]
user@host# set disable-osc
```

4. Confirm the configuration.

```
[edit chassis fpc 2 optical-options]
```

```
user@host# show
```

```
no-disable-osc;  
}
```

5. Save your configuration.

```
[edit chassis fpc 2 optical-options]  
user@host# commit
```

Related Documentation

- [Enabling or Disabling the Optical Supervisory Channel Laser on page 82](#)
- [optical-options on page 100](#)

Resetting an Optical Inline Amplifier Through the Junos OS CLI

If you need to reset an optical in the amplifier chain, you can do so from the Junos OS CLI. This topic describes how to perform either a soft or hard reset on the optical ILA.

Before you begin this procedure, make sure:

- The PTX3000 integrated photonic system is up and operational
- You have previously configured the optical supervisory channel (OSC) and that it is up and running

There are two ways to reset the optical ILA:

- Soft reset—Does not impact traffic traversing the unit.
- Hard reset—Impacts traffic traversing the unit.

To reset an optical ILA from the Junos OS CLI:

1. (Optional) To perform a soft reset, access the amplifier chain configuration hierarchy and specify the unique identification number of the optical ILA.

```
user@router# run request chassis fpc optical-module amplifier-chain ila soft-reset  
fpc-slot 5 ila-number 2
```

2. (Optional) To perform a hard reset, access the amplifier chain configuration hierarchy and specify the unique identification number of the optical ILA.

```
user@router# run request chassis fpc optical-module amplifier-chain ila hard-reset  
fpc-slot 5 ila-number 2
```

3. Whether you perform a soft or hard reset, verify that the Junos OS CLI responds with the following message.

```
Reset command was successfully issued to the requested ILA
```

4. Verify that the reset is complete and the software is now running.

```
user@router# run show chassis fpc optical-properties amplifier-chain ila summary
fpc-slot 5 ila-number 2
```

```
ILA Number                2
ILA Name                   ILA-2
ILA Position               3
OSC IP Address             10.0.0.13/255.255.255.0
Manufacture Name           oplk
Manufacture Date           2016-04-07
Part Number                EDFA128ILAJUP01
Serial Num                 3D2L6140005
Calibration Date           2016-04-07
Firmware Version           2.10.0002      #new
version shown here
Hardware Version            2.01
FPGA Version               5.0
X86CPLD Version            28
Board CPLD Version         41
System Date                2015-09-22
System Time                18:43:03 GMT+0000
Up Time                    2363
IP v4 Address/Mask/Gateway 192.168.7.136/255.255.0.0/ 192.168.7.254
OSC MAC Address            aa:bb:cc:dd:ee:02
Board Temperature (C)      33.6
Temperature Threshold High/Low (C) 55.0/-5.0
Power and Fan Plug Status (Fan 0/1/2, Power 0/1) Fan0: 1 Fan1: 1
Fan2: 1 Power0: 0 Power1: 1
Fan Speed (Fan 0/1/2)     9984 / 9984 / 9984

System Mode (auto/manual)  Auto
Firmware Upgrade Status (none/in progress/done) Status: Successful
Percent: 100
```

Verify the **Up Time** field is reset, confirming the reset.

- Related Documentation**
- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
 - [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)

PART 4

Configuration Statements and Operational Commands

- [Configuration Statements on page 87](#)
- [Operational Commands on page 117](#)

CHAPTER 11

Configuration Statements

- [amplifier-chain \(IPLC\) on page 88](#)
- [expansion-card \(IPLC\) on page 90](#)
- [express-in \(IPLC\) on page 92](#)
- [fpc \(M320, T320, T640 and PTX Series Routers\) on page 94](#)
- [ila-options on page 96](#)
- [optical-options \(IPLC\) on page 100](#)
- [switch \(IPLC\) on page 102](#)
- [tca \(IPLC\) on page 104](#)
- [wavelength \(IPLC\) on page 110](#)
- [wss-express-in \(IPLC\) on page 115](#)

amplifier-chain (IPLC)

Syntax

```
amplifier-chain {  
  anchor-iplc ;  
  ila ila-number {  
    ila-options ;  
  }  
  no-anchor-iplc ;  
  osc-ip ip-address/CIDR ;  
  osc-mac osc-mac ;  
}
```

Hierarchy Level [edit chassis fpc *fpc-slot* *optical-options*]

Release Information Statement introduced in Junos OS Release 17.1R1 on the PTX3000 integrated photonic line system.

Description Configure the optical supervisory channel (OSC) for the PTX3000 integrated photonic line system and optical ILAs in the amplifier chain. This command includes parameters that enable IP connectivity for the OSC in the line system and amplifier chain.

Options The options available under the **amplifier-chain** configuration hierarchy are all associated with configuring and enabling OSC communications over the amplifier chain of the PTX3000 integrated photonic line system. You must specify the following options in order to enable OSC communication, which enables you to configure and manage Juniper Networks optical inline amplifier through the Junos OS CLI:

anchor-iplc—Configure the specified IPLC as the anchor IPLC for the optical supervisory channel (OSC). Use this option to specify one of the IPLC modules in the amplifier chain as the anchor of the chain. You can only have one IPLC anchor in the amplifier chain. This option is only available if the specified slot contains an IPLC base module.

ila *ila-number*—Configure a unique identification number for the specified optical ILA. This option is only available if the specified slot contains an IPLC base module and you are using the optical ILA in the amplifier chain.

no-anchor-iplc—(Optional) Disable the IPLC from performing anchor queries. You can configure only one IPLC as the anchor of the amplifier chain. You can optionally enable this option on the remote IPLC, that is not performing the anchor function. This option is only available if the specified slot contains an IPLC base module.

osc-ip *osc-ip*—Specify the IP address of the anchor IPLC. All IP addresses associated with the OSC must be on the same private subnet. This option is only available if the specified slot contains an IPLC base module.

osc-mac *osc-mac*—Specify the MAC address of the anchor IPLC. This option is only available if the specified slot contains an IPLC base module.

All other options are explained separately.

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

Related Documentation

- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73](#)
- [Configuring the Anchor IPLC of the Amplifier Chain on page 34](#)
- [Configuring the IP Address of the Anchor IPLC on page 35](#)

expansion-card (IPLC)

Syntax expansion-card {
 fpc *fpc-slot*;
 }

Hierarchy Level [edit chassis fpc *fpc-slot* [optical-options](#)]

Release Information Statement introduced in Junos OS Releases 15.1F6 and 17.1R1 on PTX Series Packet Transport Routers.

Description Create a logical association between the specified IPLC base module and IPLC expansion module. The IPLC base module can accept and multiplex (add) and demultiplex (drop) up to 32 individual wavelengths into a single fiber pair. If you require the IPLC to support more than 32 channels, you can configure it to support an additional 32 channels by installing and connecting the IPLC expansion module to the IPLC base module, thus increasing the IPLC channel capacity to 64 channels.

Use this statement in combination with attaching the IPLC base and expansion modules together through the front panel as follows:

- Install the IPLC base module and IPLC expansion module in the chassis.



BEST PRACTICE: We recommend that you place the IPLC modules in the same FPC/PIC slot pair in the chassis.

- Connect the two IPLC modules together as follows:
 - Connect the **XPN IN** port of the IPLC base module to the **XPN OUT** of the IPLC expansion module.
 - Connect the **XPN OUT** port of the IPLC base module to the **XPN IN** of the IPLC expansion module.

For complete details on making these connections on the PTX3000 Packet Transport Router, see the [PTX3000 Hardware Guide](#).

Options *fpc-slot*—Specify the slot in which the IPLC expansion module resides.

Range: 0 through 15

Default: None

Example If the IPLC base module resides in slot 1 and the IPLC expansion module resides in slot 2:

[edit]




user@host# set chassis fpc 1 [optical-options](#) expansion-card fpc 2

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

Related Documentation

- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
- [Increasing the Channel Capacity of the Node on page 19](#)
- [Configuring a Two-Degree Node for Express Traffic on page 21](#)

express-in (IPLC)

Syntax	<code>express-in { fpc fpc-slot; }</code>
Hierarchy Level	[edit chassis fpc fpc-slot optical-options]
Release Information	Statement introduced in Junos OS Releases 15.1F6 and 17.1R1 for the PTX3000 integrated photonic line system.
Description	Create a logical connection for between two IPLC base modules to form a two-degree IPLC node. By using this statement, along with connecting two IPLC base modules together through the front panel, you create a two-degree IPLC node that can communicate either east-west or north-south. You can use this option for express traffic in IPLC ring and metro linear scenarios, as well as other network deployments that require a two-degree IPLC node.
	<div>  <p>NOTE: In conjunction with this statement, connect the two IPLC base modules together through the PT IN and PT OUT ports on the front panel; otherwise, an association between the two modules is not properly formed.</p> </div>
	<div>  <p>BEST PRACTICE: We recommend that you place the IPLC modules into the same FPC/PIC slot pair on the PTX3000 chassis.</p> </div>
	<div>  <p>NOTE: You can configure only one logical association between two IPLC base modules.</p> </div>
Options	<i>fpc-slot</i> —Specify the location of the IPLC base module. Default: None
Example	To create a logical connection between the IPLC base modules in slots 1 and 2: [edit] user@host# set chassis fpc 1 optical-options express-in fpc 2
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.

**Related
Documentation**

- [Bypassing a Wavelength on page 25](#)
- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
- [Configuring the Integrated Photonic Line Card to Switch Wavelengths to Local or Remote Optical Interfaces on page 29](#)

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

```
Syntax  fpc slot-number {
        error {
            [fatal | major | minor] {
                threshold threshold-value;
                action (alarm | disable-pfe | offline-pic | log | get-state | offline | reset);
            }
        }
        optical-options {
            expansion-card {
                fpc fpc-slot;
            }
            express-in {
                fpc fpc-slot;
            }
            tca tca-identifier (enable-tca | no-enable-tca) (threshold number | threshold-24hrs
                number) ;
            wavelength nm{
                switch interface-name{
                }
                wss-express-in fpc-slot;
            }
        }
    }
    pic pic-number {
        cel {
            el port-number {
                channel-group group-number timeslots slot-number;
            }
        }
        ct3 {
            port port-number {
                tl link-number {
                    channel-group group-number timeslots slot-number;
                }
            }
        }
        framing (sdh | sonet);
        idle-cell-format {
            itu-t;
            payload-pattern payload-pattern-byte;
        }
        max-queues-per-interface (8 | 4);
        no-concatenate;
        q-pic-large-buffer (large-scale | small-scale);
    }
}
```

Hierarchy Level [edit chassis]

Release Information Statement introduced before Junos OS Release 7.4.
Error statement introduced for PTX Series routers in Junos OS Release 13.3.

Description Configure properties for the PICs in individual Flexible PIC Concentrators (FPCs).

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

Range: M320, T640, T1600, T4000, and PTX5000 routers: 0 through 7

Range: PTX3000 routers: 0, 2, 4, 6, 8, 10, 12, 14



NOTE: On PTX1000 routers, the FPC number is always 0.

The remaining statements are explained separately.

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

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

- Related Documentation**
- *Configuring the Junos OS to Enable SONET/SDH Framing for SONET/SDH PICs*
 - *Configuring the Junos OS to Enable a SONET PIC to Operate in Channelized (Multiplexed) Mode*
 - *Configuring FPC Error Levels and Actions*

ila-options

Syntax `ila-options {`
 `edfa-a-b (tca-input-power-high | tca-input-power-low | tca-output-power-high |`
 `tca-output-power-low | tca-pump0-current-high | tca-pump0-current-low |`
 `tca-pump0-temperature-high | tca-pump0-temperature-low | tca-pump1-current-high`
 `| tca-pump1-current-low | tca-pump1-temperature-high | tca-pump1-temperature-low`
 `| tca-signal-output-power-high | tca-signal-output-power-low)`
 `edfa-b-a (tca-input-power-high | tca-input-power-low | tca-output-power-high |`
 `tca-output-power-low | tca-pump0-current-high | tca-pump0-current-low |`
 `tca-pump0-temperature-high | tca-pump0-temperature-low | tca-pump1-current-high`
 `| tca-pump1-current-low | tca-pump1-temperature-high | tca-pump1-temperature-low`
 `| tca-signal-output-power-high | tca-signal-output-power-low)`
 `ila-ipv4-address ila-ipv4-address`
 `osc-a (osc-fiber-loss-high-tca | osc-fiber-loss-low-tca | osc-rx-power-high-tca |`
 `osc-rx-power-low-tca | osc-tx-power-high-tca | osc-tx-power-low-tca)`
 `osc-b (osc-fiber-loss-high-tca | osc-fiber-loss-low-tca | osc-rx-power-high-tca |`
 `osc-rx-power-low-tca | osc-tx-power-high-tca | osc-tx-power-low-tca)`
 `voa-a (tca-attenuation-high | tca-attenuation-low)`
 `voa-b (tca-attenuation-high | tca-attenuation-low)`
 `}`

Hierarchy Level [edit chassis fpc *fpc-slot* **optical-options** **amplifier-chain** *ila ila-number*]

Release Information Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.

Description Configure the optical ILA IP address for optical supervisory channel communications across the amplifier chain and threshold crossing alerts for the optical ILA performance monitors.



NOTE: To configure any other optical ILA options, you must log in to the optical ILA CLI, see [Optical Inline Amplifier Hardware Guide](#).

You configure and manage optical ILAs through the associated anchor IPLC module in the PTX3000 integrated photonic line system. All communication to the optical ILA is through the anchor IPLC.

Options `ila-ipv4-address ila-ipv4-address`—Specify the IPv4 address of the optical ILA in the format: w.x.y.z/a. To enable OSC communication to and from the specified optical ILA, you must configure the IP address of the optical ILA.



TIP: All communication to and from an optical ILA is through the anchor IPLC in the PTX3000 integrated photonic line system, therefore when you set the IP address of an optical ILA, you must also specify the FPC

slot in which the anchor IPLC resides. In addition, be sure to specify an IP address on the same subnet as the anchor IPLC.



NOTE: All IP addresses associated with the OSC in the optical amplifier chain must be on the same subnet.

tca-xxx-xxx.....—Specify the threshold crossing alerts values for the optical ILA EDFAs, OSC, and VOAs. [Table 9 on page 98](#), [Table 10 on page 99](#), and [Table 11 on page 99](#) describe the TCAs you can configure for the optical ILA.

Table 9: Optical ILA EDFA Threshold Crossing Alerts

EDFA Threshold Crossing Alerts	
Threshold Crossing Alert Name	Description
tca-input-power-high	Input Power high TCA
tca-input-power-low	Input Power low TCA
tca-output-power-high	Output Power high TCA
tca-output-power-low	Output Power low TCA
tca-pump0-current-high	Pump0 current high TCA
tca-pump0-current-low	Pump0 current low TCA
tca-pump0-temperature-high	Pump0 temperature high TCA
tca-pump0-temperature-low	Pump0 temperature low TCA
tca-pump1-current-high	Pump1 current high TCA
tca-pump1-current-low	Pump1 current low TCA
tca-pump1-temperature-high	Pump1 temperature high TCA
tca-pump1-temperature-low	Pump1 temperature low TCA
tca-signal-output-power-high	Signal output Power high TCA
tca-signal-output-power-low	Signal output Power low TCA

[Table 10 on page 99](#) describes the TCAs you can configure for the optical ILA OSC TCAs:

Table 10: Optical ILA OSC Threshold Crossing Alerts

Optical Supervisory Channel TCAs	
Threshold Crossing Alert Name	Description
osc-fiber-loss-high-tca	OSC fiber loss high TCA
osc-fiber-loss-low-tca	OSC fiber loss low TCA
osc-rx-power-high-tca	OSC RX power high TCA
osc-rx-power-low-tca	OSC RX power low TCA
osc-tx-power-high-tca	OSC TX power high TCA
osc-tx-power-low-tca	OSC TX power low TCA

[Table 11 on page 99](#) describes the TCAs you can configure for the optical ILA VOA TCAs:

Table 11: Optical ILA VOA Threshold Crossing Alerts

VOA TCAs	
Threshold Crossing Alert Name	Description
tca-attenuation-high	Attenuation high TCA
tca-attenuation-low	Attenuation low TCA

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

Related Documentation

- [Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11](#)
- [Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33](#)
- [Configuring the IP Address of an Optical Inline Amplifier on page 39](#)
- [Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors on page 51](#)

optical-options (IPLC)

Syntax

```
optical-options {
  disable-edfa;
  disable-osc;
  expansion-card {
    fpc fpc-slot;
  }
  express-in {
    fpc fpc-slot;
  }
  no-disable-edfa;
  no-disable-osc;
  switch interface-name {
  }
  tca tca-identifier (enable-tca | no-enable-tca) (threshold number | threshold-24hrs number)
  ;
  wavelength nm {
    wss-express-in fpc-slot;
  }
}
```

Hierarchy Level [edit chassis chassis **fpc slot**]

Release Information Statement introduced in Junos OS Releases 15.1F6 and 17.1R1 on PTX3000 integrate photonic line system.

Description Configure the settings for the integrated photonic line card (IPLC). The options under this statement enables you to increase the IPLC channel capacity to 64 channels, configure express in and out traffic from another IPLC base module, create a single two-degree IPLC node, switch express traffic to optical interfaces in the local or remote chassis, optically bypass channels, and fine-tune performance monitors.

Options **slot**—Specify the slot number the IPLC resides in.

Range: 0 through 15

disable-edfa—Disable both erbium-doped fiber amplifiers on the IPLC. Disabling the erbium-doped fiber amplifiers on the IPLC is required as a preliminary step whenever the you need to disconnect the fiber span from the **Line IN** and **Line OUT** ports for troubleshooting.

disable-osc—Disable the optical supervisory channel laser.

no-disable-edfa—Enable both erbium-doped fiber amplifiers on the IPLC. By default, both erbium-doped fiber amplifiers are enabled.

no-disable-osc—Enable the optical supervisory channel. By default, the optical supervisory channel is enabled.



BEST PRACTICE: Anytime you need to disconnect or connect the fiber span from the Line IN and Line OUT ports on the IPLC module, we recommend you disable the optical supervisory channel and the erbium-doped fiber amplifiers on the IPLC.

Always refer to the PTX3000 Packet Transport Router Hardware Guide when connecting or disconnecting cables on the IPLC modules. See [PTX3000 Packet Transport Router Hardware Guide](#).

All other options are explained separately.

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

Related Documentation	<ul style="list-style-type: none">• Understanding How to Configure the Integrated Photonic Line Card on page 9• Configuring a Two-Degree Node for Express Traffic on page 21• Configuring Wavelengths on the Integrated Photonic Line Card Add and Drop Ports on page 22
------------------------------	--

switch (IPLC)

Syntax `switch interface-name| remote;`

Hierarchy Level `[edit chassis fpc fpc-slot optical-options wavelength nm]`

Release Information Statement introduced in Junos OS Releases 15.1F6 17.1R1 for PTX3000 integrated photonic line system.

Description Switch the specified wavelength from the IPLC port to the specified local or remote optical interface.

The IPLC is designed to connect the **ADD** and **DROP** ports on the front panel to compatible optical PICs or MICs on the local or remote chassis. Wavelengths configured on the local IPLC **ADD** ports are multiplexed and sent over the **Line OUT** port of the IPLC base module. The remote IPLC base module receives the signal on the **Line IN** port and demultiplexes the wavelengths to the **DROP** ports on the front panel of the IPLC according to the configuration of the remote IPLC. After you have made the physical connections between the IPLC ports and the local and remote optical interfaces, you need to configure the IPLC to switch the wavelengths to the optical interfaces.

This statement requires you to make the following connections:

- Install the optical interfaces and configure the wavelength number on the interface so that it is compatible with the wavelength on the IPLC. See [Configuring the 10-Gigabit or 100-Gigabit Ethernet DWDM Interface Wavelength](#). For a list of optical interfaces that are compatible with the IPLC ports, see [PTX Series IPLC Compatibility](#).
- Install the IPLC module in the local or remote PTX Series chassis and connect the **ADD** and **DROP** ports to the respective optical interfaces.



NOTE: The specified slot must contain an IPLC base module or IPLC expansion module.

Options `fpc-slot`—Specify the IPLC slot number.

`interface-name`—Specify the name of the optical interface to which you want to switch the specified wavelength. This field is free-form text.

`nm`—Specify the wavelength number you want to switch.

Remote—Specify that the wavelength is to be switched to an optical interface on a remote chassis.

Example: Switching Wavelengths to an To switch wavelength 1550.12 on the local IPLC module in slot 2 to the local et-1/1/0 interface, enter the following:

Optical Interface on the Local Chassis [edit]
user@host# set chassis fpc 2 **optical-options wavelength 1550.12 switch et-1/1/0**

Example: Switching Wavelengths to an Optical Interface on the Remote Chassis To switch wavelength 1550.12 on the local IPLC module in slot 2 to an optical interface on a remote chassis, enter the following:

[edit]
user@host# set chassis fpc 2 **optical-options wavelength 1550.12 switch remote**

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

- Related Documentation**
- [Configuring the Integrated Photonic Line Card to Switch Wavelengths to Local or Remote Optical Interfaces on page 29](#)
 - [Understanding How to Configure the Integrated Photonic Line Card on page 9](#)
 - [Understanding the Integrated Photonic Line Card Architecture on page 6](#)
 - [Configuring a Two-Degree Node for Express Traffic on page 21](#)

tca (IPLC)

Syntax `tca tca-identifier (enable-tca | no-enable-tca) (threshold number | threshold-24hrs number) ;`

Hierarchy Level [edit chassis fpc *fpc-slot* [optical-options](#)]

Release Information Statement introduced in Junos OS Releases 15.1F6 and 17.1R1 for PTX3000 integrated photonic line system.

Description Configure the threshold crossing alerts (TCA)s for the integrated photonic line card (IPLC).

TCAs can give the management system an early indication as to the state of the associated entity when it crosses a certain threshold. The timely detection of TCAs is essential to proactively manage the IPLC modules. TCAs are not an indication of a fault, but rather an indication that the entity may be close to a fault. You can choose which TCAs you want monitored by enabling the TCA. You can either keep the default threshold settings or modify the settings.

You can enable TCAs on the IPLC for the performance monitors listed in [Table 12 on page 104](#).

Table 12: IPLC Optical Performance Monitors

Performance Monitor	15 Min Bin	24 Hr Bin	TCA High	TCA Low
OSC TX power	Yes	Yes	Yes	Yes
OSC RX power	Yes	Yes	Yes	Yes
OSC/FPGA estimated fiber loss	Yes	Yes	No	No
Line OUT VOA attenuation	Yes	Yes	Yes	Yes
EDFA Input power (for both EDFAs)	Yes	Yes	Yes	Yes
EDFA Output power (for both EDFAs)	Yes	Yes	Yes	Yes
EDFA Signal output power (for both EDFAs)	Yes	Yes	Yes	Yes
EDFA Pump current (for both EDFAs)	Yes	Yes	Yes	Yes
OCM power readings (64 channels x 1 monitoring points)	Yes	Yes	Yes	Yes
Power monitor at ADD port	Yes	Yes	Yes	Yes
Power monitor at EXPRESS IN port	Yes	Yes	Yes	Yes

Each performance monitor supports:

- 15-minute and 24-hour binning
- Low and high threshold levels

[Table 13 on page 106](#) describes each TCA as well as their default, minimum, maximum, and recommended values.

Table 13: IPLC Threshold Crossing Alert Minimum and Maximum Values

TCA Identifier	Description	Granularity	Range Minimum/Maximum Default and Recommended Value
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)			
edfa1-awg-high-tca	Ingress EDFA pump AWG high TCA	5s	390/440 mW 400 mW
edfa1-awg-low-tca	Ingress EDFA pump AWG low TCA		5/15 mW 5 mW
edfa1-express-high-tca	Ingress EDFA pump express high TCA		390/440 mW 400 mW
edfa1-express-low-tca	Ingress EDFA pump express low TCA		5/15 mW 5 mW
edfa1-in-power-high-tca	Ingress EDFA input power high TCA	0.5s	10/12 dBm 11 dBm
edfa1-in-power-low-tca	Ingress EDFA input power low TCA		−38/−34 dBm −35 dBm
edfa1-out-power-high-tca	Ingress EDFA output power high TCA		20/21 dBm 20.5 dBm
edfa1-out-power-low-tca	Ingress EDFA output power low TCA		−1/0.5 dBm
edfa1-pump-current-high-tca	Ingress EDFA pump current high TCA	1s	10/300 mA
edfa1-pump-current-low-tca	Ingress EDFA pump current low TCA		
edfa1-sig-power-high-tca	Ingress EDFA signal power high TCA	0.5s	10/12 dBm 11 dBm
edfa1-sig-power-low-tca	Ingress EDFA signal power low TCA >		−39/−35 dBm −36 dBm
Erbium-Doped Fiber Amplifier (EDFA) Output Power (for Both EDFAs)			
edfa2-awg-high-tca	Egress EDFA pump AWG high TCA	5s	390/440 mW 400 mW

Table 13: IPLC Threshold Crossing Alert Minimum and Maximum Values (continued)

TCA Identifier	Description	Granularity	Range Minimum/Maximum Default and Recommended Value
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)			
edfa2-awg-low-tca	Egress EDFA pump AWG low TCA		5/15 mW 5 mW
edfa2-express-high-tca	Egress EDFA pump express high TCA		390/440 mW 400 mW
edfa2-express-low-tca	Egress EDFA pump express low TCA		5/15 mW 5 mW
edfa2-in-power-high-tca	Egress EDFA input power high TCA	0.5s	10/12 dBm 11 dBm
edfa2-in-power-low-tca	Egress EDFA input power low TCA		−38/−34 dBm −35 dBm
edfa2-out-power-high-tca	Egress EDFA output power high TCA		20/21 dBm 20.5 dBm
edfa2-out-power-low-tca	Egress EDFA output power low TCA		−1/0.5 dBm −0.5 dBm
edfa2-pump-current-high-tca	Egress EDFA pump current high TCA	1s	10/300 mA
edfa2-pump-current-low-tca	Egress EDFA pump current low TCA		
edfa2-sig-power-high-tca	Egress EDFA signal power high TCA	0.5s	10/12 dBm 11 dBm
edfa2-sig-power-low-tca	Egress EDFA signal power low TCA		−39/−35 dBm −36 dBm
Line OUT Variable Optical Attenuation (VOA)			
lout-voa-high-tca	LOUT VOA high TCA	0.5	16/25 dBm 17 dBm
lout-voa-low-tca	LOUT VOA low TCA	N/A	N/A

Table 13: IPLC Threshold Crossing Alert Minimum and Maximum Values (continued)

TCA Identifier	Description	Granularity	Range Minimum/Maximum Default and Recommended Value
Erbium-Doped Fiber Amplifier (EDFA) Input Power (for Both EDFAs)			
Optical Channel Monitor (OCM) Power Readings (64 channels x 1 Monitoring Points)			
ocm-power-high-line-out-tca	OCM Power Line Out high TCA	0.5 dBm	1/2 dBm per channel 1.5 dBm per channel <i>NOTE:</i> Assumes VOA setting =0
ocm-power-low-line-out-tca	OCM Power Line Out low TCA		−2/−1 dBm per channel −1.5 dBm per channel <i>NOTE:</i> Assumes VOA setting =0
Optical Supervisory Channel (OSC) Estimated Fiber Loss			
osc-fiber-loss-high-tca	OSC fiber loss high TCA	0.5 dB	36/39 dB 37 dB
osc-fiber-loss-low-tca	OSC fiber loss low TCA	N/A	N/A
Optical Supervisory Channel (OSC) RX Power			
osc-rx-power-high-tca	OSC RX power high TCA	0.5 dBm	5/7 dBm 6 dBm
osc-rx-power-low-tca	OSC RX power low TCA		−47/−46 dBm −46 dBm
Optical Supervisory Channel (OSC) TX Power			
osc-tx-power-high-tca	OSC TX power high TCA	0.5 dBm	5.5/7 dBm 6 dBm
osc-tx-power-low-tca	OSC TX power low TCA		−2/−0.5 dBm −1 dBm

Default By default, TCAs are disabled.

Options *tca-identifier*—Specify the name of the TCA identifier.

enable-tca | *no-enable-tca*—Enable or disable the threshold crossing alert.

threshold number—Specify the 15-minute interval threshold.

threshold-24hrs number—Specify the 24-hour interval threshold.

See [Table 13 on page 106](#) for a description of all TCAs, as well as the default, minimum, maximum, and recommended threshold values.

Example To specify the 15-minute and 24-hour interval thresholds for the optical supervisory channel receive power, enter the following:

[edit]

```
user@host# set chassis fpc 2 optical-options tca osc-rx-power-low-tca threshold -46
enable-tca
```

```
user@host# set chassis fpc 2 optical-options tca osc-rx-power-high-tca threshold 5.5
enable-tca
```

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

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

- Related Documentation**
- [Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45](#)
 - [show chassis fpc optical-properties alarms on page 119](#)
 - [show chassis fpc optical-properties edfa on page 122](#)
 - [show chassis fpc optical-properties status on page 140](#)
 - [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
 - [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

wavelength (IPLC)

Syntax `wavelength nm;`
 `wss-express-in fpc-slot;`
 `}`
 `switch interface-name;`
 `}`

Hierarchy Level [edit chassis fpc *fpc-slot* [optical-options](#)]

Release Information Statement introduced in Junos OS Releases 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.

Description Specify the wavelength in nanometers (nm) that you want to configure on the IPLC port.

Options *nm*—Wavelength in nanometers. It can be one of the following listed for the central wavelength in [Table 14 on page 111](#):

Table 14: IPLC Port Number, Wavelength, and Frequency Mapping

Frequency [THz]	Central Wavelength [nm]	Spacing	Present on IPLC Module	Label on IPLC Module	Present on IPLC Expansion Module	Label on IPLC Expansion Module
192.05	1561.01	50 GHz	Yes	0	No	No
192.1	1560.61	50/100 GHz	No	No	Yes	32
192.15	1560.2	50 GHz	Yes	1	No	No
192.2	1559.79	50/100 GHz	No	No	Yes	33
192.25	1559.39	50 GHz	Yes	2	No	No
192.3	1558.98	50/100 GHz	No	No	Yes	34
192.35	1558.58	50 GHz	Yes	3	No	No
192.4	1558.17	50/100 GHz	No	No	Yes	35
192.45	1557.77	50 GHz	Yes	4	No	No
192.5	1557.36	50/100 GHz	No	No	Yes	36
192.55	1556.96	50 GHz	Yes	5	No	No
192.6	1556.55	50/100 GHz	No	No	Yes	37
192.65	1556.15	50 GHz	Yes	6	No	No
192.7	1555.75	50/100 GHz	No	No	Yes	38
192.75	1555.34	50 GHz	Yes	7	No	No
192.8	1554.94	50/100 GHz	No	No	Yes	39
192.85	1554.54	50 GHz	Yes	8	No	No
192.9	1554.13	50/100 GHz	No	No	Yes	40
192.95	1553.73	50 GHz	Yes	9	No	No
193	1553.33	50/100 GHz	No	No	Yes	41
193.05	1552.93	50 GHz	Yes	10	No	No
193.1	1552.52	50/100 GHz	No	No	Yes	42

Table 14: IPLC Port Number, Wavelength, and Frequency Mapping (continued)

Frequency [THz]	Central Wavelength [nm]	Spacing	Present on IPLC Module	Label on IPLC Module	Present on IPLC Expansion Module	Label on IPLC Expansion Module
193.15	1552.12	50 GHz	Yes	11	No	No
193.2	1551.72	50/100 GHz	No	No	Yes	43
193.25	1551.32	50 GHz	Yes	12	No	No
193.3	1550.92	50/100 GHz	No	No	Yes	44
193.35	1550.52	50 GHz	Yes	13	No	No
193.4	1550.12	50/100 GHz	No	No	Yes	45
193.45	1549.72	50 GHz	Yes	14	No	No
193.5	1549.32	50/100 GHz	No	No	Yes	46
193.55	1548.91	50 GHz	Yes	15	No	No
193.6	1548.51	50/100 GHz	No	No	Yes	47
193.65	1548.11	50 GHz	Yes	16	No	No
193.7	1547.72	50/100 GHz	No	No	Yes	48
193.75	1547.32	50 GHz	Yes	17	No	No
193.8	1546.92	50/100 GHz	No	No	Yes	49
193.85	1546.52	50 GHz	Yes	18	No	No
193.9	1546.12	50/100 GHz	No	No	Yes	50
193.95	1545.72	50 GHz	Yes	19	No	No
194	1545.32	50/100 GHz	No	No	Yes	51
194.05	1544.92	50 GHz	Yes	20	No	No
194.1	1544.53	50/100 GHz	No	No	Yes	52
194.15	1544.13	50 GHz	Yes	21	No	No
194.2	1543.73	50/100 GHz	No	No	Yes	53

Table 14: IPLC Port Number, Wavelength, and Frequency Mapping (continued)

Frequency [THz]	Central Wavelength [nm]	Spacing	Present on IPLC Module	Label on IPLC Module	Present on IPLC Expansion Module	Label on IPLC Expansion Module
194.25	1543.33	50 GHz	Yes	22	No	No
194.3	1542.94	50/100 GHz	No	No	Yes	54
194.35	1542.54	50 GHz	Yes	23	No	No
194.4	1542.14	50/100 GHz	No	No	Yes	55
194.45	1541.75	50 GHz	Yes	24	No	No
194.5	1541.35	50/100 GHz	No	No	Yes	56
194.55	1540.95	50 GHz	Yes	25	No	No
194.6	1540.56	50/100 GHz	No	No	Yes	57
194.65	1540.16	50 GHz	Yes	26	No	No
194.7	1539.77	50/100 GHz	No	No	Yes	58
194.75	1539.37	50 GHz	Yes	27	No	No
194.8	1538.98	50/100 GHz	No	No	Yes	59
194.85	1538.58	50 GHz	Yes	28	No	No
194.9	1538.19	50/100 GHz	No	No	Yes	60
194.95	1537.79	50 GHz	Yes	29	No	No
195.00	1537.40	50/100 GHz	No	No	Yes	61
195.05	1537.00	50 GHz	Yes	30	No	No
195.10	1536.61	50/100 GHz	No	No	Yes	62
195.15	1536.22	50 GHz	Yes	31	No	No
195.20	1535.82	50/100 GHz	No	No	Yes	63

Default: 1550.12–1550.12 nm, 50/100GHz spacing

The remaining statements are explained separately. See [CLI Explorer](#).

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

Related Documentation

- [switch \(IPLC\) on page 102](#)
- [wss-express-in \(IPLC\) on page 115](#)

wss-express-in (IPLC)

Syntax `wss-express-in ;`

Hierarchy Level `[edit chassis fpc fpc-slot optical-options wavelength nm]`

Release Information Statement introduced in Junos OS Releases 15.1F6 and 17.1R1 for PTX3000 integrated photonic line system.

Description Bypass the specified wavelength on this IPLC module. When you bypass a wavelength, it does not terminate at the local node, it is passed on to the next IPLC node. Use this statement to control and manage express traffic at intermediate, two-degree IPLC nodes.



NOTE: Bypassing wavelengths is supported only on IPLC two-degree nodes running express traffic. For more information, see [“Configuring a Two-Degree Node for Express Traffic”](#) on page 21.

Options `wss-express-in`—Bypass the specified wavelength.



NOTE: You can bypass only wavelengths that are expressed-in at intermediate, two-degree IPLC nodes.

Example Bypassing a wavelength is a two-step process:

1. Configure the two-degree IPLC node for express traffic. See [“Configuring a Two-Degree Node for Express Traffic”](#) on page 21.
2. Bypass the wavelength.

For example, to bypass wavelength 1550.12 on the IPLC module in slot 2 of the two-degree IPLC node:

`[edit]`

`user@host# set chassis fpc 2 optical-options wavelength 1550.12 wss-express-in`

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

Related Documentation

- [express-in \(IPLC\) on page 92](#)
- [wavelength \(IPLC\) on page 110](#)
- [Bypassing a Wavelength on page 25](#)

CHAPTER 12

Operational Commands

- clear chassis fpc optical-properties
- show chassis fpc optical-properties alarms
- show chassis fpc optical-properties edfa
- show chassis fpc optical-properties mfg-info
- show chassis fpc optical-properties ocm
- show chassis fpc optical-properties pm-current
- show chassis fpc optical-properties pm-currentday
- show chassis fpc optical-properties pm-interval
- show chassis fpc optical-properties pm-previousday
- show chassis fpc optical-properties status
- show chassis fpc optical-properties topology
- show chassis hardware
- show chassis environment fpc
- show chassis environment monitored
- request chassis fpc optical-module firmware-upgrade
- request chassis fpc optical-module amplifier-chain ila firmware-upgrade
- request chassis fpc optical-module amplifier-chain ila soft-reset
- request chassis fpc optical-module amplifier-chain ila hard-reset
- show chassis fpc optical-properties amplifier-topology
- show chassis fpc optical-properties amplifier-chain ila summary
- show chassis fpc optical-properties amplifier-chain ila edfa
- show chassis fpc optical-properties amplifier-chain ila osc
- show chassis fpc optical-properties amplifier-chain ila voa
- show chassis fpc optical-properties amplifier-chain ila alarms
- show chassis fpc optical-properties amplifier-chain ila pm-current
- show chassis fpc optical-properties amplifier-chain ila pm-currentday
- show chassis fpc optical-properties amplifier-chain ila pm-interval
- show chassis fpc optical-properties amplifier-chain ila pm-previousday

clear chassis fpc optical-properties

Syntax	<code>clear chassis fpc optical-properties fpc-slot <i>fpc-slot</i> (pm-current pm-currentday all)</code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Clear the performance monitoring data for the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the IPLC module resides</p> <p>pm-current—Information for the current 15-minute performance monitoring data</p> <p>pm-currentday—Information for the current 24-hour performance monitoring data</p> <p>all—All performance monitoring data (current, current day, previous day, and interval)</p>
Required Privilege Level	clear
Related Documentation	<ul style="list-style-type: none">• tca on page 104• show chassis fpc optical-properties pm-currentday on page 131• show chassis fpc optical-properties pm-current on page 128• show chassis fpc optical-properties pm-interval on page 134• show chassis fpc optical-properties pm-previousday on page 137
List of Sample Output	clear chassis fpc optical-properties all on page 118
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

clear chassis fpc optical-properties all

```
user@host> clear chassis fpc optical-properties fpc-slot 5 all
```

show chassis fpc optical-properties alarms

Syntax `show chassis fpc optical-properties alarms fpc-slot fpc-slot`

Release Information Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.

Description Display the alarms for the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot. Use this command to view the current alarms on the IPLC.

Options *fpc-slot*—Slot number of the FPC or PIC in which the IPLC module resides.

Additional Information The alarms provide information about system or component failures on the IPLC.



NOTE: The *fpc-slot* number in the alarms refers to the FPC or PIC in which the IPLC module resides.

Table 15: Alarm Descriptions

Alarm	Description
IPLC <i>fpc-slot</i> AWG Add LOS	The IPLC AWG Add port has detected loss of signal (LOS).
IPLC <i>fpc-slot</i> Express-In LOS	The IPLC Express-In (XPN-IN) port has detected LOS.
IPLC <i>fpc-slot</i> OSC Add LOS	The IPLC OSC Add port has detected LOS.
IPLC <i>fpc-slot</i> OSC Drop LOS	The IPLC OSC Drop port has detected LOS.
IPLC <i>fpc-slot</i> Line In LOS	The IPLC Line IN port has detected LOS.
IPLC <i>fpc-slot</i> Reflect Power Failure	The IPLC has detected back reflection power failure.
IPLC <i>fpc-slot</i> Out of Gain	The IPLC could not converge on the set gain. It is operating at a gain value exceeding the allowable deviation from the set gain.
IPLC <i>fpc-slot</i> Pump EOL	The IPLC pump has reached its end of life (i.e. Pump current has reached the maximum rated value).
IPLC <i>fpc-slot</i> Temperature Failure	The IPLC EDFA has detected temperature failure.
IPLC <i>fpc-slot</i> Output LOS	The IPLC EDFA Output port has detected LOS.
IPLC <i>fpc-slot</i> Input LOS	The IPLC EDFA Input port has detected LOS.

Table 15: Alarm Descriptions (continued)

Alarm	Description
IPLC <i>fpc-slot</i> Output Power Failure	The IPLC Output port has detected power failure.
IPLC <i>fpc-slot</i> WSS Temperature Failure	The IPLC WSS has detected temperature failure.
IPLC <i>fpc-slot</i> Inter Diag	The IPLC is in the diagnostics mode.
IPLC <i>fpc-slot</i> Firmware Inconsistent	The IPLC firmware is inconsistent with the software or hardware. NOTE: If you see this alarm, upgrade your firmware by using the request chassis fpc optical-module firmware-upgrade command.
IPLC <i>fpc-slot</i> OCM Module Failure	The IPLC OCM module has failed.
IPLC <i>fpc-slot</i> WSS Module Failure	The IPLC WSS module has failed.
IPLC <i>fpc-slot</i> EDFA2 Module Failure	The IPLC EDFA2 module has failed.
IPLC <i>fpc-slot</i> EDFA1 Module Failure	The IPLC EDFA1 module has failed.
IPLC <i>fpc-slot</i> SFP LOS	The IPLC SFP has detected LOS.
IPLC <i>fpc-slot</i> SFP LOF	The IPLC SFP has detected loss of frame (LOF).

Required Privilege Level view

Related Documentation

- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

List of Sample Output [show chassis fpc optical-properties alarms on page 121](#)

Output Fields [Table 16 on page 120](#) lists the output fields for the **show chassis fpc optical-properties alarms** command. Output fields are listed in the approximate order in which they appear.

Table 16: show chassis fpc optical-properties alarms Output Fields

Field Name	Field Description
Module	Component on which the alarm is triggered.
Active	FPC or PIC slot number where the active alarm is triggered.
Alarms	Alarm that is triggered.

Sample Output

show chassis fpc optical-properties alarms

```
user@host> show chassis fpc optical-properties alarms fpc-slot 14
```

```
Module Active Alarms
Main Board   IPLC 14 OSC Drop LOS
Main Board   IPLC 14 Line In LOS
Output EDFA  IPLC 14 Output LOS
Output EDFA  IPLC 14 Input LOS
Main Board   IPLC 14 Firmware Inconsistent
Main Board   IPLC 14 SFP LOS
```

show chassis fpc optical-properties edfa

Syntax	<code>show chassis fpc optical-properties edfa fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Display the erbium-doped fiber amplifier (EDFA) properties for the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6
List of Sample Output	show chassis fpc optical-properties edfa on page 122
Output Fields	Table 17 on page 122 lists the output fields for the <code>show chassis fpc optical-properties edfa</code> command. Output fields are listed in the approximate order in which they appear.

Table 17: show chassis fpc optical-properties edfa Output Fields

Field Name	Field Description
EDFA Information	Detailed EDFA information such as gain setting, input loss of signal (LOS) upper threshold, output LOS upper threshold, and so on
INPUT EDFA	Values for the input EDFA received from the hardware. The input EDFA amplifies the received signal from the Line IN port before dropping the signal locally and sending a copy to the PT OUT port.
OUTPUT EDFA	Values for the output EDFA. The output EDFA amplifies the output of the wavelength-selective switching (WSS) before sending the amplified signal to Line OUT port.

Sample Output

show chassis fpc optical-properties edfa

```
user@host> show chassis fpc optical-properties edfa fpc-slot 5
```

EDFA Information	INPUT EDFA	OUTPUT EDFA
Gain Setting Saved (low/high 0.01 dB)	1089/1800	1900
Gain Tilt Setting (mBm)	0	0
Input LOS Upper Threshold (0.01 dBm)	-3300	-100
Input LOS Lower Threshold (0.01 dBm)	-3600	-2300

Output LOS Upper Threshold (0.01 dBm)	-100	-100
Output LOS Lower Threshold (0.01 dBm)	-400	-400
Gain Setting (low/high 0.01 dB)	1089/1800	1900
Output Enable	Yes	Yes
Auto LOS Enable	Yes	No
Mode	0	0
Plim Power	0	-6000

show chassis fpc optical-properties mfg-info

Syntax `show chassis fpc optical-properties mfg-info fpc-slot fpc-slot`

Release Information Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.

Description Display manufacturing details such as module type, software version, boot versions and so on, for the integrated photonic line card (IPLC) module and hardware components. This information is displayed for the main board (IPLC), erbium-doped fiber amplifier (EDFA), wavelength selective switch (WSS), and optical channel monitor (OCM) hardware components.

Options *fpc-slot*—Slot number of the FPC or PIC in which the IPLC module resides

Required Privilege Level view

Related Documentation

- [Integrated Photonic Line Card Base and Expansion Module Overview on page 3](#)
- [Understanding the Integrated Photonic Line Card Architecture on page 6](#)

List of Sample Output [show chassis fpc optical-properties mfg info on page 124](#)

Output Fields [Table 18 on page 124](#) lists the output fields for the **show chassis fpc optical-properties mfg info** command. Output fields are listed in the approximate order in which they appear.

Table 18: show chassis fpc optical-properties mfg info Output Fields

Field Name	Field Description
MAIN BOARD	Display manufacturing details about the for the main board (IPLC)
EDFA	Display manufacturing details about the erbium-doped fiber amplifier (EDFA)
WSS	Display manufacturing details about the wavelength selective switch (WSS)
OCM	Display manufacturing details about the optical channel monitor (OCM)

Sample Output

show chassis fpc optical-properties mfg info

```

user@host> show chassis fpc optical-properties mfg-info fpc-slot 5
Manufacturing Information
                MAIN BOARD                EDFA                WSS
                OCM
Product Name    IPLC                      EDFA                WSS

```

	OCM		
Module Type	NULL	NULL	NULL
	NULL		
Boot Version	-	1.01.0001	-
	1.01.0001		
Software Version	SDK:9.91.0001;FDev:1.01.0002		
Firmware Version	1.03.0004	1.02.0002	
1.01.6103	1.02.0001		
FPGA Version	42	1.04.0001	-
	-		
CPLD Version	40	-	-
	-		
Hardware Version	2.01	2.01	3.00
	2.01		
PCB Revision	2.01	2.01	3.00
	2.01		
Part Number	RADMADM2D0JUP01	RADMADM2D0JUP01-2	
DWDM21WSS50PL01	OCMMOG2192JUP01		
Serial Number	3DI05490003	B5845436	b3675577
	B5690792		
Manufacturing Date	2015-12-03	2015-11-10	
2015-07-08	2015-09-30		
Calibration Date	2015-12-03	2015-11-10	
2015-08-08	2015-10-10		

show chassis fpc optical-properties ocm

Syntax	<code>show chassis fpc optical-properties ocm fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Display the optical channel monitor (OCM) properties for the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6
List of Sample Output	show chassis fpc optical-properties ocm on page 126
Output Fields	Table 19 on page 126 lists the output fields for the <code>show chassis fpc optical-properties ocm</code> command. Output fields are listed in the approximate order in which they appear.

Table 19: show chassis fpc optical-properties ocm Output Fields

Field Name	Field Description
Wavelength(nm) / Port / Frequency(THz)	Wavelength used, port number of the IPLC module or expansion module, and frequency of the wavelength. NOTE: When the expansion module is configured, this statement displays 64 channels.
Line Out (OCM2)(0.01 dBm)	Displays the power values of each channel at the LINE OUT (output port on the IPLC). This power information is measured in dBm units by the OCM.

Sample Output

show chassis fpc optical-properties ocm

```
user@host> show chassis fpc optical-properties ocm fpc-slot 5
```

```
OCM Power Information
Wavelength(nm) / Port / Frequency(THz)    Line Out(OCM2)(0.01 dBm)
1561.01          0      192.05              -6000
1560.20          1      192.15              -6000
1559.39          2      192.25              -6000
1558.58          3      192.35              -6000
1557.77          4      192.45              -6000
```

1556.96	5	192.55	-6000
1556.15	6	192.65	-6000
1555.34	7	192.75	-6000
1554.54	8	192.85	-6000
1553.73	9	192.95	-6000
1552.93	10	193.05	-6000
1552.12	11	193.15	-6000
1551.32	12	193.25	-6000
1550.52	13	193.35	-6000
1549.72	14	193.45	-6000
1548.91	15	193.55	-6
1548.11	16	193.65	-6000
1547.32	17	193.75	-6000
1546.52	18	193.85	-6000
1545.72	19	193.95	-6000
1544.92	20	194.05	-6000
1544.13	21	194.15	-6000
1543.33	22	194.25	-6000
1542.54	23	194.35	-6000
1541.75	24	194.45	-6000
1540.95	25	194.55	-6000
1540.16	26	194.65	-6000
1539.37	27	194.75	-6000
1538.58	28	194.85	-6000
1537.79	29	194.95	-6000
1537.00	30	195.05	-6000
1536.22	31	195.15	-6000

show chassis fpc optical-properties pm-current

Syntax	<code>show chassis fpc optical-properties pm-current fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Display the current performance monitors for the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45 • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6
List of Sample Output	show chassis fpc optical-properties pm-current on page 129
Output Fields	Table 20 on page 128 lists the output fields for the <code>show chassis fpc optical-properties pm-current</code> command. Output fields are listed in the approximate order in which they appear.

Table 20: show chassis fpc optical-properties pm-current Output Fields

Field Name	Field Description
PM	Performance monitor
CURRENT	Current (instantaneous) value of the performance monitor during the 15-minute interval.
MIN	Minimum value measured
MAX	Maximum value measured
AVG	Average value
THRESHOLD (MIN) (MAX)	Threshold value set for the minimum and maximum values
TCA-ENABLED (MIN) (MAX)	Threshold-crossing alert (TCA) set for the minimum and maximum values. Yes: TCA is enabled.
TCA-RAISED (MIN) (MAX)	TCA raised for the minimum and maximum values. Yes: TCA crosses the threshold.

Sample Output

show chassis fpc optical-properties pm-current

```
user@host> show chassis fpc optical-properties pm-current fpc-slot 5
```

```
Physical interface: 5, SNMP ifIndex 5
```

```
15:30-current
```

```
Suspect Flag:False
```

```
Reason:None
```

PM			CURRENT		MIN	MAX	AVG	THRESHOLD
TCA-ENABLED			TCA-RAISED					
(MAX)	(MIN)	(MAX)	(MIN)	(MAX)				(MIN)
OSC Tx Power(0.01 dBm)				174	174	176	175	0
0	No	No	No	No				
OSC Rx Power(0.01 dBm)				-932	-933	-930	-931	0
0	No	No	No	No				
OSC Fiber Loss(0.01 dB)				1832	1815	1836	1825	0
0	No	No	No	No				
Line OUT VOA(0.01 dB)				20	10	40	25	0
0	No	No	No	No				
Ingress EDFA								
Input Power(0.01 dBm)				-1428	-1430	-1425	-1427	0
0	No	No	No	No				
Output Power(0.01 dBm)				-308	-309	-305	-307	0
0	No	No	No	No				
Signal Power(0.01 dBm)				-340	-341	-336	-338	0
0	No	No	No	No				
Egress EDFA								
Input Power(0.01 dBm)				-1845	-1850	-1843	-1846	0
0	No	No	No	No				
Output Power(0.01 dBm)				104	101	106	103	0
0	No	No	No	No				
Signal Power(0.01 dBm)				54	49	56	52	0
0	No	No	No	No				
Power monitor								
AWG Add(0.01 dB)				-1158	-1166	-1152	-1159	0
0	No	No	No	No				
Express In(0.01 dB)				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
OCM Power (LOUT)(0.01 dBm)								
1561.01				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1560.20				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1559.39				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1558.58				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1557.77				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1556.96				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1556.15				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1555.34				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1554.54				-6000	-6000	-6000	-6000	0
0	No	No	No	No				
1553.73				-6000	-6000	-6000	-6000	0

show chassis fpc optical-properties pm-currentday

Syntax	<code>show chassis fpc optical-properties pm-currentday fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Displays the performance monitors for the current day for the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45 • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6
List of Sample Output	show chassis fpc optical-properties pm-currentday on page 132
Output Fields	Table 21 on page 131 lists the output fields for the <code>show chassis fpc optical-properties currentday</code> command. Output fields are listed in the approximate order in which they appear.

Table 21: show chassis fpc optical-properties pm-currentday Output Fields

Field Name	Field Description
PM	Performance monitor
MIN	Minimum value measured
MAX	Maximum value measured
AVG	Average value
THRESHOLD (MIN) (MAX)	Threshold value set for the minimum and maximum values.
TCA-ENABLED (MIN) (MAX)	Threshold-crossing alert (TCA) set for the minimum and maximum values. Yes: TCA is enabled.
TCA-RAISED (MIN) (MAX)	TCA raised for the minimum and maximum values. Yes: TCA crosses the threshold.

Sample Output

show chassis fpc optical-properties pm-currentday

```

user@host> show chassis fpc optical-properties pm-currentday fpc-slot 5
Physical interface: 5, SNMP ifIndex 5
Current Day:
Suspect Flag:True          Reason:Invalid Interval
PM                          MIN      MAX      AVG      THRESHOLD
TCA-ENABLED               TCA-RAISED
(MIN) (MAX)               (MIN) (MAX)
(MIN) (MAX)               (MIN) (MAX)
OSC Tx Power(0.01 dBm)    171      172      172      0      0
No    No                  No    No
OSC Rx Power(0.01 dBm)    -1166    -1149    -1156    0      0
No    No                  No    No
OSC Fiber Loss(0.01 dB)   0         0        0        0      0
No    No                  No    No
Line OUT VOA(0.01 dB)     10        30       20       0      0
No    No                  No    No
Ingress EDFA
Input Power(0.01 dBm)     -1724    -1522    -1661    0      0
No    No                  No    No
Output Power(0.01 dBm)    129      311      185      0      0
No    No                  No    No
Signal Power(0.01 dBm)    74       276      136      0      0
No    No                  No    No
Egress EDFA
Input Power(0.01 dBm)     -6000    -1564    -3783    0      0
No    No                  No    No
Output Power(0.01 dBm)    -3        363      178      0      0
No    No                  No    No
Signal Power(0.01 dBm)    -1034    335      -351     0      0
No    No                  No    No
Power monitor
AWG Add(0.01 dB)          -6000    -1146    -3577    0      0
No    No                  No    No
Express In(0.01 dB)        -6000    -6000    -6000    0      0
No    No                  No    No
OCM Power (LOUT)(0.01 dBm)
1561.01                   -6000    -6000    -6000    0      0
No    No                  No    No
1560.20                   -6000    -6000    -6000    0      0
No    No                  No    No
1559.39                   -6000    -6000    -6000    0      0
No    No                  No    No
1558.58                   -6000    -6000    -6000    0      0
No    No                  No    No
1557.77                   -6000    -6000    -6000    0      0
No    No                  No    No
1556.96                   -6000    -6000    -6000    0      0
No    No                  No    No
1556.15                   -6000    -6000    -6000    0      0
No    No                  No    No
1555.34                   -6000    -6000    -6000    0      0
No    No                  No    No
1554.54                   -6000    -6000    -6000    0      0
No    No                  No    No
1553.73                   -6000    -6000    -6000    0      0
No    No                  No    No

```

	1552.93			-6000	-6000	-6000	0	0
No	No	No	No					
	1552.12			-6000	-6000	-6000	0	0
No	No	No	No					
	1551.32			-6000	-6000	-6000	0	0
No	No	No	No					
	1550.52			-6000	-6000	-6000	0	0
No	No	No	No					
	1549.72			-6000	-6000	-6000	0	0
No	No	No	No					
	1548.91			-6000	308	-2853	0	0
No	No	No	No					
	1548.11			-6000	-6000	-6000	0	0
No	No	No	No					
	1547.32			-6000	-6000	-6000	0	0
No	No	No	No					
	1546.52			-6000	-6000	-6000	0	0
No	No	No	No					
	1545.72			-6000	-6000	-6000	0	0
No	No	No	No					
	1544.92			-6000	-6000	-6000	0	0
No	No	No	No					
	1544.13			-6000	-6000	-6000	0	0
No	No	No	No					
	1543.33			-6000	-6000	-6000	0	0
No	No	No	No					
	1542.54			-6000	-6000	-6000	0	0
No	No	No	No					
	1541.75			-6000	-6000	-6000	0	0
No	No	No	No					
	1540.95			-6000	-6000	-6000	0	0
No	No	No	No					
	1540.16			-6000	-6000	-6000	0	0
No	No	No	No					
	1539.37			-6000	-6000	-6000	0	0
No	No	No	No					
	1538.58			-6000	-6000	-6000	0	0
No	No	No	No					
	1537.79			-6000	-6000	-6000	0	0
No	No	No	No					
	1537.00			-6000	-6000	-6000	0	0
No	No	No	No					
	1536.22			-6000	-6000	-6000	0	0
No	No	No	No					

show chassis fpc optical-properties pm-interval

Syntax	<code>show chassis fpc optical-properties pm-interval fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Display 15-minute intervals for the performance monitors for the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45 • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6
List of Sample Output	show chassis fpc optical-properties pm-interval on page 135
Output Fields	Table 22 on page 134 lists the output fields for the <code>show chassis fpc optical-properties pm-interval</code> command. Output fields are listed in the approximate order in which they appear.

Table 22: show chassis fpc optical-properties pm-interval Output Fields

Field Name	Field Description
PM	Performance monitor
MIN	Minimum value measured
MAX	Maximum value measured
AVG	Average value
THRESHOLD (MIN) (MAX)	Threshold value set for the minimum and maximum values.
TCA-ENABLED (MIN) (MAX)	Threshold crossing alert (TCA) set for the minimum and maximum values. Yes: TCA is enabled.
TCA-RAISED (MIN) (MAX)	TCA raised for the minimum and maximum values. Yes: TCA crosses the threshold.

Sample Output

show chassis fpc optical-properties pm-interval

```

user@host> show chassis fpc optical-properties pm-interval fpc-slot 5
Physical interface: 5, SNMP ifIndex 5
Interval#:1, 2016-04-24,15:30:00.00 - 2016-04-24,15:45:00.00
Suspect Flag:True Reason:Invalid Interval
PM
TCA-ENABLED      TCA-RAISED      MIN      MAX      AVG      THRESHOLD
(MIN) (MAX)      (MIN) (MAX)      (MIN) (MAX)
OSC Tx Power(0.01 dBm)      172      172      172      0      0
No No      No No
OSC Rx Power(0.01 dBm)      -1153     -1147     -1150     0      0
No No      No No
OSC Fiber Loss(0.01 dB)      0          0          0          0      0
No No      No No
Line OUT VOA(0.01 dB)      10         2480      1245      0      0
No No      No No
Ingress EDFA
Input Power(0.01 dBm)      -1702     -1696     -1699     0      0
No No      No No
Output Power(0.01 dBm)      148        155        151        0      0
No No      No No
Signal Power(0.01 dBm)      96         102        99         0      0
No No      No No
Egress EDFA
Input Power(0.01 dBm)      -1570     -1566     -1568     0      0
No No      No No
Output Power(0.01 dBm)      357        361        359        0      0
No No      No No
Signal Power(0.01 dBm)      328        333        330        0      0
No No      No No
Power monitor
AWG Add(0.01 dB)      -1162     -1150     -1156     0      0
No No      No No
Express In(0.01 dB)      -6000     -6000     -6000     0      0
No No      No No
OCM Power (LOUT)(0.01 dBm)
1561.01      -6000     -6000     -6000     0      0
No No      No No
1560.20      -6000     -6000     -6000     0      0
No No      No No
1559.39      -6000     -6000     -6000     0      0
No No      No No
1558.58      -6000     -6000     -6000     0      0
No No      No No
1557.77      -6000     -6000     -6000     0      0
No No      No No
1556.96      -6000     -6000     -6000     0      0
No No      No No
1556.15      -6000     -6000     -6000     0      0
No No      No No
1555.34      -6000     -6000     -6000     0      0
No No      No No
1554.54      -6000     -6000     -6000     0      0
No No      No No
1553.73      -6000     -6000     -6000     0      0
No No      No No

```

	1552.93			-6000	-6000	-6000	0	0
No	No	No	No					
	1552.12			-6000	-6000	-6000	0	0
No	No	No	No					
	1551.32			-6000	-6000	-6000	0	0
No	No	No	No					
	1550.52			-6000	-6000	-6000	0	0
No	No	No	No					
	1549.72			-6000	-6000	-6000	0	0
No	No	No	No					
	1548.91			-6000	305	-2847	0	0
No	No	No	No					
	1548.11			-6000	-6000	-6000	0	0
No	No	No	No					
	1547.32			-6000	-6000	-6000	0	0
No	No	No	No					
	1546.52			-6000	-6000	-6000	0	0
No	No	No	No					
	1545.72			-6000	-6000	-6000	0	0
No	No	No	No					
	1544.92			-6000	-6000	-6000	0	0
No	No	No	No					
	1544.13			-6000	-6000	-6000	0	0
No	No	No	No					
	1543.33			-6000	-6000	-6000	0	0
No	No	No	No					
	1542.54			-6000	-6000	-6000	0	0
No	No	No	No					
	1541.75			-6000	-6000	-6000	0	0
No	No	No	No					
	1540.95			-6000	-6000	-6000	0	0
No	No	No	No					
	1540.16			-6000	-6000	-6000	0	0
No	No	No	No					
	1539.37			-6000	-6000	-6000	0	0
No	No	No	No					
	1538.58			-6000	-6000	-6000	0	0
No	No	No	No					
	1537.79			-6000	-6000	-6000	0	0
No	No	No	No					
	1537.00			-6000	-6000	-6000	0	0
No	No	No	No					
	1536.22			-6000	-6000	-6000	0	0
No	No	No	No					
... truncated								

show chassis fpc optical-properties pm-previousday

Syntax	<code>show chassis fpc optical-properties pm-previousday fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Display performance monitors for the previous 24-hour period for the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45 • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6
List of Sample Output	show chassis fpc optical-properties pm-previousday on page 138
Output Fields	Table 23 on page 137 lists the output fields for the show chassis fpc optical-properties pm-previousday command. Output fields are listed in the approximate order in which they appear.

Table 23: show chassis fpc optical-properties pm-previousday Output Fields

Field Name	Field Description
PM	Performance monitor
MIN	Minimum value measured
MAX	Maximum value measured
AVG	Average value
THRESHOLD (MIN) (MAX)	Threshold value set for the minimum and maximum values.
TCA-ENABLED (MIN) (MAX)	Threshold-crossing alert (TCA) set for the minimum and maximum values. Yes: TCA is enabled.
TCA-RAISED (MIN) (MAX)	TCA raised for the minimum and maximum values. Yes: TCA crosses the threshold.

Sample Output

show chassis fpc optical-properties pm-previousday

```

user@host> show chassis fpc optical-properties pm-previousday fpc-slot 5
Physical interface: 5, SNMP ifIndex 5
Previous Day: 2016-04-24,17:00:00.00
Suspect Flag:True Reason:Invalid Interval
PM
TCA-ENABLED TCA-RAISED MIN MAX AVG THRESHOLD
(MIN) (MAX) (MIN) (MAX) (MIN) (MAX)
OSC Tx Power(0.01 dBm) 0 172 170 0 0
No No No No
OSC Rx Power(0.01 dBm) -1158 0 -1143 0 0
No No No No
OSC Fiber Loss(0.01 dB) 0 0 0 0 0
No No No No
Line OUT VOA(0.01 dB) 0 2480 98 0 0
No No No No
Ingress EDFA
Input Power(0.01 dBm) -1706 0 -1683 0 0
No No No No
Output Power(0.01 dBm) 0 158 151 0 0
No No No No
Signal Power(0.01 dBm) 0 106 99 0 0
No No No No
Egress EDFA
Input Power(0.01 dBm) -6000 0 -2420 0 0
No No No No
Output Power(0.01 dBm) -843 364 122 0 0
No No No No
Signal Power(0.01 dBm) -6000 336 -907 0 0
No No No No
Power monitor
AWG Add(0.01 dB) -6000 0 -2053 0 0
No No No No
Express In(0.01 dB) -6000 0 -5953 0 0
No No No No
OCM Power (LOUT)(0.01 dBm)
1561.01 -6000 0 -5953 0 0
No No No No
1560.20 -6000 0 -5953 0 0
No No No No
1559.39 -6000 0 -5953 0 0
No No No No
1558.58 -6000 0 -5953 0 0
No No No No
1557.77 -6000 0 -5953 0 0
No No No No
1556.96 -6000 0 -5953 0 0
No No No No
1556.15 -6000 0 -5953 0 0
No No No No
1555.34 -6000 0 -5953 0 0
No No No No
1554.54 -6000 0 -5953 0 0
No No No No
1553.73 -6000 0 -5953 0 0
No No No No

```

	1552.93			-6000	0	-5953	0	0
No	No	No	No					
	1552.12			-6000	0	-5953	0	0
No	No	No	No					
	1551.32			-6000	0	-5953	0	0
No	No	No	No					
	1550.52			-6000	0	-5953	0	0
No	No	No	No					
	1549.72			-6000	0	-5953	0	0
No	No	No	No					
	1548.91			-6000	308	-1130	0	0
No	No	No	No					
	1548.11			-6000	0	-5953	0	0
No	No	No	No					
	1547.32			-6000	0	-5953	0	0
No	No	No	No					
	1546.52			-6000	0	-5953	0	0
No	No	No	No					
	1545.72			-6000	0	-5953	0	0
No	No	No	No					
	1544.92			-6000	0	-5953	0	0
No	No	No	No					
	1544.13			-6000	0	-5953	0	0
No	No	No	No					
	1543.33			-6000	0	-5953	0	0
No	No	No	No					
	1542.54			-6000	0	-5953	0	0
No	No	No	No					
	1541.75			-6000	0	-5953	0	0
No	No	No	No					
	1540.95			-6000	0	-5953	0	0
No	No	No	No					
	1540.16			-6000	0	-5953	0	0
No	No	No	No					
	1539.37			-6000	0	-5953	0	0
No	No	No	No					
	1538.58			-6000	0	-5953	0	0
No	No	No	No					
	1537.79			-6000	0	-5953	0	0
No	No	No	No					
	1537.00			-6000	0	-5953	0	0
No	No	No	No					
	1536.22			-6000	0	-5953	0	0
No	No	No	No					

show chassis fpc optical-properties status

Syntax	<code>show chassis fpc optical-properties status fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Display the operational status of the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides.
Additional Information	To enable and configure the IPLC performance monitors. See “Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors” on page 45.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> Integrated Photonic Line Card Base and Expansion Module Overview on page 3 Understanding the Integrated Photonic Line Card Architecture on page 6
List of Sample Output	show chassis fpc optical-properties status on page 141
Output Fields	Table 24 on page 140 lists the output fields for the <code>show chassis fpc optical-properties status</code> command. Output fields are listed in the approximate order in which they appear.

Table 24: show chassis fpc optical-properties status Output Fields

Field Name	Field Description
Uptime	Display how long the IPLC has been up.
Input EDFA: Case temperature, pump temperature, and coil temperature	Display the temperature reading for the components in the input EDFA.
Output EDFA: Case temperature, pump temperature, and coil temperature	Display the temperature reading for the components in the output EDFA.
WSS Power Supply Voltage (0.01 V)	Display the power supply voltage reading for the wavelength-selective switch (WSS).
WSS Temperature	Display the temperature reading for the WSS.
OCM Temperature	Display the temperature reading for the optical channel monitor (OCM).
OSC Status	Display whether the OSC is enabled or disabled.

Sample Output

show chassis fpc optical-properties status

```
user@host> show chassis fpc optical-properties status fpc-slot 5
```

```
Module Status
Uptime                      14754 seconds
Input EDFA Case Temperature 29.9 degress C
Input EDFA Pump Temperature 25.7 degrees C
Input EDFA Coil Temperature 53.3 degrees C
Output EDFA Case Temperature 29.9 degrees C
Output EDFA Pump Temperature 25.6 degrees C
Output EDFA Coil Temperature 53.3 degrees C
WSS Power Supply Voltage (0.01 V) 496
WSS Temperature             32.2 degrees C
OCM Temperature             29.9 degrees C
OSC Status                  Yes
```

show chassis fpc optical-properties topology

Syntax	<code>show chassis fpc optical-properties topology <detail> fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Display topology Information about the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the IPLC module resides</p> <p><i>detail</i>—Displays the blocked wavelengths.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6
List of Sample Output	show chassis fpc optical-properties topology on page 143
Output Fields	Table 25 on page 142 lists the output fields for the show chassis fpc optical-properties topology command. Output fields are listed in the approximate order in which they appear.

Table 25: show chassis fpc optical-properties topology Output Fields

Field Name	Field Description
Wavelength(nm) / Port / Frequency(THz)	<p>Wavelength used, port number of the IPLC module or expansion module, and frequency of the wavelength.</p> <p>NOTE: When the expansion module is configured, this statement displays 64 channels.</p>
State	<p>Express-in Port or Expansion Port: State is UP or DOWN.</p> <p>Wavelength Port: State is AWG Add, Blocked, Switch, or Express-In.</p>
Connected To	<p>Express-in Port: Slot number of the connected IPLC base module.</p> <p>Expansion Port: Slot number of the connected IPLC expansion module.</p> <p>Wavelength Port: For the Switch state: Name of the interface to which it is connected. For the Express-In state: IPLC to which it is connected.</p>

Sample Output

show chassis fpc optical-properties topology

```
user@host> show chassis fpc optical-properties topology fpc-slot 5
```

IPLC Topology Information

Wavelength(nm) / Port / Frequency(THz)	State	Connected To
Express-in Port	DOWN	NA
Expansion Port	DOWN	NA
1548.91 15 193.55	AWG Add	et-12/0/0

show chassis hardware

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Syntax	<code>show chassis hardware</code> <code><detail extensive></code> <code><clei-models></code> <code><models></code>
Syntax (EX Series)	<code>show chassis hardware</code> <code><clei-models></code> <code><detail extensive></code> <code><models></code> <code><satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]></code>
Syntax (T4000 Router)	<code>show chassis hardware</code> <code><clei-models></code> <code><detail extensive></code> <code><models></code>
Syntax (TX Matrix Router)	<code>show chassis hardware</code> <code><clei-models></code> <code><detail extensive></code> <code><models></code> <code><lcc <i>number</i> scc></code>
Syntax (TX Matrix Plus Router)	<code>show chassis hardware</code> <code><clei-models></code> <code><detail extensive></code> <code><models></code> <code><lcc <i>number</i> sfc <i>number</i>></code>
Syntax (MX Series Routers)	<code>show chassis hardware</code> <code><detail extensive></code> <code><clei-models></code> <code><models></code>

	<all-members> <local> <member <i>member-id</i> >
Syntax (MX104, MX204, MX2010, MX2020, MX10003, MX10008, and MX2008 3D Universal Edge Routers)	show chassis hardware <clei-models> <detail extensive> <models> <satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]>
Syntax (QFX Series)	show chassis hardware <detail extensive> <clei-models> <interconnect-device <i>name</i> > <node-device <i>name</i> > <models>
Syntax (OCX Series)	show chassis hardware <detail extensive> <clei-models> <models>
Syntax (PTX Series Packet Transport Routers)	show chassis hardware <detail extensive> <clei-models> <models>
Syntax (ACX Series Universal Metro Routers)	show chassis hardware <detail extensive> <clei-models> <models>
Syntax (ACX5048 and ACX5096 Routers)	show chassis hardware <detail extensive> <clei-models> <models>
Syntax (ACX500 Routers)	show chassis hardware <detail extensive> <clei-models> <models>
Release Information	Command introduced before Junos OS Release 7.4. models option introduced in Junos OS Release 8.2. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router. Command introduced in Junos OS Release 11.1 for QFX Series.

Command introduced in Junos OS Release 12.1X48 for PTX Series Packet Transport Routers.

Command introduced in Junos OS Release 12.2 for ACX Series Universal Metro Routers.

Command introduced in Junos OS Release 12.3 for MX2010 and MX2020 3D Universal Edge Routers.

Information for **disk** and **usb** introduced in Junos OS Release 15.1X53-D60 for QFX10002, QFX10008, and QFX10016 switches.

Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.

Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.2 for PTX10008 Routers.

Command introduced in Junos OS Release 17.3 for MX10003 3D Universal Edge Routers.

Command introduced in Junos OS Release 17.3 for MX150 Router Appliance.

Command introduced in Junos OS Release 17.4 for MX204 Routers.

Command introduced in Junos OS Release 18.1R1 for EX9251 Switches.

Command introduced in Junos OS Release 18.2 for EX9253 Switches.

Command introduced in Junos OS Release 18.2R1 for MX10008 Routers

Description Display a list of all Flexible PIC Concentrators (FPCs) and PICs installed in the router or switch chassis, including the hardware version level and serial number.

In the EX Series switch command output, FPC refers to the following:

- On EX2200 switches, EX3200 switches, EX4200 standalone switches, and EX4500 switches—Refers to the switch; FPC *number* is always 0.
- On EX4200 switches in a Virtual Chassis configuration—Refers to the member of a Virtual Chassis; FPC *number* equals the member ID, from 0 through 9.
- On EX8208 and EX8216 switches—Refers to a line card; FPC *number* equals the slot number for the line card.

On QFX3500, QFX5100, and OCX Series standalone switches, and PTX1000 routers both the FPC and FPC *number* are always 0.

On T4000 Type 5 FPCs, there are no **top temperature sensor** or **bottom temperature sensor** parameters. Instead, **fan intake temperature sensor** and **fan exhaust temperature sensors** parameters are displayed.

Starting from Junos OS Release 11.4, the output of the **show chassis hardware models** operational mode command displays the enhanced midplanes FRU model numbers (CHAS-BP3-MX240-S, CHAS-BP3-MX480-S or CHAS-BP3-MX960-S) based on the router. Prior to release 11.4, the FRU model numbers are left blank when the router has enhanced midplanes. Note that the enhanced midplanes are introduced through the Junos OS Release 13.3, but can be supported on all Junos OS releases.

Starting with Junos OS Release 14.1, the output of the **show chassis hardware detail | extensive | clei-models | models** operational mode command displays the new DC power supply module (PSM) and power distribution unit (PDU) that are added to provide power to the high-density FPC (FPC2-PTX-P1A) and other components in a PTX5000 Packet Transport Router.

Options **none**—Display information about hardware. For a TX Matrix router, display information about the TX Matrix router and its attached T640 routers. For a TX Matrix Plus router, display information about the TX Matrix Plus router and its attached routers.

clei-models—(Optional) Display Common Language Equipment Identifier (CLEI) barcode and model number for orderable field-replaceable units (FRUs).

detail—(Optional) Include RAM and disk information in output.

extensive—(Optional) Display ID EEPROM information.

all-members—(MX Series routers only) (Optional) Display hardware-specific information for all the members of the Virtual Chassis configuration.

interconnect-device *name*—(QFabric systems only) (Optional) Display hardware-specific information for the Interconnect device.

lcc *number*—(TX Matrix routers and TX Matrix Plus router only) (Optional) On a TX Matrix router, display hardware information for a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display hardware information for a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

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

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

local—(MX Series routers only) (Optional) Display hardware-specific information for the local Virtual Chassis members.

member *member-id*—(MX Series routers and EX Series switches) (Optional) Display hardware-specific information for the specified member of the Virtual Chassis configuration. Replace *member-id* variable with a value 0 or 1.

models—(Optional) Display model numbers and part numbers for orderable FRUs and, for components that use ID EEPROM format v2, the CLEI code.

node-device *name*—(QFabric systems only) (Optional) Display hardware-specific information for the Node device.

satellite [*slot-id slot-id* | *device-alias alias-name*]—(Junos Fusion only) (Optional) Display hardware information for the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

scc—(TX Matrix router only) (Optional) Display hardware information for the TX Matrix router (switch-card chassis).

sfc number—(TX Matrix Plus router only) (Optional) Display hardware information for the TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

Additional Information The **show chassis hardware detail** command now displays DIMM information for the following Routing Engines, as shown in [Table 26 on page 148](#).

Table 26: Routing Engines Displaying DIMM Information

Routing Engines	Routers
RE-S-1800x2 and RE-S-1800x4	MX240, MX480, and MX960 routers
RE-A-1800x2	M120 and M320 routers

In Junos OS Release 11.4 and later, the output for the **show chassis hardware models** operational mode command for MX Series routers display the enhanced midplanes FRU model numbers—CHAS-BP3-MX240-S, CHAS-BP3-MX480-S, or CHAS-BP3-MX960-S—based on the router. In releases before Junos OS Release 11.4, the FRU model numbers are left blank when the router has enhanced midplanes. Note that the enhanced midplanes are introduced through Junos OS Release 13.3, but can be supported on all Junos OS releases.

Starting with Junos OS Release 17.3R1, the output of the **show chassis hardware** command displays the mode in which vMX is running (performance mode or lite mode) in the part number field for the FPC. **RIOT-PERF** indicates performance mode and **RIOT-LITE** indicates lite mode.

Required Privilege Level view

Related Documentation

- [show chassis power](#)

List of Sample Output

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- [show chassis hardware clei-models \(EX8216 Switch\) on page 157](#)
- [show chassis hardware clei-models \(T1600 Router\) on page 157](#)
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Output Fields [Table 27 on page 153](#) lists the output fields for the **show chassis hardware** command. Output fields are listed in the approximate order in which they appear.

Table 27: show chassis hardware Output Fields

Field Name	Field Description	Level of Output
Item	<p>Chassis component:</p> <ul style="list-style-type: none"> (EX Series switches)—Information about the chassis, Routing Engine (SRE and Routing Engine modules in EX8200 switches), power supplies, fan trays, and LCD panel. Also displays information about Flexible PIC Concentrators (FPCs) and associated Physical Interface Cards (PICs). Information about the backplane, midplane, and SIBs (SF modules) is displayed for EX8200 switches. (MX Series routers and EX Series switches)—Information about the backplane, Routing Engine, Power Entry Modules (PEMs), and fan trays. Also displays information about Flexible PIC Concentrators (FPCs) and associated Physical Interface Cards (PICs), Modular Port Concentrators (MPCs) and associated Modular Interface Cards (MICs), or Dense Port Concentrators (DPCs). MX80 routers have a single Routing Engine and a built-in Packet Forwarding Engine that attaches directly to MICs. The Packet Forwarding Engine has two “pseudo” FPCs (FPC 0 and FPC1). MX80 routers also have a Forwarding Engine Board (FEB). MX104 routers have a built-in Packet forwarding Engine and a Forwarding Engine Board (FEB). The Packet Forwarding Engine of the MX104 router has three “pseudo” FPCs (FPC0, FPC1, and FPC2). (M Series routers, except for the M320 router)—Information about the backplane; power supplies; fan trays; Routing Engine; maxicab (the connection between the Routing Engine and the backplane, for the M40 router only); SCB, SSB, SFM, or FEB; MCS and PCG (for the M160 router only); each FPC and PIC; and each fan, blower, and impeller. (M120, M320, and T Series routers)—Information about the backplane, power supplies, fan trays, midplane, FPM (craft interface), CIP, PEM, SCG, CB, FPC, PIC, SFP, SPMB, and SIB. (QFX Series)—Information about the chassis, Pseudo CB, Routing Engine, power supplies, fan trays, Interconnect devices, and Node devices. Also displays information about Flexible PIC Concentrators (FPCs) and associated Physical Interface Cards (PICs). (PTX Series)—Information about the chassis, midplane, craft interface (FPM), power distribution units (PDUs) and Power Supply Modules (PSMs), Centralized Clock Generators (CCGs), Routing Engines, Control Boards (CBs) and Switch Processor Mezzanine Boards (SPMBs), Flexible PIC Concentrators (FPCs), PICs, Switch Interface Boards (SIBs), and fan trays (vertical and horizontal). (MX2010, MX2020, and MX2008 routers)—Information about the chassis, midplane, craft interface (FPM), power midplane (PMP), Power Supply Modules (PSMs), Power Distribution Modules (PDMs), Routing Engines, Control Boards (CBs) and Switch Processor Mezzanine Boards (SPMBs), Switch Fabric Boards (SFBs), Flexible PIC Concentrators (FPCs), PICs, adapter cards (ADCs) and fan trays. (vMX routers)—Information about the chassis, midplane, Routing Engines, and Control Boards (CBs). Also displays information about Flexible PIC Concentrators (FPCs) and associated Modular Interface Cards (MICs) and Physical Interface Cards (PICs). 	All levels
Version	Revision level of the chassis component.	All levels
Part number	Part number of the chassis component.	All levels

Table 27: show chassis hardware Output Fields (continued)

Field Name	Field Description	Level of Output
Serial number	Serial number of the chassis component. The serial number of the backplane is also the serial number of the router chassis. Use this serial number when you need to contact Juniper Networks Customer Support about the router or switch chassis.	All levels
Assb ID or Assembly ID	(extensive keyword only) Identification number that describes the FRU hardware.	extensive
Assembly Version	(extensive keyword only) Version number of the FRU hardware.	extensive
Assembly Flags	(extensive keyword only) Flags.	extensive
FRU model number	(clei-models , extensive , and models keyword only) Model number of the FRU hardware component.	none specified
CLEI code	(clei-models and extensive keyword only) Common Language Equipment Identifier code. This value is displayed only for hardware components that use ID EEPROM format v2. This value is not displayed for components that use ID EEPROM format v1.	none specified
EEPROM Version	ID EEPROM version used by the hardware component: 0x00 (version 0), 0x01 (version 1), or 0x02 (version 2).	extensive
Description	<p>Brief description of the hardware item:</p> <ul style="list-style-type: none"> • Type of power supply. • Type of PIC. If the PIC type is not supported on the current software release, the output states Hardware Not Supported. • Type of FPC: FPC Type 1, FPC Type 2, FPC Type 3, FPC Type 4, or FPC TypeOC192. <p>On EX Series switches, a brief description of the FPC.</p> <p>The following list shows the PIM abbreviation in the output and the corresponding PIM name.</p> <ul style="list-style-type: none"> • 2x FE—Either two built-in Fast Ethernet interfaces (fixed PIM) or dual-port Fast Ethernet PIM • 4x FE—4-port Fast Ethernet ePIM • 1x GE Copper—Copper Gigabit Ethernet ePIM (one 10-Mbps, 100-Mbps, or 1000-Mbps port) • 1x GE SFP—SFP Gigabit Ethernet ePIM (one fiber port) • 2x Serial—Dual-port serial PIM • 2x T1—Dual-port T1 PIM • 2x E1—Dual-port E1 PIM • 2x CT1E1—Dual-port channelized T1/E1 PIM • 1x T3—T3 PIM (one port) • 1x E3—E3 PIM (one port) • 4x BRI S/T—4-port ISDN BRI S/T PIM • 4x BRI U—4-port ISDN BRI U PIM • 1x ADSL Annex A—ADSL 2/2+ Annex A PIM (one port, for POTS) 	All levels

Table 27: show chassis hardware Output Fields (continued)

Field Name	Field Description	Level of Output
	<ul style="list-style-type: none"> • 1x ADSL Annex B—ADSL 2/2+ Annex B PIM (one port, for ISDN) • 2x SHDSL (ATM)—G SHDSL PIM (2-port two-wire module or 1-port four-wire module) • 1x TGM550—TGM550 Telephony Gateway Module (Avaya VoIP gateway module with one console port, two analog LINE ports, and two analog TRUNK ports) • 1x DS1 TIM510—TIM510 E1/T1 Telephony Interface Module (Avaya VoIP media module with one E1 or T1 trunk termination port and ISDN PRI backup) • 4x FXS, 4x FXO, TIM514—TIM514 Analog Telephony Interface Module (Avaya VoIP media module with four analog LINE ports and four analog TRUNK ports) • 4x BRI TIM521—TIM521 BRI Telephony Interface Module (Avaya VoIP media module with four ISDN BRI ports) • Crypto Accelerator Module—For enhanced performance of cryptographic algorithms used in IP Security (IPsec) services • MPC M16x10GE—16-port 10-Gigabit Module Port Concentrator that supports SFP+ optical transceivers. (Not on EX Series switches.) • For hosts, the Routing Engine type. • For small form-factor pluggable transceiver (SFP) modules, the type of fiber: LX, SX, LH, or T. • LCD description for EX Series switches (except EX2200 switches). • MPC2—1-port MPC2 that supports two separate slots for MICs. • MPC3E—1-port MPC3E that supports two separate slots for MICs (MIC-3D-1X100GE-CFP and MIC-3D-20GE-SFP) on MX960, MX480, and MX240 routers. The MPC3E maps one MIC to one PIC (1 MIC, 1 PIC), which differs from the mapping of legacy MPCs. • 100GBASE-LR4, pluggable CFP optics • Supports the Enhanced MX Switch Control Board with fabric redundancy and existing SCBs without fabric redundancy. • Interoperates with existing MX Series line cards, including Flexible Port Concentrators (FPC), Dense Port Concentrators (DPCs), and Modular Port Concentrators (MPCs). • MPC4E—Fixed configuration MPC4E that is available in two flavors: MPC4E-3D-32XGE-SFP and MPC4E-3D-2CGE-8XGE on MX2020, MX960, MX480, and MX240 routers. • LCD description for MX Series routers 	

Sample Output

show chassis hardware (EX8216 Switch)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis       REV 06   710-016845   CY0109220035   EX8216
Midplane      REV 06   710-016845   BA0909120112   EX8216-MP
CB 0          REV 22   710-020771   AX0109197723   EX8216-RE320
CB 1          REV 22   710-020771   AX0109197726   EX8216-RE320
Routing Engine 1  BUILTIN BUILTIN      RE-EX8216

```

FPC 3	REV 19	710-020683	BC0109083125	EX8200-48F
CPU	REV 13	710-020598	BF0109144549	EX8200-CPU
FPC 4	REV 17	710-020683	BC0108500127	EX8200-48F
CPU	REV 10	710-020598	BF0108460510	EX8200-CPU
PIC 0		BUILTIN	BUILTIN	48x 100 Base-QFX/1000
Base-X				
Xcvr 1	REV 01	740-011613	PE70V89	SFP-SX
Xcvr 11	REV 01	740-011613	PE70YCE	SFP-SX
Xcvr 12	REV 01	740-011613	PE70VSH	SFP-SX
Xcvr 13	REV 01	740-011613	E08C02063	SFP-SX
Xcvr 14	REV 01	740-011613	PE70VKU	SFP-SX
Xcvr 15	REV 01	740-011613	E08E03372	SFP-SX
Xcvr 21	REV 01	740-011613	PE70VAD	SFP-SX
Xcvr 22	REV 01	740-011613	E08E01228	SFP-SX
Xcvr 23	REV 01	740-011613	PE70VSL	SFP-SX
Xcvr 24	REV 01	740-011613	E08E03409	SFP-SX
Xcvr 25	REV 01	740-011613	PE70VL4	SFP-SX
Xcvr 26	REV 01	740-011613	PDQ4L2Z	SFP-SX
Xcvr 27	REV 01	740-011613	PE70WFK	SFP-SX
Xcvr 28	REV 01	740-011782	PBD2B5U	SFP-SX
Xcvr 29	REV 01	740-011613	PE70UQX	SFP-SX
Xcvr 30	REV 01	740-011613	PE70VL5	SFP-SX
Xcvr 31	REV 01	740-011613	PE70V0F	SFP-SX
Xcvr 32	REV 01	740-011613	E08C02052	SFP-SX
Xcvr 33	REV 01	740-011613	E08C02197	SFP-SX
Xcvr 34	REV 01	740-011613	PE70V0L	SFP-SX
Xcvr 35	REV 01	740-011613	E08E03390	SFP-SX
Xcvr 36	REV 01	740-011613	PDQ4VL9	SFP-SX
Xcvr 37	REV 01	740-011613	E08E03370	SFP-SX
Xcvr 38	REV 01	740-011613	E08E03362	SFP-SX
Xcvr 39	REV 01	740-011613	E08C02065	SFP-SX
Xcvr 40	REV 01	740-011613	E08E03405	SFP-SX
Xcvr 41	REV 01	740-011613	E08E03411	SFP-SX
Xcvr 43	REV 01	740-011613	E08C02171	SFP-SX
Xcvr 45	REV 01	740-011613	E08E03410	SFP-SX
FPC 13	REV 16	710-016837	BB0109051344	EX8200-8XS
CPU				
SIB 0	REV 10	710-021613	AY0109166244	EX8216-SF320
SIB 1	REV 10	710-021613	AY0109166357	EX8216-SF320
SIB 2	REV 10	710-021613	AY0109166362	EX8216-SF320
SIB 3	REV 10	710-021613	AY0109166338	EX8216-SF320
SIB 4	REV 10	710-021613	AY0109166350	EX8216-SF320
SIB 5	REV 10	710-021613	AY0109166365	EX8216-SF320
SIB 6	REV 10	710-021613	AY0109166361	EX8216-SF320
SIB 7	REV 10	710-021613	AY0109166399	EX8216-SF320
PSU 0	REV 17	740-021466	BG0709170003	EX8200-AC2K
PSU 1	REV 17	740-021466	BG0709170004	EX8200-AC2K
PSU 2	REV 17	740-021466	BG0709170020	EX8200-AC2K
PSU 3	REV 17	740-021466	BG0709170017	EX8200-AC2K
PSU 4	REV 17	740-021466	BG0709170008	EX8200-AC2K
PSU 5	REV 17	740-021466	BG0709170018	EX8200-AC2K
Top Fan Tray				
FTC 0	REV 4	760-022620	CX1209140212	EX8216-FT
FTC 1	REV 4	760-022620	CX1209140212	EX8216-FT
Bottom Fan Tray				
FTC 0	REV 4	760-022620	CX1209140211	EX8216-FT
FTC 1	REV 4	760-022620	CX1209140211	EX8216-FT
LCD 0	REV 04	710-025742	CE0109186919	EX8200 LCD

show chassis hardware clei-models (EX8216 Switch)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 08   710-016845
PSU 0         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 1         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 2         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 3         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 4         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
PSU 5         REV 05   740-023002  COUPAEAEAA EX8200-PWR-AC3KR
Top Fan Tray
Bottom Fan Tray

```

show chassis hardware clei-models (T1600 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 03   710-005608
FPM Display   REV 05   710-002897
CIP           REV 06   710-002895
PEM 0         Rev 07   740-017906  IPUPAC7KTA PWR-T1600-3-80-DC-S
PEM 1         Rev 18   740-002595  PWR-T-DC-S
SCG 0         REV 15   710-003423  SCG-T-S
Routing Engine 0 REV 08   740-014082  RE-A-2000-4096-S
Routing Engine 1 REV 07   740-014082  RE-A-2000-4096-S
CB 0          REV 05   710-007655  CB-T-S
CB 1          REV 03   710-017707  CB-T-S
FPC 0         REV 07   710-013558  T640-FPC2-E2
  PIC 0       REV 01   750-010618  PB-4GE-SFP
  PIC 1       REV 06   750-001900  PB-10C48-SON-SMSR
  PIC 2       REV 14   750-001901  PB-40C12-SON-SMIR
  PIC 3       REV 07   750-001900  PB-10C48-SON-SMSR
FPC 1         REV 06   710-013553  T640-FPC1-E2
  PIC 0       REV 08   750-001072  P-1GE-SX
  PIC 1       REV 10   750-012266  PB-4GE-TYPE1-SFP-IQ2
  PIC 2       REV 22   750-005634  PB-1CHOC12SMIR-QPP
FPC 2
  PIC 0       REV 16   750-007141  PC-10GE-SFP
  PIC 1       REV 06   750-015217  PC-8GE-TYPE3-SFP-IQ2
  PIC 2       REV 05   750-004695  PC-TUNNEL
  PIC 3       REV 17   750-009553  PC-40C48-SON-SFP
FPC 3         REV 01   710-010154  T640-FPC3-E
  PIC 0       REV 07   750-012793  PC-1XGE-TYPE3-XFP-IQ2
  PIC 1       REV 25   750-007141  PC-10GE-SFP
  PIC 2       REV 17   750-009553  PC-40C48-SON-SFP
  PIC 3       REV 32   750-003700  PC-10C192-SON-VSR
FPC 4         REV 16   710-013037  T1600-FPC4-ES
  PIC 1       REV 06   750-034781  PD-1CE-CFP
FPC 5         REV 02   710-013037  T1600-FPC4-ES
  PIC 0       REV 16   750-012518  PD-40C192-SON-XFP
  PIC 1       REV 01   750-010850  PD-10C768-SON-SR
FPC 6         REV 14   710-013037  T1600-FPC4-ES
  PIC 0       REV 11   750-017405  PD-4XGE-XFP
  PIC 1       REV 13   750-017405  PD-4XGE-XFP
FPC 7         REV 09   710-007529  T640-FPC3
  PIC 0       REV 10   750-012793  PC-1XGE-TYPE3-XFP-IQ2
  PIC 1       REV 01   750-015217  PC-8GE-TYPE3-SFP-IQ2

```

PIC 2	REV 01	750-015217	PC-8GE-TYPE3-SFP-IQ2
PIC 3	REV 15	750-009450	PC-10C192-SON-SR2
SIB 0	REV 07	710-013074	SIB-I-T1600-S
SIB 1	REV 07	710-013074	SIB-I-T1600-S
SIB 2	REV 07	710-013074	SIB-I-T1600-S
SIB 3	REV 07	710-013074	SIB-I-T1600-S
SIB 4	REV 07	710-013074	SIB-I-T1600-S
Fan Tray 0			FANTRAY-T-S
Fan Tray 1			FANTRAY-T-S
Fan Tray 2			FAN-REAR-TX-T640-S

show chassis hardware clei-models (PTX10008 Routers)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 27	750-054097	CMMUM00ARA	QFX10008-CHAS
CB 0	REV 02	750-068820	CMUCAH3CTB	QFX10000-RE
CB 1	REV 02	750-068820	CMUCAH3CTB	QFX10000-RE
FPC 0	REV 36	750-051354	CMUIAM9BAA	QFX10000-36Q
PIC 0		BUILTIN		
FPC 1	REV 33	750-051354	CMUIAM9BAA	QFX10000-36Q
PIC 0		BUILTIN		
FPC 2	REV 32	750-051357	CMUIANABAA	QFX10000-30C
PIC 0		BUILTIN		
FPC 3	REV 35	750-051357	CMUIANABAA	QFX10000-30C
PIC 0		BUILTIN		
FPC 5	REV 08	750-068822	CMUIAM9BAB	QFX10000-36Q
PIC 0		BUILTIN		
FPC 6	REV 08	750-068822	CMUIAM9BAB	QFX10000-36Q
PIC 0		BUILTIN		
FPD Board	REV 07	711-054687		
Power Supply 0	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 1	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 2	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 3	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 4	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
Power Supply 5	REV 02	740-049388	CMUPADNBAA	QFX10000-PWR-AC
FTC 0	REV 14	750-050108	CMUCAHZCAA	QFX10008-FAN-CTRL
FTC 1	REV 14	750-050108	CMUCAHZCAA	QFX10008-FAN-CTRL
Fan Tray 0	REV 09	760-054372	CMUCAHYCAA	QFX10008-FAN
Fan Tray 1	REV 09	760-054372	CMUCAHYCAA	QFX10008-FAN
SIB 0	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 1	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 2	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 3	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 4	REV 24	750-050058	CMUCAH0CAA	QFX10008-SF
SIB 5	REV 23	750-050058	CMUCAH0CAA	QFX10008-SF

show chassis hardware clei-models (PTX10016 Routers)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 24	750-077138	CMMUN00ARA	JNP10016
CB 0	REV 04	711-065897	PROTOXCLEI	PROTO-ASSEMBLY
CB 1	REV 05	711-065897	PROTOXCLEI	PROTO-ASSEMBLY
FPC 2		BUILTIN		
PIC 0		BUILTIN		
FPC 4	REV 35	750-071976	CMUIANABAA	JNP10K-LC1101

Chassis			JY0215410033	EX2300-24P
Pseudo CB 0				
Routing Engine 0		BUILTIN	BUILTIN	RE-EX2300-24P
FPC 0	REV 05	650-059968	JY0215410033	EX2300-24P
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0	REV 05	BUILTIN	BUILTIN	24x10/100/1000 Base-T
PIC 1	REV 05	650-059968	JY0215410033	4x10G SFP/SFP+
Xcvr 0	REV 01	740-030658	AD1125A03ES	SFP+-10G-USR
Xcvr 1	REV 01	740-021308	AJP0TDZ	SFP+-10G-SR
Xcvr 3	REV 01	740-021309	A9401FL	SFP+-10G-LR
Power Supply 0				JPSU-450W-AC-AFO
Fan Tray 0 (AFO)				Fan Module, Airflow Out
Fan Tray 1 (AFO)				Fan Module, Airflow Out

show chassis hardware detail (EX4200 Switch)

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

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			BM0208327733	EX4200-24T
Routing Engine 0	REV 11	750-021256	BM0208327733	EX4200-24T, 8 POE
Routing Engine 0			BM0208327733	EX4200-24T, 8 POE
FPC 0	REV 11	750-021256	BM0208327733	EX4200-24T, 8 POE
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	24x 10/100/1000 Base-T
PIC 1	REV 03B	711-021270	AR0208162285	4x GE SFP
BRD	REV 08	711-021264	AK0208328289	EX4200-24T, 8 POE
Power Supply 0	REV 03	740-020957	AT0508346354	PS 320W AC
Fan Tray				Fan Tray

show chassis hardware (EX4300 Switch)

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

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			PD3713160055	EX4300-48P
Routing Engine 0	REV 04	650-044930	PD3713160055	EX4300-48P
FPC 0	REV 04	650-044930	PD3713160055	EX4300-48P
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0	REV 04	BUILTIN	BUILTIN	48x 10/100/1000 Base-T
PIC 1	REV 04	BUILTIN	BUILTIN	4x 40GE
Power Supply 0	REV 01	740-046871	1EDA3090026	JPSU-1100-AC-AFO-A
Fan Tray 0 (AFO)				Fan Module, Airflow Out
Fan Tray 1 (AFO)				Fan Module, Airflow Out

show chassis hardware models (EX4500 Switch)

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

Hardware inventory:				
Item	Version	Part number	Serial number	FRU model number
Routing Engine 0	REV 01	750-035700	GG0210271867	EX4500-40F-FB-C
FPC 0	REV 01	750-035700	GG0210271867	EX4500-40F-FB-C
PIC 0		BUILTIN	BUILTIN	EX4500-40F-FB-C
Power Supply 1	REV 01	740-029654	H884FS00JC09	EX4500-PWR1-AC-FB

show chassis hardware detail (EX9200 Switch)

```
user@switch> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN111DA44RFB	EX9208
Midplane	REV 05	710-017414	TS2912	EX9208-BP
FPM Board	REV 02	710-017254	XN1804	Front Panel Display
PEM 0	Rev 01	740-022697	QCS0906C033	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 01	740-022697	QCS0906C095	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 08	740-031116	9009122883	RE-S-EX9200-1800X4
CB 0	REV 16	750-031391	CAAW4391	EX9200-SCBEF
PC 0	REV 07	750-049612	CABJ9312	EX9200 40x1G Copper
CPU	REV 04	711-038484	CABH8268	MPCE PMB 2G
MIC 0	REV 02	750-049607	CABT9623	40x 1GE RJ45
PIC 0		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 1		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 2		BUILTIN	BUILTIN	10x 1GE RJ45
PIC 3		BUILTIN	BUILTIN	10x 1GE RJ45
FPC 1	REV 10	710-013699	CAAN3529	EX9200-40x1G-SFP
CPU	REV 04	711-038484	CAAL7608	MPCE PMB 2G
MIC 0	REV 26	750-028392	CAAS5151	20x 1GE SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE SFP
PIC 1		BUILTIN	BUILTIN	10x 1GE SFP
MIC 1	REV 26	750-028392	CAAC8006	20x 1GE SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 8	REV 01	740-011613	E08L03674	SFP-SX
Xcvr 9	REV 01	740-011613	E08M00243	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE SFP
FPC 3	REV 10	710-013699	CAAR5261	EX9200-40x1G-SFP
CPU	REV 04	711-038484	CAAS2118	MPCE PMB 2G
MIC 0	REV 26	750-028392	CAAS5067	20x 1GE SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 2	REV 01	740-031851	PNA7L8U	SFP-SX
Xcvr 3	REV 02	740-011613	AM0943SEKGZ	SFP-SX
Xcvr 4	REV 02	740-011613	AM0943SEJZ9	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE SFP
MIC 1	REV 26	750-028392	CAAS5132	20x 1GE SFP
PIC 2		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 4	REV 01	740-011613	E08D02625	SFP-SX
Xcvr 9	REV 02	740-011613	PJH4RD9	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE SFP
Xcvr 0	REV 01	740-011613	AM0813S8YME	SFP-SX
Fan Tray				Left Fan Tray

show chassis hardware detail (EX9251 Switch)

```
user@switch> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			BLANK	EX9251
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x6
CB 0	REV 05	750-069579	CAGT1382	EX9251
FPC 0		BUILTIN	BUILTIN	MPC
PIC 0		BUILTIN	BUILTIN	4XSFP28 PIC
Xcvr 0	REV 01	740-044512	APF14500007NHC	QSFP+-40G-CU50CM
Xcvr 2	REV 01	740-046565	QH21035H	QSFP+-40G-SR4

PIC 1		BUILTIN	BUILTIN	8XSFP PIC
Xcvr 0	REV 01	740-031980	AA15393URH7	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AA162832LVG	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	MXA0NKJ	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	MXA0K75	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	MXA138L	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	13T511102684	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	MXA138E	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	MXA152N	SFP+-10G-SR
PEM 0	REV 02	740-070749	1F186390060	AC AFO 650W PSU
PEM 1	REV 02	740-070749	1F186390045	AC AFO 650W PSU
Fan Tray 0				Fan Tray, Front to Back
Airflow - AFO				
Fan Tray 1				Fan Tray, Front to Back
Airflow - AFO				

show chassis hardware detail (EX9253 Switch)

```
user@switch> show chassis hardware
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN126145CJCB	EX9253
Midplane	REV 06	750-074276	CAJE4108	Midplane 2
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x6
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x6
CB 0	REV 24	750-067071	CAJF6414	Control Board
Mezz	REV 14	711-066896	CAJF6327	Control Mezz Board
CB 1	REV 24	750-067071	CAJF6398	Control Board
Mezz	REV 14	711-066896	CAJF6314	Control Mezz Board
FPC 0	REV 19	750-066879	CAJD1692	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0		BUILTIN	BUILTIN	6xQSFP
Xcvr 0	REV 01	740-054053	QH20019A	QSFP+-4X10G-SR
PIC 1	REV 15	750-068806	CAJD1416	MIC1
Xcvr 0	REV 01	740-061405	1EQ1151163	QSFP-100GBASE-SR4
Xcvr 1	REV 01	740-061405	1EQ11511AK	QSFP-100GBASE-SR4
Xcvr 2	REV 01	740-032986	QB160112	QSFP+-40G-SR4
FPC 1	REV 19	750-066879	CAJD1685	LC2103
CPU		BUILTIN	BUILTIN	SMPC PMB
PIC 0		BUILTIN	BUILTIN	6xQSFP
PIC 1	REV 15	750-068806	CAJD1393	MIC1
Xcvr 0	REV 01	740-032986	QB120887	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QD465034	QSFP+-40G-SR4
Xcvr 2	REV 01	740-052009	UWE2CBQ	QSFP+-40G-LR4
Xcvr 4	REV 01	740-032986	QB120701	QSFP+-40G-SR4
PEM 0	REV 01	740-066937	1HS17070027	JNP-PWR1600-AC
PEM 1	REV 01	740-066937	1HS17070151	JNP-PWR1600-AC
PEM 4	REV 01	740-066937	1HS17070090	JNP-PWR1600-AC
PEM 5	REV 01	740-066937	1HS16480119	JNP-PWR1600-AC
Fan Tray 0	REV 08	760-069329	CAJF6944	JNP FAN 3RU
Fan Tray 1	REV 08	760-069329	CAJF6863	JNP FAN 3RU
Fan Tray 2	REV 08	760-069329	CAJF6891	JNP FAN 3RU
Fan Tray 3	REV 08	760-069329	CAJF6937	JNP FAN 3RU

show chassis hardware detail (PTX10008 Routers)

```
user@switch> show chassis hardware detail
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
------	---------	-------------	---------------	-------------

CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 30x100GE/30x40GE/96x10GE
Xcvr 0	REV 01	740-061409	1GCQA1470A3	QSFP-100GBASE-LR4-T2
Xcvr 1	REV 01	740-061409	1GCQA1470XC	QSFP-100GBASE-LR4-T2
Xcvr 7		NON-JNPR	FG4550500008	QSFP-100G-CWDM4
Xcvr 24	REV 01	740-058734	1ECQ11381LX	QSFP-100GBASE-SR4
Xcvr 29	REV 01	740-043308	UWE0UYS	QSFP+-40G-LR4
FPC 5	REV 08	750-068822	ACPF0057	LC1102 - 12C / 36Q /
144X				
CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 12x100GE/36x40GE/144x10GE
FPC 6	REV 08	750-068822	ACPE9951	LC1102 - 12C / 36Q /
144X				
CPU PIC 0		BUILTIN BUILTIN	BUILTIN BUILTIN	FPC CPU 12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-054053	QF3208LG	QSFP+-4X10G-SR
Xcvr 7	REV 01	740-067442	XV20LGN	QSFP+-40G-SR4
Xcvr 8	REV 01	740-067442	XV20VMV	QSFP+-40G-SR4
Xcvr 9	REV 01	740-067442	XV20KCN	QSFP+-40G-SR4
Xcvr 10	REV 01	740-067442	XU504QD	QSFP+-40G-SR4
Xcvr 11	REV 01	740-067442	XU504X7	QSFP+-40G-SR4
Xcvr 12	REV 01	740-067442	XU504W8	QSFP+-40G-SR4
Xcvr 16	REV 01	740-032986	QF4301JP	QSFP+-40G-SR4
Xcvr 17	REV 01	740-032986	QF4303AE	QSFP+-40G-SR4
Xcvr 18	REV 01	740-054050	INF4J0492400	QSFP+-4X10G-LR
Xcvr 19	REV 01	740-054050	INF4J0492142	QSFP+-4X10G-LR
Xcvr 24	REV 01	740-032986	QF4301KB	QSFP+-40G-SR4
Xcvr 25	REV 01	740-032986	QF4303YP	QSFP+-40G-SR4
Xcvr 30	REV 01	740-067442	XV300ZX	QSFP+-40G-SR4
Xcvr 31	REV 01	740-043308	UWH2KBW	QSFP+-40G-LR4
Xcvr 34	REV 01	740-054053	QG1501YU	QSFP+-4X10G-SR
FPD Board	REV 07	711-054687	ACPC7142	Front Panel Display
Power Supply 0	REV 02	740-049388	1EDL62102N9	Power Supply AC
Power Supply 1	REV 02	740-049388	1EDL60300KX	Power Supply AC
Power Supply 2	REV 02	740-049388	1EDL60300DL	Power Supply AC
Power Supply 3	REV 02	740-049388	1EDL61701BT	Power Supply AC
Power Supply 4	REV 02	740-049388	1EDL62102P7	Power Supply AC
Power Supply 5	REV 02	740-049388	1EDL62102PP	Power Supply AC
FTC 0	REV 14	750-050108	ACPE4038	Fan Controller 8
FTC 1	REV 14	750-050108	ACPE4032	Fan Controller 8
Fan Tray 0	REV 09	760-054372	ACPD6799	Fan Tray 8
Fan Tray 1	REV 09	760-054372	ACNZ3584	Fan Tray 8
SIB 0	REV 24	750-050058	ACPD4587	Switch Fabric 8
SIB 1	REV 24	750-050058	ACNZ0635	Switch Fabric 8
SIB 2	REV 24	750-050058	ACPD4908	Switch Fabric 8
SIB 3	REV 24	750-050058	ACNZ0617	Switch Fabric 8
SIB 4	REV 24	750-050058	ACNZ0527	Switch Fabric 8
SIB 5	REV 23	750-050058	ACNX6980	Switch Fabric 8

show chassis hardware detail (PTX10016 Routers)

```
user@switch> show chassis hardware detail
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			DH995	JNP10016 [PTX10016]
Midplane	REV 22	750-056555	ACPM7810	Midplane 16
Routing Engine 0		BUILTIN	BUILTIN	RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk

vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB QEMU		QM00002		Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0		Intel		uhub0
usb1 (addr 0.2) product 0x0020 32		vendor 0x8087		uhub1
Routing Engine 1		BUILTIN		RE-PTX-2X00x4
vtbd0 15360 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 128 MB QEMU		QM00002		Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0		Intel		uhub0
usb1 (addr 0.2) product 0x0020 32		vendor 0x8087		uhub1
CB 0	REV 03	750-068820	ACPL7238	Control Board
CB 1	REV 03	750-068820	ACPL7298	Control Board
FPC 1	REV 36	750-077140	ACNP4590	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-054053	QF3600AV	QSFP+-4X10G-SR
Xcvr 35	REV 01	740-061405	1ACQ110507K	QSFP-100GBASE-SR4
FPC 3	REV 07	750-071975	CAHA2224	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-054053	QG1505YM	QSFP+-4X10G-SR
Xcvr 11		NON-JNPR	GDA2017459	QSFP-100GBASE-LR4
Xcvr 35		NON-JNPR	GDF2008750	QSFP-100GBASE-LR4
FPC 5	REV 13	750-068822	ACPD6501	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-058734	1ECQ11381LA	QSFP-100GBASE-SR4
Xcvr 2	REV 01	740-043308	UWH141S	QSFP+-40G-LR4
Xcvr 3	REV 01	740-043308	UWE2CG9	QSFP+-40G-LR4
FPC 6	REV 37	750-077140	ACNS2793	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 0	REV 01	740-032986	QH0400VH	QSFP+-40G-SR4
Xcvr 1	REV 01	740-032986	QH0400VM	QSFP+-40G-SR4
Xcvr 35	REV 01	740-058734	1ECQ11390ZB	QSFP-100GBASE-SR4
FPC 8	REV 36	750-077140	ACNP4625	LC1102 - 12C / 36Q /
144X				
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	12x100GE/36x40GE/144x10GE
Xcvr 1	REV 01	740-058732	1AMQA14206D	QSFP-100GBASE-LR4
Xcvr 10	REV 01	740-032986	QF4301KB	QSFP+-40G-SR4
Xcvr 24	REV 01	740-054050	INFAJ0492244	QSFP+-4X10G-LR
FPC 9	REV 35	750-071976	ACPD3055	LC1101 - 30C / 30Q / 96X
CPU		BUILTIN	BUILTIN	FPC CPU
PIC 0		BUILTIN	BUILTIN	30x100GE/30x40GE/96x10GE
Xcvr 0		NON-JNPR	INGBT7970007	QSFP-100GBASE-LR4
Xcvr 1		NON-JNPR	UWQ24D9	QSFP-100GBASE-LR4
Xcvr 2		NON-JNPR	INGBT7970011	QSFP-100GBASE-LR4
Xcvr 3		NON-JNPR	UX60AF1	QSFP-100G-CWDM4
Xcvr 4		NON-JNPR	UX408JJ	QSFP-100GBASE-LR4

Xcvr 11	REV 01	740-058734	1ECQ113835F	QSFP-100GBASE-SR4
Xcvr 18		NON-JNPR	Q7496	QSFP-100G-CWDM4
Xcvr 29	REV 01	740-058734	1ECQ11380LZ	QSFP-100GBASE-SR4
Power Supply 0	REV 02	740-049388	1EDL625039E	Power Supply AC
Power Supply 1	REV 02	740-049388	1EDL62503AD	Power Supply AC
Power Supply 2	REV 02	740-049388	1EDL625039P	Power Supply AC
Power Supply 3	REV 02	740-049388	1EDL702004E	Power Supply AC
Power Supply 4	REV 02	740-049388	1EDL625039D	Power Supply AC
Power Supply 5	REV 02	740-049388	1EDL63706JD	Power Supply AC
Power Supply 6	REV 02	740-049388	1EDL63706JH	Power Supply AC
FTC 0	REV 10	750-050309	ACPM2918	Fan Controller 16
FTC 1	REV 10	750-050309	ACPE8185	Fan Controller 16
Fan Tray 0	REV 10	760-077141	ACPV7288	Fan Tray 16
Fan Tray 1	REV 10	760-057901	ACPL0546	Fan Tray 16
SIB 0	REV 15	750-058270	ACPM2804	Switch Fabric 16
SIB 1	REV 15	750-058270	ACPM2808	Switch Fabric 16
SIB 2	REV 15	750-058270	ACPL4450	Switch Fabric 16
SIB 3	REV 15	750-058270	ACPJ9834	Switch Fabric 16
SIB 4	REV 15	750-058270	ACPM2814	Switch Fabric 16
SIB 5	REV 15	750-058270	ACPL4277	Switch Fabric 16
FPD Board	REV 07	711-054687	ACPL1407	Front Panel Display

show chassis hardware (M7i Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			31959	M7i
Midplane	REV 02	710-008761	CA0209	M7i Midplane
Power Supply 0	Rev 04	740-008537	PD10272	AC Power Supply
Routing Engine	REV 01	740-008846	1000396803	RE-5.0
CFEB	REV 02	750-009492	CA0166	Internet Processor IIV1
FPC 0				E-FPC
PIC 0	REV 04	750-003163	HJ6416	1x G/E, 1000 BASE-SX
PIC 1	REV 04	750-003163	HJ6423	1x G/E, 1000 BASE-SX
PIC 2	REV 04	750-003163	HJ6421	1x G/E, 1000 BASE-SX
PIC 3	REV 02	750-003163	HJ0425	1x G/E, 1000 BASE-SX
FPC 1				E-FPC
PIC 2	REV 01	750-009487	HM2275	ASP - Integrated
PIC 3	REV 01	750-009098	CA0142	2x F/E, 100 BASE-TX

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			B1157	M7i
Midplane	REV 05	710-008761	DM0840	M7i Midplane
Power Supply 0	Rev 08	740-008537	TE53755	AC Power Supply
Routing Engine	REV 07	740-011202	1000736567	RE-850
CFEB	REV 09	750-010463	DK6952	Internet Processor II
FPC 0				E-FPC
PIC 0	REV 12	750-012838	DL7993	4x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011614	PD94TDJ	SFP-LX10
Xcvr 1	REV 01	740-011615	PAD5EER	UNSUPPORTED
Xcvr 2	REV 01	740-011614	PD94THU	SFP-LX10
Xcvr 3		NON-JNPR	PDC2E7A	SFP-LX10
PIC 1	REV 03	750-023116	JT0203	4x CHSTM1 SDH CE SFP
Xcvr 0	REV 01	740-012434	AGT063832PS	SFP-SR
Xcvr 1	REV 01	740-012434	AGT063832LY	SFP-SR
Xcvr 3	REV 01	740-016064	C06J19018	SFP-LR
PIC 2	REV 15	750-014895	DM5757	MultiServices 100
PIC 3	REV 01	750-025390	JW9448	12x T1/E1 CE
FPC 1				E-FPC

PIC 2		BUILTIN	BUILTIN	1x Tunnel
PIC 3	REV 09	750-009099	DM0899	1x G/E, 1000 BASE
Xcvr 0	REV 01	740-012434	AGT07150HGJ	UNSUPPORTED
Fan Tray				Rear Fan Tray

show chassis hardware (M10 Router)

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               1122          M10
Midplane      REV 1.1  710-001950   S/N AC6626
Power supply A Rev 01    740-002497   S/N LC36095    AC
Power supply B Rev 01    740-002497   S/N LC36100    AC
Display       REV 1.2  710-001995   S/N AC6656
Host          18000005dfb3fb01 teknor
FEB           REV 01    710-001948   S/N AC6632     Internet Processor II
FPC 0
  PIC 0        REV 08    750-001072   S/N AB2485     1x G/E, 1000 BASE-SX
  PIC 1        REV 01    750-000613   S/N AA1048     1x OC-12 SONET, SMIR
FPC 1
Fan Tray 0
Fan Tray 1    FANTRAY-M10I-S
               FANTRAY-M10I-S
```

show chassis hardware models (M10 Router)

```
user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  CLEI code  FRU model number
Midplane      REV 04    710-008920
Power Supply 0 Rev 06    740-008537  PWR-M10i-M7i-AC-S
Power Supply 1 Rev 06    740-008537  PWR-M10i-M7i-AC-S
HCM 0         REV 03    710-010580  HCM-M10i-S
HCM 1         REV 03    710-010580  HCM-M10i-S
Routing Engine 0 REV 09    740-009459  RE-400-256-S
CFEB 0        REV 05    750-010465  FEB-M10i-M7i-S
FPC 0
  PIC 0        REV 10    750-002971  PE-40C3-SON-MM
  PIC 1        REV 11    750-002992  PE-4FE-TX
  PIC 2        REV 03    750-002977  PE-20C3-ATM-MM
  PIC 3        REV 08    750-005724  PE-20C3-ATM2-MM
FPC 1
  PIC 2        REV 12    750-008425  PE-AS
  PIC 3        REV 13    750-005636  PE-4CHDS3-QPP
Fan Tray 0    FANTRAY-M10I-S
Fan Tray 1    FANTRAY-M10I-S
```

show chassis hardware (M20 Router)

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               20033        M20
Backplane     REV 07    710-001517   S/N AA7940
Power supply B Rev 01    740-001465   S/N 000001    AC
Display       REV 02    710-001519   S/N AA9704
Host 0        98000004f8f27501 teknor
SSB slot 0    REV 01    710-001951   S/N AD5905     Internet Processor II
  SSRAM bank 0 REV 01    710-001385   S00480         2 MB
  SSRAM bank 1 REV 01    710-001385   S00490         2 MB
```

SSRAM bank 2	REV 01	710-001385	S001:?	2 MB
SSRAM bank 3	REV 01	710-001385	S00483	2 MB
SSB slot 1	N/A	N/A	N/A	Backup
FPC 1	REV 01	710-001292	S/N AB7528	
SSRAM	REV 01	710-000077	S/N 304209	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 000603	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 000414	64 MB
PIC 0	REV 03	750-000612	S/N AB8433	2x OC-3 ATM, MM
PIC 1	REV 01	750-000616	S/N AA1168	1x OC-12 ATM, MM
PIC 2	REV 01	750-000613	S/N AA1008	1x OC-12 SONET, SMIR
PIC 3	REV 01	750-002501	S/N AD5810	4x E3
FPC 2	REV 01	710-001292	S/N AC0119	
SSRAM	REV 01	710-000077	S/N 503241	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 306835	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 306832	64 MB
Fan Tray 0				Front Upper Fan Tray
Fan Tray 1				Front Middle Fan Tray
Fan Tray 2				Front Bottom Fan Tray
Fan Tray 3				Rear Fan Tray

show chassis hardware models (M20 Router)

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

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Backplane	REV 03	710-002334		CHAS-MP-M20-S
Power Supply A	REV 06	740-001465		PWR-M20-AC-S
Display	REV 04	710-001519		CRAFT-M20-S
Routing Engine 0	REV 06	740-003239		RE-333-768-S
Routing Engine 1	REV 06	740-003239		RE-333-768-S
SSB 0	REV 02	710-001951		SSB-E-M20
SSB 1	N/A	N/A		
FPC 0	REV 03	710-003308		FPC-E
PIC 0	REV 08	750-002303		P-4FE-TX
PIC 1	REV 07	750-004745		P-2MCDS3
PIC 2	REV 03	750-002965		PE-4CHDS3
FPC 1	REV 03	710-003308		FPC-E
PIC 0	REV 03	750-002914		P-2OC3-ATM-MM
Fan Tray 0				FANTRAY-F-M20-S
Fan Tray 1				FANTRAY-F-M20-S
Fan Tray 2				FANTRAY-F-M20-S
Fan Tray 3				FANTRAY-R-M20-S

show chassis hardware (M40 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Backplane	REV 02	710-000073	S/N AA0053	
Power supply A	Rev 2	740-000235	S/N 000042	DC
Maxicab	REV X1	710-000229	S/N AA0139	
Minicab	REV X1	710-000482	S/N AA0201	
Display	REV 06	710-000150	S/N AA0905	
Host				cpv5000
SCB	REV X1	710-000075	S/N AA0158	Internet Processor I
SSRAM bank 0	REV 02	710-000077	S/N AA2267	1 MB
SSRAM bank 1	REV 02	710-000077	S/N AA2270	1 MB
SSRAM bank 2	REV 02	710-000077	S/N AA2269	1 MB
SSRAM bank 3	REV 02	710-000077	S/N AA2268	1 MB
FPC 0	REV 01	710-000175	S/N AA0048	

SSRAM	REV 01	710-000077	S/N AA2333	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2332	64 MB
SDRAM bank 1	REV X1	710-000099	S/N AA2337	64 MB
PIC 0	REV 04	750-000613	S/N aa0343	1x OC-12 SONET, SMIR
PIC 1	REV 04	750-000613	S/N AA0379	1x OC-12 SONET, SMIR
PIC 2	REV 04	750-000613	S/N AA0377	1x OC-12 SONET, SMIR
PIC 3	REV 04	750-000613	S/N AA0378	1x Tunnel
FPC 2	REV 01	710-000175	S/N AA0042	
SSRAM	REV 02	710-000077	S/N AA2288	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2331	64 MB
SDRAM bank 1	REV 01	710-000099	S/N AA2330	64 MB
PIC 0	REV X1	750-000603	S/N AA0143	4x OC-3 SONET, SMIR
PIC 1	REV X1	750-000615	S/N AA0149	4x OC-3 SONET, MM
PIC 2	REV X1	750-000611	S/N AA0148	4x OC-3 SONET, MM
PIC 3	REV 04	750-000613	S/N AA0330	1x OC-12 SONET, SMIR
FPC 4	REV 01	710-000175	S/N AA0050	
SSRAM	REV 01	710-000077	S/N AA2327	1 MB
SDRAM bank 0	REV 01	710-000099	S/N AA2329	64 MB
SDRAM bank 1	REV 01	710-000099	S/N AA2328	64 MB
PIC 0	REV 04	750-000613	S/N AA0320	1x OC-12 SONET, SMIR
PIC 2	REV 05	750-000616	S/N AA1341	1x OC-12 ATM, MM
PIC 3	REV 08	750-001072	S/N AB2462	1x G/E, 1000 BASE-SX
FPC 5	REV 10	710-000175	S/N AA7663	
SSRAM	REV 01	710-000077	S/N 501590	1 MB
SDRAM bank 0	REV 01	710-000099	S/N 300949	64 MB
SDRAM bank 1	REV 01	710-000099	S/N 300868	64 MB
PIC 1	REV 01	750-001323	S/N AB1670	1x Tunnel

show chassis hardware (M40e Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				m40e
Midplane	REV 01	710-005071	AX3671	
FPM CMB	REV 03	710-001642	AR9074	
FPM Display	REV 03	710-001647	AR7331	
CIP	REV 04	710-002649	BB4449	
PEM 0	Rev 01	740-003787	MC12364	Power Entry Module
PEM 1	Rev 01	740-003787	MC12383	Power Entry Module
PCG 0	REV 07	710-001568	AG1332	
PCG 1	REV 07	710-001568	AR3789	
Host 0			3e000007c8176601	Present
MCS 0	REV 11	710-001226	AN5813	
SFM 0 SPP	REV 07	710-001228	AG4676	
SFM 0 SPR	REV 05	710-002189	AE4735	Internet Processor II
SFM 1 SPP	REV 07	710-001228	AP1347	
SFM 1 SPR	REV 05	710-002189	BE0063	Internet Processor II
FPC 0	REV 01	710-011725	BE0669	M40e-EP-FPC Type 1
CPU	REV 01	710-004600	BD9504	
PIC 0	REV 03	750-003737	AY3991	4x G/E, 1000 BASE-SX
FPC 1	REV 01	710-005197	BD9842	M40e-FPC Type 2
CPU	REV 01	710-004600	BB4869	
PIC 0	REV 07	750-001900	AR8278	1x OC-48 SONET, SMSR
FPC 2	REV 02	710-005197	BD9824	M40e-FPC Type 2
CPU	REV 01	710-004600	BD9531	
PIC 0	REV 03	750-003737	AY3986	4x G/E, 1000 BASE-SX
FPC 4	REV 02	710-005078	BE0664	M40e-FPC Type 1
CPU	REV 01	710-004600	BD9559	
PIC 0	REV 03	750-001894	AG7963	1x G/E, 1000 BASE-SX
PIC 2	REV 01	750-002575	AF2472	4x OC-3 SONET, SMIR

FPC 6	REV 02	710-005078	BE0652	M40e-FPC Type 1
CPU	REV 01	710-004600	BD9607	
PIC 0	REV 02	750-002911	AN2286	4x F/E, 100 BASE-TX
PIC 2	REV 01	750-002577	AP6345	4x OC-3 SONET, MM

show chassis hardware (M120 Router)

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user@host> show chassis hardware
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Hardware inventory:
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Item	Version	Part number	Serial number	Description
Chassis			JN000054AC	M120
Midplane	REV 01	710-013667	RB4170	M120 Midplane
FPM Board	REV 02	710-011407	CJ9186	M120 FPM Board
FPM Display	REV 02	710-011405	CJ9173	M120 FPM Display
FPM CIP	REV 02	710-011410	CJ9221	M120 FPM CIP
PEM 0	Rev 05	740-011936	RM28320	AC Power Entry Module
PEM 1	Rev 05	740-011936	RM28321	AC Power Entry Module
Routing Engine 0	REV 03	740-014080	1000642883	RE-A-1000
CB 0	REV 03	710-011403	CM8346	M120 Control Board
CB 1	REV 06	710-011403	CP6728	M120 Control Board
FPC 1	REV 02	710-015908	CP6925	M120 CFPC 10GE
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN) XFP
Xcvr 0	REV 01	740-014279	62E204N00007	XFP-10G-LR
FPC 3	REV 03	710-011393	CJ9234	M120 FPC Type 2
PIC 0	REV 16	750-008155	NB5229	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F15JB	SFP-SX
Xcvr 1	REV 01	740-007326	P4QOR9G	SFP-SX
PIC 1	REV 09	750-007745	CG4360	4x OC-3 SONET, SMIR
PIC 2	REV 16	750-008155	ND7787	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F12AS	SFP-SX
Xcvr 1	REV 01	740-011613	P9F1ALU	SFP-SX
PIC 3	REV 07	750-011800	JW1284	8x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011613	P9F1AM6	SFP-SX
Xcvr 6	REV 01	740-011613	P9F16NN	SFP-SX
Xcvr 7	REV 01	740-011782	P8C29Y7	SFP-SX
Board B	REV 02	710-011395	CN3754	M120 FPC Mezz
FPC 4	REV 02	710-011398	CP6741	M120 FPC Type 3
PIC 0	REV 16	750-007141	NB2855	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011782	P922A1F	SFP-SX
Xcvr 1	REV 01	740-011782	P922A16	SFP-SX
Xcvr 2	REV 01	740-011782	P922A0U	SFP-SX
Xcvr 3	REV 01	740-011782	P9229UZ	SFP-SX
Xcvr 4	REV 01	740-009029	P11JXWP	SFP-LX
Xcvr 6	REV 01	740-011613	P9F1ALW	SFP-SX
FPC 5	REV 01	710-011388	CJ9088	M120 FPC Type 1
PIC 0	*** Hardware Not Supported ***			
PIC 1	REV 05	750-012052	NB0410	1x CHOC3 IQ SONET, SMLR
PIC 2	REV 01	750-013167	CM3824	4x CHDS3 IQ
PIC 3	REV 01	750-010240	CB5366	1x G/E SFP, 1000 BASE
Board B	REV 01	710-011390	CJ9103	M120 FPC Mezz Board
FEB 3	REV 04	710-011663	CP6673	M120 FEB
FEB 4	REV 04	710-011663	CJ9368	M120 FEB
FEB 5	REV 04	710-011663	CJ9386	M120 FEB
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Top Fan Tray
Fan Tray 3				Rear Bottom Fan Tray

show chassis hardware detail (M120 Router)

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user@host> show chassis hardware detail
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis           REV 01   710-013667   JN000054AC    M120
Midplane          REV 02   710-011407   RB4170        M120 Midplane
FPM Board         REV 02   710-011407   CJ9186        M120 FPM Board
FPM Display       REV 02   710-011405   CJ9173        M120 FPM Display
FPM CIP           REV 02   710-011410   CJ9221        M120 FPM CIP
PEM 0             Rev 05   740-011936   RM28320       AC Power Entry Module
PEM 1             Rev 05   740-011936   RM28321       AC Power Entry Module
Routing Engine 0  REV 03   740-014080   1000642883    RE-A-1000
  ad0             248 MB  SILICONSYSTEMS INC 256M 126CT505S0763SC00110 Compact Flash
  ad2             38154 MB HTE541040G9SA00    MPBBTOX2HS2E3M Hard Disk
CB 0              REV 03   710-011403   CM8346        M120 Control Board
CB 1              REV 06   710-011403   CP6728        M120 Control Board
FPC 1             REV 02   710-015908   CP6925        M120 CFPC 10GE
  PIC 0           BUILTIN BUILTIN       1x 10GE(LAN/WAN) XFP
    Xcvr 0        REV 01   740-014279   62E204N00007  XFP-10G-LR
FPC 3             REV 03   710-011393   CJ9234        M120 FPC Type 2
  PIC 0           REV 16   750-008155   NB5229        2x G/E IQ, 1000 BASE
    Xcvr 0        REV 01   740-011613   P9F15JB       SFP-SX
    Xcvr 1        REV 01   740-007326   P4Q0R9G       SFP-SX
  PIC 1           REV 09   750-007745   CG4360        4x OC-3 SONET, SMIR
  PIC 2           REV 16   750-008155   ND7787        2x G/E IQ, 1000 BASE
    Xcvr 0        REV 01   740-011613   P9F12AS       SFP-SX
    Xcvr 1        REV 01   740-011613   P9F1ALU       SFP-SX
  PIC 3           REV 07   750-011800   JW1284        8x 1GE(LAN), IQ2
    Xcvr 0        REV 01   740-011613   P9F1AM6       SFP-SX
    Xcvr 6        REV 01   740-011613   P9F16NN       SFP-SX
    Xcvr 7        REV 01   740-011782   P8C29Y7       SFP-SX
  Board B         REV 02   710-011395   CN3754        M120 FPC Mezz
FPC 4             REV 02   710-011398   CP6741        M120 FPC Type 3
  PIC 0           REV 16   750-007141   NB2855        10x 1GE(LAN), 1000 BASE

    Xcvr 0        REV 01   740-011782   P922A1F       SFP-SX
    Xcvr 1        REV 01   740-011782   P922A16       SFP-SX
    Xcvr 2        REV 01   740-011782   P922A0U       SFP-SX
    Xcvr 3        REV 01   740-011782   P9229UZ       SFP-SX
    Xcvr 4        REV 01   740-009029   P11JXWP       SFP-LX
    Xcvr 6        REV 01   740-011613   P9F1ALW       SFP-SX
FPC 5             REV 01   710-011388   CJ9088        M120 FPC Type 1
  PIC 0           *** Hardware Not Supported ***
  PIC 1           REV 05   750-012052   NB0410        1x CHOC3 IQ SONET, SMLR

  PIC 2           REV 01   750-013167   CM3824        4x CHDS3 IQ
  PIC 3           REV 01   750-010240   CB5366        1x G/E SFP, 1000 BASE
  Board B         REV 01   710-011390   CJ9103        M120 FPC Mezz Board
FEB 3             REV 04   710-011663   CP6673        M120 FEB
FEB 4             REV 04   710-011663   CJ9368        M120 FEB
FEB 5             REV 04   710-011663   CJ9386        M120 FEB
Fan Tray 0        Front Top Fan Tray
Fan Tray 1        Front Bottom Fan Tray
Fan Tray 2        Rear Top Fan Tray
Fan Tray 3        Rear Bottom Fan Tray

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show chassis hardware models (M120 Router)

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user@host> show chassis hardware models

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Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 01	710-013667		
FPM CIP	REV 02	710-011410		CRAFT-M120-S
PEM 0	Rev 05	740-011936		PWR-M120-AC-S
PEM 1	Rev 05	740-011936		PWR-M120-AC-S
Routing Engine 0	REV 03	740-014080		RE-A-1000-2048-S
CB 0	REV 03	710-011403		CB-M120-S
CB 1	REV 06	710-011403		CB-M120-S
FPC 1	REV 02	710-015908		M120-cFPC-1XGE-XFP
FPC 3				
PIC 0	REV 16	750-008155		PB-2GE-SFP-QPP
PIC 1	REV 09	750-007745		PC-4OC3-SON-SMIR
PIC 2	REV 16	750-008155		PB-2GE-SFP-QPP
PIC 3	REV 07	750-011800		PB-8GE-TYPE2-SFP-IQ2
FPC 4				
PIC 0	REV 16	750-007141		PC-10GE-SFP
FPC 5				
PIC 1	REV 05	750-012052		PB-1CHOC3-SMIR-QPP
PIC 2	REV 01	750-013167		PE-4CHDS3-QPP
PIC 3	REV 01	750-010240		PB-1GE-SFP
Fan Tray 0				FFANTRAY-M120-S
Fan Tray 1				FFANTRAY-M120-S
Fan Tray 2				RFANTRAY-M120-S
Fan Tray 3				RFANTRAY-M120-S

show chassis hardware (M160 Router)

user@host> show chassis hardware

Item	Version	Part number	Serial number	Description
Chassis			101	M160
Midplane	REV 02	710-001245	S/N AB4107	
FPM CMB	REV 01	710-001642	S/N AA2911	
FPM Display	REV 01	710-001647	S/N AA2999	
CIP	REV 02	710-001593	S/N AA9563	
PEM 0	Rev 01	740-001243	S/N KJ35769	DC
PEM 1	Rev 01	740-001243	S/N KJ35765	DC
PCG 0	REV 01	710-001568	S/N AA9794	
PCG 1	REV 01	710-001568	S/N AA9804	
Host 1			da000004f8d57001	teknor
MCS 1	REV 03	710-001226	S/N AA9777	
SFM 0 SPP	REV 04	710-001228	S/N AA2975	
SFM 0 SPR	REV 02	710-001224	S/N AA9838	Internet Processor I
SFM 1 SPP	REV 04	710-001228	S/N AA2860	
SFM 1 SPR	REV 01	710-001224	S/N AB0139	Internet Processor I
FPC 0	REV 03	710-001255	S/N AA9806	FPC Type 1
CPU	REV 02	710-001217	S/N AA9590	
PIC 1	REV 05	750-000616	S/N AA1527	1x OC-12 ATM, MM
PIC 2	REV 05	750-000616	S/N AA1535	1x OC-12 ATM, MM
PIC 3	REV 01	750-000616	S/N AA1519	1x OC-12 ATM, MM
FPC 1	REV 02	710-001611	S/N AA9523	FPC Type 2
CPU	REV 02	710-001217	S/N AA9571	
PIC 0	REV 03	750-001900	S/N AA9626	1x STM-16 SDH, SMIR
PIC 1	REV 01	710-002381	S/N AD3633	2x G/E, 1000 BASE-SX
FPC 2				FPC Type OC192
CPU	REV 03	710-001217	S/N AB3329	
PIC 0	REV 01			1x OC-192 SM SR-2
Fan Tray 0				Rear Bottom Blower
Fan Tray 1				Rear Top Blower
Fan Tray 2				Front Top Blower
Fan Tray 3				Front Fan Tray

show chassis hardware models (M160 Router)

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user@host> show chassis hardware models
Hardware inventory:

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Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 03	710-009120		CHAS-BP-M320-S
FPM Display	REV 02	710-009351		CRAFT-M320-S
CIP	REV 03	710-005926		CIP-M320-S
PEM 2	Rev X4	740-009148		PWR-M-DC-S
PEM 3	Rev X4	740-009148		PWR-M-DC-S
Routing Engine 0	REV 02	740-008883		RE-1600-2048-S
Routing Engine 1	REV 02	740-008883		RE-1600-2048-S
FPC 0	REV 02	710-010419		M320-FPC1
PIC 0	REV 01	750-001323		P-TUNNEL
PIC 1	REV 02	750-002987		PE-10C12-SON-SMIR
PIC 2	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 04	750-001896		PB-10C12-SON-SMIR
FPC 1	REV 02	710-010419		M320-FPC1
PIC 0	REV 04	750-001894		PB-1GE-SX
PIC 1	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 03	750-001894		PB-1GE-SX
FPC 2	REV 02	710-010419		M320-FPC1
PIC 0	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
FPC 3				
PIC 0	REV 03	750-001895		PB-10C12-SON-MM
PIC 1	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 04	750-003141		PB-1GE-SX-B
FPC 4	REV 02	710-010419		M320-FPC1
FPC 5	REV 02	710-010419		M320-FPC1
FPC 6	REV 02	710-010419		M320-FPC1
FPC 7				
PIC 0	REV 15	750-001901		PB-40C12-SON-SMIR
PIC 1	REV 06	750-001900		PB-10C48-SON-SMSR
PIC 2	REV 07	750-001900		PB-10C48-SON-SMSR
PIC 3	REV 05	750-003737		PB-4GE-SX
SIB 0	REV 03	710-009184		SIB-M-S
SIB 1	REV 03	710-009184		SIB-M-S
SIB 2	REV 03	710-009184		SIB-M-S
SIB 3	REV 03	710-009184		SIB-M-S
Fan Tray 0				FFANTRAY-M320-S
Fan Tray 1				FFANTRAY-M320-S
Fan Tray 2				RFANTRAY-M320-S

show chassis hardware detail (M160 Router)

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user@host> show chassis hardware detail
Hardware inventory:

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Item	Version	Part number	Serial number	Description
Chassis			101	M160
Midplane	REV 02	710-001245	S/N AB4107	
FPM CMB	REV 01	710-001642	S/N AA2911	
FPM Display	REV 01	710-001647	S/N AA2999	
CIP	REV 02	710-001593	S/N AA9563	
PEM 0	Rev 01	740-001243	S/N KJ35769	DC

PEM 1	Rev 01	740-001243	S/N KJ35765	DC
PCG 0	REV 01	710-001568	S/N AA9794	
PCG 1	REV 01	710-001568	S/N AA9804	
Host 1			da000004f8d57001	teknor
MCS 1	REV 03	710-001226	S/N AA9777	
SFM 0 SPP	REV 04	710-001228	S/N AA2975	
SFM 0 SPR	REV 02	710-001224	S/N AA9838	Internet Processor I
SSRAM bank 0	REV 01	710-000077	S/N 306456	1 MB
SSRAM bank 1	REV 01	710-000077	S/N 306474	1 MB
SSRAM bank 2	REV 01	710-000077	S/N 306388	1 MB
SSRAM bank 3	REV 01	710-000077	S/N 306392	1 MB
SFM 1 SPP	REV 04	710-001228	S/N AA2860	
SFM 1 SPR	REV 01	710-001224	S/N AB0139	Internet Processor I
SSRAM bank 0	REV 01	710-000077	S/N 302917	1 MB
SSRAM bank 1	REV 01	710-000077	S/N 302662	1 MB
SSRAM bank 2	REV 01	710-000077	S/N 302593	1 MB
SSRAM bank 3	REV 01	710-000077	S/N 100160	1 MB
FPC 0	REV 03	710-001255	S/N AA9806	FPC Type 1
CPU	REV 02	710-001217	S/N AA9590	
SSRAM	REV 01	710-000077	S/N 302836	1 MB
SDRAM 0	REV 01	710-001196	S00141	32 MB
SDRAM 1	REV 01	710-001196	S0010;	32 MB
SSRAM	REV 01	710-000077	S/N 302633	1 MB
SDRAM 0	REV 01	710-001196	S00143	32 MB
SDRAM 1	REV 01	710-001196	S00115	32 MB
SSRAM	REV 01	710-000077	S/N 302952	1 MB
SDRAM 0	REV 01	710-001196	S00135	32 MB
SDRAM 1	REV 01	710-001196	S001=3	32 MB
SSRAM	REV 01	710-000077	S/N 302892	1 MB
SDRAM 0	REV 01	710-001196	S000?6	32 MB
SDRAM 1	REV 01	710-001196	S001=5	32 MB
PIC 1	REV 05	750-000616	S/N AA1527	1x OC-12 ATM, MM
PIC 2	REV 05	750-000616	S/N AA1535	1x OC-12 ATM, MM
PIC 3	REV 01	750-000616	S/N AA1519	1x OC-12 ATM, MM
FPC 1	REV 02	710-001611	S/N AA9523	FPC Type 2
CPU	REV 02	710-001217	S/N AA9571	
SSRAM	REV 01	710-000077	S/N 306340	1 MB
SDRAM 0	REV 01	710-001196	S00012	32 MB
SDRAM 1	REV 01	710-001196	S0001?	32 MB
SSRAM	REV 01	710-000077	S/N 306454	1 MB
SDRAM 0	REV 01	710-001196	S00028	32 MB
SDRAM 1	REV 01	710-001196	S0002?	32 MB
SSRAM	REV 01	710-000077	S/N 306492	1 MB
SDRAM 0	REV 01	710-001196	S00015	32 MB
SDRAM 1	REV 01	710-001196	S00031	32 MB
SSRAM	REV 01	710-000077	S/N 306363	1 MB
SDRAM 0	REV 01	710-001196	S00013	32 MB
SDRAM 1	REV 01	710-001196	S00032	32 MB
PIC 0	REV 03	750-001900	S/N AA9626	1x STM-16 SDH, SMIR
PIC 1	REV 01	710-002381	S/N AD3633	2x G/E, 1000 BASE-SX
FPC 2				FPC Type OC192
... SSRAM	REV 01	710-000077	S/N 306466	1 MB

show chassis hardware (M320 Router)

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user@host> show chassis hardware
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Hardware inventory:
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Item	Version	Part number	Serial number	Description
Chassis			67245	M320
Midplane	REV 05	710-009120	RB1202	M320 Midplane
FPM GBUS	REV 04	710-005928	HZ5697	M320 Board

FPM Display	REV 05	710-009351	HR1464	M320 FPM Display
CIP	REV 04	710-005926	HT8672	M320 CIP
PEM 0	Rev 05	740-009148	QK34208	DC Power Entry Module
PEM 1	Rev 05	740-009148	QK34262	DC Power Entry Module
PEM 2	Rev 05	740-009148	QF10449	DC Power Entry Module
PEM 3	Rev 05	740-009148	QJ18257	DC Power Entry Module
Routing Engine 0	REV 06	740-008883	P11123901185	RE-4.0
CB 0	REV 07	710-009115	JB2382	M320 Control Board
FPC 0	REV 02	710-005017	CD9926	M320 FPC Type 2
CPU	REV 01	710-011659	CJ6940	M320 PCA SCPU
PIC 0	REV 07	750-001900	AT1594	1x OC-48 SONET, SMSR
PIC 1	REV 03	750-001850	HS2746	1x Tunnel
PIC 2	REV 05	750-010618	JE7117	4x G/E SFP, 1000 BASE
PIC 3	REV 06	750-001900	HE6083	1x OC-48 SONET, SMSR
FPC 2	REV 02	710-005017	CH0319	M320 FPC Type 1
CPU	REV 01	710-011659	CJ6942	M320 PCA SCPU
PIC 0	REV 05	750-003034	BD8705	4x OC-3 SONET, SMIR
FPC 5	REV 02	710-005017	CD9938	M320 FPC Type 2
CPU				
FPC 7	REV 02	710-005017	CD9934	M320 FPC Type 2
CPU				
SIB 0	REV 09	710-009184	JA6540	M320 SIB
SIB 1	REV 09	710-009184	HV9511	M320 SIB
SIB 2	REV 09	710-009184	HW2057	M320 SIB
SIB 3	REV 09	710-009184	JA6687	M320 SIB
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray

show chassis hardware models (M320 Router)

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user@host> show chassis hardware models
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Hardware inventory:				
Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 03	710-009120		CHAS-BP-M320-S
FPM Display	REV 02	710-009351		CRAFT-M320-S
CIP	REV 03	710-005926		CIP-M320-S
PEM 2	Rev X4	740-009148		PWR-M-DC-S
PEM 3	Rev X4	740-009148		PWR-M-DC-S
Routing Engine 0	REV 02	740-008883		RE-1600-2048-S
Routing Engine 1	REV 02	740-008883		RE-1600-2048-S
FPC 0	REV 02	710-010419		M320-FPC1
PIC 0	REV 01	750-001323		P-TUNNEL
PIC 1	REV 02	750-002987		PE-10C12-SON-SMIR
PIC 2	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 04	750-001896		PB-10C12-SON-SMIR
FPC 1	REV 02	710-010419		M320-FPC1
PIC 0	REV 04	750-001894		PB-1GE-SX
PIC 1	REV 04	750-001894		PB-1GE-SX
PIC 3	REV 03	750-001894		PB-1GE-SX
FPC 2	REV 02	710-010419		M320-FPC1
PIC 0	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 1	REV 10	750-005634		PB-1CHOC12SMIR-QPP
PIC 2	REV 07	750-005634		PB-1CHOC12SMIR-QPP
PIC 3	REV 07	750-005634		PB-1CHOC12SMIR-QPP
FPC 3				
PIC 0	REV 03	750-001895		PB-10C12-SON-MM
PIC 1	REV 04	750-001894		PB-1GE-SX

PIC 3	REV 04	750-003141	PB-1GE-SX-B
FPC 4	REV 02	710-010419	M320-FPC1
FPC 5	REV 02	710-010419	M320-FPC1
FPC 6	REV 02	710-010419	M320-FPC1
FPC 7			
PIC 0	REV 15	750-001901	PB-40C12-SON-SMIR
PIC 1	REV 06	750-001900	PB-10C48-SON-SMSR
PIC 2	REV 07	750-001900	PB-10C48-SON-SMSR
PIC 3	REV 05	750-003737	PB-4GE-SX
SIB 0	REV 03	710-009184	SIB-M-S
SIB 1	REV 03	710-009184	SIB-M-S
SIB 2	REV 03	710-009184	SIB-M-S
SIB 3	REV 03	710-009184	SIB-M-S
Fan Tray 0			FFANTRAY-M320-S
Fan Tray 1			FFANTRAY-M320-S
Fan Tray 2			RFANTRAY-M320-S

show chassis hardware (MX5 Router)

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user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               E1368          MX5-T
Midplane      REV 01   711-038215   YF5288        MX5-T
PEM 0         Rev 04   740-028288   VA01215       AC Power Entry Module
PEM 1         Rev 04   740-028288   VA01218       AC Power Entry Module
Routing Engine
TFEB 0        BUILTIN  BUILTIN      BUILTIN       Routing Engine
TFEB 0        BUILTIN  BUILTIN      BUILTIN       Forwarding Engine
Processor
QXM 0         REV 05   711-028408   ZA9136        MPC QXM
FPC 0         BUILTIN  BUILTIN      BUILTIN       MPC BUILTIN
MIC 0         BUILTIN  BUILTIN      BUILTIN       4x 10GE XFP
PIC 0         BUILTIN  BUILTIN      BUILTIN       4x 10GE XFP
FPC 1         BUILTIN  BUILTIN      BUILTIN       MPC BUILTIN
MIC 0         REV 24   750-028392   YX9820        3D 20x 1GE(LAN) SFP
PIC 0         BUILTIN  BUILTIN      BUILTIN       10x 1GE(LAN) SFP
Xcvr 0        REV 01   740-031851   AM1045SUAQ3   SFP-SX
Xcvr 1        REV 01   740-031851   AM1045SUAPA   SFP-SX
Xcvr 2        REV 01   740-031851   AM1045SUAN7   SFP-SX
Xcvr 3        REV 01   740-031851   AM1045SU91Q   SFP-SX
Xcvr 4        REV 01   740-031851   AM1045SUDDR   SFP-SX
Xcvr 9        REV 01   740-011613   AM0848SB6A1   SFP-SX
PIC 1         BUILTIN  BUILTIN      BUILTIN       10x 1GE(LAN) SFP
Xcvr 0        REV 01   740-031851   AM1045SUANO   SFP-SX
Xcvr 1        REV 01   740-011613   AS0812S0719   SFP-SX
Xcvr 2        REV 01   740-011613   AM0821SA121   SFP-SX
Xcvr 3        REV 01   740-011613   PF21K21       SFP-SX
Xcvr 4        REV 01   740-011613   AM0848SB69Z   SFP-SX
Xcvr 5        REV 01   740-011782   P9POXV3       SFP-SX
Xcvr 6        REV 01   740-011613   AM0812S8WJN   SFP-SX
Xcvr 7        REV 01   740-011613   PAM3G9Q       SFP-SX
Xcvr 8        REV 01   740-011613   AM0848SB4A6   SFP-SX
Xcvr 9        REV 01   740-011782   P9MOU37       SFP-SX
MIC 1         REV 20   750-028380   ZG2657        3D 2x 10GE XFP
PIC 2         BUILTIN  BUILTIN      BUILTIN       1x 10GE XFP
PIC 3         BUILTIN  BUILTIN      BUILTIN       1x 10GE XFP
Fan Tray

```

show chassis hardware (MX10 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               E1372         MX10-T
Midplane          REV 01   711-038211   YF5285        MX10-T
PEM 0             Rev 04   740-028288   VB01678       AC Power Entry Module
Routing Engine    BUILTIN BUILTIN      Routing Engine
TFEB 0            BUILTIN BUILTIN      Forwarding Engine
Processor
  QXM 0           REV 05   711-028408   ZA9053        MPC QXM
  FPC 0            BUILTIN BUILTIN      MPC BUILTIN
  MIC 0            BUILTIN BUILTIN      4x 10GE XFP
  PIC 0            BUILTIN BUILTIN      4x 10GE XFP
  FPC 1            BUILTIN BUILTIN      MPC BUILTIN
  MIC 0           REV 24   750-028392   YX9436        3D 20x 1GE(LAN) SFP
  PIC 0            BUILTIN BUILTIN      10x 1GE(LAN) SFP
  Xcvr 0           REV 01   740-031851   AM1107SUFQW   SFP-SX
  PIC 1            BUILTIN BUILTIN      10x 1GE(LAN) SFP
Fan Tray

```

show chassis hardware (MX40 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               E1367         MX40-T
Midplane          REV 01   711-038211   YF5284        MX40-T
PEM 0             Rev 04   740-028288   VB01680       AC Power Entry Module
PEM 1             Rev 04   740-028288   VB01700       AC Power Entry Module
Routing Engine    BUILTIN BUILTIN      Routing Engine
TFEB 0            BUILTIN BUILTIN      Forwarding Engine
Processor
  QXM 0           REV 05   711-028408   ZA9048        MPC QXM
  FPC 0            BUILTIN BUILTIN      MPC BUILTIN
  MIC 0            BUILTIN BUILTIN      4x 10GE XFP
  PIC 0            BUILTIN BUILTIN      4x 10GE XFP
  Xcvr 0           REV 01   740-014279   M7067UUPP     XFP-10G-LR
  Xcvr 1           NON-JNPR K9J02UN       XFP-10G-LR
  FPC 1            BUILTIN BUILTIN      MPC BUILTIN
  MIC 0           REV 24   750-028392   YX3504        3D 20x 1GE(LAN) SFP
  PIC 0            BUILTIN BUILTIN      10x 1GE(LAN) SFP
  Xcvr 0           REV 01   740-011613   AM0812S8WTE   SFP-SX
  Xcvr 1           REV 01   740-011613   PFA6KV2       SFP-SX
  Xcvr 2           REV 01   740-031851   AM1045SUDDM   SFP-SX
  Xcvr 3           REV 01   740-011613   PD63C7M       SFP-SX
  Xcvr 4           REV 01   740-011613   PD63DJY       SFP-SX
  Xcvr 5           REV 02   740-011613   AA0950STLL9   SFP-SX
  Xcvr 6           REV 01   740-011782   PAR1YHC       SFP-SX
  Xcvr 7           REV 01   740-011782   P9P0XXL       SFP-SX
  Xcvr 8           REV 01   740-011613   PD63D95       SFP-SX
  Xcvr 9           REV 01   740-031851   AM1045SU9B8   SFP-SX
  PIC 1            BUILTIN BUILTIN      10x 1GE(LAN) SFP
  Xcvr 0           REV 01   740-011613   PF21L3Z       SFP-SX
  Xcvr 1           REV 01   740-031851   AM1045SU7M9   SFP-SX
  Xcvr 2           REV 01   740-031851   AM1045SUAPT   SFP-SX
  Xcvr 3           REV 01   740-011613   PFF2BZH       SFP-SX
  Xcvr 4           REV 01   740-031851   AM1045SUDDN   SFP-SX
  Xcvr 5           REV 01   740-031851   AM1039S00ZR   SFP-SX

```

Xcvr 6	REV 01	740-031851	AM1045SUD6Y	SFP-SX
Xcvr 8	REV 01	740-011613	PFM1QBS	SFP-SX
Xcvr 9	REV 01	740-011613	PFF2E25	SFP-SX
MIC 1	REV 01	750-021130	KG4391	3D 2x 10GE XFP
PIC 2		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-011571	C645XJ04G	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0		NON-JNPR	CA49BK0AE	XFP-10G-SR
Fan Tray				Fan Tray

show chassis hardware (Fixed MX80 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				MX80-48T
Midplane	REV 01	711-031603	KF9250	MX80-48T
Routing Engine		BUILTIN	BUILTIN	Routing Engine
FEB 0		BUILTIN	BUILTIN	Forwarding Engine Board
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	4x 10GE XFP
Xcvr 0		NON-JNPR	M6439D41	XFP-10G-LR
Xcvr 1	REV 01	740-014279	6XE931N00202	XFP-10G-LR
Xcvr 2	REV 01	740-014289	C715XU05F	XFP-10G-SR
Xcvr 3	REV 01	740-014289	C650XU0EP	XFP-10G-SR
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 01	711-029399	JR6981	12x 1GE(LAN) RJ45
PIC 0		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 1		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
MIC 1	REV 01	BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 2		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
PIC 3		BUILTIN	BUILTIN	12x 1GE(LAN) RJ45
Fan Tray				Fan Tray

show chassis hardware (Modular MX80 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				MX80
Midplane	REV 02	711-031594	JR7084	MX80
PEM 0	Rev 01	740-028288	000018	AC Power Entry Module
Routing Engine		BUILTIN	BUILTIN	Routing Engine
FEB 0		BUILTIN	BUILTIN	Forwarding Engine Board
QXM 0	REV 05	711-028408	JR7041	MPC QXM
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	4x 10GE XFP
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 02	750-028380	JR6598	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	T07M86365	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	T07M71094	XFP-10G-SR
MIC 1	REV 02	750-028380	JG8548	3D 2x 10GE XFP
PIC 2		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	T08L86302	XFP-10G-SR

PIC 3		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	C810XU0BA	XFP-10G-SR
Fan Tray				Fan Tray

show chassis hardware (MX150)

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               DD2316AF0078  MX150
Midplane      REV 04   650-066113  DD2316AF0078  MX150
Power Supply 0
Routing Engine 0
CB 0          RE-VMX
CB 1          VMX SCB
FPC 0         VMX SCB
                Virtual FPC
CPU           Rev. 1.0 RIOT      BUILTIN
MIC 0
PIC 0
Xcvr 10      REV 02   740-013111  A331846        SFP-T
Xcvr 11      REV 02   740-013111  C248517        SFP-T
Fan Tray 0    fan-ctrl-0 0, Front to
Back Airflow - AFO
Fan Tray 1    fan-ctrl-0 1, Front to
Back Airflow - AFO
```

show chassis hardware models (MX150)

```
user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 04   650-066113  DD2316AF0163  MX150
Fan Tray 0    Assy,Sub,Fan
Tray,AFO,Opus-AFO
Fan Tray 1    Assy,Sub,Fan
Tray,AFO,Opus-AFO
```

show chassis hardware (MX104 Router)

```
user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               G3503         MX104
Midplane      REV 28   750-044219  CAAX5741      MX104
PEM 0         REV 03   740-045933  1H072500016  AC Power Entry Module
PEM 1         REV 03   740-045932  1H073050017  DC Power Entry Module
Routing Engine 0 REV 20   750-044228  CAAY7935     RE-MX-104
Routing Engine 1 REV 13   750-044228  CAAM6380     RE-MX-104
AFEB 0        BUILTIN  BUILTIN      Forwarding Engine
Processor
FPC 0         BUILTIN  BUILTIN      MPC BUILTIN
FPC 1         BUILTIN  BUILTIN      MPC BUILTIN
MIC 0         REV 15   750-036132  CAAF7948     2xOC12/8xOC3 CC-CE
PIC 0
Xcvr 0        REV 01   740-011615  PCQOU2J      SFP-IR
Xcvr 1        REV 01   740-016068  PJJL7A6G     SFP-SR
Xcvr 2        REV 01   740-016068  PJJL7A5J     SFP-SR
Xcvr 3        REV 01   740-016065  PJN5HPZ      SFP-SR
Xcvr 4        REV 01   740-029122  PKB38TL      SFP-LR
Xcvr 5        REV 01   740-011787  P6A107G      SFP-LR
```

Xcvr 6	REV 01	740-029122	PKB38TR	SFP-LR
Xcvr 7	REV 01	740-011787	PBKONK3	SFP-LR
MIC 1				
FPC 2		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B10F00465	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B10F00461	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B10G01545	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B10G01385	SFP+-10G-SR
Fan Tray 0	REV 02	711-049570	CAAX6538	Fan Tray

show chassis hardware detail (MX104 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			G3503	MX104
Midplane	REV 28	750-044219	CAAX5741	MX104
PEM 0	REV 03	740-045933	1H072500016	AC Power Entry Module
PEM 1	REV 03	740-045932	1H073050017	DC Power Entry Module
Routing Engine 0	REV 20	750-044228	CAAY7935	RE-MX-104
da0	7836 MB	ATP IG eUSB SSD		Nand Flash 0
usb0 (addr 1)	EHCI root hub 0		Freescall	uhub0
usb0 (addr 2)	USB2513Bi 9491		SMSC	uhub1
usb0 (addr 3)	ATP IG eUSB SSD 44801		ATP Electronics	umass0
Routing Engine 1	REV 13	750-044228	CAAM6380	RE-MX-104
da0	7836 MB	ATP IG eUSB SSD		Nand Flash 0
AFEB 0		BUILTIN	BUILTIN	Forwarding Engine
Processor				
FPC 0		BUILTIN	BUILTIN	MPC BUILTIN
FPC 1		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0	REV 15	750-036132	CAAF7948	2xOC12/8xOC3 CC-CE
PIC 0		BUILTIN	BUILTIN	2xOC12/8xOC3 CC-CE
Xcvr 0	REV 01	740-011615	PCQOU2J	SFP-IR
Xcvr 1	REV 01	740-016068	PJL7A6G	SFP-SR
Xcvr 2	REV 01	740-016068	PJL7A5J	SFP-SR
Xcvr 3	REV 01	740-016065	PJN5HPZ	SFP-SR
Xcvr 4	REV 01	740-029122	PKB38TL	SFP-LR
Xcvr 5	REV 01	740-011787	P6A107G	SFP-LR
Xcvr 6	REV 01	740-029122	PKB38TR	SFP-LR
Xcvr 7	REV 01	740-011787	PBKONK3	SFP-LR
MIC 1				
FPC 2		BUILTIN	BUILTIN	MPC BUILTIN
MIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B10F00465	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B10F00461	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B10G01545	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	B10G01385	SFP+-10G-SR
Fan Tray 0	REV 02	711-049570	CAAX6538	Fan Tray

show chassis hardware detail (MX480 Packet Transport Router with details of virtual disk size)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN122FFD9AFB	MX480
Midplane	REV 05	710-017414	ACRB8882	MX480 Midplane
FPM Board	REV 02	710-017254	CADF7623	Front Panel Display

PEM 0	Rev 07	740-017343	QCS1128A0TY	DC Power Entry Module
PEM 1	Rev 07	740-017343	QCS1128A0JM	DC Power Entry Module
Routing Engine 0	REV 07	750-054758	CADG2028	RE-S-2X00x6
vtbd0	15361 MB			Virtio Block Disk
vtbd1	15360 MB			Virtio Block Disk
ada0	511 MB	QEMU HARDDISK	QM00002	Emulated IDE Disk
usb0 (addr 1)	UHCI root HUB 0		Intel	uhub0
Routing Engine 1	REV 00	750-054758		RE-S-2X00x6
vtbd0	15361 MB			Virtio Block Disk
vtbd1	15360 MB			Virtio Block Disk
ada0	511 MB	QEMU HARDDISK	QM00002	Emulated IDE Disk
usb0 (addr 1)	UHCI root HUB 0		Intel	uhub0
CB 0	REV 01	750-055976	CACS1837	Enhanced MX SCB 2
CB 1	REV 01	750-055976	CADD9894	Enhanced MX SCB 2
Xcvr 1	REV 01	740-031980	AP41KCL	SFP+-10G-SR
FPC 0	REV 09	750-049040	CACX1759	LOAD MPC Type 2
CPU	REV 10	711-035209	CACP9324	HMPC PMB 2G
FPC 4	REV 28	750-037355	CACY8384	MPC4E 3D 2CGE+8XGE
CPU	REV 10	711-035209	CACX0428	HMPC PMB 2G
Fan Tray				Enhanced Left Fan Tray

show chassis hardware extensive (MX104 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis
Jedec Code:         0x7fb0                EEPROM Version: 0x02
                                      S/N:           G3503
Assembly ID:         0x0560                Assembly Version: 00.00
Date:                00-00-0000            Assembly Flags:  0x00
ID: MX104
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 60 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 47 33 35 30 33 00 00 00 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane
Jedec Code:         0x7fb0                EEPROM Version: 0x02
P/N:                750-044219            S/N:           CAAX5741
Assembly ID:         0x0560                Assembly Version: 01.28
Date:                03-27-2013            Assembly Flags: 0x00
Version:            REV 28                CLEI Code:     PROTOXCLEI
ID: MX104            FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 08 00 b0 a8 6e a7 f8 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 60 01 1c 52 45 56 20 32 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 31 39 00 00
Address 0x20: 53 2f 4e 20 43 41 41 58 35 37 34 31 00 1b 03 07
Address 0x30: dd ff ff ff ad 01 08 00 b0 a8 6e a7 f8 00 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 47 33 35 30 33 00 00 00 00 00 00 00

```

```

PEM 0          REV 03  740-045933  1H072500016  AC Power Entry Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-045933      S/N:          1H072500016
Assembly ID:   0x0475          Assembly Version: 00.03
Date:         12-14-2012      Assembly Flags: 0x00
Version:      REV 03          CLEI Code:    IPUPAJ9KAA
ID: AC Power Entry Module      FRU Model Number: PWR-AMX1100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 02 02 00 ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 75 00 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 39 33 33 00 00
Address 0x20: 31 48 30 37 32 35 30 30 30 31 36 00 00 0e 0c 07
Address 0x30: dc 30 43 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 02 02 00 ff 01 49 50 55 50 41 4a 39 4b 41 41 50
Address 0x50: 57 52 2d 41 4d 58 31 31 30 30 2d 41 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 70 ff ff ff ff ff ff ff ff ff ff ff ff

PEM 1          REV 03  740-045932  1H073050017  DC Power Entry Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-045932      S/N:          1H073050017
Assembly ID:   0x0476          Assembly Version: 00.03
Date:         01-30-2013      Assembly Flags: 0x00
Version:      REV 03          CLEI Code:    IPUPAJ8KAA
ID: DC Power Entry Module      FRU Model Number: PWR-AMX1100-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 02 02 00 ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 76 00 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 39 33 32 00 00
Address 0x20: 31 48 30 37 33 30 35 30 30 31 37 00 00 1e 01 07
Address 0x30: dd 30 44 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 02 02 00 ff 01 49 50 55 50 41 4a 38 4b 41 41 50
Address 0x50: 57 52 2d 41 4d 58 31 31 30 30 2d 44 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 72 ff ff ff ff ff ff ff ff ff ff ff ff

Routing Engine 0 REV 20  750-044228  CAAY7935  RE-MX-104
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          750-044228      S/N:          CAAY7935
Assembly ID:   0x0b81          Assembly Version: 01.20
Date:         03-18-2013      Assembly Flags: 0x00
Version:      REV 20          CLEI Code:    PROTOXCLEI
ID: RE-MX-104          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 08 b0 a8 6e a6 fc 10 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 81 01 14 52 45 56 20 32 30 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 32 38 00 00
Address 0x20: 53 2f 4e 20 43 41 41 59 37 39 33 35 00 12 03 07
Address 0x30: dd ff ff ff ad 01 00 08 b0 a8 6e a6 fc 10 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
da0  7836 MB  ATP IG eUSB SSD  Nand Flash 0
usb0 (addr 1) EHCI root hub 0  Freescale  uhub0
usb0 (addr 2) USB2513Bi 9491  SMSC  uhub1
usb0 (addr 3) ATP IG eUSB SSD 44801 ATP Electronics  umass0
Routing Engine 1 REV 13  750-044228  CAAM6380  RE-MX-104
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          750-044228      S/N:          CAAM6380

```

```

Assembly ID: 0x0b81      Assembly Version: 01.13
Date: 09-17-2012      Assembly Flags: 0x00
Version: REV 13      CLEI Code: PROTOXCLEI
ID: RE-MX-104      FRU Model Number: PROTO-ASSEMBLY

Board Information Record:
Address 0x00: ad 01 00 08 64 87 88 27 08 18 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 81 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 32 38 00 00
Address 0x20: 53 2f 4e 20 43 41 41 4d 36 33 38 30 00 11 09 07
Address 0x30: dc ff ff ff ad 01 00 08 64 87 88 27 08 18 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
da0 7836 MB ATP IG eUSB SSD Nand Flash 0
AFEB 0 BUILTIN BUILTIN Forwarding Engine
Processor
FPC 0 BUILTIN BUILTIN MPC BUILTIN
FPC 1 BUILTIN BUILTIN MPC BUILTIN
MIC 0 REV 15 750-036132 CAAF7948 2x0C12/8x0C3 CC-CE
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-036132 S/N: CAAF7948
Assembly ID: 0x0a1a Assembly Version: 01.15
Date: 07-03-2012 Assembly Flags: 0x00
Version: REV 15 CLEI Code: IP9IAM2DAA
ID: 2x0C12/8x0C3 CC-CE FRU Model Number: MIC-3D-80C3-20C12-ATM

Board Information Record:
Address 0x00: 12 01 05 03 05 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 1a 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 36 31 33 32 00 00
Address 0x20: 53 2f 4e 20 43 41 41 46 37 39 34 38 00 03 07 07
Address 0x30: dc ff ff ff 12 01 05 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 39 49 41 4d 32 44 41 41 4d
Address 0x50: 49 43 2d 33 44 2d 38 4f 43 33 2d 32 4f 43 31 32
Address 0x60: 2d 41 54 4d 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff e3 c0 02 a3 9c 00 00 00 00 0a 60 00 00
PIC 0 BUILTIN BUILTIN 2x0C12/8x0C3 CC-CE
Xcvr 0 REV 01 740-011615 PCQ0U2J SFP-IR
Xcvr 1 REV 01 740-016068 PJL7A6G SFP-SR
Xcvr 2 REV 01 740-016068 PJL7A5J SFP-SR
Xcvr 3 REV 01 740-016065 PJN5HPZ SFP-SR
Xcvr 4 REV 01 740-029122 PKB38TL SFP-LR
Xcvr 5 REV 01 740-011787 P6A107G SFP-LR
Xcvr 6 REV 01 740-029122 PKB38TR SFP-LR
Xcvr 7 REV 01 740-011787 PBKONK3 SFP-LR
MIC 1
FPC 2 BUILTIN BUILTIN MPC BUILTIN
MIC 0 BUILTIN BUILTIN 4x 10GE(LAN) SFP+
Jedec Code: 0x0000 EEPROM Version: 0x00
P/N: BUILTIN S/N: BUILTIN
Assembly ID: 0x0a60 Assembly Version: 00.00
Date: 00-00-0000 Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+

Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 60 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 4d 58 43 00
Address 0x20: 42 55 49 4c 54 49 4e 00 4d 58 43 00 00 00 00 00

```

```

Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 a5 04 7f b0 02 ff 0a 1a 01 0f
PIC 0          BUILTIN          BUILTIN          4x 10GE(LAN) SFP+
  Xcvr 0      REV 01      740-031980      B10F00465      SFP+-10G-SR
  Xcvr 1      REV 01      740-031980      B10F00461      SFP+-10G-SR
  Xcvr 2      REV 01      740-031980      B10G01545      SFP+-10G-SR
  Xcvr 3      REV 01      740-031980      B10G01385      SFP+-10G-SR
Fan Tray 0    REV 02      711-049570      CAAX6538      Fan Tray
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:          711-049570      S/N:          CAAX6538
Assembly ID:  0x0b82          Assembly Version: 01.02
Date:         03-01-2013      Assembly Flags: 0x00
Version:      REV 02          CLEI Code:     PROTOXCLEI
ID: Fan Tray          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 82 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 39 35 37 30 00 00
Address 0x20: 53 2f 4e 20 43 41 41 58 36 35 33 38 00 01 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware extensive (PTX10008 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               DE487          JNP10008 [PTX10008 -
PILOT BUILD V1.1]
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          DE487
Assembly ID:  0x0566          Assembly Version: 01.27
Date:         08-08-2016      Assembly Flags: 0x00
CLEI Code:     CMMUM00ARA
ID: JNP10008      FRU Model Number: QFX10008-CHAS
Board Information Record:
Address 0x00: ad 01 08 00 30 b6 4f e9 74 c4 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 66 01 1b 00 45 56 20 32 37 00 00
Address 0x10: 00 00 00 00 00 35 30 2d 30 35 34 30 39 37 00 00
Address 0x20: 44 45 34 38 37 00 00 00 00 00 00 00 00 08 08 07
Address 0x30: e0 ff ff ff ad 01 08 00 30 b6 4f e9 74 c4 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4d 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 63 44 45 34 38 37 00 00 00 00 00 00 00
Midplane      REV 27      750-054097      ACPD4307      Midplane 8
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:          750-054097      S/N:          ACPD4307
Assembly ID:  0x0be3          Assembly Version: 01.27
Date:         08-08-2016      Assembly Flags: 0x00
Version:      REV 27          CLEI Code:     CMMUM00ARA
ID: QFX10008 Midplane      FRU Model Number: QFX10008-CHAS
Board Information Record:

```

```

Address 0x00: ad 01 08 00 30 b6 4f e9 74 c4 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e3 01 1b 52 45 56 20 32 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 34 30 39 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 33 30 37 00 08 08 07
Address 0x30: e0 ff ff ff ad 01 08 00 30 b6 4f e9 74 c4 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4d 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 63 44 45 34 38 37 00 00 00 00 00 00 00
Routing Engine 0          BUILTIN          BUILTIN          RE-PTX-2X00x4
vtbd0 15360 MB            Virtio Block Disk
vtbd1 15360 MB            Virtio Block Disk
ada0 128 MB QEMU          QM00002          Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel          uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
Routing Engine 1          BUILTIN          BUILTIN          RE-PTX-2X00x4
vtbd0 15360 MB            Virtio Block Disk
vtbd1 15360 MB            Virtio Block Disk
ada0 128 MB QEMU          QM00002          Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel          uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
CB 0          REV 02 750-068820 ACNZ4440          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-068820          S/N: ACNZ4440
Assembly ID: 0x0b9d          Assembly Version: 01.02
Date: 06-13-2016          Assembly Flags: 0x00
Version: REV 02          CLEI Code: CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 84 c1 c1 54 10 be ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 34 34 34 30 00 0d 06 07
Address 0x30: e0 ff ff ff ad 01 00 10 84 c1 c1 54 10 be ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 02 750-068820 ACNZ8284          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-068820          S/N: ACNZ8284
Assembly ID: 0x0b9d          Assembly Version: 01.02
Date: 06-27-2016          Assembly Flags: 0x00
Version: REV 02          CLEI Code: CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 84 c1 c1 e5 b1 46 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 38 32 38 34 00 1b 06 07
Address 0x30: e0 ff ff ff ad 01 00 10 84 c1 c1 e5 b1 46 ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff ff
FPC 0          REV 36 750-051354 ACNP4679          LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0          EEPROM Version: 0x02

```

```

P/N:          750-051354          S/N:          ACNP4679
Assembly ID:  0x0be7             Assembly Version: 01.36
Date:         11-11-2016         Assembly Flags:  0x00
Version:      REV 36             CLEI Code:      CMUIAM9BAA
ID: ULC-36Q-12Q28              FRU Model Number: QFX10000-36Q

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 34 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 50 34 36 37 39 00 0b 0b 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:  0x7fb0           EEPROM Version: 0x02
P/N:         BUILTIN         S/N:         BUILTIN
Assembly ID: 0xf020           Assembly Version: 02.17
Date:        04-19-2012      Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 e0 3c fa 09 00 70 87
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 e0 3c fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0           EEPROM Version: 0x02
P/N:         BUILTIN         S/N:         BUILTIN
Assembly ID: 0xf050           Assembly Version: 02.17
Date:        04-19-2012      Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 1      REV 01      740-058734      1ECQ113834D      QSFP-100GBASE-SR4
Xcvr 5      REV 01      740-058734      1ECQ1137067      QSFP-100GBASE-SR4
Xcvr 6      REV 01      740-054053      QF3205SD         QSFP+-4X10G-SR
Xcvr 7      REV 01      740-058734      1ECQ11381MP      QSFP-100GBASE-SR4
Xcvr 11     REV 01      740-061405      1ACQ110507K      QSFP-100GBASE-SR4
Xcvr 13     REV 01      740-058734      1ECQ11390ZB      QSFP-100GBASE-SR4
Xcvr 17     REV 01      740-058734      1ECQ11381M1      QSFP-100GBASE-SR4
Xcvr 19     REV 01      740-058734      1ECQ11381JS      QSFP-100GBASE-SR4
Xcvr 23     REV 01      740-058734      1ACQ112000E      QSFP-100GBASE-SR4
Xcvr 25     REV 01      740-058734      1ECQ11381NT      QSFP-100GBASE-SR4
Xcvr 28     REV 01      740-054053      QG1502WV         QSFP+-4X10G-SR
Xcvr 29     REV 01      740-058734      1ACQ112000D      QSFP-100GBASE-SR4

```

```

Xcvr 33      REV 01  740-058734  1ACQ1134065      QSFP-100GBASE-SR4
Xcvr 34      REV 01  740-067442  XV20L4L          QSFP+-40G-SR4
FPC 1        REV 33  750-051354  ACNX8831         LC1102 - 12C / 36Q /
144X
Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         750-051354  S/N:         ACNX8831
Assembly ID: 0x0be7      Assembly Version: 01.33
Date:        06-03-2016  Assembly Flags: 0x00
Version:     REV 33      CLEI Code:    CMUIAM9BAA
ID: ULC-36Q-12Q28       FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 21 52 45 56 20 33 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 34 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 58 38 38 33 31 00 03 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fb ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN    BUILTIN          FPC CPU
Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         BUILTIN     S/N:         BUILTIN
Assembly ID: 0xf020      Assembly Version: 02.17
Date:        04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 20 3e fa 09 00 10 8a
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 20 3e fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         BUILTIN     S/N:         BUILTIN
Assembly ID: 0xf050      Assembly Version: 02.17
Date:        04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 5       NON-JNPR    37700171YY0084      QSFP-100GBASE-LR4
Xcvr 25      NON-JNPR    GDA2017459         QSFP-100GBASE-LR4
Xcvr 29      NON-JNPR    GDF2008750         QSFP-100GBASE-LR4
FPC 2        REV 32  750-051357  ACPB0341         LC1101 - 30C / 30Q / 96X

Jedec Code:  0x7fb0      EEPROM Version:  0x02
P/N:         750-051357  S/N:         ACPB0341

```

```

Assembly ID: 0x0be8      Assembly Version: 01.32
Date:         06-04-2016  Assembly Flags: 0x00
Version:      REV 32      CLEI Code:      CMUIANABAA
ID: ULC-30Q28           FRU Model Number: QFX10000-30C

```

Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b e8 01 20 52 45 56 20 33 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 42 30 33 34 31 00 04 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 30 43 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff ef ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN     S/N:        BUILTIN
Assembly ID: 0xf020     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00

```

Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 20 02 11 00 00 67 00 0a 00 b0 8c
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 00 67 00
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      30x100GE/30x40GE/96x10GE

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN     S/N:        BUILTIN
Assembly ID: 0xf050     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00

```

Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 de ad be ef de ad be ef de ad be ef
Xcvr 0          NON-JNPR    37700170YZC305    QSFP-100GBASE-LR4
Xcvr 4          NON-JNPR    37700170YZC306    QSFP-100GBASE-LR4
Xcvr 9          REV 01      740-054053        QF36013S          QSFP+-4X10G-SR
Xcvr 12         REV 01      740-067442        XV301AU           QSFP+-40G-SR4
Xcvr 14         REV 01      740-043308        UWE2CG9           QSFP+-40G-LR4
Xcvr 16         REV 01      740-043308        UWH141S           QSFP+-40G-LR4
Xcvr 17         REV 01      740-058734        1ECQ11180VH       QSFP-100GBASE-SR4
Xcvr 18         REV 01      740-054050        INF4J0492237      QSFP+-4X10G-LR
Xcvr 26         REV 01      740-058734        1ACQ111803N       QSFP-100GBASE-SR4
Xcvr 27         REV 01      740-058734        1ACQ113405S       QSFP-100GBASE-SR4
FPC 3          REV 35      750-051357        ACPD2186          LC1101 - 30C / 30Q / 96X

```

```
Jedec Code: 0x7fb0      EEPROM Version: 0x02
```

```

P/N:          750-051357      S/N:          ACPD2186
Assembly ID:  0x0be8         Assembly Version: 01.35
Date:         09-21-2016     Assembly Flags:  0x00
Version:      REV 35         CLEI Code:      CMUIANABAA
ID: ULC-30Q28                FRU Model Number: QFX10000-30C

```

Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b e8 01 23 52 45 56 20 33 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 31 33 35 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 32 31 38 36 00 15 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 30 43 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff

```

```
CPU          BUILTIN          BUILTIN          FPC CPU
```

```

Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         BUILTIN         S/N:           BUILTIN
Assembly ID: 0xf020         Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags:  0x00

```

Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 20 02 11 00 80 70 fa 09 00 50 8f
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 80 70 fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          30x100GE/30x40GE/96x10GE

```

```

Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         BUILTIN         S/N:           BUILTIN
Assembly ID: 0xf050         Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags:  0x00

```

Board Information Record:

```
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0      REV 01      740-061409      1GCQA1470A3      QSFP-100GBASE-LR4-T2
Xcvr 1      REV 01      740-061409      1GCQA1470XC      QSFP-100GBASE-LR4-T2
Xcvr 7              NON-JNPR      FG4550500008      QSFP-100G-CWDM4
Xcvr 24      REV 01      740-058734      1ECQ11381LX      QSFP-100GBASE-SR4
Xcvr 29      REV 01      740-043308      UWE0UYS          QSFP+-40G-LR4
FPC 5              REV 08      750-068822      ACPF0057          LC1102 - 12C / 36Q /
144X

```

```

Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         750-068822     S/N:           ACPF0057
Assembly ID: 0x0be7         Assembly Version: 01.08
Date:        09-01-2016     Assembly Flags:  0x00
Version:      REV 08         CLEI Code:      CMUIAM9BAB

```



```

Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         BUILTIN        S/N:         BUILTIN
Assembly ID: 0xf020          Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 3e fa 09 00 30 97
Address 0x10: 09 38 bb ff 42 55 49 4c 54 49 4e 00 00 c0 3e fa
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         BUILTIN        S/N:         BUILTIN
Assembly ID: 0xf050          Assembly Version: 02.17
Date:        04-19-2012     Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 1       REV 01       740-054053   QF3208LG       QSFPA+-4X10G-SR
Xcvr 7       REV 01       740-067442   XV20LGN       QSFPA+-40G-SR4
Xcvr 8       REV 01       740-067442   XV20VMV       QSFPA+-40G-SR4
Xcvr 9       REV 01       740-067442   XV20KCN       QSFPA+-40G-SR4
Xcvr 10      REV 01       740-067442   XU504QD       QSFPA+-40G-SR4
Xcvr 11      REV 01       740-067442   XU504X7       QSFPA+-40G-SR4
Xcvr 12      REV 01       740-067442   XU504W8       QSFPA+-40G-SR4
Xcvr 16      REV 01       740-032986   QF4301JP      QSFPA+-40G-SR4
Xcvr 17      REV 01       740-032986   QF4303AE      QSFPA+-40G-SR4
Xcvr 18      REV 01       740-054050   INF4J0492400  QSFPA+-4X10G-LR
Xcvr 19      REV 01       740-054050   INF4J0492142  QSFPA+-4X10G-LR
Xcvr 24      REV 01       740-032986   QF4301KB      QSFPA+-40G-SR4
Xcvr 25      REV 01       740-032986   QF4303YP      QSFPA+-40G-SR4
Xcvr 30      REV 01       740-067442   XV300ZX       QSFPA+-40G-SR4
Xcvr 31      REV 01       740-043308   UWH2KBW       QSFPA+-40G-LR4
Xcvr 34      REV 01       740-054053   QG1501YU      QSFPA+-4X10G-SR
FPD Board    REV 07       711-054687   ACPC7142      Front Panel Display
Jedec Code:  0x7fb0          EEPROM Version: 0x01
P/N:         711-054687     S/N:         ACPC7142
Assembly ID: 0x0bf2          Assembly Version: 01.07
Date:        07-22-2016     Assembly Flags: 0x00
Version:     REV 07
ID: QFX10000 FPD
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

```

I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b f2 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 34 36 38 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 43 37 31 34 32 00 16 07 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

Power Supply 0  REV 02  740-049388  1EDL62102N9  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102N9
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 4e 39 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff ff

Power Supply 1  REV 02  740-049388  1EDL60300KX  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL60300KX
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-20-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 30 33 30 30 4b 58 00 00 14 01 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff ff

Power Supply 2  REV 02  740-049388  1EDL60300DL  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL60300DL
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-20-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 30 33 30 30 44 4c 00 00 14 01 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00

```

```

Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 3  REV 02  740-049388  1EDL61701BT  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL61701BT
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-01-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 31 37 30 31 42 54 00 00 01 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 4  REV 02  740-049388  1EDL62102P7  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102P7
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 50 37 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 5  REV 02  740-049388  1EDL62102PP  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62102PP
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 05-25-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 31 30 32 50 50 00 00 19 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
FTC 0  REV 14  750-050108  ACPE4038  Fan Controller 8
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 750-050108  S/N: ACPE4038
Assembly ID: 0x0bee  Assembly Version: 01.14
Date: 09-27-2016  Assembly Flags: 0x00

```

```

Version:      REV 14          CLEI Code:      CMUCAHZCAA
ID: QFX10000 FTC          FRU Model Number:  QFX10008-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ee 01 0e 52 45 56 20 31 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 31 30 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 45 34 30 33 38 00 1b 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 5a 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 44 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 98 ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 0      REV 09      760-054372      ACPD6799      Fan Tray 8
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          760-054372    S/N:          ACPD6799
Assembly ID:   0x0bf0      Assembly Version: 01.09
Date:         09-28-2016   Assembly Flags:  0x00
Version:      REV 09      CLEI Code:     CMUCAHYCAA
ID: QFX10008 FHB      FRU Model Number: QFX10008-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f0 01 09 52 45 56 20 30 39 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 34 33 37 32 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 44 36 37 39 39 00 1c 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 59 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1      REV 09      760-054372      ACNZ3584      Fan Tray 8
Jedec Code:    0x7fb0      EEPROM Version:  0x02
P/N:          760-054372    S/N:          ACNZ3584
Assembly ID:   0x0bf0      Assembly Version: 01.09
Date:         08-30-2016   Assembly Flags:  0x00
Version:      REV 09      CLEI Code:     CMUCAHYCAA
ID: QFX10008 FHB      FRU Model Number: QFX10008-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f0 01 09 52 45 56 20 30 39 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 34 33 37 32 00 00

```

```

Address 0x20: 53 2f 4e 20 41 43 4e 5a 33 35 38 34 00 1e 08 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 59 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 46 41 4e 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f1 ff ff ff ff ff ff ff ff ff ff ff ff
SIB 0          REV 24    750-050058    ACPD4587          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACPD4587
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-19-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 35 38 37 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 1          REV 24    750-050058    ACNZ0635          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACNZ0635
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          06-06-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 36 33 35 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 2          REV 24    750-050058    ACPD4908          Switch Fabric 8
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-050058      S/N:             ACPD4908
Assembly ID:   0x0bec          Assembly Version: 01.24
Date:          07-12-2016      Assembly Flags:   0x00
Version:       REV 24          CLEI Code:        CMUCAH0CAA
ID: QFX10008 SIB              FRU Model Number: QFX10008-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 34 39 30 38 00 0c 07 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 3          REV 24    750-050058    ACNZ0617          Switch Fabric 8

```

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNZ0617
Assembly ID: 0x0bec     Assembly Version: 01.24
Date: 06-07-2016       Assembly Flags: 0x00
Version: REV 24         CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB       FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 36 31 37 00 07 06 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 4      REV 24      750-050058      ACNZ0527      Switch Fabric 8
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNZ0527
Assembly ID: 0x0bec     Assembly Version: 01.24
Date: 06-06-2016       Assembly Flags: 0x00
Version: REV 24         CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB       FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 18 52 45 56 20 32 34 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 5a 30 35 32 37 00 06 06 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 45 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff d1 00 00 00 00 00 00 00 00 00 00 00 00
SIB 5      REV 23      750-050058      ACNX6980      Switch Fabric 8
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050058        S/N: ACNX6980
Assembly ID: 0x0bec     Assembly Version: 01.23
Date: 05-16-2016       Assembly Flags: 0x00
Version: REV 23         CLEI Code: CMUCAHOCAA
ID: QFX10008 SIB       FRU Model Number: QFX10008-SF
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b ec 01 17 52 45 56 20 32 33 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 35 38 00 00
  Address 0x20: 53 2f 4e 20 41 43 4e 58 36 39 38 30 00 10 05 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 30 43 41 41 51
  Address 0x50: 46 58 31 30 30 30 38 2d 53 46 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ce 00 00 00 00 00 00 00 00 00 00 00 00

```

show chassis hardware extensive (PTX10016 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			DH995	JNP10016 [PTX10016]

```

Jedec Code: 0x7fb0      EEPROM Version: 0x02
                        S/N: DH995
Assembly ID: 0x0566     Assembly Version: 01.22
Date: 02-16-2017       Assembly Flags: 0x00
                        CLEI Code: CMMUN00ARA
ID: JNP10016           FRU Model Number: QFX10016-CHAS

Board Information Record:
Address 0x00: ad 01 10 00 44 aa 50 ab 1b b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 66 01 16 00 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 00 35 30 2d 30 35 36 35 35 35 00 00
Address 0x20: 44 48 39 39 35 00 00 00 00 00 00 00 00 10 02 07
Address 0x30: e1 ff ff ff ad 01 10 00 44 aa 50 ab 1b b6 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4e 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 32 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 51 44 48 39 39 35 00 00 00 00 00 00 00

Midplane REV 22 750-056555 ACPM7810 Midplane 16
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-056555        S/N: ACPM7810
Assembly ID: 0x0be4     Assembly Version: 01.22
Date: 02-16-2017       Assembly Flags: 0x00
Version: REV 22         CLEI Code: CMMUN00ARA
ID: QFX10016 Midplane  FRU Model Number: QFX10016-CHAS

Board Information Record:
Address 0x00: ad 01 10 00 44 aa 50 ab 1b b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e4 01 16 52 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 36 35 35 35 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 37 38 31 30 00 10 02 07
Address 0x30: e1 ff ff ff ad 01 10 00 44 aa 50 ab 1b b6 ff ff
Address 0x40: ff ff ff ff 01 43 4d 4d 55 4e 30 30 41 52 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 43 48 41 53 00 00 00 00
Address 0x60: 00 00 00 00 00 00 32 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 51 44 48 39 39 35 00 00 00 00 00 00 00

Routing Engine 0 BUILTIN BUILTIN RE-PTX-2X00x4
vtbd0 15360 MB Virtio Block Disk
vtbd1 15360 MB Virtio Block Disk
ada0 128 MB QEMU QM00002 Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
Routing Engine 1 BUILTIN BUILTIN RE-PTX-2X00x4
vtbd0 15360 MB Virtio Block Disk
vtbd1 15360 MB Virtio Block Disk
ada0 128 MB QEMU QM00002 Virtio Block Disk
usb0 (addr 0.1) EHCI root HUB 0 Intel uhub0
usb1 (addr 0.2) product 0x0020 32 vendor 0x8087 uhub1
CB 0 REV 03 750-068820 ACPL7238 Control Board
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-068820        S/N: ACPL7238
Assembly ID: 0x0b9d     Assembly Version: 01.03
Date: 03-15-2017       Assembly Flags: 0x00
Version: REV 03         CLEI Code: CMUCAH3CTB
ID: Control Board      FRU Model Number: QFX10000-RE

Board Information Record:
Address 0x00: ad 01 00 10 e8 b6 c2 46 aa 29 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 37 32 33 38 00 0f 03 07
Address 0x30: e1 ff ff ff ad 01 00 10 e8 b6 c2 46 aa 29 ff ff

```

```

Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 03    750-068820    ACPL7298          Control Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-068820      S/N:          ACPL7298
Assembly ID:  0x0b9d          Assembly Version: 01.03
Date:         03-15-2017      Assembly Flags:  0x00
Version:      REV 03          CLEI Code:      CMUCAH3CTB
ID: Control Board          FRU Model Number: QFX10000-RE
Board Information Record:
Address 0x00: ad 01 00 10 e8 b6 c2 46 99 b9 ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 9d 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 37 32 39 38 00 0f 03 07
Address 0x30: e1 ff ff ff ad 01 00 10 e8 b6 c2 46 99 b9 ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 33 43 54 42 51
Address 0x50: 46 58 31 30 30 30 30 2d 52 45 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 41 00 ff ff ff ff ff ff
Address 0x70: ff ff ff db ff ff ff ff ff ff ff ff ff ff ff
FPC 1          REV 36    750-077140    ACNP4590          LC1102 - 12C / 36Q /
144X
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-077140      S/N:          ACNP4590
Assembly ID:  0x0be7          Assembly Version: 01.36
Date:         10-17-2016      Assembly Flags:  0x00
Version:      REV 36          CLEI Code:      CMUIAM9BAA
ID: ULC-36Q-12Q28          FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 50 34 35 39 30 00 11 0a 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:  0xf020          Assembly Version: 02.17
Date:         04-19-2012      Assembly Flags:  0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 40 36 bd 09 40 25 32
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 40 36 bd
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          BUILTIN          S/N:          BUILTIN

```

```

Assembly ID: 0xf050          Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0      REV 01      740-054053      QF3600AV      QSPF+-4X10G-SR
Xcvr 35     REV 01      740-061405      1ACQ110507K     QSPF-100GBASE-SR4
FPC 3       REV 07      750-071975      CAHA2224       LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-071975            S/N: CAHA2224
Assembly ID: 0x0be7         Assembly Version: 01.07
Date: 01-17-2017           Assembly Flags: 0x00
Version: REV 07            CLEI Code: PROTOXCLEI
ID: ULC-36Q-12Q28          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 31 39 37 35 00 00
Address 0x20: 53 2f 4e 20 43 41 48 41 32 32 32 34 00 11 01 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN      BUILTIN      FPC CPU
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: BUILTIN              S/N: BUILTIN
Assembly ID: 0xf020         Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 60 b6 be 09 c0 cf 38
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 60 b6 be
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: BUILTIN              S/N: BUILTIN
Assembly ID: 0xf050         Assembly Version: 02.17
Date: 04-19-2012           Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20

```

```

Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0          REV 01    740-054053    QG1505YM          QSFP+-4X10G-SR
Xcvr 11         NON-JNPR    GDA2017459        QSFP-100GBASE-LR4
Xcvr 35         NON-JNPR    GDF2008750        QSFP-100GBASE-LR4
FPC 5          REV 13    750-068822    ACPD6501          LC1102 - 12C / 36Q /
144X
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          750-068822      S/N:              ACPD6501
Assembly ID:   0x0be7          Assembly Version:  01.13
Date:          06-29-2017      Assembly Flags:    0x00
Version:       REV 13         CLEI Code:        CMUIAM9BAC
ID: ULC-36Q-12Q28             FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 38 38 32 32 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 36 35 30 31 00 1d 06 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 43 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 43 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fd ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN          BUILTIN          FPC CPU
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          BUILTIN          S/N:             BUILTIN
Assembly ID:  0xf020          Assembly Version: 02.17
Date:         04-19-2012      Assembly Flags:   0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 c6 bc 09 c0 ca 40
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 c0 c6 bc
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN          BUILTIN          12x100GE/36x40GE/144x10GE

Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          BUILTIN          S/N:             BUILTIN
Assembly ID:  0xf050          Assembly Version: 02.17
Date:         04-19-2012      Assembly Flags:   0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55

```

```

Xcvr 1      REV 01  740-058734  1ECQ11381LA  QSF+100GBASE-SR4
Xcvr 2      REV 01  740-043308  UWH141S      QSF+-40G-LR4
Xcvr 3      REV 01  740-043308  UWE2CG9      QSF+-40G-LR4
FPC 6       REV 37  750-077140  ACNS2793     LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        750-077140  S/N:         ACNS2793
Assembly ID: 0x0be7     Assembly Version: 01.37
Date:       03-25-2017  Assembly Flags: 0x00
Version:    REV 37     CLEI Code:    CMUIAM9BAA
ID: ULC-36Q-12Q28      FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 25 52 45 56 20 33 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 53 32 37 39 33 00 19 03 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff ff
CPU          BUILTIN    BUILTIN    FPC CPU
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN    S/N:         BUILTIN
Assembly ID: 0xf020     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 a0 e6 d4 09 00 bd 43
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 a0 e6 d4
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN    12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:        BUILTIN    S/N:         BUILTIN
Assembly ID: 0xf050     Assembly Version: 02.17
Date:       04-19-2012  Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0      REV 01  740-032986  QH0400VH     QSF+-40G-SR4
Xcvr 1      REV 01  740-032986  QH0400VM     QSF+-40G-SR4
Xcvr 35     REV 01  740-058734  1ECQ11390ZB  QSF+100GBASE-SR4
FPC 8       REV 36  750-077140  ACNP4625     LC1102 - 12C / 36Q /
144X
Jedec Code: 0x7fb0      EEPROM Version: 0x02

```

P/N: 750-077140 S/N: ACNP4625
 Assembly ID: 0x0be7 Assembly Version: 01.36
 Date: 10-17-2016 Assembly Flags: 0x00
 Version: REV 36 CLEI Code: CMUIAM9BAA
 ID: ULC-36Q-12Q28 FRU Model Number: QFX10000-36Q

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
 Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
 Address 0x20: 53 2f 4e 20 41 43 4e 50 34 36 32 35 00 11 0a 07
 Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
 Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
 Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
 Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
 Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff

CPU BUILTIN BUILTIN FPC CPU

Jedec Code: 0x7fb0 EEPROM Version: 0x02
 P/N: BUILTIN S/N: BUILTIN
 Assembly ID: 0xf020 Assembly Version: 02.17
 Date: 04-19-2012 Assembly Flags: 0x00

Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 20 02 11 00 c0 e6 d4 09 40 59 4a
 Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 c0 e6 d4
 Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
 Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
 Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
 Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
 Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
 Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00

PIC 0 BUILTIN BUILTIN 12x100GE/36x40GE/144x10GE

Jedec Code: 0x7fb0 EEPROM Version: 0x02
 P/N: BUILTIN S/N: BUILTIN
 Assembly ID: 0xf050 Assembly Version: 02.17
 Date: 04-19-2012 Assembly Flags: 0x00

Board Information Record:

Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
 Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
 Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
 Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
 Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
 Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
 Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
 Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55

Xcvr 1 REV 01 740-058732 1AMQA14206D QSFP-100GBASE-LR4
 Xcvr 10 REV 01 740-032986 QF4301KB QSFP+-40G-SR4
 Xcvr 24 REV 01 740-054050 INFJA0492244 QSFP+-4X10G-LR
 FPC 9 REV 35 750-071976 ACPD3055 LC1101 - 30C / 30Q / 96X

Jedec Code: 0x7fb0 EEPROM Version: 0x02
 P/N: 750-071976 S/N: ACPD3055
 Assembly ID: 0x0be8 Assembly Version: 01.35
 Date: 05-26-2016 Assembly Flags: 0x00
 Version: REV 35 CLEI Code: CMUIANABAA
 ID: ULC-30Q28 FRU Model Number: JNP10K-LC1101

Board Information Record:


```

Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 45 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 1  REV 02  740-049388  1EDL62503AD  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL62503AD
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 06-19-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 41 44 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 2  REV 02  740-049388  1EDL625039P  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL625039P
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 06-19-2016  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 50 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff ff
Power Supply 3  REV 02  740-049388  1EDL702004E  Power Supply AC
Jedec Code: 0x7fb0  EEPROM Version: 0x02
P/N: 740-049388  S/N: 1EDL702004E
Assembly ID: 0x0483  Assembly Version: 01.02
Date: 01-18-2017  Assembly Flags: 0x00
Version: REV 02  CLEI Code: CMUPADNBAA
ID: QFX10000 AC  FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 37 30 32 30 30 34 45 00 00 12 01 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff

```

```

Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 4  REV 02  740-049388  1EDL625039D  Power Supply AC
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-049388        S/N: 1EDL625039D
Assembly ID: 0x0483     Assembly Version: 01.02
Date: 06-19-2016       Assembly Flags: 0x00
Version: REV 02        CLEI Code: CMUPADNBAA
ID: QFX10000 AC        FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 44 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 5  REV 02  740-049388  1EDL63706JD  Power Supply AC
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-049388        S/N: 1EDL63706JD
Assembly ID: 0x0483     Assembly Version: 01.02
Date: 09-13-2016       Assembly Flags: 0x00
Version: REV 02        CLEI Code: CMUPADNBAA
ID: QFX10000 AC        FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 33 37 30 36 4a 44 00 00 0d 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
Power Supply 6  REV 02  740-049388  1EDL63706JH  Power Supply AC
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-049388        S/N: 1EDL63706JH
Assembly ID: 0x0483     Assembly Version: 01.02
Date: 09-13-2016       Assembly Flags: 0x00
Version: REV 02        CLEI Code: CMUPADNBAA
ID: QFX10000 AC        FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 33 37 30 36 4a 48 00 00 0d 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 50 41 44 4e 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 50 57 52 2d 41 43 00 00
Address 0x60: 00 00 00 00 00 00 01 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff dc ff ff ff ff ff ff ff ff ff ff ff
FTC 0          REV 10  750-050309  ACPM2918  Fan Controller 16
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-050309        S/N: ACPM2918
Assembly ID: 0x0b9c     Assembly Version: 01.10
Date: 01-13-2017       Assembly Flags: 0x00
Version: REV 10        CLEI Code: CMUCAH5CAA

```

```

ID: QFX10016 FTC                      FRU Model Number: QFX10016-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 9c 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 33 30 39 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 4d 32 39 31 38 00 0d 01 07
  Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 35 43 41 41 51
  Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 6f ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1          REV 10    750-050309    ACPE8185          Fan Controller 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-050309          S/N: ACPE8185
Assembly ID: 0x0b9c        Assembly Version: 01.10
Date: 12-22-2016          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH5CAA
ID: QFX10016 FTC          FRU Model Number: QFX10016-FAN-CTRL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 9c 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 33 30 39 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 45 38 31 38 35 00 16 0c 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 35 43 41 41 51
  Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 2d 43 54 52 4c
  Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 6f ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 0          REV 10    760-077141    ACPV7288          Fan Tray 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 760-077141          S/N: ACPV7288
Assembly ID: 0x0bf1        Assembly Version: 01.10
Date: 06-07-2017          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH4CAA
ID: QFX10016 FHB          FRU Model Number: JNP10016-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f1 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 37 37 31 34 31 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 56 37 32 38 38 00 07 06 07
  Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 34 43 41 41 4a
  Address 0x50: 4e 50 31 30 30 31 36 2d 46 41 4e 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 0d ff ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1          REV 10    760-057901    ACPL0546          Fan Tray 16
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 760-057901          S/N: ACPL0546
Assembly ID: 0x0bf1        Assembly Version: 01.10
Date: 02-14-2017          Assembly Flags: 0x00
Version: REV 10          CLEI Code: CMUCAH4CAA
ID: QFX10016 FHB          FRU Model Number: QFX10016-FAN
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b f1 01 0a 52 45 56 20 31 30 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 35 37 39 30 31 00 00
  Address 0x20: 53 2f 4e 20 41 43 50 4c 30 35 34 36 00 0e 02 07

```

```

Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 34 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 46 41 4e 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 0d ff ff ff ff ff ff ff ff ff ff ff ff
SIB 0          REV 15    750-058270    ACPM2804          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPM2804
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          12-21-2016      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 30 34 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 1          REV 15    750-058270    ACPM2808          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPM2808
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          12-21-2016      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 30 38 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 2          REV 15    750-058270    ACPL4450          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-058270      S/N:             ACPL4450
Assembly ID:   0x0bed          Assembly Version: 01.15
Date:          02-17-2017      Assembly Flags:   0x00
Version:       REV 15          CLEI Code:        CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number: QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 34 34 35 30 00 11 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00
SIB 3          REV 15    750-058270    ACPJ9834          Switch Fabric 16
Jedec Code:    0x7fb0          EEPROM Version:    0x02

```

```

P/N:          750-058270      S/N:          ACPJ9834
Assembly ID:  0x0bed          Assembly Version: 01.15
Date:         12-17-2016      Assembly Flags:  0x00
Version:      REV 15          CLEI Code:       CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number:  QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4a 39 38 33 34 00 11 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00

SIB 4          REV 15      750-058270      ACPM2814      Switch Fabric 16
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-058270      S/N:          ACPM2814
Assembly ID:   0x0bed      Assembly Version: 01.15
Date:         12-21-2016      Assembly Flags:  0x00
Version:      REV 15          CLEI Code:       CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number:  QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4d 32 38 31 34 00 15 0c 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00

SIB 5          REV 15      750-058270      ACPL4277      Switch Fabric 16
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          750-058270      S/N:          ACPL4277
Assembly ID:   0x0bed      Assembly Version: 01.15
Date:         02-17-2017      Assembly Flags:  0x00
Version:      REV 15          CLEI Code:       CMUCAH6CAA
ID: QFX10016 SIB              FRU Model Number:  QFX10016-SF
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b ed 01 0f 52 45 56 20 31 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 38 32 37 30 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 34 32 37 37 00 11 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 43 41 48 36 43 41 41 51
Address 0x50: 46 58 31 30 30 31 36 2d 53 46 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 00 00 00 00 00 00 00 00 00 00 00 00

FPD Board      REV 07      711-054687      ACPL1407      Front Panel Display
Jedec Code:    0x7fb0      EEPROM Version: 0x01
P/N:          711-054687      S/N:          ACPL1407
Assembly ID:   0x0bf2      Assembly Version: 01.07
Date:         02-12-2017      Assembly Flags:  0x00
Version:      REV 07
ID: QFX10000 FPD
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

I2C Hex Data:

```

Address 0x00: 7f b0 01 ff 0b f2 01 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 34 36 38 37 00 00
Address 0x20: 53 2f 4e 20 41 43 50 4c 31 34 30 37 00 0c 02 07
Address 0x30: e1 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware models (MX104 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 20	750-044219	CAAS5849	PROTO-ASSEMBLY
PEM 0	REV 01	740-045932	1H072400065	
Routing Engine 0	REV 16	750-044228	CAAR5915	PROTO-ASSEMBLY
AFEB 0		BUILTIN	BUILTIN	
FPC 0		BUILTIN	BUILTIN	
FPC 1		BUILTIN	BUILTIN	
MIC 0	REV 01	750-046905	CAAK7103	MIC-3D-20GE-SFP-EH
FPC 2		BUILTIN	BUILTIN	
Fan Tray	REV 02	711-049570	CAAX6538	PROTO-ASSEMBLY

show chassis hardware models (PTX10008 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 27	750-054097	ACPD4307	QFX10008-CHAS
CB 0	REV 02	750-068820	ACNZ4440	QFX10000-RE
CB 1	REV 02	750-068820	ACNZ8284	QFX10000-RE
FPC 0	REV 36	750-051354	ACNP4679	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 1	REV 33	750-051354	ACNX8831	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 2	REV 32	750-051357	ACPB0341	QFX10000-30C
PIC 0		BUILTIN	BUILTIN	
FPC 3	REV 35	750-051357	ACPD2186	QFX10000-30C
PIC 0		BUILTIN	BUILTIN	
FPC 5	REV 08	750-068822	ACPF0057	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPC 6	REV 08	750-068822	ACPE9951	QFX10000-36Q
PIC 0		BUILTIN	BUILTIN	
FPD Board	REV 07	711-054687	ACPC7142	
Power Supply 0	REV 02	740-049388	1EDL62102N9	QFX10000-PWR-AC
Power Supply 1	REV 02	740-049388	1EDL60300KX	QFX10000-PWR-AC
Power Supply 2	REV 02	740-049388	1EDL60300DL	QFX10000-PWR-AC
Power Supply 3	REV 02	740-049388	1EDL61701BT	QFX10000-PWR-AC
Power Supply 4	REV 02	740-049388	1EDL62102P7	QFX10000-PWR-AC
Power Supply 5	REV 02	740-049388	1EDL62102PP	QFX10000-PWR-AC
FTC 0	REV 14	750-050108	ACPE4038	QFX10008-FAN-CTRL
FTC 1	REV 14	750-050108	ACPE4032	QFX10008-FAN-CTRL
Fan Tray 0	REV 09	760-054372	ACPD6799	QFX10008-FAN
Fan Tray 1	REV 09	760-054372	ACNZ3584	QFX10008-FAN
SIB 0	REV 24	750-050058	ACPD4587	QFX10008-SF
SIB 1	REV 24	750-050058	ACNZ0635	QFX10008-SF
SIB 2	REV 24	750-050058	ACPD4908	QFX10008-SF
SIB 3	REV 24	750-050058	ACNZ0617	QFX10008-SF

SIB 4	REV 24	750-050058	ACNZ0527	QFX10008-SF
SIB 5	REV 23	750-050058	ACNX6980	QFX10008-SF

show chassis hardware models (PTX10016 Router)

```

user@host> show chassis hardware models
Hardware inventory:

```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 24	750-077138	ACPR5157	JNP10016
CB 0	REV 04	711-065897	CAHA9983	PROTO-ASSEMBLY
CB 1	REV 05	711-065897	CAJD3802	PROTO-ASSEMBLY
FPC 2				
PIC 0		BUILTIN	BUILTIN	
FPC 4	REV 35	750-071976	ACPD2168	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 5	REV 13	750-068822	ACPA0336	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 6	REV 41	750-071976	ACPF0695	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 7	REV 35	750-071976	ACPD2139	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 8	REV 35	750-071976	ACPD2142	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 9	REV 41	750-071976	ACPM5461	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 10	REV 35	750-071976	ACNS6795	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 11	REV 35	750-071976	ACPD1831	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 13	REV 41	750-071976	ACPS2075	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
FPC 15	REV 37	750-071976	ACPL7163	JNP10K-LC1101
PIC 0		BUILTIN	BUILTIN	
Power Supply 0	REV 01	740-073147	1EDM6171155	JNP10K-PWR-DC
Power Supply 1	REV 01	740-073147	1EDM6281575	JNP10K-PWR-DC
Power Supply 2	REV 01	740-073147	1EDM6171044	JNP10K-PWR-DC
Power Supply 3	REV 01	740-073147	1EDM6281244	JNP10K-PWR-DC
Power Supply 4	REV 01	740-073147	1EDM6282093	JNP10K-PWR-DC
Power Supply 5	REV 01	740-073147	1EDM6281413	JNP10K-PWR-DC
Power Supply 6	REV 01	740-073147	1EDM6171071	JNP10K-PWR-DC
Power Supply 7	REV 01	740-073147	1EDM6170709	JNP10K-PWR-DC
Power Supply 8	REV 01	740-073147	1EDM6171169	JNP10K-PWR-DC
Power Supply 9	REV 01	740-073147	1EDM6170754	JNP10K-PWR-DC
Fan Tray 0				QFX5100-FAN-AFO
Fan Tray 1				QFX5100-FAN-AFO
SIB 0	REV 15	750-077140	ACPV3933	JNP10016-SF
SIB 1	REV 15	750-077140	ACPV3938	JNP10016-SF
SIB 2	REV 15	750-077140	ACPV3974	JNP10016-SF
SIB 3	REV 15	750-077140	ACPV3879	JNP10016-SF
SIB 4	REV 15	750-077140	ACPV3964	JNP10016-SF
SIB 5	REV 15	750-077140	ACPV3981	JNP10016-SF
FPD Board	REV 07	711-054687	ACPS8855	

show chassis hardware clei-models (MX104 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:

```

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 20	750-044219	PROTOXCLEI	PROTO-ASSEMBLY
PEM 0	REV 01	740-045932		

Routing Engine 0	REV 16	750-044228	PROTOXCLEI	PROTO-ASSEMBLY
AFEB 0		BUILTIN		
FPC 0		BUILTIN		
FPC 1		BUILTIN		
MIC 0	REV 01	750-046905	PROTOXCLEI	MIC-3D-20GE-SFP-EH
FPC 2		BUILTIN		
Fan Tray	REV 02	711-049570	CAAX6538	PROTO-ASSEMBLY

show chassis hardware (MX240 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN10C7F7EAFC	MX240
Midplane	REV 01	710-021041	TR1502	MX240 Backplane
FPM Board	REV 01	710-017254	KD4017	Front Panel Display
PEM 0	Rev 02	740-017330	000332	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 02	740-017330	000226	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 06	740-013063	1000703522	RE-S-2000
Routing Engine 1	REV 06	740-015113	1000687625	RE-S-1300
CB 0	REV 07	710-013385	KC9057	MX SCB
CB 1	REV 05	710-013385	JY4760	MX SCB
FPC 1	REV 01	750-021679	KC7340	DPCE 40x 1GE R
CPU	REV 06	710-013713	KD4078	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	P9F18ME	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
FPC 2	REV 04	710-016669	JS4529	DPCE 40x 1GE R EQ
CPU	REV 06	710-013713	KB3969	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y79	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XU8	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YG6	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3XUG	SFP-SX
Xcvr 4	REV 01	740-011613	PBG3XTJ	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3ZUM	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3Y5H	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3UZT	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3US1	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3YG7	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XZ9	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3XTY	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3UZG	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y8W	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3YVX	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YB3	SFP-SX
Xcvr 3	REV 01	740-011613	PBG43VQ	SFP-SX
Fan Tray 0	REV 01	710-021113	JS4642	MX240 Fan Tray

show chassis hardware detail (MX 240 Router with Routing Engine Displaying DIMM Information)

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

Item	Version	Part number	Serial number	Description
Chassis			JN11279B4AFC	MX240 Backplane
Midplane	REV 07	760-021404	TS2474	MX240 Backplane
FPM Board	REV 03	760-021392	XC2643	Front Panel Display
PEM 0	Rev 03	740-017343	QCS0908A068	DC Power Entry Module
Routing Engine 0	REV 01	740-031117	AARCH00	RE-S-1800x4
ad0 3764 MB	STEC M2+	CF 9.0.2	STM2Q3209239145303	Removable Compact Flash
ad1 28626 MB	WDC SSD-F0030S-5000		C933Z036237215548S00	Compact Flash
usb0 (addr 1)	EHCI root hub 0		Intel	uhub0
usb0 (addr 2)	product 0x0020 32		vendor 0x8087	uhub1
DIMM 0	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 1	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 2	VL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
DIMM 3	SL31B5263E-F8S DIE REV-0	PCB REV-0		MFR ID-ce80
CB 0	REV 03	710-021523	XD7225	MX SCB
Fan Tray 0	REV 01	710-021113	WZ4986	MX240 Fan Tray

show chassis hardware (MX240 Router with Enhanced MX SCB)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN10C7F7EAFC	MX240
Midplane	REV 01	710-021041	TR1502	MX240 Backplane
FPM Board	REV 01	710-017254	KD4017	Front Panel Display
PEM 0	Rev 02	740-017330	000332	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 02	740-017330	000226	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 06	740-013063	1000703522	RE-S-2000
Routing Engine 1	REV 06	740-015113	1000687625	RE-S-1300
CB 0	REV 02	710-031391	YE8494	Enhanced MX SCB
CB 1	REV 05	710-031391	YOP5764	Enhanced MX SCB
FPC 1	REV 01	750-021679	KC7340	DPCE 40x 1GE R
CPU	REV 06	710-013713	KD4078	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	P9F18ME	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
FPC 2	REV 04	710-016669	JS4529	DPCE 40x 1GE R EQ
CPU	REV 06	710-013713	KB3969	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3Y79	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XU8	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YG6	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3XUG	SFP-SX
Xcvr 4	REV 01	740-011613	PBG3XTJ	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3ZUM	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3Y5H	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3UZT	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3US1	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN) EQ
Xcvr 0	REV 01	740-011613	PBG3YG7	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3XZ9	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3XTY	SFP-SX
Xcvr 3	REV 01	740-011613	PBG3UZG	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN) EQ

Xcvr 0	REV 01	740-011613	PBG3Y8W	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3YVX	SFP-SX
Xcvr 2	REV 01	740-011613	PBG3YB3	SFP-SX
Xcvr 3	REV 01	740-011613	PBG43VQ	SFP-SX
Fan Tray 0	REV 01	710-021113	JS4642	MX240 Fan Tray

show chassis hardware (MX480 Router)

```
user@host> show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis           REV 04   710-017414   JN10C7F7FAFB  MX480
Midplane          REV 02   710-017254   KB8459         MX480 Midplane
FPM Board         REV 02   710-017254   KB8459         Front Panel Display
PEM 0             Rev 02   740-017330   QCS07519029    PS 1.2-1.7kW; 100-240V
AC in
PEM 1             Rev 02   740-017330   QCS07519041    PS 1.2-1.7kW; 100-240V
AC in
PEM 2             Rev 02   740-017330   QCS07519097    PS 1.2-1.7kW; 100-240V
AC in
Routing Engine 0  REV 07   740-013063   1000733381     RE-S-2000
Routing Engine 1  REV 07   740-013063   1000733540     RE-S-2000
CB 0              REV 07   710-013385   KA8022         MX SCB
CB 1              REV 07   710-013385   KA8303         MX SCB
FPC 0             REV 09   750-020452   KA8660         DPCE 40x 1GE X EQ
CPU               REV 06   710-013713   KA8185         DPC PMB
PIC 0             BUILTIN BUILTIN       10x 1GE(LAN) EQ
PIC 1             BUILTIN BUILTIN       10x 1GE(LAN) EQ
PIC 2             BUILTIN BUILTIN       10x 1GE(LAN) EQ
PIC 3             BUILTIN BUILTIN       10x 1GE(LAN) EQ
Fan Tray          Left Fan Tray
```

show chassis hardware (MX480 Router with Enhanced MX SCB)

```
user@host> show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis           REV 04   710-017414   JN10C7F7FAFB  MX480
Midplane          REV 04   710-017414   TR2071         MX480 Midplane
FPM Board         REV 02   710-017254   KB8459         Front Panel Display
PEM 0             Rev 02   740-017330   QCS07519029    PS 1.2-1.7kW; 100-240V
AC in
PEM 1             Rev 02   740-017330   QCS07519041    PS 1.2-1.7kW; 100-240V
AC in
PEM 2             Rev 02   740-017330   QCS07519097    PS 1.2-1.7kW; 100-240V
AC in
Routing Engine 0  REV 07   740-013063   1000733381     RE-S-2000
Routing Engine 1  REV 07   740-013063   1000733540     RE-S-2000
CB 0              REV 07   710-013385   KA8022         Enhanced MX SCB
CB 1              REV 07   710-013385   KA8303         Enhanced MX SCB
FPC 0             REV 09   750-020452   KA8660         DPCE 40x 1GE X EQ
CPU               REV 06   710-013713   KA8185         DPC PMB
PIC 0             BUILTIN BUILTIN       10x 1GE(LAN) EQ
PIC 1             BUILTIN BUILTIN       10x 1GE(LAN) EQ
PIC 2             BUILTIN BUILTIN       10x 1GE(LAN) EQ
PIC 3             BUILTIN BUILTIN       10x 1GE(LAN) EQ
Fan Tray          Left Fan Tray
```

show chassis hardware (MX480 Routers with MPC5E and Built-In OTN PIC)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11C0338AFB  MX480
Midplane      REV 05   710-017414   ABAB8430      MX480 Midplane
FPM Board     REV 02   710-017254   ZS8005        Front Panel Display
PEM 0         Rev 05   740-029970   QCS1024U089   PS 1.4-2.52kW; 90-264V
AC in
PEM 1         Rev 10   740-029970   QCS1314U0FJ   PS 1.4-2.52kW; 90-264V
AC in
PEM 2         Rev 07   740-029970   QCS1121U076   PS 1.4-2.52kW; 90-264V
AC in
Routing Engine 0 REV 05   740-031116   9009092471    RE-S-1800x4
Routing Engine 1 REV 05   740-031116   9009097958    RE-S-1800x4
CB 0          REV 16   750-031391   CAAX0789      Enhanced MX SCB
CB 1          REV 16   750-031391   CAAX0856      Enhanced MX SCB
FPC 0         REV 32   750-028467   ABBP1782      MPC 3D 16x 10GE
CPU           REV 10   711-029089   ABBP5410      AMPC PMB
PIC 0         BUILTIN  BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-021308   983152A00038  SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   B11F00211     SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   AQ72LPB       SFP+-10G-SR
  Xcvr 3      REV 01   740-031980   AHNOWR5       SFP+-10G-SR
PIC 1         BUILTIN  BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-031980   B11J03627     SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   B11F00300     SFP+-10G-SR
  Xcvr 2      REV 01   740-021308   AQ42WSS       SFP+-10G-SR
  Xcvr 3      REV 01   740-021308   AQ43HGC       SFP+-10G-SR
PIC 2         BUILTIN  BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-021308   ANAONDO       SFP+-10G-SR
  Xcvr 1      REV 01   740-021308   ANAONGF       SFP+-10G-SR
  Xcvr 2      REV 01   740-021308   ANAONG9       SFP+-10G-SR
  Xcvr 3      REV 01   740-021308   ANAOMP9       SFP+-10G-SR
PIC 3         BUILTIN  BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0      REV 01   740-021308   AQA06CG       SFP+-10G-SR
  Xcvr 1      REV 01   740-021308   19T511100493  SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   APR040J       SFP+-10G-SR
FPC 1         REV 26   750-046005   CACN1894      MPC5E 3D Q 2CGE+4XGE
CPU           REV 09   711-045719   CACN8698      RMPC PMB
PIC 0         BUILTIN  BUILTIN       2X10GE SFPP OTN
  Xcvr 0      REV 01   740-031980   163363A03046  SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   AJ40JS8       SFP+-10G-SR
PIC 1         BUILTIN  BUILTIN       1X100GE CFP2 OTN
PIC 2         BUILTIN  BUILTIN       2X10GE SFPP OTN
  Xcvr 0      REV 01   740-031980   153363A00593  SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   AJ40JUJ       SFP+-10G-SR
PIC 3         BUILTIN  BUILTIN       1X100GE CFP2 OTN
  Xcvr 0      NON-JNPR  UQCOB53       CFP2-100G-LR4-D
FPC 2         REV 26   750-046005   CACN1891      MPC5E 3D Q 2CGE+4XGE
CPU           REV 09   711-045719   CACN8694      RMPC PMB
PIC 0         BUILTIN  BUILTIN       2X10GE SFPP OTN
  Xcvr 0      NON-JNPR  URA012A       SFP+-10G-LR
PIC 1         BUILTIN  BUILTIN       1X100GE CFP2 OTN
  Xcvr 0      NON-JNPR  J13F47042     CFP2-100G-LR4-D
PIC 2         BUILTIN  BUILTIN       2X10GE SFPP OTN
  Xcvr 0      REV 01   740-031980   AJC0BM3       SFP+-10G-SR
  Xcvr 1      REV 01   740-021308   11T511100917  SFP+-10G-SR
PIC 3         BUILTIN  BUILTIN       1X100GE CFP2 OTN
  Xcvr 0      NON-JNPR  UQK07SU       CFP2-100G-LR4-D

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FPC 3	REV 03	750-045372	CAAD9425	MPCE Type 3 3D
CPU	REV 08	711-035209	CAAD9094	HMPC PMB 2G
MIC 0	REV 14	750-033196	CAAW9204	1X100GE CXF
PIC 0		BUILTIN	BUILTIN	1X100GE CXF
Xcvr 0	REV 01	740-046563	XD16FC034	CFP2-100G-SR10
MIC 1	REV 19	750-033199	CAAJ1814	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 4	REV 21.0.11	750-045715	CAAY3568	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7430	RMPC PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AP406NG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AR41NLP	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11D05630	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFP
WAN MEZZ	REV 12	750-049136	CACM6678	MPC5E 24XGE OTN Mezz
FPC 5	REV 11	750-045372	CABK7539	MPCE Type 3 3D
CPU	REV 08	711-035209	CABJ2466	HMPC PMB 2G
MIC 0	REV 19	750-033199	CAAJ9719	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	UP1020P	CFP-100G-SR10
MIC 1	REV 07	750-033196	YZ0797	1X100GE CXF
PIC 2		BUILTIN	BUILTIN	1X100GE CXF
Xcvr 0	REV 01	740-046563	XC42FC022	CFP2-100G-SR10
Fan Tray				Enhanced Left Fan Tray

show chassis hardware detail (MX480 Routers with MPC5E and Built-In OTN PIC)

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

Hardware inventory:				
Item	Version	Part number	Serial number	Description
Chassis			JN11C0338AFB	MX480
Midplane	REV 05	710-017414	ABAB8430	MX480 Midplane
FPM Board	REV 02	710-017254	ZS8005	Front Panel Display
PEM 0	Rev 05	740-029970	QCS1024U089	PS 1.4-2.52kW; 90-264V
AC in				
PEM 1	Rev 10	740-029970	QCS1314U0FJ	PS 1.4-2.52kW; 90-264V
AC in				
PEM 2	Rev 07	740-029970	QCS1121U076	PS 1.4-2.52kW; 90-264V
AC in				
Routing Engine 0	REV 05	740-031116	9009092471	RE-S-1800x4
ad0	3896 MB	VRFCF14096DIHK1	VM4096MB 6862	Compact Flash
ad1	30533 MB	UGB94ARF32H0S3-KC	UNIGEN-478612-001127	Disk 1
usb0 (addr 1)		EHCI root hub 0	Intel	uhub0
usb0 (addr 2)		product 0x0020 32	vendor 0x8087	uhub1
DIMM 0		SGU04G72H1BB2SA-BB DIE	REV-52 PCB REV-54	MFR ID-ce80
DIMM 1		SGU04G72H1BB2SA-BB DIE	REV-52 PCB REV-54	MFR ID-ce80
DIMM 2		SGU04G72H1BB2SA-BB DIE	REV-52 PCB REV-54	MFR ID-ce80
DIMM 3		SGU04G72H1BB2SA-BB DIE	REV-52 PCB REV-54	MFR ID-ce80
Routing Engine 1	REV 05	740-031116	9009097958	RE-S-1800x4
ad0	3896 MB	VRFCF14096DIHK1	VM4096MB 6145	Compact Flash
ad1	30533 MB	UGB94ARF32H0S3-KC	UNIGEN-499551-000273	Disk 1
CB 0	REV 16	750-031391	CAAX0789	Enhanced MX SCB
CB 1	REV 16	750-031391	CAAX0856	Enhanced MX SCB
FPC 0	REV 32	750-028467	ABBP1782	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ABBP5410	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	983152A00038	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11F00211	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AQ72LPB	SFP+-10G-SR

Xcvr 3	REV 01	740-031980	AHNRW5	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	B11J03627	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11F00300	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ42WSS	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43HGC	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	ANAOND0	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	ANAONGF	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	ANAONG9	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	ANAOMP9	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQA06CG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	19T511100493	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	APR040J	SFP+-10G-SR
FPC 1	REV 26	750-046005	CACN1894	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACN8698	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	163363A03046	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ40JS8	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	153363A00593	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ40JUJ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQC0B53	CFP2-100G-LR4-D
FPC 2	REV 26	750-046005	CACN1891	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACN8694	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0		NON-JNPR	URA012A	SFP+-10G-LR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	J13F47042	CFP2-100G-LR4-D
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AJC0BM3	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	11T511100917	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	UQK07SU	CFP2-100G-LR4-D
FPC 3	REV 03	750-045372	CAAD9425	MPCE Type 3 3D
CPU	REV 08	711-035209	CAAD9094	HMPD PMB 2G
MIC 0	REV 14	750-033196	CAAW9204	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC034	CFP2-100G-SR10
MIC 1	REV 19	750-033199	CAAJ1814	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 4	REV 21.0.11	750-045715	CAAY3568	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7430	RMPC PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
Xcvr 0	REV 01	740-031980	AP406NG	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AR41NLP	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11D05630	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 12	750-049136	CACM6678	MPC5E 24XGE OTN Mezz
FPC 5	REV 11	750-045372	CABK7539	MPCE Type 3 3D
CPU	REV 08	711-035209	CABJ2466	HMPD PMB 2G
MIC 0	REV 19	750-033199	CAAJ9719	1X100GE CFP
PIC 0		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	UP1020P	CFP-100G-SR10
MIC 1	REV 07	750-033196	YZ0797	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP

show chassis hardware extensive (MX480 Routers with MPC5E and Built-In OTN PIC)

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```

Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PEM 0          Rev 05   740-029970   QCS1024U089   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1024U089
Assembly ID:   0x0432          Assembly Version: 01.05
Date:          06-17-2010      Assembly Flags: 0x00
Version:       Rev 05
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 05 52 65 76 20 30 35 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 30 32 34 55 30 38 39 00 00 11 06 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 1          Rev 10   740-029970   QCS1314U0FJ   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1314U0FJ
Assembly ID:   0x0432          Assembly Version: 01.10
Date:          04-04-2013      Assembly Flags: 0x00
Version:       Rev 10
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 0a 52 65 76 20 31 30 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 33 31 34 55 30 46 4a 00 00 04 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 2          Rev 07   740-029970   QCS1121U076   PS 1.4-2.52kW; 90-264V
AC in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-029970      S/N:           QCS1121U076
Assembly ID:   0x0432          Assembly Version: 01.07
Date:          05-23-2011      Assembly Flags: 0x00
Version:       Rev 07
ID: PS 1.4-2.52kW; 90-264V AC in FRU Model Number: PWR-MX480-2520-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 32 01 07 52 65 76 20 30 37 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 39 39 37 30 00 00
Address 0x20: 51 43 53 31 31 32 31 55 30 37 36 00 00 17 05 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 34 38 30 2d 32 35 32 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 05   740-031116   9009092471   RE-S-1800x4
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-031116      S/N:           9009092471

```

```

Assembly ID: 0x09c0      Assembly Version: 01.05
Date: 11-01-2011        Assembly Flags: 0x00
Version: REV 05         CLEI Code: COUCALDBAA
ID: RE-S-1800x4         FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 43 41 2d 34 32 46 42 23 23 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 30 39 32 34 37 31 00 00 00 01 0b 07
Address 0x30: db ff ff ff 54 32 30 32 37 43 41 2d 34 32 46 42
Address 0x40: 23 23 23 00 01 43 4f 55 43 41 4c 44 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4b ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6862 Compact Flash
ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-478612-001127 Disk 1
usb0 (addr 1) EHCI root hub 0 Intel uhub0
usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 1 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 2 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 3 SGU04G72H1BB2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 05 740-031116 9009097958 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009097958
Assembly ID: 0x09c0      Assembly Version: 01.05
Date: 02-06-2012        Assembly Flags: 0x00
Version: REV 05         CLEI Code: COUCALDBAA
ID: RE-S-1800x4         FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 43 41 2d 34 32 46 42 23 23 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 30 39 37 39 35 38 00 00 00 06 02 07
Address 0x30: dc ff ff ff 54 32 30 32 37 43 41 2d 34 32 46 42
Address 0x40: 23 23 23 00 01 43 4f 55 43 41 4c 44 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4b ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3896 MB VRFCF14096DIHK1 VM4096MB 6145 Compact Flash
ad1 30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000273 Disk 1

```

...

show chassis hardware (MX960 Router)

```

user@host> show chassis hardware
Hardware inventory:

```

Item	Version	Part number	Serial number	Description
Chassis				MX960
Midplane	REV 01	710-013698	AA6082	MX960 Midplane
PIM	Rev 01	740-013110	000008	Power Inlet Module
PEM 2				
PEM 3	Rev 01	740-013682	000038	PS 1.7kW; 200-240VAC in
Routing Engine 0	REV 00	740-015113	1000617944	RE-S-1300
CB 0	REV 05	710-013725	JK6947	MX960 Test SCB
FPC 4	REV 01	710-013305	JM7617	MX960 Test DPC
CPU				
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)

PIC 1		BUILTIN	BUILTIN	10x 1GE
FPC 7	REV 01	710-013305	JL9634	MX960 Test DPC
CPU				
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
Xcvr 0		NON-JNPR	MYBG65I82C	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	10x 1GE
Xcvr 1	REV 01	740-011782	P7N0368	SFP-SX
Xcvr 4	REV 01	740-011782	P8J1W27	SFP-SX
Xcvr 6	REV 01	740-011782	P8J1VSD	SFP-SX
Xcvr 9	REV 01	740-011782	P8J1W25	SFP-SX
Fan Tray 0				
Fan Tray 1				

show chassis hardware (MX960 Router with Bidirectional Optics)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN10BA5B9AFA	MX960
Midplane	REV 03	710-013698	TR0234	MX960 Backplane
FPM Board	REV 03	710-014974	JA0878	Front Panel Display
PDM	Rev 03	740-013110	QCS11135028	Power Distribution Module
PEM 0	Rev 03	740-013682	QCS11154036	PS 1.7kW; 200-240VAC in
PEM 1	Rev 03	740-013682	QCS11154010	PS 1.7kW; 200-240VAC in
PEM 2	Rev 03	740-013682	QCS11154022	PS 1.7kW; 200-240VAC in
Routing Engine 0	REV 06	740-013063	1000691458	RE-S-2000
CB 0	REV 07	710-013385	KA2190	MX SCB
CB 1	REV 07	710-013385	KA0837	MX SCB
FPC 3	REV 02	750-018122	KB3890	DPCE 40x 1GE R
CPU				
FPC 4	REV 01	750-018122	KB3889	DPCE 40x 1GE R
CPU	REV 06	710-013713	KB3976	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 1	REV 01	740-020426	4910549	SFP-1000BASE-BX40-D
Xcvr 2	REV 01	740-020426	4910551	SFP-1000BASE-BX40-D
Xcvr 5	REV 01	740-021340	77E245N00006	SFP-1000BASE-BX10-U
Xcvr 6	REV 01	740-020425	4882821	SFP-1000BASE-BX40-U
Xcvr 8	REV 01	740-020425	4882820	SFP-1000BASE-BX40-U
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-020465	77E555N00894	SFP-1000BASE-BX10-D
Xcvr 1	REV 01	740-020465	75E467X00818	SFP-1000BASE-BX10-D
Xcvr 2	REV 01	740-020465	75E467X00573	SFP-1000BASE-BX10-D
Xcvr 3	REV 01	740-020465	4888227	SFP-1000BASE-BX10-D
Xcvr 4	REV 01	740-020465	4888241	SFP-1000BASE-BX10-D
Xcvr 5	REV 01	740-021340	77E245N00005	SFP-1000BASE-BX10-U
Xcvr 6	REV 01	740-021340	76E245X00487	SFP-1000BASE-BX10-U
Xcvr 7	REV 01	740-021341	5255889	SFP-1000BASE-BX10-U
Xcvr 8	REV 01	740-021341	5255887	SFP-1000BASE-BX10-U
Xcvr 9	REV 01	740-021340	77E245N00004	SFP-1000BASE-BX10-U
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-020424	5007582	SFP-1000BASE-BX10-D
Xcvr 1	REV 01	740-020424	4888187	SFP-1000BASE-BX10-D
Xcvr 2	REV 01	740-020424	4656500	SFP-1000BASE-BX10-D
Xcvr 5	REV 01	740-021341	5255886	SFP-1000BASE-BX10-U
Xcvr 7	REV 01	740-021340	77E245N00003	SFP-1000BASE-BX10-U
Xcvr 8	REV 01	740-021341	5255888	SFP-1000BASE-BX10-U
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-017726	74S184H30341	SFP-EX
Xcvr 1	REV 01	740-017726	4814061	SFP-EX
Xcvr 5	REV 01	740-017726	6ZS184H31108	SFP-EX
Xcvr 9	REV 01	740-021340	76E245X00486	SFP-1000BASE-BX10-U

```

Fan Tray 0
Fan Tray 1      REV 03   740-014971   TP0850      Fan Tray

```

show chassis hardware (MX960 Router with Enhanced MX SCB)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1096805AFA	MX960
Midplane	REV 03	710-013698	TR0183	MX960 Backplane
Fan Extender	REV 02	710-018051	JY5227	Extended Cable Manager
FPM Board	REV 03	710-014974	JZ6876	Front Panel Display
PDM	Rev 03	740-013110	QCS11035023	Power Distribution Module
PEM 1	Rev 03	740-013682	QCS1109400L	PS 1.7kW; 200-240VAC in
PEM 2	Rev 03	740-013682	QCS11094015	PS 1.7kW; 200-240VAC in
PEM 3	Rev 03	740-013682	QCS11094012	PS 1.7kW; 200-240VAC in
Routing Engine 0	REV 06	740-013063	1000687969	RE-S-2000
Routing Engine 1	REV 06	740-013063	1000687955	RE-S-2000
CB 0	REV 11	750-031391	YZ6072	Enhanced MX SCB
CB 1	REV 11	750-031391	YZ6068	Enhanced MX SCB
CB 2	REV 11	750-031391	YZ6081	Enhanced MX SCB
FPC 0	REV 01	750-018122	KA5576	DPCE 40x 1GE R
CPU	REV 06	710-013713	KB3961	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	P9F18GF	SFP-SX
Xcvr 2	REV 01	740-011782	P9M0TL9	SFP-SX
Xcvr 7	REV 01	740-011782	P9POXXH	SFP-SX
Xcvr 9	REV 01	740-011782	P9M0TN1	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	PAJ4UHC	SFP-SX
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011613	PFF2CD0	SFP-SX
Xcvr 1	REV 01	740-011613	PBG3ZUT	SFP-SX
Xcvr 2	REV 01	740-011613	PFF2DDV	SFP-SX
Xcvr 5	REV 01	740-011613	P8E2SST	SFP-SX
Xcvr 9	REV 01	740-011782	PB8329N	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-026192	1U0201084503342	SFP-100BASE-BX10-U
Xcvr 1	REV 01	740-026193	1U1201084503313	SFP-100BASE-BX10-D
Xcvr 2	REV 01	740-011613	PAJ4Y5B	SFP-SX
Xcvr 6	REV 01	740-011782	P9MOU3M	SFP-SX
Xcvr 7	REV 01	740-011782	P9M0TLA	SFP-SX
FPC 1	REV 16	750-031089	YL0719	MPC Type 2 3D
CPU	REV 06	711-030884	YL1463	MPC PMB 2G
MIC 0	REV 07	750-028387	JR6500	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 01	740-014279	733019A00154	XFP-10G-LR
Xcvr 1	REV 02	740-014289	T09F55034	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 01	740-014279	913019B00791	XFP-10G-LR
Xcvr 1	REV 01	740-014289	98S803A90384	XFP-10G-SR
MIC 1	REV 24	750-028387	YJ3950	3D 4x 10GE XFP
PIC 2		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 02	740-014279	T10B36134	XFP-10G-LR
Xcvr 1	REV 01	740-014289	T07M86354	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	2x 10GE XFP
FPC 2	REV 08	710-014219	JY9654	DPCE 4x 10GE R
CPU	REV 06	710-013713	JZ6549	DPC PMB
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
PIC 1		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
PIC 2		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)

Xcvr 0	REV 03	740-011571	C931BK028	XFP-10G-SR
PIC 3		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
FPC 3	REV 10	750-024199	XJ6692	MX FPC Type 3
CPU	REV 03	710-022351	XF5182	DPC PMB
PIC 0	REV 17	750-009553	RJ2945	4x OC-48 SONET
Xcvr 1	REV 01	740-011785	PCP3YLL	SFP-SR
Xcvr 3	REV 01	740-011785	PDSOMRY	SFP-SR
PIC 1	REV 32	750-003700	DP2113	1x OC-192 12xMM VSR
FPC 5	REV 25	750-028467	YM8256	MPC 3D 16x 10GE
CPU	REV 10	711-029089	YL3029	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 1	REV 01	740-031980	AHNOX1Z	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
FPC 7	REV 02	750-031092	JR6658	MPC Type 1 3D Q
CPU	REV 01	711-030884	JZ9038	MPC PMB 2G
MIC 0	REV 08	750-028392	JZ8737	3D 20x 1GE(LAN) SFP
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011782	PBE2C6Y	SFP-SX
Xcvr 2		NON-JNPR	U8105N8	SFP-SX
Xcvr 4	REV 01	740-011613	PFM18EF	SFP-SX
Xcvr 7	REV 01	740-011613	PFF2AM8	SFP-SX
Xcvr 8	REV 01	740-011613	PFF2CT6	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN) SFP
Xcvr 0	REV 01	740-011782	PB82VHH	SFP-SX
Xcvr 1	REV 01	740-011613	PFF2CSW	SFP-SX
Xcvr 9	REV 01	740-011613	PFF2BY0	SFP-SX
QXM 0	REV 04	711-028408	JR6372	MPC QXM
FPC 8	REV 05	750-024387	JW9754	MX FPC Type 2
CPU	REV 03	710-022351	KF1651	DPC PMB
PIC 0	REV 08	750-014730	DM3664	4x OC-3 1x OC-12 SFP
Xcvr 0	REV 01	740-016065	81S290N00077	SFP-SR
Xcvr 1		NON-JNPR	2191844	SFP-SR
Xcvr 2	REV 01	740-011618	PD81EE5	SFP-IR
PIC 1	REV 08	750-014637	DM3671	4x OC-12-3 SFP
Xcvr 0	REV 01	740-011785	PCK3UNK	SFP-SR
Xcvr 3	REV 01	740-011785	PDSOMPZ	SFP-SR
FPC 10	REV 04	710-013699	JY4654	DPCE 40x 1GE R
CPU	REV 05	710-013713	JS9717	DPC PMB
PIC 0		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 5	REV 01	740-011782	PAR1L72	SFP-SX
Xcvr 6	REV 01	740-011782	P8N1YQ4	SFP-SX
PIC 1		BUILTIN	BUILTIN	10x 1GE(LAN)
PIC 2		BUILTIN	BUILTIN	10x 1GE(LAN)
Xcvr 0	REV 01	740-011782	P8Q2AVL	SFP-SX
Xcvr 5	REV 01	740-011782	PAR1L7B	SFP-SX
Xcvr 6	REV 01	740-011782	PAR1L2J	SFP-SX
Xcvr 8	REV 01	740-011782	P8N1YMY	SFP-SX
PIC 3		BUILTIN	BUILTIN	10x 1GE(LAN)
Fan Tray 0	REV 03	740-014971	TP0567	Fan Tray
Fan Tray 1	REV 03	740-014971	TP0702	Fan Tray

show chassis hardware models (MX960 Router with Enhanced MX SCB)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 03	710-013698	TR0183	CHAS-BP-MX960-S
Fan Extender	REV 02	710-018051	JY5227	ECM-MX960
FPM Board	REV 03	710-014974	JZ6876	CRAFT-MX960-S

Xcvr 2	REV 01	740-021308	AQ502XJ	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ43HHR	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQ502YA	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQ502EU	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQ502HR	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ502A6	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQ43H8M	SFP+-10G-SR
MIC 1	REV 14	750-033196	CAAP1398	1X100GE CXP
PIC 2		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XD16FC064	CFP-100G-SR10
FPC 3	REV 35	750-028467	CAAT9156	MPC 3D 16x 10GE
CPU	REV 11	711-029089	CAAV4645	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HZ1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43HZC	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ43HD2	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502HN	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43HGF	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501RZ	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ5029V	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ501X9	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ502ZN	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ43H86	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502ZY	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502PZ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ503E6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502XN	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11F00213	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ50336	SFP+-10G-SR
FPC 4	REV 18	750-046005	CACE6568	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8900	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA095A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOM1E	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000F	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLYC	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLYB	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-048813	XD32FE00Z	CFP2-100G-SR10
FPC 5	REV 18	750-046005	CACE6577	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8902	RMPC PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOMXE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLVY	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03T	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLW1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLW3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000J	CFP2-100G-SR10
FPC 7	REV 09	750-037355	CAAF0937	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAD8004	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	ANA0MM3	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP

Xcvr 0	REV 01	740-035329	X000C163	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQGOMS6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRX	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQGOM6Y	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQGOLZM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00499	CFP-100G-SR10
FPC 8	REV 39	750-045715	CACD1903	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1815	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QC480289	QSFPP+-40G-SR4
Xcvr 1	REV 01	740-046565	QC480274	QSFPP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130190	QSFPP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130197	QSFPP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130180	QSFPP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130199	QSFPP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0415	MPC5E 24XGE OTN Mezz
FPC 9	REV 05	750-044444	CAAY9801	MPCE Type 2 3D P
CPU	REV 04	711-038484	CAAW3673	MPCE PMB 2G
MIC 0	REV 28	750-028387	CAAX1071	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T12L92342	XFP-10G-SR
Xcvr 1		NON-JNPR	T12L92303	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	CC07BK02X	XFP-10G-SR
QXM 0	REV 06	711-028408	CAAW4883	MPC QXM
QXM 1	REV 06	711-028408	CAAW4603	MPC QXM
FPC 10	REV 21.0.11	750-045715	CAAY3541	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 07	711-045719	CAAW7426	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-031980	AHK01AP	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502ZU	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP41BLS	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQA08YA	SFP+-10G-SR
Xcvr 4	REV 01	740-021308	AQA0K26	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA06S3	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQA06AS	SFP+-10G-SR
Xcvr 8	REV 01	740-021308	AQA053N	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0E97	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA0GS4	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA0JVA	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP
Xcvr 0	REV 01	740-021308	AQA057A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	ANA0MLS	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQA093A	SFP+-10G-SR
Xcvr 3	REV 01	740-021309	943153A00075	SFP+-10G-LR
Xcvr 4	REV 01	740-021308	AQA077B	SFP+-10G-SR
Xcvr 5	REV 01	740-021308	AQA0JSC	SFP+-10G-SR
Xcvr 6	REV 01	740-021308	AQA0735	SFP+-10G-SR
Xcvr 7	REV 01	740-021308	AQ5028N	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	AP40VN5	SFP+-10G-SR
Xcvr 9	REV 01	740-021308	AQA0K0J	SFP+-10G-SR
Xcvr 10	REV 01	740-021308	AQA07AP	SFP+-10G-SR
Xcvr 11	REV 01	740-021308	AQA08YB	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
WAN MEZZ	REV 07	750-045717	CAAX3123	MPC5E 24XGE Mezz

FPC 11	REV 17	750-037355	CAAT3986	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAR3972	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQA0DSE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ501Y3	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ501XU	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ5036Y	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00247	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	ALQ1DKF	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AJ403YA	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	AP40TY0	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ14G0	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00095	CFP-100G-SR10
Fan Tray 0	REV 08	740-031521	ACAF4219	Enhanced Fan Tray
Fan Tray 1	REV 08	740-031521	ACAF4225	Enhanced Fan Tray

show chassis hardware detail (MX960 Router)

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user@host> show chassis hardware detail
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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis				MX960
Midplane	REV 01	710-013698	AA6082	MX960 Midplane
PIM	Rev 01	740-013110	000008	Power Inlet Module
PEM 2				
PEM 3	Rev 01	740-013682	000038	PS 1.7kW; 200-240VAC in
Routing Engine 0	REV 00	740-015113	1000617944	RE-S-1300
ad0 245 MB	SanDisk	SDCFB-256	111419E1805T1141	Compact Flash
ad2 38154 MB	FUJITSU	MHT2040BH	NR0WT5925N77	Hard Disk
CB 0	REV 05	710-013725	JK6947	MX960 Test SCB
FPC 4	REV 01	710-013305	JM7617	MX960 Test DPC
CPU				
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
PIC 1		BUILTIN	BUILTIN	10x 1GE
FPC 7	REV 01	710-013305	JL9634	MX960 Test DPC
CPU				
PIC 0		BUILTIN	BUILTIN	1x 10GE(LAN/WAN)
Xcvr 0		NON-JNPR	MYBG65I82C	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	10x 1GE
Xcvr 1	REV 01	740-011782	P7N0368	SFP-SX
Xcvr 4	REV 01	740-011782	P8J1W27	SFP-SX
Xcvr 6	REV 01	740-011782	P8J1VSD	SFP-SX
Xcvr 9	REV 01	740-011782	P8J1W25	SFP-SX
Fan Tray 0				
Fan Tray 1				

show chassis hardware detail (MX960 Router with MPC5EQ)

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user@host> show chassis hardware detail
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Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1214852AFA	MX960
Midplane	REV 01	710-030012	ACAX3674	MX960 Backplane
FPM Board	REV 03	710-014974	CAAZ9326	Front Panel Display
PDM	Rev 03	740-013110	QCS17025017	Power Distribution Module
PEM 0	Rev 10	740-027760	QCS1702N062	PS 4.1kW; 200-240V AC in

Xcvr 1	REV 01	740-021308	AQ43H86	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQ502ZY	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ502PZ	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ503E6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQ502XN	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	B11F00213	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQ50336	SFP+-10G-SR
FPC 4	REV 18	750-046005	CACE6568	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8900	RMPD PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQA095A	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOM1E	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000F	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLYC	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLYB	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-048813	XD32FE00Z	CFP2-100G-SR10
FPC 5	REV 18	750-046005	CACE6577	MPC5E 3D Q 2CGE+4XGE
CPU	REV 09	711-045719	CACG8902	RMPD PMB
PIC 0		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOMXE	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLVY	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0	REV 01	740-046563	XD16FC03T	CFP2-100G-SR10
PIC 2		BUILTIN	BUILTIN	2X10GE SFPP OTN
Xcvr 0	REV 01	740-021308	AQGOLW1	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOLW3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP2 OTN
Xcvr 0		NON-JNPR	FE13F000J	CFP2-100G-SR10
FPC 7	REV 09	750-037355	CAAF0937	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAD8004	HMPD PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	ANAOMM3	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X000C163	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	AQGOMS6	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AQGOMRX	SFP+-10G-SR
Xcvr 2	REV 01	740-021308	AQGOM6Y	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	AQGOLZM	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0	REV 01	740-035329	X12J00499	CFP-100G-SR10
FPC 8	REV 39	750-045715	CACD1903	MPC5E 3D Q 24XGE+6XLGE
CPU	REV 09	711-045719	CACD1815	RMPD PMB
PIC 0		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 1		BUILTIN	BUILTIN	12X10GE SFPP OTN
PIC 2		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QC480289	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QC480274	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130190	QSFP+-40G-SR4
PIC 3		BUILTIN	BUILTIN	3X40GE QSFPP
Xcvr 0	REV 01	740-046565	QD130197	QSFP+-40G-SR4
Xcvr 1	REV 01	740-046565	QD130180	QSFP+-40G-SR4
Xcvr 2	REV 01	740-046565	QD130199	QSFP+-40G-SR4
WAN MEZZ	REV 09	750-049136	CABN0415	MPC5E 24XGE OTN Mezz
FPC 9	REV 05	750-044444	CAAY9801	MPCE Type 2 3D P
CPU	REV 04	711-038484	CAAW3673	MPCE PMB 2G
MIC 0	REV 28	750-028387	CAAX1071	3D 4x 10GE XFP


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Chassis                               JN1214852AFA      MX960
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
                                           S/N:           JN1214852AFA
Assembly ID: 0x0512                    Assembly Version: 00.00
Date: 00-00-0000                       Assembly Flags: 0x00
ID: MX960
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 05 12 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x20: 4a 4e 31 32 31 34 38 35 32 41 46 41 00 00 00 00
  Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane                               REV 01      710-030012      ACAX3674      MX960 Backplane
Jedec Code: 0x7fb0                    EEPROM Version: 0x02
P/N: 710-030012                      S/N:           ACAX3674
Assembly ID: 0x01df                    Assembly Version: 01.01
Date: 01-19-2013                      Assembly Flags: 0x00
Version: REV 01                       CLEI Code:     COM8T00CRB
ID: MX960 Backplane                   FRU Model Number: CHAS-BP-MX960-S
Board Information Record:
  Address 0x00: ad 01 08 00 54 e0 32 bc 68 00 ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 01 df 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 31 30 2d 30 33 30 30 31 32 00 00
  Address 0x20: 53 2f 4e 20 41 43 41 58 33 36 37 34 00 13 01 07
  Address 0x30: dd ff ff ff ad 01 08 00 54 e0 32 bc 68 00 ff ff
  Address 0x40: ff ff ff ff 01 43 4f 4d 38 54 30 30 43 52 42 43
  Address 0x50: 48 41 53 2d 42 50 2d 4d 58 39 36 30 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff aa ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board                             REV 03      710-014974      CAAZ9326      Front Panel Display
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 710-014974                      S/N:           CAAZ9326
Assembly ID: 0x01e6                    Assembly Version: 01.03
Date: 12-31-2012                      Assembly Flags: 0x00
Version: REV 03
ID: Front Panel Display                FRU Model Number: CRAFT-MX960-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 01 e6 01 03 52 45 56 20 30 33 00 00
  Address 0x10: 00 00 00 00 37 31 30 2d 30 31 34 39 37 34 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 5a 39 33 32 36 00 1f 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
  Address 0x50: 52 41 46 54 2d 4d 58 39 36 30 2d 53 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PDM                                   Rev 03      740-013110      QCS17025017      Power Distribution Module
Jedec Code: 0x7fb0                    EEPROM Version: 0x01
P/N: 740-013110                      S/N:           QCS17025017
Assembly ID: 0x0416                    Assembly Version: 01.03
Date: 01-10-2013                      Assembly Flags: 0x00
Version: Rev 03
ID: Power Distribution Module
Board Information Record:

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Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 16 01 03 52 65 76 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 31 33 31 31 30 00 00
Address 0x20: 51 43 53 31 37 30 32 35 30 31 37 00 00 0a 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 0          Rev 10    740-027760    QCS1702N062    PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version:  0x01
P/N:           740-027760      S/N:             QCS1702N062
Assembly ID:   0x0430          Assembly Version: 01.10
Date:          01-15-2013      Assembly Flags:   0x00
Version:       Rev 10
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 0a 52 65 76 20 31 30 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 37 30 32 4e 30 36 32 00 00 0f 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 1          Rev 04    740-027760    QCS1422N02C    PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version:  0x01
P/N:           740-027760      S/N:             QCS1422N02C
Assembly ID:   0x0430          Assembly Version: 01.04
Date:          06-04-2010      Assembly Flags:   0x00
Version:       Rev 04
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 04 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 34 32 32 4e 30 32 43 00 00 04 06 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 2          Rev 09    740-027760    QCS1614N01X    PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version:  0x01
P/N:           740-027760      S/N:             QCS1614N01X
Assembly ID:   0x0430          Assembly Version: 01.09
Date:          04-07-2012      Assembly Flags:   0x00
Version:       Rev 09
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 09 52 65 76 20 30 39 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00

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Address 0x20: 51 43 53 31 36 31 34 4e 30 31 58 00 00 07 04 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 08 740-031116 9009131803 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009131803
Assembly ID: 0x09c0 Assembly Version: 01.08
Date: 03-04-2013 Assembly Flags: 0x00
Version: REV 08 CLEI Code: COUCASKBAA
ID: RE-S-1800x4 FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 42 2d 34 34 47 42 23 42 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 31 33 31 38 30 33 00 00 00 04 03 07
Address 0x30: dd ff ff ff 54 32 30 32 37 44 42 2d 34 34 47 42
Address 0x40: 23 42 23 00 01 43 4f 55 43 41 53 4b 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 59 ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3831 MB UGB30SFA4000T1 SFA4000T1 000016CD Compact Flash
ad1 30533 MB UGB94BPH32H0S1-KCI 11000061346 Disk 1
usb0 (addr 1) EHCI root hub 0 Intel uhub0
usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 1 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 2 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 3 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
Routing Engine 1 REV 08 740-031116 9009124913 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009124913
Assembly ID: 0x09c0 Assembly Version: 01.08
Date: 01-09-2013 Assembly Flags: 0x00
Version: REV 08 CLEI Code: COUCASKBAA
ID: RE-S-1800x4 FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 42 2d 34 34 47 42 23 42 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 31 32 34 39 31 33 00 00 00 09 01 07
Address 0x30: dd ff ff ff 54 32 30 32 37 44 42 2d 34 34 47 42
Address 0x40: 23 42 23 00 01 43 4f 55 43 41 53 4b 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 59 ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3831 MB UGB30SFA4000T1 SFA4000T1 0000106D Compact Flash
ad1 30533 MB UGB94BPH32H0S1-KCI 11000052402 Disk 1
CB 0 REV 18 750-031391 CABF0579 Enhanced MX SCB
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-031391 S/N: CABF0579
Assembly ID: 0x09b0 Assembly Version: 01.18
Date: 04-15-2013 Assembly Flags: 0x00
Version: REV 18 CLEI Code: COUCASRBAA
ID: Enhanced MX SCB FRU Model Number: SCBE-MX-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

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I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 12 52 45 56 20 31 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 42 46 30 35 37 39 00 0f 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 53 52 42 41 41 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 43 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 7d ff ff ff ff ff ff ff ff ff ff ff ff

CB 1          REV 16    750-031391    CAAZ2471          Enhanced MX SCB
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-031391      S/N:             CAAZ2471
Assembly ID:  0x09b0          Assembly Version: 01.16
Date:         03-09-2013      Assembly Flags:   0x00
Version:      REV 16          CLEI Code:        COUCARCBAB
ID: Enhanced MX SCB          FRU Model Number: SCBE-MX-S

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 41 5a 32 34 37 31 00 09 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 52 43 42 41 42 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 6d ff ff ff ff ff ff ff ff ff ff ff ff

CB 2          REV 16    750-031391    CAAW9595          Enhanced MX SCB
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-031391      S/N:             CAAW9595
Assembly ID:  0x09b0          Assembly Version: 01.16
Date:         02-01-2013      Assembly Flags:   0x00
Version:      REV 16          CLEI Code:        COUCARCBAB
ID: Enhanced MX SCB          FRU Model Number: SCBE-MX-S

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 41 57 39 35 39 35 00 01 02 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 52 43 42 41 42 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 6d ff ff ff ff ff ff ff ff ff ff ff ff

FPC 0          REV 18    750-046005    CACE6574          MPC5E 3D Q 2CGE+4XGE
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-046005      S/N:             CACE6574
Assembly ID:  0x0b8c          Assembly Version: 01.18
Date:         11-20-2013      Assembly Flags:   0x00
Version:      REV 18          CLEI Code:        PROTOXCLEI
ID: MPC5E 3D Q 2CGE+4XGE      FRU Model Number: PROTO-ASSEMBLY

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 8c 01 12 52 45 56 20 31 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 36 30 30 35 00 00
Address 0x20: 53 2f 4e 20 43 41 43 45 36 35 37 34 00 14 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00

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Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 09   711-045719   CACG8908           RMPC PMB
Jedec Code:  0x7fb0           EEPROM Version:  0x02
P/N:         711-045719       S/N:         CACG8908
Assembly ID: 0x0b85           Assembly Version: 01.09
Date:        11-13-2013       Assembly Flags: 0x00
Version:     REV 09
ID: RMPC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 85 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 35 37 31 39 00 00
Address 0x20: 53 2f 4e 20 43 41 43 47 38 39 30 38 00 0d 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN          2X10GE SFPP OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:         BUILTIN
Assembly ID: 0x0a90           Assembly Version: 00.00
Date:        00-00-0000       Assembly Flags: 0x00
ID: 2X10GE SFPP OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 90 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ae dc 00 00 00 00 0a 6e 00 00
Xcvr 0        REV 01   740-021308   AQA0DYT           SFP+-10G-SR
Xcvr 1        REV 01   740-021308   AQGOMS7           SFP+-10G-SR
PIC 1          BUILTIN      BUILTIN          1X100GE CFP2 OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:         BUILTIN
Assembly ID: 0x0a6e           Assembly Version: 00.00
Date:        00-00-0000       Assembly Flags: 0x00
ID: 1X100GE CFP2 OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 6e 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 03 f3 8c 31 5c e7 80 00 00 00 02
Xcvr 0        REV 01   740-046563   XD16FC03Z         CFP2-100G-SR10
PIC 2          BUILTIN      BUILTIN          2X10GE SFPP OTN
Jedec Code:  0x0000           EEPROM Version:  0x00
P/N:         BUILTIN          S/N:         BUILTIN
Assembly ID: 0x0a90           Assembly Version: 00.00

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Date:          00-00-0000      Assembly Flags:    0x00
ID: 2X10GE SFPP OTN
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0a 90 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 03 f5 6c 31 5c db 40 00 00 00 02
    Xcvr 0      REV 01    740-021308    ANA0NAJ      SFP+-10G-SR
    Xcvr 1      REV 01    740-021308    AQGOMRQ      SFP+-10G-SR
    PIC 3              BUILTIN    BUILTIN    1X100GE CFP2 OTN
Jedec Code:    0x0000      EEPROM Version:    0x00
P/N:          BUILTIN      S/N:          BUILTIN
Assembly ID:   0x0a6e      Assembly Version: 00.00
Date:          00-00-0000      Assembly Flags:    0x00
ID: 1X100GE CFP2 OTN
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 0a 6e 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 03 ed ec 31 5c e2 e8 00 00 00 02
    Xcvr 0      REV 01    740-049775    J13K72993    CFP2-100G-LR4
    FPC 1      REV 11    750-045372    CABK8154    MPCE Type 3 3D
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:          750-045372    S/N:          CABK8154
Assembly ID:   0x09db      Assembly Version: 04.11
Date:          05-18-2013    Assembly Flags:    0x00
Version:       REV 11      CLEI Code:      COUIBBNBA
ID: MPCE Type 3 3D      FRU Model Number: MX-MPC3E-3D
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 09 db 04 0b 52 45 56 20 31 31 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 34 35 33 37 32 00 00
  Address 0x20: 53 2f 4e 20 43 41 42 4b 38 31 35 34 00 12 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4e 42 41 41 4d
  Address 0x50: 58 2d 4d 50 43 33 45 2d 33 44 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 44 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff cf ff ff ff ff ff ff ff ff ff ff ff ff
    CPU          REV 08    711-035209    CABE7370    HMPC PMB 2G
Jedec Code:    0x7fb0      EEPROM Version:    0x01
P/N:          711-035209    S/N:          CABE7370
Assembly ID:   0x0b04      Assembly Version: 01.08
Date:          05-08-2013    Assembly Flags:    0x00
Version:       REV 08
ID: HMPC PMB 2G
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:

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Address 0x00: 7f b0 01 ff 0b 04 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 35 32 30 39 00 00
Address 0x20: 53 2f 4e 20 43 41 42 45 37 33 37 30 00 08 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
MIC 0          REV 07    750-033307    CABD5255          10X10GE SFPP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-033307      S/N:           CABD5255
Assembly ID:   0x0a2a          Assembly Version: 02.07
Date:          04-25-2013      Assembly Flags: 0x00
Version:       REV 07          CLEI Code:     COUIBBJBAA
ID: 10X10GE SFPP              FRU Model Number: MIC3-3D-10XGE-SFPP
Board Information Record:
Address 0x00: 34 01 03 03 05 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0a 2a 02 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 33 33 30 37 00 00
Address 0x20: 53 2f 4e 20 43 41 42 44 35 32 35 35 00 19 04 07
Address 0x30: dd ff ff ff 34 01 03 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4a 42 41 41 4d
Address 0x50: 49 43 33 2d 33 44 2d 31 30 58 47 45 2d 53 46 50
Address 0x60: 50 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 82 c0 03 f0 bc 57 79 83 80 00 00 00 02
PIC 0          BUILTIN    BUILTIN          10X10GE SFPP
Xcvr 0         REV 01     740-021308    AQ50319          SFP+-10G-SR
Xcvr 1         REV 01     740-021308    AQ5035V          SFP+-10G-SR
Xcvr 2         REV 01     740-021308    AQ502XJ          SFP+-10G-SR
Xcvr 3         REV 01     740-021308    AQ43HHR          SFP+-10G-SR
Xcvr 4         REV 01     740-021308    AQ502YA          SFP+-10G-SR
Xcvr 5         REV 01     740-021308    AQ502EU          SFP+-10G-SR
Xcvr 6         REV 01     740-021308    AQ502HR          SFP+-10G-SR
Xcvr 7         REV 01     740-021308    AQ502A6          SFP+-10G-SR
Xcvr 8         REV 01     740-021308    AQ43H8M          SFP+-10G-SR
MIC 1          REV 14     750-033196    CAAP1398          1X100GE CXP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-033196      S/N:           CAAP1398
Assembly ID:   0x0a29          Assembly Version: 03.14
Date:          10-27-2012      Assembly Flags: 0x00
Version:       REV 14          CLEI Code:     COUIBBKBAA
ID: 1X100GE CXP              FRU Model Number: MIC3-3D-1X100GE-CXP
Board Information Record:
Address 0x00: 34 01 07 07 08 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0a 29 03 0e 52 45 56 20 31 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 33 31 39 36 00 00
Address 0x20: 53 2f 4e 20 43 41 41 50 31 33 39 38 00 1b 0a 07
Address 0x30: dc ff ff ff 34 01 07 07 08 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4b 42 41 41 4d
Address 0x50: 49 43 33 2d 33 44 2d 31 58 31 30 30 47 45 2d 43
Address 0x60: 58 50 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 96 c0 03 ef cc 57 79 85 08 00 00 00 02
PIC 2          BUILTIN    BUILTIN          1X100GE CXP
Xcvr 0         REV 01     740-046563    XD16FC064        CFP2-100G-SR10
FPC 3          REV 35     750-028467    CAAT9156          MPC 3D 16x 10GE
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:           750-028467      S/N:           CAAT9156
Assembly ID:   0x0997          Assembly Version: 01.35
Date:          12-17-2012      Assembly Flags: 0x00

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Version:          REV 35
ID: MPC 3D 16x 10GE          FRU Model Number: MPC-3D-16XGE-SFPP
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 09 97 01 23 52 45 56 20 33 35 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 32 38 34 36 37 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 54 39 31 35 36 00 11 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 4d
  Address 0x50: 50 43 2d 33 44 2d 31 36 58 47 45 2d 53 46 50 50
  Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 11    711-029089    CAAV4645          AMPC PMB
Jedec Code:  0x7fb0          EEPROM Version:  0x01
P/N:         711-029089      S/N:          CAAV4645
Assembly ID: 0x0998          Assembly Version: 01.11
Date:        12-13-2012      Assembly Flags: 0x00
Version:     REV 11
ID: AMPC PMB
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 09 98 01 0b 52 45 56 20 31 31 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 32 39 30 38 39 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 56 34 36 34 35 00 0d 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN          4x 10GE(LAN) SFP+
Jedec Code:  0x0000          EEPROM Version:  0x00
P/N:         BUILTIN        S/N:          BUILTIN
Assembly ID: 0x02fe          Assembly Version: 00.00
Date:        00-00-0000      Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 00 00 00 00 02 fe 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
  Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
  Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 c0 02 6b 94 00 00 00 00 02 fe 00 00
Xcvr 0      REV 01    740-021308    AQ43HZ1          SFP+-10G-SR
Xcvr 1      REV 01    740-021308    AQ43HZC          SFP+-10G-SR
Xcvr 2      REV 01    740-021308    AQ43HD2          SFP+-10G-SR
Xcvr 3      REV 01    740-021308    AQ502HN          SFP+-10G-SR
PIC 1          BUILTIN    BUILTIN          4x 10GE(LAN) SFP+
Jedec Code:  0x0000          EEPROM Version:  0x00
P/N:         BUILTIN        S/N:          BUILTIN
Assembly ID: 0x02fe          Assembly Version: 00.00
Date:        00-00-0000      Assembly Flags: 0x00
ID: 4x 10GE(LAN) SFP+
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:

```

```

Address 0x00: 00 00 00 00 02 fe 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ac 0c 00 00 00 00 02 fe 00 00
  Xcvr 0      REV 01  740-021308  AQ43HGF      SFP+-10G-SR
  Xcvr 1      REV 01  740-021308  AQ501RZ      SFP+-10G-SR
  Xcvr 2      REV 01  740-021308  AQ5029V      SFP+-10G-SR
  Xcvr 3      REV 01  740-021308  AQ501X9      SFP+-10G-SR
  PIC 2              BUILTIN      BUILTIN      4x 10GE(LAN) SFP+
Jedec Code:  0x0000      EEPROM Version:  0x00
P/N:         BUILTIN      S/N:         BUILTIN
Assembly ID: 0x02fe      Assembly Version: 00.00
Date:        00-00-0000   Assembly Flags: 0x00
.....

```

show chassis hardware models (MX960 Router with MPC5EQ)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 01  710-030012  ACAX3674      CHAS-BP-MX960-S
FPM Board     REV 03  710-014974  CAAZ9326      CRAFT-MX960-S
PEM 0         Rev 10  740-027760  QCS1702N062   PWR-MX960-4100-AC-S
PEM 1         Rev 04  740-027760  QCS1422N02C   PWR-MX960-4100-AC-S
PEM 2         Rev 09  740-027760  QCS1614N01X   PWR-MX960-4100-AC-S
Routing Engine 0 REV 08  740-031116  9009131803    RE-S-1800X4-16G-S
Routing Engine 1 REV 08  740-031116  9009124913    RE-S-1800X4-16G-S
CB 0          REV 18  750-031391  CABF0579      SCBE-MX-S
CB 1          REV 16  750-031391  CAAZ2471      SCBE-MX-S
CB 2          REV 16  750-031391  CAAW9595      SCBE-MX-S
FPC 0         REV 18  750-046005  CACE6574      PROTO-ASSEMBLY
FPC 1         REV 11  750-045372  CABK8154      MX-MPC3E-3D
  MIC 0       REV 07  750-033307  CABD5255      MIC3-3D-10XGE-SFP
  MIC 1       REV 14  750-033196  CAAP1398      MIC3-3D-1X100GE-CXP
FPC 3         REV 35  750-028467  CAAT9156      MPC-3D-16XGE-SFP
FPC 4         REV 18  750-046005  CACE6568      PROTO-ASSEMBLY
FPC 5         REV 18  750-046005  CACE6577      PROTO-ASSEMBLY
FPC 7         REV 09  750-037355  CAAF0937      MPC4E-2CGE-8XGE
FPC 8         REV 39  750-045715  CACD1903      PROTO-ASSEMBLY
FPC 9         REV 05  750-044444  CAAY9801      MX-MPC2E-3D-P
  MIC 0       REV 28  750-028387  CAAX1071      MIC-3D-4XGE-XFP
FPC 10        REV 21.0.11 750-045715  CAAY3541      PROTO-ASSEMBLY
FPC 11        REV 17  750-037355  CAAT3986      MPC4E-3D-2CGE-8XGE
Fan Tray 0    REV 08  740-031521  ACAF4219      FFANTRAY-MX960-HC-S
Fan Tray 1    REV 08  740-031521  ACAF4225      FFANTRAY-MX960-HC-S

```

show chassis hardware clei-models (MX960 Router with MPC5EQ)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Midplane      REV 01  710-030012  COM8T00CRB     CHAS-BP-MX960-S
FPM Board     REV 03  710-014974  CAAZ9326      CRAFT-MX960-S
PEM 0         Rev 10  740-027760  QCS1702N062   PWR-MX960-4100-AC-S
PEM 1         Rev 04  740-027760  QCS1422N02C   PWR-MX960-4100-AC-S
PEM 2         Rev 09  740-027760  QCS1614N01X   PWR-MX960-4100-AC-S

```


FPC 8	REV 14	750-045372	CADK0485	MPCE Type 3 3D
CPU	REV 10	711-035209	CADM9828	HMPCE PMB 2G
MIC 0	REV 03	750-057666	CADP1390	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
FPC 9	REV 14	750-045372	CADJ1936	MPCE Type 3 3D
CPU	REV 10	711-035209	CADJ1566	HMPCE PMB 2G
MIC 0	REV 14	750-057666	CAFF7544	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	1DJBZ05100K	OTN-100G-LH
FPC 10	REV 14	750-054901	CADJ3846	MPC3E NG HQoS
CPU	REV 11	711-045719	CADN5471	RMPC PMB
MIC 0	REV 05	750-057666	CAEB5760	1X100GE DWDM CFP2-ACO
PIC 0		BUILTIN	BUILTIN	1X100GE DWDM CFP2-ACO
Xcvr 0	REV 01	740-062357	SMD5091.1	CFP-Loopback
Fan Tray 0	REV 08	740-031521	ACDB4083	Enhanced Fan Tray
Fan Tray 1	REV 08	740-031521	ACDB3995	Enhanced Fan Tray

show chassis hardware clei-models(MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 04	750-047849	CMMJA10BRA	CHAS-BP3-MX960-S
FPM Board	REV 03	710-014974		CRAFT-MX960-S
PEM 0	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 1	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 2	Rev 08	740-029344		PWR-MX960-4100-DC-S
PEM 3	Rev 08	740-029344		PWR-MX960-4100-DC-S
Routing Engine 0	REV 11	740-031116	COUCASYBAB	RE-S-1800X4-16G-S
Routing Engine 1	REV 10	740-031116	COUCASYBAA	RE-S-1800X4-16G-S
CB 0	REV 23	750-031391	COUCATXBAA	SCBE-MX-S
CB 1	REV 14	750-031391	COUCARCBAA	SCBE-MX-S
FPC 1	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 19	750-033199	COUIBA8BAA	MIC3-3D-1X100GE-CFP
FPC 2	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
FPC 3	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 03	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 4	REV 18	750-045372	COUIBBNBAC	MX-MPC3E-3D
FPC 7	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 05	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 8	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 03	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 9	REV 14	750-045372	COUIBBNBAB	MX-MPC3E-3D
MIC 0	REV 14	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
FPC 10	REV 14	750-054901	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 05	750-057666	PROTOXCLEI	PROTO-ASSEMBLY
Fan Tray 0	REV 08	740-031521		FFANTRAY-MX960-HC-S
Fan Tray 1	REV 08	740-031521		FFANTRAY-MX960-HC-S

show chassis hardware (MX10008 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			BLANK	JNP10008-MX
Midplane	REV 03	750-054097	ACAM1747	JNP10008 Midplane
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x10
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x10
CB 0	REV 17	750-052688	ACAM7468	Control Board
CB 1	REV 18	750-052688	ACAM7709	Control Board

```

FPC 0          REV 33  750-054576  CAFC8443      MPCAE 3D
CPU            BUILTIN  BUILTIN      MPC CPU
PIC 0          BUILTIN  BUILTIN      MRATE-8xQSFP-XGE-XLGE
  Xcvr 0       REV 01  740-032986  QD472831      QSFP+-40G-SR4
  Xcvr 1       REV 01  740-032986  QD472839      QSFP+-40G-SR4
  Xcvr 2       REV 01  740-032986  QB421310      QSFP+-40G-SR4
  Xcvr 3       REV 01  740-032986  QD472831      QSFP+-40G-SR4
.
.
.

PIC 5          BUILTIN  BUILTIN
MRATE-16xQSFP-XGE-XLGE-CGE
  Xcvr 0       REV 01  740-054053  QE419464      QSFP+-4X10G-SR
  Xcvr 1       REV 01  740-046565  QE413929      QSFP+-40G-SR4
  Xcvr 2       REV 01  740-058734  1ACQ1042028   QSFP28-100GBASE-SR4
  Xcvr 3       REV 01  740-046565  QE414116      QSFP+-40G-SR4
FPC 1          REV 33  750-054576  CAFC8443      MPCCE 3D
CPU            BUILTIN  BUILTIN      MPC CPU
PIC 0          BUILTIN  BUILTIN      MRATE-8xQSFP-XGE-XLGE
  Xcvr 0       REV 01  740-032986  QD472831      QSFP+-40G-SR4
  Xcvr 2       REV 01  740-032986  QB421310      QSFP+-40G-SR4
  Xcvr 4       REV 01  740-032986  QA480242      QSFP+-40G-SR4
  Xcvr 5       REV 01  740-032986  QE112585      QSFP+-40G-SR4
FPD Board      REV 01  740-XXXXXX  XXXXXXXX      Front Panel Display
Power Supply 0 REV 02  740-049388  1EDL534003N   AC 2850W Power Supply
Power Supply 1 REV 01  740-049388  1EDL44300CF   AC 2850W Power Supply
Power Supply 2 REV 02  740-049388  1EDL534004F   AC 2850W Power Supply
Power Supply 3 REV 02  740-049388  1EDL5340049   AC 2850W Power Supply
FTC 0          REV 08  750-050108  ACAM7310      Fan Tray Controller
FTC 1          REV 08  750-050108  ACAM7316      Fan Tray Controller
Fan Tray 0     REV 01  750-050108  ACAM1683      Top Fan Tray
Fan Tray 1     REV 01  760-054372  ACAM1657      Vertical Fan Tray
SFB 0          REV 13  750-050058  ACAM8990      Switch Fabric Board
SFB 1          REV 13  750-050058  ACAM8978      Switch Fabric Board
SFB 2          REV 10  750-050058  ACAM8350      Switch Fabric Board
SFB 3          REV 10  750-050058  ACAM8365      Switch Fabric Board
SFB 4          REV 13  750-050058  ACAM8941      Switch Fabric Board
SFB 5          REV 13  750-050058  ACAM8925      Switch Fabric Board

```

show chassis hardware (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN123AC42AJC  PTX3000
Midplane      REV 22   750-044645  ACLP6640      Backplane
FPM           REV 07   760-044663  ACMX2146      Front Panel Display
PSM 1         REV 02   740-044980  1EDD3080169   DC 12V Power Supply
PSM 2         REV 06   740-044981  1EDK5040563   AC 12V Power Supply
PSM 3         REV 06   740-044981  1EDK5040313   AC 12V Power Supply
PSM 4         REV 04   740-044980  1EDJ3330088   DC 12V Power Supply
Routing Engine 0 REV 12   740-026942  P737A-006029  RE-DUO-2600
CB 0          REV 18   750-044656  ACMZ3179      Control Board
FPC 2         REV 06   750-057064  ACAM6098      FPC3-SFF-PTX-1X
CPU           BUILTIN  BUILTIN      SMPC PMB
PIC 0         REV 17   750-059747  ACNW3510      5X100GE DWDM CFP2-ACO
  Xcvr 0       REV 01   740-062357  1DJBZ040003   OTN-100G-LH
  Xcvr 2       REV 01   740-062357  1DJBZ044004   OTN-100G-LH
  Xcvr 3       REV 01   740-062357  1DJBZ03500P   OTN-100G-LH

```


show chassis hardware (MX2010 Router)

```

user@host > show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis                               JN11E3217AFK  MX2010
Midplane          REV 01    750-044636   ABAB8506      Lower Backplane
Midplane 1        REV 01    711-044557   ZY8296        Upper Backplane
PMP               REV 03    711-032426   ACAJ1388      Power Midplane
FPM Board         REV 06    711-032349   ZX8744        Front Panel Display
PSM 4             REV 0C    740-033727   VK00254       DC 52V Power Supply
Module
PSM 5             REV 0B    740-033727   VG00015       DC 52V Power Supply
Module
PSM 6             REV 0B    740-033727   VH00097       DC 52V Power Supply
Module
PSM 7             REV 0C    740-033727   VJ00151       DC 52V Power Supply
Module
PSM 8             REV 0C    740-033727   VJ00149       DC 52V Power Supply
Module
PDM 0             REV 0B    740-038109   WA00008       DC Power Dist Module
PDM 1             REV 0B    740-038109   WA00014       DC Power Dist Module
Routing Engine 0  REV 02    740-041821   9009094134    RE-S-1800x4
Routing Engine 1 REV 02    740-041821   9009094141    RE-S-1800x4
CB 0              REV 08    750-040257   CAAB3491      Control Board
CB 1              REV 08    750-040257   CAAB3489      Control Board
SPMB 0            REV 02    711-041855   CAAA6135      PMB Board
SPMB 1            REV 02    711-041855   CAAA6137      PMB Board
SFB 0             REV 06    711-032385   ZV1828        Switch Fabric Board
SFB 1             REV 07    711-032385   ZZ2568        Switch Fabric Board
SFB 2             REV 07    711-032385   ZZ2563        Switch Fabric Board
SFB 3             REV 07    711-032385   ZZ2564        Switch Fabric Board
SFB 4             REV 07    711-032385   ZZ2580        Switch Fabric Board
SFB 5             REV 07    711-032385   ZZ2579        Switch Fabric Board
SFB 6             REV 07    711-032385   CAAB4882      Switch Fabric Board
SFB 7             REV 07    711-032385   CAAB4898      Switch Fabric Board
FPC 0             REV 33    750-028467   CAAB1919      MPC 3D 16x 10GE
CPU               REV 11    711-029089   CAAB7174      AMPC PMB
PIC 0             BUILTIN   BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0          REV 01    740-021308   AMH02RE       SFP+-10G-SR
  Xcvr 1          REV 01    740-021308   AMH038C       SFP+-10G-SR
  Xcvr 2          REV 01    740-021308   AMH0390       SFP+-10G-SR
  Xcvr 3          REV 01    740-021308   AMG0SUA       SFP+-10G-SR
PIC 1             BUILTIN   BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0          REV 01    740-021308   AMH0579       SFP+-10G-SR
  Xcvr 1          REV 01    740-021308   AMG0SGP       SFP+-10G-SR
  Xcvr 2          REV 01    740-021308   AMH04SV       SFP+-10G-SR
  Xcvr 3          REV 01    740-021308   AMH04X3       SFP+-10G-SR
PIC 2             BUILTIN   BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0          REV 01    740-021308   AMH0135       SFP+-10G-SR
  Xcvr 1          REV 01    740-021308   AMH02NC       SFP+-10G-SR
  Xcvr 2          REV 01    740-021308   AMH02XB       SFP+-10G-SR
  Xcvr 3          REV 01    740-021308   AMH02PN       SFP+-10G-SR
PIC 3             BUILTIN   BUILTIN       4x 10GE(LAN) SFP+
  Xcvr 0          REV 01    740-021308   AMH057Y       SFP+-10G-SR
  Xcvr 1          REV 01    740-021308   AMG0JHE       SFP+-10G-SR
  Xcvr 2          REV 01    740-021308   AMH02HT       SFP+-10G-SR
  Xcvr 3          REV 01    740-021308   AMH04V4       SFP+-10G-SR
FPC 1             REV 21    750-033205   ZG5027        MPC Type 3
CPU               REV 04    711-035209   YT4780        HMPC PMB 2G
MIC 0             REV 03    750-033307   ZV6299        10X10GE SFPP

```


PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101741	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101829	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101669	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ14E3	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	1YT517101826	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	1YT517101817	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	1YT517101735	SFP+-10G-SR
Xcvr 3	REV 01	740-031980	ALQ159A	SFP+-10G-SR
ADC 0	REV 05	750-043596	CAAC2073	Adapter Card
ADC 1	REV 01	750-043596	ZV4117	Adapter Card
ADC 8	REV 01	750-043596	ZV4107	Adapter Card
ADC 9	REV 02	750-043596	ZW1555	Adapter Card
Fan Tray 0	REV 2A	760-046960	ACAY0015	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0019	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0020	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0021	172mm FanTray - 6 Fans

show chassis hardware detail (MX2010 Router)

```

user@host > show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11E233DAFK  MX2010
Midplane      REV 26   750-044636   ABAB9357      Lower Backplane
Midplane 1    REV 01   711-044557   ABAB8643      Upper Backplane
PMP            REV 04   711-032426   ACAJ1677      Power Midplane
FPM Board      REV 08   760-044634   ABBV9726      Front Panel Display
PSM 0          REV 01   740-045050   1E02224000P   DC 52V Power Supply
Module
PSM 1          REV 01   740-045050   1E02224000M   DC 52V Power Supply
Module
PSM 2          REV 01   740-045050   1E022240010   DC 52V Power Supply
Module
PSM 3          REV 01   740-045050   1E02224000G   DC 52V Power Supply
Module
PSM 4          REV 01   740-045050   1E022240013   DC 52V Power Supply
Module
PSM 5          REV 01   740-045050   1E022240007   DC 52V Power Supply
Module
PSM 6          REV 01   740-045050   1E02224001C   DC 52V Power Supply
Module
PSM 7          REV 01   740-045050   1E02224001D   DC 52V Power Supply
Module
PSM 8          REV 01   740-045050   1E02224001B   DC 52V Power Supply
Module
PDM 0          REV 01   740-045234   1E262250067   DC Power Dist Module
Routing Engine 0 REV 02   740-041821   9009099704    RE-S-1800x4
  ad0    3831 MB  UGB30SFA4000T1  SFA4000T1 00000651 Compact Flash
  ad1    30533 MB UGB94BPH32H0S1-KCI 11000019592 Disk 1
  usb0 (addr 1) EHCI root hub 0 Intel uhub0
  usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0        SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 1        SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 2        SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 3        SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 02   740-041821   9009099706    RE-S-1800x4
  ad0    3998 MB  Virtium - TuffDrive VCF P1T0200262860208 114 Compact Flash
  ad1    30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000404 Disk 1
CB 0          REV 13   750-040257   CAAF8436      Control Board

```


show chassis hardware extensive (MX2010 Router)

```

user@host > show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN11E233DAFK
Assembly ID:  0x0557          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MX2010
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 31 45 32 33 33 44 41 46 4b 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 26   750-044636  ABAB9357      Lower Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:         750-044636      S/N:          ABAB9357
Assembly ID:  0x0b66          Assembly Version: 01.26
Date:         08-28-2012      Assembly Flags: 0x00
Version:      REV 26         CLEI Code:    PROTOXCLEI
ID: Lower Backplane          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 08 00 2c 21 72 70 a0 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 66 01 1a 52 45 56 20 32 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 33 35 37 00 1c 08 07
Address 0x30: dc ff ff ff ad 01 08 00 2c 21 72 70 a0 00 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1    REV 01   711-044557  ABAB8643      Upper Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:         711-044557      S/N:          ABAB8643
Assembly ID:  0x0b65          Assembly Version: 01.01
Date:         07-27-2012      Assembly Flags: 0x00
Version:      REV 01
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 65 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 35 35 37 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 38 36 34 33 00 1b 07 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP           REV 04   711-032426  ACAJ1677      Power Midplane
Jedec Code:   0x7fb0          EEPROM Version: 0x01
P/N:         711-032426      S/N:          ACAJ1677

```

```

Assembly ID: 0x045d      Assembly Version: 01.04
Date: 07-20-2012      Assembly Flags: 0x00
Version: REV 04
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 31 36 37 37 00 14 07 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board      REV 08      760-044634      ABBV9726      Front Panel Display
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 760-044634      S/N: ABBV9726
Assembly ID: 0x0b64      Assembly Version: 01.08
Date: 09-10-2012      Assembly Flags: 0x00
Version: REV 08      CLEI Code: IPMYA4EJRA
ID: Front Panel Display      FRU Model Number: MX2010-CRAFT-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 64 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 34 34 36 33 34 00 00
Address 0x20: 53 2f 4e 20 41 42 42 56 39 37 32 36 00 0a 09 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 59 41 34 45 4a 52 41 4d
Address 0x50: 58 32 30 31 30 2d 43 52 41 46 54 2d 53 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 0      REV 01      740-045050      1E02224000P      DC 52V Power Supply
Module
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-045050      S/N: 1E02224000P
Assembly ID: 0x0478      Assembly Version: 01.01
Date: 12-06-2012      Assembly Flags: 0x00
Version: REV 01      CLEI Code: XXXXXXXXXX
ID: DC 52V Power Supply Module      FRU Model Number: MX2000-PSM-HC-DC-S-A
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 30 35 30 00 00
Address 0x20: 31 45 30 32 32 32 34 30 30 30 50 00 00 06 0c 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 58 58 58 58 58 58 58 58 58 58 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 48 43 2d 44 43 2d
Address 0x60: 53 2d 41 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1      REV 01      740-045050      1E02224000M      DC 52V Power Supply
Module
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 740-045050      S/N: 1E02224000M
Assembly ID: 0x0478      Assembly Version: 01.01
Date: 12-06-2012      Assembly Flags: 0x00
Version: REV 01      CLEI Code: XXXXXXXXXX
ID: DC 52V Power Supply Module      FRU Model Number: MX2000-PSM-HC-DC-S-A
Board Information Record:

```

```

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 30 35 30 00 00
Address 0x20: 31 45 30 32 32 32 34 30 30 30 4d 00 00 06 0c 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 58 58 58 58 58 58 58 58 58 58 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 48 43 2d 44 43 2d
Address 0x60: 53 2d 41 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 4a 00 00 00 00 00 00 00 00 00 00 00 00
...
PDM 0          REV 01   740-045234   1E262250067       DC Power Dist Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-045234      S/N:             1E262250067
Assembly ID:   0x047b          Assembly Version: 01.01
Date:          06-28-2012      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAJSKAA
ID: DC Power Dist Module      FRU Model Number: MX2000-PDM-DC-S-A
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 7b 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 32 33 34 00 00
Address 0x20: 31 45 32 36 32 32 35 30 30 36 37 00 00 1c 06 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4a 53 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 44 4d 2d 44 43 2d 53 2d 41
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 89 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0 REV 02   740-041821   9009099704       RE-S-1800x4
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-041821      S/N:             9009099704
Assembly ID:   0x09c0          Assembly Version: 01.02
Date:          03-15-2012      Assembly Flags:   0x00
Version:       REV 02
ID: RE-S-1800x4              FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 41 2d 34 34 47 42 23 41 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 31 38 32 31 00 00
Address 0x20: 39 30 30 39 30 39 39 37 30 34 00 00 00 0f 03 07
Address 0x30: dc ff ff ff 54 32 30 32 37 44 41 2d 34 34 47 42
Address 0x40: 23 41 23 00 01 00 00 00 00 00 00 00 00 00 00 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 8c ff ff ff ff ff ff ff ff ff ff ff ff
ad0   3831 MB   UGB30SFA4000T1          SFA4000T1 00000651 Compact Flash
ad1   30533 MB  UGB94BPH32H0S1-KCI          11000019592   Disk 1
usb0 (addr 1)  EHCI root hub 0          Intel          uhub0
usb0 (addr 2)  product 0x0020 32          vendor 0x8087   uhub1
DIMM 0          SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 1          SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 2          SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
DIMM 3          SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 02   740-041821   9009099706       RE-S-1800x4
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-041821      S/N:             9009099706
Assembly ID:   0x09c0          Assembly Version: 01.02
Date:          02-23-2012      Assembly Flags:   0x00
Version:       REV 02

```

```

ID: RE-S-1800x4                      FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
  Address 0x00: 54 32 30 32 37 44 41 2d 34 34 47 42 23 41 23 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 09 c0 01 02 52 45 56 20 30 32 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 34 31 38 32 31 00 00
  Address 0x20: 39 30 30 39 30 39 39 37 30 36 00 00 00 17 02 07
  Address 0x30: dc ff ff ff 54 32 30 32 37 44 41 2d 34 34 47 42
  Address 0x40: 23 41 23 00 01 00 00 00 00 00 00 00 00 00 00 52
  Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 8c ff ff ff ff ff ff ff ff ff ff ff ff
ad0   3998 MB  Virtium - TuffDrive VCF P1T0200262860208 114 Compact Flash
ad1   30533 MB UGB94ARF32H0S3-KC UNIGEN-499551-000404 Disk 1
CB 0          REV 13   750-040257   CAAF8436          Control Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-040257      S/N:         CAAF8436
Assembly ID:  0x0b26          Assembly Version: 01.13
Date:         08-29-2012      Assembly Flags: 0x00
Version:      REV 13          CLEI Code:     PROTOXCLEI
ID: Control Board              FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 26 01 0d 52 45 56 20 31 33 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 34 30 32 35 37 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 46 38 34 33 36 00 1d 08 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
...
SPMB 0          REV 02   711-041855   ABBV3825          PMB Board
Jedec Code:   0x7fb0          EEPROM Version:   0x01
P/N:          711-041855      S/N:         ABBV3825
Assembly ID:  0x0b29          Assembly Version: 01.02
Date:         08-14-2012      Assembly Flags: 0x00
Version:      REV 02
ID: PMB Board
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0b 29 01 02 52 45 56 20 30 32 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 34 31 38 35 35 00 00
  Address 0x20: 53 2f 4e 20 41 42 42 56 33 38 32 35 00 0e 08 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
...
SFB 0          REV 05   711-044466   ABBX5682          Switch Fabric Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          711-044466      S/N:         ABBX5682
Assembly ID:  0x0b25          Assembly Version: 01.05
Date:         09-07-2012      Assembly Flags: 0x00
Version:      REV 05          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b 25 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 34 36 36 00 00
Address 0x20: 53 2f 4e 20 41 42 42 58 35 36 38 32 00 07 09 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 01 00 00 00 00 00 00 48 00

```

...

FPC 0 REV 09 750-037355 CAAF0924 MPC Type 4-2

```

Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-037355 S/N: CAAF0924
Assembly ID: 0x0b4e Assembly Version: 01.09
Date: 05-21-2012 Assembly Flags: 0x00
Version: REV 09 CLEI Code: PROTOXCLEI
ID: MPC Type 4-2 FRU Model Number: MPC4E-2CGE-8XGE

```

Board Information Record:

```

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

I2C Hex Data:

```

Address 0x00: 7f b0 02 ff 0b 4e 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 33 35 35 00 00
Address 0x20: 53 2f 4e 20 43 41 41 46 30 39 32 34 00 15 05 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 4d
Address 0x50: 50 43 34 45 2d 32 43 47 45 2d 38 58 47 45 00 00
Address 0x60: 00 00 00 00 00 00 30 39 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c6 ff ff ff ff ff ff ff ff ff ff ff ff

```

CPU REV 08 711-035209 CAAB9842 HMPC PMB 2G

```

Jedec Code: 0x7fb0 EEPROM Version: 0x01
P/N: 711-035209 S/N: CAAB9842
Assembly ID: 0x0b04 Assembly Version: 01.08
Date: 05-17-2012 Assembly Flags: 0x00
Version: REV 08
ID: HMPC PMB 2G

```

Board Information Record:

```

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

I2C Hex Data:

```

Address 0x00: 7f b0 01 ff 0b 04 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 35 32 30 39 00 00
Address 0x20: 53 2f 4e 20 43 41 41 42 39 38 34 32 00 11 05 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

```

PIC 0 BUILTIN BUILTIN 4x10GE SFPP

```

Jedec Code: 0x0000 EEPROM Version: 0x00
P/N: BUILTIN S/N: BUILTIN
Assembly ID: 0x0a53 Assembly Version: 00.00
Date: 00-00-0000 Assembly Flags: 0x00
ID: 4x10GE SFPP

```

Board Information Record:

```

Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

```

I2C Hex Data:

```

Address 0x00: 00 00 00 00 0a 53 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 4d 58 43 00
Address 0x20: 42 55 49 4c 54 49 4e 00 4d 58 43 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

```

```

Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ae 64 00 00 00 00 0a 52 00 00
Xcvr 0      REV 01  740-021308  19T511101656  SFP+-10G-SR
Xcvr 1      REV 01  740-031980  AMA04RU      SFP+-10G-SR
Xcvr 2      REV 01  740-031980  193363A00558 SFP+-10G-SR
Xcvr 3      REV 01  740-031980  B10M00202    SFP+-10G-SR
...
ADC 0      REV 13  750-043596  ABBX5532      Adapter Card
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:       750-043596    S/N:          ABBX5532
Assembly ID: 0x0b3d      Assembly Version: 01.13
Date:      09-12-2012    Assembly Flags: 0x00
Version:    REV 13      CLEI Code:    IPUCBA8CAA
ID: Adapter Card      FRU Model Number: MX2000-LC-ADAPTER
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 3d 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 33 35 39 36 00 00
Address 0x20: 53 2f 4e 20 41 42 42 58 35 35 33 32 00 0c 09 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 41 38 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 4c 43 2d 41 44 41 50 54 45 52
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 3a 00 00 00 00 00 00 00 00 00 00 00 00
...

```

show chassis hardware models (MX2010 Router)

```

user@host > show chassis hardware models
Hardware inventory:

```

Item	Version	Part number	Serial number	FRU model number
FPM Board	REV 06	711-032349	ZX8744	711-032349
PSM 4	REV 0C	740-033727	VK00254	000000000000000000000000
PSM 5	REV 0B	740-033727	VG00015	000000000000000000000000
PSM 6	REV 0B	740-033727	VH00097	000000000000000000000000
PSM 7	REV 0C	740-033727	VJ00151	000000000000000000000000
PSM 8	REV 0C	740-033727	VJ00149	000000000000000000000000
PDM 0	REV 0B	740-038109	WA00008	
PDM 1	REV 0B	740-038109	WA00014	
Routing Engine 0	REV 02	740-041821	9009094134	RE-S-1800X4-16G-S
Routing Engine 1	REV 02	740-041821	9009094141	RE-S-1800X4-16G-S
CB 0	REV 08	750-040257	CAAB3491	750-040257
CB 1	REV 08	750-040257	CAAB3489	750-040257
SFB 0	REV 06	711-032385	ZV1828	711-032385
SFB 1	REV 07	711-032385	ZZ2568	711-032385
SFB 2	REV 07	711-032385	ZZ2563	711-032385
SFB 3	REV 07	711-032385	ZZ2564	711-032385
SFB 4	REV 07	711-032385	ZZ2580	711-032385
SFB 5	REV 07	711-032385	ZZ2579	711-0323856
SFB 6	REV 07	711-032385	CAAB4882	711-044170
SFB 7	REV 07	711-032385	CAAB4898	711-044170
FPC 0	REV 33	750-028467	CAAB1919	MPC-3D-16XGE-SFPP
FPC 1	REV 21	750-033205	ZG5027	MX-MPC3-3D
MIC 0	REV 03	750-033307	ZV6299	MIC3-3D-10XGE-SFPP
MIC 1	REV 03	750-033307	ZV6268	MIC3-3D-10XGE-SFPP
FPC 8	REV 22	750-031089	ZT9746	MX-MPC2-3D
MIC 0	REV 26	750-028392	ABBS1150	MIC-3D-20GE-SFP
MIC 1	REV 26	750-028387	ABBR9582	MIC-3D-4XGE-XFP
FPC 9	REV 11	750-036284	ZL3591	MPCE-3D-16XGE-SFPP
ADC 0	REV 05	750-043596	CAAC2073	750-043596

ADC 1	REV 01	750-043596	ZV4117	750-043596
ADC 8	REV 01	750-043596	ZV4107	750-043596
ADC 9	REV 02	750-043596	ZW1555	750-043596
Fan Tray 0	REV 2A	760-046960	ACAY0015	
Fan Tray 1	REV 2A	760-046960	ACAY0019	
Fan Tray 2	REV 2A	760-046960	ACAY0020	
Fan Tray 3	REV 2A	760-046960	ACAY0021	

show chassis hardware clei-models (MX2010 Routers)

```

user@host > show chassis hardware clei-models
Hardware inventory:
Item                Version  Part number  CLEI code  FRU model number
FPM Board           REV 06  711-032349  PROTOXCLEI 711-032349
PSM 4               REV 0C  740-033727  0000000000 000000000000000000000000
PSM 5               REV 0B  740-033727  0000000000 000000000000000000000000
PSM 6               REV 0B  740-033727  0000000000 000000000000000000000000
PSM 7               REV 0C  740-033727  0000000000 000000000000000000000000
PSM 8               REV 0C  740-033727  0000000000 000000000000000000000000
PDM 0               REV 0B  740-038109  740-038109  740-038109
PDM 1               REV 0B  740-038109  740-038109  740-038109
Routing Engine 0    REV 02  740-041821  740-041821  RE-S-1800X4-16G-S
Routing Engine 1    REV 02  740-041821  740-041821  RE-S-1800X4-16G-S
CB 0                REV 08  750-040257  PROTOXCLEI 750-040257
CB 1                REV 08  750-040257  PROTOXCLEI 750-040257
SFB 0               REV 06  711-032385  PROTOXCLEI 711-032385
SFB 1               REV 07  711-032385  PROTOXCLEI 711-032385
SFB 2               REV 07  711-032385  PROTOXCLEI 711-032385
SFB 3               REV 07  711-032385  PROTOXCLEI 711-032385
SFB 4               REV 07  711-032385  PROTOXCLEI 711-032385
SFB 5               REV 07  711-032385  PROTOXCLEI 711-0323856
SFB 6               REV 07  711-032385  PROTOXCLEI 711-044170
SFB 7               REV 07  711-032385  PROTOXCLEI 711-044170
FPC 0               REV 33  750-028467  MPC-3D-16XGE-SFPP
FPC 1               REV 21  750-033205  MX-MPC3-3D
MIC 0               REV 03  750-033307  PROTOXCLEI MIC3-3D-10XGE-SFPP
MIC 1               REV 03  750-033307  PROTOXCLEI MIC3-3D-10XGE-SFPP
FPC 8               REV 22  750-031089  COUIBAYBAA MX-MPC2-3D
MIC 0               REV 26  750-028392  COUIA15BAA MIC-3D-20GE-SFP
MIC 1               REV 26  750-028387  COUIA16BAA MIC-3D-4XGE-XFP
FPC 9               REV 11  750-036284  CMUIACGBAA MPCE-3D-16XGE-SFPP
ADC 0               REV 05  750-043596  PROTOXCLEI 750-043596
ADC 1               REV 01  750-043596  PROTOXCLEI 750-043596
ADC 8               REV 01  750-043596  PROTOXCLEI 750-043596
ADC 9               REV 02  750-043596  PROTOXCLEI 750-043596
Fan Tray 0          REV 2A  760-046960
Fan Tray 1          REV 2A  760-046960
Fan Tray 2          REV 2A  760-046960
Fan Tray 3          REV 2A  760-046960

```

show chassis hardware (MX2010 Routers with MPC6E and OTN MIC)

```

user@host> show chassis hardware
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis             REV 35  750-044636  JN11C9AFEAFK  MX2010
Midplane            REV 02  711-044557  ABAB9188      Lower Backplane
Midplane 1          REV 02  711-044557  ABAB8729      Upper Backplane
PMP                 REV 04  711-032426  ACAJ2432      Power Midplane
FPM Board           REV 09  760-044634  ABCA4314      Front Panel Display

```

PSM 0 Module	REV 01	740-050037	1EDB321015C	DC 52V Power Supply
PSM 1 Module	REV 01	740-050037	1EDB321015J	DC 52V Power Supply
PSM 2 Module	REV 01	740-050037	1EDB32000K8	DC 52V Power Supply
PSM 3 Module	REV 01	740-050037	1EDB32101JW	DC 52V Power Supply
PSM 4 Module	REV 01	740-050037	1EDB321015G	DC 52V Power Supply
PSM 5 Module	REV 01	740-050037	1EDB32101HH	DC 52V Power Supply
PSM 6 Module	REV 01	740-050037	1EDB32101HD	DC 52V Power Supply
PSM 7 Module	REV 01	740-050037	1EDB321015F	DC 52V Power Supply
PSM 8 Module	REV 01	740-050037	1EDB321015B	DC 52V Power Supply
PDM 0	REV 03	740-045234	1EFA3220433	DC Power Dist Module
PDM 1	REV 03	740-045234	1EFA3220425	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009115685	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009099711	RE-S-1800x4
CB 0	REV 23	750-040257	CABE8395	Control Board
CB 1	REV 12	750-040257	CAAD9499	Control Board
SPMB 0	REV 02	711-041855	ABCG8426	PMB Board
SPMB 1	REV 02	711-041855	ABBS1481	PMB Board
SFB 0	REV 06	711-044466	ABCD5013	Switch Fabric Board
SFB 1	REV 06	711-044466	ABCD5160	Switch Fabric Board
SFB 2	REV 06	711-044466	ABCD5175	Switch Fabric Board
SFB 3	REV 06	711-044466	ABCD4938	Switch Fabric Board
SFB 4	REV 06	711-044466	ABCD4944	Switch Fabric Board
SFB 5	REV 06	711-044466	ABCD4968	Switch Fabric Board
SFB 6	REV 06	711-044466	ABCD5267	Switch Fabric Board
SFB 7	REV 06	711-044466	ABCD4997	Switch Fabric Board
FPC 0	REV 59	750-044130	ABCT7676	MPC6E 3D
CPU	REV 10	711-045719	ABCK8527	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7810	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7811	MPC6E XL
FPC 2	REV 27	750-033205	ZL6014	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9068	HMPD PMB 2G
MIC 0	REV 14	750-033196	CAAW9214	1X100GE CXP
PIC 0		BUILTIN	BUILTIN	1X100GE CXP
Xcvr 0	REV 01	740-046563	XC49FC030	CFP2-100G-SR10
MIC 1	REV 18	750-033199	CAAC3231	1X100GE CFP
PIC 2		BUILTIN	BUILTIN	1X100GE CFP
FPC 3	REV 59	750-044130	ABCT7682	MPC6E 3D
CPU	REV 10	711-045719	ABCK8531	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7818	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7819	MPC6E XL
FPC 4	REV 33	750-044130	ABBY9278	MPC6E 3D
CPU	REV 09	711-045719	ABBY8677	RMPD PMB
XLM 0	REV 06.2.00	711-046638	ABBY8844	MPC6E XL
XLM 1	REV 06.2.00	711-046638	ABBY8830	MPC6E XL
FPC 5	REV 59	750-044130	ABCT7675	MPC6E 3D
CPU	REV 10	711-045719	ABCK8526	RMPD PMB
XLM 0	REV 13	711-046638	ABCT7808	MPC6E XL
XLM 1	REV 13	711-046638	ABCT7809	MPC6E XL
FPC 6	REV 30	750-028467	ZM4986	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZP6541	AMPD PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AQ43GAC	SFP+-10G-SR


```

Date:          06-21-2013      Assembly Flags:    0x00
Version:       REV 35         CLEI Code:       IPMU810ARA
ID: Lower Backplane          FRU Model Number: CHAS-BP-MX2010-S
Board Information Record:
Address 0x00: ad 01 08 00 3c 8a b0 38 68 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 66 01 23 52 45 56 20 33 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 31 38 38 00 15 06 07
Address 0x30: dd ff ff ff ad 01 08 00 3c 8a b0 38 68 00 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 38 31 30 41 52 41 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 31 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 30 36 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f8 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1      REV 02      711-044557      ABAB8729      Upper Backplane
Jedec Code:     0x7fb0      EEPROM Version: 0x01
P/N:            711-044557      S/N:          ABAB8729
Assembly ID:    0x0b65      Assembly Version: 01.02
Date:           03-21-2013      Assembly Flags: 0x00
Version:        REV 02
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 65 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 35 35 37 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 38 37 32 39 00 15 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP             REV 04      711-032426      ACAJ2432      Power Midplane
Jedec Code:     0x7fb0      EEPROM Version: 0x01
P/N:            711-032426      S/N:          ACAJ2432
Assembly ID:    0x045d      Assembly Version: 01.04
Date:           03-28-2013      Assembly Flags: 0x00
Version:        REV 04
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 32 34 33 32 00 1c 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board       REV 09      760-044634      ABCA4314      Front Panel Display
Jedec Code:     0x7fb0      EEPROM Version: 0x02
P/N:            760-044634      S/N:          ABCA4314
Assembly ID:    0x0b64      Assembly Version: 01.09
Date:           03-28-2013      Assembly Flags: 0x00
Version:        REV 09      CLEI Code:     IPMYA4EJRA
ID: Front Panel Display      FRU Model Number: MX2010-CRAFT-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 64 01 09 52 45 56 20 30 39 00 00

```

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Address 0x10: 00 00 00 00 37 36 30 2d 30 34 34 36 33 34 00 00
Address 0x20: 53 2f 4e 20 41 42 43 41 34 33 31 34 00 1c 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 59 41 34 45 4a 52 41 4d
Address 0x50: 58 32 30 31 30 2d 43 52 41 46 54 2d 53 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 0          REV 01   740-050037   1EDB321015C   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB321015C
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-28-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 43 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1          REV 01   740-050037   1EDB321015J   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB321015J
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-28-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 4a 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 2          REV 01   740-050037   1EDB32000K8   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:           740-050037      S/N:           1EDB32000K8
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-23-2013      Assembly Flags: 0x00
Version:       REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 30 30 30 4b 38 00 00 17 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d

```

```

Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 3          REV 01   740-050037   1EDB32101JW   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB32101JW
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-30-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 4a 57 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 01   740-050037   1EDB321015G   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB321015G
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-28-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 47 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 01   740-050037   1EDB32101HH   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB32101HH
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-30-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 48 48 00 00 1e 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 01   740-050037   1EDB32101HD   DC 52V Power Supply

```



```

Version:      REV 03          CLEI Code:      IPUPAJSKAA
ID: DC Power Dist Module     FRU Model Number: MX2000-PDM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 7b 01 03 52 45 56 20 30 33 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 32 33 34 00 00
  Address 0x20: 31 45 46 41 33 32 32 30 34 33 33 00 00 1e 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4a 53 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 44 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 33 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 1d 00 00 00 00 00 00 00 00 00 00 00 00
PDM 1          REV 03      740-045234      1EFA3220425      DC Power Dist Module
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:           740-045234   S/N:           1EFA3220425
Assembly ID:   0x047b      Assembly Version: 01.03
Date:          05-30-2013   Assembly Flags: 0x00
Version:       REV 03      CLEI Code:      IPUPAJSKAA
ID: DC Power Dist Module     FRU Model Number: MX2000-PDM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
..

```

show chassis hardware (MX2020 Router)

```

user@host > show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11E2227AFJ  MX2020
Midplane      REV 27   750-040240   ABAB9384      Lower Power Midplane
Midplane 1    REV 04   711-032386   ABAB9386      Upper Backplane
PMP 1         REV 05   711-032428   ACAJ1579      Upper Power Midplane
PMP 0         REV 04   711-032426   ACAJ1524      Lower Power Midplane
FPM Board     REV 06   760-040242   ABBT8837      Front Panel Display
PSM 0         REV 01   740-045050   1E022240056   DC 52V Power Supply
Module
PSM 1         REV 01   740-045050   1E022240054   DC 52V Power Supply
Module
PSM 2         REV 01   740-045050   1E02224005H   DC 52V Power Supply
Module
PSM 3         REV 01   740-045050   1E022240053   DC 52V Power Supply
Module
PSM 4         REV 01   740-045050   1E02224004K   DC 52V Power Supply
Module
PSM 7         REV 01   740-045050   1E02224006W   DC 52V Power Supply
Module
PSM 8         REV 01   740-045050   1E022240062   DC 52V Power Supply
Module
PSM 9         REV 01   740-045050   1E02224005B   DC 52V Power Supply
Module
PSM 10        REV 01   740-045050   1E02224005A   DC 52V Power Supply
Module
PSM 11        REV 01   740-045050   1E022240052   DC 52V Power Supply
Module
PSM 12        REV 01   740-045050   1E022240051   DC 52V Power Supply
Module
PSM 13        REV 01   740-045050   1E022240058   DC 52V Power Supply
Module
PSM 14        REV 01   740-045050   1E02224004L   DC 52V Power Supply
Module

```


show chassis hardware detail (MX2020 Router with MPC5EQ and MPC6E)

```

user@host>show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN120BADBAFJ  MX2020
Midplane      REV 51   750-040240   ABAB9243      Lower Backplane
Midplane 1    REV 04   711-032386   ABAB9399      Upper Backplane
PMP 1         REV 05   711-032428   ACAJ2541      Upper Power Midplane
PMP 0         REV 04   711-032426   ACAJ2194      Lower Power Midplane
FPM Board     REV 13   760-040242   ABCA8835      Front Panel Display
PSM 0         REV 01   740-050037   1EDB32403L5   DC 52V Power Supply
Module
PSM 1         REV 01   740-050037   1EDB32403L3   DC 52V Power Supply
Module
PSM 2         REV 01   740-050037   1EDB32403KM   DC 52V Power Supply
Module
PSM 3         REV 01   740-050037   1EDB3130079   DC 52V Power Supply
Module
PSM 4         REV 01   740-050037   1EDB3130077   DC 52V Power Supply
Module
PSM 5         REV 01   740-050037   1EDB3130020   DC 52V Power Supply
Module
PSM 6         REV 01   740-050037   1EDB313009S   DC 52V Power Supply
Module
PSM 7         REV 01   740-050037   1EDB313008E   DC 52V Power Supply
Module
PSM 8         REV 01   740-050037   1EDB3130063   DC 52V Power Supply
Module
PSM 12        REV 01   740-050037   1EDB3130026   DC 52V Power Supply
Module
PSM 13        REV 01   740-050037   1EDB3130074   DC 52V Power Supply
Module
PSM 14        REV 01   740-050037   1EDB313009D   DC 52V Power Supply
Module
PSM 15        REV 01   740-050037   1EDB3130024   DC 52V Power Supply
Module
PSM 16        REV 01   740-050037   1EDB3130054   DC 52V Power Supply
Module
PSM 17        REV 01   740-050037   1EDB3130080   DC 52V Power Supply
Module
PDM 0         REV 03   740-045234   1EGA3170144   DC Power Dist Module
PDM 1         REV 03   740-045234   1EGA3170158   DC Power Dist Module
PDM 2         REV 03   740-045234   1EGA3170182   DC Power Dist Module
PDM 3         REV 03   740-045234   1EGA3170207   DC Power Dist Module
Routing Engine 0 REV 02   740-041821   9009112112    RE-S-1800x4
  ad0  3998 MB  Virtium - TuffDrive VCF P1T0200274310822 113 Compact Flash
  ad1  30533 MB UGB94BPH32H0S1-KCI 11000031656      Disk 1
  usb0 (addr 1) EHCI root hub 0      Intel          uhub0
  usb0 (addr 2) product 0x0020 32   vendor 0x8087   uhub1
  DIMM 0      SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 1      SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 2      SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 3      SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 02   740-041821   9009112087    RE-S-1800x4
  ad0  3998 MB  Virtium - TuffDrive VCF P1T0200274310822 366 Compact Flash
  ad1  30533 MB UGB94BPH32H0S1-KCI 11000039979      Disk 1
CB 0          REV 23   750-040257   CABA2295      Control Board
CB 1          REV 23   750-040257   CABE8379      Control Board
SPMB 0

```

SPMB 1				
FPC 0	REV 39	750-045715	CACD1902	MPC5E 3D Q 24XGE+6XLGE
CPU				
FPC 1	REV 11	750-045372	CABK8112	MPCE Type 3 3D
CPU				
FPC 2	REV 17	750-037355	CAAS5826	MPC4E 3D 2CGE+8XGE
CPU				
FPC 3	REV 05	750-044444	CAAY9920	MPCE Type 2 3D P
CPU				
FPC 4	REV 18	750-046005	CACH5661	MPC5E 3D Q 2CGE+4XGE
CPU				
FPC 5	REV 35	750-028467	CAAR2623	MPC 3D 16x 10GE
CPU				
FPC 9	REV 30	750-044130	ABCF5773	MPC6E 3D
CPU				
FPC 10	REV 36	750-044130	ABCS8602	MPC6E 3D
CPU				
FPC 17	REV 28	750-044130	ABBZ3873	MPC6E 3D
CPU				
FPC 18	REV 39	750-045715	CACD1910	MPC5E 3D Q 24XGE+6XLGE
CPU				
FPC 19	REV 39	750-045715	CACD1908	MPC5E 3D Q 24XGE+6XLGE
CPU				
Fan Tray 0	REV 06	760-046960	ACAY0791	172mm FanTray - 6 Fans
Fan Tray 1	REV 06	760-046960	ACAY0788	172mm FanTray - 6 Fans
Fan Tray 2	REV 06	760-046960	ACAY0755	172mm FanTray - 6 Fans
Fan Tray 3	REV 06	760-046960	ACAY0441	172mm FanTray - 6 Fans

show chassis hardware extensive (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN120BADBAFJ
Assembly ID:  0x0557          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MX2020
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 32 30 42 41 44 42 41 46 4a 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 51    750-040240  ABAB9243      Lower Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:         750-040240      S/N:          ABAB9243
Assembly ID:  0x0b22          Assembly Version: 01.51
Date:         05-30-2013      Assembly Flags: 0x00
Version:      REV 51          CLEI Code:    IPMU710ARA
ID: Lower Backplane          FRU Model Number: CHAS-BP-MX2020-S
Board Information Record:
Address 0x00: ad 01 10 00 4c 96 14 72 30 08 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 22 01 33 52 45 56 20 35 31 00 00

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Address 0x10: 00 00 00 00 37 35 30 2d 30 34 30 32 34 30 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 32 34 33 00 1e 05 07
Address 0x30: dd ff ff ff ad 01 10 00 4c 96 14 72 30 08 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 37 31 30 41 52 41 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 32 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1      REV 04      711-032386      ABAB9399      Upper Backplane
Jedec Code:     0x7fb0      EEPROM Version: 0x01
P/N:            711-032386      S/N:            ABAB9399
Assembly ID:    0x0b23      Assembly Version: 01.04
Date:           10-22-2012      Assembly Flags: 0x00
Version:        REV 04
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 fe 0b 23 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 33 38 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 33 39 39 00 16 0a 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP 1           REV 05      711-032428      ACAJ2541      Upper Power Midplane
Jedec Code:     0x7fb0      EEPROM Version: 0x01
P/N:            711-032428      S/N:            ACAJ2541
Assembly ID:    0x045c      Assembly Version: 01.05
Date:           04-26-2013      Assembly Flags: 0x00
Version:        REV 05
ID: Upper Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5c 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 38 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 32 35 34 31 00 1a 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP 0           REV 04      711-032426      ACAJ2194      Lower Power Midplane
Jedec Code:     0x7fb0      EEPROM Version: 0x01
P/N:            711-032426      S/N:            ACAJ2194
Assembly ID:    0x045d      Assembly Version: 01.04
Date:           01-29-2013      Assembly Flags: 0x00
Version:        REV 04
ID: Lower Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 32 31 39 34 00 1d 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

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FPM Board          REV 13    760-040242    ABCA8835          Front Panel Display
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 760-040242          S/N: ABCA8835
Assembly ID: 0x0b24        Assembly Version: 01.13
Date: 04-13-2013          Assembly Flags: 0x00
Version: REV 13           CLEI Code: IPMYAE5JRA
ID: Front Panel Display   FRU Model Number: MX2020-CRAFT-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 24 01 0d 52 45 56 20 31 33 00 00
  Address 0x10: 00 00 00 00 37 36 30 2d 30 34 30 32 34 32 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 41 38 38 33 35 00 0d 04 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 4d 59 41 45 35 4a 52 41 4d
  Address 0x50: 58 32 30 32 30 2d 43 52 41 46 54 2d 53 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 95 ff ff ff ff ff ff ff ff ff ff ff ff

PSM 0              REV 01    740-050037    1EDB32403L5       DC 52V Power Supply
Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 740-050037          S/N: 1EDB32403L5
Assembly ID: 0x0478        Assembly Version: 01.01
Date: 06-21-2013          Assembly Flags: 0x00
Version: REV 01           CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 32 34 30 33 4c 35 00 00 15 06 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00

PSM 1              REV 01    740-050037    1EDB32403L3       DC 52V Power Supply
Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 740-050037          S/N: 1EDB32403L3
Assembly ID: 0x0478        Assembly Version: 01.01
Date: 06-21-2013          Assembly Flags: 0x00
Version: REV 01           CLEI Code: IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 32 34 30 33 4c 33 00 00 15 06 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00

PSM 2              REV 01    740-050037    1EDB32403KM       DC 52V Power Supply
Module
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 740-050037          S/N: 1EDB32403KM
Assembly ID: 0x0478        Assembly Version: 01.01

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Date:          06-21-2013      Assembly Flags:    0x00
Version:       REV 01         CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 34 30 33 4b 4d 00 00 15 06 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 3          REV 01    740-050037    1EDB3130079    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          740-050037   S/N:           1EDB3130079
Assembly ID:   0x0478      Assembly Version: 01.01
Date:         05-16-2013   Assembly Flags: 0x00
Version:       REV 01      CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 39 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 01    740-050037    1EDB3130077    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          740-050037   S/N:           1EDB3130077
Assembly ID:   0x0478      Assembly Version: 01.01
Date:         05-17-2013   Assembly Flags: 0x00
Version:       REV 01      CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 37 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 01    740-050037    1EDB3130020    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          740-050037   S/N:           1EDB3130020
Assembly ID:   0x0478      Assembly Version: 01.01
Date:         05-16-2013   Assembly Flags: 0x00
Version:       REV 01      CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:

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Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 32 30 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 01   740-050037   1EDB313009S   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB313009S
Assembly ID:   0x0478         Assembly Version: 01.01
Date:         05-17-2013      Assembly Flags:  0x00
Version:      REV 01          CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 39 53 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 01   740-050037   1EDB313008E   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB313008E
Assembly ID:   0x0478         Assembly Version: 01.01
Date:         05-17-2013      Assembly Flags:  0x00
Version:      REV 01          CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 38 45 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 8          REV 01   740-050037   1EDB3130063   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB3130063
Assembly ID:   0x0478         Assembly Version: 01.01
Date:         05-17-2013      Assembly Flags:  0x00
Version:      REV 01          CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00

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Address 0x20: 31 45 44 42 33 31 33 30 30 36 33 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00
PSM 12          REV 01   740-050037   1EDB3130026   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB3130026
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-16-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 32 36 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00
PSM 13          REV 01   740-050037   1EDB3130074   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB3130074
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 34 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00
PSM 14          REV 01   740-050037   1EDB313009D   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB313009D
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 39 44 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00

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Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00
PSM 15          REV 01   740-050037   1EDB3130024       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB3130024
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-16-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
...

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show chassis hardware models (MX2020 Routers with MPC5EQ and MPC6E)

```

user@host> show chassis hardware models
Hardware inventory:

```

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 51	750-040240	ABAB9243	CHAS-BP-MX2020-S
FPM Board	REV 13	760-040242	ABCA8835	MX2020-CRAFT-S
PSM 0	REV 01	740-050037	1EDB32403L5	MX2000-PSM-DC-S
PSM 1	REV 01	740-050037	1EDB32403L3	MX2000-PSM-DC-S
PSM 2	REV 01	740-050037	1EDB32403KM	MX2000-PSM-DC-S
PSM 3	REV 01	740-050037	1EDB3130079	MX2000-PSM-DC-S
PSM 4	REV 01	740-050037	1EDB3130077	MX2000-PSM-DC-S
PSM 5	REV 01	740-050037	1EDB3130020	MX2000-PSM-DC-S
PSM 6	REV 01	740-050037	1EDB313009S	MX2000-PSM-DC-S
PSM 7	REV 01	740-050037	1EDB313008E	MX2000-PSM-DC-S
PSM 8	REV 01	740-050037	1EDB3130063	MX2000-PSM-DC-S
PSM 12	REV 01	740-050037	1EDB3130026	MX2000-PSM-DC-S
PSM 13	REV 01	740-050037	1EDB3130074	MX2000-PSM-DC-S
PSM 14	REV 01	740-050037	1EDB313009D	MX2000-PSM-DC-S
PSM 15	REV 01	740-050037	1EDB3130024	MX2000-PSM-DC-S
PSM 16	REV 01	740-050037	1EDB3130054	MX2000-PSM-DC-S
PSM 17	REV 01	740-050037	1EDB3130080	MX2000-PSM-DC-S
PDM 0	REV 03	740-045234	1EGA3170144	MX2000-PDM-DC-S
PDM 1	REV 03	740-045234	1EGA3170158	MX2000-PDM-DC-S
PDM 2	REV 03	740-045234	1EGA3170182	MX2000-PDM-DC-S
PDM 3	REV 03	740-045234	1EGA3170207	MX2000-PDM-DC-S
Routing Engine 0	REV 02	740-041821	9009112112	RE-MX2000-1800X4-S
Routing Engine 1	REV 02	740-041821	9009112087	RE-MX2000-1800X4-S
CB 0	REV 23	750-040257	CABA2295	RE-MX2000-1800X4-S
CB 1	REV 23	750-040257	CABE8379	RE-MX2000-1800X4-S
SFB 0	REV 06	711-044466	ABCD5001	MX2000-SFB-S
SFB 1	REV 06	711-044466	ABCD5034	MX2000-SFB-S
SFB 2	REV 06	711-044466	ABCH3899	MX2000-SFB-S
SFB 3	REV 06	711-044466	ABCD5020	MX2000-SFB-S
SFB 4	REV 06	711-044466	ABCD4975	MX2000-SFB-S
SFB 5	REV 06	711-044466	ABCH3881	MX2000-SFB-S
SFB 6	REV 06	711-044466	ABCD5026	MX2000-SFB-S
SFB 7	REV 06	711-044466	ABCD5032	MX2000-SFB-S
FPC 0	REV 39	750-045715	CACD1902	PROTO-ASSEMBLY
FPC 1	REV 11	750-045372	CABK8112	MX-MPC3E-3D
FPC 2	REV 17	750-037355	CAAS5826	MPC4E-3D-2CGE-8XGE
FPC 3	REV 05	750-044444	CAAY9920	MX-MPC2E-3D-P
FPC 4	REV 18	750-046005	CACH5661	PROTO-ASSEMBLY
FPC 5	REV 35	750-028467	CAAR2623	MPC-3D-16XGE-SFPP
FPC 9	REV 30	750-044130	ABCF5773	PROTO-ASSEMBLY

FPC 10	REV 36	750-044130	ABCS8602	PROTO-ASSEMBLY
FPC 17	REV 28	750-044130	ABBZ3873	PROTO-ASSEMBLY
FPC 18	REV 39	750-045715	CACD1910	PROTO-ASSEMBLY
FPC 19	REV 39	750-045715	CACD1908	PROTO-ASSEMBLY
ADC 0	REV 17	750-043596	ABCD5378	MX2000-LC-ADAPTER
ADC 1	REV 17	750-043596	ABCD5465	MX2000-LC-ADAPTER
ADC 2	REV 17	750-043596	ABCD5431	MX2000-LC-ADAPTER
ADC 3	REV 17	750-043596	ABCD5356	MX2000-LC-ADAPTER
ADC 4	REV 02	750-043596	ZW1545	750-043596
ADC 5	REV 17	750-043596	ABCD5517	MX2000-LC-ADAPTER
ADC 18	REV 17	750-043596	ABCD5535	MX2000-LC-ADAPTER
ADC 19	REV 01	750-043596	ZV4127	750-043596
Fan Tray 0	REV 06	760-046960	ACAY0791	MX2000-FANTRAY-S
Fan Tray 1	REV 06	760-046960	ACAY0788	MX2000-FANTRAY-S
Fan Tray 2	REV 06	760-046960	ACAY0755	MX2000-FANTRAY-S
Fan Tray 3	REV 06	760-046960	ACAY0441	MX2000-FANTRAY-S

show chassis hardware clei-models (MX2020 Router with MPC5EQ and MPC6E)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

Item	Version	Part number	CLEI code	FRU model number
Midplane	REV 51	750-040240	IPMU710ARA	CHAS-BP-MX2020-S
FPM Board	REV 13	760-040242	IPMYAE5JRA	MX2020-CRAFT-S
PSM 0	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 1	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 2	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 3	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 4	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 5	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 6	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 7	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 8	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 12	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 13	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 14	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 15	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 16	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PSM 17	REV 01	740-050037	IPUPAKRKAA	MX2000-PSM-DC-S
PDM 0	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 1	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 2	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
PDM 3	REV 03	740-045234	IPUPAJSKAA	MX2000-PDM-DC-S
CB 0	REV 23	750-040257	IPUCBA7CTA	RE-MX2000-1800X4-S
CB 1	REV 23	750-040257	IPUCBA7CTA	RE-MX2000-1800X4-S
SFB 0	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 1	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 2	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 3	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 4	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 5	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 6	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
SFB 7	REV 06	711-044466	IPUCBA6CAA	MX2000-SFB-S
FPC 0	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 1	REV 11	750-045372	COUIBBNBAA	MX-MPC3E-3D
FPC 2	REV 17	750-037355	IPU3A4DHAA	MPC4E-3D-2CGE-8XGE
FPC 3	REV 05	750-044444	COUIBBGBAA	MX-MPC2E-3D-P
MIC 0	REV 28	750-028387	COUIA16BAA	MIC-3D-4XGE-XFP
FPC 4	REV 18	750-046005	PROTOXCLEI	PROTO-ASSEMBLY
FPC 5	REV 35	750-028467		MPC-3D-16XGE-SFPP
FPC 9	REV 30	750-044130	PROTOXCLEI	PROTO-ASSEMBLY

MIC 0	REV 05	750-049457	PROTOXCLEI	PROTO-ASSEMBLY
FPC 10	REV 36	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 0	REV 06	750-049979	PROTOXCLEI	PROTO-ASSEMBLY
MIC 1	REV 12	750-050008	PROTOXCLEI	PROTO-ASSEMBLY
FPC 17	REV 28	750-044130	PROTOXCLEI	PROTO-ASSEMBLY
MIC 1	REV 03	750-050008	PROTOXCLEI	PROTO-ASSEMBLY
FPC 18	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
FPC 19	REV 39	750-045715	PROTOXCLEI	PROTO-ASSEMBLY
ADC 0	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 1	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 2	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 3	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 4	REV 02	750-043596	PROTOXCLEI	750-043596
ADC 5	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 18	REV 17	750-043596	IPUCBA8CAA	MX2000-LC-ADAPTER
ADC 19	REV 01	750-043596	PROTOXCLEI	750-043596
Fan Tray 0	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 1	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 2	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S
Fan Tray 3	REV 06	760-046960	IPUCBA5CAA	MX2000-FANTRAY-S

show chassis hardware (MX Series routers with ATM MIC)

user@host> show chassis hardware

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN115736EAF	MX240
Midplane	REV 07	760-021404	ABAA5038	MX240 Backplane
FPM Board	REV 03	760-021392	ABBA2758	Front Panel Display
PEM 0	Rev 01	740-022697	QCS0937C07K	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 01	740-022697	QCS0939C04X	PS 1.2-1.7kW; 100-240V
AC in				
PEM 2	Rev 01	740-022697	QCS0937C06B	PS 1.2-1.7kW; 100-240V
AC in				
PEM 3	Rev 01	740-022697	QCS0937C07U	PS 1.2-1.7kW; 100-240V
AC in				
Routing Engine 0	REV 12	740-013063	9009042291	RE-S-2000
Routing Engine 1	REV 12	740-013063	9009042266	RE-S-2000
CB 0	REV 06	710-021523	ABBC1435	MX SCB
CB 1	REV 06	710-021523	ABBC1497	MX SCB
FPC 2	REV 14	750-031088	YH8446	MPC Type 2 3D Q
CPU	REV 06	711-030884	YH9612	MPC PMB 2G
MIC 0				
MIC 1	REV 10	750-036132	ZP7062	2xOC12/8xOC3 CC-CE
PIC 2		BUILTIN	BUILTIN	2xOC12/8xOC3 CC-CE
Xcvr 0		NON-JNPR	23393-00492	UNKNOWN
Xcvr 1		NON-JNPR	23393-00500	UNKNOWN
Xcvr 2		NON-JNPR	23393-00912	UNKNOWN
Xcvr 3	REV 01	740-015638	22216-00575	Load SFP
Xcvr 4	REV 01	740-015638	24145-00110	Load SFP
Xcvr 5	REV 01	740-015638	24145-00016	Load SFP
Xcvr 6	REV 01	740-015638	24145-00175	Load SFP
Xcvr 7		NON-JNPR	23393-00627	UNKNOWN
QXM 0	REV 05	711-028408	YF4681	MPC QXM
QXM 1	REV 05	711-028408	YF4817	MPC QXM
Fan Tray 0	REV 01	710-021113	XL3645	MX240 Fan Tray

show chassis hardware (MX240, MX480, MX960 routers with Application Services Modular Line Card)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN11D969BAFA	MX960
Midplane	REV 03	710-013698	ACAA2362	MX960 Backplane
FPM Board	REV 03	710-014974	ZR0639	Front Panel Display
PDM	Rev 03	740-013110	QCS152250SX	Power Distribution Module
PEM 0	Rev 10	740-013683	QCS1512718W	DC Power Entry Module
PEM 1	Rev 10	740-013683	QCS1512702Y	DC Power Entry Module
Routing Engine 0	REV 15	740-013063	9012024667	RE-S-2000
Routing Engine 1	REV 15	740-013063	9012024649	RE-S-2000
CB 0	REV 14	750-031391	ZJ7749	Enhanced MX SCB
CB 1	REV 14	750-031391	ZJ7750	Enhanced MX SCB
CB 2	REV 14	750-031391	ZY9233	Enhanced MX SCB
FPC 0	REV 17	750-031089	YR7434	MPC Type 2 3D
CPU				
FPC 1	REV 11	750-037207	ZW9727	AS-MCC
CPU	REV 04	711-038173	ZW4817	AS-MCC-PMB
MIC 0	REV 01	750-037214	ZH3764	AS-MSC
PIC 0		BUILTIN	BUILTIN	AS-MSC
MIC 1	REV 01	711-028408	JZ9200	AS-MXC
PIC 2		BUILTIN	BUILTIN	AS-MXC
FPC 4	REV 30	750-028467	ABBN0232	MPC 3D 16x 10GE
CPU				
FPC 5	REV 04	750-037207	ZK9074	AS-MCC
CPU				
Fan Tray 0	REV 05	740-014971	VT5683	Fan Tray
Fan Tray 1	REV 05	740-014971	VT5684	Fan Tray

show chassis hardware extensive (MX240, MX480, MX960 Routers with Application Services Modular Line Card)

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

```
ID: AS-MCC                      FRU Model Number: 750-037207
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 37 01 0b 52 45 56 20 31 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 30 37 00 00
Address 0x20: 53 2f 4e 20 5a 57 39 37 32 37 00 00 00 11 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 35 30 2d 30 33 37 32 30 37 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 31 31 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 5e ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 04      711-038173    ZW4817      AS-MCC-PMB
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:         711-038173    S/N:        ZW4817
Assembly ID: 0x0b38      Assembly Version: 01.04
Date:        12-30-2011   Assembly Flags: 0x00
Version:     REV 04
ID: AS-MCC-PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 38 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 38 31 37 33 00 00
```

```

Address 0x20: 53 2f 4e 20 5a 57 34 38 31 37 00 00 00 1e 0c 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 31 31 2d 30 33 38 31 37 33 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 30 34 00 ff ff ff ff ff ff
Address 0x70: ff ff ff 60 00 00 00 00 00 00 00 00 00 00 00
MIC 0          REV 01    750-037214    ZH3764          AS-MS
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-037214      S/N:              ZH3764
Assembly ID:   0x0a44          Assembly Version:  01.01
Date:          07-04-2011      Assembly Flags:    0x00
Version:       REV 01
ID: AS-MS
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 44 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 31 34 00 00
Address 0x20: 53 2f 4e 20 5a 48 33 37 36 34 00 00 00 04 07 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff f6 c0 03 e1 bc 00 00 00 00 00 00 00
PIC 0          BUILTIN    BUILTIN    AS-MS
FPC 4          REV 30    750-028467    ABBN0232    MPC 3D 16x 10GE
Jedec Code:    0x7fb0          EEPROM Version:    0x01

```

show chassis hardware (MX480 Router with MPC4E)

```

user@host> show chassis hardware
Hardware inventory:

```

Item	Version	Part number	Serial number	Description
Chassis			JN10FF57BAFB	MX480
Midplane	REV 05	750-047849	Good	MX480 Midplane
FPM Board	REV 02	710-017254	KG2066	Front Panel Display
PEM 0	Rev 03	740-017330	QCS081590BJ	PS 1.2-1.7kW; 100-240V
AC in				
PEM 1	Rev 03	740-017330	QCS0815908Z	PS 1.2-1.7kW; 100-240V
AC in				
PEM 2	Rev 03	740-029970	QCS1001U001	PS 1.4-2.52kW; 90-264V
AC in				
Routing Engine 0	REV 05	740-031116	9009089502	RE-S-1800x4
Routing Engine 1	REV 05	740-031116	9009089624	RE-S-1800x4
CB 0	REV 02	750-031391	YE8506	Enhanced MX SCB
CB 1	REV 14	750-031391	ZK8265	Enhanced MX SCB
FPC 2	REV 05	750-037358	ZT0638	MPC4E 3D 32XGE
CPU	REV 07	711-035209	ZK3187	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	8X10GE SFPP
PIC 1		BUILTIN	BUILTIN	8X10GE SFPP
PIC 2		BUILTIN	BUILTIN	8X10GE SFPP
PIC 3		BUILTIN	BUILTIN	8X10GE SFPP
FPC 3	REV 06	750-037355	CAAB1144	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAB1278	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-031980	B11E01439	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	B11D05809	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	D5418	UNKNOWN
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00362	CFP-100G-SR10

FPC 4	REV 12.3.10	750-033205	YR9445	MPCE Type 3 3D
CPU				
Fan Tray				Enhanced Left Fan Tray

show chassis hardware (MX2020 Router with MPC4E)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN11E188CAFJ	MX2020
Midplane	REV 04	711-032387	ABAC7474	Lower Backplane
Midplane 1	REV 04	711-032386	ABAC7408	Upper Backplane
PMP 1	REV 03	711-032428	ACAJ1137	Upper Power Midplane
PMP 0	REV 03	711-032426	ACAJ1016	Lower Power Midplane
FPM Board	REV 06	760-040242	ABBT8832	Front Panel Display
PSM 3	REV 0C	740-033727	VK00255	DC 52V Power Supply
Module				
PSM 4	REV 0C	740-033727	VJ00148	DC 52V Power Supply
Module				
PSM 5	REV 0C	740-033727	VK00207	DC 52V Power Supply
Module				
PSM 6	REV 0C	740-033727	VK00319	DC 52V Power Supply
Module				
PSM 7	REV 0C	740-033727	VK00264	DC 52V Power Supply
Module				
PSM 8	REV 0B	740-033727	VG00025	DC 52V Power Supply
Module				
PSM 13	REV 0C	740-033727	VK00274	DC 52V Power Supply
Module				
PSM 14	REV 0C	740-033727	VJ00167	DC 52V Power Supply
Module				
PSM 15	REV 0C	740-033727	VK00299	DC 52V Power Supply
Module				
PSM 16	REV 0C	740-033727	VK00213	DC 52V Power Supply
Module				
PSM 17	REV 0C	740-033727	VK00253	DC 52V Power Supply
Module				
PDM 0	REV 0B	740-038109	VJ00040	DC Power Dist Module
PDM 2	REV 0B	740-038109	VJ00025	DC Power Dist Module
Routing Engine 0	REV 02	740-041821	9009089735	RE-S-1800x4
Routing Engine 1	REV 02	740-041821	9009089731	RE-S-1800x4
CB 0	REV 04	750-040257	ZT2846	Control Board
CB 1	REV 04	750-040257	ZT2877	Control Board
SPMB 0	REV 01	711-041855	ZS2282	PMB Board
SPMB 1	REV 01	711-041855	ZS2261	PMB Board
SFB 0	REV 07	711-032385	ZZ2582	Switch Fabric Board
SFB 1	REV 04	711-032385	ZV4229	Switch Fabric Board
SFB 2	REV 07	711-032385	CAAB4902	Switch Fabric Board
SFB 3	REV 07	711-032385	CAAB4891	Switch Fabric Board
SFB 4	REV 07	711-032385	CAAB4883	Switch Fabric Board
SFB 5	REV 07	711-032385	CAAB4889	Switch Fabric Board
SFB 6	REV 06	711-032385	ZV1818	Switch Fabric Board
SFB 7	REV 07	711-032385	CAAB4897	Switch Fabric Board
FPC 0	REV 34	750-031090	ZT9799	MPC Type 2 3D EQ
CPU	REV 06	711-030884	ZS1122	MPC PMB 2G
MIC 0	REV 11	750-033535	CAAD7674	MIC-3D-10C192-XFP
PIC 0		BUILTIN	BUILTIN	MIC-3D-10C192-XFP
Xcvr 0	REV 01	740-014279	753019A00404	XFP-0C192-SR
MIC 1	REV 14	750-031967	ZM6103	MIC-3D-80C30C12-40C48
PIC 2		BUILTIN	BUILTIN	MIC-3D-80C30C12-40C48
Xcvr 0	REV 01	740-011615	PEF1AZP	SFP-IR

Xcvr 1	REV 01	740-011615	PEF1AZN	SFP-IR
Xcvr 2	REV 01	740-021308	ANA0N8S	SFP+-10G-SR
QXM 0	REV 06	711-028408	ZT9339	MPC QXM
QXM 1	REV 06	711-028408	ZT9237	MPC QXM
FPC 9	REV 34	750-031090	ZT9770	MPC Type 2 3D EQ
CPU	REV 06	711-030884	ZS1302	MPC PMB 2G
MIC 0	REV 24	750-028387	YJ3950	3D 4x 10GE XFP
PIC 0		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0		NON-JNPR	T09M52516	XFP-10G-SR
Xcvr 1		NON-JNPR	CA49BK095	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	2x 10GE XFP
Xcvr 0	REV 02	740-014289	C834XU01T	XFP-10G-SR
Xcvr 1		NON-JNPR	T09M52515	XFP-10G-SR
MIC 1	REV 11	750-033535	CAAD7681	MIC-3D-10C192-XFP
PIC 2		BUILTIN	BUILTIN	MIC-3D-10C192-XFP
Xcvr 0	REV 01	740-014279	KBQ02BE	XFP-OC192-SR
QXM 0	REV 06	711-028408	ZT9151	MPC QXM
QXM 1	REV 06	711-028408	ZT9116	MPC QXM
FPC 10	REV 27	750-033205	ZL6215	MPCE Type 3 3D
CPU	REV 07	711-035209	ZK9038	HMPC PMB 2G
MIC 0	REV 18	750-028380	YG6885	3D 2x 10GE XFP
PIC 0		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 01	740-014289	C706XU0AG	XFP-10G-SR
PIC 1		BUILTIN	BUILTIN	1x 10GE XFP
Xcvr 0	REV 02	740-014289	T08L84366	XFP-10G-SR
FPC 14	REV 09	750-037355	CAAF1534	MPC4E 3D 2CGE+8XGE
CPU	REV 08	711-035209	CAAB9879	HMPC PMB 2G
PIC 0		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	21T511100436	SFP+-10G-SR
Xcvr 1	REV 01	740-031980	AHPOGPM	SFP+-10G-SR
Xcvr 2	REV 01	740-031980	123363A00032	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	19T511100477	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	1X100GE CFP
Xcvr 0		NON-JNPR	X12J00260	CFP-100G-SR10
PIC 2		BUILTIN	BUILTIN	4x10GE SFPP
Xcvr 0	REV 01	740-021308	21T511104086	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	21T511104627	SFP+-10G-SR
Xcvr 3	REV 01	740-021308	21T511104644	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	1X100GE CFP
FPC 19	REV 32	750-028467	ZR2008	MPC 3D 16x 10GE
CPU	REV 10	711-029089	ZT6933	AMPC PMB
PIC 0		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	19T511100291	SFP+-10G-SR
Xcvr 1	REV 01	740-021308	AMH02VE	SFP+-10G-SR
PIC 1		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	23T511102128	SFP+-10G-SR
PIC 2		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-021308	AMS15PP	SFP+-10G-SR
PIC 3		BUILTIN	BUILTIN	4x 10GE(LAN) SFP+
Xcvr 0	REV 01	740-031980	123363A00716	SFP+-10G-SR
ADC 0	REV 05	750-043596	CAAC2072	Adapter Card
ADC 9	REV 01	750-043596	ZV4111	Adapter Card
ADC 10	REV 05	750-043596	CAAC2058	Adapter Card
ADC 14	REV 02	750-043596	ZW1561	Adapter Card
ADC 19	REV 01	750-043596	ZV4127	Adapter Card
Fan Tray 0	REV 03	760-046960	ACAY0124	172mm FanTray - 6 Fans
Fan Tray 1	REV 2A	760-046960	ACAY0022	172mm FanTray - 6 Fans
Fan Tray 2	REV 2A	760-046960	ACAY0023	172mm FanTray - 6 Fans
Fan Tray 3	REV 2A	760-046960	ACAY0025	172mm FanTray - 6 Fans

show chassis hardware (MX5, MX10, MX40, MX80, MX240, MX480, and MX960 Routers with Enhanced 20-Port Gigabit Ethernet MIC)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               F3434         MX80-P
Midplane                               ZK2681       MX80-P
PEM 0                               VE05267      AC Power Entry Module
PEM 1                               VE05270      AC Power Entry Module
Routing Engine BUILTIN      BUILTIN      Routing Engine
TFEB 0                               BUILTIN      Forwarding Engine
Processor
  QXM 0          REV 05  711-028408  ZK0952        MPC QXM
  FPC 0                               BUILTIN      MPC BUILTIN
  MIC 0                               BUILTIN      4x 10GE XFP
  PIC 0                               BUILTIN      4x 10GE XFP
  FPC 1                               BUILTIN      MPC BUILTIN
  MIC 0          REV 02  750-049846  CAAV2153      3D 20x 1GE(LAN)-E,SFP
  PIC 0                               BUILTIN      10x 1GE(LAN) -E SFP
    Xcvr 0        REV 01  740-011613  AM0816S9B81   SFP-SX
    Xcvr 1        REV 02  740-011613  AM0925SBLK7   SFP-SX
    Xcvr 2        REV 01  740-011613  UAQ0005        SFP-SX
    Xcvr 3        REV 01  740-011613  UAQ000C        SFP-SX
    Xcvr 4        REV 01  740-011613  P9F195E        SFP-SX
    Xcvr 5        REV 01  740-011613  UAQ0003        SFP-SX
    Xcvr 6        REV 01  740-031851  AM1041SU1LD    SFP-SX
    Xcvr 8        REV 02  740-013111  B101501        SFP-T
  PIC 1                               BUILTIN      10x 1GE(LAN) -E SFP
    Xcvr 0        REV 01  740-011613  PFM1ML7        SFP-SX
    Xcvr 4        REV 01  740-011613  PE729P6        SFP-SX
    Xcvr 6        REV 02  740-011613  AM1014SGC84    SFP-SX
    Xcvr 9        REV 01  740-011613  AM0812S8UK3    SFP-SX
  MIC 1          REV 26  750-028392  ZY0187        3D 20x 1GE(LAN) SFP
  PIC 2                               BUILTIN      10x 1GE(LAN) SFP
    Xcvr 0        REV 01  740-011613  P9F1AN9        SFP-SX
    Xcvr 5        REV 02  740-011613  AM1003SFUF4    SFP-SX
    Xcvr 9        REV 01  740-031851  AM1041SU1LM    SFP-SX
  PIC 3                               BUILTIN      10x 1GE(LAN) SFP
    Xcvr 4        REV 01  740-011613  PAJ4MYT        SFP-SX
    Xcvr 7        +      NON-JNPR     XG32A024       SFP-SX
    Xcvr 8        NON-JNPR PFROV6J         SFP-SX
    Xcvr 9        REV 01  740-031851  AM1041SU02U    SFP-SX
Fan Tray

```

show chassis hardware models (MX5, MX10, MX40, MX80, MX240, MX480, and MX960 Routers with Enhanced 20-Port Gigabit Ethernet MIC)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
PEM 0          Rev 04  740-028288  VE05267        PWR-MX80-AC-S
PEM 1          Rev 04  740-028288  VE05270        PWR-MX80-AC-S
Routing Engine BUILTIN      BUILTIN
TFEB 0          BUILTIN      BUILTIN
FPC 0          BUILTIN      BUILTIN
FPC 1          BUILTIN      BUILTIN
  MIC 0          REV 02  750-049846  CAAV2153        MIC-3D-20GE-SFP-E
  MIC 1          REV 26  750-028392  ZY0187          MIC-3D-20GE-SFP
Fan Tray      FANTRAY-MX80-S

```

show chassis hardware (MX2008 Router)

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

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1259E1CAFL	MX2008
Midplane	REV 47	750-044636	ABAD1739	Lower Backplane
PMP	REV 01	711-051406	ACVD0738	Power Midplane
FPM Board	REV 02	760-068193	ABDG7408	Front Panel Display
PSM 1	REV 06	740-050037	1EDB61200R8	DC 52V Power Supply
Module				
PSM 2	REV 06	740-050037	1EDB61200WA	DC 52V Power Supply
Module				
PSM 3	REV 06	740-050037	1EDB61200NY	DC 52V Power Supply
Module				
PSM 4	REV 06	740-050037	1EDB61200N2	DC 52V Power Supply
Module				
PSM 5	REV 06	740-050037	1EDB61200RN	DC 52V Power Supply
Module				
PSM 6	REV 06	740-050037	1EDB61200RF	DC 52V Power Supply
Module				
PSM 7	REV 06	740-050037	1EDB61200R7	DC 52V Power Supply
Module				
PDM 0	REV 01	740-060189	1EFF5250143	DC PDM Optimized
PDM 1	REV 01	740-060189	1EFF5250074	DC PDM Optimized
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x8
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x8
CB 0	REV 01	750-067373	ABDJ0047	Control Board
CB 1	REV 03	750-067373	ABDH3016	Control Board
SFB 0	REV 08	750-067371	ABDK7180	Switch Fabric Board
SFB 1	REV 08	750-067371	ABDK7024	Switch Fabric Board
SFB 2	REV 08	750-067371	ABDK7188	Switch Fabric Board
SFB 3	REV 08	750-067371	ABDK7143	Switch Fabric Board
SFB 4	REV 08	750-067371	ABDK7030	Switch Fabric Board
SFB 5	REV 08	750-067371	ABDK7146	Switch Fabric Board
SFB 6	REV 08	750-067371	ABDK7203	Switch Fabric Board
SFB 7	REV 08	750-067371	ABDK7238	Switch Fabric Board
FPC 0	REV 36	750-044130	ABCS8607	MPC6E 3D
CPU	REV 09	711-045719	ABCS8776	RMPC PMB
MIC 0	REV 21	750-050008	ABCT5920	4X100GE CXP
PIC 0		BUILTIN	BUILTIN	4X100GE CXP
XLM 0	REV 07.2.00	711-046638	ABCK3488	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5482	MPC6E XL
FPC 1	REV 22	750-063414	CAFJ3026	MPC9E 3D
CPU	REV 16	750-057177	CAFF9332	SMPC PMB
FPC 7	REV 08	750-038492	ZX4080	MPCE Type 2 3D EQ
CPU	REV 03	711-038484	ZX3665	MPCE PMB 2G
MIC 0	REV 05	750-037128	ZR4031	1xCOC12/4xCOC3 CH-CE
PIC 0		BUILTIN	BUILTIN	1xCOC12/4xCOC3 CH-CE
MIC 1	REV 23	750-032479	CADE8614	MIC-3D-8DS3-E3
PIC 2		BUILTIN	BUILTIN	MIC-3D-8DS3-E3
QXM 0	REV 06	711-028408	ZW8299	MPC QXM
QXM 1	REV 06	711-028408	ZY0609	MPC QXM
ADC 7	REV 17	750-043596	ABCA0990	Adapter Card
Fan Tray 0	REV 01	760-052467	ACAY6190	172mm FanTray - 6 Fans
Fan Tray 1	REV 01	760-052467	ACAY6414	172mm FanTray - 6 Fans

show chassis hardware detail (MX2008 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN1259E1CAFL	MX2008
Midplane	REV 47	750-044636	ABAD1739	Lower Backplane
PMP	REV 01	711-051406	ACVD0738	Power Midplane
FPM Board	REV 02	760-068193	ABDG7408	Front Panel Display
PSM 1	REV 06	740-050037	1EDB61200R8	DC 52V Power Supply
Module				
PSM 2	REV 06	740-050037	1EDB61200WA	DC 52V Power Supply
Module				
PSM 3	REV 06	740-050037	1EDB61200NY	DC 52V Power Supply
Module				
PSM 4	REV 06	740-050037	1EDB61200N2	DC 52V Power Supply
Module				
PSM 5	REV 06	740-050037	1EDB61200RN	DC 52V Power Supply
Module				
PSM 6	REV 06	740-050037	1EDB61200RF	DC 52V Power Supply
Module				
PSM 7	REV 06	740-050037	1EDB61200R7	DC 52V Power Supply
Module				
PDM 0	REV 01	740-060189	1EFF5250143	DC PDM Optimized
PDM 1	REV 01	740-060189	1EFF5250074	DC PDM Optimized
Routing Engine 0		BUILTIN	BUILTIN	RE-S-2X00x8
vtbd0 15361 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 511 MB	QEMU HARDDISK		QM00002	Emulated IDE Disk
usb0 (addr 1)	XHCI root HUB 0		0x8086	uhub0
Routing Engine 1		BUILTIN	BUILTIN	RE-S-2X00x8
vtbd0 15361 MB				Virtio Block Disk
vtbd1 15360 MB				Virtio Block Disk
ada0 511 MB	QEMU HARDDISK		QM00002	Emulated IDE Disk
usb0 (addr 1)	XHCI root HUB 0		0x8086	uhub0
CB 0	REV 01	750-067373	ABDJ0047	Control Board
CB 1	REV 03	750-067373	ABDH3016	Control Board
SFB 0	REV 08	750-067371	ABDK7180	Switch Fabric Board
SFB 1	REV 08	750-067371	ABDK7024	Switch Fabric Board
SFB 2	REV 08	750-067371	ABDK7188	Switch Fabric Board
SFB 3	REV 08	750-067371	ABDK7143	Switch Fabric Board
SFB 4	REV 08	750-067371	ABDK7030	Switch Fabric Board
SFB 5	REV 08	750-067371	ABDK7146	Switch Fabric Board
SFB 6	REV 08	750-067371	ABDK7203	Switch Fabric Board
SFB 7	REV 08	750-067371	ABDK7238	Switch Fabric Board
FPC 0	REV 36	750-044130	ABCS8607	MPC6E 3D
CPU	REV 09	711-045719	ABCS8776	RMPC PMB
MIC 0	REV 21	750-050008	ABCT5920	4X100GE CXP
PIC 0		BUILTIN	BUILTIN	4X100GE CXP
XLM 0	REV 07.2.00	711-046638	ABCK3488	MPC6E XL
XLM 1	REV 07.2.00	711-046638	ABCK5482	MPC6E XL
FPC 1	REV 22	750-063414	CAFJ3026	MPC9E 3D
CPU	REV 16	750-057177	CAFF9332	SMPC PMB
FPC 7	REV 08	750-038492	ZX4080	MPCE Type 2 3D EQ
CPU	REV 03	711-038484	ZX3665	MPCE PMB 2G
MIC 0	REV 05	750-037128	ZR4031	1xCOC12/4xCOC3 CH-CE
PIC 0		BUILTIN	BUILTIN	1xCOC12/4xCOC3 CH-CE
MIC 1	REV 23	750-032479	CADE8614	MIC-3D-8DS3-E3
PIC 2		BUILTIN	BUILTIN	MIC-3D-8DS3-E3
QXM 0	REV 06	711-028408	ZW8299	MPC QXM
QXM 1	REV 06	711-028408	ZY0609	MPC QXM
ADC 7	REV 17	750-043596	ABCA0990	Adapter Card
Fan Tray 0	REV 01	760-052467	ACAY6190	172mm FanTray - 6 Fans
Fan Tray 1	REV 01	760-052467	ACAY6414	172mm FanTray - 6 Fans

show chassis hardware extensive (MX2008 Router)

```

user@host>show chassis hardware extensive
Hardware inventory:
Item              Version  Part number  Serial number  Description
Chassis
Jedec Code:       0x7fb0          EEPROM Version: 0x02
                  S/N:              JN1259E1CAFL
Assembly ID:      0x0557          Assembly Version: 00.00
Date:             00-00-0000      Assembly Flags:  0x00
ID: MX2008
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 32 35 39 45 31 43 41 46 4c 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane          REV 47    750-044636  ABAD1739      Lower Backplane
Jedec Code:       0x7fb0          EEPROM Version: 0x02
P/N:              750-044636      S/N:           ABAD1739
Assembly ID:      0x0b66          Assembly Version: 01.47
Date:             06-08-2016      Assembly Flags: 0x00
Version:          REV 47          CLEI Code:     IPMU810ARB
ID: Lower Backplane  FRU Model Number: CHAS-BP-MX2010-S
Board Information Record:
Address 0x00: ad 01 08 00 f4 cc 55 3e 35 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 66 01 2f 52 45 56 20 34 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 44 31 37 33 39 00 08 06 07
Address 0x30: e0 ff ff ff ad 01 08 00 f4 cc 55 3e 35 00 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 38 31 30 41 52 42 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 31 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 42 43 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 18 ff ff ff ff ff ff ff ff ff ff ff ff
PMP               REV 01    711-051406  ACVD0738      Power Midplane
Jedec Code:       0x7fb0          EEPROM Version: 0x01
P/N:              711-051406      S/N:           ACVD0738
Assembly ID:      0x045d          Assembly Version: 01.01
Date:             06-06-2016      Assembly Flags: 0x00
Version:          REV 01
ID: Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5d 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 35 31 34 30 36 00 00
Address 0x20: 53 2f 4e 20 41 43 56 44 30 37 33 38 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board         REV 02    760-068193  ABDG7408      Front Panel Display
Jedec Code:       0x7fb0          EEPROM Version: 0x02

```

```

P/N:          760-068193      S/N:          ABDG7408
Assembly ID:  0x0cac          Assembly Version: 01.02
Date:         06-06-2016     Assembly Flags:  0x00
Version:      REV 02         CLEI Code:       PROTOXCLEI
ID: Front Panel Display      FRU Model Number:  PROTO-ASSEMBLY

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c ac 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 36 38 31 39 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 47 37 34 30 38 00 06 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff

PSM 1          REV 06    740-050037    1EDB61200R8    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB61200R8
Assembly ID:   0x0478          Assembly Version: 01.06
Date:         03-16-2016     Assembly Flags:  0x00
Version:      REV 06         CLEI Code:       IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 52 38 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00

PSM 2          REV 06    740-050037    1EDB61200WA    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB61200WA
Assembly ID:   0x0478          Assembly Version: 01.06
Date:         03-16-2016     Assembly Flags:  0x00
Version:      REV 06         CLEI Code:       IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number:  MX2000-PSM-DC-S

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 57 41 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00

PSM 3          REV 06    740-050037    1EDB61200NY    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:          740-050037      S/N:            1EDB61200NY
Assembly ID:   0x0478          Assembly Version: 01.06
Date:         03-16-2016     Assembly Flags:  0x00
Version:      REV 06         CLEI Code:       IPUPAPDKAA

```



```

Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 52 46 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 06    740-050037    1EDB61200R7    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          740-050037      S/N:              1EDB61200R7
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 52 37 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00 00
PDM 0          REV 01    740-060189    1EFF5250143    DC PDM Optimized
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          740-060189      S/N:              1EFF5250143
Assembly ID:   0x0495          Assembly Version:  01.01
Date:          07-21-2015      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAN1KAA
ID: DC PDM Optimized          FRU Model Number:  MX2K-PDM-OP-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 95 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 36 30 31 38 39 00 00
Address 0x20: 31 45 46 46 35 32 35 30 31 34 33 00 00 15 07 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4e 31 4b 41 41 4d
Address 0x50: 58 32 4b 2d 50 44 4d 2d 4f 50 2d 44 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 84 00 00 00 00 00 00 00 00 00 00 00 00
PDM 1          REV 01    740-060189    1EFF5250074    DC PDM Optimized
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          740-060189      S/N:              1EFF5250074
Assembly ID:   0x0495          Assembly Version:  01.01
Date:          07-21-2015      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAN1KAA
ID: DC PDM Optimized          FRU Model Number:  MX2K-PDM-OP-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 95 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 36 30 31 38 39 00 00
Address 0x20: 31 45 46 46 35 32 35 30 30 37 34 00 00 15 07 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4e 31 4b 41 41 4d
Address 0x50: 58 32 4b 2d 50 44 4d 2d 4f 50 2d 44 43 2d 53 00

```

```

Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 84 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0          BUILTIN          BUILTIN          RE-S-2X00x8
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N: BUILTIN          S/N: BUILTIN
Assembly ID: 0x0c10          Assembly Version: 00.00
Date: 00-00-0000          Assembly Flags: 0x00
ID: RE-S-2X00x8
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0c 10 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 00 00 00 00
Address 0x20: 42 55 49 4c 54 49 4e 00 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
vtd0 15361 MB          Virtio Block Disk
vtd1 15360 MB          Virtio Block Disk
ada0 511 MB QEMU HARDDISK QM00002 Emulated IDE Disk
usb0 (addr 1) XHCI root HUB 0 0x8086 uhub0
Routing Engine 1          BUILTIN          BUILTIN          RE-S-2X00x8
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N: BUILTIN          S/N: BUILTIN
Assembly ID: 0x0c10          Assembly Version: 00.00
Date: 00-00-0000          Assembly Flags: 0x00
ID: RE-S-2X00x8
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0c 10 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 00 00 00 00
Address 0x20: 42 55 49 4c 54 49 4e 00 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
vtd0 15361 MB          Virtio Block Disk
vtd1 15360 MB          Virtio Block Disk
ada0 511 MB QEMU HARDDISK QM00002 Emulated IDE Disk
usb0 (addr 1) XHCI root HUB 0 0x8086 uhub0
CB 0          REV 01 750-067373 ABDJ0047          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-067373          S/N: ABDJ0047
Assembly ID: 0x0c96          Assembly Version: 01.01
Date: 06-21-2016          Assembly Flags: 0x00
Version: REV 01          CLEI Code: PROTOXCLEI
ID: Control Board          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 20 28 8a 1c 6d c4 7e ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 96 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4a 30 30 34 37 00 15 06 07
Address 0x30: e0 ff ff ff ad 01 00 20 28 8a 1c 6d c4 7e ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff

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Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 03 750-067373 ABDH3016          Control Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         750-067373      S/N:              ABDH3016
Assembly ID: 0x0c96          Assembly Version: 01.03
Date:        05-07-2016      Assembly Flags: 0x00
Version:     REV 03          CLEI Code:      PROTOXCLEI
ID: Control Board          FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 20 f4 cc 55 35 71 a0 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 96 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 48 33 30 31 36 00 07 05 07
Address 0x30: e0 ff ff ff ad 01 00 20 f4 cc 55 35 71 a0 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff

SFB 0          REV 08 750-067371 ABDK7180          Switch Fabric Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         750-067371      S/N:              ABDK7180
Assembly ID: 0x0c97          Assembly Version: 01.08
Date:        09-27-2016      Assembly Flags: 0x00
Version:     REV 08          CLEI Code:      PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 38 30 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 00 00 00 48 00

SFB 1          REV 08 750-067371 ABDK7024          Switch Fabric Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         750-067371      S/N:              ABDK7024
Assembly ID: 0x0c97          Assembly Version: 01.08
Date:        09-27-2016      Assembly Flags: 0x00
Version:     REV 08          CLEI Code:      PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 30 32 34 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 00 01 00 48 00

SFB 2          REV 08 750-067371 ABDK7188          Switch Fabric Board
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:         750-067371      S/N:              ABDK7188
Assembly ID: 0x0c97          Assembly Version: 01.08
Date:        09-28-2016      Assembly Flags: 0x00
Version:     REV 08          CLEI Code:      PROTOXCLEI

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ID: Switch Fabric Board          FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 38 38 00 1c 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 00 02 00 48 00
SFB 3          REV 08    750-067371  ABDK7143          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:          ABDK7143
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-27-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 34 33 00 1b 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 00 03 00 48 00
SFB 4          REV 08    750-067371  ABDK7030          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:          ABDK7030
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-24-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 30 33 30 00 18 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 00 04 00 48 00
SFB 5          REV 08    750-067371  ABDK7146          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:          ABDK7146
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-27-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 34 36 00 1b 09 07

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Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 05 00 48 00
SFB 6          REV 08    750-067371    ABDK7203          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:           ABDK7203
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-28-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 32 30 33 00 1c 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 06 00 48 00
SFB 7          REV 08    750-067371    ABDK7238          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:           ABDK7238
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-27-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board      FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4b 37 32 33 38 00 1b 09 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 07 00 48 00
FPC 0          REV 36    750-044130    ABCS8607          MPC6E 3D
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-044130      S/N:           ABCS8607
Assembly ID:   0x0b86          Assembly Version: 01.36
Date:          10-29-2013      Assembly Flags: 0x00
Version:       REV 36          CLEI Code:     PROTOXCLEI
ID: MPC6E 3D      FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0b 86 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 31 33 30 00 00
Address 0x20: 53 2f 4e 20 41 42 43 53 38 36 30 37 00 1d 0a 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 09    711-045719    ABCS8776          RMPC PMB
Jedec Code:    0x7fb0          EEPROM Version:    0x02

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P/N:          711-045719      S/N:          ABCS8776
Assembly ID:  0x0b85         Assembly Version: 01.09
Date:         10-24-2013     Assembly Flags:  0x00
Version:      REV 09
ID: RMPC PMB
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 85 01 09 52 45 56 20 30 39 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 34 35 37 31 39 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 53 38 37 37 36 00 18 0a 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 00 00 00 00 16 47 1f b0 00 00 00 00
MIC 0          REV 21    750-050008    ABCT5920          4X100GE CXP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          750-050008      S/N:          ABCT5920
Assembly ID:   0x0a83         Assembly Version: 01.21
Date:         09-29-2014     Assembly Flags:  0x00
Version:      REV 21         CLEI Code:     IP9IATYDAA
ID: 4X100GE CXP             FRU Model Number: MIC6-100G-CXP
Board Information Record:
  Address 0x00: 12 01 07 02 03 ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0a 83 01 15 52 45 56 20 32 31 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 35 30 30 30 38 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 54 35 39 32 30 00 1d 09 07
  Address 0x30: de ff ff ff 12 01 07 02 03 ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 39 49 41 54 59 44 41 41 4d
  Address 0x50: 49 43 36 2d 31 30 30 47 2d 43 58 50 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 74 00 00 00 00 10 09 73 3c c0 02 70 3c
PIC 0          BUILTIN      BUILTIN          4X100GE CXP
XLM 0          REV 07.2.00  711-046638  ABCK3488          MPC6E XL
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          711-046638      S/N:          ABCK3488
Assembly ID:   0x0b88         Assembly Version: 01.07
Date:         11-11-2013     Assembly Flags:  0x00
Version:      REV 07.2.00
ID: MPC6E XL
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 88 01 07 52 45 56 20 30 37 2e 32
  Address 0x10: 2e 30 30 00 37 31 31 2d 30 34 36 36 33 38 00 00
  Address 0x20: 53 2f 4e 20 41 42 43 4b 33 34 38 38 00 0b 0b 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
XLM 1          REV 07.2.00  711-046638  ABCK5482          MPC6E XL
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          711-046638      S/N:          ABCK5482
Assembly ID:   0x0b88         Assembly Version: 01.07
Date:         10-21-2013     Assembly Flags:  0x00
Version:      REV 07.2.00
ID: MPC6E XL
Board Information Record:

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Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 88 01 07 52 45 56 20 30 37 2e 32
Address 0x10: 2e 30 30 00 37 31 31 2d 30 34 36 36 33 38 00 00
Address 0x20: 53 2f 4e 20 41 42 43 4b 35 34 38 32 00 15 0a 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
FPC 1          REV 22    750-063414    CAFJ3026          MPC9E 3D
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          750-063414      S/N:          CAFJ3026
Assembly ID:   0x0c43          Assembly Version: 01.22
Date:          03-28-2016      Assembly Flags: 0x00
Version:       REV 22          CLEI Code:     IPUCBMUCAA
ID: MPC9E 3D          FRU Model Number: MX2K-MPC9E
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0c 43 01 16 52 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 33 34 31 34 00 00
Address 0x20: 53 2f 4e 20 43 41 46 4a 33 30 32 36 00 1c 03 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 4d 55 43 41 41 4d
Address 0x50: 58 32 4b 2d 4d 50 43 39 45 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 16    750-057177    CAFF9332          SMPC PMB
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:          750-057177      S/N:          CAFF9332
Assembly ID:   0x0c22          Assembly Version: 01.16
Date:          03-20-2016      Assembly Flags: 0x00
Version:       REV 16
ID: SMPC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0c 22 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 37 31 37 37 00 00
Address 0x20: 53 2f 4e 20 43 41 46 46 39 33 33 32 00 14 03 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 38 f9 0d e0 4f d1 4b 08
FPC 7          REV 08    750-038492    ZX4080          MPCE Type 2 3D EQ
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          750-038492      S/N:          ZX4080
Assembly ID:   0x0b35          Assembly Version: 01.08
Date:          02-03-2012      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     COUIBA5BAA
ID: MPCE Type 2 3D EQ          FRU Model Number: MX-MPC2E-3D-EQ
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 35 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 38 34 39 32 00 00
Address 0x20: 53 2f 4e 20 5a 58 34 30 38 30 00 00 00 03 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 41 35 42 41 41 4d

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Address 0x50: 58 2d 4d 50 43 32 45 2d 33 44 2d 45 51 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 74 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 03    711-038484    ZX3665          MPCE PMB 2G
Jedec Code:  0x7fb0          EEPROM Version:  0x01
P/N:         711-038484      S/N:          ZX3665
Assembly ID: 0x0b36          Assembly Version: 01.03
Date:        02-01-2012      Assembly Flags: 0x00
Version:     REV 03
ID: MPCE PMB 2G
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 36 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 38 34 38 34 00 00
Address 0x20: 53 2f 4e 20 5a 58 33 36 36 35 00 00 00 01 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 02 00 00 0c 00 42 5f c0 a4
MIC 0          REV 05    750-037128    ZR4031          1xCOC12/4xCOC3 CH-CE
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         750-037128      S/N:          ZR4031
Assembly ID: 0x0a1b          Assembly Version: 01.05
Date:        12-04-2011      Assembly Flags: 0x00
Version:     REV 05          CLEI Code:      PROTOXCLEI
ID: 1xCOC12/4xCOC3 CH-CE    FRU Model Number: MIC-3D-4CHOC3-10C12-CE
Board Information Record:
Address 0x00: 12 01 05 03 05 ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 1b 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 31 32 38 00 00
Address 0x20: 53 2f 4e 20 5a 52 34 30 33 31 00 00 00 04 0c 07
Address 0x30: db ff ff ff 12 01 05 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 4d
Address 0x50: 49 43 2d 33 44 2d 34 43 48 4f 43 33 2d 31 4f 43
Address 0x60: 31 32 2d 43 45 00 30 32 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 98 c0 02 61 bc 7f b0 02 ff 0a 11 01 17
PIC 0          BUILTIN    BUILTIN          1xCOC12/4xCOC3 CH-CE
MIC 1          REV 23    750-032479    CADE8614        MIC-3D-8DS3-E3
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         750-032479      S/N:          CADE8614
Assembly ID: 0x0a11          Assembly Version: 01.23
Date:        07-24-2014      Assembly Flags: 0x00
Version:     REV 23          CLEI Code:      COUIA8DBAA
ID: MIC-3D-8DS3-E3          FRU Model Number: MIC-3D-8DS3-E3
Board Information Record:
Address 0x00: 56 01 ff ff 03 ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0a 11 01 17 52 45 56 20 32 33 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 32 34 37 39 00 00
Address 0x20: 53 2f 4e 20 43 41 44 45 38 36 31 34 00 18 07 07
Address 0x30: de ff ff ff 56 01 ff ff 03 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 41 38 44 42 41 41 4d
Address 0x50: 49 43 2d 33 44 2d 38 44 53 33 2d 45 33 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 7b c0 03 e5 7c 4f 8a 9e 10 00 00 00 02
PIC 2          BUILTIN    BUILTIN          MIC-3D-8DS3-E3
QXM 0          REV 06    711-028408    ZW8299          MPC QXM
Jedec Code:  0x7fb0          EEPROM Version:  0x01

```

P/N: 711-028408 S/N: ZW8299
 Assembly ID: 0x097a Assembly Version: 02.06
 Date: 01-19-2012 Assembly Flags: 0x00
 Version: REV 06
 ID: MPC QXM

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 01 ff 09 7a 02 06 52 45 56 20 30 36 00 00
 Address 0x10: 00 00 00 00 37 31 31 2d 30 32 38 34 30 38 00 00
 Address 0x20: 53 2f 4e 20 5a 57 38 32 39 39 00 00 00 13 01 07
 Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
 Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
 Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
 Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
 Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

QXM 1 REV 06 711-028408 ZY0609 MPC QXM

Jedec Code: 0x7fb0 EEPROM Version: 0x01
 P/N: 711-028408 S/N: ZY0609
 Assembly ID: 0x097a Assembly Version: 02.06
 Date: 01-19-2012 Assembly Flags: 0x00
 Version: REV 06
 ID: MPC QXM

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 01 ff 09 7a 02 06 52 45 56 20 30 36 00 00
 Address 0x10: 00 00 00 00 37 31 31 2d 30 32 38 34 30 38 00 00
 Address 0x20: 53 2f 4e 20 5a 59 30 36 30 39 00 00 00 13 01 07
 Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
 Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
 Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
 Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
 Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

ADC 7 REV 17 750-043596 ABCA0990 Adapter Card

Jedec Code: 0x7fb0 EEPROM Version: 0x02
 P/N: 750-043596 S/N: ABCA0990
 Assembly ID: 0x0b3d Assembly Version: 01.17
 Date: 03-07-2013 Assembly Flags: 0x00
 Version: REV 17 CLEI Code: IPUCBA8CAA
 ID: Adapter Card FRU Model Number: MX2000-LC-ADAPTER

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

I2C Hex Data:

Address 0x00: 7f b0 02 ff 0b 3d 01 11 52 45 56 20 31 37 00 00
 Address 0x10: 00 00 00 00 37 35 30 2d 30 34 33 35 39 36 00 00
 Address 0x20: 53 2f 4e 20 41 42 43 41 30 39 39 30 00 07 03 07
 Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
 Address 0x40: ff ff ff ff 01 49 50 55 43 42 41 38 43 41 41 4d
 Address 0x50: 58 32 30 30 30 2d 4c 43 2d 41 44 41 50 54 45 52
 Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
 Address 0x70: ff ff ff 3a 00 00 00 00 00 00 00 00 00 00 00 00

Fan Tray 0 REV 01 760-052467 ACAY6190 172mm FanTray - 6 Fans

Jedec Code: 0x7fb0 EEPROM Version: 0x02
 P/N: 760-052467 S/N: ACAY6190
 Assembly ID: 0x0b96 Assembly Version: 02.10
 Date: 09-18-2015 Assembly Flags: 0x00
 Version: REV 01 CLEI Code: IPUCBENCAA
 ID: 172mm FanTray - 6 Fans FRU Model Number: MX2000-FANTRAY-S

Board Information Record:

Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

Xcvr 6	REV 01	740-031980	AJJ01NU	SFP+-10G-SR
Xcvr 7	REV 01	740-031980	123363A01305	SFP+-10G-SR
Xcvr 8	REV 01	740-031980	B10M00361	SFP+-10G-SR
Xcvr 9	REV 01	740-031980	AJJ01M7	SFP+-10G-SR
Xcvr 10	REV 01	740-031980	AJJ032X	SFP+-10G-SR
Xcvr 11	REV 01	740-031980	AJJ01PG	SFP+-10G-SR
LMB 0	REV 04	711-034381	EF3838	Type-0 LMB
LMB 1	REV 03	711-035774	EF3821	Type-1 LMB
LMB 2	REV 04	711-034381	EF3834	Type-0 LMB
SPMB 0	REV 05	710-023321	ED1990	LCC Switch CPU
SPMB 1	REV 05	710-023321	EA2768	LCC Switch CPU
SIB 0	REV 02	711-036340	EF8802	SIB-HC-3D
SIB 1	REV 07	711-036340	EG2286	SIB-HC-3D
SIB 2	REV 07	711-036340	EG2252	SIB-HC-3D
SIB 3	REV 02	711-036340	EF1358	SIB-HC-3D
SIB 4	REV 02	711-036340	EF8806	SIB-HC-3D
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
-- Rev 2				
Fan Tray 2				Rear Fan Tray -- Rev 3

show chassis hardware models (T4000 Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	FRU model number
Midplane	REV 01	710-027486	RC8355	CHAS-BP-T1600-S
FPM Display	REV 01	710-021387	EF6764	CRAFT-T1600-S
CIP	REV 06	710-002895	BBAD9210	CIP-L-T640-S
PEM 0	REV 01	740-036442	VA00016	PWR-T-6-60-DC
SCG 0	REV 18	710-003423	BBAD7248	SCG-T-S
SCG 1	REV 18	710-003423	BBAE3874	SCG-T-S
Routing Engine 0	REV 05	740-026941	P737F-002248	RE-DUO-C1800-8G-S
Routing Engine 1	REV 06	740-026941	P737F-002653	RE-DUO-C1800-8G-S
CB 0	REV 09	710-022597	ED0295	CB-LCC-S
CB 1	REV 09	710-022597	EA6050	CB-LCC-S
FPC 3				
PIC 0	REV 08	750-035293	EF3657	PF-1CGE-CFP
PIC 1	REV 10	750-034624	BBAN4098	PF-12XGE-SFPP
FPC 5	REV 03	710-033871	BBAJ0768	T1600-FPC4-ES
PIC 1	REV 03	750-034781	EE6655	PD-1CE-CFP-FPC4
FPC 6				
PIC 0	REV 10	750-034624	BBAN4109	PF-12XGE-SFPP
Fan Tray 0				FANTRAY-T-S
Fan Tray 1				FANTRAY-T4000-S
Fan Tray 2				FAN-REAR-TXP-LCC

show chassis hardware lcc (TX Matrix Router)

```
user@host> show chassis hardware lcc 0
lcc0-re0:
```

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			65751	T640
Midplane	REV 03	710-005608	RA1408	T640 Backplane
FPM GBUS	REV 09	710-002901	RA2784	T640 FPM Board
FPM Display	REV 05	710-002897	RA2825	FPM Display
CIP	REV 06	710-002895	HT0684	T Series CIP

PEM 0	Rev 11	740-002595	PM18483	Power Entry Module
PEM 1	Rev 11	740-002595	qb13984	Power Entry Module
SCG 0	REV 11	710-003423	HT0022	T640 Sonet Clock Gen.
Routing Engine 0	REV 13	740-005022	210865700363	RE-3.0 (RE-600)
CB 0	REV 03	710-007655	HW1195	Control Board (CB-T)
FPC 1	REV 05	710-007527	HM3245	FPC Type 2
CPU	REV 14	710-001726	HM1084	FPC CPU
PIC 0	REV 02	750-007218	AZ1112	2x OC-12 ATM2 IQ, SMIR
PIC 1	REV 02	750-007745	HG3462	4x OC-3 SONET, SMIR
PIC 2	REV 14	750-001901	BA5390	4x OC-12 SONET, SMIR
PIC 3	REV 09	750-008155	HS3012	2x G/E IQ, 1000 BASE
SFP 0		NON-JNPR	P1186TY	SFP-S
SFP 1	REV 01	740-007326	P11WLTF	SFP-SX
MMB 1	REV 02	710-005555	HL7514	MMB-288mbit
PPB 0	REV 04	710-003758	HM4405	PPB Type 2
PPB 1	REV 04	710-003758	AV1960	PPB Type 2
FPC 2	REV 08	710-010154	HZ3578	E-FPC Type 3
CPU	REV 05	710-010169	HZ3219	FPC CPU-Enhanced
PIC 0	REV 02	750-009567	HX2882	1x 10GE(LAN), XENPAK
SFP 0	REV 01	740-009898	USC202U709	XENPAK-LR
PIC 1	REV 03	750-003336	HJ9954	4x OC-48 SONET, SMSR
PIC 2	REV 01	750-004535	HC0235	1x OC-192 SM SR1
PIC 3	REV 07	750-007141	HX1699	10x 1GE(LAN), 1000 BASE
SFP 0	REV 01	740-007326	2441042	SFP-SX
SFP 1	REV 01	740-007326	2441027	SFP-SX
MMB 0	REV 03	710-010171	HV2365	MMB-5M3-288mbit
MMB 1	REV 03	710-010171	HZ3888	MMB-5M3-288mbit
SPMB 0	REV 09	710-003229	HW5245	T Series Switch CPU
SIB 3	REV 07	710-005781	HR5927	SIB-L8-F16
B Board	REV 06	710-005782	HR5971	SIB-L8-F16 (B)
SIB 4	REV 07	710-005781	HR5903	SIB-L8-F16
B Board	REV 06	710-005782	HZ5275	SIB-L8-F16 (B)

show chassis hardware scc (TX Matrix Router)

```

user@host> show chassis hardware scc
scc-re0:
-----
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               TX Matrix
Midplane      REV 04   710-004396   RB0014         SCC Midplane
FPM GBUS      REV 04   710-004617   HW9141         SCC FPM Board
FPM Display   REV 04   710-004619   HS5950         SCC FPM
CIP 0         REV 01   710-010218   HV9151         SCC CIP
CIP 1         REV 01   710-010218   HV9152         SCC CIP
PEM 1         Rev 11   740-002595   QB13977        Power Entry Module
Routing Engine 0 REV 05   740-008883   P11123900153  RE-4.0 (RE-1600)
CB 0          REV 01   710-011709   HR5964         Control Board (CB-TX)
SPMB 0        REV 09   710-003229   HW5293         T Series Switch CPU
SIB 3
SIB 4         REV 01   710-005839   HW1177         SIB-S8-F16
B Board       REV 01   710-005840   HW1202         SIB-S8-F16 (B)

```

show chassis hardware (TI600 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description

```

Chassis			B2703	T1600
Midplane	REV 03	710-005608	RC4137	T640 Backplane
FPM GBUS	REV 10	710-002901	DT7062	T640 FPM Board
FPM Display	REV 05	710-002897	DS3067	FPM Display
CIP	REV 06	710-002895	DT3386	T-series CIP
PEM 0	Rev 07	740-017906	UA26344	Power Entry Module 3x80
PEM 1	Rev 18	740-002595	UF38441	Power Entry Module
SCG 0	REV 15	710-003423	DV0941	T640 Sonet Clock Gen.
Routing Engine 0	REV 08	740-014082	9009014502	RE-A-2000
Routing Engine 1	REV 07	740-014082	9009009591	RE-A-2000
CB 0	REV 05	710-007655	JA9360	Control Board (CB-T)
CB 1	REV 03	710-017707	DT3251	Control Board (CB-T)
FPC 0	REV 07	710-013558	DR4253	E2-FPC Type 2
CPU	REV 05	710-013563	DS3902	FPC CPU-Enhanced
PIC 0	REV 01	750-010618	CB5446	4x G/E SFP, 1000 BASE
Xcvr 0	REV 01	740-011613	P9F11CW	SFP-SX
Xcvr 1	REV 01	740-011613	P9F15C2	SFP-SX
Xcvr 2	REV 01	740-011782	PB94K0L	SFP-SX
PIC 1	REV 06	750-001900	HB6399	1x OC-48 SONET, SMSR
PIC 2	REV 14	750-001901	AP1092	4x OC-12 SONET, SMIR
PIC 3	REV 07	750-001900	AR8275	1x OC-48 SONET, SMSR
MMB 1	REV 07	710-010171	DS1524	MMB-5M3-288mbit
FPC 1	REV 06	710-013553	DL9067	E2-FPC Type 1
CPU	REV 04	710-013563	DM1685	FPC CPU-Enhanced
PIC 0	REV 08	750-001072	AB1688	1x G/E, 1000 BASE-SX
PIC 1	REV 10	750-012266	JX5519	4x 1GE(LAN), IQ2
Xcvr 0	REV 01	740-011613	AM0812S8UK6	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8UK1	SFP-SX
Xcvr 3	REV 01	740-011782	P8N1YHG	SFP-SX
PIC 2	REV 22	750-005634	DP0083	1x CHOC12 IQ SONET, SMIR
MMB 1	REV 07	710-008923	DN1862	MMB 3M 288-bit
FPC 2	REV 01	710-005548	HJ9899	FPC Type 3
CPU	REV 06	710-001726	HC0586	FPC CPU
PIC 0	REV 16	750-007141	NC9660	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011613	AM0812S8XAR	SFP-SX
Xcvr 1	REV 01	740-011782	P920E7B	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8XAU	SFP-SX
Xcvr 4	REV 01	740-011613	AM0812S8XAK	SFP-SX
Xcvr 5	REV 01	740-011613	AM0812S8XAA	SFP-SX
Xcvr 6	REV 01	740-011613	PAJ4NKY	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8UJW	SFP-SX
Xcvr 8	REV 01	740-011782	PB81X89	SFP-SX
Xcvr 9	REV 01	740-011613	AM0812S8UJX	SFP-SX
PIC 1	REV 06	750-015217	DK3280	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P8P0A3T	SFP-SX
Xcvr 1	REV 01	740-013111	5090002	SFP-T
Xcvr 2	REV 01	740-011613	AM0814S93BQ	SFP-SX
Xcvr 4		NON-JNPR	PDE0FAN	SFP-SX
Xcvr 5	REV 01	740-011782	P8Q20XY	SFP-SX
Xcvr 6	REV 01	740-011613	AM0812S8UJV	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8UP7	SFP-SX
PIC 2	REV 05	750-004695	HT4383	1x Tunnel
PIC 3	REV 17	750-009553	RL0204	4x OC-48 SONET
Xcvr 0	REV 01	740-011785	PDS3T23	SFP-SR
Xcvr 1	REV 01	740-011785	P6Q0F3E	SFP-SR
MMB 0	REV 03	710-004047	HD5843	MMB-288mbit
MMB 1	REV 03	710-004047	HE3208	MMB-288mbit
PPB 0	REV 02	710-002845	HA4524	PPB Type 3
PPB 1	REV 02	710-002845	HA4766	PPB Type 3

FPC 3	REV 01	710-010154	HR0863	E-FPC Type 3
CPU	REV 01	710-010169	HN3422	FPC CPU-Enhanced
PIC 0	REV 07	750-012793	WF5096	1x 10GE(LAN/WAN) IQ2
Xcvr 0		NON-JNPR	M64294TP	XFP-10G-LR
PIC 1	REV 25	750-007141	DV2127	10x 1GE(LAN), 1000 BASE
Xcvr 0	REV 01	740-011613	PFA6LTJ	SFP-SX
Xcvr 1	REV 01	740-011782	P9POXV4	SFP-SX
Xcvr 2	REV 01	740-011782	P9M0TNX	SFP-SX
Xcvr 4	REV 01	740-011782	P9B0TTP	SFP-SX
Xcvr 5		NON-JNPR	PBS4LED	SFP-SX
PIC 2	REV 17	750-009553	RL0212	4x OC-48 SONET
Xcvr 0	REV 01	740-011785	PDS3T8G	SFP-SR
PIC 3	REV 32	750-003700	DL1279	1x OC-192 12xMM VSR
MMB 0	REV 01	710-010171	HR0821	MMB-288mbit
MMB 1	REV 01	710-010171	HR0818	MMB-288mbit
FPC 4	REV 16	710-013037	EB4919	FPC Type 4-ES
CPU	REV 09	710-016744	BBAA4382	ST-PMB2
PIC 0	REV 03	711-029996	EB1569	100GE
PIC 1	REV 05	711-029999	EB9983	100GE CFP
Xcvr 0	REV 0	740-032210	J10G80746	CFP-100G-LR4
BRIDGE 0	REV 02	711-029995	EB2235	100GE Bridge Board
MMB 0	REV 04	710-025563	BBAA7112	ST-MMB2
MMB 1	REV 04	710-025563	BBAA7149	ST-MMB2
FPC 5	REV 02	710-013037	DE3407	FPC Type 4-ES
CPU	REV 04	710-016744	DA2124	ST-PMB2
PIC 0	REV 16	750-012518	DF2554	4x OC-192 SONET XFP
Xcvr 0	REV 01	740-014279	AA0745N1FX8	XFP-OC192-SR
Xcvr 1	REV 01	740-014279	AA0748N1HN5	XFP-OC192-SR
Xcvr 2	REV 01	740-014279	AA0748N1HT6	XFP-OC192-SR
Xcvr 3	REV 01	740-014279	AA0744N1EC9	XFP-OC192-SR
PIC 1	REV 01	750-010850	JA0329	1x OC-768 SONET SR
MMB 0	REV 04	710-016036	DE9577	ST-MMB2
MMB 1	REV 04	710-016036	DK4060	ST-MMB2
FPC 6	REV 14	710-013037	DV1431	FPC Type 4-ES
CPU	REV 09	710-016744	DT9020	ST-PMB2
PIC 0	REV 11	750-017405	DM6261	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 01	740-014289	C701XU05Q	XFP-10G-SR
Xcvr 1	REV 01	740-014279	AA0748N1HPT	XFP-10G-LR
Xcvr 2	REV 01	740-014289	T08E19189	XFP-10G-SR
Xcvr 3	REV 01	740-014289	C715XU058	XFP-10G-SR
PIC 1	REV 13	750-017405	DP8772	4x 10GE (LAN/WAN) XFP
Xcvr 0	REV 02	740-011571	C850XJ037	XFP-10G-SR
Xcvr 1	REV 02	740-014289	C839XU0L9	XFP-10G-SR
Xcvr 2	REV 02	740-014289	C834XU05A	XFP-10G-SR
Xcvr 3	REV 02	740-014289	C810XU0CE	XFP-10G-SR
MMB 0	REV 01	710-025563	DT8454	ST-MMB2
MMB 1	REV 01	710-025563	DT8366	ST-MMB2
FPC 7	REV 09	710-007529	HZ7624	FPC Type 3
CPU	REV 15	710-001726	HZ1413	FPC CPU
PIC 0	REV 10	750-012793	DM5627	1x 10GE(LAN/WAN) IQ2
Xcvr 0	REV 02	740-011571	C831XJ062	XFP-10G-SR
PIC 1	REV 01	750-015217	JT6762	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P8Q25JU	SFP-SX
Xcvr 1	REV 01	740-011782	P9B0U0K	SFP-SX
PIC 2	REV 01	750-015217	JS4268	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011613	AM0812S8XBZ	SFP-SX
Xcvr 1	REV 01	740-011613	AM0812S8XAP	SFP-SX
Xcvr 2	REV 01	740-011613	AM0812S8XBY	SFP-SX
Xcvr 3	REV 01	740-011613	AM0812S8XBX	SFP-SX
Xcvr 4	REV 01	740-011613	P9F1652	SFP-SX

Xcvr 5	REV 01	740-011782	P8Q21YC	SFP-SX
Xcvr 6	REV 01	740-011782	P8Q27HQ	SFP-SX
Xcvr 7	REV 01	740-011613	P8E2SSU	SFP-SX
PIC 3	REV 15	750-009450	NB6790	1x OC-192 SM SR2
MMB 0	REV 03	710-005555	HZ3450	MMB-288mbit
MMB 1	REV 03	710-005555	HZ3415	MMB-288mbit
PPB 0	REV 04	710-002845	HP0887	PPB Type 3
PPB 1	REV 04	710-002845	HW5255	PPB Type 3
SPMB 0	REV 10	710-003229	HX3699	T-series Switch CPU
SPMB 1	REV 12	710-003229	DT3091	T-series Switch CPU
SIB 0	REV 07	710-013074	DS4747	SIB-I8-SF
SIB 1	REV 07	710-013074	DS4942	SIB-I8-SF
SIB 2	REV 07	710-013074	DS4965	SIB-I8-SF
SIB 3	REV 07	710-013074	DS4990	SIB-I8-SF
SIB 4	REV 07	710-013074	DS4944	SIB-I8-SF
Fan Tray 0				Front Top Fan Tray
Fan Tray 1				Front Bottom Fan Tray
Fan Tray 2				Rear Fan Tray -- Rev 2

show chassis hardware (TX Matrix Plus Router)

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

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN113186EAHB	TXP
Midplane	REV 05	710-022574	TS3822	SFC Midplane
FPM Display	REV 03	710-024027	DW4701	TXP FPM Display
CIP 0	REV 05	710-023792	DW7998	TXP CIP
CIP 1	REV 05	710-023792	DW7999	TXP CIP
PEM 0	Rev 04	740-027463	UM26367	Power Entry Module
PEM 1	Rev 04	740-027463	UM26346	Power Entry Module
Routing Engine 0	REV 06	740-026942	737A-1081	RE-DUO-2600
Routing Engine 1	REV 06	740-026942	737A-1043	RE-DUO-2600
CB 0	REV 05	710-022606	DW4435	SFC Control Board
CB 1	REV 09	710-022606	DW6100	SFC Control Board
SPMB 0		BUILTIN		SFC Switch CPU
SPMB 1		BUILTIN		SFC Switch CPU
SIB F13 0	REV 04	750-024564	DW5764	F13 SIB
B Board	REV 03	710-023431	DW9053	F13 SIB Mezz
SIB F13 3	REV 04	750-024564	DW5785	F13 SIB
B Board	REV 03	710-023431	DW9030	F13 SIB Mezz
SIB F13 6				
SIB F13 8	REV 04	750-024564	DW5752	F13 SIB
B Board	REV 03	710-023431	DW9051	F13 SIB Mezz
SIB F13 11	REV 04	750-024564	DW5782	F13 SIB
B Board	REV 03	710-023431	DW9058	F13 SIB Mezz
SIB F13 12	REV 03	750-024564	DT9466	F13 SIB
B Board	REV 02	710-023431	DT6556	F13 SIB Mezz
SIB F2S 0/0	REV 05	710-022603	DW7898	F2S SIB
B Board	REV 05	710-023787	DW7625	F2S SIB Mezz
SIB F2S 0/2	REV 05	710-022603	DW7811	F2S SIB
B Board	REV 05	710-023787	DW7550	F2S SIB Mezz
SIB F2S 0/4	REV 04	710-022603	DW4873	F2S SIB
B Board	REV 05	710-023787	DW8509	F2S SIB Mezz
SIB F2S 0/6	REV 04	710-022603	DW4867	F2S SIB
B Board	REV 05	710-023787	DW8472	F2S SIB Mezz
SIB F2S 1/0	REV 04	710-022603	DW4871	F2S SIB
B Board	REV 05	710-023787	DW8497	F2S SIB Mezz
SIB F2S 1/2	REV 05	710-022603	DW7868	F2S SIB

B Board	REV 05	710-023787	DW7551	F2S SIB Mezz
SIB F2S 1/4	REV 04	710-022603	DW4854	F2S SIB
B Board	REV 05	710-023787	DW8496	F2S SIB Mezz
SIB F2S 1/6	REV 05	710-022603	DW7889	F2S SIB
B Board	REV 05	710-023787	DW7496	F2S SIB Mezz
SIB F2S 2/0	REV 04	710-022603	DW4852	F2S SIB
B Board	REV 05	710-023787	DW8498	F2S SIB Mezz
SIB F2S 2/2	REV 04	710-022603	DW4845	F2S SIB
B Board	REV 05	710-023787	DW8457	F2S SIB Mezz
SIB F2S 2/4	REV 05	710-022603	DW7802	F2S SIB
B Board	REV 05	710-023787	DW7562	F2S SIB Mezz
SIB F2S 2/6	REV 04	710-022603	DW4822	F2S SIB
B Board	REV 05	710-023787	DW8467	F2S SIB Mezz
SIB F2S 3/0	REV 05	710-022603	DW7815	F2S SIB
B Board	REV 05	710-023787	DW7518	F2S SIB Mezz
SIB F2S 3/2	REV 03	710-022603	DV0068	F2S SIB
B Board	REV 03	710-023787	DT9974	F2S SIB Mezz
SIB F2S 3/4	REV 05	710-022603	DW7874	F2S SIB
B Board	REV 05	710-023787	DW7601	F2S SIB Mezz
SIB F2S 3/6	REV 03	710-022603	DV0033	F2S SIB
B Board	REV 03	710-023787	DT9969	F2S SIB Mezz
SIB F2S 4/0	REV 03	710-022603	DV0043	F2S SIB
B Board	REV 03	710-023787	DT9948	F2S SIB Mezz
SIB F2S 4/2	REV 05	710-022603	DW5446	F2S SIB
B Board	REV 05	710-023787	DW7611	F2S SIB Mezz
SIB F2S 4/4	REV 04	710-022603	DW4826	F2S SIB
B Board	REV 05	710-023787	DW8458	F2S SIB Mezz
SIB F2S 4/6	REV 03	710-022603	DV0026	F2S SIB
B Board	REV 03	710-023787	DT9963	F2S SIB Mezz
Fan Tray 0	REV 02	760-024497	DR8290	Front Fan Tray
Fan Tray 1	REV 02	760-024497	DR8293	Front Fan Tray
Fan Tray 2	REV 05	760-024502	DR8280	Rear Fan Tray
Fan Tray 3				
Fan Tray 4	REV 05	760-024502	DR8276	Rear Fan Tray
Fan Tray 5	REV 02	760-024502	DP5643	Rear Fan Tray

lcc0-re0:

Hardware inventory:

Item	Version	Part number	Serial number	Description
Chassis			JN11036F8AHA	T1600
Midplane	REV 03	710-017247	RC3799	T-series Backplane
FPM GBUS	REV 10	710-002901	DP7009	T640 FPM Board
FPM Display	REV 01	710-021387	DN7026	T1600 FPM Display
CIP	REV 06	710-002895	DP6024	T-series CIP
PEM 1	Rev 02	740-023211	WA50019	Power Entry Module 4x60A
SCG 0	REV 15	710-003423	DR6757	T640 Sonet Clock Gen.
SCG 1	REV 15	710-003423	DS2225	T640 Sonet Clock Gen.
Routing Engine 0	REV 01	740-026941	737F-1040	RE-DUO-1800
Routing Engine 1	REV 01	740-026941	737F-1016	RE-DUO-1800
CB 0	REV 06	710-022597	DX4011	LCC Control Board
CB 1	REV 06	710-022597	DX4017	LCC Control Board
FPC 1	REV 07	710-013035	DN5847	FPC Type 3-ES
CPU	REV 08	710-016744	DP2570	ST-PMB2
PIC 0	REV 05	750-015217	DB0418	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P8Q27ZG	SFP-SX
Xcvr 1		NON-JNPR	PDA1U0D	SFP-SX
Xcvr 2	REV 01	740-011613	P9F1ALW	SFP-SX
Xcvr 3	REV 01	740-011782	PBA403V	SFP-SX
Xcvr 4		NON-JNPR	PDE09DP	SFP-SX
Xcvr 5	REV 01	740-011782	PCH2P4K	SFP-SX

Xcvr 6	REV 01	740-011782	PB94K0F	SFP-SX
Xcvr 7	REV 01	740-011782	PBA2R2A	SFP-SX
PIC 1	REV 03	750-004424	HJ4020	1x 10GE(LAN), DWDM
PIC 2	REV 01	750-003336	HG6073	4x OC-48 SONET, SMSR
MMB 0	REV 04	710-016036	DP3401	ST-MMB2
FPC 3	REV 12	710-013037	DR1169	FPC Type 4-ES
CPU	REV 08	710-016744	DP9429	ST-PMB2
PIC 0	REV 02	750-010850	JA0332	1x OC-768 SONET SR
MMB 0	REV 04	710-016036	DR0628	ST-MMB2
MMB 1	REV 04	710-016036	DR0592	ST-MMB2
FPC 4	REV 05	710-021534	DR7350	FPC Type 1-ES
CPU	REV 08	710-016744	DP8096	ST-PMB2
PIC 0	REV 04	750-014627	DP9171	4x OC-3 1x OC-12 SFP
Xcvr 0	REV 02	740-011615	PDE2RVR	SFP-SR
PIC 1	REV 22	750-005634	DS5815	1x CHOC12 IQ SONET, SMIR
PIC 2	REV 09	750-002911	CF4539	4x F/E, 100 BASE-TX
PIC 3	REV 08	750-021652	DR2827	1x CHOC12 IQE SONET
Xcvr 0		NON-JNPR	8	UNKNOWN
MMB 0	REV 04	710-016036	DR0809	ST-MMB2
FPC 5	REV 07	710-007529	HS5608	FPC Type 3
CPU	REV 15	710-001726	HX4351	FPC CPU
PIC 0	REV 14	750-009567	WJ8961	1x 10GE(LAN), XENPAK
Xcvr 0	REV 01	740-013170	J05K05961	XENPAK-LR
PIC 1	REV 16	750-007141	JJ8146	10x 1GE(LAN), 1000 BASE
Xcvr 1	REV 01	740-011613	P9F117T	SFP-SX
Xcvr 2	REV 01	740-011782	PBA2VCL	SFP-SX
Xcvr 3	REV 01	740-011782	PB83DRB	SFP-SX
Xcvr 4	REV 01	740-011613	AM0812S8UP8	SFP-SX
PIC 2	REV 12	750-009567	WF3566	1x 10GE(LAN), XENPAK
Xcvr 0	REV 02	740-013170	T07C94489	XENPAK-LR
MMB 0	REV 03	710-005555	HZ1907	MMB-288mbit
MMB 1	REV 03	710-005555	HW5283	MMB-288mbit
PPB 0	REV 04	710-002845	HZ7717	PPB Type 3
PPB 1	REV 04	710-002845	HS0110	PPB Type 3
FPC 6	REV 07	710-013035	DP7486	FPC Type 3-ES
CPU	REV 08	710-016744	DP2545	ST-PMB2
PIC 0	REV 09	750-009567	NE6323	1x 10GE(LAN), XENPAK
Xcvr 0	REV 02	740-013170	T09C71959	XENPAK-LR
PIC 1	REV 06	750-015217	DN4775	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011782	P7E0T6M	SFP-SX
Xcvr 1	REV 01	740-011613	AM0812S8XAY	SFP-SX
Xcvr 2	REV 01	740-011782	P7E0T6J	SFP-SX
Xcvr 3	REV 01	740-011782	PCH2P7D	SFP-SX
Xcvr 4	REV 01	740-011782	P9B0QYT	SFP-SX
Xcvr 5	REV 01	740-011613	AM0812S8WQJ	SFP-SX
Xcvr 6	REV 02	740-013111	9301220	SFP-T
Xcvr 7	REV 01	740-011782	P9B0TZ5	SFP-SX
PIC 2	REV 06	750-015217	DM6747	8x 1GE(TYPE3), IQ2
Xcvr 0	REV 01	740-011613	PAP0ZB2	SFP-SX
Xcvr 1	REV 01	740-013111	70191002	SFP-T
Xcvr 6	REV 01	740-011782	PBA29H8	SFP-SX
Xcvr 7	REV 01	740-011613	AM0812S8WQG	SFP-SX
MMB 0	REV 04	710-016036	DP3238	ST-MMB2
FPC 7	REV 03	710-021540	DV3154	FPC Type 2-ES
CPU	REV 09	710-016744	DT9053	ST-PMB2
PIC 0	REV 13	750-001901	HB4225	4x OC-12 SONET, SMIR
PIC 1	REV 05	750-001900	AD3644	1x OC-48 SONET, SMSR
PIC 2	REV 10	750-008155	HV0335	2x G/E IQ, 1000 BASE
Xcvr 0	REV 01	740-011782	PCH2UKF	SFP-SX

show chassis hardware clei-models (QFX3500 Switches)

```

user@switch> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Routing Engine 0
FPC 0         REV 02    711-032234
Power Supply 0  PSMI 2C  11-d65800

```

show chassis hardware clei-models (QFX5100 Switches)

```

user@switch> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Routing Engine 0
FPC 0         REV 01    611-053010  CMMNV10BRA
PIC 0         BUILTIN
Power Supply 0  REV 03    740-053352  MUPABHBAA      JPSU-850W-AC-AFO
Power Supply 1  REV 03    740-053352  MUPABHBAA      JPSU-850W-AC-AFO
Fan Tray 0
Fan Tray 1
Fan Tray 2
QFX5100-96S-FANAFO
QFX5100-96S-FANAFO
QFX5100-96S-FANAFO

```

show chassis hardware (QFX10002 Switches)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0
FPC 0         REV 26    750-059497  ACNL1387      QFX10002-36Q
CPU
PIC 0         BUILTIN
Xcvr 0        REV 01    740-038623  MOC15476230389  QSFP+-40G-CU1M
Xcvr 1        REV 01    740-038623  MOC15476230438  QSFP+-40G-CU1M
Xcvr 2        REV 01    740-038623  MOC15446231917  QSFP+-40G-CU1M
Xcvr 3        REV 01    740-038623  MOC15446232043  QSFP+-40G-CU1M
Xcvr 4        REV      740-038624  APF15470032AVB  QSFP+-40G-CU3M
Xcvr 5        REV      740-038624  APF15470032H15  QSFP+-40G-CU3M
Xcvr 6        REV      740-038624  APF15470032A9J  QSFP+-40G-CU3M
Xcvr 7        REV      740-038624  APF15470032AG7  QSFP+-40G-CU3M
Xcvr 8        REV      740-038624  APF15470032ALD  QSFP+-40G-CU3M
Xcvr 9        REV 01    740-053203  APF15470071V43  QSFP+-40G-ACU7M
Xcvr 10       REV 01    740-053203  APF15470071V15  QSFP+-40G-ACU7M
Xcvr 11       REV 01    740-053203  APF15470071V12  QSFP+-40G-ACU7M
Xcvr 13       REV      740-038624  APF15470032H1N  QSFP+-40G-CU3M
Xcvr 18       REV 01    740-053203  APF154800738HW  QSFP+-40G-ACU7M
Xcvr 19       REV 01    740-038153  MOC12161530041  QSFP+-40G-CU3M
Xcvr 20       REV 01    740-038153  APF15500034A29  QSFP+-40G-CU3M
Xcvr 30       REV 01    740-038623  MOC15476230444  QSFP+-40G-CU1M
Xcvr 31       REV 01    740-032986  QC330038        QSFP+-40G-SR4
Xcvr 32       REV 01    740-032986  QC290540        QSFP+-40G-SR4
Mezz          REV 02    711-059316  ACNG9344        QFX10002 36X40G Mezz
Power Supply 0  REV 03    740-054405  1EDN5389293    AC AFO 1600W PSU
Power Supply 1  REV 03    740-054405  1EDN5346300    AC AFO 1600W PSU
Fan Tray 0
Front to Back Airflow - AFO
Fan Tray 1
QFX10002 Fan Tray 0,
QFX10002 Fan Tray 1,

```



```

P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:  0x0aaf          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MS BUILTIN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a af 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 de ad be ef 64 22 cd 48 60 af 21 38
PIC 2          BUILTIN          BUILTIN          MS BUILTIN

```

show chassis hardware clei-models (ACX500 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Midplane      REV 01    650-055932  PROTOXCLEI     ACX500-AC
Routing Engine
FEB 0         BUILTIN
FPC 0         BUILTIN

```

show chassis hardware models (ACX500 Router)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number   FRU model number
Midplane      REV 01    650-055932  VJ0214510035   ACX500-AC
Routing Engine
FEB 0         BUILTIN
FPC 0         BUILTIN

```

show chassis environment fpc

List of Syntax	Syntax on page 385 Syntax (TX Matrix and TX Matrix Plus Routers) on page 385 Syntax (MX Series Routers) on page 385 Syntax (MX2010, MX10003, MX204, MX2008, MX10008, 3D Universal Edge Routers) on page 385 Syntax (MX2020 3D Universal Edge Routers) on page 385 Syntax (QFX Series) on page 385 Syntax (OCX Series) on page 385 Syntax (PTX3000 Series) on page 385 Syntax (PTX10008 Series) on page 386 Syntax (EX9251, EX9253 Switches) on page 386
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, MX10008, 3D Universal Edge Routers)	show chassis environment fpc <slot>
Syntax (MX2020 3D Universal Edge Routers)	show chassis environment fpc <slot> <satellite [fpc-slot slot-id device-alias alias-name]
Syntax (QFX Series)	show chassis environment fpc <fpc-slot> interconnect-device name
Syntax (OCX Series)	show chassis environment fpc <fpc-slot>
Syntax (PTX3000 Series)	show chassis environment fpc <fpc-slot>

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

local—(MX Series routers only) (Optional) Display environmental information for the FPCs in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display environmental information for the FPCs in the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

satellite [*fpc-slot slot-id* | *device-alias alias-name*]—(Junos Fusion only)(Optional) Display environmental information for the FPCs in the specified satellite device in a Junos Fusion, or for all satellite devices in the Junos Fusion if no satellite devices are specified.

slot* or *fpc-slot—(Optional) Display environmental information about an individual FPC:

- (TX Matrix and TX Matrix Plus routers only) On a TX Matrix router, if you specify the number of the T640 router by using only the **lcc *number*** option (the recommended method), replace ***slot*** with a value from 0 through 7. Similarly, on a TX Matrix Plus router, if you specify the number of the router by using only the **lcc *number*** option (the recommended method), replace ***slot*** with a value from 0 through 7. Otherwise, replace ***slot*** with a value from 0 through 31. For example, the following commands have the same result:

```
user@host> show chassis environment fpc 1 lcc 1
user@host> show chassis environment fpc 9
```

- M120 router—Replace ***slot*** with a value from 0 through 5.
- MX240 router—Replace ***slot*** with a value from 0 through 2.
- MX480 router—Replace ***slot*** with a value from 0 through 5.
- MX960 router—Replace ***slot*** with a value from 0 through 11.
- MX2010 router—Replace ***slot*** with a value from 0 through 9.
- MX2020 router—Replace ***slot*** with a value from 0 through 19.
- MX2008 router—Replace ***slot*** with a value from 0 through 9.
- Other routers—Replace ***slot*** with a value from 0 through 7.
- EX Series switches:
 - EX3200 switches and EX4200 standalone switches—Replace ***slot*** with 0.
 - EX4200 switches in a Virtual Chassis configuration—Replace ***slot*** with a value from 0 through 9 (switch's member ID).

- EX6210 switches—Replace **slot** with a value from 0 through 3 (line card only), 4 or 5 (line card or Switch Fabric and Rotuing Engine (SRE) module), or 6 through 9 (line card only).
- EX8208 switches—Replace **slot** with a value from 0 through 7 (line card).
- EX8216 switches—Replace **slot** with a value from 0 through 15 (line card).
- QFX3500 switches —Replace **fpc-slot** with 0 through 15.
- PTX5000 Packet Transport Router—Replace **fpc-slot** with 0 through 7.
- PTX3000 Packet Transport Router—Replace **fpc-slot** with 0 through 15.

Required Privilege Level view

Related Documentation

- *request chassis fpc*
- *show chassis fpc*
- *show chassis fpc-feb-connectivity*
- *Configuring the Junos OS to Resynchronize FPC Sequence Numbers with Active FPCs when an FPC Comes Online*
- *MX960 Flexible PIC Concentrator Description*

List of Sample Output

[show chassis environment fpc \(M120 Router\) on page 390](#)
[show chassis environment fpc \(M160 Router\) on page 391](#)
[show chassis environment fpc \(M320 Router\) on page 391](#)
[show chassis environment fpc \(MX2020 Router\) on page 392](#)
[show chassis environment fpc \(MX2010 Router\) on page 395](#)
[show chassis environment fpc \(MX2008 Router\) on page 398](#)
[show chassis environment fpc \(MX240 Router\) on page 401](#)
[show chassis environment fpc \(MX480 Router\) on page 402](#)
[show chassis environment fpc \(MX960 Router\) on page 403](#)
[show chassis environment fpc \(MX480 Router with 100-Gigabit Ethernet CFP\) on page 404](#)
[show chassis environment fpc \(MX240, MX480, MX960 with Application Services Modular Line Card on page 405](#)
[show chassis environment fpc \(MX10003 Router\) on page 405](#)
[show chassis environment fpc \(MX204 Router\) on page 409](#)
[show chassis environment fpc \(MX10008 Router\) on page 409](#)
[show chassis environment fpc \(T320, T640, and T1600 Routers\) on page 416](#)
[show chassis environment fpc \(T4000 Router\) on page 417](#)
[show chassis environment fpc lcc \(TX Matrix Router\) on page 422](#)
[show chassis environment fpc lcc \(TX Matrix Plus Router\) on page 422](#)
[show chassis environment fpc \(QFX Series and OCX Series\) on page 423](#)
[show chassis environment fpc interconnect-device \(QFabric Systems\) on page 423](#)
[show chassis environment fpc 5\(PTX3000 Packet Transport Router\) on page 424](#)


```

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

```



```

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

```


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

```



```

FPC 1 status:
State                               Online
Temperature Intake                  36 degrees C / 96 degrees F
Temperature Exhaust A               39 degrees C / 102 degrees F
Temperature LU TSen                 52 degrees C / 125 degrees F
Temperature LU Chip                 54 degrees C / 129 degrees F
Temperature XM TSen                 52 degrees C / 125 degrees F
Temperature XM Chip                 60 degrees C / 140 degrees F
Temperature PCIe TSen              52 degrees C / 125 degrees F
Temperature PCIe Chip              69 degrees C / 156 degrees F
Power
MPC-BIAS3V3-z12106                 3302 mV
MPC-VDD3V3-z16100                  3325 mV
MPC-AVDD1V0-z16100                 1007 mV
MPC-PCIE_1V0-z16100                904 mV
MPC-LU0_1V0-z12004                 996 mV
MPC-VDD_1V5-z12004                 1498 mV
MPC-12VA-BMR453                    11733 mV
MPC-12VB-BMR453                    11728 mV
MPC-XM_0V9-vt273m                  900 mV
I2C Slave Revision                 81

```

show chassis environment fpc (EX9251 Switches)

```

user@switch> show chassis environment fpc
FPC 0 status:
State                               Online
Power
I2C Slave Revision                 0

```

show chassis environment fpc (EX9253 Switches)

```

user@switch> show chassis environment fpc
FPC 0 status:
State                               Online
FPC 0 Intake Temp Sensor            32 degrees C / 89 degrees F
FPC 0 Exhaust-A Temp Sensor         60 degrees C / 140 degrees F
FPC 0 Exhaust-B Temp Sensor         48 degrees C / 118 degrees F
Power
I2C Slave Revision                 13
FPC 1 status:
State                               Online
FPC 1 Intake Temp Sensor            30 degrees C / 86 degrees F
FPC 1 Exhaust-A Temp Sensor         60 degrees C / 140 degrees F
FPC 1 Exhaust-B Temp Sensor         50 degrees C / 122 degrees F
Power
I2C Slave Revision                 13

```

show chassis environment monitored

List of Syntax	Syntax on page 434 Syntax (MX2020, MX2010, and MX2008 Routers) on page 434
Syntax	show chassis environment monitored
Syntax (MX2020, MX2010, and MX2008 Routers)	show chassis environment monitored <all-members> <local> <member <i>member-id</i> >
Release Information	<p>Command introduced in Junos OS Release 12.1 for PTX Series Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>all-members, local, and member <i>member-id</i> options introduced in Junos OS Release 15.1 for MX2020 and MX2010 routers.</p> <p>Command introduced in Junos OS Release 17.2 for MX2008 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 18.2 for MX10008 3D Universal Edge Routers.</p>
Description	<p>(PTX Series Packet Transport Routers, MX2010, MX2020, MX2008, and MX10008 routers) Display status information for monitored temperatures.</p> <p>On the PTX Series Packet Transport Routers, and on MX2010, MX2020, MX2008, and MX10008 routers, you can configure which temperatures are monitored for computing temperature alarms. Use this command to display only the temperatures that are monitored. Temperatures that are not included in the temperature alarm computations are not displayed.</p>
Options	<p>none—Display status information for monitored temperatures.</p> <p>all-members—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in all members of the Virtual Chassis configuration.</p> <p>local—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the local member of the Virtual Chassis.</p> <p>member <i>member-id</i>—(MX2010, MX2020, and MX2008 routers only) (Optional) Display chassis information for monitored temperatures in the specified member of the Virtual Chassis. Replace <i>member-id</i> with the value 0 or 1.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• <i>show chassis environment</i>• <i>Chassis-Level Feature Guide</i>

SFB 3 Intake-A	OK	28 degrees C / 82 degrees F
SFB 3 Intake-B	OK	28 degrees C / 82 degrees F
SFB 3 Exhaust-A	OK	27 degrees C / 80 degrees F
SFB 3 Exhaust-B	OK	28 degrees C / 82 degrees F
SFB 3 PF0	OK	31 degrees C / 87 degrees F
SFB 3 PF1	OK	31 degrees C / 87 degrees F

request chassis fpc optical-module firmware-upgrade

Syntax	<code>request chassis fpc optical-module firmware-upgrade fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 15.1F6 and 17.1R1 on PTX3000 integrated photonic line system.
Description	Upgrade the firmware of the integrated photonic line card (IPLC) module installed in the Flexible PIC Concentrator (FPC) or PIC slot.
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides.
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none">• Integrated Photonic Line Card Base and Expansion Module Overview on page 3• Understanding the Integrated Photonic Line Card Architecture on page 6• Understanding How to Configure the Integrated Photonic Line Card on page 9
List of Sample Output	request chassis fpc optical-module firmware-upgrade on page 456
Output Fields	When you enter the command, you are provided feedback on the status of your request.

Sample Output

request chassis fpc optical-module firmware-upgrade

```
user@host> request chassis fpc optical-module firmware-upgrade fpc-slot 4
IPLC 2 upgrade finished
```

request chassis fpc optical-module amplifier-chain ila firmware-upgrade

Syntax	<code>request chassis optical-module amplifier-chain ila firmware-upgrade fpc-slot <i>fpc-slot</i> ila <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	To transfer the firmware image from the integrated photonic line card (IPLC) module to a particular optical inline amplifier (ILA) and issue a firmware upgrade.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the IPLC module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none"> • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6 • Understanding How to Configure the Integrated Photonic Line Card on page 9
List of Sample Output	request chassis fpc optical-module amplifier-chain ila firmware-upgrade on page 457
Output Fields	When you enter the command, you are provided feedback on the status of your request.

Sample Output

request chassis fpc optical-module amplifier-chain ila firmware-upgrade

```

user@host> request chassis fpc optical-module amplifier-chain ila firmware-upgrade fpc-slot
3 ila-number 0
IPLC 3 upgrade finished
user@host>

```

request chassis fpc optical-module amplifier-chain ila soft-reset

Syntax	<code>request chassis optical-module amplifier-chain ila soft-reset fpc-slot <i>fpc-slot</i> ila <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Apply a soft reset to the optical inline amplifier (ILA). The soft reset does not disrupt the network traffic.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none">• Integrated Photonic Line Card Base and Expansion Module Overview on page 3• Understanding the Integrated Photonic Line Card Architecture on page 6• Understanding How to Configure the Integrated Photonic Line Card on page 9
List of Sample Output	request chassis fpc optical-module amplifier-chain ila soft-reset on page 458
Output Fields	When you enter the command, you are provided feedback on the status of your request.

Sample Output

request chassis fpc optical-module amplifier-chain ila soft-reset

```
user@host> request chassis fpc optical-module amplifier-chain ila soft-reset fpc-slot 3 ila-number 0
Reset command was successfully issued to the requested ILA
```

request chassis fpc optical-module amplifier-chain ila hard-reset

Syntax	<code>request chassis optical-module amplifier-chain ila hard-reset fpc-slot <i>fpc-slot</i> ila <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Apply a hard reset to the optical inline amplifier (ILA). Issuing a hard reset disrupts the network traffic on the optical ILA.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none"> • Integrated Photonic Line Card Base and Expansion Module Overview on page 3 • Understanding the Integrated Photonic Line Card Architecture on page 6 • Understanding How to Configure the Integrated Photonic Line Card on page 9
List of Sample Output	request chassis fpc optical-module amplifier-chain ila hard-reset on page 459
Output Fields	When you enter the command, you are provided feedback on the status of your request.

Sample Output

request chassis fpc optical-module amplifier-chain ila hard-reset

```
user@host> request chassis fpc optical-module amplifier-chain ila hard-reset fpc-slot 3 ila-number 3
Reset command was successfully issued to the requested ILA
```

show chassis fpc optical-properties amplifier-topology

Syntax	<code>show chassis fpc optical-properties amplifier-topology fpc-slot <i>fpc-slot</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Display the topology information for the integrated photonic line card (IPLC) and the optical inline amplifier (ILA).
Options	<i>fpc-slot</i> —Slot number of the FPC or PIC in which the IPLC module resides.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11
List of Sample Output	show chassis fpc optical-properties amplifier-topology on page 460
Output Fields	Table 30 on page 460 lists the output fields for the show chassis fpc optical-properties amplifier-topology command. Output fields are listed in the approximate order in which they appear.

Table 30: show chassis fpc optical-properties amplifier-topology Output Fields

Field Name	Field Description
Name	Name of the device.
IP Addr/Subnet	IP address and subnet of the device.
Reachable	Yes or No. Device is up or down.
Connected To	Displays the name of the device it is connected to.

Sample Output

show chassis fpc optical-properties amplifier-topology

```

user@host> show chassis fpc optical-properties amplifier-topology fpc-slot 3

IPLC Amplifier Topology Information
Name      IP Addr/Subnet      Reachable      Connected To
Anchor IPLC  10.0.0.10/255.255.255.0 Yes             N/A
ILA-0     10.0.0.11/255.255.255.0 Yes             IPLC-3

```

show chassis fpc optical-properties amplifier-chain ila summary

Syntax	<code>show chassis fpc optical-properties amplifier-chain ila summary fpc-slot <i>fpc-slot</i> ila-number <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Display detailed information for the optical inline amplifier (ILA) such as the manufacturing details, power and temperature information, fan information, and so on.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11 • Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33 • Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73
List of Sample Output	show chassis fpc optical-properties amplifier-chain ila summary on page 463
Output Fields	Table 31 on page 461 lists the output fields for the show chassis fpc optical-properties amplifier-chain ila summary command. Output fields are listed in the approximate order in which they appear.

Table 31: show chassis fpc optical-properties amplifier-chain ila summary Output Fields

Field Name	Field Description
ILA Number	Number assigned to the optical ILA.
ILA Name	Name of the optical ILA.
ILA Position	Position of the optical ILA in the amplifier chain. This value can change if optical ILAs are added or removed from the amplifier chain.

Table 31: show chassis fpc optical-properties amplifier-chain ila summary Output Fields (continued)

Field Name	Field Description
OSC IP Address	Displays the configured IP address of the optical ILA used for optical supervisory channel (OSC) communications with the anchor IPLC module in the PTX3000 integrated photonic line system. The IP address must be on the same, private subnet as the anchor IPLC.
Manufacture Name	Name of manufacturer.
Manufacture Date	Date of manufacture.
Part Number	Part number of the optical ILA.
Serial Num	Serial number of the optical ILA.
Calibration Date	Date of calibrating the components such as; pumps, optical power, and so on.
Firmware version	Firmware version number.
Hardware Version	Hardware version number.
FPGA Version	Field-programmable gate array (FPGA) version number.
X86CPLD Version	X86CPLD processor version number.
Board CPLD Version	Board CPLD version number.
System Date and System Time	System time and date.
Up Time	Time the device has been up.
IP v4 Address/Mask/Gateway	IPv4 address for the optical ILA interface.
OSC MAC Address	MAC address of the associated IPLC OSC management interface.
Board Temperature (C)	Temperature of the main board.
Temperature Threshold High/Low (C)	Temperature at which an alarm is raised when it is too high or it is too low.
Power and Fan Plug Status (Fan 0/1/2, Power 0/1)	Displays how many power supplies and fans are plugged in.
Fan Speed (Fan 0/1/2)	Fan speed.
System Mode (auto/manual)	System mode: auto or manual. The auto mode is the default. The manual mode is available only for debug purposes.

Table 31: show chassis fpc optical-properties amplifier-chain ila summary Output Fields (continued)

Field Name	Field Description
Firmware Upgrade Status (none/in progress/done)	Firmware upgrade status.

Sample Output

show chassis fpc optical-properties amplifier-chain ila summary

```

user@host> show chassis fpc optical-properties amplifier-chain ila summary fpc-slot 3 ila-number
0

    ILA Number                0
    ILA Name                   ILA-0
    ILA Position               1
    OSC IP Address              10.0.0.11/255.255.255.0

    Manufacture Name           op1k
    Manufacture Date            2016-04-07
    Part Number                 EDFA128ILAJUP01
    Serial Num                  3D2L6140001
    Calibration Date            2016-04-07
    Firmware Version            2.10.0001
    Hardware Version            2.01
    FPGA Version                5.0
    X86CPLD Version            28
    Board CPLD Version          41
    System Date                 2015-10-04
    System Time                 02:00:19 GMT-0700
    Up Time                    2255845
    IP v4 Address/Mask/Gateway  192.168.7.135/255.255.0.0/ 192.168.7.254
    OSC MAC Address             aa:bb:cc:dd:ee:01
    Board Temperature (C)       31.4
    Temperature Threshold High/Low (C) 55.0/-5.0
    Power and Fan Plug Status (Fan 0/1/2, Power 0/1)
1 Power0: 0 Power1: 1          Fan0: 1 Fan1: 1 Fan2:
    Fan Speed (Fan 0/1/2)      9984 / 9984 / 10752
    System Mode (auto/manual)   Auto
    Firmware Upgrade Status (none/in progress/done)
Percent: 0                     Status: Successful

```

show chassis fpc optical-properties amplifier-chain ila edfa

Syntax	<code>show chassis fpc optical-properties amplifier-chain ila edfa fpc-slot <i>fpc-slot</i> ila-number <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Displays the status information about a particular erbium-doped fiber amplifier (EDFA) for the optical inline amplifier (ILA). There are two EDFAs in the optical ILA: one is responsible for A to B direction (for example, east to west) and is called EDFA-A-B; the other one is responsible for B to A direction (for example, west to east) and is called EDFA-B-A. Information is shown for the EDFA-A-B and EDFA-B-A.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11 • Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33 • Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73
List of Sample Output	show chassis fpc optical-properties amplifier-chain ila edfa on page 466
Output Fields	Table 32 on page 464 lists the output fields for the show chassis fpc optical-properties amplifier-chain ila edfa command. Output fields are listed in the approximate order in which they appear.

Table 32: show chassis fpc optical-properties amplifier-chain ila edfa Output Fields

Field Name	Field Description
edfaIndex	Index of the EDFA in the optical ILA (1 or 2).
Manufacture information	Displays the EDFA's manufacturing information.
edfaModuleType	Name of the module.
edfaPartNumber	EDFA part number.

Table 32: show chassis fpc optical-properties amplifier-chain ila edfa Output Fields (continued)

Field Name	Field Description
edfaSerialNumber	EDFA serial number.
edfaMfgDate	Name of manufacturer.
edfaCaliDate	Date of calibration.
edfaFirmwareVer	Firmware version.
edfaHardwareVer	Hardware version for the EDFA.
edfaMode	The EDFA's workmode.
edfaGainSetting (0.01dBm)	Displays the EDFA's gain setting in automatic-gain control (AGC) mode. AGC is a mode of operation in which the optical ILA adjusts its gain to compensate for the preceding span loss.
edfaTilt (0.01dBm)	Displays the EDFA tilt.
edfaWorkingStatus	The EDFA's status. The status is Normal, Output Disabled, or Standby. The Automatic Power Reduction (APR) status is APR activated or APR deactivated.
edfaAprEnable	Displays whether the APR is enabled or disabled.
edfaWorkRange	Displays the EDFA's gain working range, it is Low Gain or High Gain.
edfaActualGain (0.01dBm)	Displays the EDFA's actual gain in response to the EDFA's gain setting target.
edfaCaseTemperature (C)	The EDFA's case temperature. Case temperature measures the temperature inside the case.
edfaPumpTemperature (C)	The EDFA's pump temperature. Pump temperature is the set operating temperature of the pump.
edfaAse (0.01dBm)	The EDFA's amplified spontaneous emission (ASE) in dBm.
edfaUpstreamOutputPower (0.01dBm)	The output power of the optical ILA preceding the previous optical span.
edfaInputPower (0.01dBm)	The input optical power. The unit is dBm.
edfaOutputPower (0.01dBm)	The output optical power. The unit is dBm.
edfaDownstreamInputPower (0.01dBm)	Input power of the optical ILA following the next optical span.

Table 32: show chassis fpc optical-properties amplifier-chain ila edfa Output Fields (continued)

Field Name	Field Description
edfaInputLOSThreshold (0.01dBm)	Displays the set threshold for the minimum input power to the EDFA. If the received power is less than this threshold, the EDFA declares loss of signal (LOS). The unit is dBm.
edfaOutputLOSThreshold (0.01dBm)	Displays the set threshold for the minimum output power to the EDFA. If the transmitted power is less than this threshold, the EDFA declares LOS. The unit is dBm.

Sample Output

show chassis fpc optical-properties amplifier-chain ila edfa

```

user@host> show chassis fpc optical-properties amplifier-chain ila edfa fpc-slot 3 ila-number
0
ILA EDFA-A-B Information
  edfaIndex                               1
  Manufacture information                  EDFA_MFG
  edfaModuleType                          ILA_EDFA
  edfaPartNumber                          EDFA128ILAJUP01-2
  edfaSerialNumber                        B6904420
  edfaMfgDate                             2016-03-09
  edfaCaliDate                            2016-03-09
  edfaFirmwareVer                         1.03.0001
  edfaHardwareVer                         1.00.0002
  edfaMode                                AGC
  edfaGainSetting (0.01dBm)               1030
  edfaTilt (0.01dBm)                      0
  edfaWorkingStatus                       Normal, APR deactivated
  edfaAprEnable                           Enabled
  edfaWorkRange                           Low Gain
  edfaActualGain (0.01dBm)                1031
  edfaCaseTemperature (C)                  34.30
  edfaPumpTemperature (C)                  25.20
  edfaAse (0.01dBm)                       -1474
  edfaUpstreamOutputPower (0.01dBm)       -1
  edfaInputPower (0.01dBm)                -1026
  edfaOutputPower (0.01dBm)               15
  edfaDownstreamInputPower (0.01dBm)      -992
  edfaInputLOSThreshold (0.01dBm)         -3950
  edfaOutputLOSThreshold (0.01dBm)        -250
ILA EDFA-B-A Information
  edfaIndex                               2
  Manufacture information                  EDFA_MFG
  edfaModuleType                          ILA_EDFA
  edfaPartNumber                          EDFA128ILAJUP01-2
  edfaSerialNumber                        B6904420
  edfaMfgDate                             2016-03-09
  edfaCaliDate                            2016-03-09
  edfaFirmwareVer                         1.03.0001
  edfaHardwareVer                         1.00.0002
  edfaMode                                AGC
  edfaGainSetting (0.01dBm)               1010
  edfaTilt (0.01dBm)                      0
  edfaWorkingStatus                       Normal, APR deactivated

```

edfaAprEnable	Enabled
edfaWorkRange	Low Gain
edfaActualGain (0.01dBm)	1003
edfaCaseTemperature (C)	34.30
edfaPumpTemperature (C)	25.70
edfaAse (0.01dBm)	-1498
edfaUpstreamOutputPower (0.01dBm)	-37
edfaInputPower (0.01dBm)	-1054
edfaOutputPower (0.01dBm)	-45
edfaDownstreamInputPower (0.01dBm)	-1086
edfaInputLOSThreshold (0.01dBm)	-3950
edfaOutputLOSThreshold (0.01dBm)	-250

show chassis fpc optical-properties amplifier-chain ila osc

Syntax	<code>show chassis fpc optical-properties amplifier-chain ila osc fpc-slot <i>fpc-slot</i> ila-number <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Display the status information about a particular optical supervisory channel (OSC) for the optical inline amplifier (ILA). There are two OSCs (OSC A and OSC B) in the optical ILA.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11 Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33
List of Sample Output	show chassis fpc optical-properties amplifier-chain ila osc on page 469
Output Fields	Table 33 on page 468 lists the output fields for the show chassis fpc optical-properties amplifier-chain ila osc command. Output fields are listed in the approximate order in which they appear.

Table 33: show chassis fpc optical-properties amplifier-chain ila osc Output Fields

Field Name	Field Description
oscIndex	Displays information for OSC A (1) or OSC B (2).
Manufacture information node	OSC A or OSC B.
oscEnable	Displays whether OSC is enabled or disabled.
oscAddPowerValue (0.01dBm)	The OSC power in dBm for (OSC transmitted) for port A or B.
oscDropPowerValue (0.01dBm)	The OSC power in dBm for (OSC received) for port A or B.
oscAddLOSThreshold (0.01dBm)	The OSC loss of signal (LOS) alarm threshold (OSC transmitted) for port A or B.

Table 33: show chassis fpc optical-properties amplifier-chain ila osc Output Fields (continued)

Field Name	Field Description
oscDropLOSThreshold (0.01dBm)	The OSC LOS alarm threshold (OSC received) for port A or B.

Sample Output

show chassis fpc optical-properties amplifier-chain ila osc

```
user@host> show chassis fpc optical-properties amplifier-chain ila osc fpc-slot 3 ila-number 0
```

ILA OSC-A Information

```
oscIndex                1
Manufacture information node ILA OSC-A Information
oscEnable                0
oscAddPowerValue (0.01dBm) 249
oscDropPowerValue (0.01dBm) -893
oscAddLOSThreshold (0.01dBm) 0
oscDropLOSThreshold (0.01dBm) 0
```

ILA OSC-B Information

```
oscIndex                2
Manufacture information node ILA OSC-B Information
oscEnable                0
oscAddPowerValue (0.01dBm) 225
oscDropPowerValue (0.01dBm) -823
oscAddLOSThreshold (0.01dBm) 0
oscDropLOSThreshold (0.01dBm) 0
```

show chassis fpc optical-properties amplifier-chain ila voa

Syntax	<code>show chassis fpc optical-properties amplifier-chain ila voa fpc-slot <i>fpc-slot</i> ila-number <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Display the status information about a particular variable optical attenuator (VOA) for an optical inline amplifier (ILA). There are two VOAs (VOA A and VOA B) in the optical ILA.
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11 • Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33 • Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73
List of Sample Output	show chassis fpc optical-properties amplifier-chain ila voa on page 470
Output Fields	Table 34 on page 470 lists the output fields for the show chassis fpc optical-properties amplifier-chain ila voa command. Output fields are listed in the approximate order in which they appear.

Table 34: show chassis fpc optical-properties amplifier-chain ila voa Output Fields

Field Name	Field Description
voaIndex	VOA information for A (1) or B (2).
voaAttenuation (0.01db)	Displays the VOA value (dB).

Sample Output

show chassis fpc optical-properties amplifier-chain ila voa

```
user@host> show chassis fpc optical-properties amplifier-chain ila voa fpc-slot 3 ila-number 0
```

ILA VOA-A Information	
voaIndex	1
voaAttenuation (0.01db)	0
ILA VOA-B Information	
voaIndex	2
voaAttenuation (0.01db)	0

show chassis fpc optical-properties amplifier-chain ila alarms

Syntax	<code>show chassis fpc optical-properties amplifier-chain ila alarms fpc-slot <i>fpc-slot</i> ila-number <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Display information about the alarms for an optical inline amplifier (ILA).
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11 • Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33 • Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73 • Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45 • Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors on page 51
List of Sample Output	show chassis fpc optical-properties amplifier-chain ila alarms on page 476
Output Fields	Table 35 on page 472 lists the output fields for the show chassis fpc optical-properties amplifier-chain ila alarms command. Output fields are listed in the approximate order in which they appear.

Table 35: show chassis fpc optical-properties amplifier-chain ila alarms Output Fields

Field Name	Field Description
ILA Active Alarms	Alarms that are active (see Table 36 on page 473 for alarm descriptions and corrective actions).

[Table 36 on page 473](#) describes the optical ILA alarms and provides the corrective action.

Table 36: Alarm Descriptions

Alarm Name	Description	Corrective Action
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Board temperature abnormal	EDFA board temperature alarm. If the temperature is greater than the high threshold, or the temperature is less than the low threshold, an alarm is triggered.	Recover the temperature to normal range. If the temperature falls 1° C below the high threshold or exceeds the low threshold by 1° C, the alarm is cleared. <i>NOTE:</i> Hysteresis is 1° C
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Communication abnormal	Optical ILA internal alarm. When the communication between the X86 (processor) and the EDFA has a problem, an alarm is triggered.	Hard reset the optical ILA. If the hard reset fails to clear the alarm, return the device by using a Return Materials Authorization (RMA).
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Fan0 online abnormal	Fan 0 is missing.	Insert fan in fan slot 0.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Fan1 online abnormal	Fan 1 is missing.	Insert fan in fan slot 1.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Fan2 online abnormal	Fan 2 is missing.	Insert fan in fan slot 2.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Fan0 speed abnormal	Speed of fan in fan slot 0 is below 768 rotations per minute.	Clean the fan, or replace it.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Fan1 speed abnormal	Speed of fan in fan slot 1 is below 768 rotations per minute.	Clean the fan, or replace it.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Fan2 speed abnormal	Speed of fan in fan slot 2 is below 768 rotations per minute.	Clean the fan, or replace it.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Software version inconsistency	Module firmware version mismatch.	Upgrade submodules such as field-programmable gate array (FPGA).
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Power 1 abnormal	Power supply in slot 1 has failed, or is missing.	Replace the power supply in slot 1.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Power 0 abnormal	Power supply in slot 0 has failed, or is missing.	Replace the power supply in slot 0.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> Table error	This alarm is triggered when the manufacture/calibration data are missing.	Return the device by using an RMA.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B Case temperature	EDFA A-B case temperature alarm. When the EDFA case temperature is above 80° C, an alarm is triggered. A-B is the A to B direction (for example, east to west).	When the EDFA case temperature is below 80° C, the alarm is cleared.

Table 36: Alarm Descriptions (continued)

Alarm Name	Description	Corrective Action
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B RFL	EDFA A-B module reflection alarm. This alarm is triggered when there is high back reflection at the output port of the optical ILA. A-B is the A to B direction (for example, east to west).	Check that the fiber-optic cable is connected at the output port, and if it is connected, clean the fiber-optic cable and reconnect it.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B OOG	EDFA A-B is out of gain. This alarm is triggered if the difference between the gain setting and the actual achieved gain is more than 0.5 dB. A-B is the A to B direction (for example, east to west).	Wait for the optical ILA control loops to self-adjust.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B Pump0 EOL	EDFA A-B pump 0 has reached its end of life. A-B is the A to B direction (for example, east to west).	Reset the optical ILA, or return the device by using an RMA.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B Pump1 EOL	EDFA A-B pump 1 has reached its end of life. A-B is the A to B direction (for example, east to west).	Reset the optical ILA or return the device by using an RMA.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B Pump0 Temperature	EDFA A-B pump 0 temperature alarm. If the pump temperature is below 20° C or greater than 30° C, an alarm is triggered. E-ab is the A to B direction (for example, east to west)	When pump temperature is between 20° and 30° C, the alarm is cleared.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B Pump1 Temperature	EDFA A-B pump 1 temperature alarm. A-B is the A to B direction (for example, east to west). If the pump temperature is below 20° C or greater than 30° C, an alarm is triggered. A-B is the A to B direction (for example, east to west).	When pump temperature is between 20° and 30° C, the alarm is cleared.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B Input LOS	EDFA A-B input power alarm. If the input power is within 1.5 dB of the threshold for the minimum input power, an alarm is triggered. A-B is the A to B direction (for example, east to west).	When the input power is at least 1.5 dB greater than the threshold value, the alarm is cleared.

Table 36: Alarm Descriptions (continued)

Alarm Name	Description	Corrective Action
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B Output LOS	EDFA A-B output power alarm. If the output power is within 1.5 dB of the threshold for the minimum output power, an alarm is triggered. A-B is the A to B direction (for example, east to west).	When the output power is at least 1.5 dB greater than the threshold value, the alarm is cleared.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA A-B Calibration table error	EDFA A-B calibration table error.	Return the device by using an RMA.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A Case temperature error	EDFA B-A case temperature alarm. When the EDFA case temperature is above 80° C, this alarm is triggered. B-A is the B to A direction (for example, west to east).	When the EDFA case temperature is below 80° C, the alarm is cleared.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A RFL error	EDFA B-A module reflection alarm. This alarm is triggered when there is high back reflection at the output port of the optical ILA. B-A is the B to A direction (for example, west to east)	Check that the fiber-optic cable is connected at the output port, and if it is connected, clean the fiber-optic cable and reconnect it.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A OOG	EDFA B-A is out of gain. This alarm is triggered if the difference between the gain setting and the actual achieved gain is more than 0.5 dB. B-A is the B to A direction (for example, west to east).	Wait for the optical ILA control loops to self--adjust.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A Pump0 EOL	EDFA B-A pump 0 has reached its end of life. B-A is the B to A direction (for example, west to east).	Reset the optical ILA, or return the device by using an RMA.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A Pump1 EOL	EDFA B-A pump 1 has reached its end of life. B-A is the B to A direction (for example, west to east).	Reset the optical ILA, or return the device by using an RMA.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A Pump0 Temperature	EDFA B-A pump 0 temperature alarm. If the pump temperature is below 20° C or greater than 30° C, an alarm is triggered. B-A is the B to A direction (for example, west to east).	When pump temperature is between 20° and 30° C, the alarm is cleared.

Table 36: Alarm Descriptions (continued)

Alarm Name	Description	Corrective Action
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A Pump1 Temperature	EDFA B-A pump 1 temperature alarm. If the pump temperature is below 20° C or greater than 30° C, an alarm is triggered. B-A is the B to A direction (for example, west to east).	When pump temperature is between 20° and 30° C, the alarm is cleared.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A Input LOS	EDFA B-A input power alarm. If the input power is within 1.5 dB of the threshold for the minimum input power, an alarm is triggered. B-A is the B to A direction (for example, west to east).	When the input power is at least 1.5 dB greater than the threshold value, the alarm is cleared.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A Output LOS	EDFA E-ba output power alarm. If the input power is within 1.5 dB of the threshold for the minimum output power, an alarm is triggered. B-A is the B to A direction (for example, west to east).	When the output power is at least 1.5 dB greater than the threshold value, the alarm is cleared.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> EDFA B-A Calibration table error	EDFA B-A calibration table error.	Return the device by using an RMA.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> OSC A Add power LOS	The alarm is triggered if the add power value is within 1.5 dB from OSC minimum add power threshold value.	The alarm is cleared when the add power is at least 1.5 dB greater than the threshold value.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> OSC A Drop power LOS	The alarm is triggered if the drop power value is within 1.5 dB from the OSC minimum drop power threshold value.	The alarm is cleared when the drop power is at least 1.5 dB greater than the threshold value.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> OSC B Add power LOS	The alarm is triggered if the add power value is within 1.5 dB from the OSC minimum add power threshold.	The alarm is cleared when the add power is at least 1.5 dB greater than the threshold value.
IPLC <i>fpc-slot</i> ILA <i>ila-number</i> OSC B Drop power LOS	The alarm is triggered if the drop power value is within 1.5 dB from the OSC minimum drop power threshold value.	The alarm is cleared when the drop power is at least 1.5 dB greater than the threshold value.

Table 36 on page 473 describes the optical ILA alarms and provides the corrective action.

Sample Output

show chassis fpc optical-properties amplifier-chain ila alarms

```
user@host> show chassis fpc optical-properties amplifier-chain ila alarms fpc-slot 3 ila-number 0
```

```
ILA Active Alarms
IPLC 3 ILA 0 Power 0 abnormal
```

show chassis fpc optical-properties amplifier-chain ila pm-current

Syntax	<code>show chassis fpc optical-properties amplifier-chain ila pm-current fpc-slot <i>fpc-slot</i> ila-number <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Display the current performance monitors for the optical inline amplifier (ILA).
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The number assigned to the optical ILA.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11 • Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33 • Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73 • Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45 • Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors on page 51
List of Sample Output	show chassis fpc optical-properties amplifier-chain ila pm-current on page 480
Output Fields	Table 37 on page 478 lists the output fields for the <code>show chassis fpc optical-properties amplifier-chain ila pm-current</code> command. Output fields are listed in the approximate order in which they appear.

Table 37: show chassis fpc optical-properties pm-current Output Fields

Field Name	Field Description
PM	Performance monitor.
CURRENT	Current (instantaneous) value of the performance monitor during the 15-minute interval.
MIN	Minimum value measured.

show chassis fpc optical-properties amplifier-chain ila pm-interval

Syntax	<code>show chassis fpc optical-properties amplifier-chain ila pm-interval fpc-slot <i>fpc-slot</i> ila-number <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Displays current performance data during a 15-minute interval for the optical inline amplifier (ILA).
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—Optical ILA number in the chain.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11 • Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33 • Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73 • Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45 • Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors on page 51
List of Sample Output	show chassis fpc optical-properties amplifier-chain ila pm-interval on page 486
Output Fields	Table 41 on page 484 lists the output fields for the show chassis fpc optical-properties amplifier-chain ila pm-interval command. Output fields are listed in the approximate order in which they appear.

Table 41: show chassis fpc optical-properties amplifier-chain ila pm-interval Output Fields

Field Name	Field Description
PM	Performance monitor.
MIN	Minimum value measured.
MAX	Maximum value measured.

Table 41: show chassis fpc optical-properties amplifier-chain ila pm-interval Output Fields (continued)

Field Name	Field Description
AVG	Average value.
THRESHOLD (MIN) (MAX)	Threshold value set for the minimum and maximum values.
TCA-ENABLED (MIN) (MAX)	Threshold-crossing alert (TCA) set for the minimum and maximum values. Yes: TCA is enabled.
TCA-RAISED (MIN) (MAX)	TCA raised for the minimum and maximum values. Yes: TCA crosses the threshold.

Table 40 on page 482 lists the TCA names and descriptions.

Table 42: TCA Descriptions

Threshold Crossing Alert Name	Description
OSC-A Tx Power(0.01 dBm), OSC-B Tx Power(0.01 dBm)	Optical supervisory channel (OSC) A or B TX transmit power value. The unit is dBm.
OSC-A Rx Power(0.01 dBm), OSC-B Rx Power(0.01 dBm)	OSC (A or B) RX receive power value. The unit is dBm.
OSC-A Fiber Loss(0.01 dB), OSC-B Fiber Loss(0.01 dB)	OSC fiber loss value (for OSC A or B) The unit is dBm.
Line OUT VOA-A(0.01 dB), Line OUT VOA-B(0.01 dB)	Line out variable optical attenuator (VOA) value (A or B)
EDFA A-B Input Power(0.01 dBm), EDFA B-A Input Power(0.01 dBm)	Erbium-doped fiber amplifier (EDFA) input power, for EDFA A-B or B-A.
EDFA A-B Output Power(0.01 dBm), EDFA B-A Output Power(0.01 dBm)	Output optical power, for EDFA A-B or B-A. The unit is dBm.
EDFA A-B Signal Output Power(0.01 dBm), EDFA B-A Signal Output Power(0.01 dBm)	Signal output power for EDFA A-B or B-A.. The unit is dBm.
EDFA A-B Pump 0 Current(0.01mA), EDFA B-A Pump 0 Current(0.01mA)	Electric current for pump 0 for EDFA A-B or B-A.
EDFA A-B Pump 1 Current(0.01mA), EDFA B-A Pump 1 Current(0.01mA)	Electric current for pump 1 for EDFA A-B or B-A.
EDFA A-B Pump 0 Temperature(C), EDFA B-A Pump 0 Temperature(C)	EDFA's pump 0 temperature for EDFA A-B or B-A.
EDFA A-B Pump 1 Temperature(C), EDFA B-A Pump 1 Temperature(C)	EDFA's pump 1 temperature for EDFA A-B or B-A.

show chassis fpc optical-properties amplifier-chain ila pm-previousday

Syntax	<code>show chassis fpc optical-properties amplifier-chain ila pm-previousday fpc-slot <i>fpc-slot</i> ila-number <i>ila-number</i></code>
Release Information	Statement introduced in Junos OS Release 17.1R1 on PTX3000 integrated photonic line system.
Description	Display performance monitors for the previous 24-hour period for an optical inline amplifier (ILA).
Options	<p><i>fpc-slot</i>—Slot number of the FPC or PIC in which the integrated photonic line card (IPLC) module resides.</p> <p><i>ila-number</i>—The optical ILA number.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • Understanding Optical Supervisory Channel Communication in the Amplifier Chain on page 11 • Configuring the Optical Supervisory Channel Across the Amplifier Chain of the PTX3000 Integrated Photonic Line System on page 33 • Example: Configuring the Optical Supervisory Channel for the Integrated Photonic Line System and Optical Inline Amplifier on page 73 • Enabling and Configuring Thresholds on the Integrated Photonic Line Card Performance Monitors on page 45 • Enabling and Configuring Thresholds on the Optical Inline Amplifier Performance Monitors on page 51
List of Sample Output	show chassis fpc optical-properties amplifier-chain ila pm-previousday on page 490
Output Fields	Table 43 on page 488 lists the output fields for the show chassis fpc optical-properties amplifier-chain ila pm-previousday command. Output fields are listed in the approximate order in which they appear.

Table 43: show chassis fpc optical-properties amplifier-chain ila pm-previousday Output Fields

Field Name	Field Description
PM	Performance monitor.
MIN	Minimum value measured.
MAX	Maximum value measured.

Table 43: show chassis fpc optical-properties amplifier-chain ila pm-previousday Output Fields (continued)

Field Name	Field Description
AVG	Average value.
THRESHOLD (MIN) (MAX)	Threshold value set for the minimum and maximum values.
TCA-ENABLED (MIN) (MAX)	Threshold-crossing alert (TCA) set for the minimum and maximum values. Yes: TCA is enabled.
TCA-RAISED (MIN) (MAX)	TCA raised for the minimum and maximum values. Yes: TCA crosses the threshold.

Table 40 on page 482 lists the TCA names and descriptions.

Table 44: TCA Descriptions

Threshold Crossing Alert Name	Description
OSC-A Tx Power(0.01 dBm), OSC-B Tx Power(0.01 dBm)	Optical supervisory channel (OSC) A or B TX transmit power value. The unit is dBm.
OSC-A Rx Power(0.01 dBm), OSC-B Rx Power(0.01 dBm)	OSC (A or B) RX receive power value. The unit is dBm.
OSC-A Fiber Loss(0.01 dB), OSC-B Fiber Loss(0.01 dB)	OSC fiber loss value (for OSC A or B) The unit is dBm.
Line OUT VOA-A(0.01 dB), Line OUT VOA-B(0.01 dB)	Line out variable optical attenuator (VOA) value (A or B)
EDFA A-B Input Power(0.01 dBm), EDFA B-A Input Power(0.01 dBm)	Erbium-doped fiber amplifier (EDFA) input power, for EDFA A-B or B-A.
EDFA A-B Output Power(0.01 dBm), EDFA B-A Output Power(0.01 dBm)	Output optical power, for EDFA A-B or B-A. The unit is dBm.
EDFA A-B Signal Output Power(0.01 dBm), EDFA B-A Signal Output Power(0.01 dBm)	Signal output power for EDFA A-B or B-A.. The unit is dBm.
EDFA A-B Pump 0 Current(0.01mA), EDFA B-A Pump 0 Current(0.01mA)	Electric current for pump 0 for EDFA A-B or B-A.
EDFA A-B Pump 1 Current(0.01mA), EDFA B-A Pump 1 Current(0.01mA)	Electric current for pump 1 for EDFA A-B or B-A.
EDFA A-B Pump 0 Temperature(C), EDFA B-A Pump 0 Temperature(C)	EDFA's pump 0 temperature for EDFA A-B or B-A.
EDFA A-B Pump 1 Temperature(C), EDFA B-A Pump 1Temperature(C)	EDFA's pump 1 temperature for EDFA A-B or B-A.

