



Junos[®] OS

Overview for Routing Devices



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

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Junos® OS Overview for Routing Devices

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Documentation and Release Notes

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

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

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

Supported Platforms

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

- [ACX Series](#)
- [M Series](#)
- [MX Series](#)
- [T Series](#)
- [PTX Series](#)

Using the Examples in This Manual

If you want to use the examples in this manual, you can use the **load merge** or the **load merge relative** command. These commands cause the software to merge the incoming

configuration into the current candidate configuration. The example does not become active until you commit the candidate configuration.

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

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

Merging a Full Example

To merge a full example, follow these steps:

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

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

```
system {
  scripts {
    commit {
      file ex-script.xsl;
    }
  }
}
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 xv](#) defines notice icons used in this guide.

Table 1: Notice Icons







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

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

Table 2: Text and Syntax Conventions

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

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

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

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using either of the following methods:

- Online feedback rating system—On any page of the Juniper Networks TechLibrary site at <http://www.juniper.net/techpubs/index.html>, simply click the stars to rate the content, and use the pop-up form to provide us with information about your experience. Alternately, you can use the online feedback form at <http://www.juniper.net/techpubs/feedback/>.
- E-mail—Send your comments to techpubs-comments@juniper.net. Include the document or topic name, URL or page number, and software version (if applicable).

Requesting Technical Support

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

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

Self-Help Online Tools and Resources

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

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

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

Opening a Case with JTAC

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

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

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

PART 1

Junos OS Overview

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CHAPTER 1

Junos OS Software Overview

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Junos OS Overview

Juniper Networks provides high-performance network routers that create a responsive and trusted environment for accelerating the deployment of services and applications over a single network. The Junos operating system (Junos OS) is the foundation of these high-performance networks. Unlike other complex, monolithic software architectures, Junos OS incorporates key design and developmental differences to deliver increased network availability, operational efficiency, and flexibility. These key advantages are:

- One operating system
- One software release
- One modular software architecture

One Operating System

Unlike other network operating systems that share a common name but splinter into many different programs, Junos OS is a single, cohesive operating system that is shared across all routers and product lines. This enables Juniper Networks engineers to develop software features once and share the features across product lines simultaneously. Because features are common to a single source, generally these features are implemented the same way for all of the product lines, reducing the training required to

learn different tools and methods for each product. Furthermore, because all Juniper Networks products use the same code base, interoperability among products is not an issue.

One Software Release

Each new version of Junos OS is released concurrently for all product lines following a preset schedule. Each new version of software includes working features released in previous versions of the software and must achieve zero critical regression errors. This discipline ensures reliable operations for the entire release.

One Modular Software

Although individual architecture modules of Junos OS communicate through well-defined interfaces, each module runs in its own protected memory space, preventing one module from disrupting another. It also enables the independent restart of each module as necessary. This is in contrast to monolithic operating systems for which a malfunction in one module can ripple to other modules, possibly causing a full system crash or restart. This modular Junos OS architecture provides a high level of performance, high availability, security, and device scalability not found in other operating systems.

Junos OS is preinstalled on your Juniper Networks router when you receive it from the factory. When you first power on the router, all software starts automatically. You then configure the software so that the router can participate in your network.

You can upgrade the router software as new features are added or software problems are fixed. You obtain new software by downloading images from the Juniper Networks Support Web page onto your router or another system on your local network, then install the software upgrade onto the router.

Juniper Networks routers run only binaries supplied by Juniper Networks. Each Junos OS image includes a digitally signed manifest of executables, which are registered with the system only if the signature can be validated. Junos OS will not execute any binary without a registered fingerprint. This feature protects the system against unauthorized software and activity that might compromise the integrity of your router.

Related Documentation

- [Junos OS Configuration Basics on page 31](#)
- [Junos OS Architecture Overview on page 5](#)
- [Router Hardware Components on page 7](#)
- [Junos OS Commit Model for Router or Switch Configuration on page 35](#)
- [Junos OS Routing Engine Components and Processes on page 8](#)
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Junos OS Architecture Overview

This topic provides an overview of the Junos OS product and routing process architecture:

- [Product Architecture on page 5](#)
- [Routing Process Architecture on page 5](#)

Product Architecture

Junos OS provides IP routing software as well as software for interface, network, and chassis management. Junos OS runs on all Juniper Networks

J Series, M Series, MX Series, and T Series routers, as well as on other Juniper Networks products.

- J Series Services Routers are deployed at the remote edge of distributed networks.
- M Series Multiservice Edge routers are mostly deployed in small and medium cores in peering, route reflector, data center applications, or at the IP or MPLS edge to support high-performance Layer 2 and Layer 3 services. All M Series routers have redundant power and cooling, and the M10i, M20, M40e, M120, M160, and M320 routers have fully redundant hardware, including Routing Engines, switch interface components, and packet forwarding components. The M120 router also supports Forwarding Engine Board (FEB) failover. In the event of a FEB failure, a backup FEB can quickly take over packet forwarding.
- MX Series 3D Universal Edge Routers are Ethernet-optimized edge routers that provide both switching and carrier-class Ethernet routing. The MX Series routers support Dense Port Concentrators (DPCs), Modular Port Concentrator (MPCs) and Modular Interface Cards, and FPCs and PICs. For a detailed list of supported line cards see the [MX Series Interface Module Reference](#).
- T Series Core routers (T320, T640, T1600, T4000, TX Matrix, and TX Matrix Plus routers) are deployed at the core of provider networks. These routers have fully redundant hardware, including power and cooling, Routing Engines, and Switch Interface Boards (SIBs).

A *routing matrix* is a multichassis architecture composed of multiple routers, for example, one TX Matrix router connected to one to four T640 routers, or one TX Matrix Plus router connected to one to four T1600 routers. From the perspective of the user interface, the routing matrix appears as a single router. On a routing matrix composed of a TX Matrix router and T640 routers, the TX Matrix router controls all of the T640 routers. On a routing matrix composed of a TX Matrix Plus router and T1600 or T4000 routers, the TX Matrix Plus router controls all the T1600 or T4000 routers.

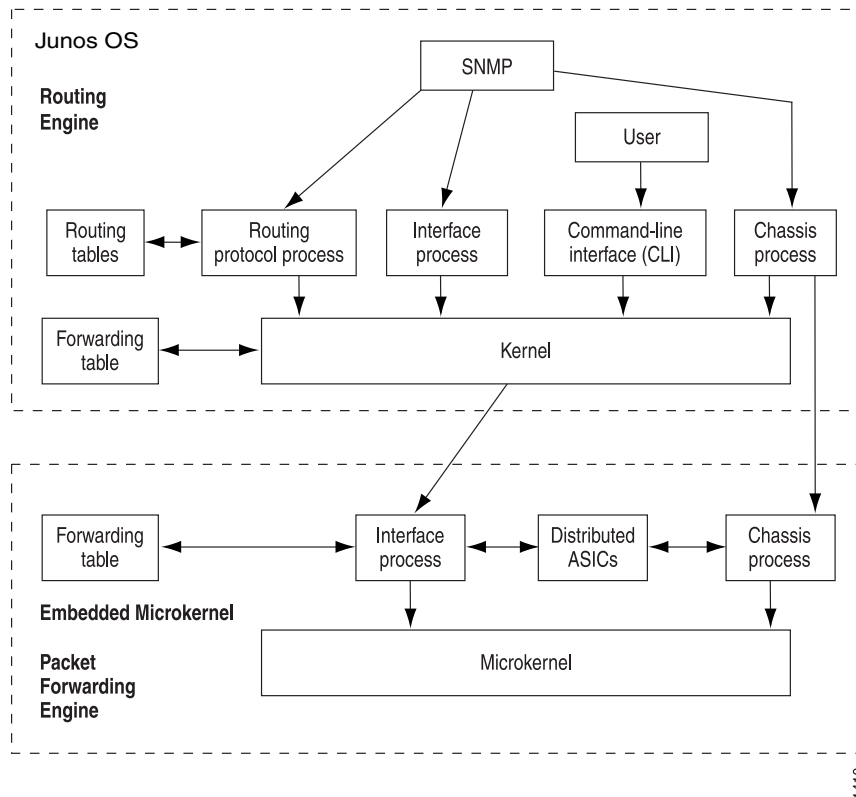
Routing Process Architecture

The routing process is handled by the following two components (see [Figure 1 on page 6](#)):

- Routing Engine
- Packet Forwarding Engine

Because this architecture separates control operations such as routing updates and system management from packet forwarding, the router can deliver superior performance and highly reliable Internet operation.

Figure 1: Product Architecture



Packet Forwarding Engine

The Packet Forwarding Engine uses application-specific integrated circuits (ASICs) to perform Layer 2 and Layer 3 packet switching, route lookups, and packet forwarding. The Packet Forwarding Engine forwards packets between input and output interfaces. The M Series routers (except the M7i, M40, and M320) have redundant Packet Forwarding Engines. The J Series Routers have a software-based Packet Forwarding Engine.

Routing Engine

The Routing Engine controls the routing updates and the system management. The Routing Engine consists of routing protocol software processes running inside a protected memory environment on a general-purpose computer platform. The Routing Engine handles all of the routing protocol processes and other software processes that control the routers' interfaces, some of the chassis components, system management, and user access to the router. These routers and software processes run on top of a kernel that interacts with the Packet Forwarding Engine. All M Series (except the M7i and M40) routers and T Series routers have redundant Routing Engines.

The Routing Engine has these features:

- Routing protocol packets processing—All routing protocol packets from the network are directed to the Routing Engine, and therefore do not unnecessarily delay the Packet Forwarding Engine.
- Software modularity—Software functions are in separate processes, so a failure of one process has little or no effect on other software processes.
- In-depth IP functionality—Each routing protocol is implemented with a complete set of IP features and provides full flexibility for advertising, filtering, and modifying routes. Routing policies are set according to route parameters, such as prefix, prefix lengths, and Border Gateway Protocol (BGP) attributes.
- Scalability—Junos OS routing tables are designed to hold all the routes used in current and near-future networks. Additionally, Junos OS can efficiently support large numbers of interfaces and virtual circuits.
- Management interfaces—System management is implemented with a command-line interface (CLI), a craft interface, and Simple Network Management Protocol (SNMP).
- Storage and change management—Configuration files, system images, and microcode are held and maintained in one primary and two secondary storage systems, permitting local or remote upgrades.
- Monitoring efficiency and flexibility—Alarms are generated and packets are counted without adversely affecting packet forwarding performance.

The Routing Engine constructs and maintains one or more routing tables. From the routing tables, the Routing Engine derives a table of active routes, called the *forwarding table*, which is then copied into the Packet Forwarding Engine. The forwarding table in the Packet Forwarding Engine can be updated without interrupting the router's forwarding.

In a Junos-FIPS environment, hardware configurations with two Routing Engines must use IPsec and a private routing instance for all communications between the Routing Engines. IPsec communication between the Routing Engines and Adaptive Services (AS) II FIPS PICs is also required.

Related Documentation

- [Junos OS Overview on page 3](#)

Router Hardware Components

Junos OS runs on Juniper Networks routers and Packet Transport Routers, including: ACX Series, J Series, M Series, MX Series, T Series, and PTX Series Packet Transport Routers. Each network device consists of the major hardware components as shown in [Table 3 on page 8](#). One or more of the major hardware components shown is used in each system.



NOTE: The ACX Series router is a single-board router with a built-in Routing Engine and one Packet Forwarding Engine. The “pseudo” FPCs and PICs are described in *ACX2000 and ACX2100 Routers Hardware and CLI Terminology Mapping*.

Table 3: Major Router Hardware Components

| | M Series | MX Series | T Series | PTX Series | J Series |
|----------------------------------|----------|-----------|----------|------------|----------|
| Routing Engines | X | X | X | X | X |
| Control Board | X | | X | X | |
| Switch Interface Board (SIB) | X | | X | X | |
| Forwarding Engine Board (FEB) | X | | | | |
| Power Supply | X | X | X | X | X |
| Cooling System | X | X | X | X | X |
| Dense Port Concentrators (DPC) | | X | | | |
| Switch Control Board (SCB) | | X | | | |
| Flexible PIC Concentrators (FPC) | X | X | X | X | |
| Physical Interface Module (PIM) | | | | | X |
| Physical Interface Card (PIC) | X | X | X | X | |

Flexible PIC Concentrators (FPCs) are each populated by PICs for various interface types. On some routers, the PICs are installed directly in the chassis.

For information about specific components in your router, see the hardware guide for your router.

Related Documentation

- [Junos OS Architecture Overview on page 5](#)

Junos OS Routing Engine Components and Processes

Junos OS runs on the Routing Engine. Junos OS consists of software processes that support Internet routing protocols, control router interfaces and the router chassis, and enable router system management. Junos OS processes run on top of a kernel, which enables communication between processes and provides a direct link to the Packet

Forwarding Engine software. Junos OS can be used to configure routing protocols and router interface properties, as well as to monitor and troubleshoot protocol and network connectivity problems.

The Routing Engine software consists of several software processes that control router functionality and a kernel that provides the communication among all the processes.

Routing Engine Kernel

The Routing Engine kernel provides the underlying infrastructure for all Junos OS processes, including providing the link between the routing tables and the Routing Engine's forwarding table. The kernel is also responsible for all communication with the Packet Forwarding Engine, which includes keeping the Packet Forwarding Engine's copy of the forwarding table synchronized with the master copy in the Routing Engine.

Initialization Process

When the router boots, an initialization process (init) starts and monitors all the other software processes.

If a software process terminates or fails to start when called, the init process attempts to restart it a limited number of times and logs any failure information for further investigation.

Management Process

The management process (mgd) manages the configuration of the router and all user commands. The management process is responsible for notifying other processes when a new configuration is committed. A dedicated management process handles Junos XML protocol XML requests from its client, which might be the CLI or any Junos XML protocol client.

Process Limits

There are limits to the total number of Junos OS processes that can run simultaneously on a system. There are also limits set for the maximum number of iterations of any single process. The limit for iterations of any single process can only be reached if the limit of overall system processes is not exceeded.

Access methods such as telnet and SSH spawn multiple system processes for each session created. For this reason, it might not be possible to simultaneously support the maximum number of access sessions for multiple services.

Routing Protocol Process

Within Junos OS, the routing protocol process (rpd) controls the routing protocols that run on the router. The rpd process starts all configured routing protocols and handles all routing messages. It maintains one or more routing tables, which consolidate the routing information learned from all routing protocols. From this routing information, the routing protocol process determines the active routes to network destinations and installs these routes into the Routing Engine's forwarding table. Finally, rpd implements routing policy, which enables you to control the routing information that is transferred between the

routing protocols and the routing table. Using routing policy, you can filter and limit the transfer of information as well as set properties associated with specific routes.

Interface Process

The Junos OS interface process enables you to configure and control the physical interface devices and logical interfaces present in a router. You can configure interface properties such as the interface location, for example, in which slot the Flexible PIC Concentrator (FPC) is installed and in which location on the FPC the Physical Interface Card (PIC) is installed, as well as the interface encapsulation and interface-specific properties. You can configure the interfaces currently present in the router, as well as interfaces that are not present but that you might add later.

The Junos OS interface process communicates through the Junos OS kernel with the interface process in the Packet Forwarding Engine, enabling Junos OS to track the status and condition of the router's interfaces.

Chassis Process

The Junos OS chassis process (chassisd) enables you to configure and control the properties of the router, including conditions that trigger alarms. The chassisd on the Routing Engine communicates directly with its peer processes running on the Packet Forwarding Engine.

SNMP and MIB II Processes

Junos OS supports the Simple Network Management Protocol (SNMP), which helps administrators monitor the state of a router. The software supports SNMP version 1 (SNMPv1), version 2 (SNMPv2, also known as version 2c, or v2c), and version 3 (SNMPv3). The Junos OS implementation of SNMP does not include any of the security features that were originally included in the IETF SNMP drafts but were later dropped. The SNMP software is controlled by the Junos OS SNMP and Management Information Base II (MIB II) processes, which consist of an SNMP master agent and various subagents.

Related Documentation • [Junos OS Architecture Overview on page 5](#)

List of Junos OS Processes

Junos OS consists of multiple processes that run on different platforms and have unique functions. The separation of functions provides operational stability, because each process accesses its own protected memory space.

[Table 4 on page 11](#) describes the processes that run only on MX Series 3D Universal Edge Routers.

Table 4: Junos OS Processes on MX Series Platform Only

| Process | Name | Description |
|------------------------------------|--------------|---|
| Clksync process (RE) | clksyncd | <p>Defines the operation of synchronous Ethernet and Precision Time Protocol (PTP) on a Juniper Networks MX Series router. The operation includes communication with the Packet Forwarding Engine (clock-sync module) to program and process clock events from the EEC clock.</p> <p>Operates the PTP stack, exchanges packets, and handles the configuration changes for the modular MX Series (MX80).</p> <p>Controls the configuration and monitoring of the overall operation of the PTP functionality for chassis-based MX Series platforms (MX240, MX480, and so on).</p> |
| Clock-sync process (PFE) | clock-sync | <p>Programs and monitors the modular interface card (MIC), the CPLD, and the EEC clock. Peer of the clksyncd process module.</p> <p>Captures all PTP and Synchronous Ethernet statistics on the Packet Forwarding Engine and provides them to the Routing Engine.</p> |
| Interchassis communication process | iccpd | Exchanges proprietary Junos OS messages between two Juniper Networks MX Series routers that take part in a multichassis link aggregation group (LAG). |
| Statistics agent process | stats-agentd | <p>Acts as a relay process to collect interface statistics for all software development kit (SDK) applications.</p> <p>Interacts with the pfed process to collect the logical interface statistics for SDK applications.</p> |

Table 5 on page 11 lists all the other processes that are common across platforms.

Table 5: Junos OS Processes

| Name | Process | Description |
|---------------------------|-------------------|---|
| Adaptive services process | adaptive-services | Manages the configuration for stateful firewall, Network Address Translation (NAT), intrusion detection service (IDS), and IP Security (IPsec) services on the Adaptive Services PIC. |
| Alarm control process | alarm-control | Configures the system alarm. |

Table 5: Junos OS Processes (*continued*)

| Name | Process | Description |
|--|---------------------------------|--|
| Access Node Control Protocol (ANCP) process | ancpd-service | Works with a special Internet Group Management Protocol (IGMP) session to collect outgoing interface mapping events in a scalable manner. |
| Application identification process | application-identification | Identifies an application using intrusion detection and prevention (IDP) to allow or deny traffic based on applications running on standard or nonstandard ports. |
| RADIUS accounting process | audit-process | Gathers statistical data that can be used for general network monitoring, analyzing, and tracking usage patterns, for billing a user based upon the amount of time or type of services accessed. |
| Auto-configuration process | auto-configuration | Configures interfaces automatically. |
| Boot process | bootp | Enables a router, switch, or interface to act as a Dynamic Host Configuration Protocol (DHCP) or bootstrap protocol (BOOTP) relay agent. DHCP relaying is disabled. |
| Captive portal content delivery process | captive-portal-content-delivery | Specifies the location to which a subscriber's initial Web browser session is redirected, enabling initial provisioning and service selection for the subscriber. |
| Universal Edge Layer 2 Tunneling Protocol process | ce-l2tp-service | (M10, M10i, M7i, and MX Series routers only) Establishes L2TP tunnels and Point-to-Point Protocol (PPP) sessions through L2TP tunnels. |
| Ethernet OAM connectivity fault management process | cfm | Monitors the physical link between two switches. |
| Chassis control process | chassis-control | Manages the chassis. |
| Class of service process | class-of-service | Controls the router's or switch's CoS configuration. |
| Ethernet clock synchronization process | clksyncd-service | Uses Synchronous Ethernet (SyncE) for external clock synchronization . |
| Craft interface I/O control process | craft-control | Controls the I/O of the craft interface. |
| Database replication process | database-replication | (EX Series switches and MX Series routers only) Manages the replication of updates from the master to the slave in the database management system. |
| Datapath trace process | datapath-trace-service | Traces the path taken by the packet through the network. |

Table 5: Junos OS Processes (*continued*)

| Name | Process | Description |
|---|---|--|
| Dynamic Host Configuration Protocol process | dhcp-service | (EX Series switches and MX Series routers only) Enables a DHCP server to allocate network IP addresses and deliver configuration settings to client hosts without user intervention. |
| Diameter process | diameter-service | Implements the Diameter protocol which uses the Transmission Control Protocol (TCP) and Stream Control Transmission Protocol (SCTP) instead of User Datagram Protocol (UDP), for monitoring the network. |
| Disk monitoring process | disk-monitoring | Checks the health of the hard disk drive on the Routing Engine. |
| Dynamic flow capture (DFC) process | dynamic-flow-capture | Controls the DFC configurations on Monitoring Services III PICs. |
| ECC parity errors logging process | ecc-error-logging | Logs the ECC parity errors into the memory on the Routing Engine. |
| Connectivity fault management (CFM) process | ethernet-connectivity-fault-management ethernet-cfm | Provides IEEE 802.1ag OAM CFM database information for CFM maintenance association end points (MEPs) in a CFM session. |
| Ethernet OAM Link-Fault-Management process | ethernet-link-fault-management | (EX Series switches and MX Series routers only) Provides the OAM link fault management (LFM) information for Ethernet interfaces. |
| Event processing process | event-processing or eventd | Configures the application to handle all generated events. |
| Firewall process | firewall | Manages the firewall configuration and enables accepting or rejecting packets that are transiting an interface on a router or switch. |
| General authentication process | general-authentication-service | (EX Series switches and MX Series routers only) Manages general authentication of a user. |
| Inter-Chassis Communication Protocol (ICCP) process | iccp-service | Synchronizes data within a set of two (or more) PEs that form a redundancy group (RG). |
| IDP policy process | idp-policy | Enables various attack detection and prevention techniques on traffic traversing the network. |
| Integrated Local Management Interface process | ilmi | Provides bidirectional exchange of management information between two Asynchronous Transfer Mode (ATM) interfaces across a physical connection. |

Table 5: Junos OS Processes (*continued*)

| Name | Process | Description |
|---|------------------------------------|---|
| Inet process | inet-process | Configures the IP multicast family. |
| Init process | init | Initializes the USB modem. |
| Interface control process | interface-control | Controls the router's or switch's physical interface devices and logical interfaces. |
| Kernel replication process | kernel-replication | Replicates the state of the backup Routing Engine when graceful Routing Engine switchover (GRES) is configured. |
| Layer 2 address flooding and learning process | l2-learning | Enables a router to: <ul style="list-style-type: none"> Learn unicast media access control (MAC) addresses to avoid flooding the packets to all the ports in a bridge domain. Create a source MAC entry in its source and destination MAC tables for each MAC address learned from packets received on ports that belong to the bridge domain. |
| Layer 2 Control Protocol process | l2cpd-service | Enables features such as Layer 2 protocol tunneling and nonstop bridging. |
| Link Aggregation Control Protocol process | lACP | The process: <ul style="list-style-type: none"> Provides a standardized means for exchanging information between partner systems on a link. Allows the link aggregation control instances to reach agreement on the identity of the Link Aggregation Group (LAG) to which the link belongs, and then to move the link to that LAG. Enables the transmission and reception processes for the link to function in an orderly manner. |
| Link management process | link-management | Manages traffic engineering links. |
| Local policy decision function process | local-policy-decision-function | Regulates the collection of statistics related to applications and application groups and tracking of information about dynamic subscribers and static interfaces. |
| Logical system multiplexer process | logical-system-mux or lrmuxd | Manages multiple instances of the routing protocols process (rpd) on a machine running logical routers. |
| MAC validation process | mac-validation | Configures MAC address validation that enables a router to validate if received packets contain a trusted IP source and an Ethernet MAC source address. |

Table 5: Junos OS Processes (*continued*)

| Name | Process | Description |
|--|------------------------------|--|
| Management Information Base II process | mib-process | Provides the router's MIB II agent. |
| Mobile IP process | mobile-ip | Configures Junos OS Mobile IP features. |
| NFS mount requests process | mountd-service | (Some EX Series switches and MX Series routers only) Completes internal NFS mount requests for MS-PIC and MS-MPC. |
| MPLS Periodic Traceroute process | mpls-traceroute | Enables tracing of forwarding equivalence classes (FECs) for LDP Layered Service Providers (LSPs). |
| Multiservice process | mspd | Configures multiservice edge routers. |
| Multicast Snooping process | multicast-snooping | (EX Series switches and MX Series routers only) Makes Layer 3 information, such as the MAC addresses of members of a multicast group, known to Layer 2 devices, such as VLAN switches. |
| DNS server process | named-service | Enables a router or a switch to resolve hostnames into addresses. |
| Bidirectional Forwarding Detection (BFD) process | neighbor-liveness | Displays the process that specifies the maximum length of time that the router waits for its neighbor to re-establish an LDP session. |
| Remote NFS server process | nfsd-service | Provides remote file access for applications that need NFS-based transport. |
| Network time process | ntp | Provides the mechanisms to synchronize time and coordinate time distribution in a large, diverse network. |
| Packet-triggered dynamic subscribers and policy control (PTCP) process | packet-triggered-subscribers | Enables the application of policies to dynamic subscribers that are controlled by a subscriber termination device. |
| Peer selection service process | peer-selection-service | Enables peer selection. |
| Periodic packet management process | periodic-packet-services | Processes a variety of time-sensitive periodic tasks so that other processes can more optimally direct their resources. |
| Packet Forwarding Engine process | pfed | Gathers and reports Packet Forwarding Engine statistics. |
| Packet gateway service process | pgcp-service or pgcpd | Configures the Packet Gateway Control Protocol (PGCP) that is required for the border gateway function (BGF) feature. |

Table 5: Junos OS Processes (*continued*)

| Name | Process | Description |
|--|--|--|
| Pragmatic General Multicast process | pgm | Enables a reliable transport layer for multicast applications. |
| PIC services logging process | pic-services-logging or fsad (the file system access daemon) | Enables PICs to send special logging information to the Routing Engine for archiving on the hard disk. |
| Point-to-Point Protocol (PPP) process | ppp | Enables transporting IP traffic across point-to-point links. |
| Universal edge PPP process | ppp-service | Enables transporting IP traffic across universal edge routers. |
| Point-to-Point Protocol over Ethernet process | pppoe | Allows users to connect to a network of hosts over a bridge or access concentrator. |
| Process health monitor process | process-monitor or pmond | <p>Extends the SNMP RMON alarm infrastructure to provide predefined monitoring for a selected set of object instances (such as file system usage, CPU usage, and memory usage) and dynamic object instances (such as Junos OS processes).</p> <p>NOTE: The process health monitor process is enabled by default on the Routing Engines of MX Series routers, even when no service interfaces are configured. To disable this process, include the disable statement at the [edit system processes process-monitor] hierarchy level.</p> |
| Redundancy interface management process | redundancy-interface-process | Serves as an active or backup process of an application server and can be configured to process traffic for more than one logical application server. |
| Remote operations process | remote-operations | Provides the ping and traceroute MIBs. |
| Resource cleanup process | resource-cleanup | Enables cleaning of resources by entities other than the application itself. |
| Routing process | routing | Directs forwarding on the basis of routing tables, which maintain a record of the routes to various network destinations. |
| Traffic sampling control process | sampling | Performs packet sampling based on particular input interfaces and various fields in the packet header. |
| Session Border Control (SBC) configuration process | sbc-configuration-process | Configures the session border controller functionality that enables delivery of voice, video, and other multimedia services with assured quality and security. |

Table 5: Junos OS Processes (*continued*)

| Name | Process | Description |
|--|---|---|
| SDK service process | sdk-service | Runs on the Routing Engine and enables communication between the SDK application and Junos OS. Although the SDK service process is present on the router, it is turned off by default. |
| Secure Neighbor Discovery (SND) protocol process | secure-neighbor-discovery or send | (EX Series switches and MX Series routers only) Provides support for protecting NDP messages. |
| Service Deployment System (SDX) process | service-deployment | Enables Junos OS to work with the Session and Resource Control (SRC) software. |
| Simple Network Management Protocol (SNMP) process | snmp | Enables the monitoring of network devices from a central location, and provides the router's or switch's SNMP master agent. |
| SONET Automatic Protection Switching (APS) process | sonet-aps | Monitors any SONET interface that participates in APS. |
| Static subscribers process | static-subscribers | Associates subscribers with statically configured interfaces, and provides dynamic service activation and activation for these subscribers. |
| Tunnel OAM process | tunnel-oamd | Enables the Operations, Administration, and Maintenance of Layer 2 tunneled networks. |
| Virtual Router Redundancy Protocol (VRRP) process | vrrp | (EX Series switches and MX Series routers only) Enables hosts on a LAN to make use of redundant routing platforms on that LAN without requiring more than the static configuration of a single default route on the hosts. |
| Watchdog timer process | watchdog | Enables the watchdog timer when Junos OS encounters a problem. |

Default Directories for Junos OS File Storage on the Router or Switch

Junos OS files are stored in the following directories on the router or switch:

- **/altconfig**—When you back up the currently running and active file system partitions on the router or switch to standby partitions using the **request system snapshot** command, the **/config** directory is backed up to **/altconfig**. Normally, the **/config** directory is on the CompactFlash card and **/altconfig** is on the hard disk.
- **/altroot**—When you back up the currently running and active file system partitions on the router to standby partitions using the **request system snapshot** command, the root file system (**/**) is backed up to **/altroot**. Normally, the root directory is on the CompactFlash card and **/altroot** is on the hard disk.

- **/config**—This directory is located on the primary boot device, that is, on the device from which the router or switch booted (generally the CompactFlash card (device **wd0**) or internal flash storage). This directory contains the current operational router or switch configuration and the last three committed configurations, in the files **juniper.conf**, **juniper.conf.1**, **juniper.conf.2**, and **juniper.conf.3**, respectively.
- **/var**—This directory is located either on the hard disk (device **wd2**) or internal flash storage. It contains the following subdirectories:
 - **/home**—Contains users' home directories, which are created when you create user access accounts. For users using SSH authentication, their **.ssh** file, which contains their SSH key, is placed in their home directory. When a user saves or loads a configuration file, that file is loaded from the user's home directory unless the user specifies a full pathname.
 - **/db/config**—Contains up to 46 additional previous versions of committed configurations, which are stored in the files **juniper.conf.4.gz** through **juniper.conf.49.gz**.
 - **/log**—Contains system log and tracing files.
 - **/tmp**—Contains core files. The software saves up to five core files, numbered from 0 through 4. File number 0 is the oldest core file and file number 4 is the newest core file. To preserve the oldest core files, the software overwrites the newest core file, number 4, with any subsequent core file.

Each router or switch ships with removable media (device **wfd0**) that contains a backup copy of Junos OS.

Directories on the Logical System

In addition to saving the configuration of logical systems in the current **juniper.conf** file, each logical system has an individual directory structure created in the **/var/logical-systems/logical-system-name** directory.

The **/var/logical-systems/logical-system-name** directory contains the following subdirectories:

- **/config**—Contains the current operational configuration specific to the logical system.
- **/log**—Contains system log and tracing files specific to the logical system.

To maintain backward compatibility for the log files with previous versions of Junos OS, a symbolic link (symlink) from the **/var/logs/logical-system-name** directory to the **/var/logical-systems/logical-system-name** directory is created when a logical system is configured.

- **/tmp**—Contains temporary files specific to the logical system.

This file system for each logical system enables logical system users to view trace logs and modify logical system files. Logical system administrators have full access to view and modify all files specific to the logical system.

Logical system users and administrators can save and load configuration files at the logical-system hierarchy level using the **save** and **load** configuration mode commands.

In addition, they can also issue the **show log**, **monitor**, and **file** operational mode commands at the logical-system hierarchy level.

Related Documentation • [Format for Specifying Filenames and URLs in Junos OS CLI Commands on page 53](#)

Junos OS Support for IPv4 Routing Protocols

Junos OS implements full IP routing functionality, providing support for IP version 4 (IPv4). The routing protocols are fully interoperable with existing IP routing protocols, and they have been developed to provide the scale and control necessary for the Internet core.

Junos OS provides the following routing and Multiprotocol Label Switching (MPLS) applications protocols:

- Unicast routing protocols:
 - BGP—Border Gateway Protocol, version 4, is an exterior gateway protocol (EGP) that guarantees loop-free exchange of routing information between routing domains (also called autonomous systems). BGP, in conjunction with Junos routing policy, provides a system of administrative checks and balances that can be used to implement peering and transit agreements.
 - ICMP—Internet Control Message Protocol router discovery enables hosts to discover the addresses of operational routers on the subnet.
 - IS-IS—Intermediate System-to-Intermediate System is a link-state interior gateway protocol (IGP) for IP networks that uses the shortest-path-first (SPF) algorithm, which also is referred to as the Dijkstra algorithm, to determine routes. The Junos IS-IS software is a new and complete implementation of the protocol, addressing issues of scale, convergence, and resilience.
 - OSPF—Open Shortest Path First, version 2, is an IGP that was developed for IP networks by the Internet Engineering Task Force (IETF). OSPF is a link-state protocol that makes routing decisions based on the SPF algorithm. The Junos OSPF software is a new and complete implementation of the protocol, addressing issues of scale, convergence, and resilience.
 - RIP—Routing Information Protocol, version 2, is a distance-vector IGP for IP networks based on the Bellman-Ford algorithm. RIP dynamically routes packets between a subscriber and a service provider without the subscriber having to configure BGP or participate in the service provider's IGP discovery process.
- Multicast routing protocols:
 - DVMRP—Distance Vector Multicast Routing Protocol is a dense-mode (flood-and-prune) multicast routing protocol.
 - IGMP—Internet Group Management Protocol, versions 1 and 2, is used to manage membership in multicast groups.
 - MSDP—Multicast Source Discovery Protocol enables multiple Protocol Independent Multicast (PIM) sparse mode domains to be joined. A rendezvous point (RP) in a

PIM sparse mode domain has a peer relationship with an RP in another domain, enabling it to discover multicast sources from other domains.

- PIM sparse mode and dense mode—Protocol-Independent Multicast is a multicast routing protocol. PIM sparse mode routes to multicast groups that might span wide-area and interdomain internets. PIM dense mode is a flood-and-prune protocol.
- SAP/SDP—Session Announcement Protocol and Session Description Protocol handle conference session announcements.
- MPLS applications protocols:
 - LDP—The Label Distribution Protocol provides a mechanism for distributing labels in non-traffic-engineered applications. LDP enables routers to establish label-switched paths (LSPs) through a network by mapping network layer routing information directly to data-link layer switched paths. LSPs created by LDP can also traverse LSPs created by the Resource Reservation Protocol (RSVP).
 - MPLS—Multiprotocol Label Switching, formerly known as tag switching, enables you to manually or dynamically configure LSPs through a network. It lets you direct traffic through particular paths rather than rely on the IGP's least-cost algorithm to choose a path.
 - RSVP—The Resource Reservation Protocol, version 1, provides a mechanism for engineering network traffic patterns that is independent of the shortest path decided upon by a routing protocol. RSVP itself is not a routing protocol; it operates with current and future unicast and multicast routing protocols. The primary purpose of the Junos RSVP software is to support dynamic signaling for MPLS LSPs.

**Related
Documentation**

- [Junos OS Overview on page 3](#)
- [Junos OS Support for IPv6 Routing Protocols on page 20](#)

Junos OS Support for IPv6 Routing Protocols

The Junos OS implements IP routing functionality, providing support for IP version 6 (IPv6). The routing protocols have been developed to provide the scale and control necessary for the Internet core.

The software supports the following unicast routing protocols:

- BGP—Border Gateway Protocol version 4, is an EGP that guarantees loop-free exchange of routing information between routing domains (also called autonomous systems). BGP, in conjunction with Junos routing policies, provides a system of administrative checks and balances that can be used to implement peering and transit agreements.
- ICMP—Internet Control Message Protocol router discovery enables hosts to discover the addresses of operational routers on the subnet.
- IS-IS—Intermediate System-to-Intermediate System is a link-state IGP for IP networks that uses the SPF algorithm, which also is referred to as the Dijkstra algorithm, to

determine routes. The Junos OS supports a new and complete implementation of the protocol, addressing issues of scale, convergence, and resilience.

- OSPF version 3 (OSPFv3) supports IPv6. The fundamental mechanisms of OSPF such as flooding, designated router (DR) election, area-based topologies, and the SPF calculations remain unchanged. Some differences exist either because of changes in protocol semantics between IPv4 and IPv6, or because of the need to handle the increased address size of IPv6.
- RIP—Routing Information Protocol version 2 is a distance-vector IGP for IP networks based on the Bellman-Ford algorithm. RIP dynamically routes packets between a subscriber and a service provider without the subscriber having to configure BGP or to participate in the service provider's IGP discovery process.

**Related
Documentation**

- [Junos OS Overview on page 3](#)
- [Junos OS Support for IPv4 Routing Protocols on page 19](#)

Junos OS Routing and Forwarding Tables

A major function of the Junos OS routing protocol process is to maintain the Routing Engine's routing tables and use these tables to determine the active routes to network destinations. The routing protocol process then installs these routes into the Routing Engine's forwarding table. The Junos OS kernel then copies this forwarding table to the Packet Forwarding Engine.

The routing protocol process maintains multiple routing tables. By default, it maintains the following three routing tables. You can configure additional routing tables to suit your requirements.

- Unicast routing table—Stores routing information for all unicast routing protocols running on the router. BGP, IS-IS, OSPF, and RIP all store their routing information in this routing table. You can configure additional routes, such as static routes, to be included in this routing table. BGP, IS-IS, OSPF, and RIP use the routes in this routing table when advertising routing information to their neighbors.
- Multicast routing table (cache)—Stores routing information for all the running multicast protocols. DVMRP and PIM both store their routing information in this routing table, and you can configure additional routes to be included in this routing table.
- MPLS routing table—Stores MPLS path and label information.

With each routing table, the routing protocol process uses the collected routing information to determine active routes to network destinations.

For unicast routes, the routing protocol process determines active routes by choosing the most preferred route, which is the route with the lowest preference value. By default, the route's preference value is simply a function of how the routing protocol process learned about the route. You can modify the default preference value using routing policy and with software configuration parameters.

For multicast traffic, the routing protocol process determines active routes based on traffic flow and other parameters specified by the multicast routing protocol algorithms. The routing protocol process then installs one or more active routes to each network destination into the Routing Engine's forwarding table.

Related Documentation

- [Routing Policy Overview on page 22](#)

Routing Policy Overview

By default, all routing protocols place their routes into the routing table. When advertising routes, the routing protocols by default advertise only a limited set of routes from the routing table. Specifically, each routing protocol exports only the active routes that were learned by that protocol. In addition, the interior gateway protocols (IS-IS, OSPF, and RIP) export the direct (interface) routes for the interfaces on which they are explicitly configured.

You can control the routes that a protocol places into each table and the routes from that table that the protocol advertises. You do this by defining one or more routing policies and then applying them to the specific routing protocol.

Routing policies applied when the routing protocol places routes into the routing table are referred to as *import policies* because the routes are being imported into the routing table. Policies applied when the routing protocol is advertising routes that are in the routing table are referred to as *export policies* because the routes are being exported from the routing table. In other words, the terms *import* and *export* are used with respect to the routing table.

A routing policy enables you to control (filter) which routes a routing protocol imports into the routing table and which routes a routing protocol exports from the routing table. A routing policy also enables you to set the information associated with a route as it is being imported into or exported from the routing table. Filtering imported routes enables you to control the routes used to determine active routes. Filtering routes being exported from the routing table enables you to control the routes that a protocol advertises to its neighbors.

You implement routing policy by defining policies. A policy specifies the conditions to use to match a route and the action to perform on the route when a match occurs. For example, when a routing table imports routing information from a routing protocol, a routing policy might modify the route's preference, mark the route with a color to identify it and allow it to be manipulated later, or prevent the route from even being installed in a routing table. When a routing table exports routes into a routing protocol, a policy might assign metric values, modify the BGP community information, tag the route with additional information, or prevent the route from being exported altogether. You also can define policies for redistributing the routes learned from one protocol into another protocol.

Related Documentation

- [Junos OS Routing and Forwarding Tables on page 21](#)
- [Junos OS Support for IPv4 Routing Protocols on page 19](#)
- [Junos OS Support for IPv6 Routing Protocols on page 20](#)

Junos OS Support for VPNs

Junos OS supports several types of virtual private networks (VPNs):

- **Layer 2 VPNs**—A Layer 2 VPN links a set of sites that share routing information, and whose connectivity is controlled by a collection of policies. A Layer 2 VPN is not aware of routes within a customer's network. It simply provides private links between a customer's sites over the service provider's existing public Internet backbone.
- **Layer 3 VPNs**—A Layer 3 VPN is the same thing as a Layer 2 VPN, but it is aware of routes within a customer's network, requiring more configuration on the part of the service provider than a Layer 2 VPN. The sites that make up a Layer 3 VPN are connected over a service provider's existing public Internet backbone.
- **Interprovider VPNs**—An interprovider VPN supplies connectivity between two VPNs in separate autonomous systems (ASs). This functionality can be used by a VPN customer with connections to several Internet service providers (ISPs), or different connections to the same ISP in various geographic regions.
- **Carrier-of-carrier VPNs**—Carrier-of-carrier VPNs allow a VPN service provider to supply VPN service to a customer who is also a service provider. The latter service provider supplies Internet or VPN service to an end customer.

Related Documentation

- [Junos OS Overview on page 3](#)

CHAPTER 2

Junos OS Security Overview

- [Junos OS Features for Router Security on page 25](#)
- [Junos OS Default Settings for Router Security on page 29](#)

Junos OS Features for Router Security

Router security consists of three major elements: physical security of the router, operating system security, and security that can be affected through configuration. Physical security involves restricting access to the router. Exploits that can easily be prevented from remote locations are extremely difficult or impossible to prevent if an attacker can gain access to the router's management port or console. The inherent security of Junos OS also plays an important role in router security. Junos OS is extremely stable and robust. Junos OS also provides features to protect against attacks, allowing you to configure the router to minimize vulnerabilities.

The following are Junos OS features available to improve router security:

- [Methods of Remote Access for Router Management on page 25](#)
- [Junos OS Supported Protocols and Methods for User Authentication on page 26](#)
- [Junos OS Plain-Text Password Requirements on page 27](#)
- [Junos OS Support for Routing Protocol Security Features and IPsec on page 27](#)
- [Junos OS Support for Firewall Filters on page 28](#)
- [Junos OS Support Distributed Denial-of-Service Protection on page 28](#)
- [Junos OS Auditing Support for Security on page 29](#)

Methods of Remote Access for Router Management

When you first install Junos OS, all remote access to the router is disabled, thereby ensuring that remote access is possible only if deliberately enabled by an authorized user. You can establish remote communication with a router in one of the following ways:

- **Out-of-band management**—Enables connection to the router through an interface dedicated to router management. Juniper Networks routers support out-of-band management with a dedicated management Ethernet interface, as well as EIA-232 console and auxiliary ports. On all routers other than the TX Matrix Plus router, T1600 router, T1600 or T4000 routers connected to a TX Matrix Plus router in a routing matrix, T640 routers with a Routing Engine supporting 64-bit Junos OS, and PTX Series Packet

Transport Routers, the management interface is fxp0. On a TX Matrix Plus router, T1600 router, T1600 or T4000 routers in a routing matrix, T640 routers with a Routing Engine supporting 64-bit Junos OS, and PTX Series Packet Transport Routers, the management Ethernet Interface is labeled em0. The management Ethernet interface connects directly to the Routing Engine. No transit traffic is allowed through this interface, providing complete separation of customer and management traffic and ensuring that congestion or failures in the transit network do not affect the management of the router.

- Inband management—Enables connection to the routers using the same interfaces through which customer traffic flows. Although this approach is simple and requires no dedicated management resources, it has some disadvantages:
 - Management flows and transit traffic flows are mixed together. Any attack traffic that is mixed with the normal traffic can affect the communication with the router.
 - The links between router components might not be totally trustworthy, leading to the possibility of wiretapping and replay attacks.

For management access to the router, the standard ways to communicate with the router from a remote console are with Telnet and SSH. SSH provides secure encrypted communications and is therefore useful for inband router management. Telnet provides unencrypted, and therefore less secure, access to the router.

Junos OS Supported Protocols and Methods for User Authentication

On a router, you can create local user login accounts to control who can log in to the router and the access privileges they have. A password, either an SSH key or a Message Digest 5 (MD5) password, is associated with each login account. To define access privileges, you create login classes into which you group users with similar jobs or job functions. You use these classes to explicitly define what commands their users are and are not allowed to issue while logged in to the router.

The management of multiple routers by many different personnel can create a user account management problem. One solution is to use a central authentication service to simplify account management, creating and deleting user accounts only on a single, central server. A central authentication system also simplifies the use of one-time password systems such as SecureID, which offer protection against password sniffing and password replay attacks (attacks in which someone uses a captured password to pose as a router administrator).

Junos OS supports two protocols for central authentication of users on multiple routers:

- Terminal Access Controller Access Control System Plus (TACACS+)
- Remote Authentication Dial-In User Service (RADIUS), a multivendor IETF standard whose features are more widely accepted than those of TACACS+ or other proprietary systems. All one-time-password system vendors support RADIUS.

Junos OS also supports the following authentication methods:

- Internet Protocol Security (IPsec). IPsec architecture provides a security suite for the IPv4 and IPv6 network layers. The suite provides such functionality as authentication

of origin, data integrity, confidentiality, replay protection, and nonrepudiation of source. In addition to IPsec, Junos OS supports the Internet Key Exchange (IKE), which defines mechanisms for key generation and exchange, and manages security associations (SAs).

- MD5 authentication of MSDP peering sessions. This authentication provides protection against spoofed packets being introduced into a peering session.
- SNMPv3 authentication and encryption. SNMPv3 uses the user-based security model (USM) for message security and the view-based access control model (VACM) for access control. USM specifies authentication and encryption. VACM specifies access-control rules.

Junos OS Plain-Text Password Requirements

Junos OS has special requirements when you create plain-text passwords on a router. The default requirements for plain-text passwords are as follows:

- The password must be between 6 and 128 characters long.
- You can include uppercase letters, lowercase letters, numbers, punctuation marks, and any of the following special characters:
! @ # \$ % ^ & * , + = < > ; ;
Control characters are not recommended.
- The password must contain at least one change of case or character class.

You can change the requirements for plain-text passwords.

You can include the **plain-text-password** statement at the following hierarchy levels:

- [edit system diag-port-authentication]
- [edit system pic-console-authentication]
- [edit system root-authentication]
- [edit system login user *username* authentication]

Junos OS Support for Routing Protocol Security Features and IPsec

The main task of a router is to forward user traffic toward its intended destination based on the information in the router's routing and forwarding tables. You can configure routing policies that define the flows of routing information through the network, controlling which routes the routing protocols place in the routing tables and which routes they advertise from the tables. You can also use routing policies to change specific route characteristics, change the BGP route flap-damping values, perform per-packet load balancing, and enable class of service (CoS).

Attackers can send forged protocol packets to a router with the intent of changing or corrupting the contents of its routing table or other databases, which can degrade the functionality of the router. To prevent such attacks, you must ensure that routers form routing protocol peering or neighboring relationships with trusted peers. One way to do this is by authenticating routing protocol messages. The Junos OS BGP, IS-IS, OSPF, RIP,

and RSVP protocols support HMAC-MD5 authentication, which uses a secret key combined with the data being protected to compute a hash. When the protocols send messages, the computed hash is transmitted with the data. The receiver uses the matching key to validate the message hash.

Junos OS supports the IPsec security suite for the IPv4 and IPv6 network layers. The suite provides such functionality as authentication of origin, data integrity, confidentiality, replay protection, and nonrepudiation of source. Junos OS also supports IKE, which defines mechanisms for key generation and exchange, and manages SAs.

Junos OS Support for Firewall Filters

Firewall filters allow you to control packets transiting the router to a network destination and packets destined for and sent by the router. You can configure firewall filters to control which data packets are accepted on and transmitted from the physical interfaces, and which local packets are transmitted from the physical interfaces and the Routing Engine. Firewall filters provide a means of protecting your router from excessive traffic. Firewall filters that control local packets can also protect your router from external aggressions, such as DoS attacks.

To protect the Routing Engine, you can configure a firewall filter only on the router's loopback interface. Adding or modifying filters for each interface on the router is not necessary. You can design firewall filters to protect against ICMP and Transmission Control Protocol (TCP) connection request (SYN) floods and to rate-limit traffic being sent to the Routing Engine.

Junos OS Support Distributed Denial-of-Service Protection

A denial-of-service attack is any attempt to deny valid users access to network or server resources by using up all the resources of the network element or server. Distributed denial-of-service attacks involve an attack from multiple sources, enabling a much greater amount of traffic to attack the network. The attacks typically use network protocol control packets to trigger a large number of exceptions to the router's control plane. This results in an excessive processing load that disrupts normal network operations.

Junos OS DDoS protection enables the router to continue functioning while under an attack. It identifies and suppresses malicious control packets while enabling legitimate control traffic to be processed. A single point of DDoS protection management enables network administrators to customize profiles for their network control traffic. Protection and monitoring persists across graceful Routing Engine switchover (GRES) and unified in-service-software-upgrade (ISSU) switchovers. Protection is not diminished as the number of subscribers increases.

To protect against DDoS attacks, you can configure policers for host-bound exception traffic. The policers specify rate limits for individual types of protocol control packets or for all control packet types for a protocol. You can monitor policer actions for packet types and protocol groups at the level of the router, Routing Engine, and line cards. You can also control logging of policer events.

Flow detection is an enhancement to DDoS protection that supplements the DDoS policer hierarchies by using a limited amount of hardware resources to monitor the arrival rate

of host-bound flows of control traffic. Flow detection is much more scalable than a solution based on filter policers. Filter policers track all flows, which consumes a considerable amount of resources. In contrast, flow detection only tracks flows it identifies as suspicious, using far fewer resources to do so.

The flow detection application has two interrelated components, detection and tracking. Detection is the process where flows suspected of being improper are identified and subsequently controlled. Tracking is the process where flows are tracked to determine whether they are truly hostile and when these flows recover to within acceptable limits.

Junos OS Auditing Support for Security

Junos OS logs significant events that occur on the router and within the network. Although logging itself does not increase security, you can use the system logs to monitor the effectiveness of your security policies and router configurations. You can also use the logs when reacting to a continued and deliberate attack as a means of identifying the source address, router, or port of the attacker's traffic. You can configure the logging of different levels of events, from only critical events to all events, including informational events. You can then inspect the contents of the system log files either in real time or later.

Debugging and troubleshooting are much easier when the timestamps in the system log files of all routers are synchronized, because events that span the network might be correlated with synchronous entries in multiple logs. Junos OS supports the Network Time Protocol (NTP), which you can enable on the router to synchronize the system clocks of routers and other networking equipment. By default, NTP operates in an unauthenticated mode. You can configure various types of authentication, including an HMAC-MD5 scheme.

- Related Documentation**
- *Overview of IPsec*
 - *Junos OS System Log Overview*

Junos OS Default Settings for Router Security

Junos OS protects against common router security weaknesses with the following default settings:

- Junos OS does not forward directed broadcast messages. Directed broadcast services send ping requests from a spoofed source address to a broadcast address and can be used to attack other Internet users. For example, if broadcast ping messages were allowed on the 200.0.0.0/24 network, a single ping request could result in up to 254 responses to the supposed source of the ping. The source would actually become the victim of a denial-of-service (DoS) attack.
- Only console access to the router is enabled by default. Remote management access to the router and all management access protocols, including Telnet, FTP, and SSH (Secure Shell), are disabled by default.
- Junos OS does not support the SNMP set capability for editing configuration data. Although the software supports the SNMP set capability for monitoring and

troubleshooting the network, this support exposes no known security issues. (You can configure the software to disable this SNMP set capability.)

- Junos OS ignores martian addresses that contain the following prefixes: 0.0.0.0/8, 127.0.0.0/8, 128.0.0.0/16, 191.255.0.0/16, 192.0.0.0/24, 223.255.55.0/24, and 240.0.0.0/4. Martian addresses are reserved host or network addresses about which all routing information should be ignored.

CHAPTER 3

Junos OS Configuration Overview

- [Junos OS Configuration Basics on page 31](#)
- [Methods for Configuring Junos OS on page 32](#)
- [Junos OS Configuration from External Devices on page 35](#)
- [Junos OS Commit Model for Router or Switch Configuration on page 35](#)
- [Understanding Junos OS Configuration Groups on page 36](#)

Junos OS Configuration Basics

Your router comes with Junos OS installed on it. When you power on the router, all software starts automatically. You simply need to configure the software so that the router will be ready to participate in the network.

To configure the Junos OS, you must specify a hierarchy of configuration statements that define the preferred software properties. You can configure all properties of the Junos OS, including interfaces, general routing information, routing protocols, and user access, as well as some system hardware properties. After you have created a candidate configuration, you commit the configuration to be evaluated and activated by the Junos OS.

Related Documentation

- [Junos OS Configuration from External Devices on page 35](#)
- [Methods for Configuring Junos OS on page 32](#)
- [Initial Router or Switch Configuration Using Junos OS on page 41](#)

Methods for Configuring Junos OS

You can use any of the methods shown in [Table 6 on page 32](#) to configure Junos OS.

Table 6: Methods for Configuring Junos OS

| Method | Description |
|---|--|
| Command-line interface (CLI) | Create the configuration for the device using the CLI. You can enter commands from a single command line, and scroll through recently executed commands. |
| ASCII file | Load an ASCII file containing a configuration that you created earlier, either on this system or on another system. You can then activate and run the configuration file, or you can edit it using the CLI and then activate it. |
| J-Web graphical user interface (GUI) | Use the J-Web GUI to configure the device. J-Web enables you to monitor, configure, troubleshoot, and manage the router on a client by means of a Web browser. The J-Web GUI is preinstalled on J Series Routers and is an optional software package that can be installed on M Series and T Series routers. J-Web is not available for the QFX Series. |
| Junos XML management protocol (API) | Use Junos XML protocol Perl client modules to develop custom applications for configuring information on devices that run Junos OS. Client applications use the Junos XML management protocol to request and change configuration information on Juniper Networks J Series, M Series, and T Series routers. The Junos XML management protocol is customized for Junos OS, and operations in the API are equivalent to those in the Junos OS CLI. |
| NETCONF application programming interface (API) | Use NETCONF Perl client modules to develop custom applications for configuring information on devices that run Junos OS. Client applications use the NETCONF XML management protocol to request and change configuration information on Juniper Networks J Series, M Series, and T Series routers. The NETCONF XML management protocol includes features that accommodate the configuration data models of multiple vendors. |
| Configuration commit scripts | Create scripts that run at commit time to enforce custom configuration rules. Commit scripts are written in Extensible Stylesheet Language Transformations (XSLT). Commit scripts are not available for the QFX Series. |

The following sections contain complete descriptions of the methods you can use to configure Junos OS:

- [Junos OS Command-Line Interface on page 33](#)
- [ASCII File on page 33](#)
- [J-Web Package on page 33](#)
- [Junos XML Management Protocol Software on page 34](#)

- [NETCONF XML Management Protocol Software on page 34](#)
- [Configuration Commit Scripts on page 34](#)

Junos OS Command-Line Interface

The Junos OS CLI is a straightforward command interface. You use Emacs-style keyboard sequences to move around on a command line and scroll through a buffer that contains recently executed commands. You type commands on a single line, and the commands are executed when you press the Enter key. The CLI also provides command help and command completion. For more information about the CLI, see the *CLI User Guide* and the [CLI Explorer](#).

ASCII File

You can load an ASCII file containing a configuration that you created earlier, either on this system or another system. You can then activate and run the configuration file as is, or you can edit it using the CLI and then activate it.

J-Web Package

As an alternative to entering CLI commands, Junos OS supports the J-Web GUI. The J-Web user interface enables you to monitor, configure, troubleshoot, and manage the router on a client by means of a Web browser with Hypertext Transfer Protocol (HTTP) or HTTP over Secure Sockets Layer (HTTPS) enabled.

The J-Web user interface is preinstalled on J Series Routers. It is provided as an optional, licensed software package (jweb package) on M Series and T Series routers. The jweb package is not included in jinstall and jbundle software bundles. It must be installed separately. To install the package on M Series and T Series routers, follow the procedure described in the *Installation and Upgrade Guide*.

J-Web supports weak (56-bit) encryption by default. This enables international customers to install J-Web and use HTTPS connections for J-Web access. Domestic customers can also install the jcrypto strong encryption package. This package automatically overrides the weak encryption. For more information about the J-Web GUI, see the *J-Web Interface User Guide*.



NOTE: Because the J-Web package is bundled separately from other packages, it is possible to have a version mismatch between J-Web and other Junos OS packages you have installed.

To check for a version mismatch, use the `show system alarms` CLI command. If the version number does not match exactly, a system alarm appears. For example, if you install the 7.4R1.2 jroute package and the 7.4R1.1 jweb package, an alarm is activated. For more information on the `show system alarms` command, see the [CLI Explorer](#).

Junos XML Management Protocol Software

The Junos XML management protocol is an Extensible Markup Language (XML) application that client applications use to request and change configuration information on Juniper Networks J Series, M Series, MX Series, and T Series routers. This API is customized for Junos OS, and operations in the API are equivalent to Junos OS CLI configuration mode commands. The Junos XML management protocol includes a set of Perl modules that enable client applications to communicate with a Junos XML protocol server on the router. The Perl modules are used to develop custom applications for configuring and monitoring Junos OS.

For a complete description of how to use Junos XML and Junos XML management protocol software, see the *Junos XML Management Protocol Developer Guide*.

NETCONF XML Management Protocol Software

The NETCONF XML management protocol is an Extensible Markup Language (XML) application that client applications can use to request and change configuration information on Juniper Networks J Series, M Series, MX Series, and T Series routers. This API is customized for Junos OS, and includes features that accommodate the configuration data models of multiple vendors. The NETCONF XML management protocol includes a set of Perl modules that enable client applications to communicate with a NETCONF server on the router. The Perl modules are used to develop custom applications for configuring and monitoring Junos OS.

For a complete description of how to use Junos XML and NETCONF XML management protocol software, see the *NETCONF XML Management Protocol Developer Guide*.

Configuration Commit Scripts

You can create and use scripts that run at commit time to enforce custom configuration rules. If a configuration breaks the custom rules, the script can generate actions that the Junos OS performs. These actions include:

- Generating custom error messages
- Generating custom warning messages
- Generating custom system log messages
- Making changes to the configuration

Configuration commit scripts also enable you to create macros, which expand simplified custom aliases for frequently used configuration statements into standard Junos OS configuration statements. Commit scripts are written in Extensible Stylesheet Language Transformations (XSLT). For more information, see the *Automation Scripting Feature Guide*.

Related Documentation

- [Junos OS Configuration from External Devices on page 35](#)

Junos OS Configuration from External Devices

You can configure the router from a system console connected to the router's console port or by using Telnet to access the router remotely. The router provides three ports on the craft interface for connecting external management devices to the Routing Engine and the Junos OS:

- Console port—Connects a system console using an RS-232 serial cable.
- Auxiliary port—Connects a laptop or modem using an RS-232 serial cable.
- Ethernet management port—Connects the Routing Engine to a management LAN (or any other device that plugs into an Ethernet connection) for remote management through a PC or other client device. The Ethernet port is 10/100 megabits per second (Mbps) autosensing and requires an RJ-45 connector.

Related Documentation

- [Methods for Configuring Junos OS on page 32](#)
- [Configuring Junos OS to Set Console and Auxiliary Port Properties on page 64](#)

Junos OS Commit Model for Router or Switch Configuration

The router or switch configuration is saved using a commit model—a candidate configuration is modified as desired and then committed to the system. When a configuration is committed, the router or switch checks the configuration for syntax errors, and if no errors are found, the configuration is saved as **juniper.conf.gz** and activated. The formerly active configuration file is saved as the first rollback configuration file (**juniper.conf.1.gz**), and any other rollback configuration files are incremented by 1. For example, **juniper.conf.1.gz** is incremented to **juniper.conf.2.gz**, making it the second rollback configuration file. The router or switch can have a maximum of 49 rollback configurations (numbered 1 through 49) saved on the system.

On the router or switch, the active configuration file and the first three rollback files (**juniper.conf.gz.1**, **juniper.conf.gz.2**, **juniper.conf.gz.3**) are located in the **/config** directory. If the file **rescue.conf.gz** is saved on the system, this file should also be saved in the **/config** directory. The factory default files are located in the **/etc/config** directory.

There are two mechanisms used to propagate the configurations between Routing Engines within a router or switch:

- Synchronization—Propagates a configuration from one Routing Engine to a second Routing Engine within the same router or switch chassis.



NOTE: The QFX3500 switch has only one Routing Engine.

To synchronize configurations, use the **commit synchronize** CLI command. If one of the Routing Engines is locked, the synchronization fails. If synchronization fails because of

a locked configuration file, you can use the **commit synchronize force** command. This command overrides the lock and synchronizes the configuration files.

- **Distribution**—Propagates a configuration across the routing plane on a multichassis router or switch. Distribution occurs automatically. There is no user command available to control the distribution process. If a configuration is locked during a distribution of a configuration, the locked configuration does not receive the distributed configuration file, so the synchronization fails. You need to clear the lock before the configuration and resynchronize the routing planes.



NOTE: When you use the **commit synchronize force** CLI command on a multichassis platform, the forced synchronization of the configuration files does not affect the distribution of the configuration file across the routing plane. If a configuration file is locked on a router or switch remote from the router or switch where the command was issued, the synchronization fails on the remote router or switch. You need to clear the lock and reissue the synchronization command.

Related Documentation

- [Configuring Junos OS for the First Time on a Router or Switch with a Single Routing Engine on page 43](#)
- *commit*

Understanding Junos OS Configuration Groups

This topic provides an overview of the configuration groups feature and the inheritance model in Junos OS, and contains the following sections:

- [Configuration Groups Overview on page 36](#)
- [Inheritance Model on page 37](#)
- [Configuring Configuration Groups on page 37](#)

Configuration Groups Overview

The configuration groups feature in Junos OS enables you to create a group containing configuration statements and to direct the inheritance of that group's statements in the rest of the configuration. The same group can be applied to different sections of the configuration, and different sections of one group's configuration statements can be inherited in different places in the configuration.

Configuration groups enable you to create smaller, more logically constructed configuration files, making it easier to configure and maintain Junos OS. For example, you can group statements that are repeated in many places in the configuration, such as when configuring interfaces, and thereby limit updates to just the group.

You can also use wildcards in a configuration group to allow configuration data to be inherited by any object that matches a wildcard expression.

The configuration group mechanism is separate from the grouping mechanisms used elsewhere in the configuration, such as BGP groups. Configuration groups provide a generic mechanism that can be used throughout the configuration but that are known only to the Junos OS CLI. The individual software processes that perform the actions directed by the configuration receive the expanded form of the configuration—they have no knowledge of configuration groups.

Inheritance Model

Configuration groups use true inheritance, which involves a dynamic, ongoing relationship between the source of the configuration data and the target of that data. Data values changed in the configuration group are automatically inherited by the target. The target does not need to contain the inherited information, although the inherited values can be overridden in the target without affecting the source from which they were inherited.

This inheritance model allows you to see only the instance-specific information without seeing the inherited details. A command pipe in configuration mode allows you to display the inherited data.

Configuring Configuration Groups

For areas of your configuration to inherit configuration statements, you must first put the statements into a configuration group and then apply that group to the levels in the configuration hierarchy that require the statements.

To configure configuration groups and inheritance, you can include the **groups** statement at the **[edit]** hierarchy level:

```
[edit]
groups {
  group-name {
    configuration-data;
  }
}
```

Include the **apply-groups [group-names]** statement anywhere in the configuration where the configuration statements contained in a configuration group are needed.

Related Documentation

- *Creating the Junos OS Configuration Group*

PART 2

Configuring and Administering Routers

- [Configuring Routers on page 41](#)
- [Monitoring Routers on page 69](#)
- [Managing Junos OS Processes on page 79](#)

CHAPTER 4

Configuring Routers

- [Initial Router or Switch Configuration Using Junos OS on page 41](#)
- [Configuring Junos OS for the First Time on a Router or Switch with a Single Routing Engine on page 43](#)
- [Configuring Junos OS for the First Time on a Device with Dual Routing Engines on page 47](#)
- [Junos OS Configuration Using the CLI on page 52](#)
- [Format for Specifying IP Addresses, Network Masks, and Prefixes in Junos OS Configuration Statements on page 52](#)
- [Format for Specifying Filenames and URLs in Junos OS CLI Commands on page 53](#)
- [Creating and Activating a Candidate Configuration on page 55](#)
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- [Example: Configuring a Proxy Server for License Updates on page 56](#)
- [Configuring Automatic Mirroring of the CompactFlash Card on the Hard Disk Drive on page 59](#)
- [Using Junos OS to Specify the Number of Configurations Stored on the CompactFlash Card on page 60](#)
- [Using Junos OS to Configure a Router or Switch to Transfer Its Configuration to an Archive Site on page 61](#)
- [Specifying the Physical Location of the Router or Switch on page 63](#)
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- [Example: Configuring the Unique Identity of a Router for Making it Accessible on the Network on page 65](#)

Initial Router or Switch Configuration Using Junos OS

This topic provides an overview of initial router or switch configuration tasks using Junos OS.

When you turn on a router or switch for the first time, Junos OS automatically boots and starts. You must enter basic configuration information so that the router or switch is on the network and you can log in to it over the network.

To configure the router or switch initially, you must connect a terminal or laptop computer to the router or switch through the console port—a serial port on the front of the router or switch. Only console access to the router or switch is enabled by default. Remote management access to the router or switch and all management access protocols, including Telnet, FTP, and SSH, are disabled by default.

When you first connect to the router or switch console, you must log in as the user **root**. At first, the root account requires no password. You see that you are the user **root**, because the command prompt shows the username **root@#**.

You must start the Junos OS command-line interface (CLI) using the command **cli**. The command prompt **root@>** indicates that you are the user **root** and that you are in Junos OS operational mode. Enter Junos OS configuration mode by typing the command **configure**. The command prompt **root@#** indicates that you are in the Junos OS configuration mode.

When you first configure a router or switch, you must configure the following basic properties:

- Router or switch hostname
- Domain name
- IP address of the router or switch management Ethernet interface. To find the management Ethernet interface that you should use for configuration, see *Supported Routing Engines by Router*.
- IP address of a backup router
- IP address of one or more DNS name servers on your network
- Password for the root account

Related Documentation

- [Configuring Junos OS for the First Time on a Router or Switch with a Single Routing Engine on page 43](#)
- [Configuring Junos OS for the First Time on a Device with Dual Routing Engines on page 47](#)
- [Supported Routing Engines by Router](#)
- [Junos OS Configuration Using the CLI on page 52](#)

Configuring Junos OS for the First Time on a Router or Switch with a Single Routing Engine

When you power on a router the first time, Junos OS automatically boots and starts. You must enter basic configuration information so that the router is on the network and you can log in to it over the network.

To configure the router initially, you must connect a terminal or laptop computer to the router through the console port—a serial port on the front of the router. Only console access to the router is enabled by default. Remote management access to the router and all management access protocols, including Telnet, FTP, and SSH, are disabled by default.

To configure the Junos OS for the first time on a router with a single Routing Engine, follow these steps:

1. Connect a terminal or laptop computer to the router through the console port—a serial port on the front of the router. Only console access to the router is enabled by default.

2. Power on the router and wait for it to boot.

The Junos OS boots automatically. The boot process is complete when you see the **login:** prompt on the console.

3. Log in as the user **root**.

Initially, the **root** user account requires no password. You can see that you are the **root** user, because the prompt on the router shows the username **root@#**.

4. Start the Junos OS command-line interface (CLI):

```
root@# cli
root@>
```

5. Enter Junos OS configuration mode:

```
cli> configure
[edit]
root@#
```

6. Configure the name of the router (the router hostname). We do not recommend spaces in the router name. However, if the name does include spaces, enclose the entire name in quotation marks (" ").

```
[edit]
root@# set system host-name hostname
```

7. Configure the router's domain name:

```
[edit]
root@# set system domain-name domain-name
```



NOTE: Before you begin Step 8, see *Supported Routing Engines by Router* to find the management Ethernet interface that you should use to perform this configuration.

8. Configure the IP address and prefix length for the router management Ethernet interface. The management Ethernet interface provides a separate out-of-band management network for the router.

- For devices that use management Ethernet interface fxp0:

[edit]

```
root@# set interfaces fxp0 unit 0 family inet address address/prefix-length
```

- For devices that use management Ethernet interface em0:

[edit]

```
root@# set interfaces em0 unit 0 family inet address address/prefix-length
```

To use em0 as an out-of-band management Ethernet interface, you must configure its logical port, em0.0, with a valid IP address.

9. Configure the IP address of a backup or default router. This device is called the backup router, because it is used only while the routing protocol process is not running. Choose a router that is directly connected to the local router by way of the management interface. The router uses this backup router only when it is booting and only or when the Junos routing software (the routing protocol process, rpd) is not running.

For routers with two Routing Engines, the backup Routing Engine, **RE1**, uses the backup router as a default gateway after the router boots. This enables you to access the backup Routing Engine. (**RE0** is the default master Routing Engine.)



NOTE: The backup router Routing Engine does not support more than 16 destinations. If you configure more than 16 destinations on the backup Routing Engine, the Junos OS ignores any destination addresses after the sixteenth address and displays a commit-time warning message to this effect.

[edit]

```
root@# set system backup-router address
```

10. Configure the IP address of a DNS server. The router uses the DNS name server to translate hostnames into IP addresses.

[edit]

```
root@# set system name-server address
```

11. Set the root password, entering either a clear-text password that the system will encrypt, a password that is already encrypted, or an SSH public key string.

Choose one of the following:

- a. To enter a clear-text password, use the following command:

```
[edit]
root@# set system root-authentication plain-text-password
New password: type password
Retype new password: retype password
```

- b. To enter a password that is already encrypted, use the following command:

```
[edit]
root@# set system root-authentication encrypted-password encrypted-password
```

- c. To enter an SSH public key, use the following command:

```
[edit]
root@# set system root-authentication ssh-rsa key
```

12. Optionally, display the configuration statements:

```
[edit]
root@ show
system {
  host-name hostname;
  domain-name domain.name;
  backup-router address;
  root-authentication {
    (encrypted-password "password" | public-key);
    ssh-dsa "public-key";
    ssh-ecdsa "public-key";
    ssh-rsa "public-key";
  }
  name-server {
    address;
  }
  interfaces {
    fxp0 {
      unit 0 {
        family inet {
          address address ;
        }
      }
    }
  }
}
```

On routers that use management Ethernet interface em0, you will see em0 in place of fxp0 in the **show** command output.

13. Commit the configuration, which activates the configuration on the router:

```
[edit]
root@# commit
```

After committing the configuration, you see the newly configured hostname appear after the username in the prompt—for example, **user@host#**.

The defaults for Junos OS are now set on the router.

If you want to configure additional Junos OS properties at this time, remain in the CLI configuration mode and add the necessary configuration statements. You need to commit your configuration changes to activate them on the router.

14. Exit from the CLI configuration mode.

```
[edit]
root@hostname# exit
root@hostname>
```

15. Back up the configuration on the hard drive.

After you have installed the software on the router, committed the configuration, and are satisfied that the new configuration is successfully running, you should issue the **request system snapshot** command to back up the new software to the **/altconfig** file system. If you do not issue the **request system snapshot** command, the configuration on the alternate boot device will be out of sync with the configuration on the primary boot device.

The **request system snapshot** command causes the root file system to be backed up to **/altroot**, and **/config** to be backed up to **/altconfig**. The root and **/config** file systems are on the router's CompactFlash card, and the **/altroot** and **/altconfig** file systems are on the router's hard disk.



NOTE: After you issue the **request system snapshot** command, you cannot return to the previous version of the software, because the running copy and the backup copy of the software are identical.

**Related
Documentation**

- [Initial Router or Switch Configuration Using Junos OS on page 41](#)
- [Supported Routing Engines by Router](#)
- [Format for Specifying IP Addresses, Network Masks, and Prefixes in Junos OS Configuration Statements on page 52](#)
- [Default Directories for Junos OS File Storage on the Router or Switch on page 17](#)
- [Configuring Automatic Mirroring of the CompactFlash Card on the Hard Disk Drive on page 59](#)

Configuring Junos OS for the First Time on a Device with Dual Routing Engines

If a router has dual Routing Engines, you can create configuration groups and use the same configuration for both Routing Engines. This ensures that the configuration will not change during a failover scenario because of the identical configuration shared between the Routing Engines.

Configure the hostnames and addresses of the two Routing Engines using configuration groups at the **[edit groups]** hierarchy level. Use the reserved configuration group **re0** for the Routing Engine in slot 0 and **re1** for the Routing Engine in slot 1 to define Routing Engine-specific parameters. Configuring **re0** and **re1** groups enables both Routing Engines to use the same configuration file.

Use the **apply-groups** statement to reproduce the configuration group information in the main part of the configuration.

The **commit synchronize** command commits the same configuration on both Routing Engines. The command makes the active or applied configuration the same for both Routing Engines with the exception of the groups, **re0** being applied to only **RE0** and **re1** being applied only to **RE1**. If you do not synchronize the configurations between two Routing Engines and one of them fails, the router may not forward traffic correctly, because the backup Routing Engine may have a different configuration.

To initially configure a router with dual Routing Engines, follow these steps:

1. Go to *“Configuring Junos OS for the First Time on a Router or Switch with a Single Routing Engine” on page 43* and follow Step 1 through Step 5 to initially configure the backup Routing Engine.
2. Create the configuration group **re0**. The **re0** group is a special group designator that is only used by **RE0** in a redundant routing platform.

```
[edit]
root@host# set groups re0
```

3. Navigate to the **groups re0** level of the configuration hierarchy.

```
[edit]
root@host# edit groups re0
```

4. Specify the router hostname.

```
[edit groups re0]
root@host# set system host-name host-name
```



NOTE: The hostname specified in the router configuration is not used by the DNS server to resolve to the correct IP address. This hostname is used to display the name of the Routing Engine in the CLI. For example, the hostname appears at the command-line prompt when the user is logged in to the CLI:

```
user-name@host-name>
```



NOTE: Before you begin Step 5, see *Supported Routing Engines by Router* to find the management Ethernet interface that you should use to perform this configuration.

5. Configure the IP address and prefix length for the router management Ethernet interface. The management Ethernet interface provides a separate out-of-band management network for the router.

- For routers that use management Ethernet interface fxp0:

```
[edit groups]
root@host# set interfaces fxp0 unit 0 family inet address address/prefix-length
```

- For routers that use management Ethernet interface em0:

```
[edit groups]
root@host# set interfaces em0 unit 0 family inet address address/prefix-length
```

To use em0 as an out-of-band management Ethernet interface, you must configure its logical port, em0.0, with a valid IP address.

6. Set the loopback interface address for the **re0** configuration group:

```
[edit groups]
root@host# set re0 interfaces lo0 unit 0 family inet address address/prefix-length
```

7. Return to the top level of the hierarchy.

```
[edit groups re0]
root@host# top
```

8. Create the configuration group **re1**.

```
[edit]
root@host# set groups re1
```

9. Navigate to the **groups re1** level of the configuration hierarchy.

```
[edit]
root@host# edit groups re1
```

10. Specify the router hostname.

```
[edit groups re1]
root@host# set system host-name host-name
```



NOTE: Before you begin Step 11, see *Supported Routing Engines by Router* to find the management Ethernet interface that you should use to perform this configuration.

11. Configure the IP address and prefix length for the router management Ethernet interface.

- For routers that use management Ethernet interface fxp0:

```
[edit groups]
root@host# set interfaces fxp0 unit 0 family inet address address/prefix-length
```

- For routers that use management Ethernet interface em0:

```
[edit groups]
root@host# set interfaces em0 unit 0 family inet address address/prefix-length
```

To use em0 as an out-of-band management Ethernet interface, you must configure its logical port, em0.0, with a valid IP address.

12. Set the loopback interface address for **re1** configuration group:

```
[edit groups]
root@host# set re1 interfaces lo0 unit 0 family inet address address/prefix-length
```

13. Return to the top level of the hierarchy.

```
[edit groups re0]
root@host# top
```

14. Configure the **apply-groups** statement to reproduce the configuration group information to the main part of the configuration and to specify the group application order.

```
[edit]
root@host# set apply-groups [ re0 re1 ]
```

15. Configure Routing Engine redundancy:

```
[edit]
root@host# set chassis redundancy routing-engine 0 master
root@host# set chassis redundancy routing-engine 1 backup
```

16. Save the configuration change on both Routing Engines:

```
[edit]
user@host> commit synchronize
```

After the configuration changes are saved, complete the management console configuration.

1. Configure the IP address of the DNS server.

```
[edit ]
root@host# set system name-server address
```

2. Configure the router domain name:

```
[edit ]
root@host# set system domain-name domain-name
```

3. Configure the IP address of a backup or default router. A backup router is used only while the routing protocol process is not running. Choose a router that is directly connected to the local router by way of the management interface. The router uses this backup router only when it is booting and or when the Junos routing software (the routing protocol process, rpd) is not running. For more information, see *Configuring a Backup Router*.

For routers with two Routing Engines, the backup Routing Engine, **RE1**, uses the backup router as a default gateway after the router boots. This enables you to access the backup Routing Engine. (**RE0** is the default master Routing Engine.)



NOTE: The backup router Routing Engine does not support more than 16 destinations. If you configure more than 16 destinations on the backup Routing Engine, the Junos OS ignores any destination addresses after the sixteenth address and displays a commit-time warning message to this effect.

```
[edit]
root@host# set system backup-router address
```

4. Set the root password by choosing one of the following:
 - a. To enter a clear-text password, use the following command:

```
[edit]
root@host# set system root-authentication plain-text-password
New password: type password
Retype new password: retry password
```

- b. To enter a password that is already encrypted, use the following command:

```
[edit]
root@host# set system root-authentication encrypted-password
encrypted-password
```

- c. To enter an SSH public key, use the following command:

```
[edit]
root@host# set system root-authentication ssh-rsa key
```

5. Optionally, display the configuration statements:

```
[edit]
root@ show
system {
  host-name hostname;
  domain-name domain.name;
  backup-router address;
  root-authentication {
    (encrypted-password "password" | public-key);
    ssh-dsa "public-key";
    ssh-ecdsa "public-key";
    ssh-rsa "public-key";
  }
  name-server {
    address;
  }
  interfaces {
    fxp0 {
      unit 0 {
        family inet {
          address address ;
        }
      }
    }
  }
}
```

On routers that use management Ethernet interface em0, you will see em0 in place of fxp0 in the **show** command output.

- After you have installed the new software and are satisfied that it is successfully running, issue the **request system snapshot** command to back up the new software on both master and backup Routing Engines.

```
{master}
user@host> request system snapshot
```

The root file system is backed up to **/altroot**, and **/config** is backed up to **/altconfig**. The root and **/config** file systems are on the router's CompactFlash card, and the **/altroot** and **/altconfig** file systems are on the router's hard disk.



NOTE: After you issue the **request system snapshot** command, you cannot return to the previous version of the software, because the running copy and backup copy of the software are identical.

For information about creating configuration groups, see *CLI User Guide*.

For information about configuring high availability features for redundant Routing Engine systems and the **re0** group, see *Junos OS High Availability Library for Routing Devices*.

Related Documentation

- [Configuring Junos OS for the First Time on a Router or Switch with a Single Routing Engine on page 43](#)

- [Supported Routing Engines by Router](#)
- [Initial Router or Switch Configuration Using Junos OS on page 41](#)
- [Format for Specifying IP Addresses, Network Masks, and Prefixes in Junos OS Configuration Statements on page 52](#)
- [Default Directories for Junos OS File Storage on the Router or Switch on page 17](#)
- [Configuring Automatic Mirroring of the CompactFlash Card on the Hard Disk Drive on page 59](#)

Junos OS Configuration Using the CLI

You configure the Junos OS using the Junos OS command-line interface (CLI). The CLI is described in detail in the *CLI User Guide*.

After completing the initial minimal configuration, you can configure software properties. If you configure the software interactively using the CLI, you enter software configuration statements to create a candidate configuration that contains a hierarchy of statements. At any hierarchy level, you generally can enter statements in any order. While you are configuring the software, you can display all or portions of the candidate configuration, and you can insert or delete statements. Any changes you make affect only the candidate configuration, not the active configuration that is running on the router.

The configuration hierarchy logically groups related functions, which results in configuration statements that have a consistent syntax. For example, you configure routing protocols, routing policies, interfaces, and SNMP management in their own separate portions of the configuration hierarchy.

At each level of the hierarchy, you can display a list of the statements available at that level, along with short descriptions of the statements' functions. To have the CLI complete the statement name if it is unambiguous or to provide a list of possible completions, you can type a partial statement name followed by a space or tab.

More than one user can edit a router's configuration simultaneously. All changes made by all users are visible to everyone editing the configuration.

Related Documentation

- [Disk Space Management for Junos OS Installation](#)
- [Creating and Activating a Candidate Configuration on page 55](#)

Format for Specifying IP Addresses, Network Masks, and Prefixes in Junos OS Configuration Statements

Many statements in the Junos OS configuration include an option to specify an IP address or route prefix. This option is represented in one of the following ways:

- **network/prefix-length**—Network portion of the IP address, followed by a slash and the destination prefix length (previously called the subnet mask). For example, 10.0.0.1/8.

- **network**—IP address. For example, 10.0.0.2.
- **destination-prefix/prefix-length**—Route prefix, followed by a slash and the destination prefix length. For example, 192.168.1.10/32.

You enter all IP addresses in classless mode. You can enter the IP address with or without a prefix length, in standard dotted notation (for example, 1.2.3.4), or hexadecimal notation as a 32-bit number in network-byte order (for example, 0x01020304). If you omit any octets, they are assumed to be zero. Specify the prefix length as a decimal number from 1 through 32.

Related Documentation

- [Format for Specifying Filenames and URLs in Junos OS CLI Commands on page 53](#)

Format for Specifying Filenames and URLs in Junos OS CLI Commands

In some CLI commands and configuration statements—including **file copy**, **file archive**, **load**, **save**, **set system login user *username* authentication load-key-file**, and **request system software add**—you can include a filename. On a routing matrix, you can include chassis information (for example, **lcc0**, **lcc0-re0**, or **lcc0-re1**) as part of the filename.

A *routing matrix* is a multichassis architecture composed of either one TX Matrix router and from one to four T640 routers connected to the TX Matrix router, or one TX Matrix Plus router and from one to four T1600 routers connected to the TX Matrix Plus router. From the perspective of the user interface, the routing matrix appears as a single router. On a routing matrix composed of the TX Matrix router and T640 routers, the TX Matrix router controls all the T640 routers. On a routing matrix composed of a TX Matrix Plus router and T1600 routers, the TX Matrix Plus router controls all the T1600 routers.



WARNING: Starting with Junos OS Release 15.1, the **ssl3-support** option is not available for configuration with the **set system services xnm-ssl** and **file copy** commands. SSLv3 is no longer supported and available.

For all releases prior to and including Junos OS Release 14.2, SSLv3 is disabled by default at runtime. The **ssl3-support** option is hidden and deprecated in Junos OS Release 14.2 and earlier releases. However, you can use the **set system services xnm-ssl ssl3-support** command to enable SSLv3 for a Junos XML protocol client application to use as the protocol to connect to the Junos XML protocol server on a router, and you can use the **file copy source destination ssl3-support** command to enable the copying of files from an SSLv3 URL.

Using SSLv3 presents a potential security vulnerability, and we recommend that you not use SSLv3. For more details about this security vulnerability, go to <http://kb.juniper.net/InfoCenter/index?page=content&id=JSA10656>.

You can specify a filename or URL in one of the following ways:

- **filename**—File in the user's current directory on the local CompactFlash card (not applicable on the QFX Series). You can use wildcards to specify multiple source files or a single destination file. Wildcards are not supported in FTP.



NOTE: Wildcards are supported only by the **file** (**compare** | **copy** | **delete** | **list** | **rename** | **show**) commands. When you issue the **file show** command with a wildcard, it must resolve to one filename.

- **path/filename**—File on the local flash disk.
- **/var/filename** or **/var/path/filename**—File on the local hard disk. You can also specify a file on a local Routing Engine for a specific T640 router or a T1600 router in a routing matrix:

```
user@host> file delete lcc0-re0:/var/tmp/junk
```

- **a:filename** or **a:path/filename**—File on the local removable media. The default path is **/** (the root-level directory). The removable media can be in MS-DOS or UNIX (UFS) format.
- **hostname:/path/filename**, **hostname:filename**, **hostname:path/filename**, or **"scp://hostname/path/filename"**—File on an **scp/ssh** server. This form is not available in the worldwide version of Junos OS. The default path is the user's home directory on the remote system. You can also specify **hostname** as **username@hostname**.
- **ftp://hostname/path/filename**—File on an FTP server. You can also specify **hostname** as **username@hostname** or **username:password@hostname**. The default path is the user's home directory. To specify an absolute path, the path must start with **%2F**; for example, **ftp://hostname/%2Fpath/filename**. To have the system prompt you for the password, specify **prompt** in place of the password. If a password is required and you do not specify the password or **prompt**, an error message is displayed:

```
user@host> file copy ftp://username@ftp.hostname.net/filename
file copy ftp.hostname.net: Not logged in.
```

```
user@host> file copy ftp://username:prompt@ftp.hostname.net/filename
Password for username@ftp.hostname.net:
```

- **http://hostname/path/filename**—File on an HTTP server. You can also specify **hostname** as **username@hostname** or **username:password@hostname**. If a password is required and you omit it, you are prompted for it.



NOTE: You cannot specify a HTTP(s) URL for a file as a destination, because HTTP(s) URLs are not writable. However you can specify HTTP(s) URL for a file as a source.

- **re0:/path/filename** or **re1:/path/filename**—File on a local Routing Engine. You can also specify a file on a local Routing Engine for a specific T640 router or a T1600 router in a routing matrix:

```
user@host> show log lcc0-re1:chassisd
```

**Related
Documentation**

- [Format for Specifying IP Addresses, Network Masks, and Prefixes in Junos OS Configuration Statements on page 52](#)
- [Default Directories for Junos OS File Storage on the Router or Switch on page 17](#)

Creating and Activating a Candidate Configuration

You enter software configuration statements using the CLI to create a candidate configuration that contains a hierarchy of statements. To have a candidate configuration take effect, you commit the changes. At this point, the candidate file is checked for proper syntax, activated, and marked as the current, operational software configuration file. If multiple users are editing the configuration, when you commit the candidate configuration, all changes made by all the users take effect.

The CLI always maintains a copy of previously committed versions of the software configuration. If you need to return to a previous configuration, you can do this from within the CLI.

**Related
Documentation**

- [Junos OS Commit Model for Router or Switch Configuration on page 35](#)

Mapping the Name of the Router to IP Addresses

Whereas using the Domain Name System (DNS) is an easier and more scalable way to resolve IP addresses from hostnames, you might want to manually map the hostname to a static IP address for the following reasons:

- You might not have a DNS entry for the router.
- You might not want the computer to contact the DNS server to resolve a particular IP address—you might use this particular IP address a lot, or it might be just for testing or development purposes.

To map a router's hostname to one or more IP addresses:

1. Include the **inet** statement at the **[edit system static-host-mapping hostname]** hierarchy level.

```
user@host# set system static-host-mapping hostname inet [ ip-addresses ]
```

2. Verify the configuration with the **show** command.

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

```
static-host-mapping {  
  hostname {  
    inet [ ip-addresses ];  
  }  
}
```

Related Documentation

- [Example: Configuring the Unique Identity of a Router for Making it Accessible on the Network on page 65](#)
- *Reaching a Domain Name System Server*

Example: Configuring a Proxy Server for License Updates

This example shows how to configure a proxy server to download Juniper Networks license updates.

- [Requirements on page 56](#)
- [Overview on page 56](#)
- [Configuration on page 57](#)
- [Verification on page 58](#)

Requirements

This example uses the following hardware and software components:

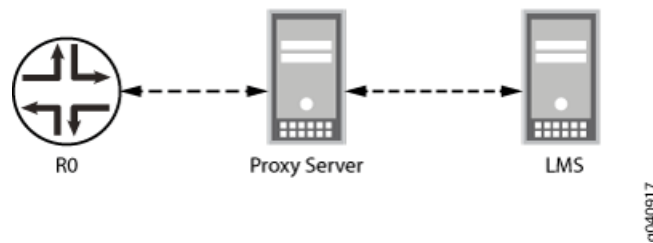
- An M Series, MX Series, PTX Series, or SRX Series device
- Junos OS Release 11.4 running on the device

Overview

In Junos OS Release 11.4 and later, you can download Juniper Networks license updates using a proxy server. This feature is supported on M Series and SRX Series devices. In earlier releases, downloading license updates was only possible by directly connecting to the [Juniper Networks License Management System](#).

In an enterprise, there might be devices in a private network that might be restricted from connecting to the Internet directly for security reasons. In such scenarios, you can configure a proxy server in the private network to connect to the LMS and download the license updates, and have the routers or devices in the private network connect to the proxy server to download the licenses or license updates. In [Figure 2 on page 57](#), R0 is the router in the private network. Proxy Server represents the proxy server, and LMS represents the Juniper Networks License Management System.

Figure 2: Proxy Server Example



To enable this feature, you configure the device with details of the proxy server at the **[edit system proxy]** hierarchy level.

Configuration

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

Router R0

```

set system proxy server 192.168.1.10
set system proxy port 3128
set system proxy username user1
set system proxy password user123
set system license traceoptions file license.log
set system license traceoptions flag all
  
```

Step-by-Step Procedure The following example requires you to navigate various levels in the configuration hierarchy. For information about navigating the CLI, see the *CLI User Guide*.

To configure the proxy server properties on the device:

1. Configure the proxy server IP address or hostname.

```

[edit system proxy]
user@hostR0# set server 192.168.1.10
  
```
2. Configure a port number (ranging from 0 through 65535) used to connect to the proxy server.

```

[edit system proxy]
user@hostR0# set port 3128
  
```
3. Configure the password as configured on the proxy server.

```

[edit system proxy]
user@R0# set password user123
  
```
4. Configure the username as configured on the proxy server.

```

[edit system proxy]
user@R0# set username user1
  
```

5. Configure trace options for licenses.

```
[edit system license]
user@R0# set traceoptions file license.log
user@R0# set traceoptions flag all
```

Results From configuration mode, confirm your configuration by entering the **show system** command. If the output does not display the intended configuration, repeat the instructions in this example to correct the configuration.

```
user@R0# show system
proxy {
  server 192.168.1.10;
  port 3128;
  username user1;
  password "$ABC123"; ## SECRET-DATA
}
license {
  traceoptions {
    file license.log;
    flag all;
  }
}
```

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

Verification

Confirm that the configuration is working properly.

Verifying That the License Is Downloaded

Purpose Verify that the license is downloaded using the proxy server.

- Action**
1. Delete the existing license using the **request system license delete *license-filename*** command.

2. Download the license using the **request system license update** command.

```
user@R0> request system license update
Request to automatically update license keys from https://devicex.example.com
has been sent, use 'show system license' to check status.
```

3. Verify the license using the **show system license** command.

```
user@R0> show system license
License usage:
```

| Feature name | Licenses used | Licenses installed | Licenses needed | Expiry |
|-------------------------|------------------|-----------------------|--------------------|--------|
| av_key_kaspersky_engine | 0 | 1 | 0 | |
| 2011-11-17 16:00:00 PST | | | | |
| idp-sig | 1 | 1 | 0 | |

```
2011-11-17 16:00:00 PST
ax411-wlan-ap                0          2          0    permanent
```

```
Licenses installed:
License identifier: JUNOS282725
License version: 2
Valid for device: AG2909AA0014
Features:
  av_key_kaspersky_engine - Kaspersky AV
    date-based, 2010-11-21 16:00:00 PST - 2011-11-17 16:00:00 PST
```

4. Check the system log file to verify that the license is downloaded using the proxy server.

```
user@R0> show /var/log/license.log
Nov 18 08:14:14 Received SIGHUP signal
Nov 18 08:14:17 GRES not enabled.
Nov 18 08:14:17 License download proxy server configured.
Nov 18 08:14:17 License download proxy server: 192.168.1.10
Nov 18 08:14:17 License download proxy server port: 3128
Nov 18 08:14:17 License download proxy user name: user1
Nov 18 08:14:17 License download proxy user password: xxx
Nov 18 08:14:18 Access configuration autoupdate url: devicex.example.com
Nov 18 08:14:18 Access configuration renew-before-expiration: 60 days
Nov 18 08:14:18 Access configuration renew-interval: 1 hours
Nov 18 08:16:53 Received SIGUSR1 signal, license download start...
Nov 18 08:16:58 env HTTP_PROXY=http://192.168.1.10/
Nov 18 08:16:58 env HTTP_PROXY_AUTH="basic*:abc:xxx"
HTTP_PROXY_AUTH="basic*:user:<password>" /usr/sbin/license_fetch -o
/tmp/license.keys.1053
'https://devicex.example.com/junos/key_retrieval?serial=AG2909AA0014=11.4I'
2> /tmp/license.status.1053
Nov 18 08:17:03 /tmp/license.keys.1053                    505 kB
505 kBps
```

- Related Documentation
- [password \(Proxy Systems\) on page 129](#)
 - [port on page 132](#)
 - [proxy on page 136](#)
 - [server on page 144](#)
 - [username on page 151](#)

Configuring Automatic Mirroring of the CompactFlash Card on the Hard Disk Drive

You can direct the hard disk to automatically mirror the contents of the CompactFlash card. When you include the **mirror-flash-on-disk** statement, the hard disk maintains a synchronized mirror copy of the CompactFlash card contents. Data written to the CompactFlash card is simultaneously updated in the mirrored copy of the hard disk. If the CompactFlash card fails to read data, the hard disk automatically retrieves its mirrored copy of the CompactFlash card.



CAUTION: We recommend that you disable flash-to-disk mirroring when you upgrade or downgrade the router.

You cannot issue the `request system snapshot` command while flash-to-disk mirroring is enabled.

To configure the mirroring of the CompactFlash card to the hard disk, include the `mirror-flash-on-disk` statement at the `[edit system]` hierarchy level:

```
[edit system]
mirror-flash-on-disk;
```



NOTE: After you have enabled or disabled the `mirror-flash-on-disk` statement, you must reboot the router for your changes to take effect. To reboot, issue the `request system reboot` command.

**Related
Documentation**

- [Using Junos OS to Specify the Number of Configurations Stored on the CompactFlash Card on page 60](#)
- [Configuring Junos OS for the First Time on a Router or Switch with a Single Routing Engine on page 43](#)

Using Junos OS to Specify the Number of Configurations Stored on the CompactFlash Card

By default, Junos OS saves the current configuration and three previous versions of the committed configuration on the CompactFlash card. The currently operational Junos OS configuration is stored in the file `juniper.conf.gz`, and the last three committed configurations are stored in the files `juniper.conf.1.gz`, `juniper.conf.2.gz`, and `juniper.conf.3.gz`. These four files are located in the CompactFlash card in the directory `/config`.

In addition to saving the current configuration and the current operational version, you can also specify how many previous versions of the committed configurations you want stored on the CompactFlash card in the directory `/config`. The remaining previous versions of committed configurations are stored in the directory `/var/db/config` on the hard disk. This is useful when you have very large configurations that might not fit on the CompactFlash card.

To specify how many previous versions of the committed configurations you want stored on the CompactFlash card, include the `max-configurations-on-flash` statement at the `[edit system]` hierarchy level:

```
[edit system]
max-configurations-on-flash number;
```

number is a value from 0 through 49.

- Related Documentation**
- [Configuring Automatic Mirroring of the CompactFlash Card on the Hard Disk Drive on page 59](#)

Using Junos OS to Configure a Router or Switch to Transfer Its Configuration to an Archive Site

You can configure a router or switch to transfer its configuration to an archive file periodically. The following tasks describe how to transfer the configuration to an archive site:

1. [Configuring the Transfer of the Currently Active Configuration to an Archive Site on page 61](#)
2. [Configuring the Periodic Transfer of the Active Configuration to an Archive Site on page 61](#)
3. [Configuring the Transfer of the Currently Active Configuration When a Configuration Is Committed on page 62](#)
4. [Configuring Archive Sites for the Transfer of Active Configuration Files on page 62](#)

Configuring the Transfer of the Currently Active Configuration to an Archive Site

If you want to back up your device's current configuration to an archive site, you can configure the router or switch to transfer its currently active configuration by FTP or secure copy (SCP) periodically or after each commit.

To configure the router or switch to transfer its currently active configuration to an archive site, include statements at the **[edit system archival configuration]** hierarchy level:

```
[edit system archival configuration]
archive-sites {
  ftp://username<:password>@host-address<:port>/url-path;
  scp://username<:password>@host-address<:port>/url-path;
}
transfer-interval interval;
transfer-on-commit;
```



NOTE: When specifying a URL in a Junos OS statement using an IPv6 host address, you must enclose the entire URL in quotation marks (") and enclose the IPv6 host address in brackets ([]). For example, "ftp://username<:password>@[ipv6-host-address]<:port>/url-path"

Configuring the Periodic Transfer of the Active Configuration to an Archive Site

To configure the router or switch to periodically transfer its currently active configuration to an archive site, include the **transfer-interval** statement at the **[edit system archival configuration]** hierarchy level:

```
[edit system archival configuration]
transfer-interval interval;
```

The *interval* is a period of time ranging from 15 through 2880 minutes.

Configuring the Transfer of the Currently Active Configuration When a Configuration Is Committed

To configure the router or switch to transfer its currently active configuration to an archive site each time you commit a candidate configuration, include the **transfer-on-commit** statement at the **[edit system archival configuration]** hierarchy level:

```
[edit system archival configuration]
transfer-on-commit;
```



NOTE: When specifying a URL in a Junos OS statement using an IPv6 host address, you must enclose the entire URL in quotation marks ("") and enclose the IPv6 host address in brackets ([]). For example,
 “scp://username<:password>@[ipv6-host-address]<:port>/url-path”

Configuring Archive Sites for the Transfer of Active Configuration Files

When you configure the router or switch to transfer its configuration files, you specify an archive site to which the files are transferred. If you specify more than one archive site, the router or switch attempts to transfer files to the first archive site in the list, moving to the next site only if the transfer fails.

When you use the **archive-sites** statement, you can specify a destination as an FTP URL, or SCP-style remote file specification. The URL type **file://** is also supported.

To configure the archive site, include the **archive-sites** statement at the **[edit system archival configuration]** hierarchy level:

```
[edit system archival configuration]
archive-sites {
  ftp://username@host:<port>url-path password password;
  scp://username@host:<port>url-path password password;
  file://<path>/<filename>;
}
```



NOTE: When specifying a URL in a Junos OS statement using an IPv6 host address, you must enclose the entire URL in quotation marks ("") and enclose the IPv6 host address in brackets ([]). For example,
 “scp://username<:password>@[ipv6-host-address]<:port>/url-path”

When you specify the archive site, do not add a forward slash (/) to the end of the URL.

The destination filename is saved in the following format, where *n* corresponds to the number of the compressed configuration rollback file that has been archived:

```
<router-name>_YYYYMMDD_HHMMSS_juniper.conf.n.gz
```




NOTE: The time included in the destination filename is always in Coordinated Universal Time (UTC) regardless of whether the time on the router is configured as UTC or the local time zone. The default time zone on the router or switch is UTC.

- See Also**
- [archive-sites on page 102](#)
 - [Junos OS Commit Model for Router or Switch Configuration on page 35](#)

Specifying the Physical Location of the Router or Switch

To specify the physical location of the router or switch, you can configure the following options for the **location** statement at the **[edit system]** hierarchy level:

- **altitude *feet***—Number of feet above sea level.
- **building *name***—Name of the building, 1 to 28 characters in length. If the string contains spaces, enclose it in quotation marks (" ").
- **country-code *code***—Two-letter country code.
- **floor *number***—Floor in the building.
- **hcoord *horizontal-coordinate***—Bellcore Horizontal Coordinate.
- **lata *transport-area***—Local Access Transport Area.
- **latitude *degrees***—Latitude in degree format.
- **longitude *degrees***—Longitude in degree format.
- **npa-nxx *number***—First six digits of the phone number (area code and exchange).
- **postal-code *postal-code***—Postal code.
- **rack *number***—Rack number.
- **vcoord *vertical-coordinate***—Bellcore Vertical Coordinate.

The following example shows how to specify the physical location of the router or switch:

```
[edit system]
location {
  altitude feet;
  building name;
  country-code code;
  floor number;
  hcoord horizontal-coordinate;
  lata transport--area;
  latitude degrees;
  longitude degrees;
  npa-nxx number;
  postal-code postal-code;
  rack number;
```

```
vcoord vertical-coordinate;  
}
```

Related Documentation

- *Getting Started Guide for Routing Devices*

Configuring Junos OS to Set Console and Auxiliary Port Properties

Each router or switch has a console port and an auxiliary port for connecting terminals to the router or switch. The console port is enabled by default, and its speed is 9600 baud. The auxiliary port is disabled by default.

To configure the properties for the console and auxiliary ports, include the **ports** statement at the **[edit system]** hierarchy level:

```
[edit system]  
ports {  
  auxiliary {  
    disable;  
    insecure;  
    type terminal-type;  
  }  
  console {  
    authentication-order;  
    disable;  
    insecure;  
    log-out-on-disconnect;  
    type terminal-type;  
  }  
}
```

By default, the terminal type is unknown, and the terminal speed is 9600 baud for both the console and auxiliary ports. To change the terminal type, include the **type** statement, specifying a **terminal-type** of **ansi**, **vt100**, **small-xterm**, or **xterm**. The first three terminal types set a screen size of 80 columns by 24 lines. The last type, **xterm**, sets the size to 80 columns by 65 rows.

By default, the console session is not logged out when the data carrier is lost on the console modem control lines. To log out the session when the data carrier on the console port is lost, include the **log-out-on-disconnect** statement. You can use the **show system users** command to verify the console session is logged out.



NOTE: The **log-out-on-disconnect** statement is not operational on MX80 routers. On MX80 routers you must manually log out from the console with the **request system logout u0** command.

By default, terminal connections to the console and auxiliary ports are secure. When you configure the console as insecure, root logins are not allowed to establish terminal connections. In addition, superusers and anyone with a user identifier (UID) of 0 are not allowed to establish terminal connections in multiuser mode when you configure the console as insecure. To disable root login connections to the console and auxiliary ports,

include the **insecure** statement. This option can be used to prevent a user from attempting password recovery by booting into single-user mode, if the user does not know the root password.

To disable console login, include the **disable** statement. By default, console login is enabled.

For Common Criteria compliance, the console port must be disabled.

**Related
Documentation**

- [Methods for Configuring Junos OS on page 32](#)
- *console*
- [ports on page 133](#)

Example: Configuring the Unique Identity of a Router for Making it Accessible on the Network

To use a router in a network, you must configure the router's identity. Configuring a router's identity makes the router accessible on the network and so that other users can log in to it. You can refer to any Internet-connected machine in either of two ways:

- By its IP address
- By its hostname

Once you have a hostname, you can find the IP address, you can use the Domain Name System (DNS) to resolve an IP address from a hostname, or you can manually map the hostname to a static IP address. Although using the DNS is an easier and more scalable way to resolve IP addresses from hostnames, you might not have a DNS entry for the router, or you might not want the computer to contact the DNS server to resolve a particular IP address (perhaps you use this particular IP address a lot, or you might be using it only for testing or development purposes and do not want to give it a DNS entry).

To configure a router's unique identity, you might need to include all or part of the following: the hostname of the router, its IP address, the domain name, two or three name servers, mapping of the hostname to the IP address.

- [Requirements on page 65](#)
- [Overview on page 66](#)
- [Configuration on page 66](#)
- [Verification on page 68](#)

Requirements

No special configuration beyond device initialization is required before configuring this example.

Overview

A hostname is the router's name. It is easier for most people to remember a hostname than an IP address. Junos OS uses the configured hostname as part of the command prompt, to prepend log files and other accounting information, as well as in other places where knowing the device identity is useful. You can use the hostname to telnet to a router.

The domain name is the string appended to hostnames that are not fully qualified. The domain name is the name of a network associated with an organization. For sites in the United States, domain names typically take the form of *org-name.org-type*.

The mapping of hostnames to IP addresses is handled through a service called the Domain Name System (DNS). A series of special DNS servers across the world known as name servers keep track of the hostname and IP address information for all the devices on the Internet. Applications that need to determine an IP address from a hostname (or vice versa) contact the local name server to get this information. You can set a few name servers.

In case your hostname and IP address do not have a DNS entry in a name server, configure a static mapping.

In this example, the values given in [Table 7 on page 66](#) are used to configure each of these variables. You need to substitute data pertinent to your router and network for these values.

Table 7: Values to Use in Example

| Name of Variable | Value Used in Example | Value You Substitute |
|--------------------------------|--------------------------------|----------------------|
| domain-name <i>domain-name</i> | domain-name device.example.net | |
| host-name <i>host-name</i> | host-name example-re0 | |
| inet <i>ip-address</i> | inet 172.22.147.39 | |
| name-server <i>ip-address</i> | name-server 172.24.16.115 | |
| | name-server 192.0.2.0 | |

Configuration

CLI Quick Configuration

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

```
set system domain-name device.example.net
set system host-name example-re0
set system name-server 172.24.16.115
set system name-server 192.0.2.0
```

```
set system static-host-mapping example-re0 inet 172.22.147.39
```

Configuring the Router's Identity

Step-by-Step Procedure

To configure the identity settings of a device:

1. Configure the domain name of your network.

```
[edit]
user@host# set system domain-name device.example.net
```
2. Configure the hostname, using the **set system host-name** command.

```
[edit]
user@host# set system host-name example-re0
```
3. Configure from one to three name servers.

```
[edit]
user@host# set system name-server 172.24.16.115
user@host# set system name-server 192.0.2.0
```
4. Map from the hostname to the IP address, using the **set system static-host-mapping** command.

```
[edit]
user@host# set system static-host-mapping example-re0 inet 172.22.147.39
```

Results

To check the configuration, use the configuration mode **show system** command.

```
[edit]
user@host# show system
domain-name device.example.net;
host-name example-re0;
name-server {
  172.24.16.115;
  192.0.2.0;
}
static-host-mapping {
  example-re0 {
    inet 172.22.147.39;
  }
}
```

When you have the correct configuration, enter **commit**.

Verification

Verifying the Hostname and IP Address of a Device

Purpose Verify the hostname and IP address of a device.

Action Issue the **show host *host-name*** operational command.

```
user@example-re0> show host newton
newton.device.example.net is an alias for example-re0.device.example.net.
example-re0.device.example.net has address 172.22.147.39
```

Related Documentation

- *Understanding Hostnames*
- *Reaching a Domain Name System Server*

CHAPTER 5

Monitoring Routers

- [Junos OS Tools for Monitoring the Router on page 69](#)
- [Tracing and Logging Junos OS Operations on page 70](#)
- [Understanding Dropped Packets and Untransmitted Traffic Using show Commands on page 71](#)
- [Log a User Out of the Router on page 76](#)

Junos OS Tools for Monitoring the Router

The primary method of monitoring and troubleshooting Junos OS, routing protocols, network connectivity, and the router hardware is to enter commands from the CLI. The CLI enables you to display information in the routing tables and routing protocol-specific data, and to check network connectivity using **ping** and **traceroute** commands.

The J-Web GUI is a Web-based alternative to using CLI commands to monitor, troubleshoot, and manage the router.

Junos OS includes SNMP software, which enables you to manage routers. The SNMP software consists of an SNMP master agent and a MIB II agent, and supports MIB II SNMP version 1 traps and version 2 notifications, SNMP version 1 **Get** and **GetNext** requests, and version 2 **GetBulk** requests.

The software also supports tracing and logging operations so that you can track events that occur in the router—both normal router operations and error conditions—and track the packets that are generated by or pass through the router. Logging operations use a syslog-like mechanism to record system-wide, high-level operations, such as interfaces going up or down and users logging in to or out of the router. Tracing operations record more detailed messages about the operation of routing protocols, such as the various types of routing protocol packets sent and received, and routing policy actions.

Related Documentation

- [Methods for Configuring Junos OS on page 32](#)
- [Junos OS Features for Router Security on page 25](#)

Tracing and Logging Junos OS Operations

Tracing and logging operations allow you to track events that occur in the router—both normal router operations and error conditions—and to track the packets that are generated by or passed through the router. The results of tracing and logging operations are placed in files in the `/var/log` directory on the router.

Junos OS provides an option to do remote tracing for specific processes, which greatly reduces use of the router's internal storage for tracing and is analogous to remote system logging. You configure remote tracing system-wide using the **tracing** statement at the **[edit system]** hierarchy level. By default, remote tracing is not configured. You can disable remote tracing for specific processes using the **no-remote-trace** statement at the **[edit process-name traceoptions]** hierarchy level. This feature does not alter local tracing functionality in any way, and logging files are stored on the router.

Junos OS supports remote tracing for the following processes:

- `chassisd`—Chassis-control process
- `eventd`—Event-processing process
- `cosd`—Class-of-service process
- `spd`—Adaptive-services process

Logging operations use a system logging mechanism similar to the UNIX `syslogd` utility to record systemwide, high-level operations, such as interfaces going up or down and users logging in to or out of the router. You configure these operations by using the **syslog** statement at the **[edit system]** hierarchy level, as described in *Junos OS System Log Overview*, and by using the **options** statement at the **[edit routing-options]** hierarchy level, as described in the *Junos OS Routing Protocols Library*.

Tracing operations record more detailed messages about the operation of routing protocols, such as the various types of routing protocol packets sent and received, and routing policy actions. You configure tracing operations using the **traceoptions** statement. You can define tracing operations in different portions of the router configuration:

- Global tracing operations—Define tracing for all routing protocols. You define these tracing operations at the **[edit routing-options]** hierarchy level of the configuration.
- Protocol-specific tracing operations—Define tracing for a specific routing protocol. You define these tracing operations in the **[edit protocol]** hierarchy when configuring the individual routing protocol. Protocol-specific tracing operations override any equivalent operations that you specify in the global **traceoptions** statement. If there are no equivalent operations, they supplement the global tracing options. If you do not specify any protocol-specific tracing, the routing protocol inherits all the global tracing operations.
- Tracing operations within individual routing protocol entities—Some protocols allow you to define more granular tracing operations. For example, in Border Gateway Protocol (BGP), you can configure peer-specific tracing operations. These operations override any equivalent BGP-wide operations or, if there are no equivalents, supplement them.

If you do not specify any peer-specific tracing operations, the peers inherit, first, all the BGP-wide tracing operations and, second, the global tracing operations.

- Interface tracing operations—Define tracing for individual router interfaces and for the interface process itself. You define these tracing operations at the **[edit interfaces]** hierarchy level of the configuration as described in the *Junos OS Network Interfaces Library for Routing Devices*.
- Remote tracing—To enable system-wide remote tracing, include the **destination-override syslog host** statement at the **[edit system tracing]** hierarchy level. This specifies the remote host running the system log process (syslogd), which collects the traces. Traces are written to file(s) on the remote host per the syslogd configuration in */etc/syslog.conf*. By default remote tracing is *not* configured.

To override the system-wide remote tracing configuration for a particular process, include the **no-remote-trace** statement at the **[edit process-name traceoptions]** hierarchy. When **no-remote-trace** is enabled, the process does local tracing.



NOTE: When remote tracing is configured, traces will go to the remote host.

To collect traces, use the **local0** facility as the selector in */etc/syslog.conf* on the remote host. To separate traces from various processes into different files, include the process name or trace-file name if it is specified at the **[edit process-name traceoptions file]** hierarchy level, in the Program field in */etc/syslog.conf*. If your syslog server supports parsing hostname and program name, then you can separate traces from the various processes.

Related Documentation • [Junos OS System Log Overview](#)

Understanding Dropped Packets and Untransmitted Traffic Using show Commands

Starting with Junos OS Release 14.2, packets that need to be forwarded to the adjacent network element or a neighboring device along a routing path might be dropped by a router owing to several factors. Some of the causes for such a loss of traffic or a block in transmission of data packets include overloaded system conditions, profiles and policies that restrict the bandwidth or priority of traffic, network outages, or disruption with physical cable faults. You can use a number of show commands to determine and analyze the statistical counters and metrics related to any traffic loss and take an appropriate corrective measure. The fields displayed in the output of the show commands help in diagnosing and debugging network performance and traffic-handling efficiency problems.

The following **show** commands and associated fields applicable for dropped packets enable you to view and analyze some of the system parameters for errors or disruption in transmitted packets:

show interfaces extensive Command

show interfaces extensive—Display input and output packet errors or drops

The following are the output fields related to packet drops:

Input Errors—Input errors on the interface. The following paragraphs explain the counters whose meaning might not be obvious:

- **Errors**—Sum of the incoming frame aborts and FCS errors.
- **Drops**—Number of packets dropped by the input queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet that is dropped by the ASIC's RED mechanism.
- **Framing errors**—Number of packets received with an invalid frame checksum (FCS).
- **Runts**—Number of frames received that are smaller than the runt threshold.
- **Policed discards**—Number of frames that the incoming packet match code discarded because they were not recognized or not of interest. Usually, this field reports protocols that the Junos OS does not handle.
- **L3 incompletes**—Number of incoming packets discarded because they failed Layer 3 (usually IPv4) sanity checks of the header. For example, a frame with less than 20 bytes of available IP header is discarded. L3 incomplete errors can be ignored by configuring the **ignore-l3-incompletes** statement.
- **L2 channel errors**—Number of times the software did not find a valid logical interface for an incoming frame.
- **L2 mismatch timeouts**—Number of malformed or short packets that caused the incoming packet handler to discard the frame as unreadable.
- **FIFO errors**—Number of FIFO errors in the receive direction that are reported by the ASIC on the PIC. If this value is ever nonzero, the PIC is probably malfunctioning.
- **Resource errors**—Sum of transmit drops.

Output Errors—Output errors on the interface. The following paragraphs explain the counters whose meaning might not be obvious:

- **Carrier transitions**—Number of times the interface has gone from **down** to **up**. This number does not normally increment quickly, increasing only when the cable is unplugged, the far-end system is powered down and then up, or another problem occurs. If the number of carrier transitions increments quickly (perhaps once every 10 seconds), the cable, the far-end system, or the PIC or PIM is malfunctioning.
- **Errors**—Sum of the outgoing frame aborts and FCS errors.
- **Drops**—Number of packets dropped by the output queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet that is dropped by the ASIC's RED mechanism.

- **Collisions**—Number of Ethernet collisions. The Gigabit Ethernet PIC supports only full-duplex operation, so for Gigabit Ethernet PICs, this number should always remain 0. If it is nonzero, there is a software bug.
- **Aged packets**—Number of packets that remained in shared packet SDRAM so long that the system automatically purged them. The value in this field should never increment. If it does, it is most likely a software bug or possibly malfunctioning hardware.
- **FIFO errors**—Number of FIFO errors in the send direction as reported by the ASIC on the PIC. If this value is ever nonzero, the PIC is probably malfunctioning.
- **HS link CRC errors**—Number of errors on the high-speed links between the ASICs responsible for handling the router interfaces.
- **MTU errors**—Number of packets whose size exceeded the MTU of the interface.
- **Resource errors**—Sum of transmit drops.

Queue counters (Egress)

CoS queue number and its associated user-configured forwarding class name.

- **Queued packets**—Number of queued packets.
- **Transmitted packets**—Number of transmitted packets.
- **Dropped packets**—Number of packets dropped by the ASIC's RED mechanism.

Queue counters (Ingress)

CoS queue number and its associated user-configured forwarding class name. Displayed on IQ2 interfaces.

- **Queued packets**—Number of queued packets.
- **Transmitted packets**—Number of transmitted packets.
- **Dropped packets**—Number of packets dropped by the ASIC's RED mechanism.

show interfaces queue Command

show interfaces queue—Display class-of-service (CoS) queue information for physical interfaces.

The following are the output fields related to packet drops:

Queue counters (Ingress)—CoS queue number and its associated user-configured forwarding class name. Displayed on IQ2 interfaces.

- **Queued packets**—Number of queued packets.
- **Transmitted packets**—Number of transmitted packets.
- **Dropped packets**—Number of packets dropped by the ASIC's RED mechanism.

Tail-dropped packets—Number of packets dropped because of tail drop.

RL-dropped packets—Number of packets dropped due to rate limiting. For rate-limited interfaces hosted on MICs, MPCs, and Enhanced Queuing DPCs only, this statistic is not included in the queued traffic statistics.

RL-dropped bytes—Number of bytes dropped due to rate limiting. For rate-limited interfaces hosted on MICs, MPCs, and Enhanced Queuing DPCs only, this statistic is not included in the queued traffic statistics.

RED-dropped packets—Number of packets dropped because of random early detection (RED).

- (M Series and T Series routers only) On M320 and M120 routers and the T Series routers, the total number of dropped packets is displayed. On all other M Series routers, the output classifies dropped packets into the following categories:
 - **Low, non-TCP**—Number of low-loss priority non-TCP packets dropped because of RED.
 - **Low, TCP**—Number of low-loss priority TCP packets dropped because of RED.
 - **High, non-TCP**—Number of high-loss priority non-TCP packets dropped because of RED.
 - **High, TCP**—Number of high-loss priority TCP packets dropped because of RED.
- (J Series routers and MX Series routers with enhanced DPCs, and T Series routers with enhanced FPCs only) The output classifies dropped packets into the following categories:
 - **Low**—Number of low-loss priority packets dropped because of RED.
 - **Medium-low**—Number of medium-low loss priority packets dropped because of RED.
 - **Medium-high**—Number of medium-high loss priority packets dropped because of RED.
 - **High**—Number of high-loss priority packets dropped because of RED.

RED-dropped bytes—Number of bytes dropped because of RED. The byte counts vary by interface hardware.

- (M Series and T Series routers only) On M320 and M120 routers and the T Series routers, only the total number of dropped bytes is displayed. On all other M Series routers, the output classifies dropped bytes into the following categories:
 - **Low, non-TCP**—Number of low-loss priority non-TCP bytes dropped because of RED.
 - **Low, TCP**—Number of low-loss priority TCP bytes dropped because of RED.
 - **High, non-TCP**—Number of high-loss priority non-TCP bytes dropped because of RED.
 - **High, TCP**—Number of high-loss priority TCP bytes dropped because of RED.
- (J Series routers only) The output classifies dropped bytes into the following categories:

- **Low**—Number of low-loss priority bytes dropped because of RED.
- **Medium-low**—Number of medium-low loss priority bytes dropped because of RED.
- **Medium-high**—Number of medium-high loss priority bytes dropped because of RED.
- **High**—Number of high-loss priority bytes dropped because of RED.

**show class-of-service
fabric statistics
summary Command**

show class-of-service fabric statistics summary—Display class-of-service (CoS) switch fabric queue drop statistics.

The following are the output fields related to packet drops:

Drop statistics—Fabric queue statistics for dropped traffic:

- **Packets**—Dropped packet count for high-priority and low-priority queues.
- **Bytes**—Dropped byte count for high-priority and low-priority queues.
- **pps**—Dropped packets-per-second count for high-priority and low-priority queues.
- **bps**—Dropped bits-per-second count for high-priority and low-priority queues.

**show pfe statistics
traffic fpc Command**

show pfe statistics traffic fpc—Display packet drops related to the entire FPC

The following are the output fields related to packet drops:

Packet Forwarding Engine Hardware Discard statistics—Information about Packet Forwarding Engine hardware discards:

- **Timeout**—Number of packets discarded because of timeouts.
- **Truncated key**—Number of packets discarded because of truncated keys.
- **Bits to test**—Number of bits to test.
- **Data error**—Number of packets discarded because of data errors.
- **Stack underflow**—Number of packets discarded because of stack underflows.
- **Stack overflow**—Number of packets discarded because of stack overflows.
- **Normal discard**—Number of packets discarded because of discard routes. Packets are dropped silently without being further processed by the host. Normal discards are reported when packets match a firewall filter term that has an action of discard or when the final result of the route look-up is a next hop of discard.
- **Extended discard**—Number of packets discarded because of illegal next hops. Packets are dropped silently but are also sent to the Routing Engine for further processing. Extended discards are reported when packets match a firewall filter term that has an

action of discard and an additional action that requires Routing Engine processing, such as log, count, sample, or syslog.

- **Invalid interface**—Number of packets discarded because of invalid incoming interfaces.
- **Info cell drops**—Number of information cell drops.
- **Fabric drops**—Number of fabric drops.

Packet Forwarding Engine Local Traffic statistics—Information about Packet Forwarding Engine local traffic:

- **Local packets input**—Number of incoming packets from the local network.
- **Local packets output**—Number of outgoing packets dispatched to a host in the local network.
- **Software input high drops**—Number of incoming software packets of high-priority, dropped during transmission.
- **Software input medium drops**—Number of incoming software packets of medium-priority, dropped during transmission.
- **Software input low drops**—Number of incoming software packets of low-priority, dropped during transmission.
- **Software output drops**—Number of outgoing software packets that were dropped during transmission.
- **Hardware input drops**—Number of incoming hardware packets that were dropped during transmission.

The preceding commands represent only the main parameters that you can use to identify and monitor traffic drops or errors. Depending on your specific deployment scenario and network conditions, you might need to view the output of other relevant **show** commands to evaluate different factors that might be resulting in traffic transmission losses.

- Related Documentation**
- *show interfaces extensive*
 - *show interfaces queue*
 - *show pfe statistics traffic*
 - *show class-of-service fabric statistics*

Log a User Out of the Router

Purpose Disconnect a user session when that session does not terminate after the user logs out.

Action To log a user out of all terminal sessions on a router, enter the following Junos OS CLI operational mode command:

```
user@host> request system logout username
```

Sample Output

```
user@host> show system users
10:07PM up 13 days, 1:25, 2 users, load averages: 0.17, 0.05, 0.02
USER      TTY      FROM              LOGIN@   IDLE   WHAT
harry     p0       hpot-1t.cmpy.net  10:07PM   -    -cli (c1
wizard    p1       hpot-1t.cmpy.net  10:06PM   -    -cli (c1

user@host> request system logout user harry
user@host> show system users
10:07PM up 13 days, 1:25, 1 user, load averages: 0.24, 0.06, 0.02
USER      TTY      FROM              LOGIN@   IDLE   WHAT
wizard    p1       hpot-1t.cmpy.net  10:06PM   -    -cli (c1
```

Meaning The sample output for the first **show system users** command shows there were two users on the router, **harry** and **wizard**. The **request system logout user** command was issued to log out user **harry**. Because there is no output to indicate that **harry** was logged out, the **show system users** command was issued again to verify that user **harry** was actually logged out of the router.

CHAPTER 6

Managing Junos OS Processes

- [Disabling Junos OS Processes on page 79](#)
- [Viewing Core Files from Junos OS Processes on page 80](#)
- [Saving Core Files from Junos OS Processes on page 80](#)
- [Configuring Failover to Backup Media If a Junos OS Process Fails on page 80](#)
- [Using the AgentD Process for Exporting Data to the Routing Engine on page 81](#)
- [Using Virtual Memory for Process Configuration Data on page 82](#)
- [Example: Configuring Virtual Memory for Process Configuration Data on page 83](#)

Disabling Junos OS Processes



CAUTION: Never disable any of the software processes unless instructed to do so by a Customer Support engineer.

To disable a software process, specify the appropriate option in the **processes** statement at the **[edit system]** hierarchy level:

```
[edit system]
processes {
  process-name (enable | disable);
}
```



NOTE: The *process-name* variable is one of the valid process names. You can obtain a complete list of process names by using the CLI command completion feature. For additional information, see [processes](#).

Related Documentation

- [Configuring Failover to Backup Media If a Junos OS Process Fails on page 80](#)
- [Configuring Password Authentication for the Diagnostics Port](#)
- [Viewing Core Files from Junos OS Processes on page 80](#)

Viewing Core Files from Junos OS Processes

When an internal Junos OS process generates a core file, the output found at `/var/crash/` and `/var/tmp/` can now be viewed. This provides a quick method of finding core issues across large networks.

Use the CLI command `show system core-dumps` to view core files.

```
root@host> show system core-dumps
-rw----- 1 root  wheel  268369920 Jun 18 17:59 /var/crash/vmcore.0
-rw-rw---- 1 root  field   3371008 Jun 18 17:53 /var/tmp/rpd.core.0
-rw-r--r-- 1 root  wheel   27775914 Jun 18 17:59 /var/crash/kernel.0
```

Related Documentation

- [Saving Core Files from Junos OS Processes on page 80](#)

Saving Core Files from Junos OS Processes

By default, when an internal Junos OS process generates a core file, the file and associated context information are saved for debugging purposes in a compressed tar file named `/var/tmp/process-name.core.core-number.tgz`. The contextual information includes the configuration and system log message files.

To disable the saving of core files and associated context information, include the `no-saved-core-context` statement at the `[edit system]` hierarchy level:

```
[edit system]
no-saved-core-context;
```

To save the core files only, include the `saved-core-files` statement at the `[edit system]` hierarchy level and specify the number of files to save:

```
[edit system]
saved-core-files number;
```

number is the number of core files to save and can be a value from 1 through 10.

To save the core files along with the contextual information, include the `saved-core-context` statement at the `[edit system]` hierarchy level:

```
[edit system]
saved-core-context;
```

Related Documentation

- [Viewing Core Files from Junos OS Processes on page 80](#)

Configuring Failover to Backup Media If a Junos OS Process Fails

For routers or switches with redundant Routing Engines, you can configure the router or switch to switch to backup media that contains a version of the system if a software process fails repeatedly. You can configure the router or switch to fail over either to

backup media or to the other Routing Engine. To configure automatic switchover to backup media if a software process fails, include the **failover** statement at the **[edit system processes process-name]** hierarchy level:

```
[edit system processes]
process-name failover (alternate-media | other-routing-engine);
```

process-name is one of the valid process names. If this statement is configured for a process, and that process fails four times within 30 seconds, the router reboots from either the alternative media or the other Routing Engine.

- Related Documentation**
- [Disabling Junos OS Processes on page 79](#)
 - [Saving Core Files from Junos OS Processes on page 80](#)
 - [processes on page 135](#)

Using the AgentD Process for Exporting Data to the Routing Engine

Starting with Junos OS Release 14.2, the agent process is a control plane process. AgentD interfaces with the Junos OS CLI to configure sensors and streaming servers, and to export profiles that are present in the Packet Forwarding Engine. The data pertaining to sensors is in turn exported in .jrf (Java required files format) format at the configured intervals to the streaming servers from Packet Forwarding Engine. AgentD can intercept the data sent out from the Packet Forwarding Engine to prevent the Routing Engine processes or daemons from querying the Packet Forwarding Engine. Starting with Junos OS Release 14.2, this data is exported by agentD from the Packet Forwarding Engine to the Routing Engine. A historical snapshot of this data collected is maintained in the Routing Engine. A limit on the number of records of the sensor data that is saved in the Routing Engine exists.

The following operations occur during the export of data to the Routing Engine using agentD:

1. AgentD listens on port 2000 for messages from the Packet Forwarding Engine. Data can be received at the Routing Engine by configuring the IP address of one of the streaming servers as the Routing Engine IP address of fxp0 and port as 2000.
2. The data is sent by Packet Forwarding Engine in JRF format.
3. AgentD maintains the sensor data history in a database (/var/run/agentd.db). It is a Berkeley database. AgentD database has tables based on sensor types. Because CPU, NPU, and interface sensor types are supported, a total of three tables are created.
4. It is possible to maintain a history of maximum 50 records for each table in the database. The number of records is configured using a hidden statement.



NOTE: We recommend that you use the hidden statement to configure the limit on the number of records of sensor data that is exported by agentD only with the assistance of a Juniper Technical Assistance Center representative.

5. After the sensor data arrives at the Routing Engine, agentD decodes the header to find sensor type so as to write the data into the respective table. It determines the sensor ID, FPC slot, Packet Forwarding Engine ID, and retrieves the current timestamp. This 4-tuple value becomes the key for the table. The entire message along with the header is written to the database table.
6. When a fresh record needs to be written to the table, the maximum limit for number of records, if configured, is examined. If the limit is exceeded, the oldest entry is purged from the table to insert the fresh record.

Release History Table

| Release | Description |
|---------|--|
| 14.2R1 | Starting with Junos OS Release 14.2, the agent process is a control plane process. |

Using Virtual Memory for Process Configuration Data

Configuration data for each process in Junos OS is stored in memory that is mapped within the address space of each process, requiring a fixed maximum space to be reserved in each process. Typically, the maximum database size available is 680 MB for the i386 platform and 238 MB for other platforms. This scheme works well until a process is managing many functions at commit time and negatively impacts the commit time, or simply needs more memory than the default allotment. For example, the rpd process might be managing many routes and require more space to store important information about the routes.

In circumstances that require more than the maximum memory-mapped size, you can use **virtual-memory-mapping** at the **[edit system configuration-database]** hierarchy level to make more memory available for the configuration database per process.

You can configure a portion of virtual memory at a fixed size for the initial portion of the configuration database, and you can specify an amount to be used for page-pooling. Page-pooling uses a small amount of memory to bring database pages into memory as needed, rather than mapping the entire configuration database into the virtual memory space for the process.

For i386 platforms on the M Series, MX Series, and T Series devices only, you can also extend the configuration database size from a maximum of 680 MB to 1.5 GB.

Related Documentation

- [Example: Configuring Virtual Memory for Process Configuration Data on page 83](#)
- [configuration-database on page 109](#)
- [extend-size on page 115](#)
- [virtual-memory-mapping on page 152](#)

Example: Configuring Virtual Memory for Process Configuration Data

This example shows how to use **virtual-memory-mapping** to configure different fixed and page-pooling sizes for the configuration database for individual processes in Junos OS.

- [Requirements on page 83](#)
- [Overview on page 83](#)
- [Configuration on page 84](#)

Requirements

This example uses the following hardware and software components:

- A Juniper Networks M Series, MX Series, PTX Series, or T Series router
- Junos OS Release 13.2 or later

Overview

Typically, the maximum database size available for storing configuration data per process is 665.99 MB for M, MX, PTX, and T i386 platforms, with certain devices such as the PTX1000 Packet Transport Router having a maximum database size of 409.99 MB. The database size is mapped within the address space reserved for that process. Depending on the process, this database size might impact commit performance for a process that manages many changes at commit. To improve commit performance, you can use **virtual-memory-mapping** at the **[edit system configuration-database]** hierarchy level to allocate virtual memory for storing process configuration data on a per-process basis. You can configure a portion of the virtual memory as fixed size and a portion for page-pooling. Page-pooling uses just a small amount of memory to swap pages in or out as needed, rather than mapping the entire configuration database at once.

Using **virtual-memory-mapping** and enabling page-pooling are methods used to improve commit performance for processes that manage many changes at commit time that negatively impact commit performance.

Additionally, for M, MX, PTX, and T i386 systems, the option **extend-size** is available at the **[edit system configuration-database]** hierarchy level to increase the configuration database size, improving commit performance for mgd. The extended default size is based on the original default database size. A device with a default database size of 409.99 MB will extend to a maximum of 1049.99 MB, and a device with a default database size of 665.99 MB will extend to a maximum of 1305.99. The extended size will automatically be used by mgd. Other processes will only be able to access the increased size by using page-pooling. The **extend-size** option is not available on MX80, MX40, MX10, or MX5 platforms.

The configurations provided here are only examples. The sizes and processes that you configure will be different depending on the needs of your system.

Syntax

The syntax structure used in this example is available in Junos OS Release 13.2 or later.

```
system {
  configuration-database {
    virtual-memory-mapping {
      process process name {
        fixed-size size KB;
        page-pooling-size size KB;
      }
    }
    extend-size;
  }
}
```

Configuration

- [Configuring Virtual Memory Parameters for a Single Process on page 84](#)
- [Configuring Virtual Memory Parameters for Multiple Processes on page 85](#)
- [Configuring Extended Size for the Configuration Database on page 86](#)

Configuring Virtual Memory Parameters for a Single Process

Step-by-Step Procedure

This example sets parameters of 512 KB for the fixed size and 512 KB for the page-pooling size of virtual memory mapping for the interface-control process, which controls the router's physical interface devices and logical interfaces.

This example assumes that the interface-control process on this sample system manages so many changes at commit time that performance is impacted. After completing this configuration on this system, the user expects improvement in the commit time performance.

1. Set the virtual memory fixed size to 512 KB and the page-pooling size to 512 KB for the interface-control process.

[edit]

```
user@host# set system configuration-database virtual-memory-mapping process
interface-control fixed-size 512 page-pooling 512
```

2. Commit the changes.

```
user@host# commit
```

Results Verify the setup using the `show system configuration-database` command.

```
user@host# show system configuration-database

configuration-database {
  virtual-memory-mapping {
    process interface-control {
      fixed-size 512;
      page-pooling-size 512;
    }
  }
}
```



NOTE: Starting from Junos OS Release 15.1, you use the `show system configuration database usage` operational mode command to view the usage statistics of configuration database memory.

Configuring Virtual Memory Parameters for Multiple Processes

Step-by-Step Procedure

You can configure virtual memory parameters for configuration data for more than one process on a single system. This example configures parameters to enable page-pooling for the processes: interface-control, mib-process, firewall, event-processing, vrrp, and snmp.

1. Set the fixed-size to 20480 and set the page-pooling size to 30720 for the interface-control process.

```
user@host# set system configuration-database virtual-memory-mapping process
interface-control fixed-size 20480 page-pooling 30720
```

2. Set the fixed-size to 512 and set the page-pooling size to 30720 for the mib-process.

```
user@host# set system configuration-database virtual-memory-mapping process
mib-process fixed-size 512 page-pooling 30720
```

3. Set the fixed-size to 30720 and set the page-pooling size to 1024 for the firewall process.

```
user@host# set system configuration-database virtual-memory-mapping process
firewall 30720 page-pooling 1024
```

4. Set the fixed-size to 10240 and set the page-pooling size to 10240 for the snmp process.

```
user@host# set system configuration-database virtual-memory-mapping process
snmp fixed-size 10240 page-pooling 10240
```

5. Commit the changes.

```
user@host# commit
```

Results Verify the setup using the `show system configuration-database` command.

```
user@host# show system configuration-database
configuration-database {
  virtual-memory-mapping {
    process interface-control {
      fixed-size 20480;
      page-pooling-size 30720;
    }
    process mib-process {
```

```

        fixed-size 512;
        page-pooling-size 30720;
    }
    process firewall {
        fixed-size 30720;
        page-pooling-size 1024;
    }
    process snmp {
        fixed-size 10240;
        page-pooling-size 10240;
    }
}
}

```



NOTE: Starting from Junos OS Release 15.1, you use the `show system configuration database usage` operational mode command to view the usage statistics of configuration database memory.

Configuring Extended Size for the Configuration Database

Step-by-Step Procedure

This example increases the configuration database size available to mgd and other processes on i386 versions of M Series, MX Series, PTX Series, or T Series platforms. Devices with a default database size of 409.99 MB will extend to a maximum of 1049.99 MB, and devices with a default database size of 665.99 MB will extend to a maximum of 1305.99.



NOTE: This feature is only available on i386 platforms, and mgd automatically uses the increased database size. To make the extended memory available for other processes, enable `page-pooling-size` under `virtual-memory-mapping`. The extend-size option is not available on MX80, MX40, MX10, or MX5 platforms.

1. Extend the configuration database size.

```

[edit]
user@host# set system configuration-database extend-size

```

2. Commit the changes.

```

user@host# commit

```

Results Verify the setup using the `show system configuration-database` command. For brevity, this `show` output includes only the configuration that is relevant to this example.

```

user@host# show system configuration-database
configuration-database {

```



```
...
extend-size;
}
```



NOTE: Starting from Junos OS Release 15.1, you use the **show system configuration database usage** operational mode command to view the usage statistics of configuration database memory.

Release History Table

| Release | Description |
|---------|--|
| 15.1 | Starting from Junos OS Release 15.1, you use the show system configuration database usage operational mode command to view the usage statistics of configuration database memory. |

Related Documentation

- [Using Virtual Memory for Process Configuration Data on page 82](#)
- [configuration-database on page 109](#)
- [extend-size on page 115](#)
- [virtual-memory-mapping on page 152](#)
- [show system configuration database usage on page 512](#)

PART 3

Configuration Statements and Operational Commands

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CHAPTER 7

Configuration Statements

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System Management Configuration Statements

This topic lists all the configuration statements that you can include at the **[edit system]** hierarchy level to configure system management features:

```
system {  
  accounting {  
    destination {  
      radius {  
        server {  
          server-address {  
            accounting-port port-number;  
            retry number;
```

```

        secret password;
        source-address address;
        timeout seconds;
    }
}
tacplus {
    server {
        server-address {
            port port-number;
            secret password;
            single-connection;
            timeout seconds;
        }
    }
}
enhanced-avs-max;
events [ login change-log interactive-commands ];
}
archival {
    configuration {
        archive-sites {
            ftp://<username>:<password>@<host>:<port>/<url-path>;
            ftp://<username>:<password>@<host>:<port>/<url-path>;
        }
        transfer-interval interval;
        transfer-on-commit;
    }
}
allow-v4mapped-packets;
arp {
    aging-timer minutes;
    gratuitous-arp-delay;
    gratuitous-arp-on-ifup;
    interfaces;
    passive-learning;
    purging;
}
authentication-order [ authentication-methods ];
backup-router address <destination destination-address>;
commit {
    delta-export;
    fast-synchronize;
    persist-groups-inheritance;
    server;
    synchronize
}
synchronize;
(compress-configuration-files | no-compress-configuration-files);
default-address-selection;
dump-device (compact-flash | remove-compact | usb);
diag-port-authentication (encrypted-password "password" | plain-text-password);
dynamic-profile-options {
    versioning;
}

```

```
domain-name domain-name;
domain-search [ domain-list ];
host-name hostname;
inet6-backup-router address <destination destination-address>;
internet-options {
    tcp-mss mss-value;
    (gre-path-mtu-discovery | no-gre-path-mtu-discovery);
    icmpv4-rate-limit bucket-size bucket-size packet-rate packet-rate;
    icmpv6-rate-limit bucket-size bucket-size packet-rate packet-rate;
    (ipip-path-mtu-discovery | no-ipip-path-mtu-discovery);
    (ipv6-path-mtu-discovery | no-ipv6-path-mtu-discovery);
    ipv6-path-mtu-discovery-timeout;
    no-tcp-rfc1323-paws;
    no-tcp-rfc1323;
    (path-mtu-discovery | no-path-mtu-discovery);
    source-port upper-limit <upper-limit>;
    (source-quench | no-source-quench);
    tcp-drop-synfin-set;
}
location {
    altitude feet;
    building name;
    country-code code;
    floor number;
    hcoord horizontal-coordinate;
    lata service-area;
    latitude degrees;
    longitude degrees;
    npa-nxx number;
    postal-code postal-code;
    rack number;
    vcoord vertical-coordinate;
}
login {
    announcement text;
    class class-name {
        access-end;
        access-start;
        allow-commands "regular-expression";
        ( allow-configuration | allow-configuration-regexps ) "regular expression 1" "regular
            expression 2";
        allowed-days;
        deny-commands "regular-expression";
        ( deny-configuration | deny-configuration-regexps ) "regular expression 1" "regular
            expression 2 ";
        idle-timeout minutes;
        login-script
        login-tip;
        permissions [ permissions ];
    }
    message text;
    password {
        change-type (set-transitions | character-set);
        format (md5 | sha1 | des);
        maximum-length length;
        minimum-changes number;
```



```

        minimum-length length;
    }
    retry-options {
        backoff-threshold number;
        backoff-factor seconds;
        minimum-time seconds;
        tries-before-disconnect number;
    }
    user username {
        full-name complete-name;
        uid uid-value;
        class class-name;
        authentication {
            (encrypted-password "password" | plain-text-password);
            ssh-rsa "public-key";
            ssh-dsa "public-key";
        }
    }
}
login-tip number;
mirror-flash-on-disk;
name-server {
    address;
}
no-multicast-echo;
no-redirects;
no-ping-record-route;
no-ping-time-stamp;
ntp {
    authentication-key key-number type type value password;
    boot-server address;
    broadcast <address> <key key-number> <version value> <ttl value>;
    broadcast-client;
    multicast-client <address>;
    peer address <key key-number> <version value> <prefer>;
    source-address source-address;
    server address <key key-number> <version value> <prefer>;
    trusted-key [ key-numbers ];
}
ports {
    auxiliary {
        type terminal-type;
    }
    pic-console-authentication {
        encrypted-password encrypted-password;
        plain-text-password;
        console {
            insecure;
            log-out-on-disconnect;
            type terminal-type;
            disable;
        }
    }
}
processes {
    process--name (enable | disable) failover (alternate-media | other-routing-engine);
    timeout seconds;
}

```

```
    }
  }
radius-server server-address {
  accounting-port port-number;
  port port-number;
  retry number;
  secret password;
  source-address source-address;
  timeout seconds;
}
radius-options {
  enhanced-accounting
  password-protocol mschap-v2;
}
attributes {
  nas-ip-address ip-address;
}
enhanced-accounting;
password-protocol mschap-v2;
}
root-authentication {
  (encrypted-password "password" | plain-text-password);
  ssh-rsa "public-key";
  ssh-dsa "public-key";
}
(saved-core-context | no-saved-core-context);
saved-core-files saved-core-files;
scripts {
  commit {
    allow-transients;
    file filename {
      optional;
      refresh;
      refresh-from url;
      source url;
    }
    traceoptions {
      file <filename> <files number> <size size> <world-readable | no-world-readable>;
      flag flag;
      no-remote-trace;
    }
  }
  op {
    file filename {
      arguments {
        argument-name {
          description descriptive-text;
        }
      }
      command filename-alias;
      description descriptive-text;
      refresh;
      refresh-from url;
      source url;
    }
    refresh;
    refresh-from url;
```

```

    traceoptions {
        file <filename> <files number> <size size> <world-readable | no-world-readable>;
        flag flag;
        no-remote-trace;
    }
}
services {
    finger {
        connection-limit limit;
        rate-limit limit;
    }
    flow-tap-dtcp {
        ssh {
            connection-limit limit;
            rate-limit limit;
        }
    }
    ftp {
        connection-limit limit;
        rate-limit limit;
    }
    rest {
        control {
            allowed-sources [ value-list ];
            connection-limit limit;
        }
        enable-explorer;
        http {
            addresses [ addresses ];
            port port-number;
        }
        https {
            addresses [ addresses ];
            cipher-list [ cipher-1 cipher-2 cipher-3 ... ];
            mutual-authentication {
                certificate-authority certificate-authority-profile-name;
            }
            port port-number;
            server-certificate local-certificate-identifier;
        }
        traceoptions {
            flag flag;
        }
    }
}
service-deployment {
    servers server-address {
        port port-number;
    }
    source-address source-address;
}
ssh {
    root-login (allow | deny | deny-password);
    protocol-version [v1 v2];
    connection-limit limit;
    rate-limit limit;
}

```

```
}
telnet {
    connection-limit limit;
    rate-limit limit;
}
web-management {
    http {
        interfaces [ interface-names ];
        port port;
    }
    https {
        interfaces [ interface-names ];
        local-certificate name;
        port port;
    }
    session {
        idle-timeout [ minutes ];
        session-limit [ session-limit ];
    }
}
xnm-clear-text {
    connection-limit limit;
    rate-limit limit;
}
xnm-ssl {
    connection-limit limit;
    local-certificate name;
    rate-limit limit;
}
}
static-host-mapping {
    hostname {
        alias [ alias ];
        inet [ address ];
        sysid system-identifier;
    }
}
syslog {
    archive <files number> <size size> <world-readable | no-world-readable>;
    console {
        facility severity;
    }
    file filename {
        facility severity;
        archive <archive-sites {ftp-url <password password>}> <files number> <size size>
            <start-time "YYYY-MM-DD.hh:mm"> <transfer-interval minutes> <world-readable |
            no-world-readable>;
        explicit-priority;
        match "regular-expression";
        match-string string-name;
        structured-data {
            brief;
        }
    }
}
host (hostname | other-routing-engine | scc-master) {
    facility severity;
```

```
    explicit-priority;
    facility-override facility;
    log-prefix string;
    match "regular-expression";
    source-address source-address;
    structured-data {
        brief;
    }
}
source-address source-address;
time-format (year | millisecond | year millisecond);
user (username | *) {
    facility severity;
    match "regular-expression";
}
}
tacplus-options {
    enhanced-accounting;
    service-name service-name;
    (no-cmd-attribute-value | exclude-cmd-attribute);
}
tacplus-server server-address {
    secret password;
    single-connection;
    source-address source-address;
    timeout seconds;
}
time-zone (GMThour-offset | time-zone);
}
tracing {
    destination-override {
        syslog host;
    }
}
use-imported-time-zones;
}
```

announcement

| | |
|---------------------------------|--|
| Syntax | announcement <i>text</i> ; |
| Hierarchy Level | [edit system login] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Configure a system login announcement. This announcement appears after a user logs in. |
| Options | <i>text</i> —Text of the announcement. If the text contains any spaces, enclose it in quotation marks. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring the Junos OS to Display a System Login Announcement</i>• message on page 126 |

archival

Syntax

```

archival {
  configuration {
    archive-sites {
      file://<path>/<filename>;
      ftp://username@host:<port>url-path password password;
      http://username@host:<port>url-path password password;
      pasvftp://username@host:<port>url-path password password;
      scp://username@host:<port>url-path password password;
    }
    transfer-interval interval;
    transfer-on-commit;
  }
}

```

Hierarchy Level [edit system]

Release Information Statement introduced before Junos OS Release 7.4.
Statement introduced in Junos OS Release 9.0 for EX Series switches.
Statement introduced in Junos OS Release 11.1 for the QFX Series.
Statement introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.

Description Configure copying of the currently active configuration to an archive site. An archive site can be a file, or an FTP, HTTP, or SCP location.

Options The remaining statements are explained separately.





NOTE: The [edit system archival] hierarchy is not available on QFabric systems.

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

Related Documentation

- [Using Junos OS to Configure a Router or Switch to Transfer Its Configuration to an Archive Site on page 61](#)

archive-sites (Configuration File)

| | |
|----------------------------|--|
| Syntax | <pre>archive-sites { file://<path>/<filename>; ftp://username@host:<port>url-path password password; http://username@host:<port>url-path password password; pasvftp://username@host:<port>url-path password password; scp://username@host:<port>url-path password password; }</pre> |
| Hierarchy Level | [edit system archival configuration] |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Statement introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Statement introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p> |
| Description | <p>Specify where to transfer the current configuration files. When specifying a URL in a Junos OS statement using an IPv6 host address, you must enclose the entire URL in quotation marks (" ") and enclose the IPv6 host address in brackets ([]). For example,</p> <p>"scp://username<:password>@[ipv6-host-address]<:port>/url-path"</p> <p>If you specify more than one archive site, the router or switch attempts to transfer the configuration files to the first archive site in the list, moving to the next only if the transfer fails.</p> <p>The destination filename is saved in the following format, where <i>n</i> corresponds to the number of the compressed configuration rollback file that has been archived:</p> <p>router-name_YYYYMMDD_HHMMSS_juniper.conf.n.gz</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <p> NOTE: The time included in the destination filename is always in Coordinated Universal Time (UTC) regardless of whether the time on the router or switch is configured as UTC or the local time zone. The default time zone on the router or switch is UTC.</p> </div> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <p> NOTE: The [edit system archival] hierarchy is not available on QFabric systems.</p> </div> |
| Options | <p>The prefix used in the configuration statement determines the form of transfer:</p> <p>file:// —transfer on a path to a named file</p> <p>ftp:// —transfer using active FTP server</p> |

http://—transfer using HTTP server

pasvftp:// —transfer to a device that only accepts passive FTP services

scp:// —transfer to a known host using background SCP file transfers

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

| | |
|------------------------------|--|
| Related Documentation | <ul style="list-style-type: none">• Configuring Archive Sites for the Transfer of Active Configuration Files on page 62• Junos OS Commit Model for Router or Switch Configuration on page 35• configuration on page 108• transfer-on-commit on page 150 |
|------------------------------|--|

autoinstallation

| | |
|---------------------------------|---|
| Syntax | <pre>autoinstallation { configuration-servers { url; } interfaces { interface-name { bootp; rarp; } } }</pre> |
| Hierarchy Level | [edit system] |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 9.1 for EX Series switches.</p> <p>Statement introduced in Junos OS Release 12.2 for ACX Series Universal Access Routers.</p> |
| Description | <p>Download a configuration file automatically from an FTP, Hypertext Transfer Protocol (HTTP), or Trivial FTP (TFTP) server. When you power on a router or switch configured for autoinstallation, it requests an IP address from a Dynamic Host Configuration Protocol (DHCP) server. Once the router or switch has an address, it sends a request to a configuration server and downloads and installs a configuration.</p> |
| Options | The remaining statements are explained separately. See CLI Explorer . |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none">• <i>ACX Series Autoinstallation Overview</i>• <i>Before You Begin Autoinstallation on an ACX Series Universal Access Router</i>• <i>Autoinstallation Configuration of ACX Series Universal Access Routers</i>• <i>USB Autoinstallation on ACX Series Routers</i>• <i>Verifying Autoinstallation on ACX Series Universal Access Routers</i>• <i>show system autoinstallation status</i>• <i>Upgrading Software by Using Automatic Software Download</i>• configuration-servers on page 110• <i>idle-timeout</i> |

backup-router

| | |
|---------------------------------|--|
| Syntax | <code>backup-router address <destination <i>destination-address</i>>;</code> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Set a default router (running IP version 4 [IPv4]) to use while the local router (running IPv4) is booting and if the routing protocol processes fail to start. The Junos OS removes the route to this router as soon as the software starts. |
| Options | <p>address—Address of the default router.</p> <p>destination <i>destination-address</i>—(Optional) Destination address that is reachable through the backup router. You can include this option to achieve network reachability while loading, configuring, and recovering the router, but without the risk of installing a default route in the forwarding table.</p> <p>Default: All hosts (default route) are reachable through the backup router.</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring a Backup Router</i> |

commit (System)

| | |
|----------------------------|--|
| Syntax | <pre>commit { commit-synchronize-server; delta-export; fast-synchronize; notification; peers; peers-synchronize; persist-groups-inheritance; server; synchronize; }</pre> |
| Hierarchy Level | [edit system] |
| Release Information | <p>Statement introduced in Junos OS Release 7.4.</p> <p>Option persist-groups-inheritance added in Junos OS Release 13.2.</p> <p>Option delta-export added in Junos OS Release 14.2.</p> <p>Option peers added in Junos OS Release 14.2R6</p> <p>Option peers-synchronize added in Junos OS Release 14.2R6</p> |
| Description | Configure options for Junos OS commit. |
| Options | <p>commit-synchronize-server—(Optional) Specify traceoptions for commit synchronize server actions.</p> <p>delta-export—(Optional) Configure system commit to export only the changes made in the candidate configuration instead of exporting the entire candidate configuration to the configuration database.</p> <p>fast-synchronize—(Optional) Configure the default commit to occur simultaneously on dual Routing Engines.</p> <p>notification—(Optional) Notify applications upon commit completion.</p> <p>peers—(Optional) Specify the host names or IP addresses of the MC-LAG peers and the user authentication details for the users administering the MC-LAG peers that are participating in commit synchronization.</p> <p>peers-synchronize—(Optional) Configure a commit synchronization on MC-LAG peers.</p> <p>persist-groups-inheritance—(Optional) Configure commit to quickly apply configuration groups that use wildcards.</p> <p>server—(Optional) Configure a default batch commit.</p> <p>synchronize—(Optional) Configure the default commit to occur sequentially on dual Routing Engines.</p> |

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

Related Documentation

- [delta-export on page 110](#)
- [fast-synchronize on page 116](#)
- [persist-groups-inheritance on page 130](#)
- [server on page 143](#)
- [synchronize on page 146](#)

compress-configuration-files (System)

Syntax (compress-configuration-files | no-compress-configuration-files);

Hierarchy Level [edit [system](#)]

Release Information Statement introduced before Junos OS Release 7.4.

Description Compress the current operational configuration file. By default, the current operational configuration file is compressed, and is stored in the file **juniper.conf**, in the **/config** file system, along with the last three committed versions of the configuration. However, with large networks, the current configuration file might exceed the available space in the **/config** file system. Compressing the current configuration file allows the file to fit in the file system, typically reducing the size of the file by 90 percent. The current configuration file is compressed on the second commit of the configuration after the first commit is made to include the **compress-configuration-files** statement.



NOTE: We recommend that you enable compression of the router configuration files to minimize the amount of disk space that they require.

Default The current operational configuration file is uncompressed.

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

Related Documentation

- *Compressing the Current Configuration File*

configuration

Syntax

```
configuration {
  transfer-interval interval;
  transfer-on-commit;
  archive-sites {
    file://<path>/<filename>;
    ftp://username@host:<port>url-path password password;
    http://username@host:<port>url-path password password;
    pasvftp://username@host:<port>url-path password password;
    scp://username@host:<port>url-path password password;
  }
}
```

Hierarchy Level [edit system archival]

Release Information Statement introduced before Junos OS Release 7.4.
Statement introduced in Junos OS Release 9.0 for EX Series switches.
Statement introduced in Junos OS Release 11.1 for the QFX Series.
Statement introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.

Description Configure the router or switch to periodically transfer its currently active configuration (or after each commit).



NOTE: The [edit system archival] hierarchy is not available on QFabric systems.

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

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

Related Documentation

- [Using Junos OS to Configure a Router or Switch to Transfer Its Configuration to an Archive Site on page 61](#)
- [archive](#)
- [archive-sites on page 102](#)
- [transfer-interval on page 149](#)
- [transfer-on-commit on page 150](#)

configuration-database

| | |
|---------------------------------|--|
| Syntax | <pre> configuration-database { ephemeral { allow-commit-synchronize-with-gres; ignore-ephemeral-default; instance <i>instance-name</i>; } virtual-memory-mapping { process <i>process name</i> { fixed-size <i>size KB</i>; page-pooling-size <i>size KB</i>; } } extend-size; } </pre> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced in Junos OS Release 13.2. |
| Description | <p>Define parameters for the configuration databases.</p> <p>Configure the virtual-memory-mapping statement hierarchy to increase the memory space available for the configuration database size per process, as needed, by using virtual memory mapping and page-pooling.</p> <p>Configure the ephemeral statement hierarchy to specify options for the ephemeral configuration database.</p> |
| Options | <p>extend-size—For i386 platforms on the M Series , MX Series, or T Series devices only, increase the memory space available for the configuration database, per process, up to 1.5 GB.</p> <p>The remaining statements are explained separately. See CLI Explorer.</p> |
| Required Privilege Level | <p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Example: Configuring Virtual Memory for Process Configuration Data on page 83 |

configuration-servers

| | |
|---------------------------------|---|
| Syntax | <pre>configuration-servers { url; }</pre> |
| Hierarchy Level | [edit system autoinstallation] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | For EX Series switches only, configure the URL address of a server from which to obtain configuration files. Examples of URLs: <i>tftp://hostname/path/filename</i> <i>ftp://username:prompt@ftp.hostname.net/filename /</i> |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Upgrading Software by Using Automatic Software Download</i>• Getting Started Guide for your router model• autoinstallation on page 104• <i>idle-timeout</i> |

delta-export

| | |
|---------------------------------|--|
| Syntax | <pre>delta-export;</pre> |
| Hierarchy Level | [edit system commit] |
| Release Information | Statement introduced in Junos OS Release 14.2. |
| Description | Configure system commit to export only the changes made in the candidate configuration instead of exporting the entire candidate configuration to the configuration database. This helps to reduce the time taken to commit the configuration changes. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• commit on page 106• System Management Configuration Statements on page 92 |

domain-name

| | |
|---------------------------------|--|
| Syntax | <code>domain-name <i>domain-name</i>;</code> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Configure the name of the domain in which the router or switch is located. This is the default domain name that is appended to hostnames that are not fully qualified. |
| Options | <i>domain-name</i> —Name of the domain. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Reaching a Domain Name System Server</i> |

domain-search

| | |
|---------------------------------|--|
| Syntax | <code>domain-search [<i>domain-list</i>];</code> |
| Hierarchy Level | <code>[edit system],</code> <code>[edit system services dhcp],</code> <code>[edit system services dhcp],</code> <code>[edit system services dhcp pool],</code> <code>[edit system services dhcp static-binding]</code> |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Configure a list of domains to search (in the case where you want to configure access to multiple DNS servers for redundancy, and/or to resolve hosts that the previous server could not). |
| Options | <i>domain-list</i> —List of domain servers to search. The list can contain up to six domain names, separated by a space, with a total of up to 256 characters. For example to search domain1.net , and if it fails to resolve the host, domain2.net , and if fails to resolve the host, domain3.net , you would configure the following domain list at the domain-search hierarchy level: <code>[edit system]</code> <code>set domain-search [domain1.net domain2.net domain3.net]</code> |
| Required Privilege Level | <code>system</code> —To view this statement in the configuration. <code>system-control</code> —To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring a Domain Name and Domain Search List for a DHCP Server Host</i>• <i>Reaching a Domain Name System Server</i> |



dump-device

| | |
|---------------------------------|--|
| Syntax | <pre> dump-device { compact-flash; removable-compact-flash; usb; } </pre> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | <p>Configure the medium used for storing memory snapshots of system failure. When you specify the storage and an operating system fails, the operating system writes a snapshot of the state of the router when it failed to the storage medium. When the operating system is rebooted, the storage device is checked for a snapshot. If found, the snapshot of memory is written to the /var/crash directory on the router and can be examined by Juniper Networks customer support to help determine the cause of failure.</p> <p>If the swap partition on the device medium is not large enough for the system memory snapshot, the snapshot is not successfully written to the directory. Use the request system snapshot command to specify the swap partition.</p> |
| Options | <p>compact-flash—The primary CompactFlash card.</p> <p>removable-compact-flash—The CompactFlash card on the front of the router as the system software failure memory snapshot device.</p> <p>usb—The device attached to the universal serial bus (USB) port.</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> Getting Started Guide for your router model |

events

| | |
|---------------------------------|--|
| Syntax | <code>events [<i>events</i>];</code> |
| Hierarchy Level | [edit system accounting] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Configure the types of events to track and log. |
| Options | <i>events</i> —Event types; can be one or more of the following: <ul style="list-style-type: none">• change-log—Audit configuration changes.• interactive-commands—Audit interactive commands (any command-line input).• login—Audit logins. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring TACACS+ System Accounting</i> |

extend-size

| | |
|---------------------------------|---|
| Syntax | extend-size; |
| Hierarchy Level | [edit system configuration-database] |
| Description | <p>(M, MX, PTX, and T i386 only) Extend the default size of the configuration database. The extended default size is based on the original default database size. A device with a default database size of 409.99 MB will extend to a maximum of 1049.99 MB, and a device with a default database size of 665.99 MB will extend to a maximum of 1305.99. This is only used by mgd and only in the M, MX, PTX and T Series i386 platforms. The extend-size option is not available on MX80, MX40, MX10, or MX5 platforms.</p> |
| | <p> NOTE: You must reboot the router after committing this statement to make the change effective.</p> |
| | <p> NOTE: Starting with Junos OS Release 15.1R2, any operation on the system configuration-database extend-size configuration statement such as, deactivate, delete, or set, generates the following warning message:</p> <p>Change in 'system configuration-database extend-size' will be effective at next reboot only.</p> |
| Required Privilege Level | <p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Example: Configuring Virtual Memory for Process Configuration Data on page 83 |

fast-synchronize

| | |
|----------------------------|--|
| Syntax | <code>fast-synchronize;</code> |
| Hierarchy Level | [edit system commit] |
| Release Information | Statement introduced in Junos OS Release 12.2. |
| Description | Configure commits to run in parallel (simultaneously) on both the master and backup Routing Engines to reduce the time required for commit synchronization. The fast-synchronize configuration is valid only on systems with two Routing Engines. |

**NOTE:**

- When the **fast-synchronize** statement is configured, the commits on the master Routing Engine and the backup Routing Engine run in parallel. In this process, the configuration is validated only on the Routing Engine where you execute the **commit** command. Therefore, it is recommended not to include too many configuration details in groups like **re0** and **re1**, because the configuration specified in group **re0** is applied only if the current Routing Engine is in slot 0. Likewise, the configuration specified in group **re1** is applied only if the current Routing Engine is in slot 1.
 - Ensure that the Junos OS software version running on both the Routing Engines is same.
-

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

| | |
|------------------------------|---|
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring Multiple Routing Engines to Synchronize Committed Configurations Automatically</i>• synchronize on page 146 |
|------------------------------|---|

fixed-size (Virtual Memory Mapping)

| | |
|---------------------------------|--|
| Syntax | <code>fixed-size size KB;</code> |
| Hierarchy Level | [edit system configuration-database virtual-memory-mapping process <i>process name</i>] |
| Description | Configure a nondefault size for the fixed size memory to be used for the initial portion of the configuration database for a specific process when using virtual memory mapping to improve commit performance. This is used in conjunction with a page-pooling size set aside to swap pages in and out of virtual memory to improve commit performance. |
| Options | <p>size KB—Size in kilobytes to directly map for the initial portion (fixed size) of the configuration database for the specified process.</p> <p>Range: Minimum 1024 KB, maximum 680 MB</p> |
| Required Privilege Level | <p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Using Virtual Memory for Process Configuration Data on page 82 • Example: Configuring Virtual Memory for Process Configuration Data on page 83 • configuration-database on page 109 • extend-size on page 115 • virtual-memory-mapping on page 152 |

groups

```
Syntax  groups {
        group-name {
            configuration-data;
            when {
                chassis chassis-id;
                member member-id;
                model model-id;
                node node-id;
                peers [ names of peers ]
                routing-engine routing-engine-id;
                time <start-time> [to <end-time>];
            }
            conditional-data;
        }
        lccn-re0 {
            configuration-data;
        }
        lccn-re1 {
            configuration-data;
        }
    }
```

Hierarchy Level [edit]

Release Information Statement introduced before Junos OS Release 7.4.

Description Create a configuration group.

Options —

group-name—Name of the configuration group. To configure multiple groups, specify more than one **group-name**.

configuration-data—The configuration statements that are to be applied elsewhere in the configuration with the **apply-groups** statement, to have the target configuration inherit the statements in the group.

when conditional-data—Option introduced in Junos 11.3. The conditional statements that are to be applied when this configuration group is applied.

On routers that support multiple Routing Engines, you can also specify two special group names:

re0—Configuration statements that are to be applied to the Routing Engine in slot 0.

re1—Configuration statements that are to be applied to the Routing Engine in slot 1.

The configuration specified in group **re0** is applied only if the current Routing Engine is in slot 0; likewise, the configuration specified in group **re1** is applied only if the

current Routing Engine is in slot 1. Therefore, both Routing Engines can use the same configuration file, each using only the configuration statements that apply to it. Each **re0** or **re1** group contains at a minimum the configuration for the hostname and the management interface (**fxp0**). If each Routing Engine uses a different management interface, the group also should contain the configuration for the backup router and static routes.

(Routing matrix only) The TX Matrix router supports group names for the Routing Engines in each connected T640 router in the following formats:



NOTE: The management Ethernet interface used for the TX Matrix Plus router, T1600 routers in a routing matrix, and PTX Series Packet Transport Routers, is **em0**. Junos OS automatically creates the router's management Ethernet interface, **em0**.

- **lccn-re0**—Configuration statements applied to the Routing Engine in slot 0 of the specified T640 router that is connected to a TX Matrix router.
- **lccn-re1**—Configuration statements applied to the specified to the Routing Engine in slot 1 of the specified T640 router that is connected to a TX Matrix router.

n identifies the T640 router and can be from 0 through 3.

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

Required Privilege Level configure—To enter configuration mode.

Related Documentation

- *Creating the Junos OS Configuration Group*
- *apply-groups*
- *apply-groups-except*

host-name

| | |
|---------------------------------|---|
| Syntax | <code>host-name <i>hostname</i>;</code> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Set the hostname of the router or switch. |
| Options | <i>hostname</i> —Name of the router or switch. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Understanding Hostnames</i>• <i>Configuring the Hostname of a Router or Switch by Using a Configuration Group</i> |


inet6-backup-router

| | |
|---------------------------------|---|
| Syntax | <code>inet6-backup-router <i>address</i> <destination <i>destination-address</i>>;</code> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Set a default router (running IP version 6 [IPv6]) to use while the local router or switch (running IPv6) is booting and if the routing protocol processes fail to start. The Junos OS removes the route to this router or switch as soon as the software starts. |
| Options | <p><i>address</i>—Address of the default router.</p> <p><i>destination destination-address</i>—(Optional) Destination address that is reachable through the backup router. You can include this option to achieve network reachability while loading, configuring, and recovering the router or switch, but without the risk of installing a default route in the forwarding table.</p> <p>Default: All hosts (default route) are reachable through the backup router.</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring a Backup Router</i> |

interfaces

| | |
|---------------------------------|---|
| Syntax | <pre>interfaces { interface-name { bootp; rarp; } }</pre> |
| Hierarchy Level | [edit system autoinstallation] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Configure the interface on which to perform autoinstallation. A request for an IP address is sent from the interface. Specify the IP address procurement protocol. |
| Options | rarpbootp —Send requests over serial interfaces with Frame Relay. rarp —Send requests over Ethernet interfaces. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Upgrading Software by Using Automatic Software Download</i>• autoinstallation on page 104 |

load-key-file

| | |
|---------------------------------|--|
| Syntax | <code>load-key-file URL filename;</code> |
| Hierarchy Level | [edit system root-authentication], [edit system login user <i>username</i> authentication] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 11.1 for the QFX Series. Statement introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | <div>  NOTE: ECDSA is not supported on the QFabric system. </div> <p>Load RSA (SSH version 2) and DSA or ECDSA (SSH version 2) public keys from a previously-generated named file at a specified URL location or local path. The file contains one or more SSH keys that are copied into the configuration when the command is issued.</p> |
| Required Privilege Level | admin—To view this statement in the configuration. admin-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring the Root Password</i> • <i>Configuring the Root Password</i> • <i>Configuring Junos OS User Accounts by Using a Configuration Group</i> |

location (System)

| | |
|--------------------------|---|
| Syntax | <pre>location { altitude <i>feet</i>; building <i>name</i>; country-code <i>code</i>; floor <i>number</i>; hcoord <i>horizontal-coordinate</i>; lata <i>transport-area</i>; latitude <i>degrees</i>; longitude <i>degrees</i>; npa-nxx <i>number</i>; postal-code <i>postal-code</i>; rack <i>number</i>; vcoord <i>vertical-coordinate</i>; }</pre> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Configure the system location in various formats. |
| Options | <p>altitude <i>feet</i>—Number of feet above sea level.</p> <p>building <i>name</i>—Name of building. The name of the building can be 1 to 28 characters in length. If the string contains spaces, enclose it in quotation marks (" ").</p> <p>country-code <i>code</i>—Two-letter country code.</p> <p>floor <i>number</i>—Floor in the building.</p> <p>hcoord <i>horizontal-coordinate</i>—Bellcore Horizontal Coordinate.</p> <p>lata <i>transport-area</i>—Local Access Transport Area.</p> <p>latitude <i>degrees</i>—Latitude in degree format.</p> <p>longitude <i>degrees</i>—Longitude in degree format.</p> <p>npa-nxx <i>number</i>—First six digits of the phone number (area code and exchange).</p> <p>postal-code <i>postal-code</i>—Postal code.</p> <p>rack <i>number</i>—Rack number.</p> <p>vcoord <i>vertical-coordinate</i>—Bellcore Vertical Coordinate.</p> |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |

- Related Documentation**
- [Specifying the Physical Location of the Router or Switch on page 63](#)

login-tip

| | |
|---------------------------------|---|
| Syntax | login-tip; |
| Hierarchy Level | [edit system login class <i>class-name</i>] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Enable CLI tips at login. |
| Default | Disabled. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Configuring Login Tips |

max-configurations-on-flash

| | |
|---------------------------------|---|
| Syntax | max-configurations-on-flash <i>number</i> ; |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Specify the number of configurations stored on the CompactFlash card. |
| Options | <p><i>number</i>—The number of configurations stored on the CompactFlash card.</p> <p>Range: 0 through 49. The most recently saved configuration is number 0, and the oldest saved configuration is number 49.</p> |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Using Junos OS to Specify the Number of Configurations Stored on the CompactFlash Card on page 60 |

message

| | |
|---------------------------------|---|
| Syntax | <code>message text;</code> |
| Hierarchy Level | [edit system login] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | <p>Configure a system login message. This message appears before a user logs in.</p> <p>You can format the message using the following special characters:</p> <ul style="list-style-type: none">• \n—New line• \t—Horizontal tab• \'—Single quotation mark• \"—Double quotation mark• \\—Backslash |
| Options | <code>text</code> —Text of the message. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring the Junos OS to Display a System Login Message</i>• announcement on page 100 |

mirror-flash-on-disk

Syntax mirror-flash-on-disk;

Hierarchy Level [edit system]

Release Information Statement introduced before Junos OS Release 7.4.
Statement deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

Description Configure the hard disk to automatically mirror the contents of the CompactFlash card. The hard disk maintains a synchronized mirror copy of the CompactFlash card contents. Data written to the CompactFlash card is simultaneously updated in the mirrored copy of the hard disk. If the CompactFlash card fails to read data, the hard disk automatically retrieves its mirrored copy of the CompactFlash card.



CAUTION: We recommend that you disable flash disk mirroring when you upgrade or downgrade the router.

You cannot issue the `request system snapshot` command while the `mirror-flash-on-disk` statement is enabled.



NOTE: After you have enabled or disabled the `mirror-flash-on-disk` statement, you must reboot the router for your changes to take effect. To reboot, issue the `request system reboot` command.

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

Related Documentation

- [Configuring Automatic Mirroring of the CompactFlash Card on the Hard Disk Drive on page 59](#)

name-server

| | |
|---------------------------------|---|
| Syntax | <code>name-server { <code>address</code>; }</code> |
| Hierarchy Level | [edit system], [edit system services dhcp], [edit system services dhcp], [edit system services dhcp pool], [edit system services dhcp static-binding] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Configure one or more Domain Name System (DNS) name servers. |
| Options | <code>address</code> —Address of the name server. To configure multiple name servers, include a maximum of three <code>address</code> options. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Reaching a Domain Name System Server</i> |

page-pooling-size (Virtual Memory Mapping)

| | |
|---------------------------------|--|
| Syntax | <code>page-pooling-size size KB;</code> |
| Hierarchy Level | [edit system configuration-database virtual-memory-mapping process <i>process name</i>] |
| Description | Configure a page-pooling size to use to swap pages in and out of virtual memory for a specific process when using virtual memory mapping to improve commit performance. This is used in conjunction with a fixed size memory to be used for the initial portion of the configuration database. |
| Options | size KB —Size in kilobytes to use for page-pooling the remaining data in the database. Range: Minimum 1024 KB, maximum 680 MB |
| Required Privilege Level | admin—To view this statement in the configuration. admin-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Using Virtual Memory for Process Configuration Data on page 82 • Example: Configuring Virtual Memory for Process Configuration Data on page 83 • configuration-database on page 109 • extend-size on page 115 • virtual-memory-mapping on page 152 |

password (Proxy Systems)

| | |
|---------------------------------|--|
| Syntax | <code>password password;</code> |
| Hierarchy Level | [edit system proxy] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Configure the proxy server parameters for a device. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Example: Configuring a Proxy Server for License Updates on page 56 |

`persist-groups-inheritance`

| | |
|---------------------------------|--|
| Syntax | <code>persist-groups-inheritance;</code> |
| Hierarchy Level | [edit system commit] |
| Release Information | Statement introduced in Junos OS Release 13.2. |
| Description | Configure this option to improve commit performance for systems that use many configuration groups that use wildcards. This option causes the full inheritance paths of the configuration groups to be built in the database instead of in the process memory. |
| Options | There are no options for this configuration. |
| Required Privilege Level | admin—To view this statement in the configuration. admin-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Improving Commit Time When Using Configuration Groups</i> |

pic-console-authentication

| | |
|---------------------------------|---|
| Syntax | <pre>pic-console authentication { (encrypted-password "password" plain-text-password); }</pre> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Configure console access to Physical Interface Cards (PICs). |
| Default | Disabled. By default, there is no password setting for console access. |
| Options | <p>encrypted-password "password"—Use MD5 or other encrypted authentication. Specify the MD5 or other password. You can specify only one encrypted password.</p> <p>You cannot configure a blank password for encrypted-password using blank quotation marks (" "). You must configure a password whose number of characters range from 1 through 128 characters and enclose the password in quotation marks.</p> <p>plain-text-password—Use a plain-text password. The CLI prompts you for the password and then encrypts it. The CLI displays the encrypted version, and the software places the encrypted version in its user database. You can specify only one plain-text password.</p> <p>The default requirements for plain-text passwords are:</p> <ul style="list-style-type: none"> • The password must be between 6 and 128 characters long • You can include most character classes in a password (uppercase letters, lowercase letters, numbers, punctuation marks, and other special characters). Control characters are not recommended. • Valid passwords must contain at least one change of case or character class. |
| Required Privilege Level | <p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Configuring Junos OS to Set Console and Auxiliary Port Properties on page 64 • Configuring Password Authentication for Console Access to PICs |

port (Syslog)

| | |
|---------------------------------|--|
| Syntax | <code>port <i>port number</i>;</code> |
| Hierarchy Level | [edit system syslog host <i>hostname</i> other-routing-engine scc-master)] |
| Release Information | Statement introduced in Junos OS Release 11.3. |
| Description | Specify the port number for the remote syslog server. |
| Options | <i>port number</i> —Port number of the remote syslog server. Range: 0 through 65535 Default: 514 |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>syslog</i>• <i>host</i> |

port (Proxy Server)

| | |
|---------------------------------|--|
| Syntax | <code>port <i>port-number</i>;</code> |
| Hierarchy Level | [edit system proxy] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Configure the port number for the proxy server ranging from 0 through 65535 . |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Example: Configuring a Proxy Server for License Updates on page 56 |

ports

| | |
|---------------------------------|---|
| Syntax | <pre> ports { auxiliary { disable; insecure; type <i>terminal-type</i>; port-type (mini-usb rj45); } console { disable; insecure; log-out-on-disconnect; type <i>terminal-type</i>; } } </pre> |
| Hierarchy Level | [edit system] |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 9.0 for EX Series switches.</p> |
| Description | <p>Configure the properties of the console and auxiliary ports. The ports are located on the router's craft interface.</p> <p>See the switch's hardware documentation for port locations.</p> <p>The remaining statements are explained separately.</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Configuring Junos OS to Set Console and Auxiliary Port Properties on page 64 |

process (Virtual Memory Mapping)

| | |
|---------------------------------|--|
| Syntax | <pre>process process name { fixed-size size; page-pooling-size size; }</pre> |
| Hierarchy Level | [edit system configuration-database virtual-memory-mapping] |
| Description | Configure parameters on a per-process basis for using virtual memory mapping for the configuration database. Configure a nondefault size for the fixed size memory to be used for the initial portion of the configuration database for a specific process. Also configure a page-pooling size to be used to access virtual memory as needed by implementing page-pooling. |
| Options | <p>fixed-size size KB—Size in kilobytes to directly map for the initial portion of the configuration database for the specified process. Range: Minimum 512 KB, maximum 680 MB</p> <p>page-pooling-size size KB—Size in kilobytes to use for page-pooling the remaining data in the database. Range: Minimum 512 KB, maximum 680 MB</p> |
| Required Privilege Level | admin—To view this statement in the configuration. admin-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Using Virtual Memory for Process Configuration Data on page 82• Example: Configuring Virtual Memory for Process Configuration Data on page 83• configuration-database on page 109• extend-size on page 115• virtual-memory-mapping on page 152 |

processes

| | |
|----------------------------|--|
| Syntax | <pre>processes { process-name (enable disable) failover (alternate-media other-routing-engine); timeout seconds; }</pre> |
| Hierarchy Level | [edit system] |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 9.0 for EX Series switches.</p> |
| Description | Configure which Junos OS processes are running on the router or switch. |



CAUTION: Never disable any of the software processes unless instructed to do so by a customer support engineer.

| | |
|---------------------------------|---|
| Default | All processes are enabled by default. |
| Options | <p>(enable disable)—(Optional) Enable or disable a specified process.</p> <p>failover (alternate-media other-routing-engine)—(Optional) For routers or switches with redundant Routing Engines only, switch to backup media if a process fails repeatedly. If a process fails four times within 30 seconds, the router or switch reboots from the alternate media or the other Routing Engine.</p> <p>process-name—One of the valid process names. You can obtain a complete list of process names by using the CLI command completion feature. After specifying a process name, command completion also indicates any additional options for that process.</p> <p>timeout seconds—(Optional) How often the system checks the watchdog timer, in seconds. If the watchdog timer has not been checked in the specified number of seconds, the system reloads. If you set the time value too low, it is possible for the system to reboot immediately after it loads.</p> <p>Values: 15, 60, or 180</p> <p>Default: 180 seconds (rounded up to 291 seconds by the Junos kernel)</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> Disabling Junos OS Processes on page 79 |

proxy (System)

| | |
|---------------------------------|---|
| Syntax | <pre>proxy { server (<i>hostname</i> <i>ip-address</i>); port <i>port-number</i>; username <i>username</i>; password <i>password</i>; }</pre> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | <p>Configure the proxy server properties for a device.</p> <p>The remaining statements are explained separately. See CLI Explorer.</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none">• Example: Configuring a Proxy Server for License Updates on page 56 |

root-authentication

| | |
|----------------------------|---|
| Syntax | <pre> root-authentication { (encrypted-password "password" plain-text-password); load-key-file URL:filename; no-public-keys ssh-dsa "public-key"; ssh-eccdsa "public-key"; ssh-rsa "public-key"; } </pre> |
| Hierarchy Level | [edit system] |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 9.0 for EX Series switches.</p> |
| Description | <p>Configure the authentication methods for the root-level user, whose username is root.</p> <p>You can use the load-key-file URL:filename statement to load an SSH key file that was previously generated using ssh-keygen.</p> <p>Optionally, you can use the ssh-dsa, ssh-eccdsa, or ssh-rsa statements to directly configure SSH RSA, DSA, or ECDSA keys to authenticate root logins. You can configure more than one public key for SSH authentication of root logins as well as for user accounts. When a user logs in as root, the public keys are referenced to determine whether the private key matches any of them.</p> <p>To view the SSH keys entries, use the configuration mode show command. For example:</p> <pre> [edit system] user@host# set root-authentication load-key-file my-host:.ssh/id_dsa.pub .file.19692 0 KB 0.3 kB/s ETA: 00:00:00 100% [edit system] user@host# show root-authentication { ssh-rsa "ABC123 user@domain.net"; # SECRET-DATA } </pre> |
| Options | <p>encrypted-password "password"—MD5 or other encrypted authentication. Specify the MD5 or other password. You can specify only one encrypted password.</p> <p>You cannot configure a blank password for encrypted-password using blank quotation marks (" "). You must configure a password whose number of characters range from 1 through 128 characters and enclose the password in quotation marks.</p> <p>load-key-file URL:filename—Load an SSH key file that was previously generated using ssh-keygen. The URL:filename is the path to the file's location and name. When using this option, the contents of the key file are copied into the configuration immediately</p> |

after entering the **load-key-file** *URL:filename* statement. This command loads RSA (SSH version 2) and DSA (SSH version 2) public keys.

no-public-keys—Disables SSH public key based authentication.

plain-text-password—Plain-text password. The CLI prompts you for the password and then encrypts it. The CLI displays the encrypted version, and the software places the encrypted version in its user database. You can specify only one plain-text password.

ssh-ecdsa "public/private-key"—SSH ECDSA (variant of DSA that uses elliptic curve cryptography) public key. You can specify one or more public keys.

ssh-dsa "public-key"—SSH version 2 authentication. Specify the DSA (SSH version 2) public key. You can specify one or more public keys.

ssh-rsa "public-key"—SSH version 2 authentication. Specify the RSA (SSH version 2) public key. You can specify one or more public keys.

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

| | |
|------------------------------|--|
| Related Documentation | <ul style="list-style-type: none">• <i>Understanding User Accounts</i>• <i>Protecting Network Security by Configuring the Root Password</i>• <i>Recovering the Root Password</i>• <i>authentication</i> |
|------------------------------|--|

root-login

| | |
|---------------------------------|--|
| Syntax | root-login (allow deny deny-password); |
| Hierarchy Level | [edit system services ssh] |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Statement introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Statement introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p> |
| Description | Control user access through SSH. |
| Default | <p>root-login deny-password is the default for most systems.</p> <p>Starting in Junos release 17.4R1 for MX Series routers, the default for root-login is deny. In previous Junos releases, the default setting for the MX240, MX480, MX960, MX2010 and MX2020 was allow.</p> |
| Options | <p>allow—Allow users to log in to the router or switch as root through SSH.</p> <p>deny—Disable users from logging in to the router or switch as root through SSH.</p> <p>deny-password—Allow users to log in to the router or switch as root through SSH when the authentication method (for example, RSA authentication) does not require a password.</p> |
| Required Privilege Level | <p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> <i>Configuring SSH Service for Remote Access to the Router or Switch</i> |

routing (System Processes)

| | |
|----------------------------|--|
| Syntax | routing { force-32-bit force-64-bit auto-64-bit; } |
| Hierarchy Level | [edit system processes], [edit logical-systems <i>logical-system name</i> system processes] |
| Release Information | Statement introduced in Junos OS Release 13.3 R4. |
| Description | Configure routing protocols process (rpd) mode. |
| Default | force-32-bit mode is used in Junos 15.1F2 and prior releases auto-64-bit mode is used starting in Junos 15.1F3 |
| Options | auto-64-bit —(Optional) Enable to use 64-bit mode. If the system is 64-bit capable and has at least 16 GB of RAM, then auto-64-bit will cause the Routing Engine to run in 64-bit mode. Otherwise, it will run in 32-bit mode. |



NOTE: This option is not applicable for logical systems.



NOTE: Starting in Junos 15.1F3, 15.1R2, 15.1R3, and 15.2R1, 64-bit mode is enabled by default on systems that support it and which have at least 16 GB of RAM.

force-32-bit—(Optional) Enable to always use 32-bit mode.



NOTE: For MX Series routers, virtual private LAN service (VPLS) dynamic profiles are not supported with the 64-bit mode routing protocol process (rpd). To enable VPLS dynamic profiles configuration, configure the routing process to use 32-bit mode.

force-64-bit—(Optional) Enable to always use 64-bit mode.



TIP: You need not restart the routing protocol process (rpd) to use the 64-bit mode. However, forcing rpd from 32-bit to 64-bit or 64-bit-to 32-bit will restart the rpd process, which can impact the routing protocols. For this reason, it is recommended to perform these changes in a maintenance window.

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

Related Documentation

- [Disabling Junos OS Processes on page 79](#)
- [processes on page 135](#)

saved-core-context

Syntax (saved-core-context | no-saved-core-context);

Hierarchy Level [edit system]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure whether the router saves core files generated by internal Junos processes, along with contextual information (system log files and a copy of the current configuration):

- **saved-core-context**—The router saves each cores file and its associated context in a compressed tar file named `/var/tmp/process-name.core.core-number.tgz`.
- **no-saved-core-context**—The router does not save cores files and their associated context.

The router saves core files.

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

Related Documentation

- [Saving Core Files from Junos OS Processes on page 80](#)
- [saved-core-files on page 142](#)

saved-core-files

| | |
|---------------------------------|---|
| Syntax | <code>saved-core-files <i>number</i>;</code> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | Save core files generated by internal Junos processes, but not the associated contextual information (configuration and system log files). |
| Options | <i>number</i> —Maximum number of core files to save. Range: 1 through 10 |
| Required Privilege Level | admin—To view this statement in the configuration. admin-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Saving Core Files from Junos OS Processes on page 80• saved-core-context on page 141 |

server (Batch Commits)

| | |
|---------------------------------|--|
| Syntax | <pre> server { commit-interval <number-of-seconds-between-commits>; days-to-keep-error-logs <days-to-keep-error-log-entries>; maximum-aggregate-pool <maximum-number-of-commits-to-aggregate>; maximum-entries <number-of-entries>; traceoptions { file filename; files number; flag (all batch commit-server configuration); size maximum-file-size; (world-readable no-world-readable); } } </pre> |
| Hierarchy Level | [edit system commit] |
| Release Information | Statement introduced in Junos OS Release 12.1. |
| Description | Configure the system commit to occur in batches. Configure parameters for aggregating and saving batch commits. |
| Options | <p><i>commit-interval</i>—Configure the interval between commits.</p> <p><i>days-to-keep-error-logs</i>—Configure the number of days to keep log entries.</p> <p><i>maximum-aggregate-pool</i>—Configure the maximum number of commits to aggregate together.</p> <p><i>maximum-entries</i>—Configure the maximum number of commit entries.</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • <i>Example: Configuring Batch Commit Server Properties</i> |

server (Proxy)

| | |
|---------------------------------|--|
| Syntax | <code>server (hostname ip-address);</code> |
| Hierarchy Level | [edit system proxy] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Configure the proxy server name or IP address. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• Example: Configuring a Proxy Server for License Updates on page 56 |

static-host-mapping

| | |
|---------------------------------|---|
| Syntax | <pre>static-host-mapping { hostname { alias [<i>aliases</i>]; inet [<i>addresses</i>]; inet6 [<i>addresses</i>]; sysid <i>system-identifier</i>; } }</pre> |
| Hierarchy Level | [edit system] |
| Release Information | Statement introduced before Junos OS Release 7.4. |
| Description | (Optional) Statically map a hostname to one or more IP addresses and aliases, and configure an International Organization for Standardization (ISO) system identifier (system ID). |
| Default | If you do not statically map the hostname, the mapping is generated dynamically, based on the system configuration. For instance, if you omit the static-host-mapping hostname sysid statement, the IS-IS system ID is dynamically generated from the host portion of the ISO address configured on the loopback interface (lo0) and is mapped to the host-name statement configured at the [edit system] hierarchy level. |
| Options | <p>alias <i>alias</i>—Alias for the hostname.</p> <p>hostname—Fully qualified hostname.</p> <p>inet <i>address</i>—IP address. You can specify one or more IP addresses for the host.</p> <p>inet6 <i>address</i>—IP address. You can specify one or more IPv6 addresses for the host.</p> <p>sysid <i>system-identifier</i>—ISO system identifier (system ID). This is the 6-byte portion of the Intermediate System-to-Intermediate System (IS-IS) network service access point (NSAP). We recommend that you use the host's IP address represented in binary-coded decimal (BCD) format. For example, the IP address 208.197.169.18 is 2081.9716.9018 in BCD.</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> Configuring the Hostname of a Router or Switch by Using a Configuration Group |

synchronize

| | |
|----------------------------|--|
| Syntax | synchronize; |
| Hierarchy Level | [edit system commit] |
| Release Information | Statement introduced in Junos OS Release 7.4. Statement introduced in Junos OS Release 10.4 for EX Series switches. |
| Description | For devices with multiple Routing Engines only. Configure the commit command to automatically perform a commit synchronize action between dual Routing Engines within the same chassis. The Routing Engine on which you execute the commit command (the requesting Routing Engine) copies and loads its candidate configuration to the other (the responding) Routing Engine. Each Routing Engine then performs a syntax check on the candidate configuration file being committed. If no errors are found, the configuration is activated and becomes the current operational configuration on both Routing Engines. |



NOTE: If you configure the **commit synchronize** statement at the [edit system] hierarchy level and issue a **commit** in the master Routing Engine, the master configuration is automatically synchronized with the backup. However, if the backup Routing Engine is down when you issue the **commit**, the Junos OS displays a warning and commits the candidate configuration in the master Routing Engine. When the backup Routing Engine comes up, its configuration will automatically be synchronized with the master. A newly inserted backup Routing Engine automatically synchronizes its configuration with the master Routing Engine configuration.



NOTE: When you configure nonstop active routing (NSR), you must configure the **commit synchronize** statement. Otherwise, the **commit** operation fails.

On the TX Matrix router, synchronization only occurs between the Routing Engines within the same chassis. When synchronization is complete, the new configuration is then distributed to the Routing Engines on the T640 routers. That is, the master Routing Engine on the TX Matrix router distributes the configuration to the master Routing Engine on each T640 router. Likewise, the backup Routing Engine on the TX Matrix router distributes the configuration to the backup Routing Engine on each T640 router.

On the TX Matrix Plus router, synchronization only occurs between the Routing Engines within the switch-fabric chassis and when synchronization is complete, the new configuration is then distributed to the Routing Engines on the line-card chassis (LCC). That is, the master Routing Engine on the TX Matrix Plus router distributes the configuration to the master Routing Engine on each LCC. Likewise, the backup Routing

Engine on the TX Matrix Plus router distributes the configuration to the backup Routing Engine on each LCC.

In EX Series Virtual Chassis configurations:

- On EX4200 switches in Virtual Chassis, synchronization occurs between the switch in the master role and the switch in the backup role.
- On EX8200 switches in a Virtual Chassis, synchronization occurs only between the master and backup XRE200 External Routing Engines.

Options **and-quit**—(Optional) Quit configuration mode if the commit synchronization succeeds.

at—(Optional) Time at which to activate configuration changes.

comment—(Optional) Write a message to the commit log.

force—(Optional) Force a commit synchronization on the other Routing Engine (ignore warnings).

scripts—(Optional) Push scripts to the other Routing Engine.

Required Privilege **system**—To view this statement in the configuration.

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

Related • *Synchronizing the Routing Engine Configuration*

Documentation • *Configuring Multiple Routing Engines to Synchronize Committed Configurations Automatically*

synchronize (Commit configuration)

| | |
|---------------------------------|---|
| Syntax | synchronize; |
| Hierarchy Level | [edit system commit] |
| Release Information | Statement introduced in Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | <p>For devices with multiple Routing Engines only. Configure a commit command to automatically result in a commit synchronize action between dual Routing Engines within the same chassis. The Routing Engine on which you execute the commit command (the requesting Routing Engine) copies and loads its candidate configuration to the other (the responding) Routing Engines. All Routing Engines then perform a syntax check on the candidate configuration file being committed. If no errors are found, the configuration is activated and becomes the current operational configuration on all Routing Engines.</p> <p>Starting with Junos OS Release 9.3, accounting of events and operations on a backup Routing Engine is not supported on accounting servers such as TACACS+ or RADIUS. Logging of accounting events is supported only for events and operations on a master Routing Engine.</p> |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring Multiple Routing Engines to Synchronize Committed Configurations Automatically</i> |

system

| | |
|---------------------------------|---|
| Syntax | system { ... } |
| Hierarchy Level | [edit] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Configure system management properties. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none">• System Management Configuration Statements on page 92 |

transfer-interval (Configuration)



| | |
|----------------------------|---|
| Syntax | <code>transfer-interval <i>interval</i>;</code> |
| Hierarchy Level | [edit system archival configuration] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. Statement introduced in Junos OS Release 14.1X53-D20 for OCX Series switches. Statement introduced in Junos OS Release 11.1 for the QFX Series. |
| Description | Configure the router or switch to periodically transfer its currently active configuration to an archive site. |
| Options | <i>interval</i> —Interval at which to transfer the current configuration to an archive site. Range: 15 through 2880 minutes |



NOTE: The [edit system archival] hierarchy is not available on QFabric systems.

| | |
|---------------------------------|---|
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Configuring the Periodic Transfer of the Active Configuration to an Archive Site on page 61 • archive • configuration on page 108 • transfer-on-commit on page 150 |

transfer-on-commit

| | |
|---------------------------------|--|
| Syntax | transfer-on-commit; |
| Hierarchy Level | [edit system archival configuration] |
| Release Information | <p>Statement introduced before Junos OS Release 7.4.</p> <p>Statement introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Statement introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Statement introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p> |
| Description | Configure the router or switch to transfer its currently active configuration to an archive site each time you commit a candidate configuration. |
| | <p> NOTE: When specifying a URL in a Junos OS statement using an IPv6 host address, you must enclose the entire URL in quotation marks (“ ”) and enclose the IPv6 host address in brackets ([]). For example, “ftp://username<:password>@[ipv6-host-address]<:port>/url-path” .</p> |
| | <p> NOTE: The [edit system archival] hierarchy is not available on QFabric systems.</p> |
| Required Privilege Level | <p>system—To view this statement in the configuration.</p> <p>system-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none"> • Configuring the Transfer of the Currently Active Configuration When a Configuration Is Committed on page 62 • archive • configuration on page 108 • transfer-interval on page 149 |

trusted-key

| | |
|---------------------------------|---|
| Syntax | <code>trusted-key [<i>key-numbers</i>];</code> |
| Hierarchy Level | [edit system ntp] |
| Release Information | Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | For NTP, configure the keys you are allowed to use when you configure the local router or switch to synchronize its time with other systems on the network. |
| Options | <i>key-numbers</i> —One or more key numbers. Each key can be any 32-bit unsigned integer except 0. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring NTP Authentication Keys</i> • <i>authentication-key</i> • <i>broadcast</i> • <i>peer</i> • <i>server</i> |

username (System)

| | |
|---------------------------------|--|
| Syntax | <code>username <i>username</i>;</code> |
| Hierarchy Level | [edit system proxy] |
| Release Information | Statement introduced in Junos OS Release 11.4. |
| Description | Configure the username as configured in the proxy server. |
| Required Privilege Level | system—To view this statement in the configuration. system-control—To add this statement to the configuration. |
| Related Documentation | <ul style="list-style-type: none"> • Example: Configuring a Proxy Server for License Updates on page 56 |

virtual-memory-mapping

| | |
|--------------------------|---|
| Syntax | <pre>virtual-memory-mapping { process process name { fixed-size size KB; page-pooling-size size KB; } }</pre> |
| Hierarchy Level | [edit system configuration-database] |
| Description | <p>Define parameters for using virtual memory mapping for the configuration database on a per-process basis. You can define a fixed size for the initial portion of the database and configure a page-pooling size for the remaining portion of the database. Page-pooling enables the configuration database to use small amounts of virtual memory by swapping pages in or out, as needed, for remaining process configurations that might temporarily exceed the fixed memory database size that is allocated. Using this method, there is no need to map the entire database into the virtual memory of the process. Only the most recently used pages are pooled (pointed to) when accessed.</p> |
| Options | <p>fixed-size size KB—Size in kilobytes to directly map for the initial portion of the configuration database for the specified process. Range: Minimum 512 KB, maximum 680 MB</p> <p>page-pooling-size size KB—Size in kilobytes to use for page-pooling the remaining data in the database. Range: Minimum 512 KB, maximum 680 MB</p> |
| Required Privilege Level | <p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p> |
| Related Documentation | <ul style="list-style-type: none">• Using Virtual Memory for Process Configuration Data on page 82• Example: Configuring Virtual Memory for Process Configuration Data on page 83• configuration-database on page 109• extend-size on page 115• process on page 134 |

CHAPTER 8

File Management Commands

- file archive
- file checksum md5
- file checksum sha1
- file checksum sha-256
- file compare
- file copy
- file delete
- file list
- file rename
- file show

file archive

| | |
|---------------------------------|--|
| Syntax | <code>file archive destination <i>destination</i> source <i>source</i> <compress></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p> |
| Description | <p>Archive, and optionally compress, one or multiple local system files as a single file, locally or at a remote location.</p> <p>For information on valid filename and URL formats, see “Format for Specifying Filenames and URLs in Junos OS CLI Commands” on page 53.</p> |
| Options | <p>destination <i>destination</i>—Destination of the archived file or files. Specify the destination as a URL or filename. The Junos OS adds one of the following suffixes if the destination filename does not already have it:</p> <ul style="list-style-type: none">• For archived files—The suffix .tar• For archived and compressed files—The suffix .tgz <p>source <i>source</i>—Source of the original file or files. Specify the source as a URL or filename.</p> <p>compress—(Optional) Compress the archived file with the GNU zip (gzip) compression utility. The compressed files have the suffix .tgz.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• Format for Specifying Filenames and URLs in Junos OS CLI Commands on page 53 |
| List of Sample Output | <p>file archive (Multiple Files) on page 154</p> <p>file archive (Single File) on page 155</p> <p>file archive (with Compression) on page 155</p> |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

file archive (Multiple Files)

The following sample command archives all message files in the local directory `/var/log/messages` as the single file `messages-archive.tar`.

```
user@host> file archive source /var/log/messages* destination /var/log/messages-archive.tar
/usr/bin/tar: Removing leading / from absolute path names in the archive.
user@host>
```

file archive (Single File)

The following sample command archives one message file in the local directory **/var/log/messages** as the single file **messages-archive.tar**.

```
user@host> file archive source /var/log/messages destination /var/log/messages-archive.tar
/usr/bin/tar: Removing leading / from absolute path names in the archive.
user@host
```

file archive (with Compression)

The following sample command archives and compresses all message files in the local directory **/var/log/messages** as the single file **messages-archive.tgz**.

```
user@host> file archive compress source /var/log/messages* destination
/var/log/messages-archive.tgz
/usr/bin/tar: Removing leading / from absolute path names in the archive.
```

file checksum md5

| | |
|---------------------------------|---|
| Syntax | <code>file checksum md5 <pathname> filename</code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches. |
| Description | Calculate the Message Digest 5 (MD5) checksum of a file. |
| Options | pathname —(Optional) Path to a filename. filename —Name of a local file for which to calculate the MD5 checksum. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring Checksum Hashes for a Commit Script</i>• <i>Configuring Checksum Hashes for an Event Script</i>• <i>Configuring Checksum Hashes for an Op Script</i>• <i>Configuring Checksum Hashes for an SNMP Script</i>• <i>Executing an Op Script from a Remote Site</i>• file checksum sha-256 on page 158• file checksum sha1 on page 157 |
| List of Sample Output | file checksum md5 on page 156 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

file checksum md5

```
user@host> file checksum md5 jbundle-5.3R2.4-export-signed.tgz
MD5 (jbundle-5.3R2.4-export-signed.tgz) = $ABC123
```

file checksum sha1

| | |
|---------------------------------|--|
| Syntax | <code>file checksum sha1 <pathname> filename</code> |
| Release Information | <p>Command introduced in Junos OS Release 9.5.</p> <p>Command introduced in Junos OS Release 9.5 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p> |
| Description | Calculate the Secure Hash Algorithm (SHA-1) checksum of a file. |
| Options | <p>pathname—(Optional) Path to a filename.</p> <p>filename—Name of a local file for which to calculate the SHA-1 checksum.</p> |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • <i>Configuring Checksum Hashes for a Commit Script</i> • <i>Configuring Checksum Hashes for an Event Script</i> • <i>Configuring Checksum Hashes for an Op Script</i> • <i>Configuring Checksum Hashes for an SNMP Script</i> • <i>Executing an Op Script from a Remote Site</i> • file checksum md5 on page 156 • file checksum sha-256 on page 158 |
| List of Sample Output | file checksum sha1 on page 157 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

file checksum sha1

```
user@host> file checksum sha1 /var/db/scripts/opscript.slax

SHA1 (/var/db/scripts/commitscript.slax) = $ABC123
```

file checksum sha-256

| | |
|---------------------------------|---|
| Syntax | <code>file checksum sha-256 <pathname> filename</code> |
| Release Information | Command introduced in Junos OS Release 9.5. Command introduced in Junos OS Release 9.5 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches. |
| Description | Calculate the Secure Hash Algorithm 2 family (SHA-256) checksum of a file. |
| Options | pathname —(Optional) Path to a filename. filename —Name of a local file for which to calculate the SHA-256 checksum. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none">• <i>Configuring Checksum Hashes for a Commit Script</i>• <i>Configuring Checksum Hashes for an Event Script</i>• <i>Configuring Checksum Hashes for an Op Script</i>• <i>Configuring Checksum Hashes for an SNMP Script</i>• <i>Executing an Op Script from a Remote Site</i>• file checksum md5 on page 156• file checksum sha1 on page 157 |
| List of Sample Output | file checksum sha-256 on page 158 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

file checksum sha-256

```
user@host> file checksum sha-256 /var/db/scripts/commitscript.slax  
  
SHA256 (/var/db/scripts/commitscript.slax) =$ABC123
```


file compare

| | |
|---------------------------------|---|
| Syntax | <pre>file compare (files <i>filename filename</i>) <context unified> <ignore-white-space></pre> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p> |
| Description | <p>Compare two local files and describe the differences between them in default, context, or unified output styles:</p> <ul style="list-style-type: none"> • Default—In the first line of output, c means lines were changed between the two files, d means lines were deleted between the two files, and a means lines were added between the two files. The numbers preceding this alphabetical marker represent the first file, and the lines after the alphabetical marker represent the second file. A left angle bracket (<) in front of output lines refers to the first file. A right angle bracket (>) in front of output lines refers to the second file. • Context—The display is divided into two parts. The first part is the first file; the second part is the second file. Output lines preceded by an exclamation point (!) have changed. Additions are marked with a plus sign (+), and deletions are marked with a minus sign (-). • Unified—The display is preceded by the line number from the first and the second file (xx,xxx,x). Before the line number, additions to the file are marked with a plus sign (+), and deletions to the file are marked with a minus sign (-). The body of the output contains the affected lines. Changes are viewed as additions plus deletions. |
| Options | <p>files <i>filename</i>—Names of two local files to compare.</p> <p>context—(Optional) Display output in context format.</p> <p>ignore-white-space—(Optional) Ignore changes in the amount of white space.</p> <p>unified—(Optional) Display output in unified format.</p> |
| Required Privilege Level | none |
| Related Documentation | <ul style="list-style-type: none"> • Format for Specifying Filenames and URLs in Junos OS CLI Commands on page 53 • Viewing Core Files from Junos OS Processes on page 80 |
| List of Sample Output | <p>file compare files on page 161</p> <p>file compare files context on page 161</p> |

[file compare files unified on page 161](#)

[file compare files unified ignore-white-space on page 162](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

file compare files

```
user@host> file compare files /tmp/one /tmp/two
100c100
<          full-name "File 1";
---
>          full-name "File 2";
102c102
<          class foo; # 'foo' is not defined
---
>          class super-user;
```

file compare files context

```
user@host> file compare files /tmp/one /tmp/two context
*** /tmp/one   Wed Dec  3 17:12:50 2003
--- /tmp/two   Wed Dec  3 09:13:14 2003
*****
*** 97,104 ****
        }
    }
    user bill {
!         full-name "Bill Smith";
!         class foo; # 'foo' is not defined
        authentication {
            encrypted-password $ABC123;
        }
--- 97,105 ----
    }
    user bill {
!         full-name "Bill Smith";
!         uid 1089;
!         class super-user;
        authentication {
            encrypted-password $ABC123;
        }
```

file compare files unified

```
user@host> file compare files /tmp/one /tmp/two unified
--- /tmp/one   Wed Dec  3 17:12:50 2003
+++ /tmp/two   Wed Dec  3 09:13:14 2003
@@ -97,8 +97,9 @@
    }
}
user bill {
-     full-name "Bill Smith";
-     class foo; # 'foo' is not defined
+     full-name "Bill Smith";
+     uid 1089;
+     class super-user;
    authentication {
        encrypted-password $ABC123;
    }
```

file compare files unified ignore-white-space

```
user@host> file compare files /tmp/one /tmp/two unified ignore-white-space
--- /tmp/one    Wed Dec  3 09:13:10 2003
+++ /tmp/two    Wed Dec  3 09:13:14 2003
@@ -99,7 +99,7 @@
     user bill {
         full-name "Bill Smith";
         uid 1089;
-        class foo; # 'foo' is not defined
+        class super-user;
         authentication {
             encrypted-password $ABC123; # SECRET-DATA
         }
     }
```

file copy

Syntax `file copy source destination`
`<source-address address>`
`<staging-directory directory location>`

Release Information Command introduced before Junos OS Release 7.4.
source-address option added in Junos OS Release 7.4.
Command introduced in Junos OS Release 9.0 for EX Series switches.
Command introduced in Junos OS Release 11.1 for QFX Series switches.
staging-directory option added in Junos OS Release 17.3DCB.

Description Copy files from one location to another location on the local device or to a location on a remote device reachable by the local device.

For information on valid filename and URL formats, see [“Format for Specifying Filenames and URLs in Junos OS CLI Commands”](#) on page 53.



WARNING: Starting with Junos OS Release 15.1, the `ssl3-support` option is not available for configuration with the `set system services xnm-ssl` and `file copy` commands. SSLv3 is no longer supported and available.

For all releases prior to and including Junos OS Release 14.2, SSLv3 is disabled by default at runtime. The `ssl3-support` option is hidden and deprecated in Junos OS Release 14.2 and earlier releases. However, you can use the `set system services xnm-ssl ssl3-support` command to enable SSLv3 for a Junos XML protocol client application to use as the protocol to connect to the Junos XML protocol server on a router, and you can use the `file copy source destination ssl3-support` command to enable the copying of files from an SSLv3 URL.

Using SSLv3 presents a potential security vulnerability, and we recommend that you not use SSLv3. For more details about this security vulnerability, go to <http://kb.juniper.net/InfoCenter/index?page=content&id=JSA10656>.



NOTE: If you define an ordered set of ciphers, key exchange methods, or message authentication codes (MACs) at the `[edit system services ssh]` hierarchy level, the newly-defined set is used when copying files using secure copy protocol (`scp`). For more information, see *Configuring the SSH Service to Support Legacy Cryptography*.

Required Privilege Level maintenance

Related Documentation

- [Format for Specifying Filenames and URLs in Junos OS CLI Commands on page 53](#)
- [Default Directories for Junos OS File Storage on the Router or Switch on page 17](#)
- [Copying a Configuration File from One Routing Engine to the Other](#)

List of Sample Output

[Copy a File from the Local Device to a Personal Computer on page 164](#)
[Copy a Configuration File between Routing Engines on page 164](#)
[Copy a Log File between Routing Engines on page 164](#)
[Copy a File from a TX Matrix Plus Router to a T1600 Router Connected to the TX Matrix Plus on page 164](#)
[Copy a File Using File Transfer Protocol on page 164](#)
[Copy a File Using File Transfer Protocol and Requiring a Password on page 165](#)
[Copy a File Using Secure Copy Protocol \(scp\) on page 165](#)
[Copy a File Using a Staging Directory on page 165](#)

Sample Output

The following are examples of a variety of file copy scenarios.

Copy a File from the Local Device to a Personal Computer

```
user@host> file copy /var/tmp/rpd.core.4 mypc:/c/junipero/tmp  
  
...transferring.file..... |           0 KB |    0.3 kB/s | ETA: 00:00:00 | 100%
```

Copy a Configuration File between Routing Engines

The following sample command copies a configuration file from Routing Engine 0 to Routing Engine 1:

```
user@host> file copy /config/juniper.conf re1:/var/tmp/copied-juniper.conf
```

Copy a Log File between Routing Engines

The following sample command copies a log file from Routing Engine 0 to Routing Engine 1:

```
user@host> file copy lcc0-re0:/var/log/chassisd lcc0-re1:/var/tmp
```

Copy a File from a TX Matrix Plus Router to a T1600 Router Connected to the TX Matrix Plus

The following sample command copies a text file from Routing Engine 1 on the switch-fabric chassis sfc0 to Routing Engine 1 on the line-card chassis lcc0:

```
user@host> file copy sfc0-re1:/tmp/sample.txt lcc0-re1:/var/tmp
```

Copy a File Using File Transfer Protocol

To use anonymous FTP to copy a local file to a remote system, enter the following command:

```
user@host>file copy filename ftp://hostname/filename
```

In the following example, `/config/juniper.conf` is the local file and `hostname` is the FTP server:

```

user@host> file copy /config/juniper.conf ftp://hostname/juniper.conf
Receiving ftp: //hostname/juniper.conf (2198 bytes): 100%
2198 bytes transferred in 0.0 seconds (2.69 MBps)

```

Copy a File Using File Transfer Protocol and Requiring a Password

To use FTP where you require more privacy and are prompted for a password, enter the following command:

```
root@host> file copy filename ftp://user@hostname/filename
```

In the following example, `/config/juniper.conf` is the local file and `hostname` is the FTP server:

```

root@host> file copy /config/juniper.conf ftp://user@hostname/juniper.conf
Password for user@hostname: *****
Receiving ftp: //user@hostname/juniper.conf (2198 bytes): 100%
2198 bytes transferred in 0.0 seconds (2.69 MBps)

```

Copy a File Using Secure Copy Protocol (scp)

To use scp to copy a local file to a remote system, enter the following command:

```
root@host> file copy filename scp://user@hostname/path/filename
```

In the following example, `/config/juniper.conf` is the local file, `user` is the username, and `ssh-host` is the scp server:

```

root@host> file copy /config/juniper.conf scp://user@ssh-host/tmp/juniper.conf
user@ssh-host's password: *****
juniper.conf          100%
|*****|
2198          00:00

```

Copy a File Using a Staging Directory

The following sample command copies a file using a staging directory

```
user@host> file copy re1:/var/tmp/junos-install-x.log /root/ staging-directory /var/tmp/tmp1
```

file delete

| | |
|---------------------------------|---|
| Syntax | <code>file delete <i>filename</i></code> <code><purge></code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches. |
| Description | Delete a file on the local router or switch. |
| Options | <i>filename</i> —Name of the file to delete. For a routing matrix, include chassis information in the filename if the file to be deleted is not local to the Routing Engine from which the command is issued. <i>purge</i> —(Optional) Overwrite regular files before deleting them. |
| Required Privilege Level | maintenance |
| List of Sample Output | file delete on page 166 file delete (Routing Matrix) on page 166 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

file delete

```
user@host> file list /var/tmp
dcd.core
rpd.core
snmpd.core

user@host> file delete /var/tmp/snmpd.core
user@host> file list /var/tmp
dcd.core
rpd.core
```

file delete (Routing Matrix)

```
user@host> file list lcc0-re0:/var/tmp
dcd.core
rpd.core
snmpd.core

user@host> file delete lcc0-re0:/var/tmp/snmpd.core
user@host> file list /var/tmp
dcd.core
rpd.core
```


file list

| | |
|---------------------------------|---|
| Syntax | <code>file list <detail recursive> <path></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p> |
| Description | Display a list of files on the local router or switch. |
| Options | <p>none—Display a list of files in the default directory. The default directory is the home directory of the user logged in to the router or switch.</p> <p>detail—(Optional) Display detailed information about the files. The output is similar to what is displayed by the Linux <code>ls -l</code> command.</p> <p>recursive—(Optional) Display detailed information about the files in the directory and all subdirectories below it.</p> <p>path—(Optional) List the files in a specified directory path.</p> |
| Additional Information | <p>To view available directories, enter a space and then a slash (/) after the file list command.</p> <p>To view files within a specific directory, include a slash followed by the directory and, optionally, subdirectory name after the file list command.</p> |
| Required Privilege Level | maintenance |
| List of Sample Output | <p>file list on page 167</p> <p>file list (detailed) on page 168</p> <p>file list (recursive) on page 168</p> |

Sample Output

file list

The following command lists the contents of the `/var/tmp` directory.

```
user@host> file list /var/tmp
```

```
/var/tmp:
trace_debug
package.log
pics/
downloads/
```

file list (detailed)

The following command lists detailed information about the contents of the `/var/tmp` directory.

```
user@host> file list /var/tmp detail
```

```
/var/tmp/:
total blocks: 4276224
-rw-r--r--  1 user  group      1362 Oct 16 11:11 trace_debug
-rw-r--r--  1 user  group       108 Aug 9  2016 package.log
drwxrwxrwx  2 user  group       512 Jun 30 2016 pics/
drwxr-xr-x  3 user  group       512 Aug 9  2016 downloads/
total files: 2
```

file list (recursive)

The following command lists detailed information about the contents of the `/var/tmp` directory and all subdirectories below it.

```
user@host> file list /var/tmp recursive
```

```
/var/tmp/:
total blocks: 4276224
-rw-r--r--  1 user  group      1362 Oct 16 11:11 trace_debug
-rw-r--r--  1 user  group       108 Aug 9  2016 package.log
drwxrwxrwx  2 user  group       512 Jun 30 2016 pics/
drwxr-xr-x  3 user  group       512 Aug 9  2016 downloads/
total files: 2

/var/tmp/pics:
total blocks: 5120461
-rw-r--r--  1 user  group      1910 Oct 15  2016 image3.png
-rw-r--r--  1 user  group     1852 Oct 15  2016 image2.png
-rw-r--r--  1 user  group     1310 Aug 9  2016 image1.png
total files: 3

/var/tmp/downloads:
total blocks: 24
-rw-r--r--  1 user  group       108 Aug 21  2016 package2.log
-rw-r--r--  1 user  group       108 Aug 9  2016 package1.log
drwxr-xr-x  2 user  group       512 Aug 9  2016 sub-download/
total files: 2

/var/tmp/downloads/sub-download:
total blocks: 16
total files: 0
```

file rename

| | |
|---------------------------------|--|
| Syntax | <code>file rename <i>source destination</i></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.</p> |
| Description | Rename a file on the local router or switch. |
| Options | <p><i>destination</i>—New name for the file.</p> <p><i>source</i>—Original name of the file. For a routing matrix, the filename must include the chassis information.</p> |
| Required Privilege Level | maintenance |
| List of Sample Output | <p>file rename on page 169</p> <p>file rename (Routing Matrix) on page 169</p> |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

file rename

The following example lists the files in `/var/tmp`, renames one of the files, and then displays the list of files again to reveal the newly named file.

```
user@host> file list /var/tmp
dcd.core
rpd.core
snmpd.core

user@host> file rename /var/tmp/dcd.core /var/tmp/dcd.core.990413
user@host> file list /var/tmp
dcd.core.990413
rpd.core
snmpd.core
```

file rename (Routing Matrix)

The following example lists the files in `/var/tmp`, renames one of the files, and then displays the list of files again to reveal the newly named file.

```
user@host> file list lcc0-re1:/var/tmp
lcc0-re1:
-----

/var/tmp:
```

```
.pccardd
sartre.conf
snmpd
syslogd.core-tarball.0.tgz

user@host> file rename lcc0-re0:/var/tmp/snmpd /var/tmp/snmpd.rr
user@host> file list lcc0-re1:/var/tmp
lcc0-re1:
-----

/var/tmp:
.pccardd
sartre.conf
snmpd.rr
syslogd.core-tarball.0.tgz
```

file show

| | |
|---------------------------------|---|
| Syntax | <code>file show <i>filename</i></code> <encoding (base64 raw)> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches. |
| Description | Display the contents of a file. |
| Options | <i>filename</i> —Name of a file. For a routing matrix, the filename must include the chassis information. encoding (base64 raw) —(Optional) Encode file contents with base64 encoding or show raw text. |
| Required Privilege Level | maintenance |
| List of Sample Output | file show on page 171 file show (Routing Matrix) on page 171 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

file show

```
user@host> file show /var/log/messages
Apr 13 21:00:08 dev1 /kernel: so-1/1/2: loopback suspected; going to standby.
Apr 13 21:00:40 dev1 /kernel: so-1/1/2: loopback suspected; going to standby.
Apr 13 21:02:48 dev1 last message repeated 4 times
Apr 13 21:07:04 dev1 last message repeated 8 times
Apr 13 21:07:13 dev1 /kernel: so-1/1/0: Clearing SONET alarm(s) RDI-P
Apr 13 21:07:29 dev1 /kernel: so-1/1/0: Asserting SONET alarm(s) RDI-P
...
```

file show (Routing Matrix)

```
user@host> file show lcc0-re0:/var/tmp/gdbinit
lcc0-re0:
-----
#####
# Settings
#####

set print pretty

#####
# Basic stuff
```

```
#####

define msgbuf
    printf "%s", msgbufp->msg_ptr
end
# hex dump of a block of memory
# usage: dump address length
define dump
    p $arg0, $arg1
    set $ch = $arg0
    set $j = 0
    set $n = $arg1
    while ($j < $n)
        #printf "%x %x ",&$ch[$j],$ch[$j]
        printf "%x ",$ch[$j]
        set $j = $j + 1
        if (!($j % 16))
            printf "\n"
        end
    end
end
end
```

CHAPTER 9

System Software Administrative Commands

- clear system commit
- clear system reboot
- configure
- request message
- request system configuration rescue delete
- request system configuration rescue save
- request system halt
- request system license add
- request system license delete
- request system license save
- request system logout
- request system partition abort
- request system partition hard-disk
- request system power-off
- request system reboot
- request system snapshot
- request system software abort
- request system software add
- request system zeroize
- show chassis hardware
- show configuration
- show host
- show log
- show system connections
- show system name-resolution

- `show version`
- `start shell`

clear system commit

| | |
|---------------------------------|---|
| Syntax | clear system commit |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> |
| Description | Clear any pending commit operation. |
| Options | This command has no options. |
| Required Privilege Level | maintenance (or the actual user who scheduled the commit) |
| Related Documentation | <ul style="list-style-type: none"> • show system commit on page 508 |
| List of Sample Output | <p>clear system commit on page 175</p> <p>clear system commit (None Pending) on page 175</p> <p>clear system commit (User Does Not Have Required Privilege Level) on page 175</p> |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

clear system commit

```
user@host> clear system commit
Pending commit cleared.
```

clear system commit (None Pending)

```
user@host> clear system commit
No commit scheduled.
```

clear system commit (User Does Not Have Required Privilege Level)

```
user@host> clear system commit
error: Permission denied
```

clear system reboot

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 176 Syntax (EX Series Switches) on page 176 Syntax (TX Matrix Router) on page 176 Syntax (TX Matrix Plus Router) on page 176 Syntax (QFX Series) on page 176 |
| Syntax | clear system reboot <both-routing-engines> |
| Syntax (EX Series Switches) | clear system reboot <all-members> <both-routing-engines> <local> <member <i>member-id</i> > |
| Syntax (TX Matrix Router) | clear system reboot <both-routing-engines> <all-chassis all-lcc lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | clear system reboot <both-routing-engines> <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > |
| Syntax (QFX Series) | clear system reboot <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-group <i>name</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Clear any pending system software reboots or halts. When issued on a TX Matrix router without any options, the default behavior clears all pending system software reboots or halts on all T640 routers connected to the TX Matrix router. When issued on a TX Matrix Plus router without any options, the default behavior clears all pending system software reboots or halts on all T1600 or T4000 routers connected to the TX Matrix Plus router. |
| Options | none —Clear all pending system software reboots or halts. all-chassis —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Clear all halt or reboot requests for all the Routing Engines in the chassis. |

all-lcc—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, clear all halt or reboot requests for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, clear all halt or reboot requests on the l connected T1600 or T4000 LCCs.

all-members—(EX4200 switches only) (Optional) Clear all halt or reboot requests on all members of the Virtual Chassis configuration.

both-routing-engines—(Systems with multiple Routing Engines) (Optional) Clear all halt or reboot requests on both Routing Engines. On a TX Matrix router, clear both Routing Engines on all chassis connected to the TX Matrix router. Likewise, on a TX Matrix Plus router, clear both Routing Engines on all chassis connected to the TX Matrix Plus router.

infrastructure *name*—(QFabric systems) (Optional) Clear all halt or reboot requests on the fabric control Routing Engines or fabric manager Routing Engines.

interconnect-device *name*—(QFabric systems) (Optional) Clear all halt or reboot requests on the Interconnect device.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, clear all halt or reboot requests for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, clear all halt or reboot requests for a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches only) (Optional) Clear all halt or reboot requests on the local Virtual Chassis member.

member *member-id*—(EX4200 switches only) (Optional) Clear all halt or reboot requests on the specified member of the Virtual Chassis configuration. Replace ***member-id*** with a value from 0 through 9.

node-group *name*—(QFabric systems) (Optional) Clear all halt or reboot requests on the Node group.

scc—(TX Matrix routers only) (Optional) Clear all halt or reboot requests for the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Clear all halt or reboot requests for the TX Matrix Plus router. Replace *number* with 0.

Required Privilege Level maintenance

Related Documentation

- [request system reboot on page 206](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

- [clear system reboot on page 179](#)
- [clear system reboot \(TX Matrix Router\) on page 179](#)
- [clear system reboot \(QFX Series\) on page 179](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

clear system reboot

```
user@host> clear system reboot
reboot requested by root at Sat Dec 12 19:37:34 1998
[process id 17855]
Terminating...
```

clear system reboot (TX Matrix Router)

```
user@host> clear system reboot
scc-re0:
-----
No shutdown/reboot scheduled.
lcc0-re0:
-----
No shutdown/reboot scheduled.
lcc2-re0:
-----
No shutdown/reboot scheduled.
```

clear system reboot (QFX Series)

```
user@switch> clear system reboot node-group node1
No shutdown/reboot scheduled.
```

configure

| | |
|---------------------------------|---|
| Syntax | <code>configure</code> <code><batch></code> <code><dynamic></code> <code><exclusive></code> <code><private></code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Enter configuration mode. When this command is entered without any optional keywords, everyone can make configuration changes and commit all changes made to the configuration. |
| Options | <p>none—Enter configuration mode.</p> <p>batch—(Optional) Work in the batch commit mode where commit operations are executed in batches.</p> <p>dynamic—(Optional) Configure routing policies and certain routing policy objects in a dynamic database that is not subject to the same verification required in the standard configuration database. As a result, the time it takes to commit changes to the dynamic database is much shorter than for the standard configuration database. You can then reference these policies and policy objects in routing policies you configure in the standard database.</p> <p>exclusive—(Optional) Lock the candidate configuration for as long as you remain in configuration mode, allowing you to make changes without interference from other users. Other users can enter and exit configuration mode, but they cannot change the configuration.</p> <p>private—(Optional) Allow multiple users to edit different parts of the configuration at the same time and to commit only their own changes, or to roll back without interfering with one another's changes. You cannot commit changes in configure private mode when another user is in configure exclusive mode.</p> |
| Additional Information | For more information about the different methods of entering configuration mode and the restrictions that apply, see the <i>Junos OS Administration Library</i> . |
| Required Privilege Level | configure |
| Related Documentation | <ul style="list-style-type: none">• show configuration on page 464 |
| List of Sample Output | configure on page 181 |

Output Fields When you enter this command, you are placed in configuration mode and the system prompt changes from *hostname>* to *hostname#*.

Sample Output

configure

```
user@host> configure
Entering configuration mode
[edit]
user@host#
```

request message

| | |
|---------------------------------|---|
| Syntax | <code>request message all message "text"</code> <code>request message message "text" (terminal <i>terminal-name</i> user <i>user-name</i>)</code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Display a message on the screens of all users who are logged in to the router or switch or on specific screens. |
| Options | all —Display a message on the terminal of all users who are currently logged in. message "text" —Message to display. terminal <i>terminal-name</i> —Name of the terminal on which to display the message. user <i>user-name</i> —Name of the user to whom to direct the message. |
| Required Privilege Level | maintenance |
| List of Sample Output | request message message on page 182 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request message message

```
user@host> request message message "Maintenance window in 10 minutes" user maria
Message from user@host on tty0 at 20:27 ...
Maintenance window in 10 minutes
EOF
```


request system configuration rescue delete

Syntax request system configuration rescue delete

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
 Command introduced in Junos OS Release 11.1 for the QFX Series.
 Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.

Description Delete an existing rescue configuration.



NOTE: The [edit system configuration] hierarchy is not available on QFabric systems.

Options This command has no options.

Required Privilege Level maintenance

Related Documentation

- [request system configuration rescue save on page 184](#)
- [request system software rollback](#)
- [show system commit on page 508](#)

List of Sample Output [request system configuration rescue delete on page 183](#)

Output Fields This command produces no output.

Sample Output

request system configuration rescue delete

```
user@host> request system configuration rescue delete
```

request system configuration rescue save

Syntax request system configuration rescue save

Release Information Command introduced before Junos OS Release 7.4.
Command introduced in Junos OS Release 9.0 for EX Series switches.
Command introduced in Junos OS Release 11.1 for the QFX Series.
Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.

Description Save the most recently committed configuration as the rescue configuration so that you can return to it at any time by using the **rollback** command.



NOTE: The [edit system configuration] hierarchy is not available on QFabric systems.

Options This command has no options.

Required Privilege Level maintenance

Related Documentation

- *request system software delete*
- *request system software rollback*
- [show system commit on page 508](#)

List of Sample Output [request system configuration rescue save on page 184](#)

Output Fields This command produces no output.

Sample Output

request system configuration rescue save

```
user@host> request system configuration rescue save
```

request system halt

List of Syntax [Syntax on page 185](#)
 [Syntax \(EX Series Switches\) on page 185](#)
 [Syntax \(PTX Series\) on page 185](#)
 [Syntax \(TX Matrix Router\) on page 185](#)
 [Syntax \(TX Matrix Plus Router\) on page 186](#)
 [Syntax \(MX Series Router\) on page 186](#)
 [Syntax \(QFX Series\) on page 186](#)

Syntax request system halt
 <at *time*>
 <backup-routing-engine>
 <both-routing-engines>
 <other-routing-engine>
 <in *minutes*>
 <media (compact-flash | disk | removable-compact-flash | usb)>
 <message "*text*">

Syntax (EX Series Switches) request system halt
 <all-members>
 <at *time*>
 <backup-routing-engine>
 <both-routing-engines>
 <in *minutes*>
 <local>
 <media (external | internal)>
 <member *member-id*>
 <message "*text*">
 <other-routing-engine>
 <slice *slice*>

Syntax (PTX Series) request system halt
 <at *time*>
 <backup-routing-engine>
 <both-routing-engines>
 <other-routing-engine>
 <in *minutes*>
 <media (compact-flash | disk)>
 <message "*text*">

Syntax (TX Matrix Router) request system halt
 <all-lcc | lcc *number* | scc>
 <at *time*>
 <backup-routing-engine>
 <both-routing-engines>
 <other-routing-engine>
 <in *minutes*>
 <media (compact-flash | disk)>
 <message "*text*">

| | |
|--------------------------------|--|
| Syntax (TX Matrix Plus Router) | <pre>request system halt <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>> <at <i>time</i>> <backup-routing-engine> <both-routing-engines> <other-routing-engine> <in <i>minutes</i>> <media (compact-flash disk)> <message "<i>text</i>"></pre> |
| Syntax (MX Series Router) | <pre>request system halt <all-members> <at <i>time</i>> <backup-routing-engine> <both-routing-engines> <in <i>minutes</i>> <local> <media (external internal)> <member <i>member-id</i>> <message "<i>text</i>"> <other-routing-engine></pre> |
| Syntax (QFX Series) | <pre>request system halt <all-members> <at <i>time</i>> <both-routing-engines> <director-device <i>director-device-id</i>> <in <i>minutes</i>> <local> <media > <member <i>member-id</i>> <message "<i>text</i>"> <other-routing-engine> <slice <i>slice</i>></pre> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>other-routing-engine option introduced in Junos OS Release 8.0.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>director-device option introduced for QFabric systems in Junos OS Release 12.2.</p> <p>backup-routing-engine option introduced in Junos OS Release 13.1.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> |
| Description | Stop the router or switch software. |



NOTE: When you issue this command on an individual component—for example, a Node device—in a QFabric system, you will receive a warning that says “Hardware-based members will halt, Virtual Junos Routing Engines will reboot.” If you want to halt only one member of a Node group, issue this command with the `member` option on the Node device CLI, because you cannot issue this command from the QFabric CLI. Also, issuing this command might cause traffic loss on an individual component.

When you issue this command on a QFX5100 switch, you are not prompted to reboot. You must power cycle the switch to reboot.



NOTE: For the routers with the Routing Engines RE-S-2x00x6, RE-PTX-2x00x8, and RE-S-2x00x8, this command is deprecated and might be removed completely in a future release.

On these routers, this command is replaced with the `request vmhost halt` command which provides similar functionality.

Options **none**—Stop the router or switch software immediately.

all-chassis—(TX Matrix and TX Matrix Plus routers only) (Optional) Halt all chassis.

all-lcc—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, halt all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, halt all T1600 routers (or line-card chassis) connected to the TX Matrix Plus router.

all-members—(EX4200 switches and MX Series routers only) (Optional) Halt all members of the Virtual Chassis configuration.

at time —(Optional) Time at which to stop the software, specified in one of the following ways:

- **now**—Stop the software immediately. This is the default.
- **+minutes**—Number of minutes from now to stop the software.
- **yymmddhhmm**—Absolute time at which to stop the software, specified as year, month, day, hour, and minute.
- **hh:mm**—Absolute time on the current day at which to stop the software.

backup-routing-engine—(Optional) Halt the backup Routing Engine. This command halts the backup Routing Engine, regardless from which Routing Engine the command is executed. For example, if you issue the command from the master Routing Engine,

the backup Routing Engine is halted. If you issue the command from the backup Routing Engine, the backup Routing Engine is halted.

both-routing-engines—(Optional) Halt both Routing Engines at the same time.

director-device *director-device-id*—(QFabric systems only) Halt a specific Director device.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, halt a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, halt a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches and MX Series routers only) (Optional) Halt the local Virtual Chassis member.

in *minutes*—(Optional) Number of minutes from now to stop the software. This option is an alias for the at +*minutes* option.

media (compact-flash | disk)—(Optional) Boot medium for the next boot.

media (external | internal)—(EX Series and QFX Series switches and MX Series routers only) (Optional) Halt the boot media:

- **external**—Halt the external mass storage device.
- **internal**—Halt the internal flash device.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Halt the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

message "*text*"—(Optional) Message to display to all system users before stopping the software.

other-routing-engine—(Optional) Halt the other Routing Engine from which the command is issued. For example, if you issue the command from the master Routing Engine, the backup Routing Engine is halted. Similarly, if you issue the command from the backup Routing Engine, the master Routing Engine is halted.

scc—(TX Matrix routers only) (Optional) Halt the TX Matrix router (or switch-card chassis).

sfc number—(TX Matrix Plus routers only) (Optional) Halt the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

slice slice—(EX Series and QFX Series switches only) (Optional) Halt a partition on the boot media. This option has the following suboptions:

- 1—Halt partition 1.
- 2—Halt partition 2.
- **alternate**—Reboot from the alternate partition.

Additional Information On the M7i router, the **request system halt** command does not immediately power down the Packet Forwarding Engine. The power-down process can take as long as 5 minutes.

On a TX Matrix router and TX Matrix Plus router if you issue the **request system halt** command on the master Routing Engine, all the master Routing Engines connected to the routing matrix are halted. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are halted.



NOTE: If you have a router or switch with two Routing Engines and you want to shut the power off to the router or switch or remove a Routing Engine, you must first halt the backup Routing Engine (if it has been upgraded), and then halt the master Routing Engine. To halt a Routing Engine, issue the **request system halt** command. You can also halt both Routing Engines at the same time by issuing the **request system halt both-routing-engines** command.

Required Privilege Level maintenance

Related Documentation

- [clear system reboot on page 176](#)
- [request system power-off on page 201](#)
- [request vmhost halt](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

- [request system halt on page 190](#)
- [request system halt \(In 2 Hours\) on page 190](#)
- [request system halt \(Immediately\) on page 190](#)
- [request system halt \(At 1:20 AM\) on page 190](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request system halt

```
user@host> request system halt
Halt the system ? [yes,no] (no) yes

*** FINAL System shutdown message from root@section2 ***
System going down IMMEDIATELY
Terminated
...
syncing disks... 11 8 done
The operating system has halted.
Please press any key to reboot.
```

request system halt (In 2 Hours)

The following example, which assumes that the time is 5 PM (1700), illustrates three different ways to request that the system stop 2 hours from now:

```
user@host> request system halt at +120
user@host> request system halt in 120
user@host> request system halt at 19:00
```

request system halt (Immediately)

```
user@host> request system halt at now
```

request system halt (At 1:20 AM)

To stop the system at 1:20 AM, enter the following command. Because 1:20 AM is the next day, you must specify the absolute time.

```
user@host> request system halt at yymmdd120
request system halt at 120
Halt the system at 120? [yes,no] (no) yes
```


request system license add

| | |
|---------------------------------|--|
| Syntax | <code>request system license add (<i>filename</i> terminal)</code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 9.5 for SRX Series devices.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Added additional information section on XML RPC in Junos OS Release 17.4.</p> |
| Description | Add a license key. |
| Options | <p><i>filename</i>—License key from a file or URL. Specify the filename or the URL where the key is located.</p> <p><i>terminal</i>—License key from the terminal.</p> |
| Additional Information | <p>Although the <code> display xml rpc</code> filter returns “xml rpc equivalent of this command is not available,” the following RPC is supported for license installation:</p> <pre><rpc> <request-license-add> <key-data> key </key-data> </request-license-add> </rpc></pre> <p>Where <i>key-data</i> is the license key data.</p> <pre><rpc> <request-license-add> <source> key-file </source> </request-license-add> </rpc></pre> <p>Where <i>source</i> is the URL of the source license key file.</p> |
| Required Privilege Level | maintenance |
| List of Sample Output | request system license add on page 191 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request system license add

```
user@host> request system license add terminal
E408408918 aeaqib qcsbja okbuqe rcmxnq vjocwf uxfsta
          z5ufjb kdrmt6 57bimv 2f3ddp qttdcn 627q4a
```

```
jx4s5x hiri  
E408408918: successfully added  
add license complete (no errors)
```

request system license delete

| | |
|---------------------------------|--|
| Syntax | <code>request system license delete (<i>license-identifier</i> license-identifier-list [<i>licenseid001</i> <i>licenseid002</i> <i>licenseid003</i>] all)</code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Option license-identifier-list introduced in Junos OS Release 13.1. |
| Description | Delete a license key. You can choose to delete one license at a time, all licenses at once, or a list of license identifiers enclosed in brackets. |
| Options | <i>license-identifier</i> —Text string that uniquely identifies a license key. license-identifier-list [<i>licenseid001</i> <i>licenseid002</i> <i>licenseid003</i>....] —Delete multiple license identifiers as a list enclosed in brackets. all —Delete all licenses on the device. |
| Required Privilege Level | maintenance |
| Related Documentation | |

request system license save

| | |
|---------------------------------|--|
| Syntax | <code>request system license save (<i>filename</i> terminal)</code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 9.5 for SRX Series devices.</p> <p>Added additional information section on XML RPC in Junos OS Release 17.4.</p> |
| Description | Save installed license keys to a file or URL. |
| Options | <p><i>filename</i>—License key from a file or URL. Specify the filename or the URL where the key is located.</p> <p><i>terminal</i>—License key from the terminal.</p> |
| Additional Information | <p>Although the <code> display xml rpc</code> filter returns “xml rpc equivalent of this command is not available,” the following RPC is supported for saving installed license keys to a file or URL:</p> <pre><rpc> <request-license-save> <destination>destination</destination> </request-license-save> </rpc></pre> <p>Where <i>destination</i> is the URL of the destination license key file.</p> |
| Required Privilege Level | maintenance |
| List of Sample Output | request system license save on page 194 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request system license save

```
user@host> request system license save ftp://user@host/license.conf
```

request system logout

| | |
|---------------------------------|---|
| Syntax | <code>request system logout (pid <i>pid</i> terminal <i>terminal</i> user <i>username</i>) <all></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> |
| Description | Log out users from the router or switch and the configuration database. If a user held the configure exclusive lock, this command clears the exclusive lock. |
| Options | <p>all—(Optional) Log out all sessions owned by a particular PID, terminal session, or user. (On a TX Matrix or TX Matrix Plus router, this command is broadcast to all chassis.)</p> <p>pid <i>pid</i>—Log out the user session using the specified management process identifier (PID). The PID type must be management process.</p> <p>terminal <i>terminal</i>—Log out the user for the specified terminal session.</p> <p>user <i>username</i>—Log out the specified user.</p> |
| Required Privilege Level | configure |
| Related Documentation | <ul style="list-style-type: none"> • Log a User Out of the Router on page 76 |
| List of Sample Output | request system logout on page 195 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request system logout

```
user@host> request system logout user test all
Connection closed by foreign host.
```

request system partition abort

| | |
|--------------------------------|--|
| List of Syntax | Syntax on page 196 |
| | Syntax (TX Matrix Router) on page 196 |
| | Syntax (TX Matrix Plus Router) on page 196 |
| | Syntax (MX Series Router) on page 196 |
| Syntax | request system partition abort |
| Syntax (TX Matrix Router) | request system partition abort <all-chassis all-lcc lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | request system partition abort <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > |
| Syntax (MX Series Router) | request system partition abort <all-members> <local> <member <i>member-id</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. |
| | sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. |
| | Command deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1. |



NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

| | |
|-------------|---|
| Description | Terminate a previously scheduled storage media partition operation. If the command is issued between the time of a partition request and a reboot, the partition request is aborted and the storage media is not affected. |
| Options | all-chassis —(TX Matrix and TX Matrix Plus routers only) (Optional) Abort a previously scheduled partition operation for all chassis. |
| | all-lcc —(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, abort a previously scheduled partition operation on all T640 routers (line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, abort a previously scheduled partition operation on all routers (line-card chassis) connected to the TX Matrix Plus router. |
| | all-members —(MX Series routers only) (Optional) Abort a previously scheduled partition operation for all members of the Virtual Chassis configuration. |

lcc *number*—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix Plus router, abort a previously scheduled partition operation on a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, abort a previously scheduled partition operation on a specific router that is connected to the TX Matrix Plus router.

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

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

local—(MX Series routers only) (Optional) Abort a previously scheduled partition operation for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Abort a previously scheduled partition operation for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

scc—(TX Matrix routers only) (Optional) Abort a previously scheduled partition operation on the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Abort a previously scheduled partition operation on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

Required Privilege Level maintenance

Related Documentation [request system partition hard-disk on page 198](#)

List of Sample Output [request system partition abort on page 197](#)


Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

[request system partition abort](#)

```
user@host> request system partition abort
The hard disk is no longer scheduled to be partitioned.
```

request system partition hard-disk

| | |
|--|--|
| List of Syntax | Syntax on page 198 Syntax (TX Matrix Router) on page 198 Syntax (TX Matrix Plus Router) on page 198 Syntax (MX Series Router) on page 198 |
| Syntax | request system partition hard-disk |
| Syntax (TX Matrix Router) | request system partition hard-disk <all-chassis all-lcc lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | request system partition hard-disk <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > |
| Syntax (MX Series Router) | request system partition hard-disk <all-members> <local> <member <i>member-id</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1. |
| <div>  <p>NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in <i>Release Information for Junos OS with Upgraded FreeBSD</i>.</p> </div> | |
| Description | Set up the hard disk for partitioning. After this command is issued, the hard disk is partitioned the next time the system is rebooted. When the hard disk is partitioned, the contents of /altroot and /altconfig are saved and restored. All other data on the hard disk is at risk of being lost. |
| Options | <p>all-chassis—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Schedule a partition of the hard disk for all routers in the chassis at its next reboot.</p> <p>all-lcc—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, schedule a partition of the hard disk on all T640 routers connected to the TX Matrix router at their next reboot. On a TX Matrix Plus router, schedule a partition of the hard disk on all connected LCCs.</p> <p>all-members—(MX Series routers only) (Optional) Schedule a partition of the hard disk for all members of the Virtual Chassis configuration.</p> |

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix Plus router, schedule a partition of the hard disk on a specific T640 router connected to the TX Matrix router. On a TX Matrix Plus router, schedule a partition of the hard disk on a specific router that is connected to the TX Matrix Plus router.

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

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

local—(MX Series routers only) (Optional) Schedule a partition of the hard disk for the local member of the Virtual Chassis.

member *member-id*—(MX Series routers only) (Optional) Schedule a partition of the hard disk for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

scc—(TX Matrix routers only) (Optional) Schedule a partition of the hard disk on the T640 router connected to the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Schedule a partition of the hard disk on the connected T1600 or T4000 LCCs connected to the TX Matrix Plus router. Replace *number* with 0.

| | |
|---------------------------------|--|
| Additional Information | To immediately partition the hard disk, use the request system reboot command. To cancel the partition request, use the request system partition abort command. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • request system partition abort on page 196 • Routing Matrix with a TX Matrix Plus Router Solutions Page |
| List of Sample Output | request system partition hard-disk on page 200 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request system partition hard-disk

```
user@host> request system partition hard-disk
WARNING: The hard disk is about to be partitioned. The contents
WARNING: of /altroot and /altconfig will be saved and restored.
WARNING: All other data is at risk. This is the setup stage, the
WARNING: partition happens during the next reboot.

Setting up to partition the hard disk ...

WARNING: A REBOOT IS REQUIRED TO PARTITION THE HARD DISK. Use the
WARNING: 'request system reboot' command when you are ready to proceed
WARNING: with the partitioning. To abort the partition of the hard disk
WARNING: use the 'request system partition abort' command.
```

request system power-off

| | |
|---------------------------------------|--|
| List of Syntax | Syntax on page 201 Syntax (EX Series Switches) on page 201 Syntax (TX Matrix Router) on page 201 Syntax (TX Matrix Plus Router) on page 201 Syntax (MX Series Router) on page 201 Syntax (QFX Series) on page 202 |
| Syntax | <pre>request system power-off <both-routing-engines> <other-routing-engine> <at <i>time</i>> <in <i>minutes</i>> <media (compact-flash disk removable-compact-flash usb)> <message "<i>text</i>"></pre> |
| Syntax (EX Series Switches) | <pre>request system power-off <all-members> <at <i>time</i>> <both-routing-engines> <in <i>minutes</i>> <local> <media (external internal)> <member <i>member-id</i>> <message "<i>text</i>"> <other-routing-engine> <slice <i>slice</i>></pre> |
| Syntax (TX Matrix Router) | <pre>request system power-off <all-chassis all-lcc lcc <i>number</i> scc> <both-routing-engines> <other-routing-engine> <at <i>time</i>> <in <i>minutes</i>> <media (compact-flash disk)> <message "<i>text</i>"></pre> |
| Syntax (TX Matrix Plus Router) | <pre>request system power-off <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>> <both-routing-engines> <other-routing-engine> <at <i>time</i>> <in <i>minutes</i>> <media (compact-flash disk)> <message "<i>text</i>"></pre> |
| Syntax (MX Series Router) | <pre>request system power-off <all-members> <at <i>time</i>> <both-routing-engines></pre> |

```
<in minutes>  
<local>  
<media (external | internal)>  
<member member-id>  
<message "text">  
<other-routing-engine>
```

Syntax (QFX Series) request system power-off
<at *time*>
<in *minutes*>
<media (external | internal)>
<message "*text*">
<slice *slice*>

Release Information Command introduced in Junos OS Release 8.0.
Command introduced in Junos OS Release 9.0 for EX Series switches.
Command introduced in Junos OS Release 11.1 for the QFX Series.
Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

Description Power off the Routing Engines.



NOTE: When you issue this command on an individual component in a QFabric system, you will receive a warning that says “Hardware-based members will halt, Virtual Junos Routing Engines will reboot.” If you want to halt only one member, use the member option. You cannot issue this command from the QFabric CLI.



NOTE: For a standalone chassis (such as MX Series, PTX Series, and T Series routers), the request to power off the system is applicable only to the Routing Engines. When you request to power off both Routing Engines, all the FPCs in the chassis shut down after approximately 10 minutes and the chassis fans run at full speed. The FPCs shut down because they no longer have communication with the Routing Engines and an Inter-Integrated Circuit (I2C) timeout occurred.



NOTE: For the routers with Routing Engines RE-S-2x00x6, RE-PTX-2x00x8, and RE-S-2x00x8, this command is deprecated and might be removed completely in a future release.

On these routers, this command is replaced with the request vmhost power-off command which provides similar functionality.

Options **none**—Power off the router or switch software immediately.

all-chassis—(Optional) (TX Matrix and TX Matrix Plus router only) Power off all Routing Engines in the chassis.

all-lcc—(Optional) (TX Matrix and TX Matrix Plus router only) On a TX Matrix router, power off all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, power off all T1600 routers (or line-card chassis) connected to the TX Matrix Plus router.

all-members—(EX4200 switches and MX Series routers only) (Optional) Power off all members of the Virtual Chassis configuration.

at time—(Optional) Time at which to power off the software, specified in one of the following ways:

- **now**—Power off the software immediately. This is the default.
- **+minutes**—Number of minutes from now to power off the software.
- **yymmddhhmm**—Absolute time at which to power off the software, specified as year, month, day, hour, and minute.
- **hh:mm**—Absolute time on the current day at which to power off the software.

both-routing-engines—(Optional) Power off both Routing Engines at the same time.

in minutes—(Optional) Number of minutes from now to power off the software. This option is an alias for the **at +minutes** option.

lcc number—(Optional) (TX Matrix and TX Matrix Plus router only) On a TX Matrix router, power off a T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, power off a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches and MX Series routers only) (Optional) Power off the local Virtual Chassis member.

media (compact-flash | disk)—(Optional) Boot medium for the next boot.

media (external | internal)—(EX Series and QFX Series switches and MX Series routers only) (Optional) Power off the boot media:

- **external**—Power off the external mass storage device.
- **internal**—Power off the internal flash device.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Power off the specified member of the Virtual Chassis configuration. For EX4200 switches, replace ***member-id*** with a value from 0 through 9. For an MX Series Virtual Chassis, replace ***member-id*** with a value of 0 or 1.

message "*text*"—(Optional) Message to display to all system users before powering off the software.

other-routing-engine—(Optional) Power off the other Routing Engine from which the command is issued. For example, if you issue the command from the master Routing Engine, the backup Routing Engine is halted. Similarly, if you issue the command from the backup Routing Engine, the master Routing Engine is halted.

scc—(Optional) (TX Matrix router only) Power off only the master Routing Engine or the backup Routing Engine on the TX Matrix router (or switch-card chassis). If you issue the command from the master Routing Engine, the master SCC is powered off. If you issue the command from the backup Routing Engine, the backup SCC is powered off.

sfc *number*—(Optional) (TX Matrix Plus router only) Power off only the master Routing Engine or the backup Routing Engine on the TX Matrix Plus router (or switch-fabric chassis). If you issue the command from the master Routing Engine, the master SFC is powered off. If you issue the command from the backup Routing Engine, the backup SFC is powered off. Replace ***number*** with zero.

slice *slice*—(EX Series and QFX Series switches only) (Optional) Power off a partition on the boot media. This option has the following suboptions:

- **1**—Power off partition 1.
- **2**—Power off partition 2.
- **alternate**—Reboot from the alternate partition.

Additional Information On a routing matrix composed of a TX Matrix router and T640 routers, if you issue the **request system power-off** command on the TX Matrix master Routing Engine, all the master Routing Engines connected to the routing matrix are powered off. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are powered off.

Likewise, on a routing matrix composed of a TX Matrix Plus router and T1600 routers, if you issue the **request system power-off** command on the TX Matrix Plus master Routing Engine, all the master Routing Engines connected to the routing matrix are powered off.

If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are powered off.

If you issue the **request system power-off both-routing-engines** command on the TX Matrix or TX Matrix Plus router, all the Routing Engines on the routing matrix are powered off.

Required Privilege Level maintenance

List of Sample Output [request system power-off on page 205](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

[request system power-off](#)

```
user@host> request system power-off message "This router will be powered off in 30 minutes.
Please save your data and log out immediately."
warning: This command will not halt the other routing-engine.
If planning to switch off power, use the both-routing-engines option.
Power Off the system ? [yes,no] (no) yes
```

```
*** FINAL System shutdown message from remote@nutmeg ***
System going down IMMEDIATELY
```

```
This router will be powered off in 30 minutes. Please save your data and log out
immediately.
```

```
Shutdown NOW!
[pid 5177]
```

request system reboot

List of Syntax [Syntax on page 206](#)
 [Syntax \(EX Series Switches\) on page 206](#)
 [Syntax \(TX Matrix Router\) on page 206](#)
 [Syntax \(TX Matrix Plus Router\) on page 206](#)
 [Syntax \(MX Series Router\) on page 206](#)

Syntax request system reboot
 <at *time*>
 <both-routing-engines>
 <in *minutes*>
 <media (compact-flash | disk | removable-compact-flash | usb)>
 <message "*text*">
 <other-routing-engine>

Syntax (EX Series Switches) request system reboot
 <all-members>
 <at *time*>
 <both-routing-engines>
 <in *minutes*>
 <local>
 <media (external | internal)>
 <member *member-id*>
 <message "*text*">
 <other-routing-engine>
 <slice *slice*>

Syntax (TX Matrix Router) request system reboot
 <all-chassis | all-lcc | lcc *number* | scc>
 <at *time*>
 <both-routing-engines>
 <in *minutes*>
 <media (compact-flash | disk)>
 <message "*text*">
 <other-routing-engine>

Syntax (TX Matrix Plus Router) request system reboot
 <all-chassis | all-lcc | lcc *number* | sfc *number*>
 <at *time*>
 <both-routing-engines>
 <in *minutes*>
 <media (compact-flash | disk)>
 <message "*text*">
 <other-routing-engine>
 <partition (1 | 2 | alternate)>

Syntax (MX Series Router) request system reboot
 <all-members>
 <at *time*>
 <both-routing-engines>


```

<in minutes>
<local>
<media (external | internal)>
<member member-id>
<message "text">
<other-routing-engine>

```

Release Information Command introduced before Junos OS Release 7.4.
Option **other-routing-engine** introduced in Junos OS Release 8.0.
Command introduced in Junos OS Release 9.0 for EX Series switches.
Option **sfc** introduced for the TX Matrix Plus router in Junos OS Release 9.6.
Option **both-routing-engines** introduced in Junos OS Release 12.1.

Description Reboot the software.



NOTE: Starting with Junos OS Release 15.1F3, the statement **request system reboot** reboots only the guest operating system on the PTX5000 with RE-PTX-X8-64G and, MX240, MX480, and MX960 with RE-S-X6-64G.

Starting with Junos OS Release 15.1F5, the statement **request system reboot** reboots only the guest operating system on the MX2010, and MX2020 with REMX2K-X8-64G.



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

Options **none**—Reboot the software immediately.

all-chassis—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router or TX Matrix Plus router, reboot all routers connected to the TX Matrix or TX Matrix Plus router, respectively.

all-lcc—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router or TX Matrix Plus router, reboot all line card chassis connected to the TX Matrix or TX Matrix Plus router, respectively.

all-members—(EX4200 switches and MX Series routers only) (Optional) Reboot the software on all members of the Virtual Chassis configuration.

at time—(Optional) Time at which to reboot the software, specified in one of the following ways:

- **now**—Stop or reboot the software immediately. This is the default.
- **+minutes**—Number of minutes from now to reboot the software.
- **yymmddhhmm**—Absolute time at which to reboot the software, specified as year, month, day, hour, and minute.
- **hh:mm**—Absolute time on the current day at which to stop the software, specified in 24-hour time.

both-routing-engines—(Optional) Reboot both Routing Engines at the same time.

in minutes—(Optional) Number of minutes from now to reboot the software. This option is an alias for the **at +minutes** option.

lcc number—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number.

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

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

local—(EX4200 switches and MX Series routers only) (Optional) Reboot the software on the local Virtual Chassis member.

media (compact-flash | disk)—(Optional) Boot medium for next boot.

media (external | internal)—(EX Series switches and MX Series routers only) (Optional) Reboot the boot media:

- **external**—Reboot the external mass storage device.
- **internal**—Reboot the internal flash device.

member member-id—(EX4200 switches and MX Series routers only) (Optional) Reboot the software on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

message "text"—(Optional) Message to display to all system users before stopping or rebooting the software.

other-routing-engine—(Optional) Reboot the other Routing Engine from which the command is issued. For example, if you issue the command from the master Routing Engine, the backup Routing Engine is rebooted. Similarly, if you issue the command from the backup Routing Engine, the master Routing Engine is rebooted.

partition—(TX Matrix Plus routers only) (Optional) Reboot using the specified partition on the boot media. This option has the following suboptions:

- 1—Reboot from partition 1.
- 2—Reboot from partition 2.
- **alternate**—Reboot from the alternate partition.

scc—(TX Matrix routers only) (Optional) Reboot the Routing Engine on the TX Matrix switch-card chassis. If you issue the command from re0, re0 is rebooted. If you issue the command from re1, re1 is rebooted.

sfc number—(TX Matrix Plus routers only) (Optional) Reboot the Routing Engine on the TX Matrix Plus switch-fabric chassis. If you issue the command from re0, re0 is rebooted. If you issue the command from re1, re1 is rebooted. Replace *number* with 0.

slice slice—(EX Series switches only) (Optional) Reboot a partition on the boot media. This option has the following suboptions:

- 1—Power off partition 1.
- 2—Power off partition 2.
- **alternate**—Reboot from the alternate partition.

Additional Information Reboot requests are recorded in the system log files, which you can view with the **show log** command (see [show log](#)). Also, the names of any running processes that are scheduled to be shut down are changed. You can view the process names with the **show system processes** command (see [show system processes](#)).

On a TX Matrix or TX Matrix Plus router, if you issue the **request system reboot** command on the master Routing Engine, all the master Routing Engines connected to the routing matrix are rebooted. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are rebooted.



NOTE: Before issuing the **request system reboot** command on a TX Matrix Plus router with no options or the **all-chassis**, **all-lcc**, **lcc number**, or **sfc** options, verify that master Routing Engine for all routers in the routing matrix are in the same slot number. If the master Routing Engine for a line-card chassis is in a different slot number than the master Routing Engine for a TX Matrix Plus router, the line-card chassis might become logically disconnected from the routing matrix after the **request system reboot** command.



NOTE: To reboot a router that has two Routing Engines, reboot the backup Routing Engine (if you have upgraded it) first, and then reboot the master Routing Engine.

| | |
|---------------------------------|---|
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • clear system reboot on page 176 • request system halt on page 185 • Routing Matrix with a TX Matrix Plus Router Solutions Page • request vmhost reboot |
| List of Sample Output | request system reboot on page 210 request system reboot (at 2300) on page 210 request system reboot (in 2 Hours) on page 210 request system reboot (Immediately) on page 210 request system reboot (at 1:20 AM) on page 211 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

request system reboot

```
user@host> request system reboot
Reboot the system ? [yes,no] (no)
```

request system reboot (at 2300)

```
user@host> request system reboot at 2300 message ?Maintenance time!?
Reboot the system ? [yes,no] (no) yes

shutdown: [pid 186]
*** System shutdown message from root@test.example.net ***
System going down at 23:00
```

request system reboot (in 2 Hours)

The following example, which assumes that the time is 5 PM (17:00), illustrates three different ways to request the system to reboot in two hours:

```
user@host> request system reboot at +120
user@host> request system reboot in 120
user@host> request system reboot at 19:00
```

request system reboot (Immediately)

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

request system reboot (at 1:20 AM)

To reboot the system at 1:20 AM, enter the following command. Because 1:20 AM is the next day, you must specify the absolute time.

```
user@host> request system reboot at 06060120
request system reboot at 120
Reboot the system at 120? [yes,no] (no) yes
```

request system snapshot

| | |
|--|--|
| List of Syntax | Syntax on page 212 Syntax (ACX Series Routers) on page 212 Syntax (EX Series Switches) on page 212 Syntax (MX Series Routers) on page 212 Syntax (TX Matrix Routers) on page 212 Syntax (TX Matrix Plus Routers) on page 212 |
| Syntax | request system snapshot <partition> |
| Syntax (ACX Series Routers) | request system snapshot <media type> <partition> |
| Syntax (EX Series Switches) | request system snapshot <all-members local member <i>member-id</i> > <media type> <partition> <re0 re1 routing-engine <i>routing-engine-id</i> > <slice alternate> |
| Syntax (MX Series Routers) | request system snapshot <all-members> <config-partition> <local> <member <i>member-id</i> > <media <i>usb-port-number</i> > <partition> <root-partition> |
| Syntax (TX Matrix Routers) | request system snapshot <all-chassis all-lcc lcc <i>number</i> scc> <config-partition> <partition> <root-partition> |
| Syntax (TX Matrix Plus Routers) | request system snapshot <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > <config-partition> <partition> <root-partition> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 12.2 for ACX Series routers. Options <config-partition> and <root-partition> introduced in Junos OS Release 13.1 for M Series, MX Series, T Series, and TX Series routers. |

Option **media usb-port-number** introduced in Junos OS Release 13.2 for MX104 routers. Options **<config-partition>**, **<root-partition>**, and **<slice>** deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1



NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

- Description**
- On the router, back up the currently running and active file system partitions to standby partitions that are not running. Specifically, the root file system (**/**) is backed up to **/altroot**, and **/config** is backed up to **/altconfig**. The root and **/config** file systems are on the router's flash drive, and the **/altroot** and **/altconfig** file systems are on the router's hard drive.
 - On the switch, take a snapshot of the files currently used to run the switch—the complete contents of the root (**/**), **/altroot**, **/config**, **/var**, and **/var-tmp** directories, which include the running Junos OS, the active configuration, and log files.



CAUTION: After you run the **request system snapshot** command, you cannot return to the previous version of the software, because the running and backup copies of the software are identical.



NOTE: Starting with Junos OS Release 15.1F3, the statement **request system snapshot** creates a snapshot of the guest OS image only for the PTX5000 with RE-DUO-C2600-16G, and the MX240, MX480, and MX960 routers with RE-S-1800X4-32G-S.

Starting with Junos OS Release 15.1F5, the statement **request system snapshot** creates a snapshot of the guest OS image only for the MX2010 and MX2020 routers with REMX2K-1800-32G-S.

On these routers, in order to create snapshot of the host OS image along with Junos OS image, use the **request vmhost snapshot** command.

Options The specific options available depend upon the router or switch:

none—Back up the currently running software as follows:

- On the router, back up the currently running and active file system partitions to standby partitions that are not running. Specifically, the root file system (**/**) is backed up to **/altroot**, and **/config** is backed up to **/altconfig**. The root and **/config**

file systems are on the router's flash drive, and the `/altroot` and `/altconfig` file systems are on the router's hard drive.

- On the switch, take a snapshot of the files currently used to run the switch and copy them to the media that the switch did not boot from. If the switch is booted from internal media, the snapshot is copied to external (USB) media. If the switch is booted from external (USB) media, the snapshot is copied to internal media.
- If the snapshot destination is external media but a USB flash drive is not connected, an error message is displayed.
- If the automatic snapshot procedure is already in progress, the command returns the following error: **Snapshot already in progress. Cannot start manual snapshot.** For additional information about the automatic snapshot feature, see *Understanding Resilient Dual-Root Partitions on Switches*.

all-chassis | all-lcc | lcc *number* —(TX Matrix and TX Matrix Plus router only) (Optional)

- **all-chassis**—On a TX Matrix router, archive data and executable areas for all Routing Engines in the chassis. On a TX Matrix Plus router, archive data and executable areas for all Routing Engines in the chassis.
- **all-lcc**—On a TX Matrix router, archive data and executable areas for all T640 routers (or line-card chassis) connected to a TX Matrix router. On a TX Matrix Plus router, archive data and executable areas for all routers (or line-card chassis) connected to a TX Matrix Plus router.
- **lcc *number***—On a TX Matrix router, archive data and executable areas for a specific T640 router (or line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, archive data and executable areas for a specific router (line-card chassis) that is connected to a TX Matrix Plus router.

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

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

all-members | local | member *member-id*—(EX Series switch Virtual Chassis and MX Series routers only) (Optional) Specify where to place the snapshot (archive data and executable areas) in a Virtual Chassis:

- **all-members**—Create a snapshot (archive data and executable areas) for all members of the Virtual Chassis.

- **local**—Create a snapshot (archive data and executable areas) on the member of the Virtual Chassis that you are currently logged into.
- **member *member-id***—Create a snapshot (archive data and executable areas) for the specified member of the Virtual Chassis.

config-partition—(M, MX, T, TX Series routers only) Create a snapshot of the configuration partition only and store it onto the default **/altconfig** on the hard disk device or an **/altconfig** on a USB device. Option deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

media type—(ACX Series, M320, T640, MX960 routers, and EX Series switches only)(Optional) Specify the boot device the software is copied to:

- **compact-flash**—Copy software to the primary compact flash drive.
- **external**—(Switches only) Copy software to an external mass storage device, such as a USB flash drive. If a USB drive is not connected, the switch displays an error message.
- **internal**—Copy software to an internal flash drive.
- **removable-compact-flash**—Copy software to the removable compact flash drive.
- **usb**—(ACX Series, M320, T640, MX960 routers only) Copy software to the device connected to the USB port.
- **usb0**—(MX104 routers only) Copy software to the device connected to the USB0 port.
- **usb1**—(MX104 routers only) Copy software to the device connected to the USB1 port.

partition—(Optional) Repartition the flash drive before a snapshot occurs. If the partition table on the flash drive is corrupted, the **request system snapshot** command fails and reports errors. The partition option is only supported for restoring the software image from the hard drive to the flash drive.

(Routers only) You cannot issue the **request system snapshot** command when you enable flash disk mirroring. We recommend that you disable flash disk mirroring when you upgrade or downgrade the software. For more information, see the *Junos OS Administration Library*.

(EX Series switches only) If the snapshot destination is the media that the switch did not boot from, you must use the **partition** option.

re0 | re1 | routing-engine *routing-engine-id*—(EX6200 and EX8200 switches only) Specify where to place the snapshot in a redundant Routing Engine configuration.

- **re0**—Create a snapshot on Routing Engine 0.
- **re1**—Create a snapshot on Routing Engine 1.
- **routing-engine *routing-engine-id***—Create a snapshot on the specified Routing Engine.

root-partition—(M, MX, T, TX Series routers only) Create a snapshot of the root partition only and store it onto the default **/altroot** on the hard disk device or an **/altroot** on a USB device. Option deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

slice alternate—(EX Series switches only) (Optional) Take a snapshot of the active root partition and copy it to the alternate slice on the boot media.

Option deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

scc—(TX Matrix router only) (Optional) Archive data and executable areas for a TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus router only) (Optional) Archive data and executable areas for a TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

- Additional Information**
- (Routers only) Before upgrading the software on the router, when you have a known stable system, issue the **request system snapshot** command to back up the software, including the configuration, to the **/altroot** and **/altconfig** file systems. After you have upgraded the software on the router and are satisfied that the new packages are

successfully installed and running, issue the **request system snapshot** command again to back up the new software to the **/altroot** and **/altconfig** file systems.

- (Routers only) You cannot issue the **request system snapshot** command when you enable flash disk mirroring. We recommend that you disable flash disk mirroring when you upgrade or downgrade the software. For more information, see the *Junos OS Administration Library*
- (TX Matrix and TX Matrix Plus router only) On a routing matrix, if you issue the **request system snapshot** command on the master Routing Engine, all the master Routing Engines connected to the routing matrix are backed up. If you issue this command on the backup Routing Engine, all the backup Routing Engines connected to the routing matrix are backed up.

Required Privilege Level maintenance

Related Documentation

- [request system snapshot \(Junos OS with Upgraded FreeBSD\)](#)
- [show system snapshot on page 557](#)
- [show system auto-snapshot](#)

List of Sample Output

- [request system snapshot \(Routers\) on page 217](#)
- [request system snapshot \(EX Series Switches\) on page 217](#)
- [request system snapshot \(When the Partition Flag Is On\) on page 218](#)
- [request system snapshot \(MX104 Routers When Media Device is Missing\) on page 218](#)
- [request system snapshot \(When Mirroring Is Enabled\) on page 218](#)
- [request system snapshot all-lcc \(Routing Matrix\) on page 218](#)
- [request system snapshot all-members \(Virtual Chassis\) on page 218](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request system snapshot (Routers)

```
user@host> request system snapshot
umount: /altroot: not currently mounted
Copying / to /altroot.. (this may take a few minutes)
umount: /altconfig: not currently mounted
Copying /config to /altconfig.. (this may take a few minutes)

The following filesystems were archived: / /config
```

request system snapshot (EX Series Switches)

```
user@switch> request system snapshot partition
Clearing current label...
Partitioning external media (/dev/da1) ...
Partitions on snapshot:

Partition Mountpoint Size Snapshot argument
```

```

s1a    /altroot    179M    none
s2a    /           180M    none
s3d    /var/tmp    361M    none
s3e    /var        121M    none
s4d    /config     60M     none
Copying '/dev/da0s1a' to '/dev/da1s1a' .. (this may take a few minutes)
Copying '/dev/da0s2a' to '/dev/da1s2a' .. (this may take a few minutes)
Copying '/dev/da0s3d' to '/dev/da1s3d' .. (this may take a few minutes)
Copying '/dev/da0s3e' to '/dev/da1s3e' .. (this may take a few minutes)
Copying '/dev/da0s4d' to '/dev/da1s4d' .. (this may take a few minutes)
The following filesystems were archived: /altroot / /var/tmp /var /config

```

request system snapshot (When the Partition Flag Is On)

```

user@host> request system snapshot partition
Performing preliminary partition checks ...
Partitioning ad0 ...
umount: /altroot: not currently mounted
Copying / to /altroot.. (this may take a few minutes)

The following filesystems were archived: / /config

```

request system snapshot (MX104 Routers When Media Device is Missing)

```

user@host > request system snapshot media usb0
error: usb0 media missing or invalid

```

request system snapshot (When Mirroring Is Enabled)

```

user@host> request system snapshot
Snapshot is not possible since mirror-flash-on-disk is configured.

```

request system snapshot all-lcc (Routing Matrix)

```

user@host> request system snapshot all-lcc
lcc0-re0:
-----
Copying '/' to '/altroot' .. (this may take a few minutes)
Copying '/config' to '/altconfig' .. (this may take a few minutes)
The following filesystems were archived: / /config

lcc2-re0:
-----
Copying '/' to '/altroot' .. (this may take a few minutes)
Copying '/config' to '/altconfig' .. (this may take a few minutes)
The following filesystems were archived: / /config

```

request system snapshot all-members (Virtual Chassis)

```

user@switch> request system snapshot all-members media internal
fpc0:
-----
Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /

fpc1:
-----
Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /

```

fpc2:

Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /

fpc3:

Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /

fpc4:

Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /

fpc5:

Copying '/dev/da0s2a' to '/dev/da0s1a' .. (this may take a few minutes)
The following filesystems were archived: /

request system software abort

| | |
|---------------------------------|--|
| Syntax | request system software abort in-service-upgrade |
| Release Information | Command introduced in JUNOS Release 9.0. Command introduced in Junos OS Release 13.2 for PTX5000 routers. |
| Description | Abort a unified in-service software upgrade (ISSU). The unified ISSU must be in progress and you must issue this command from a router session other than the one on which you issued the request system in-service-upgrade command that launched the unified ISSU. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none">• <i>request system software in-service-upgrade</i>• <i>show chassis in-service-upgrade</i>• <i>Getting Started with Unified In-Service Software Upgrade</i>• <i>Example: Performing a Unified ISSU</i> |
| List of Sample Output | request system software abort (New Router Session) on page 220 request system software in-service-upgrade (Unified ISSU Session) on page 220 |
| Output Fields | When you enter the request system software abort command on a new router session, you are provided feedback on the status of your request in the router session on which you issued the request system software in-service-upgrade command. |

Sample Output

request system software abort (New Router Session)

```
user@host> request system software abort
```

request system software in-service-upgrade (Unified ISSU Session)

```
user@host> request system software in-service-upgrade
/var/tmp/jinstall-9.0-20080117.0-domestic-signed.tgz
ISSU: Preparing Backup RE
Pushing bundle to re1
Checking compatibility with configuration Initializing...
Using jbase-9.0-20080116.2
Verified manifest signed by PackageProduction_9_0_0 Using
/var/tmp/jinstall-9.0-20080117.0-domestic-signed.tgz
Verified jinstall-9.0-20080117.0-domestic.tgz signed by PackageProduction_9_0_0
Using jinstall-9.0-20080117.0-domestic.tgz
Using jbundle-9.0-20080117.0-domestic.tgz
Checking jbundle requirements on /
```

```

Using jbase-9.0-20080117.0.tgz
Verified manifest signed by PackageProduction_9_0_0 Using
jkernel-9.0-20080117.0.tgz Verified manifest signed by PackageProduction_9_0_0
Using jcrypto-9.0-20080117.0.tgz Verified manifest signed by
PackageProduction_9_0_0 Using jpfe-9.0-20080117.0.tgz Using
jdocs-9.0-20080117.0.tgz Verified manifest signed by PackageProduction_9_0_0 Using
jroute-9.0-20080117.0.tgz Verified manifest signed by PackageProduction_9_0_0
Hardware Database regeneration succeeded Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded
Installing package '/var/tmp/jinstall-9.0-20080117.0-domestic-signed.tgz'
...
Verified jinstall-9.0-20080117.0-domestic.tgz signed by PackageProduction_9_0_0
Adding jinstall...
Verified manifest signed by PackageProduction_9_0_0

WARNING: This package will load JUNOS 9.0-20080117.0 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.

Saving the config files ...
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Installing the bootstrap installer ...

WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,
WARNING: instead use the 'request system software delete jinstall'
WARNING: command as soon as this operation completes.

Saving package file in
/var/sw/pkg/jinstall-9.0-20080117.0-domestic-signed.tgz ...
Saving state for rollback ...
Backup upgrade done
Rebooting Backup RE

Rebooting re1
error: ISSU Aborted! Backup RE maybe in inconsistent state, Please restore backup
RE
ISSU: IDLE

{master}
user@host>

```

request system software add

List of Syntax [Syntax on page 222](#)
 [Syntax \(EX Series Switches\) on page 222](#)
 [Syntax \(TX Matrix Router\) on page 222](#)
 [Syntax \(TX Matrix Plus Router\) on page 223](#)
 [Syntax \(MX Series Router\) on page 223](#)
 [Syntax \(QFX Series\) on page 223](#)
 [Syntax \(OCX Series\) on page 224](#)

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

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

Syntax (TX Matrix Router) request system software add *package-name*
 <best-effort-load>
 <delay-restart>
 <force>
 <lcc *number* | scc>
 <no-copy>
 <no-validate>
 <re0 | re1>
 <reboot>
 <set [*package-name1 package-name2*]>


```

<unlink>
<upgrade-with-config>
<validate>
<validate-on-host hostname>
<validate-on-routing-engine routing-engine>

```

Syntax (TX Matrix Plus Router)

```

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

```

Syntax (MX Series Router)

```

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

```

Syntax (QFX Series)

```

request system software add package-name
<best-effort-load>
<component all>
<delay-restart>
<force>
<force-host>
<no-copy>
<partition>
<reboot>
<unlink>
<upgrade-with-config>

```

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

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



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

upgrade-with-config and **upgrade-with-config-format format** options added in Junos OS Release 12.3 for M Series routers, MX Series routers, and T Series routers, EX Series Ethernet switches, and QFX Series devices.

Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

device-alias, **satellite**, **upgrade-group**, and **version** options introduced in Junos OS Release 14.2R3 for Junos Fusion.

validate-on-host and **validate-on-routing-engine** options added in Junos OS Release 15.1F3 for PTX5000 routers and MX240, MX480, and MX960 routers.

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

Description



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

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

For information on valid filename and URL formats, see [“Format for Specifying Filenames and URLs in Junos OS CLI Commands”](#) on page 53.



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



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



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



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

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

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

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

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



NOTE:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

A satellite software upgrade group is a group of satellite devices in a Junos Fusion that are designated to upgrade to the same satellite software version using the same satellite software package. See *Understanding Software in a Junos Fusion Provider Edge*, *Understanding Software in a Junos Fusion Enterprise*, and *Managing Satellite Software Upgrade Groups in a Junos Fusion*.

upgrade-with-config—(Optional) Install one or more configuration files.



NOTE: Configuration files specified with this option must have the extension `.text` or `.xml` and have the extension specified. Using the extension `.txt` will not work.

validate—(Optional) Validate the software package or bundle against the current configuration as a prerequisite to adding the software package or bundle. This is the default behavior when the software package or bundle being added is a different release.



NOTE: The `validate` option only works on systems that do not have `graceful-switchover` (GRES) enabled. To use the `validate` option on a system with GRES, either disable GRES for the duration of the installation, or install using the command `request system software in-service-upgrade`, which requires nonstop active routing (NSR) to be enabled when using GRES.

validate-on-host *hostname*—(Optional) Validate the software package by comparing it to the running configuration on a remote Junos OS host. Specify a host, replacing *hostname* with the remote hostname. You can optionally provide the username that will be used to log in to the remote host by specifying the hostname in the format `user@hostname`.

validate-on-routing-engine *routing-engine*—(Optional) Validate the software bundle or package by comparing it to the running configuration on a Junos OS Routing Engine on the same chassis. Specify a Routing Engine, replacing *routing-engine* with the routing engine name.

Additional Information Before upgrading the software on the router or switch, when you have a known stable system, issue the **request system snapshot** command to back up the software, including the configuration, to the `/altroot` and `/altconfig` file systems. After you have upgraded the software on the router or switch and are satisfied that the new package or bundle is successfully installed and running, issue the **request system snapshot** command again to back up the new software to the `/altroot` and `/altconfig` file systems.



NOTE: The `request system snapshot` command is currently not supported on the QFabric system. Also, you cannot add or install multiple packages on a QFabric system.

After you run the `request system snapshot` command, you cannot return to the previous version of the software because the running and backup copies of the software are identical.

If you are upgrading more than one package at the same time, delete the operating system package, `jkernel`, last. Add the operating system package, `jkernel`, first and the routing software package, `jroute`, last. If you are upgrading all packages at once, delete and add them in the following order:

```
user@host> request system software add /var/tmp/jbase
user@host> request system software add /var/tmp/jkernel
user@host> request system software add /var/tmp/jpfe
user@host> request system software add /var/tmp/jdocs
user@host> request system software add /var/tmp/jroute
user@host> request system software add /var/tmp/jcrypto
```

By default, when you issue the `request system software add package-name` command on a TX Matrix master Routing Engine, all the T640 master Routing Engines that are connected to it are upgraded to the same version of software. If you issue the same command on the TX Matrix backup Routing Engine, all the T640 backup Routing Engines that are connected to it are upgraded to the same version of software.

Likewise, when you issue the `request system software add package-name` command on a TX Matrix Plus master Routing Engine, all the T1600 or T4000 master Routing Engines that are connected to it are upgraded to the same version of software. If you issue the same command on the TX Matrix Plus backup Routing Engine, all the T1600 or T4000 backup Routing Engines that are connected to it are upgraded to the same version of software.

Required Privilege Level

maintenance

Related Documentation

- [Format for Specifying Filenames and URLs in Junos OS CLI Commands on page 53](#)
- `request system software delete`
- `request system software rollback`
- `request system storage cleanup`
- *Upgrading Software*
- *Upgrading Software on a QFabric System*
- *Managing Satellite Software Upgrade Groups in a Junos Fusion*
- `request system software add (Maintenance)`

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output [request system software add validate on page 231](#)
[request system software add /var/tmp/ no-validate on page 232](#)
[request system software add no-copy no-validate reboot on page 232](#)
[request system software add validate-on-host on page 233](#)
[request system software add \(Mixed EX4200 and EX4500 Virtual Chassis\) on page 234](#)
[request system software add component all \(QFabric Systems\) on page 234](#)
[request system software add upgrade-group \(Junos Fusion\) on page 234](#)

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

`request system software add validate`

```
user@host> request system software add validate /var/tmp/jinstall-7.2R1.7-domestic-signed.tgz
Checking compatibility with configuration
Initializing...
Using jbase-7.1R2.2
Using /var/tmp/jinstall-7.2R1.7-domestic-signed.tgz
Verified jinstall-7.2R1.7-domestic.tgz signed by PackageProduction_7_2_0
Using /var/validate/tmp/jinstall-signed/jinstall-7.2R1.7-domestic.tgz
Using /var/validate/tmp/jinstall/jbundle-7.2R1.7-domestic.tgz
Checking jbundle requirements on /
Using /var/validate/tmp/jbundle/jbase-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jkernel-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jcrypto-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jpfe-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jdocs-7.2R1.7.tgz
Using /var/validate/tmp/jbundle/jroute-7.2R1.7.tgz
Validating against /config/juniper.conf.gz
mgd: commit complete
Validation succeeded
Validating against /config/rescue.conf.gz
mgd: commit complete
Validation succeeded
Installing package '/var/tmp/jinstall-7.2R1.7-domestic-signed.tgz' ...
Verified jinstall-7.2R1.7-domestic.tgz signed by PackageProduction_7_2_0
Adding jinstall...

WARNING: This package will load JUNOS 7.2R1.7 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.

Saving the config files ...
Installing the bootstrap installer ...

WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,
WARNING: instead use the 'request system software delete jinstall'
```

WARNING: command as soon as this operation completes.

Saving package file in /var/sw/pkg/jinstall-7.2R1.7-domestic-signed.tgz ...
Saving state for rollback ...

request system software add /var/tmp/ no-validate

```
user@host> request system software add no-validate
/var/tmp/junos-install-mx-x86-32-15.1R1.9.tgz
Installing package '/var/tmp/junos-install-mx-x86-32-15.1R1.9.tgz' ...
Verified manifest signed by PackageProductionEc_2015
Verified manifest signed by PackageProductionRSA_2015
Verified contents.iso
Verified issu-indb.tgz
Verified junos-x86-32.tgz
Verified kernel
Verified metatags
Verified package.xml
Verified pkgtools.tgz
camcontrol: not found
camcontrol: not found
Verified manifest signed by PackageProductionEc_2015
Saving the config files ...
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Saving package file in
/var/sw/pkg/junos-install-x86-32-domestic-20150618.043753_builder_junos_151_r1.tgz
...
Saving state for rollback ...
```

request system software add no-copy no-validate reboot

```
user@host> request system software add no-copy no-validate junos-install-srx-x86-64-17.3R1.tgz
reboot
Verified junos-install-srx-x86-64-17.3R1 signed by PackageProductionEc_2017 method
ECDSA256+SHA256
Verified manifest signed by PackageProductionEc_2017 method ECDSA256+SHA256
Checking PIC combinations
Verified fips-mode signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding fips-mode-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jail-runtime signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jail-runtime-x86-32-20170725.352915_builder_stable_10 ...
Verified jdocs signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jdocs-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jfirmware signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jfirmware-x86-32-17.3R1 ...
Verified jpfe-X signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-X-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-X960 signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-X960-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-common signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-common-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jpfe-fips signed by PackageProductionEc_2017 method ECDSA256+SHA256
Verified jpfe-wrlinux signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jpfe-wrlinux-x86-32-20170728.153050_builder_junos_173_r1 ...
Verified jsd-jet-1 signed by PackageProductionEc_2017 method ECDSA256+SHA256
Adding jsd-x86-32-17.3R1-jet-1 ...
```

request system software add validate-on-host

```

user@host> request system software add validate-on-host user@xyz
:/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz
user@host> request system software add validate-on-host user@xyz
:/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz
Extracting JUNOS version from package...
Connecting to remote host xyz...
Password:
Sending configuration to xyz...
Validating configuration on xyz...
PACKAGE TYPE: not found
Checking compatibility with configuration
Initializing...
Using jbase-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jruntime-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jkernel-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jroute-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jcrypto-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using jweb-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using /var/packages/jtools-15.1-20150516_ib_15_2_psd.0
Verified manifest signed by PackageDevelopmentEc_2015
Using /var/tmp/config.tgz
Hardware Database regeneration succeeded
Validating against /config/juniper.conf.gz
mgd: warning: schema: init: 'logical-systems-vlans' contains-node 'juniper-config
vlans': not found
mgd: commit complete
Validation succeeded
Installing package
'/var/tmp/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz' ...
Verified jinstall-15.1-20150516_ib_15_2_psd.0-domestic.tgz signed by
PackageDevelopmentEc_2015
Adding jinstall...

WARNING: The software that is being installed has limited support.
WARNING: Run 'file show /etc/notices/unsupported.txt' for details.

WARNING: This package will load JUNOS 15.1-20150516_ib_15_2_psd.0 software.
WARNING: It will save JUNOS configuration files, and SSH keys
WARNING: (if configured), but erase all other files and information
WARNING: stored on this machine. It will attempt to preserve dumps
WARNING: and log files, but this can not be guaranteed. This is the
WARNING: pre-installation stage and all the software is loaded when
WARNING: you reboot the system.

Saving the config files ...
NOTICE: uncommitted changes have been saved in
/var/db/config/juniper.conf.pre-install
Installing the bootstrap installer ...

WARNING: A REBOOT IS REQUIRED TO LOAD THIS SOFTWARE CORRECTLY. Use the
WARNING: 'request system reboot' command when software installation is
WARNING: complete. To abort the installation, do not reboot your system,

```

```
WARNING:      instead use the 'request system software delete jinstall'
WARNING:      command as soon as this operation completes.

Saving package file in
/var/sw/pkg/jinstall-15.1-20150516_ib_15_2_psd.0-domestic-signed.tgz ...
Saving state for rollback ...
```

Sample Output

request system software add (Mixed EX4200 and EX4500 Virtual Chassis)

```
user@switch> request system software add set
[/var/tmp/jinstall-ex-4200-11.1R1.1-domestic-signed.tgz
/var/tmp/jinstall-ex-4500-11.1R1.1-domestic-signed.tgz]
...
```

request system software add component all (QFabric Systems)

```
user@switch> request system software add /pbdata/packages/jinstall-qfabric-12.2X50-D1.3.rpm
component all
...
```

request system software add upgrade-group (Junos Fusion)

```
user@aggregation-device> request system software add /var/tmp/satellite-3.0R1.1-signed.tgz
upgrade-group group1
```

request system zeroize

Syntax request system zeroize
 <media>
 <local>

Release Information Command introduced before Junos OS Release 9.0.
 Command introduced in Junos OS Release 11.2 for EX Series switches.
 Option **media** added in Junos OS Release 11.4 for EX Series switches.
 Command introduced in Junos OS Release 12.2 for MX Series routers.
 Command introduced in Junos OS Release 12.3 for the QFX Series.
 Option **local** added in Junos OS Release 14.1.
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

Description Remove all configuration information on the Routing Engines and reset all key values on the device where you run the command.

- If the device has dual Routing Engines, the command is broadcast to all Routing Engines on the device.
- In a Virtual Chassis or Virtual Chassis Fabric (VCF) composed of EX Series switches (except EX8200 Virtual Chassis) or QFX Series switches, this command operates only on the member switch where you run the command, even if that switch is in the master Routing Engine role. The command is not forwarded to the backup Routing Engine member or to member switches in the line-card role. To apply this command to more than one member of an EX Series or QFX Series Virtual Chassis or VCF, we recommend you remove and disconnect each of those members from the Virtual Chassis or VCF, and then run the command on each isolated switch individually.

The command removes all data files, including customized configuration and log files, by unlinking the files from their directories. The command removes all user-created files from the system, including all plain-text passwords, secrets, and private keys for SSH, local encryption, local authentication, IPsec, RADIUS, TACACS+, and SNMP.

This command reboots the device and sets it to the factory default configuration. After the reboot, you cannot access the device through the management Ethernet interface. Log in through the console as **root** and start the Junos OS CLI by typing **cli** at the prompt.



NOTE: If the configuration contains the **commit synchronize** statement at the **[edit system]** hierarchy level, and you issue a **commit** in the master Routing Engine, the master configuration is automatically synchronized with the backup. If the backup Routing Engine is down when you issue the **commit**, the Junos OS displays a warning and commits the candidate configuration in the master Routing Engine. When the backup Routing Engine comes up, its configuration will automatically be synchronized with the master. A newly inserted backup Routing Engine or a Routing Engine that comes up after running the **request system zeroize** command also automatically synchronizes its configuration with the master Routing Engine configuration.



NOTE: Starting with Junos OS Release 15.1F3, the `request system zeroize` command removes all configuration information on the guest OS for the PTX5000 router with RE-DUO-C2600-16G, and MX240, MX480, and MX960 with RE-S-1800X4-32G-S.

Starting with Junos OS Release 15.1F5, the `request system zeroize` command removes all configuration information on the guest OS for the MX2010 and MX2020 with REMX2K-1800-32G-S.

On these routers, in order to remove all configuration information on both guest OS and host OS, use the `request vmhost zeroize` command.

To completely erase user-created data so that it is unrecoverable, use the **media** option.

Options **media**—(Optional) In addition to removing all configuration and log files, causes memory and the media to be scrubbed, removing all traces of any user-created files. Every storage device attached to the system is scrubbed, including disks, flash drives, removable USBs, and so on. The duration of the scrubbing process is dependent on the size of the media being erased. As a result, the `request system zeroize media` operation can take considerably more time than the `request system zeroize` operation. However, the critical security parameters are all removed at the beginning of the process.



NOTE: On QFX Series platforms running Junos OS Release 14.1X53 or earlier, the **media** option is not available. On QFX Series platforms running releases later than Junos OS Release 14.1X53 that do not have the FreeBSD 10 kernel, the **media** option is available, but if you use it, the system will issue a warning that the **media** option is not supported and will continue with the zeroize operation. On platforms that are not QFX Series platforms, the **media** option is not available in Junos OS Release 17.2 or later with the FreeBSD 10 kernel.

local—(Optional) Remove all the configuration information and restore all the key values on the active Routing Engine.



NOTE: Specifying this option has no effect on switches in a Virtual Chassis or VCF composed of EX Series switches (except EX8200 Virtual Chassis) or QFX switches, because in these configurations, the `request system zeroize` command only operates locally by default.

Required Privilege Level maintenance

Related Documentation

- [request system snapshot on page 212](#)
- *Reverting to the Default Factory Configuration for the EX Series Switch*
- *Reverting to the Rescue Configuration for the EX Series Switch*
- *Reverting to the Default Factory Configuration*
- *Reverting to the Rescue Configuration*
- *Reverting to the Default Factory Configuration by Using the request system zeroize Command*

List of Sample Output [request system zeroize on page 237](#)
[request system zeroize media on page 238](#)

Sample Output

request system zeroize

```

user@host> request system zeroize
warning: System will be rebooted and may not boot without configuration
Erase all data, including configuration and log files? [yes,no] (no) yes

0 1 1 0 0 0 done

syncing disks... All buffers synced.
Uptime: 5d19h20m26s
recorded reboot as normal shutdown
Rebooting...

U-Boot 1.1.6 (Mar 11 2011 - 04:39:06)

Board: EX4200-24T 2.11
EPLD: Version 6.0 (0x85)
DRAM: Initializing (1024 MB)
FLASH: 8 MB

Firmware Version: --- 01.00.00 ---
USB: scanning bus for devices... 2 USB Device(s) found
      scanning bus for storage devices... 1 Storage Device(s) found

ELF file is 32 bit
Consoles: U-Boot console

FreeBSD/PowerPC U-Boot bootstrap loader, Revision 2.4
(user@device.example.net, Fri Mar 11 03:03:36 UTC 2011)
Memory: 1024MB
bootsequencing is enabled
bootsuccess is set
new boot device = disk0s1:
Loading /boot/defaults/loader.conf
/kernel data=0x915c84+0xa1260 syms=[0x4+0x7cbd0+0x4+0xb1c19]

Hit [Enter] to boot immediately, or space bar for command prompt.
```

```

Booting [/kernel]...
Kernel entry at 0x800000e0 ...
GDB: no debug ports present
KDB: debugger backends: ddb
KDB: current backend: ddb
Copyright (c) 1996-2011, Juniper Networks, Inc.
All rights reserved.
Copyright (c) 1992-2006 The FreeBSD Project.
Copyright (c) 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994
    The Regents of the University of California. All rights reserved.
JUNOS 11.1R1.8 #0: 2011-03-09 20:14:25 UTC

user@device.example.net:/volume/build/junos/11.1/release/11.1R1.8/obj-powerpc/bsd/kernels/
JUNIPER-EX/kernel
Timecounter "decrementer" frequency 50000000 Hz quality 0
cpu0: Freescale e500v2 core revision 2.2
cpu0: HID0 80004080
...

```

request system zeroize media

```

user@host> request system zeroize media
warning: System will be rebooted and may not boot without configuration
Erase all data, including configuration and log files? [yes,no] (no) yes

warning: ipsec-key-management subsystem not running - not needed by configuration.
warning: zeroizing fpc0

{master:0}
root> Waiting (max 60 seconds) for system process `vnlr' to stop...done
...
Syncing disks, vnodes remaining...2 4 2 4 3 2 1 1 0 0 0 done

syncing disks... All buffers synced.
Uptime: 14m50s
recorded reboot as normal shutdown
Rebooting...

U-Boot 1.1.6 (Apr 21 2011 - 13:58:42)

Board: EX4200-48PX 1.1
EPLD: Version 8.0 (0x82)
DRAM: Initializing (512 MB)
FLASH: 8 MB
NAND: No NAND device found!!!
0 MiB

Firmware Version: --- 01.00.00 ---
USB: scanning bus for devices... 2 USB Device(s) found
      scanning bus for storage devices... 1 Storage Device(s) found

ELF file is 32 bit
Consoles: U-Boot console

FreeBSD/PowerPC U-Boot bootstrap loader, Revision 2.2
(user@device1.example.com, Fri Feb 26 17:48:51 PST 2010)
Memory: 512MB
Loading /boot/defaults/loader.conf
/kernel data=0x9abfdc+0xb06e4 syms=[0x4+0x83b30+0x4+0xbd7c6]

Hit [Enter] to boot immediately, or space bar for command prompt.

```



```

Booting [/kernel] in 1 second... Booting [/kernel]...
Kernel entry at 0x800000e0 ...
GDB: no debug ports present
KDB: debugger backends: ddb
KDB: current backend: ddb
Copyright (c) 1996-2011, Juniper Networks, Inc.
All rights reserved.
Copyright (c) 1992-2006 The FreeBSD Project.
Copyright (c) 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994
The Regents of the University of California. All rights reserved.
JUNOS 11.4R1.2 #0: 2011-10-27 18:05:39 UTC
user@device1.example.com:/volume/build/junos/11.4/release/11.4R1.2/obj-powerpc/
bsd/kernels/JUNIPER-EX/kernel
can't re-use a leaf (all_slot_serialid)!
Timecounter "decrementer" frequency 50000000 Hz quality 0
cpu0: Freescale e500v2 core revision 2.2
cpu0: HID0 80004080<EMCP,TBEN,EN_MAS7_UPDATE>
real memory = 511705088 (488 MB)
avail memory = 500260864 (477 MB)
ETHERNET SOCKET BRIDGE initialising
Initializing EXSERIES platform properties ...
. . .
Automatic reboot in progress...
Media check on da0 on ex platforms
** /dev/da0s2a
FILE SYSTEM CLEAN; SKIPPING CHECKS
clean, 20055 free (31 frags, 2503 blocks, 0.0% fragmentation)
zeroizing /dev/da0s1a ...
. . .
zeroizing /dev/da0s3d ...
. . .
zeroizing /dev/da0s3e ...
. . .
zeroizing /dev/da0s4d ...
. . .
zeroizing /dev/da0s4e ...
. . .

syncing disks... All buffers synced.
Uptime: 3m40s
Rebooting...

U-Boot 1.1.6 (Apr 21 2011 - 13:58:42)

Board: EX4200-48PX 1.1
EPLD: Version 8.0 (0x82)
DRAM: Initializing (512 MB)
FLASH: 8 MB
NAND: No NAND device found!!!
0 MiB

Firmware Version: --- 01.00.00 ---
USB: scanning bus for devices... 2 USB Device(s) found
      scanning bus for storage devices... 1 Storage Device(s) found

ELF file is 32 bit
Consoles: U-Boot console

FreeBSD/PowerPC U-Boot bootstrap loader, Revision 2.2
(user@device1.example.com, Fri Feb 26 17:48:51 PST 2010)
Memory: 512MB

```

```
Loading /boot/defaults/loader.conf
/kernel data=0x9abfdc+0xb06e4 syms=[0x4+0x83b30+0x4+0xbd7c6]

Hit [Enter] to boot immediately, or space bar for command prompt.
Booting [/kernel] in 1 second... Booting [/kernel]...
Kernel entry at 0x800000e0 ...
GDB: no debug ports present
KDB: debugger backends: ddb
KDB: current backend: ddb
Copyright (c) 1996-2011, Juniper Networks, Inc.
All rights reserved.
Copyright (c) 1992-2006 The FreeBSD Project.
Copyright (c) 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994
The Regents of the University of California. All rights reserved.
JUNOS 11.4R1.2 #0: 2011-10-27 18:05:39 UTC
user@device1.example.com:/volume/build/junos/11.4/release/11.4R1.2/obj-powerpc/
bsd/kernels/JUNIPER-EX/kernel
can't re-use a leaf (all_slot_serialid)!
Timecounter "decrementer" frequency 50000000 Hz quality 0
cpu0: Freescale e500v2 core revision 2.2
cpu0: H1D0 80004080 <EMCP,TBEN,EN_MAS7_UPDATE>
real memory = 511705088 (488 MB)
avail memory = 500260864 (477 MB)
ETHERNET SOCKET BRIDGE initialising
Initializing EXSERIES platform properties ...
...
Automatic reboot in progress...
Media check on da0 on ex platforms
** /dev/da0s1a
FILE SYSTEM CLEAN; SKIPPING CHECKS
clean, 20064 free (48 frags, 2502 blocks, 0.1% fragmentation)
zeroizing /dev/da0s2a ...
...
Creating initial configuration...mgd: error: Cannot open configuration file:
/config/juniper.conf
mgd: warning: activating factory configuration
mgd: commit complete
mgd: -----
mgd: Please login as 'root'. No password is required.
mgd: To start Initial Setup, type 'ezsetup' at the JUNOS prompt.
mgd: To start JUNOS CLI, type 'cli' at the JUNOS prompt.
mgd: -----
Setting initial options: debugger_on_panic=NO debugger_on_break=NO.
Starting optional daemons: .
Doing initial network setup:
...

Amnesiac (ttyu0)
```

show chassis hardware

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 241 Syntax (EX Series) on page 241 Syntax (T4000 Router) on page 241 Syntax (TX Matrix Router) on page 241 Syntax (TX Matrix Plus Router) on page 241 Syntax (MX Series Routers) on page 241 Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) on page 242 Syntax (QFX Series) on page 242 Syntax (OCX Series) on page 242 Syntax (PTX Series Packet Transport Routers) on page 242 Syntax (ACX Series Universal Access Routers) on page 242 Syntax (ACX5048 and ACX5096 Routers) on page 242 Syntax (ACX500 Routers) on page 242 |
| Syntax | <pre>show chassis hardware <detail extensive> <clei-models> <models></pre> |
| Syntax (EX Series) | <pre>show chassis hardware <clei-models> <detail extensive> <models> <satellite [slot-id slot-id device-alias alias-name]></pre> |
| Syntax (T4000 Router) | <pre>show chassis hardware <clei-models> <detail extensive> <models></pre> |
| Syntax (TX Matrix Router) | <pre>show chassis hardware <clei-models> <detail extensive> <models> <lcc number scc></pre> |
| Syntax (TX Matrix Plus Router) | <pre>show chassis hardware <clei-models> <detail extensive> <models> <lcc number sfc number></pre> |
| Syntax (MX Series Routers) | <pre>show chassis hardware <detail extensive> <clei-models> <models></pre> |

| | |
|--|---|
| | <div><div><all-members></div><div><local></div><div><member <i>member-id</i>></div></div> |
| Syntax (MX104, MX204, MX2010, MX2020, MX10003, and MX2008 3D Universal Edge Routers) | <div><div>show chassis hardware</div><div><clei-models></div><div><detail extensive></div><div><models></div><div><satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]></div></div> |
| Syntax (QFX Series) | <div><div>show chassis hardware</div><div><detail extensive></div><div><clei-models></div><div><interconnect-device <i>name</i>></div><div><node-device <i>name</i>></div><div><models></div></div> |
| Syntax (OCX Series) | <div><div>show chassis hardware</div><div><detail extensive></div><div><clei-models></div><div><models></div></div> |
| Syntax (PTX Series Packet Transport Routers) | <div><div>show chassis hardware</div><div><detail extensive></div><div><clei-models></div><div><models></div></div> |
| Syntax (ACX Series Universal Access Routers) | <div><div>show chassis hardware</div><div><detail extensive></div><div><clei-models></div><div><models></div></div> |
| Syntax (ACX5048 and ACX5096 Routers) | <div><div>show chassis hardware</div><div><detail extensive></div><div><clei-models></div><div><models></div></div> |
| Syntax (ACX500 Routers) | <div><div>show chassis hardware</div><div><detail extensive></div><div><clei-models></div><div><models></div></div> |
| Release Information | <div><div>Command introduced before Junos OS Release 7.4.</div><div>models option introduced in Junos OS Release 8.2.</div><div>Command introduced in Junos OS Release 9.0 for EX Series switches.</div><div>sfc option introduced in Junos OS Release 9.6 for the TX Matrix Plus router.</div><div>Command introduced in Junos OS Release 11.1 for QFX Series.</div></div> |

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 Access 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.

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 8 on page 245](#).

Table 8: 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

- [show chassis hardware \(EX8216 Switch\) on page 252](#)
- [show chassis hardware clei-models \(EX8216 Switch\) on page 254](#)
- [show chassis hardware clei-models \(T1600 Router\) on page 254](#)
- [show chassis hardware clei-models \(PTX10016 Routers\) on page 255](#)
- [show chassis hardware \(EX2300-C Switch\) on page 255](#)
- [show chassis hardware \(EX2300 Switch\) on page 256](#)
- [show chassis hardware detail \(EX4200 Switch\) on page 256](#)
- [show chassis hardware \(EX4300 Switch\) on page 256](#)
- [show chassis hardware models \(EX4500 Switch\) on page 257](#)
- [show chassis hardware detail \(EX9200 Switch\) on page 257](#)
- [show chassis hardware detail \(PTX10016 Routers\) on page 258](#)
- [show chassis hardware \(M7i Router\) on page 259](#)
- [show chassis hardware \(M10 Router\) on page 260](#)

[show chassis hardware models \(M10 Router\) on page 260](#)
[show chassis hardware \(M20 Router\) on page 260](#)
[show chassis hardware models \(M20 Router\) on page 261](#)
[show chassis hardware \(M40 Router\) on page 261](#)
[show chassis hardware \(M40e Router\) on page 262](#)
[show chassis hardware \(M120 Router\) on page 263](#)
[show chassis hardware detail \(M120 Router\) on page 264](#)
[show chassis hardware models \(M120 Router\) on page 265](#)
[show chassis hardware \(M160 Router\) on page 265](#)
[show chassis hardware models \(M160 Router\) on page 266](#)
[show chassis hardware detail \(M160 Router\) on page 267](#)
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Output Fields [Table 9 on page 250](#) lists the output fields for the **show chassis hardware** command. Output fields are listed in the approximate order in which they appear.

Table 9: 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 9: 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 9: show chassis hardware Output Fields (*continued*)

| Field Name | Field Description | Level of Output |
|------------|---|-----------------|
| | <ul style="list-style-type: none"> • 1x ADSL Annex B—ADSL 2/2+ Annex B PIM (one port, for ISDN) • 2x SHDSL (ATM)—G SHDSL PIM (2-port two-wire module or 1-port four-wire module) • 1x TGM550—TGM550 Telephony Gateway Module (Avaya VoIP gateway module with one console port, two analog LINE ports, and two analog TRUNK ports) • 1x DS1 TIM510—TIM510 E1/T1 Telephony Interface Module (Avaya VoIP media module with one E1 or T1 trunk termination port and ISDN PRI backup) • 4x FXS, 4x FXO, TIM514—TIM514 Analog Telephony Interface Module (Avaya VoIP media module with four analog LINE ports and four analog TRUNK ports) • 4x BRI TIM521—TIM521 BRI Telephony Interface Module (Avaya VoIP media module with four ISDN BRI ports) • Crypto Accelerator Module—For enhanced performance of cryptographic algorithms used in IP Security (IPsec) services • MPC M16x10GE—16-port 10-Gigabit Module Port Concentrator that supports SFP+ optical transceivers. (Not on EX Series switches.) • For hosts, the Routing Engine type. • For small form-factor pluggable transceiver (SFP) modules, the type of fiber: LX, SX, LH, or T. • LCD description for EX Series switches (except EX2200 switches). • MPC2—1-port MPC2 that supports two separate slots for MICs. • MPC3E—1-port MPC3E that supports two separate slots for MICs (MIC-3D-1X100GE-CFP and MIC-3D-20GE-SFP) on MX960, MX480, and MX240 routers. The MPC3E maps one MIC to one PIC (1 MIC, 1 PIC), which differs from the mapping of legacy MPCs. • 100GBASE-LR4, pluggable CFP optics • Supports the Enhanced MX Switch Control Board with fabric redundancy and existing SCBs without fabric redundancy. • Interoperates with existing MX Series line cards, including Flexible Port Concentrators (FPC), Dense Port Concentrators (DPCs), and Modular Port Concentrators (MPCs). • MPC4E—Fixed configuration MPC4E that is available in two flavors: MPC4E-3D-32XGE-SFPP and MPC4E-3D-2CGE-8XGE on MX2020, MX960, MX480, and MX240 routers. • LCD description for MX Series routers | |

Sample Output

show chassis hardware (EX8216 Switch)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis       REV 06   710-016845   BA0909120112   EX8216
Midplane      REV 06   710-020771   AX0109197723   EX8216-MP
CB 0          REV 22   710-020771   AX0109197723   EX8216-RE320
CB 1          REV 22   710-020771   AX0109197726   EX8216-RE320
Routing Engine 1  BUILTIN BUILTIN      RE-EX8216

```

| | | | | |
|-----------------|--------|------------|--------------|-----------------------|
| FPC 3 | REV 19 | 710-020683 | BC0109083125 | EX8200-48F |
| CPU | REV 13 | 710-020598 | BF0109144549 | EX8200-CPU |
| FPC 4 | REV 17 | 710-020683 | BC0108500127 | EX8200-48F |
| CPU | REV 10 | 710-020598 | BF0108460510 | EX8200-CPU |
| PIC 0 | | BUILTIN | BUILTIN | 48x 100 Base-QFX/1000 |
| Base-X | | | | |
| Xcvr 1 | REV 01 | 740-011613 | PE70V89 | SFP-SX |
| Xcvr 11 | REV 01 | 740-011613 | PE70YCE | SFP-SX |
| Xcvr 12 | REV 01 | 740-011613 | PE70VSH | SFP-SX |
| Xcvr 13 | REV 01 | 740-011613 | E08C02063 | SFP-SX |
| Xcvr 14 | REV 01 | 740-011613 | PE70VKU | SFP-SX |
| Xcvr 15 | REV 01 | 740-011613 | E08E03372 | SFP-SX |
| Xcvr 21 | REV 01 | 740-011613 | PE70VAD | SFP-SX |
| Xcvr 22 | REV 01 | 740-011613 | E08E01228 | SFP-SX |
| Xcvr 23 | REV 01 | 740-011613 | PE70VSL | SFP-SX |
| Xcvr 24 | REV 01 | 740-011613 | E08E03409 | SFP-SX |
| Xcvr 25 | REV 01 | 740-011613 | PE70VL4 | SFP-SX |
| Xcvr 26 | REV 01 | 740-011613 | PDQ4L2Z | SFP-SX |
| Xcvr 27 | REV 01 | 740-011613 | PE70WFK | SFP-SX |
| Xcvr 28 | REV 01 | 740-011782 | PBD2B5U | SFP-SX |
| Xcvr 29 | REV 01 | 740-011613 | PE70UQX | SFP-SX |
| Xcvr 30 | REV 01 | 740-011613 | PE70VL5 | SFP-SX |
| Xcvr 31 | REV 01 | 740-011613 | 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 (PTX10016 Routers)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|----------------|---------|-------------|------------|-------------------|
| Midplane | REV 22 | 750-056555 | CMMUN00ARA | QFX10016-CHAS |
| CB 0 | REV 03 | 750-068820 | CMUCAH3CTB | QFX10000-RE |
| CB 1 | REV 03 | 750-068820 | CMUCAH3CTB | QFX10000-RE |
| FPC 1 | REV 36 | 750-077140 | CMUIAM9BAA | QFX10000-36Q |
| PIC 0 | | BUILTIN | | |
| FPC 3 | REV 07 | 750-071975 | PROTOXCLEI | PROTO-ASSEMBLY |
| PIC 0 | | BUILTIN | | |
| FPC 5 | REV 13 | 750-068822 | CMUIAM9BAC | QFX10000-36Q |
| PIC 0 | | BUILTIN | | |
| FPC 6 | REV 37 | 750-077140 | CMUIAM9BAA | QFX10000-36Q |
| PIC 0 | | BUILTIN | | |
| FPC 8 | REV 36 | 750-077140 | CMUIAM9BAA | QFX10000-36Q |
| PIC 0 | | BUILTIN | | |
| FPC 9 | REV 35 | 750-071976 | CMUIANABAA | JNP10K-LC1101 |
| PIC 0 | | BUILTIN | | |
| 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 |
| Power Supply 6 | REV 02 | 740-049388 | CMUPADNBAA | QFX10000-PWR-AC |
| FTC 0 | REV 10 | 750-050309 | CMUCAH5CAA | QFX10016-FAN-CTRL |
| FTC 1 | REV 10 | 750-050309 | CMUCAH5CAA | QFX10016-FAN-CTRL |
| Fan Tray 0 | REV 10 | 760-077141 | CMUCAH4CAA | JNP10016-FAN |
| Fan Tray 1 | REV 10 | 760-057901 | CMUCAH4CAA | QFX10016-FAN |
| SIB 0 | REV 15 | 750-058270 | CMUCAH6CAA | QFX10016-SF |
| SIB 1 | REV 15 | 750-058270 | CMUCAH6CAA | QFX10016-SF |
| SIB 2 | REV 15 | 750-058270 | CMUCAH6CAA | QFX10016-SF |
| SIB 3 | REV 15 | 750-058270 | CMUCAH6CAA | QFX10016-SF |
| SIB 4 | REV 15 | 750-058270 | CMUCAH6CAA | QFX10016-SF |
| SIB 5 | REV 15 | 750-058270 | CMUCAH6CAA | QFX10016-SF |
| FPD Board | REV 07 | 711-054687 | | |

show chassis hardware (EX2300-C Switch)

```
user@switch> show chassis hardware
```

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|----------------|
| Chassis | | | HV0215410003 | EX2300-C-12P |
| Pseudo CB 0 | | | | |
| Routing Engine 0 | | BUILTIN | BUILTIN | RE-EX2300C-12P |
| FPC 0 | REV 04 | 650-059984 | HV0215410003 | EX2300-C-12P |

| | | | | |
|----------------|--------|------------|--------------|-----------------------|
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | REV 04 | BUILTIN | BUILTIN | 12x10/100/1000 Base-T |
| PIC 1 | REV 04 | 650-059984 | HV0215410003 | 2x10G SFP/SFP+ |
| Xcvr 0 | REV 01 | 740-021309 | T09K00695 | SFP+-10G-LR |
| Xcvr 1 | REV 01 | 740-030658 | AD1146A05JT | SFP+-10G-USR |
| Power Supply 0 | | | | JPSU-170W-AC |

show chassis hardware (EX2300 Switch)

```
user@switch> show chassis hardware
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-------------------------|
| Chassis | | | JY0215410033 | EX2300-24P |
| Pseudo CB 0 | | | | |
| Routing Engine 0 | | BUILTIN | BUILTIN | RE-EX2300-24P |
| FPC 0 | REV 05 | 650-059968 | JY0215410033 | 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 | AJPOTDZ | 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 (PTX10016 Routers)

user@switch> show chassis hardware detail

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|-------------------|-------------|---------------|---------------------------|
| Chassis | | | DH995 | JNP10016 [PTX10016] |
| Midplane | REV 22 | 750-056555 | ACPM7810 | Midplane 16 |
| Routing Engine 0 | | BUILTIN | BUILTIN | RE-PTX-2X00x4 |
| vtbd0 15360 MB | | | | Virtio Block Disk |
| vtbd1 15360 MB | | | | Virtio Block Disk |
| ada0 128 MB | QEMU | | QM00002 | Virtio Block Disk |
| usb0 (addr 0.1) | EHCI root HUB 0 | | Intel | uhub0 |
| usb1 (addr 0.2) | product 0x0020 32 | | vendor 0x8087 | uhub1 |
| Routing Engine 1 | | BUILTIN | BUILTIN | RE-PTX-2X00x4 |
| vtbd0 15360 MB | | | | Virtio Block Disk |
| vtbd1 15360 MB | | | | Virtio Block Disk |
| ada0 128 MB | QEMU | | QM00002 | Virtio Block Disk |
| usb0 (addr 0.1) | EHCI root HUB 0 | | Intel | uhub0 |
| usb1 (addr 0.2) | product 0x0020 32 | | vendor 0x8087 | uhub1 |
| CB 0 | REV 03 | 750-068820 | ACPL7238 | Control Board |
| CB 1 | REV 03 | 750-068820 | ACPL7298 | Control Board |
| FPC 1 | REV 36 | 750-077140 | ACNP4590 | LC1102 - 12C / 36Q / 144X |
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | | BUILTIN | BUILTIN | 12x100GE/36x40GE/144x10GE |
| Xcvr 0 | REV 01 | 740-054053 | QF3600AV | QSFP+-4X10G-SR |
| Xcvr 35 | REV 01 | 740-061405 | 1ACQ110507K | QSFP-100GBASE-SR4 |
| FPC 3 | REV 07 | 750-071975 | CAHA2224 | LC1102 - 12C / 36Q / 144X |
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | | BUILTIN | BUILTIN | 12x100GE/36x40GE/144x10GE |
| Xcvr 0 | REV 01 | 740-054053 | QG1505YM | QSFP+-4X10G-SR |
| Xcvr 11 | | NON-JNPR | GDA2017459 | QSFP-100GBASE-LR4 |
| Xcvr 35 | | NON-JNPR | GDF2008750 | QSFP-100GBASE-LR4 |
| FPC 5 | REV 13 | 750-068822 | ACPD6501 | LC1102 - 12C / 36Q / 144X |
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | | BUILTIN | BUILTIN | 12x100GE/36x40GE/144x10GE |
| Xcvr 1 | REV 01 | 740-058734 | 1ECQ11381LA | QSFP-100GBASE-SR4 |
| Xcvr 2 | REV 01 | 740-043308 | UWH141S | QSFP+-40G-LR4 |
| Xcvr 3 | REV 01 | 740-043308 | UWE2CG9 | QSFP+-40G-LR4 |
| FPC 6 | REV 37 | 750-077140 | ACNS2793 | LC1102 - 12C / 36Q / 144X |
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | | BUILTIN | BUILTIN | 12x100GE/36x40GE/144x10GE |
| Xcvr 0 | REV 01 | 740-032986 | QH0400VH | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-032986 | QH0400VM | QSFP+-40G-SR4 |
| Xcvr 35 | REV 01 | 740-058734 | 1ECQ11390ZB | QSFP-100GBASE-SR4 |
| FPC 8 | REV 36 | 750-077140 | ACNP4625 | LC1102 - 12C / 36Q / 144X |
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | | BUILTIN | BUILTIN | 12x100GE/36x40GE/144x10GE |
| Xcvr 1 | REV 01 | 740-058732 | 1AMQA14206D | QSFP-100GBASE-LR4 |
| Xcvr 10 | REV 01 | 740-032986 | QF4301KB | QSFP+-40G-SR4 |
| Xcvr 24 | REV 01 | 740-054050 | 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 | | | | FANTRAY-M10I-S |
| Fan Tray 1 | | | | FANTRAY-M10I-S |

show chassis hardware models (M10 Router)

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

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|-----------|-------------------|
| Midplane | REV 04 | 710-008920 | | CHAS-MP-M10i-S |
| Power Supply 0 | Rev 06 | 740-008537 | | PWR-M10i-M7i-AC-S |
| Power Supply 1 | Rev 06 | 740-008537 | | PWR-M10i-M7i-AC-S |
| HCM 0 | REV 03 | 710-010580 | | HCM-M10i-S |
| HCM 1 | REV 03 | 710-010580 | | HCM-M10i-S |
| Routing Engine 0 | REV 09 | 740-009459 | | RE-400-256-S |
| CFEB 0 | REV 05 | 750-010465 | | FEB-M10i-M7i-S |
| FPC 0 | | | | |
| PIC 0 | REV 10 | 750-002971 | | PE-40C3-SON-MM |
| PIC 1 | REV 11 | 750-002992 | | PE-4FE-TX |
| PIC 2 | REV 03 | 750-002977 | | PE-20C3-ATM-MM |
| PIC 3 | REV 08 | 750-005724 | | PE-20C3-ATM2-MM |
| FPC 1 | | | | |
| PIC 2 | REV 12 | 750-008425 | | PE-AS |
| PIC 3 | REV 13 | 750-005636 | | PE-4CHDS3-QPP |
| Fan Tray 0 | | | | FANTRAY-M10I-S |
| Fan Tray 1 | | | | FANTRAY-M10I-S |

show chassis hardware (M20 Router)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------------|---------|-------------|------------------|-----------------------|
| Chassis | | | 20033 | M20 |
| Backplane | REV 07 | 710-001517 | S/N AA7940 | |
| Power supply B | Rev 01 | 740-001465 | S/N 000001 | AC |
| Display | REV 02 | 710-001519 | S/N AA9704 | |
| Host 0 | | | 98000004f8f27501 | teknor |
| SSB slot 0 | REV 01 | 710-001951 | S/N AD5905 | Internet Processor II |
| SSRAM bank 0 | REV 01 | 710-001385 | S00480 | 2 MB |
| SSRAM bank 1 | REV 01 | 710-001385 | S00490 | 2 MB |
| SSRAM bank 2 | REV 01 | 710-001385 | S001:? | 2 MB |
| SSRAM bank 3 | REV 01 | 710-001385 | S00483 | 2 MB |
| SSB slot 1 | N/A | N/A | N/A | Backup |
| FPC 1 | REV 01 | 710-001292 | S/N AB7528 | |
| SSRAM | REV 01 | 710-000077 | S/N 304209 | 1 MB |
| SDRAM bank 0 | REV 01 | 710-000099 | S/N 000603 | 64 MB |
| SDRAM bank 1 | REV 01 | 710-000099 | S/N 000414 | 64 MB |
| PIC 0 | REV 03 | 750-000612 | S/N AB8433 | 2x OC-3 ATM, MM |
| PIC 1 | REV 01 | 750-000616 | S/N AA1168 | 1x OC-12 ATM, MM |
| PIC 2 | REV 01 | 750-000613 | S/N AA1008 | 1x OC-12 SONET, SMIR |
| PIC 3 | REV 01 | 750-002501 | S/N AD5810 | 4x E3 |
| FPC 2 | REV 01 | 710-001292 | S/N AC0119 | |
| SSRAM | REV 01 | 710-000077 | S/N 503241 | 1 MB |
| SDRAM bank 0 | REV 01 | 710-000099 | S/N 306835 | 64 MB |
| SDRAM bank 1 | REV 01 | 710-000099 | S/N 306832 | 64 MB |
| Fan Tray 0 | | | | Front Upper Fan Tray |
| Fan Tray 1 | | | | Front Middle Fan Tray |
| Fan Tray 2 | | | | Front Bottom Fan Tray |
| Fan Tray 3 | | | | Rear Fan Tray |

show chassis hardware models (M20 Router)

user@host> show chassis hardware models

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|-----------|------------------|
| Backplane | REV 03 | 710-002334 | | CHAS-MP-M20-S |
| Power Supply A | REV 06 | 740-001465 | | PWR-M20-AC-S |
| Display | REV 04 | 710-001519 | | CRAFT-M20-S |
| Routing Engine 0 | REV 06 | 740-003239 | | RE-333-768-S |
| Routing Engine 1 | REV 06 | 740-003239 | | RE-333-768-S |
| SSB 0 | REV 02 | 710-001951 | | SSB-E-M20 |
| SSB 1 | N/A | N/A | | |
| FPC 0 | REV 03 | 710-003308 | | FPC-E |
| PIC 0 | REV 08 | 750-002303 | | P-4FE-TX |
| PIC 1 | REV 07 | 750-004745 | | P-2MCDS3 |
| PIC 2 | REV 03 | 750-002965 | | PE-4CHDS3 |
| FPC 1 | REV 03 | 710-003308 | | FPC-E |
| PIC 0 | REV 03 | 750-002914 | | P-20C3-ATM-MM |
| Fan Tray 0 | | | | FANTRAY-F-M20-S |
| Fan Tray 1 | | | | FANTRAY-F-M20-S |
| Fan Tray 2 | | | | FANTRAY-F-M20-S |
| Fan Tray 3 | | | | FANTRAY-R-M20-S |

show chassis hardware (M40 Router)

user@host> show chassis hardware

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------------|---------|-------------|---------------|-------------|
| Backplane | REV 02 | 710-000073 | S/N AA0053 | |
| Power supply A | Rev 2 | 740-000235 | S/N 000042 | DC |

| | | | | |
|--------------|--------|------------|------------|----------------------|
| Maxicab | REV X1 | 710-000229 | S/N AA0139 | |
| Minicab | REV X1 | 710-000482 | S/N AA0201 | |
| Display | REV 06 | 710-000150 | S/N AA0905 | |
| Host | | | | cpv5000 |
| SCB | REV X1 | 710-000075 | S/N AA0158 | Internet Processor I |
| SSRAM bank 0 | REV 02 | 710-000077 | S/N AA2267 | 1 MB |
| SSRAM bank 1 | REV 02 | 710-000077 | S/N AA2270 | 1 MB |
| SSRAM bank 2 | REV 02 | 710-000077 | S/N AA2269 | 1 MB |
| SSRAM bank 3 | REV 02 | 710-000077 | S/N AA2268 | 1 MB |
| FPC 0 | REV 01 | 710-000175 | S/N AA0048 | |
| SSRAM | REV 01 | 710-000077 | S/N AA2333 | 1 MB |
| SDRAM bank 0 | REV 01 | 710-000099 | S/N AA2332 | 64 MB |
| SDRAM bank 1 | REV X1 | 710-000099 | S/N AA2337 | 64 MB |
| PIC 0 | REV 04 | 750-000613 | S/N aa0343 | 1x OC-12 SONET, SMIR |
| PIC 1 | REV 04 | 750-000613 | S/N AA0379 | 1x OC-12 SONET, SMIR |
| PIC 2 | REV 04 | 750-000613 | S/N AA0377 | 1x OC-12 SONET, SMIR |
| PIC 3 | REV 04 | 750-000613 | S/N AA0378 | 1x Tunnel |
| FPC 2 | REV 01 | 710-000175 | S/N AA0042 | |
| SSRAM | REV 02 | 710-000077 | S/N AA2288 | 1 MB |
| SDRAM bank 0 | REV 01 | 710-000099 | S/N AA2331 | 64 MB |
| SDRAM bank 1 | REV 01 | 710-000099 | S/N AA2330 | 64 MB |
| PIC 0 | REV X1 | 750-000603 | S/N AA0143 | 4x OC-3 SONET, SMIR |
| PIC 1 | REV X1 | 750-000615 | S/N AA0149 | 4x OC-3 SONET, MM |
| PIC 2 | REV X1 | 750-000611 | S/N AA0148 | 4x OC-3 SONET, MM |
| PIC 3 | REV 04 | 750-000613 | S/N AA0330 | 1x OC-12 SONET, SMIR |
| FPC 4 | REV 01 | 710-000175 | S/N AA0050 | |
| SSRAM | REV 01 | 710-000077 | S/N AA2327 | 1 MB |
| SDRAM bank 0 | REV 01 | 710-000099 | S/N AA2329 | 64 MB |
| SDRAM bank 1 | REV 01 | 710-000099 | S/N AA2328 | 64 MB |
| PIC 0 | REV 04 | 750-000613 | S/N AA0320 | 1x OC-12 SONET, SMIR |
| PIC 2 | REV 05 | 750-000616 | S/N AA1341 | 1x OC-12 ATM, MM |
| PIC 3 | REV 08 | 750-001072 | S/N AB2462 | 1x G/E, 1000 BASE-SX |
| FPC 5 | REV 10 | 710-000175 | S/N AA7663 | |
| SSRAM | REV 01 | 710-000077 | S/N 501590 | 1 MB |
| SDRAM bank 0 | REV 01 | 710-000099 | S/N 300949 | 64 MB |
| SDRAM bank 1 | REV 01 | 710-000099 | S/N 300868 | 64 MB |
| PIC 1 | REV 01 | 750-001323 | S/N AB1670 | 1x Tunnel |

show chassis hardware (M40e Router)

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

| Hardware inventory: | | | | |
|---------------------|---------|-------------|------------------|-----------------------|
| Item | Version | Part number | Serial number | Description |
| Chassis | | | | m40e |
| Midplane | REV 01 | 710-005071 | AX3671 | |
| FPM CMB | REV 03 | 710-001642 | AR9074 | |
| FPM Display | REV 03 | 710-001647 | AR7331 | |
| CIP | REV 04 | 710-002649 | BB4449 | |
| PEM 0 | Rev 01 | 740-003787 | MC12364 | Power Entry Module |
| PEM 1 | Rev 01 | 740-003787 | MC12383 | Power Entry Module |
| PCG 0 | REV 07 | 710-001568 | AG1332 | |
| PCG 1 | REV 07 | 710-001568 | AR3789 | |
| Host 0 | | | 3e000007c8176601 | Present |
| MCS 0 | REV 11 | 710-001226 | AN5813 | |
| SFM 0 SPP | REV 07 | 710-001228 | AG4676 | |
| SFM 0 SPR | REV 05 | 710-002189 | AE4735 | Internet Processor II |
| SFM 1 SPP | REV 07 | 710-001228 | AP1347 | |
| SFM 1 SPR | REV 05 | 710-002189 | BE0063 | Internet Processor II |
| FPC 0 | REV 01 | 710-011725 | BE0669 | M40e-EP-FPC Type 1 |
| CPU | REV 01 | 710-004600 | BD9504 | |
| PIC 0 | REV 03 | 750-003737 | AY3991 | 4x G/E, 1000 BASE-SX |

| | | | | |
|-------|--------|------------|--------|----------------------|
| FPC 1 | REV 01 | 710-005197 | BD9842 | M40e-FPC Type 2 |
| CPU | REV 01 | 710-004600 | BB4869 | |
| PIC 0 | REV 07 | 750-001900 | AR8278 | 1x OC-48 SONET, SMSR |
| FPC 2 | REV 02 | 710-005197 | BD9824 | M40e-FPC Type 2 |
| CPU | REV 01 | 710-004600 | BD9531 | |
| PIC 0 | REV 03 | 750-003737 | AY3986 | 4x G/E, 1000 BASE-SX |
| FPC 4 | REV 02 | 710-005078 | BE0664 | M40e-FPC Type 1 |
| CPU | REV 01 | 710-004600 | BD9559 | |
| PIC 0 | REV 03 | 750-001894 | AG7963 | 1x G/E, 1000 BASE-SX |
| PIC 2 | REV 01 | 750-002575 | AF2472 | 4x OC-3 SONET, SMIR |
| FPC 6 | REV 02 | 710-005078 | BE0652 | M40e-FPC Type 1 |
| CPU | REV 01 | 710-004600 | BD9607 | |
| PIC 0 | REV 02 | 750-002911 | AN2286 | 4x F/E, 100 BASE-TX |
| PIC 2 | REV 01 | 750-002577 | AP6345 | 4x OC-3 SONET, MM |

show chassis hardware (M120 Router)

user@host> show chassis hardware

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|--------------------------------|-------------|---------------|-------------------------|
| Chassis | | | JN000054AC | M120 |
| Midplane | REV 01 | 710-013667 | RB4170 | M120 Midplane |
| FPM Board | REV 02 | 710-011407 | CJ9186 | M120 FPM Board |
| FPM Display | REV 02 | 710-011405 | CJ9173 | M120 FPM Display |
| FPM CIP | REV 02 | 710-011410 | CJ9221 | M120 FPM CIP |
| PEM 0 | Rev 05 | 740-011936 | RM28320 | AC Power Entry Module |
| PEM 1 | Rev 05 | 740-011936 | RM28321 | AC Power Entry Module |
| Routing Engine 0 | REV 03 | 740-014080 | 1000642883 | RE-A-1000 |
| CB 0 | REV 03 | 710-011403 | CM8346 | M120 Control Board |
| CB 1 | REV 06 | 710-011403 | CP6728 | M120 Control Board |
| FPC 1 | REV 02 | 710-015908 | CP6925 | M120 CFPC 10GE |
| PIC 0 | | BUILTIN | BUILTIN | 1x 10GE(LAN/WAN) XFP |
| Xcvr 0 | REV 01 | 740-014279 | 62E204N00007 | XFP-10G-LR |
| FPC 3 | REV 03 | 710-011393 | CJ9234 | M120 FPC Type 2 |
| PIC 0 | REV 16 | 750-008155 | NB5229 | 2x G/E IQ, 1000 BASE |
| Xcvr 0 | REV 01 | 740-011613 | P9F15JB | SFP-SX |
| Xcvr 1 | REV 01 | 740-007326 | P4Q0R9G | SFP-SX |
| PIC 1 | REV 09 | 750-007745 | CG4360 | 4x OC-3 SONET, SMIR |
| PIC 2 | REV 16 | 750-008155 | ND7787 | 2x G/E IQ, 1000 BASE |
| Xcvr 0 | REV 01 | 740-011613 | P9F12AS | SFP-SX |
| Xcvr 1 | REV 01 | 740-011613 | P9F1ALU | SFP-SX |
| PIC 3 | REV 07 | 750-011800 | JW1284 | 8x 1GE(LAN), IQ2 |
| Xcvr 0 | REV 01 | 740-011613 | P9F1AM6 | SFP-SX |
| Xcvr 6 | REV 01 | 740-011613 | P9F16NN | SFP-SX |
| Xcvr 7 | REV 01 | 740-011782 | P8C29Y7 | SFP-SX |
| Board B | REV 02 | 710-011395 | CN3754 | M120 FPC Mezz |
| FPC 4 | REV 02 | 710-011398 | CP6741 | M120 FPC Type 3 |
| PIC 0 | REV 16 | 750-007141 | NB2855 | 10x 1GE(LAN), 1000 BASE |
| Xcvr 0 | REV 01 | 740-011782 | P922A1F | SFP-SX |
| Xcvr 1 | REV 01 | 740-011782 | P922A16 | SFP-SX |
| Xcvr 2 | REV 01 | 740-011782 | P922A0U | SFP-SX |
| Xcvr 3 | REV 01 | 740-011782 | P9229UZ | SFP-SX |
| Xcvr 4 | REV 01 | 740-009029 | P11JXWP | SFP-LX |
| Xcvr 6 | REV 01 | 740-011613 | P9F1ALW | SFP-SX |
| FPC 5 | REV 01 | 710-011388 | CJ9088 | M120 FPC Type 1 |
| PIC 0 | *** Hardware Not Supported *** | | | |
| PIC 1 | REV 05 | 750-012052 | NB0410 | 1x CHOC3 IQ SONET, SMLR |
| PIC 2 | REV 01 | 750-013167 | CM3824 | 4x CHDS3 IQ |
| PIC 3 | REV 01 | 750-010240 | CB5366 | 1x G/E SFP, 1000 BASE |

| | | | | |
|------------|--------|------------|--------|-----------------------|
| Board B | REV 01 | 710-011390 | CJ9103 | M120 FPC Mezz Board |
| FEB 3 | REV 04 | 710-011663 | CP6673 | M120 FEB |
| FEB 4 | REV 04 | 710-011663 | CJ9368 | M120 FEB |
| FEB 5 | REV 04 | 710-011663 | CJ9386 | M120 FEB |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Top Fan Tray |
| Fan Tray 3 | | | | Rear Bottom Fan Tray |

show chassis hardware detail (M120 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              JN000054AC  M120
Midplane             REV 01    710-013667  RB4170         M120 Midplane
FPM Board             REV 02    710-011407  CJ9186         M120 FPM Board
FPM Display           REV 02    710-011405  CJ9173         M120 FPM Display
FPM CIP               REV 02    710-011410  CJ9221         M120 FPM CIP
PEM 0                 Rev 05    740-011936  RM28320        AC Power Entry Module
PEM 1                 Rev 05    740-011936  RM28321        AC Power Entry Module
Routing Engine 0     REV 03    740-014080  1000642883     RE-A-1000
  ad0      248 MB  SILICONSYSTEMS INC 256M 126CT505S0763SC00110 Compact Flash
  ad2     38154 MB HTE541040G9SA00    MPBBT0X2HS2E3M  Hard Disk
CB 0                  REV 03    710-011403  CM8346         M120 Control Board
CB 1                  REV 06    710-011403  CP6728         M120 Control Board
FPC 1                 REV 02    710-015908  CP6925         M120 CFPC 10GE
  PIC 0                BUILTIN    BUILTIN        1x 10GE(LAN/WAN) XFP
    Xcvr 0              REV 01    740-014279  62E204N00007   XFP-10G-LR
FPC 3                 REV 03    710-011393  CJ9234         M120 FPC Type 2
  PIC 0                 REV 16    750-008155  NB5229         2x G/E IQ, 1000 BASE
    Xcvr 0              REV 01    740-011613  P9F15JB        SFP-SX
    Xcvr 1              REV 01    740-007326  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

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| | |
|------------|-----------------------|
| Fan Tray 0 | Front Top Fan Tray |
| Fan Tray 1 | Front Bottom Fan Tray |
| Fan Tray 2 | Rear Top Fan Tray |
| Fan Tray 3 | Rear Bottom Fan Tray |

show chassis hardware models (M120 Router)

```

user@host> show chassis hardware models
Hardware inventory:
Item                Version  Part number  CLEI code  FRU model number
Midplane            REV 01  710-013667
FPM CIP             REV 02  710-011410  CRAFT-M120-S
PEM 0               Rev 05  740-011936  PWR-M120-AC-S
PEM 1               Rev 05  740-011936  PWR-M120-AC-S
Routing Engine 0    REV 03  740-014080  RE-A-1000-2048-S
CB 0                REV 03  710-011403  CB-M120-S
CB 1                REV 06  710-011403  CB-M120-S
FPC 1               REV 02  710-015908  M120-cFPC-1XGE-XFP
FPC 3
  PIC 0             REV 16  750-008155  PB-2GE-SFP-QPP
  PIC 1             REV 09  750-007745  PC-40C3-SON-SMIR
  PIC 2             REV 16  750-008155  PB-2GE-SFP-QPP
  PIC 3             REV 07  750-011800  PB-8GE-TYPE2-SFP-IQ2
FPC 4
  PIC 0             REV 16  750-007141  PC-10GE-SFP
FPC 5
  PIC 1             REV 05  750-012052  PB-1CHOC3-SMIR-QPP
  PIC 2             REV 01  750-013167  PE-4CHDS3-QPP
  PIC 3             REV 01  750-010240  PB-1GE-SFP
Fan Tray 0          FFANTRAY-M120-S
Fan Tray 1          FFANTRAY-M120-S
Fan Tray 2          RFANTRAY-M120-S
Fan Tray 3          RFANTRAY-M120-S

```

show chassis hardware (M160 Router)

```

user@host> show chassis hardware
Item                Version  Part number  Serial number  Description
Chassis            101
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

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| | | | | |
|------------|--------|------------|------------|----------------------|
| PIC 0 | REV 03 | 750-001900 | S/N AA9626 | 1x STM-16 SDH, SMIR |
| PIC 1 | REV 01 | 710-002381 | S/N AD3633 | 2x G/E, 1000 BASE-SX |
| FPC 2 | | | | FPC Type OC192 |
| CPU | REV 03 | 710-001217 | S/N AB3329 | |
| PIC 0 | REV 01 | | | 1x OC-192 SM SR-2 |
| Fan Tray 0 | | | | Rear Bottom Blower |
| Fan Tray 1 | | | | Rear Top Blower |
| Fan Tray 2 | | | | Front Top Blower |
| Fan Tray 3 | | | | Front Fan Tray |

show chassis hardware models (M160 Router)

```

user@host> show chassis hardware models
Hardware inventory:

```

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|-----------|--------------------|
| Midplane | REV 03 | 710-009120 | | CHAS-BP-M320-S |
| FPM Display | REV 02 | 710-009351 | | CRAFT-M320-S |
| CIP | REV 03 | 710-005926 | | CIP-M320-S |
| PEM 2 | Rev X4 | 740-009148 | | PWR-M-DC-S |
| PEM 3 | Rev X4 | 740-009148 | | PWR-M-DC-S |
| Routing Engine 0 | REV 02 | 740-008883 | | RE-1600-2048-S |
| Routing Engine 1 | REV 02 | 740-008883 | | RE-1600-2048-S |
| FPC 0 | REV 02 | 710-010419 | | M320-FPC1 |
| PIC 0 | REV 01 | 750-001323 | | P-TUNNEL |
| PIC 1 | REV 02 | 750-002987 | | PE-10C12-SON-SMIR |
| PIC 2 | REV 04 | 750-001894 | | PB-1GE-SX |
| PIC 3 | REV 04 | 750-001896 | | PB-10C12-SON-SMIR |
| FPC 1 | REV 02 | 710-010419 | | M320-FPC1 |
| PIC 0 | REV 04 | 750-001894 | | PB-1GE-SX |
| PIC 1 | REV 04 | 750-001894 | | PB-1GE-SX |
| PIC 3 | REV 03 | 750-001894 | | PB-1GE-SX |
| FPC 2 | REV 02 | 710-010419 | | M320-FPC1 |
| PIC 0 | REV 10 | 750-005634 | | PB-1CHOC12SMIR-QPP |
| PIC 1 | REV 10 | 750-005634 | | PB-1CHOC12SMIR-QPP |
| PIC 2 | REV 07 | 750-005634 | | PB-1CHOC12SMIR-QPP |
| PIC 3 | REV 07 | 750-005634 | | PB-1CHOC12SMIR-QPP |
| PIC 1 | REV 10 | 750-005634 | | PB-1CHOC12SMIR-QPP |
| PIC 2 | REV 07 | 750-005634 | | PB-1CHOC12SMIR-QPP |
| PIC 3 | REV 07 | 750-005634 | | PB-1CHOC12SMIR-QPP |
| FPC 3 | | | | |
| PIC 0 | REV 03 | 750-001895 | | PB-10C12-SON-MM |
| PIC 1 | REV 04 | 750-001894 | | PB-1GE-SX |
| PIC 3 | REV 04 | 750-003141 | | PB-1GE-SX-B |
| FPC 4 | REV 02 | 710-010419 | | M320-FPC1 |
| FPC 5 | REV 02 | 710-010419 | | M320-FPC1 |
| FPC 6 | REV 02 | 710-010419 | | M320-FPC1 |
| FPC 7 | | | | |
| PIC 0 | REV 15 | 750-001901 | | PB-40C12-SON-SMIR |
| PIC 1 | REV 06 | 750-001900 | | PB-10C48-SON-SMSR |
| PIC 2 | REV 07 | 750-001900 | | PB-10C48-SON-SMSR |
| PIC 3 | REV 05 | 750-003737 | | PB-4GE-SX |
| SIB 0 | REV 03 | 710-009184 | | SIB-M-S |
| SIB 1 | REV 03 | 710-009184 | | SIB-M-S |
| SIB 2 | REV 03 | 710-009184 | | SIB-M-S |
| SIB 3 | REV 03 | 710-009184 | | SIB-M-S |
| Fan Tray 0 | | | | FFANTRAY-M320-S |
| Fan Tray 1 | | | | FFANTRAY-M320-S |
| Fan Tray 2 | | | | RFANTRAY-M320-S |

show chassis hardware detail (M160 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               101          M160
Midplane      REV 02   710-001245   S/N AB4107
FPM CMB       REV 01   710-001642   S/N AA2911
FPM Display   REV 01   710-001647   S/N AA2999
CIP           REV 02   710-001593   S/N AA9563
PEM 0         Rev 01   740-001243   S/N KJ35769   DC
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
... SSRAM          REV 01   710-000077   S/N 306466          FPC Type OC192
                      1 MB

```

show chassis hardware (M320 Router)

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-----------------------|
| Chassis | | | 67245 | M320 |
| Midplane | REV 05 | 710-009120 | RB1202 | M320 Midplane |
| FPM GBUS | REV 04 | 710-005928 | HZ5697 | M320 Board |
| FPM Display | REV 05 | 710-009351 | HR1464 | M320 FPM Display |
| CIP | REV 04 | 710-005926 | HT8672 | M320 CIP |
| PEM 0 | Rev 05 | 740-009148 | QK34208 | DC Power Entry Module |
| PEM 1 | Rev 05 | 740-009148 | QK34262 | DC Power Entry Module |
| PEM 2 | Rev 05 | 740-009148 | QF10449 | DC Power Entry Module |
| PEM 3 | Rev 05 | 740-009148 | QJ18257 | DC Power Entry Module |
| Routing Engine 0 | REV 06 | 740-008883 | P11123901185 | RE-4.0 |
| CB 0 | REV 07 | 710-009115 | JB2382 | M320 Control Board |
| FPC 0 | REV 02 | 710-005017 | CD9926 | M320 FPC Type 2 |
| CPU | REV 01 | 710-011659 | CJ6940 | M320 PCA SCPU |
| PIC 0 | REV 07 | 750-001900 | AT1594 | 1x OC-48 SONET, SMSR |
| PIC 1 | REV 03 | 750-001850 | HS2746 | 1x Tunnel |
| PIC 2 | REV 05 | 750-010618 | JE7117 | 4x G/E SFP, 1000 BASE |
| PIC 3 | REV 06 | 750-001900 | HE6083 | 1x OC-48 SONET, SMSR |
| FPC 2 | REV 02 | 710-005017 | CH0319 | M320 FPC Type 1 |
| CPU | REV 01 | 710-011659 | CJ6942 | M320 PCA SCPU |
| PIC 0 | REV 05 | 750-003034 | BD8705 | 4x OC-3 SONET, SMIR |
| FPC 5 | REV 02 | 710-005017 | CD9938 | M320 FPC Type 2 |
| CPU | | | | |
| FPC 7 | REV 02 | 710-005017 | CD9934 | M320 FPC Type 2 |
| CPU | | | | |
| SIB 0 | REV 09 | 710-009184 | JA6540 | M320 SIB |
| SIB 1 | REV 09 | 710-009184 | HV9511 | M320 SIB |
| SIB 2 | REV 09 | 710-009184 | HW2057 | M320 SIB |
| SIB 3 | REV 09 | 710-009184 | JA6687 | M320 SIB |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray |

show chassis hardware models (M320 Router)

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

```
Hardware inventory:
```

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|-----------|-------------------|
| Midplane | REV 03 | 710-009120 | | CHAS-BP-M320-S |
| FPM Display | REV 02 | 710-009351 | | CRAFT-M320-S |
| CIP | REV 03 | 710-005926 | | CIP-M320-S |
| PEM 2 | Rev X4 | 740-009148 | | PWR-M-DC-S |
| PEM 3 | Rev X4 | 740-009148 | | PWR-M-DC-S |
| Routing Engine 0 | REV 02 | 740-008883 | | RE-1600-2048-S |
| Routing Engine 1 | REV 02 | 740-008883 | | RE-1600-2048-S |
| FPC 0 | REV 02 | 710-010419 | | M320-FPC1 |
| PIC 0 | REV 01 | 750-001323 | | P-TUNNEL |
| PIC 1 | REV 02 | 750-002987 | | PE-10C12-SON-SMIR |
| PIC 2 | REV 04 | 750-001894 | | PB-1GE-SX |
| PIC 3 | REV 04 | 750-001896 | | PB-10C12-SON-SMIR |
| FPC 1 | REV 02 | 710-010419 | | M320-FPC1 |
| PIC 0 | REV 04 | 750-001894 | | PB-1GE-SX |
| PIC 1 | REV 04 | 750-001894 | | PB-1GE-SX |

| | | | |
|------------|--------|------------|--------------------|
| PIC 3 | REV 03 | 750-001894 | PB-1GE-SX |
| FPC 2 | REV 02 | 710-010419 | M320-FPC1 |
| PIC 0 | REV 10 | 750-005634 | PB-1CHOC12SMIR-QPP |
| PIC 1 | REV 10 | 750-005634 | PB-1CHOC12SMIR-QPP |
| PIC 2 | REV 07 | 750-005634 | PB-1CHOC12SMIR-QPP |
| PIC 3 | REV 07 | 750-005634 | PB-1CHOC12SMIR-QPP |
| PIC 1 | REV 10 | 750-005634 | PB-1CHOC12SMIR-QPP |
| PIC 2 | REV 07 | 750-005634 | PB-1CHOC12SMIR-QPP |
| PIC 3 | REV 07 | 750-005634 | PB-1CHOC12SMIR-QPP |
| FPC 3 | | | |
| PIC 0 | REV 03 | 750-001895 | PB-10C12-SON-MM |
| PIC 1 | REV 04 | 750-001894 | PB-1GE-SX |
| PIC 3 | REV 04 | 750-003141 | PB-1GE-SX-B |
| FPC 4 | REV 02 | 710-010419 | M320-FPC1 |
| FPC 5 | REV 02 | 710-010419 | M320-FPC1 |
| FPC 6 | REV 02 | 710-010419 | M320-FPC1 |
| FPC 7 | | | |
| PIC 0 | REV 15 | 750-001901 | PB-40C12-SON-SMIR |
| PIC 1 | REV 06 | 750-001900 | PB-10C48-SON-SMSR |
| PIC 2 | REV 07 | 750-001900 | PB-10C48-SON-SMSR |
| PIC 3 | REV 05 | 750-003737 | PB-4GE-SX |
| SIB 0 | REV 03 | 710-009184 | SIB-M-S |
| SIB 1 | REV 03 | 710-009184 | SIB-M-S |
| SIB 2 | REV 03 | 710-009184 | SIB-M-S |
| SIB 3 | REV 03 | 710-009184 | SIB-M-S |
| Fan Tray 0 | | | FFANTRAY-M320-S |
| Fan Tray 1 | | | FFANTRAY-M320-S |
| Fan Tray 2 | | | RFANTRAY-M320-S |

show chassis hardware (MX5 Router)

```

user@host> show chassis hardware
Hardware inventory:

```

| Item | Version | Part number | Serial number | Description |
|----------------|---------|-------------|---------------|-----------------------|
| Chassis | | | E1368 | MX5-T |
| Midplane | REV 01 | 711-038215 | YF5288 | MX5-T |
| PEM 0 | Rev 04 | 740-028288 | VA01215 | AC Power Entry Module |
| PEM 1 | Rev 04 | 740-028288 | VA01218 | AC Power Entry Module |
| Routing Engine | | BUILTIN | BUILTIN | Routing Engine |
| TFEB 0 | | BUILTIN | BUILTIN | Forwarding Engine |
| Processor | | | | |
| QXM 0 | REV 05 | 711-028408 | ZA9136 | MPC QXM |
| FPC 0 | | BUILTIN | BUILTIN | MPC BUILTIN |
| MIC 0 | | BUILTIN | BUILTIN | 4x 10GE XFP |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE XFP |
| FPC 1 | | BUILTIN | BUILTIN | MPC BUILTIN |
| MIC 0 | REV 24 | 750-028392 | YX9820 | 3D 20x 1GE(LAN) SFP |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031851 | AM1045SUAQ3 | SFP-SX |
| Xcvr 1 | REV 01 | 740-031851 | AM1045SUAPA | SFP-SX |
| Xcvr 2 | REV 01 | 740-031851 | AM1045SUAN7 | SFP-SX |
| Xcvr 3 | REV 01 | 740-031851 | AM1045SU91Q | SFP-SX |
| Xcvr 4 | REV 01 | 740-031851 | AM1045SUDDR | SFP-SX |
| Xcvr 9 | REV 01 | 740-011613 | AM0848SB6A1 | SFP-SX |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031851 | AM1045SUANO | SFP-SX |
| Xcvr 1 | REV 01 | 740-011613 | AS0812S0719 | SFP-SX |
| Xcvr 2 | REV 01 | 740-011613 | AM0821SA121 | SFP-SX |
| Xcvr 3 | REV 01 | 740-011613 | PF21K21 | SFP-SX |
| Xcvr 4 | REV 01 | 740-011613 | AM0848SB69Z | SFP-SX |
| Xcvr 5 | REV 01 | 740-011782 | P9P0XV3 | 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 |
| PIC 1 | REV 20 | 750-028380 | ZG2657 | 3D 2x 10GE XFP |
| PIC 2 | | BUILTIN | BUILTIN | 1x 10GE XFP |
| PIC 3 | | BUILTIN | BUILTIN | 1x 10GE XFP |
| Fan Tray | | | | Fan Tray |

show chassis hardware (MX10 Router)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------------|---------|-------------|---------------|-----------------------|
| Chassis | | | E1372 | MX10-T |
| Midplane | REV 01 | 711-038211 | YF5285 | MX10-T |
| PEM 0 | Rev 04 | 740-028288 | VB01678 | AC Power Entry Module |
| Routing Engine | | BUILTIN | BUILTIN | Routing Engine |
| TFEB 0 | | BUILTIN | BUILTIN | Forwarding Engine |
| Processor | | | | |
| QXM 0 | REV 05 | 711-028408 | ZA9053 | MPC QXM |
| FPC 0 | | BUILTIN | BUILTIN | MPC BUILTIN |
| MIC 0 | | BUILTIN | BUILTIN | 4x 10GE XFP |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE XFP |
| FPC 1 | | BUILTIN | BUILTIN | MPC BUILTIN |
| MIC 0 | REV 24 | 750-028392 | YX9436 | 3D 20x 1GE(LAN) SFP |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031851 | AM1107SUFQW | SFP-SX |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Fan Tray | | | | Fan Tray |

show chassis hardware (MX40 Router)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------------|---------|-------------|---------------|-----------------------|
| Chassis | | | E1367 | MX40-T |
| Midplane | REV 01 | 711-038211 | YF5284 | MX40-T |
| PEM 0 | Rev 04 | 740-028288 | VB01680 | AC Power Entry Module |
| PEM 1 | Rev 04 | 740-028288 | VB01700 | AC Power Entry Module |
| Routing Engine | | BUILTIN | BUILTIN | Routing Engine |
| TFEB 0 | | BUILTIN | BUILTIN | Forwarding Engine |
| Processor | | | | |
| QXM 0 | REV 05 | 711-028408 | ZA9048 | MPC QXM |
| FPC 0 | | BUILTIN | BUILTIN | MPC BUILTIN |
| MIC 0 | | BUILTIN | BUILTIN | 4x 10GE XFP |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE XFP |
| Xcvr 0 | REV 01 | 740-014279 | M7067UPP | XFP-10G-LR |
| Xcvr 1 | | NON-JNPR | K9J02UN | XFP-10G-LR |
| FPC 1 | | BUILTIN | BUILTIN | MPC BUILTIN |
| MIC 0 | REV 24 | 750-028392 | YX3504 | 3D 20x 1GE(LAN) SFP |
| 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
CB 1
FPC 0
CPU
MIC 0
PIC 0
Xcvr 10
Xcvr 11
Fan Tray 0
Back Airflow - AF0
Fan Tray 1
Back Airflow - AF0
```

| | | | | |
|--|----------|------------|---------|------------------------|
| | | | | RE-VMX |
| | | | | VMX SCB |
| | | | | VMX SCB |
| | | | | Virtual FPC |
| | Rev. 1.0 | RIOT | BUILTIN | Virtual |
| | | BUILTIN | BUILTIN | Virtual |
| | REV 02 | 740-013111 | A331846 | SFP-T |
| | REV 02 | 740-013111 | C248517 | SFP-T |
| | | | | fan-ctrl-0 0, Front to |
| | | | | fan-ctrl-0 1, Front to |

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
Tray,AF0,Opus-AF0
Fan Tray 1
Tray,AF0,Opus-AF0
```

| | | | | |
|--|--|--|--|--------------|
| | | | | Assy,Sub,Fan |
| | | | | Assy,Sub,Fan |

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
PEM 1
Routing Engine 0
Routing Engine 1
AFEB 0
Processor
FPC 0
```

| | | | | |
|--|--------|------------|-------------|-----------------------|
| | REV 03 | 740-045933 | 1H072500016 | AC Power Entry Module |
| | REV 03 | 740-045932 | 1H073050017 | DC Power Entry Module |
| | REV 20 | 750-044228 | CAAY7935 | RE-MX-104 |
| | REV 13 | 750-044228 | CAAM6380 | RE-MX-104 |
| | | BUILTIN | BUILTIN | Forwarding Engine |
| | | 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 (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 | | Freescale | uhub0 |
| usb0 (addr 2) | USB2513Bi 9491 | | SMSC | uhub1 |
| usb0 (addr 3) | ATP IG eUSB SSD 44801 | | ATP Electronics | umass0 |
| Routing Engine 1 | REV 13 | 750-044228 | CAAM6380 | RE-MX-104 |
| da0 | 7836 MB | ATP IG eUSB SSD | | Nand Flash 0 |
| AFEB 0 | | 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 | | | G3503 | MX104 |
| Jedec Code: | 0x7fb0 | EEPROM Version: | 0x02 | |
| | | S/N: | G3503 | |
| Assembly ID: | 0x0560 | Assembly Version: | 00.00 | |
| Date: | 00-00-0000 | Assembly Flags: | 0x00 | |
| ID: | MX104 | | | |
| Board Information Record: | | | | |
| Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| I2C Hex Data: | | | | |
| Address 0x00: 7f b0 02 ff 05 60 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x20: 47 33 35 30 33 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Midplane | REV 28 | 750-044219 | CAAX5741 | MX104 |
| Jedec Code: | 0x7fb0 | EEPROM Version: | 0x02 | |
| P/N: | 750-044219 | S/N: | CAAX5741 | |
| Assembly ID: | 0x0560 | Assembly Version: | 01.28 | |
| Date: | 03-27-2013 | Assembly Flags: | 0x00 | |
| Version: | REV 28 | CLEI Code: | PROTOXCLEI | |
| ID: | MX104 | FRU Model Number: | PROTO-ASSEMBLY | |
| Board Information Record: | | | | |
| Address 0x00: ad 01 08 00 b0 a8 6e a7 f8 00 ff ff ff ff ff ff | | | | |

```

I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 60 01 1c 52 45 56 20 32 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 32 31 39 00 00
Address 0x20: 53 2f 4e 20 43 41 41 58 35 37 34 31 00 1b 03 07
Address 0x30: dd ff ff ff ad 01 08 00 b0 a8 6e a7 f8 00 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 47 33 35 30 33 00 00 00 00 00 00 00
PEM 0          REV 03    740-045933    1H072500016    AC Power Entry Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          740-045933      S/N:            1H072500016
Assembly ID:   0x0475          Assembly Version: 00.03
Date:         12-14-2012      Assembly Flags:  0x00
Version:      REV 03          CLEI Code:      IPUPAJ9KAA
ID: AC Power Entry Module    FRU Model Number: PWR-AMX1100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff 02 02 00 ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 75 00 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 39 33 33 00 00
Address 0x20: 31 48 30 37 32 35 30 30 30 31 36 00 00 0e 0c 07
Address 0x30: dc 30 43 ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 02 02 00 ff 01 49 50 55 50 41 4a 39 4b 41 41 50
Address 0x50: 57 52 2d 41 4d 58 31 31 30 30 2d 41 43 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 70 ff ff ff ff ff ff ff ff ff ff ff ff
PEM 1          REV 03    740-045932    1H073050017    DC Power Entry Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          740-045932      S/N:            1H073050017
Assembly ID:   0x0476          Assembly Version: 00.03
Date:         01-30-2013      Assembly Flags:  0x00
Version:      REV 03          CLEI Code:      IPUPAJ8KAA
ID: DC Power Entry Module    FRU Model Number: PWR-AMX1100-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff 02 02 00 ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 76 00 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 35 39 33 32 00 00
Address 0x20: 31 48 30 37 33 30 35 30 30 31 37 00 00 1e 01 07
Address 0x30: dd 30 44 ff ff ff ff ff ff ff ff ff ff ff ff
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
da0      7836 MB  ATP IG eUSB SSD                      Nand Flash 0
usb0 (addr 1) EHCI root hub 0                      Freescale      uhub0
usb0 (addr 2) USB2513Bi 9491                      SMC           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
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 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 PCQOU2J SFP-IR
Xcvr 1 REV 01 740-016068 P3L7A6G SFP-SR
Xcvr 2 REV 01 740-016068 P3L7A5J SFP-SR
Xcvr 3 REV 01 740-016065 PJN5HPZ SFP-SR
Xcvr 4 REV 01 740-029122 PKB38TL SFP-LR
Xcvr 5 REV 01 740-011787 P6A107G SFP-LR
Xcvr 6 REV 01 740-029122 PKB38TR SFP-LR
Xcvr 7 REV 01 740-011787 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 (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
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 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 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 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

```



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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 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 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 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   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

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
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
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
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

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
 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

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 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

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

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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      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
Jedec Code:  0x7fb0          EEPROM Version: 0x02
P/N:         750-077140      S/N:          ACNP4625
Assembly ID: 0x0be7        Assembly Version: 01.36
Date:        10-17-2016    Assembly Flags: 0x00
Version:     REV 36        CLEI Code:    CMUIAM9BAA
ID: ULC-36Q-12Q28        FRU Model Number: QFX10000-36Q
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e7 01 24 52 45 56 20 33 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 37 31 34 30 00 00
Address 0x20: 53 2f 4e 20 41 43 4e 50 34 36 32 35 00 11 0a 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4d 39 42 41 41 51
Address 0x50: 46 58 31 30 30 30 30 2d 33 36 51 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 45 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff fe ff ff ff ff ff ff ff ff ff ff ff ff

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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    INF4J0492244  QSFP+-4X10G-LR
FPC 9          REV 35    750-071976    ACPD3055      LC1101 - 30C / 30Q / 96X

Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:         750-071976 S/N:             ACPD3055
Assembly ID: 0x0be8     Assembly Version:  01.35
Date:        05-26-2016 Assembly Flags:     0x00
Version:     REV 35     CLEI Code:       CMUIANABAA
ID: ULC-30Q28          FRU Model Number: JNP10K-LC1101

Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b e8 01 23 52 45 56 20 33 35 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 37 31 39 37 36 00 00
Address 0x20: 53 2f 4e 20 41 43 50 44 33 30 35 35 00 1a 05 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4d 55 49 41 4e 41 42 41 41 4a
Address 0x50: 4e 50 31 30 4b 2d 4c 43 31 31 30 31 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 42 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff ef ff ff ff ff ff ff ff ff ff ff ff ff
CPU                BUILTIN    BUILTIN            FPC CPU
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:         BUILTIN    S/N:               BUILTIN
Assembly ID: 0xf020     Assembly Version:  02.17
Date:        04-19-2012 Assembly Flags:     0x00

Board Information Record:

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Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 20 02 11 00 20 e7 d4 09 00 a6 d4
Address 0x10: 09 e8 ba ff 42 55 49 4c 54 49 4e 00 00 20 e7 d4
Address 0x20: 42 55 49 4c 54 49 4e 00 42 55 49 4c 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 50 36 36 36 36 00 00 00 00 00 00 00
PIC 0                BUILTIN        BUILTIN        30x100GE/30x40GE/96x10GE

Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N:        BUILTIN        S/N:        BUILTIN
Assembly ID: 0xf050        Assembly Version: 02.17
Date:       04-19-2012     Assembly Flags: 0x00
Board Information Record:
Address 0x00: ad 01 01 04 ac 4b c8 1d f7 b6 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff f0 50 02 11 00 00 00 00 07 0a 20 45
Address 0x10: 6c 61 70 73 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 13 04 07
Address 0x30: dc ff ff ff ad 01 01 04 ac 4b c8 1d f7 b6 ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 45 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff f3 55 55 55 55 55 55 55 55 55 55 55 55
Xcvr 0                NON-JNPR      INGBT7970007      QSFP-100GBASE-LR4
Xcvr 1                NON-JNPR      UWQ24D9          QSFP-100GBASE-LR4
Xcvr 2                NON-JNPR      INGBT7970011     QSFP-100GBASE-LR4
Xcvr 3                NON-JNPR      UX60AF1          QSFP-100G-CWDM4
Xcvr 4                NON-JNPR      UX408JJ          QSFP-100GBASE-LR4
Xcvr 11              REV 01        740-058734       1ECQ113835F      QSFP-100GBASE-SR4
Xcvr 18              NON-JNPR      Q7496            QSFP-100G-CWDM4
Xcvr 29              REV 01        740-058734       1ECQ11380LZ      QSFP-100GBASE-SR4
Power Supply 0        REV 02        740-049388       1EDL625039E      Power Supply AC
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N:        740-049388      S/N:        1EDL625039E
Assembly ID: 0x0483        Assembly Version: 01.02
Date:       06-19-2016     Assembly Flags: 0x00
Version:    REV 02         CLEI Code:    CMUPADNBAA
ID: QFX10000 AC          FRU Model Number: QFX10000-PWR-AC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 83 01 02 52 45 56 20 30 32 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 34 39 33 38 38 00 00
Address 0x20: 31 45 44 4c 36 32 35 30 33 39 45 00 00 13 06 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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
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
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
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
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
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 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 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 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 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 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
FTC 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
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
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
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
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
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
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
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
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
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
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 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 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 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 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 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 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

```

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 (PTX10016 Router)

user@host> show chassis hardware models

Hardware inventory:

| Item | Version | Part number | Serial number | FRU model number |
|----------------|---------|-------------|---------------|-------------------|
| Midplane | REV 22 | 750-056555 | ACPM7810 | QFX10016-CHAS |
| CB 0 | REV 03 | 750-068820 | ACPL7238 | QFX10000-RE |
| CB 1 | REV 03 | 750-068820 | ACPL7298 | QFX10000-RE |
| FPC 1 | REV 36 | 750-077140 | ACNP4590 | QFX10000-36Q |
| PIC 0 | | BUILTIN | BUILTIN | |
| FPC 3 | REV 07 | 750-071975 | CAHA2224 | PROTO-ASSEMBLY |
| PIC 0 | | BUILTIN | BUILTIN | |
| FPC 5 | REV 13 | 750-068822 | ACPD6501 | QFX10000-36Q |
| PIC 0 | | BUILTIN | BUILTIN | |
| FPC 6 | REV 37 | 750-077140 | ACNS2793 | QFX10000-36Q |
| PIC 0 | | BUILTIN | BUILTIN | |
| FPC 8 | REV 36 | 750-077140 | ACNP4625 | QFX10000-36Q |
| PIC 0 | | BUILTIN | BUILTIN | |
| FPC 9 | REV 35 | 750-071976 | ACPD3055 | JNP10K-LC1101 |
| PIC 0 | | BUILTIN | BUILTIN | |
| Power Supply 0 | REV 02 | 740-049388 | 1EDL625039E | QFX10000-PWR-AC |
| Power Supply 1 | REV 02 | 740-049388 | 1EDL62503AD | QFX10000-PWR-AC |
| Power Supply 2 | REV 02 | 740-049388 | 1EDL625039P | QFX10000-PWR-AC |
| Power Supply 3 | REV 02 | 740-049388 | 1EDL702004E | QFX10000-PWR-AC |
| Power Supply 4 | REV 02 | 740-049388 | 1EDL625039D | QFX10000-PWR-AC |
| Power Supply 5 | REV 02 | 740-049388 | 1EDL63706JD | QFX10000-PWR-AC |
| Power Supply 6 | REV 02 | 740-049388 | 1EDL63706JH | QFX10000-PWR-AC |
| FTC 0 | REV 10 | 750-050309 | ACPM2918 | QFX10016-FAN-CTRL |
| FTC 1 | REV 10 | 750-050309 | ACPE8185 | QFX10016-FAN-CTRL |
| Fan Tray 0 | REV 10 | 760-077141 | ACPV7288 | JNP10016-FAN |
| Fan Tray 1 | REV 10 | 760-057901 | ACPL0546 | QFX10016-FAN |
| SIB 0 | REV 15 | 750-058270 | ACPM2804 | QFX10016-SF |
| SIB 1 | REV 15 | 750-058270 | ACPM2808 | QFX10016-SF |
| SIB 2 | REV 15 | 750-058270 | ACPL4450 | QFX10016-SF |
| SIB 3 | REV 15 | 750-058270 | ACP39834 | QFX10016-SF |
| SIB 4 | REV 15 | 750-058270 | ACPM2814 | QFX10016-SF |
| SIB 5 | REV 15 | 750-058270 | ACPL4277 | QFX10016-SF |
| FPD Board | REV 07 | 711-054687 | ACPL1407 | |

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 | | | JN10C7F7EAF | 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  STIM2Q3209239145303 Removable Compact Flash

ad1  28626 MB  WDC SSD-F0030S-5000  C933Z036237215548S00 Compact Flash
usb0 (addr 1)  EHCI root hub 0  Intel  uhub0
usb0 (addr 2)  product 0x0020 32  vendor 0x8087  uhub1
DIMM 0         VL31B5263E-F8S DIE REV-0 PCB REV-0  MFR ID-ce80
DIMM 1         VL31B5263E-F8S DIE REV-0 PCB REV-0  MFR ID-ce80
DIMM 2         VL31B5263E-F8S DIE REV-0 PCB REV-0  MFR ID-ce80
DIMM 3         SL31B5263E-F8S DIE REV-0 PCB REV-0  MFR ID-ce80
CB 0           REV 03  710-021523  XD7225      MX SCB
Fan Tray 0     REV 01  710-021113  WZ4986      MX240 Fan Tray

```

show chassis hardware (MX240 Router with Enhanced MX SCB)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN10C7F7EAFC  MX240
Midplane      REV 01  710-021041  TR1502        MX240 Backplane
FPM Board     REV 01  710-017254  KD4017        Front Panel Display
PEM 0         Rev 02  740-017330  000332        PS 1.2-1.7kW; 100-240V
AC in
PEM 1         Rev 02  740-017330  000226        PS 1.2-1.7kW; 100-240V
AC in
Routing Engine 0 REV 06  740-013063  1000703522    RE-S-2000
Routing Engine 1 REV 06  740-015113  1000687625    RE-S-1300
CB 0          REV 02  710-031391  YE8494        Enhanced MX SCB
CB 1          REV 05  710-031391  YOP5764       Enhanced MX SCB
FPC 1         REV 01  750-021679  KC7340        DPCE 40x 1GE R
CPU           REV 06  710-013713  KD4078        DPC PMB
PIC 0         BUILTIN  BUILTIN      10x 1GE(LAN)
Xcvr 0        REV 01  740-011613  P9F18ME       SFP-SX
PIC 1         BUILTIN  BUILTIN      10x 1GE(LAN)
PIC 2         BUILTIN  BUILTIN      10x 1GE(LAN)
PIC 3         BUILTIN  BUILTIN      10x 1GE(LAN)
FPC 2         REV 04  710-016669  JS4529        DPCE 40x 1GE R EQ
CPU           REV 06  710-013713  KB3969        DPC PMB
PIC 0         BUILTIN  BUILTIN      10x 1GE(LAN) EQ
Xcvr 0        REV 01  740-011613  PBG3Y79       SFP-SX
Xcvr 1        REV 01  740-011613  PBG3XU8       SFP-SX
Xcvr 2        REV 01  740-011613  PBG3YG6       SFP-SX
Xcvr 3        REV 01  740-011613  PBG3XUG       SFP-SX
Xcvr 4        REV 01  740-011613  PBG3XTJ       SFP-SX
PIC 1         BUILTIN  BUILTIN      10x 1GE(LAN) EQ
Xcvr 0        REV 01  740-011613  PBG3ZUM       SFP-SX
Xcvr 1        REV 01  740-011613  PBG3Y5H       SFP-SX
Xcvr 2        REV 01  740-011613  PBG3UZT       SFP-SX
Xcvr 3        REV 01  740-011613  PBG3US1       SFP-SX
PIC 2         BUILTIN  BUILTIN      10x 1GE(LAN) EQ
Xcvr 0        REV 01  740-011613  PBG3YG7       SFP-SX
Xcvr 1        REV 01  740-011613  PBG3XZ9       SFP-SX
Xcvr 2        REV 01  740-011613  PBG3XTY       SFP-SX
Xcvr 3        REV 01  740-011613  PBG3UZG       SFP-SX
PIC 3         BUILTIN  BUILTIN      10x 1GE(LAN) EQ
Xcvr 0        REV 01  740-011613  PBG3Y8W       SFP-SX
Xcvr 1        REV 01  740-011613  PBG3YVX       SFP-SX
Xcvr 2        REV 01  740-011613  PBG3YB3       SFP-SX
Xcvr 3        REV 01  740-011613  PBG43VQ       SFP-SX
Fan Tray 0    REV 01  710-021113  JS4642        MX240 Fan Tray

```

show chassis hardware (MX480 Router)

```

user@host> show chassis hardware
Hardware inventory:

```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|------------------------|
| Chassis | | | JN10C7F7FAFB | MX480 |
| Midplane | REV 04 | 710-017414 | TR2071 | MX480 Midplane |
| FPM Board | REV 02 | 710-017254 | KB8459 | Front Panel Display |
| PEM 0 | Rev 02 | 740-017330 | QCS07519029 | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| PEM 1 | Rev 02 | 740-017330 | QCS07519041 | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| PEM 2 | Rev 02 | 740-017330 | QCS07519097 | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| Routing Engine 0 | REV 07 | 740-013063 | 1000733381 | RE-S-2000 |
| Routing Engine 1 | REV 07 | 740-013063 | 1000733540 | RE-S-2000 |
| CB 0 | REV 07 | 710-013385 | KA8022 | MX SCB |
| CB 1 | REV 07 | 710-013385 | KA8303 | MX SCB |
| FPC 0 | REV 09 | 750-020452 | KA8660 | DPCE 40x 1GE X EQ |
| CPU | REV 06 | 710-013713 | KA8185 | DPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| PIC 2 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| PIC 3 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| Fan Tray | | | | Left Fan Tray |

show chassis hardware (MX480 Router with Enhanced MX SCB)

```

user@host> show chassis hardware
Hardware inventory:

```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|------------------------|
| Chassis | | | JN10C7F7FAFB | MX480 |
| Midplane | REV 04 | 710-017414 | TR2071 | MX480 Midplane |
| FPM Board | REV 02 | 710-017254 | KB8459 | Front Panel Display |
| PEM 0 | Rev 02 | 740-017330 | QCS07519029 | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| PEM 1 | Rev 02 | 740-017330 | QCS07519041 | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| PEM 2 | Rev 02 | 740-017330 | QCS07519097 | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| Routing Engine 0 | REV 07 | 740-013063 | 1000733381 | RE-S-2000 |
| Routing Engine 1 | REV 07 | 740-013063 | 1000733540 | RE-S-2000 |
| CB 0 | REV 07 | 710-013385 | KA8022 | Enhanced MX SCB |
| CB 1 | REV 07 | 710-013385 | KA8303 | Enhanced MX SCB |
| FPC 0 | REV 09 | 750-020452 | KA8660 | DPCE 40x 1GE X EQ |
| CPU | REV 06 | 710-013713 | KA8185 | DPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| PIC 2 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| PIC 3 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| Fan Tray | | | | Left Fan Tray |

show chassis hardware (MX480 Routers with MPC5E and Built-In OTN PIC)

```

user@host> show chassis hardware
Hardware inventory:

```

| Item | Version | Part number | Serial number | Description |
|-----------|---------|-------------|---------------|---------------------|
| Chassis | | | JN11C0338AFB | MX480 |
| Midplane | REV 05 | 710-017414 | ABAB8430 | MX480 Midplane |
| FPM Board | REV 02 | 710-017254 | ZS8005 | Front Panel Display |

| | | | | |
|------------------|-------------|------------|--------------|------------------------|
| PEM 0 | Rev 05 | 740-029970 | QCS1024U089 | PS 1.4-2.52kW; 90-264V |
| AC in | | | | |
| PEM 1 | Rev 10 | 740-029970 | QCS1314U0FJ | PS 1.4-2.52kW; 90-264V |
| AC in | | | | |
| PEM 2 | Rev 07 | 740-029970 | QCS1121U076 | PS 1.4-2.52kW; 90-264V |
| AC in | | | | |
| Routing Engine 0 | REV 05 | 740-031116 | 9009092471 | RE-S-1800x4 |
| Routing Engine 1 | REV 05 | 740-031116 | 9009097958 | RE-S-1800x4 |
| CB 0 | REV 16 | 750-031391 | CAAX0789 | Enhanced MX SCB |
| CB 1 | REV 16 | 750-031391 | CAAX0856 | Enhanced MX SCB |
| FPC 0 | REV 32 | 750-028467 | ABBP1782 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBP5410 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 983152A00038 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11F00211 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AQ72LPB | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AHNOWR5 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11J03627 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11F00300 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ42WSS | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ43HGC | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | ANAONDO | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | ANAONGF | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | ANAONG9 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | ANAOMP9 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQA06CG | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 19T511100493 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | APR040J | SFP+-10G-SR |
| FPC 1 | REV 26 | 750-046005 | CACN1894 | MPC5E 3D Q 2CGE+4XGE |
| CPU | REV 09 | 711-045719 | CACN8698 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-031980 | 163363A03046 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJ40JS8 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| PIC 2 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-031980 | 153363A00593 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJ40JUJ | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | UQCOB53 | CFP2-100G-LR4-D |
| FPC 2 | REV 26 | 750-046005 | CACN1891 | MPC5E 3D Q 2CGE+4XGE |
| CPU | REV 09 | 711-045719 | CACN8694 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | | NON-JNPR | URA012A | SFP+-10G-LR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | J13F47042 | CFP2-100G-LR4-D |
| PIC 2 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-031980 | AJC0BM3 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 11T511100917 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | UQK07SU | CFP2-100G-LR4-D |
| FPC 3 | REV 03 | 750-045372 | CAAD9425 | MPCE Type 3 3D |
| CPU | REV 08 | 711-035209 | CAAD9094 | HMPC PMB 2G |
| MIC 0 | REV 14 | 750-033196 | CAAW9204 | 1X100GE CXP |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE CXP |
| Xcvr 0 | REV 01 | 740-046563 | XD16FC034 | CFP2-100G-SR10 |
| MIC 1 | REV 19 | 750-033199 | CAAJ1814 | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CFP |
| FPC 4 | REV 21.0.11 | 750-045715 | CAAY3568 | MPC5E 3D Q 24XGE+6XLGE |

| | | | | |
|----------|--------|------------|-----------|------------------------|
| CPU | REV 07 | 711-045719 | CAAW7430 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-031980 | AP406NG | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AR41NLP | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11D05630 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| PIC 2 | | BUILTIN | BUILTIN | 3X40GE 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 | HMPC PMB 2G |
| MIC 0 | REV 19 | 750-033199 | CAAJ9719 | 1X100GE CFP |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-035329 | UP1020P | CFP-100G-SR10 |
| MIC 1 | REV 07 | 750-033196 | YZ0797 | 1X100GE CXP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CXP |
| Xcvr 0 | REV 01 | 740-046563 | XC42FC022 | CFP2-100G-SR10 |
| Fan Tray | | | | Enhanced Left Fan Tray |

show chassis hardware detail (MX480 Routers with MPC5E and Built-In OTN PIC)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11C0338AFB  MX480
Midplane                               ABAB8430      MX480 Midplane
FPM Board                               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  AHN0WR5       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  ANA0ND0       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 | RMPD 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 | RMPD 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 | RMPD PMB |
| PIC 0 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-031980 | AP406NG | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AR41NLP | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11D05630 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| PIC 2 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| PIC 3 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| WAN MEZZ | REV 12 | 750-049136 | CACM6678 | MPC5E 24XGE OTN Mezz |
| FPC 5 | REV 11 | 750-045372 | CABK7539 | MPCE Type 3 3D |
| CPU | REV 08 | 711-035209 | CABJ2466 | HMPD PMB 2G |
| MIC 0 | REV 19 | 750-033199 | CAAJ9719 | 1X100GE CFP |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-035329 | UP1020P | CFP-100G-SR10 |
| MIC 1 | REV 07 | 750-033196 | YZ0797 | 1X100GE CXP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CXP |
| Xcvr 0 | REV 01 | 740-046563 | XC42FC022 | CFP2-100G-SR10 |
| Fan Tray | | | | Enhanced Left Fan Tray |

show chassis hardware extensive (MX480 Routers with MPC5E and Built-In OTN PIC)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|---|---------------------|-------------------|-----------------|------------------------|
| Chassis | | | JN11C0338AFB | MX480 |
| Jedec Code: | 0x7fb0 | EEPROM Version: | 0x02 | |
| | | S/N: | JN11C0338AFB | |
| Assembly ID: | 0x01fe | Assembly Version: | 00.00 | |
| Date: | 00-00-0000 | Assembly Flags: | 0x02 | |
| ID: | MX480 | | | |
| Board Information Record: | | | | |
| Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| I2C Hex Data: | | | | |
| Address 0x00: 7f b0 02 ff 01 fe 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x20: 4a 4e 31 31 43 30 33 33 38 41 46 42 02 00 00 00 | | | | |
| Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 | | | | |
| Midplane | REV 05 | 710-017414 | ABAB8430 | MX480 Midplane |
| Jedec Code: | 0x7fb0 | EEPROM Version: | 0x01 | |
| P/N: | 710-017414 | S/N: | ABAB8430 | |
| Assembly ID: | 0x01fe | Assembly Version: | 01.05 | |
| Date: | 12-13-2011 | Assembly Flags: | 0x00 | |
| Version: | REV 05 | | | |
| ID: | MX480 Midplane | FRU Model Number: | CHAS-BP-MX480-S | |
| Board Information Record: | | | | |
| Address 0x00: ad 01 08 00 00 23 9c fc 98 00 ff ff ff ff ff ff | | | | |
| I2C Hex Data: | | | | |
| Address 0x00: 7f b0 01 ff 01 fe 01 05 52 45 56 20 30 35 00 00 | | | | |
| Address 0x10: 00 00 00 00 37 31 30 2d 30 31 37 34 31 34 00 00 | | | | |
| Address 0x20: 53 2f 4e 20 41 42 41 42 38 34 33 30 00 0d 0c 07 | | | | |
| Address 0x30: db ff ff ff ad 01 08 00 00 23 9c fc 98 00 ff ff | | | | |
| Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43 | | | | |
| Address 0x50: 48 41 53 2d 42 50 2d 4d 58 34 38 30 2d 53 00 00 | | | | |
| Address 0x60: 00 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff | | | | |
| Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff | | | | |
| FPM Board | REV 02 | 710-017254 | ZS8005 | Front Panel Display |
| Jedec Code: | 0x7fb0 | EEPROM Version: | 0x01 | |
| P/N: | 710-017254 | S/N: | ZS8005 | |
| Assembly ID: | 0x01ff | Assembly Version: | 01.02 | |
| Date: | 11-21-2011 | Assembly Flags: | 0x00 | |
| Version: | REV 02 | | | |
| ID: | Front Panel Display | FRU Model Number: | CRAFT-MX480-S | |
| Board Information Record: | | | | |
| Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff | | | | |
| I2C Hex Data: | | | | |
| Address 0x00: 7f b0 01 ff 01 ff 01 02 52 45 56 20 30 32 00 00 | | | | |
| Address 0x10: 00 00 00 00 37 31 30 2d 30 31 37 32 35 34 00 00 | | | | |
| Address 0x20: 53 2f 4e 20 5a 53 38 30 30 35 00 00 00 15 0b 07 | | | | |
| Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff | | | | |
| Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43 | | | | |
| Address 0x50: 52 41 46 54 2d 4d 58 34 38 30 2d 53 00 00 00 00 | | | | |
| Address 0x60: 00 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff | | | | |
| Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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 00 00 00 00
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
  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 00 00 00 00
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
  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 00 00 00 00
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
  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 | P9P0XXH | SFP-SX |
| Xcvr 9 | REV 01 | 740-011782 | P9M0TN1 | SFP-SX |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) |
| Xcvr 0 | REV 01 | 740-011613 | PAJ4UHC | SFP-SX |
| PIC 2 | | BUILTIN | BUILTIN | 10x 1GE(LAN) |
| Xcvr 0 | REV 01 | 740-011613 | PFF2CD0 | SFP-SX |
| Xcvr 1 | REV 01 | 740-011613 | PBG3ZUT | SFP-SX |
| Xcvr 2 | REV 01 | 740-011613 | PFF2DDV | SFP-SX |
| Xcvr 5 | REV 01 | 740-011613 | P8E2SST | SFP-SX |
| Xcvr 9 | REV 01 | 740-011782 | PB8329N | SFP-SX |
| PIC 3 | | BUILTIN | BUILTIN | 10x 1GE(LAN) |
| Xcvr 0 | REV 01 | 740-026192 | 1U0201084503342 | SFP-100BASE-BX10-U |
| Xcvr 1 | REV 01 | 740-026193 | 1U1201084503313 | SFP-100BASE-BX10-D |
| Xcvr 2 | REV 01 | 740-011613 | PAJ4Y5B | SFP-SX |
| Xcvr 6 | REV 01 | 740-011782 | P9M0U3M | SFP-SX |
| Xcvr 7 | REV 01 | 740-011782 | P9M0TLA | SFP-SX |
| FPC 1 | REV 16 | 750-031089 | YL0719 | MPC Type 2 3D |
| CPU | REV 06 | 711-030884 | YL1463 | MPC PMB 2G |
| MIC 0 | REV 07 | 750-028387 | JR6500 | 3D 4x 10GE XFP |
| PIC 0 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | REV 01 | 740-014279 | 733019A00154 | XFP-10G-LR |
| Xcvr 1 | REV 02 | 740-014289 | T09F55034 | XFP-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | REV 01 | 740-014279 | 913019B00791 | XFP-10G-LR |
| Xcvr 1 | REV 01 | 740-014289 | 98S803A90384 | XFP-10G-SR |
| MIC 1 | REV 24 | 750-028387 | YJ3950 | 3D 4x 10GE XFP |
| PIC 2 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | REV 02 | 740-014279 | T10B36134 | XFP-10G-LR |
| Xcvr 1 | REV 01 | 740-014289 | T07M86354 | XFP-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| FPC 2 | REV 08 | 710-014219 | JY9654 | DPCE 4x 10GE R |
| CPU | REV 06 | 710-013713 | JZ6549 | DPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 1x 10GE(LAN/WAN) |
| PIC 1 | | BUILTIN | BUILTIN | 1x 10GE(LAN/WAN) |
| PIC 2 | | BUILTIN | BUILTIN | 1x 10GE(LAN/WAN) |
| 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)

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user@host> show chassis hardware models
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Hardware inventory:
```

| Item | Version | Part number | Serial number | FRU model number |
|------------------|---------|-------------|---------------|------------------|
| Midplane | REV 03 | 710-013698 | TR0183 | CHAS-BP-MX960-S |
| Fan Extender | REV 02 | 710-018051 | JY5227 | ECM-MX960 |
| FPM Board | REV 03 | 710-014974 | JZ6876 | CRAFT-MX960-S |
| Routing Engine 0 | REV 06 | 740-013063 | 1000687969 | RE-S-2000-4096-S |
| Routing Engine 1 | REV 06 | 740-013063 | 1000687955 | RE-S-2000-4096-S |
| CB 0 | REV 11 | 750-031391 | YZ6072 | SCBE-MX-S |
| CB 1 | REV 11 | 750-031391 | YZ6068 | SCBE-MX-S |
| CB 2 | REV 11 | 750-031391 | YZ6081 | SCBE-MX-S |
| FPC 0 | REV 01 | 750-018122 | KA5576 | DPCE-R-40GE-SFP |

| | | | | |
|------------|--------|------------|--------|------------------------|
| FPC 1 | REV 16 | 750-031089 | YL0719 | MX-MPC2-3D |
| MIC 0 | REV 07 | 750-028387 | JR6500 | MIC-3D-4XGE-XFP |
| MIC 1 | REV 24 | 750-028387 | YJ3950 | MIC-3D-4XGE-XFP |
| FPC 2 | REV 08 | 710-014219 | JY9654 | DPC-R-4XGE-XFP |
| FPC 3 | REV 10 | 750-024199 | XJ6692 | MX-FPC3 |
| PIC 0 | REV 17 | 750-009553 | RJ2945 | PC-40C48-SON-SFP |
| PIC 1 | REV 32 | 750-003700 | DP2113 | PC-10C192-SON-VSR |
| FPC 5 | REV 25 | 750-028467 | YM8256 | MPC-3D-16XGE-SFPP |
| FPC 7 | REV 02 | 750-031092 | JR6658 | MX-MPC1-3D-Q |
| MIC 0 | REV 08 | 750-028392 | JZ8737 | MIC-3D-20GE-SFP |
| FPC 8 | REV 05 | 750-024387 | JW9754 | MX-FPC2 |
| PIC 0 | REV 08 | 750-014730 | DM3664 | PB-40C3-10C12-SON2-SFP |
| PIC 1 | REV 08 | 750-014637 | DM3671 | PB-40C3-40C12-SON-SFP |
| FPC 10 | REV 04 | 710-013699 | JY4654 | DPC-R-40GE-SFP |
| Fan Tray 0 | REV 03 | 740-014971 | TP0567 | FFANTRAY-MX960-S |
| Fan Tray 1 | REV 03 | 740-014971 | TP0702 | FFANTRAY-MX960-S |

show chassis hardware (MX960 Router with MPC5EQ)

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user@host> show chassis hardware
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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 | | | | |
| PEM 1 | Rev 04 | 740-027760 | QCS1422N02C | PS 4.1kW; 200-240V AC |
| in | | | | |
| PEM 2 | Rev 09 | 740-027760 | QCS1614N01X | PS 4.1kW; 200-240V AC |
| in | | | | |
| Routing Engine 0 | REV 08 | 740-031116 | 9009131803 | RE-S-1800x4 |
| Routing Engine 1 | REV 08 | 740-031116 | 9009124913 | RE-S-1800x4 |
| CB 0 | REV 18 | 750-031391 | CABF0579 | Enhanced MX SCB |
| CB 1 | REV 16 | 750-031391 | CAAZ2471 | Enhanced MX SCB |
| CB 2 | REV 16 | 750-031391 | CAAW9595 | Enhanced MX SCB |
| FPC 0 | REV 18 | 750-046005 | CACE6574 | MPC5E 3D Q 2CGE+4XGE |
| CPU | REV 09 | 711-045719 | CACG8908 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-021308 | AQA0DYT | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQGOMS7 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | REV 01 | 740-046563 | XD16FC03Z | CFP2-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-021308 | ANAONAJ | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQGOMRQ | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | REV 01 | 740-049775 | J13K72993 | CFP2-100G-LR4 |
| FPC 1 | REV 11 | 750-045372 | CABK8154 | MPCE Type 3 3D |
| CPU | REV 08 | 711-035209 | CABE7370 | HMPC PMB 2G |
| MIC 0 | REV 07 | 750-033307 | CABD5255 | 10X10GE SFPP |
| PIC 0 | | BUILTIN | BUILTIN | 10X10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | AQ50319 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ5035V | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ502XJ | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ43HHR | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | AQ502YA | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | AQ502EU | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQ502HR | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQ502A6 | SFP+-10G-SR |

| | | | | |
|--------|--------|------------|-----------|----------------------|
| Xcvr 8 | REV 01 | 740-021308 | AQ43H8M | SFP+-10G-SR |
| MIC 1 | REV 14 | 750-033196 | CAAP1398 | 1X100GE CXP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CXP |
| Xcvr 0 | REV 01 | 740-046563 | XD16FC064 | CFP-100G-SR10 |
| FPC 3 | REV 35 | 750-028467 | CAAT9156 | MPC 3D 16x 10GE |
| CPU | REV 11 | 711-029089 | CAAV4645 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ43HZ1 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ43HZC | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ43HD2 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ502HN | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ43HGF | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ501RZ | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ5029V | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ501X9 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ502ZN | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ43H86 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ502ZY | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ502PZ | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ503E6 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ502XN | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11F00213 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ50336 | SFP+-10G-SR |
| FPC 4 | REV 18 | 750-046005 | CACE6568 | MPC5E 3D Q 2CGE+4XGE |
| CPU | REV 09 | 711-045719 | CACG8900 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-021308 | AQA095A | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQGOM1E | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | FE13F000F | CFP2-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-021308 | AQGOLYC | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQGOLYB | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | REV 01 | 740-048813 | XD32FE00Z | CFP2-100G-SR10 |
| FPC 5 | REV 18 | 750-046005 | CACE6577 | MPC5E 3D Q 2CGE+4XGE |
| CPU | REV 09 | 711-045719 | CACG8902 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-021308 | AQGOMXE | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQGOLVY | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | REV 01 | 740-046563 | XD16FC03T | CFP2-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-021308 | AQGOLW1 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQGOLW3 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | FE13F000J | CFP2-100G-SR10 |
| FPC 7 | REV 09 | 750-037355 | CAAF0937 | MPC4E 3D 2CGE+8XGE |
| CPU | REV 08 | 711-035209 | CAAD8004 | HMPC PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | ANAOMM3 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-035329 | X000C163 | CFP-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | AQGOMS6 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQGOMRX | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQGOM6Y | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQGOLZM | SFP+-10G-SR |

| | | | | |
|----------|-------------|------------|--------------|------------------------|
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-035329 | X12J00499 | CFP-100G-SR10 |
| FPC 8 | REV 39 | 750-045715 | CACD1903 | MPC5E 3D Q 24XGE+6XLGE |
| CPU | REV 09 | 711-045719 | CACD1815 | RMPD PMB |
| PIC 0 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| PIC 1 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| PIC 2 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| Xcvr 0 | REV 01 | 740-046565 | QC480289 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-046565 | QC480274 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-046565 | QD130190 | QSFP+-40G-SR4 |
| PIC 3 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| Xcvr 0 | REV 01 | 740-046565 | QD130197 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-046565 | QD130180 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-046565 | QD130199 | QSFP+-40G-SR4 |
| WAN MEZZ | REV 09 | 750-049136 | CABN0415 | MPC5E 24XGE OTN Mezz |
| FPC 9 | REV 05 | 750-044444 | CAAY9801 | MPCE Type 2 3D P |
| CPU | REV 04 | 711-038484 | CAAW3673 | MPCE PMB 2G |
| MIC 0 | REV 28 | 750-028387 | CAAX1071 | 3D 4x 10GE XFP |
| PIC 0 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | | NON-JNPR | T12L92342 | XFP-10G-SR |
| Xcvr 1 | | NON-JNPR | T12L92303 | XFP-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | | NON-JNPR | CC07BK02X | XFP-10G-SR |
| QXM 0 | REV 06 | 711-028408 | CAAW4883 | MPC QXM |
| QXM 1 | REV 06 | 711-028408 | CAAW4603 | MPC QXM |
| FPC 10 | REV 21.0.11 | 750-045715 | CAAY3541 | MPC5E 3D Q 24XGE+6XLGE |
| CPU | REV 07 | 711-045719 | CAAW7426 | RMPD PMB |
| PIC 0 | | BUILTIN | BUILTIN | 12X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AHK01AP | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ502ZU | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AP41BLS | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQA08YA | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | AQA0K26 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQA06S3 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQA06AS | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-021308 | AQA053N | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | AQA0E97 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-021308 | AQA0GS4 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-021308 | AQA0JVA | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 12X10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | AQA057A | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | ANA0MLS | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQA093A | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021309 | 943153A00075 | SFP+-10G-LR |
| Xcvr 4 | REV 01 | 740-021308 | AQA077B | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | AQA0JSC | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQA0735 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQ5028N | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | AP40VN5 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | AQA0K0J | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-021308 | AQA07AP | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-021308 | AQA08YB | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| PIC 3 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| WAN MEZZ | REV 07 | 750-045717 | CAAX3123 | MPC5E 24XGE Mezz |
| FPC 11 | REV 17 | 750-037355 | CAAT3986 | MPC4E 3D 2CGE+8XGE |
| CPU | REV 08 | 711-035209 | CAAR3972 | HMPD PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | AQA0DSE | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ501Y3 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ501XU | SFP+-10G-SR |

| | | | | |
|------------|--------|------------|-----------|-------------------|
| Xcvr 3 | REV 01 | 740-021308 | AQ5036Y | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | | NON-JNPR | X12J00247 | CFP-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | ALQ1DKF | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJ403YA | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AP40TY0 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | ALQ14G0 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-035329 | X12J00095 | CFP-100G-SR10 |
| Fan Tray 0 | REV 08 | 740-031521 | ACAF4219 | Enhanced Fan Tray |
| Fan Tray 1 | REV 08 | 740-031521 | ACAF4225 | Enhanced Fan Tray |

show chassis hardware detail (MX960 Router)

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user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 01    710-013698   AA6082         MX960 Midplane
PIM           Rev 01    740-013110   000008         Power Inlet Module
PEM 2
PEM 3         Rev 01    740-013682   000038         PS 1.7kW; 200-240VAC in
Routing Engine 0 REV 00    740-015113   1000617944     RE-S-1300
  ad0        245 MB   SanDisk     SDCFB-256      111419E1805T1141 Compact Flash
  ad2        38154 MB FUJITSU     MHT2040BH      NROWT5925N77    Hard Disk
CB 0          REV 05    710-013725   JK6947         MX960 Test SCB
FPC 4         REV 01    710-013305   JM7617         MX960 Test DPC
CPU
PIC 0
PIC 1
FPC 7         REV 01    710-013305   JL9634         MX960 Test DPC
CPU
PIC 0
Xcvr 0
PIC 1
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)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Midplane      REV 01    710-030012   ACAX3674       MX960 Backplane
FPM Board     REV 03    710-014974   CAAZ9326       Front Panel Display
PDM           Rev 03    740-013110   QCS17025017    Power Distribution Module
PEM 0         Rev 10    740-027760   QCS1702N062    PS 4.1kW; 200-240V AC
in
PEM 1         Rev 04    740-027760   QCS1422N02C    PS 4.1kW; 200-240V AC
in
PEM 2         Rev 09    740-027760   QCS1614N01X    PS 4.1kW; 200-240V AC
in
Routing Engine 0 REV 08    740-031116   9009131803     RE-S-1800x4
  ad0        3831 MB   UGB30SFA4000T1 SFA4000T1 000016CD Compact Flash

```

| | | | | |
|------------------|----------|---------------------|--------------------|----------------------|
| ad1 | 30533 MB | UGB94BPH32H0S1-KCI | 11000061346 | Disk 1 |
| usb0 (addr 1) | | EHCI root hub 0 | Intel | uhub0 |
| usb0 (addr 2) | | product 0x0020 32 | vendor 0x8087 | uhub1 |
| DIMM 0 | | VL31B5263F-F8SD DIE | REV-0 PCB REV-0 | MFR ID-ce80 |
| DIMM 1 | | VL31B5263F-F8SD DIE | REV-0 PCB REV-0 | MFR ID-ce80 |
| DIMM 2 | | VL31B5263F-F8SD DIE | REV-0 PCB REV-0 | MFR ID-ce80 |
| DIMM 3 | | VL31B5263F-F8SD DIE | REV-0 PCB REV-0 | MFR ID-ce80 |
| Routing Engine 1 | | REV 08 740-031116 | 9009124913 | RE-S-1800x4 |
| ad0 | 3831 MB | UGB30SFA4000T1 | SFA4000T1 0000106D | Compact Flash |
| ad1 | 30533 MB | UGB94BPH32H0S1-KCI | 11000052402 | Disk 1 |
| CB 0 | | REV 18 750-031391 | CABF0579 | Enhanced MX SCB |
| CB 1 | | REV 16 750-031391 | CAAZ2471 | Enhanced MX SCB |
| CB 2 | | REV 16 750-031391 | CAAW9595 | Enhanced MX SCB |
| FPC 0 | | REV 18 750-046005 | CACE6574 | MPC5E 3D Q 2CGE+4XGE |
| CPU | | REV 09 711-045719 | CACG8908 | RMPM PMB |
| PIC 0 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | | REV 01 740-021308 | AQA0DYT | SFP+-10G-SR |
| Xcvr 1 | | REV 01 740-021308 | AQGOMS7 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | | REV 01 740-046563 | XD16FC03Z | CFP2-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| Xcvr 0 | | REV 01 740-021308 | ANAONAJ | SFP+-10G-SR |
| Xcvr 1 | | REV 01 740-021308 | AQGOMRQ | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | | REV 01 740-049775 | J13K72993 | CFP2-100G-LR4 |
| FPC 1 | | REV 11 750-045372 | CABK8154 | MPCE Type 3 3D |
| CPU | | REV 08 711-035209 | CABE7370 | HMPM PMB 2G |
| MIC 0 | | REV 07 750-033307 | CABD5255 | 10X10GE SFPP |
| PIC 0 | | BUILTIN | BUILTIN | 10X10GE SFPP |
| Xcvr 0 | | REV 01 740-021308 | AQ50319 | SFP+-10G-SR |
| Xcvr 1 | | REV 01 740-021308 | AQ5035V | SFP+-10G-SR |
| Xcvr 2 | | REV 01 740-021308 | AQ502XJ | SFP+-10G-SR |
| Xcvr 3 | | REV 01 740-021308 | AQ43HHR | SFP+-10G-SR |
| Xcvr 4 | | REV 01 740-021308 | AQ502YA | SFP+-10G-SR |
| Xcvr 5 | | REV 01 740-021308 | AQ502EU | SFP+-10G-SR |
| Xcvr 6 | | REV 01 740-021308 | AQ502HR | SFP+-10G-SR |
| Xcvr 7 | | REV 01 740-021308 | AQ502A6 | SFP+-10G-SR |
| Xcvr 8 | | REV 01 740-021308 | AQ43H8M | SFP+-10G-SR |
| MIC 1 | | REV 14 750-033196 | CAAP1398 | 1X100GE CXP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CXP |
| Xcvr 0 | | REV 01 740-046563 | XD16FC064 | CFP2-100G-SR10 |
| FPC 3 | | REV 35 750-028467 | CAAT9156 | MPC 3D 16x 10GE |
| CPU | | REV 11 711-029089 | CAAV4645 | AMPM 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 | 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 |
| 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 | MPD QXM |

| | | | | |
|------------|-------------|------------|--------------|------------------------|
| QXM 1 | REV 06 | 711-028408 | CAAW4603 | MPC QXM |
| FPC 10 | REV 21.0.11 | 750-045715 | CAAY3541 | MPC5E 3D Q 24XGE+6XLGE |
| CPU | REV 07 | 711-045719 | CAAW7426 | RMPM PMB |
| PIC 0 | | BUILTIN | BUILTIN | 12X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AHK01AP | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ502ZU | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AP41BLS | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQA08YA | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | AQA0K26 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQA06S3 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQA06AS | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-021308 | AQA053N | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | AQA0E97 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-021308 | AQA0GS4 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-021308 | AQA0JVA | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 12X10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | AQA057A | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | ANA0MLS | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQA093A | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021309 | 943153A00075 | SFP+-10G-LR |
| Xcvr 4 | REV 01 | 740-021308 | AQA077B | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | AQA0JSC | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQA0735 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQ5028N | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | AP40VN5 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | AQA0K0J | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-021308 | AQA07AP | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-021308 | AQA08YB | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| PIC 3 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| WAN MEZZ | REV 07 | 750-045717 | CAAX3123 | MPC5E 24XGE Mezz |
| FPC 11 | REV 17 | 750-037355 | CAAT3986 | MPC4E 3D 2CGE+8XGE |
| CPU | REV 08 | 711-035209 | CAAR3972 | HMPM PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | AQA0DSE | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ501Y3 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ501XU | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ5036Y | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | | NON-JNPR | X12J00247 | CFP-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | ALQ1DKF | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJ403YA | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AP40TY0 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | ALQ14G0 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-035329 | X12J00095 | CFP-100G-SR10 |
| Fan Tray 0 | REV 08 | 740-031521 | ACAF4219 | Enhanced Fan Tray |
| Fan Tray 1 | REV 08 | 740-031521 | ACAF4225 | Enhanced Fan Tray |

show chassis hardware extensive (MX960 Router with MPC5EQ)

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|--------------|------------|-------------------|---------------|-------------|
| Chassis | | | JN1214852AFA | MX960 |
| Jedec Code: | 0x7fb0 | EEPROM Version: | 0x02 | |
| | | S/N: | JN1214852AFA | |
| Assembly ID: | 0x0512 | Assembly Version: | 00.00 | |
| Date: | 00-00-0000 | Assembly Flags: | 0x00 | |
| ID: | MX960 | | | |

```

Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 05 12 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x20: 4a 4e 31 32 31 34 38 35 32 41 46 41 00 00 00 00
  Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane          REV 01    710-030012    ACAX3674          MX960 Backplane
Jedec Code:      0x7fb0          EEPROM Version:      0x02
P/N:             710-030012      S/N:                ACAX3674
Assembly ID:     0x01df          Assembly Version:    01.01
Date:           01-19-2013      Assembly Flags:      0x00
Version:         REV 01          CLEI Code:          COM8T00CRB
ID: MX960 Backplane          FRU Model Number:   CHAS-BP-MX960-S
Board Information Record:
  Address 0x00: ad 01 08 00 54 e0 32 bc 68 00 ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 01 df 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 31 30 2d 30 33 30 30 31 32 00 00
  Address 0x20: 53 2f 4e 20 41 43 41 58 33 36 37 34 00 13 01 07
  Address 0x30: dd ff ff ff ad 01 08 00 54 e0 32 bc 68 00 ff ff
  Address 0x40: ff ff ff ff 01 43 4f 4d 38 54 30 30 43 52 42 43
  Address 0x50: 48 41 53 2d 42 50 2d 4d 58 39 36 30 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff aa ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board          REV 03    710-014974    CAAZ9326          Front Panel Display
Jedec Code:      0x7fb0          EEPROM Version:      0x01
P/N:             710-014974      S/N:                CAAZ9326
Assembly ID:     0x01e6          Assembly Version:    01.03
Date:           12-31-2012      Assembly Flags:      0x00
Version:         REV 03          FRU Model Number:   CRAFT-MX960-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 01 e6 01 03 52 45 56 20 30 33 00 00
  Address 0x10: 00 00 00 00 37 31 30 2d 30 31 34 39 37 34 00 00
  Address 0x20: 53 2f 4e 20 43 41 41 5a 39 33 32 36 00 1f 0c 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
  Address 0x50: 52 41 46 54 2d 4d 58 39 36 30 2d 53 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PDM                Rev 03    740-013110    QCS17025017      Power Distribution Module
Jedec Code:      0x7fb0          EEPROM Version:      0x01
P/N:             740-013110      S/N:                QCS17025017
Assembly ID:     0x0416          Assembly Version:    01.03
Date:           01-10-2013      Assembly Flags:      0x00
Version:         Rev 03
ID: Power Distribution Module
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 04 16 01 03 52 65 76 20 30 33 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 31 33 31 31 30 00 00
  Address 0x20: 51 43 53 31 37 30 32 35 30 31 37 00 00 0a 01 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

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Address 0x40: ff 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 0          Rev 10   740-027760   QCS1702N062   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-027760      S/N:           QCS1702N062
Assembly ID:   0x0430          Assembly Version: 01.10
Date:          01-15-2013      Assembly Flags: 0x00
Version:       Rev 10
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 0a 52 65 76 20 31 30 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 37 30 32 4e 30 36 32 00 00 0f 01 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 1          Rev 04   740-027760   QCS1422N02C   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-027760      S/N:           QCS1422N02C
Assembly ID:   0x0430          Assembly Version: 01.04
Date:          06-04-2010      Assembly Flags: 0x00
Version:       Rev 04
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 04 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 34 32 32 4e 30 32 43 00 00 04 06 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: 00 00 00 00 01 00 00 00 00 00 00 00 00 00 00 50
Address 0x50: 57 52 2d 4d 58 39 36 30 2d 34 31 30 30 2d 41 43
Address 0x60: 2d 53 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
PEM 2          Rev 09   740-027760   QCS1614N01X   PS 4.1kW; 200-240V AC
in
Jedec Code:    0x7fb0          EEPROM Version: 0x01
P/N:           740-027760      S/N:           QCS1614N01X
Assembly ID:   0x0430          Assembly Version: 01.09
Date:          04-07-2012      Assembly Flags: 0x00
Version:       Rev 09
ID: PS 4.1kW; 200-240V AC in   FRU Model Number: PWR-MX960-4100-AC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 30 01 09 52 65 76 20 30 39 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 32 37 37 36 30 00 00
Address 0x20: 51 43 53 31 36 31 34 4e 30 31 58 00 00 07 04 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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

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Routing Engine 0 REV 08 740-031116 9009131803 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009131803
Assembly ID: 0x09c0 Assembly Version: 01.08
Date: 03-04-2013 Assembly Flags: 0x00
Version: REV 08 CLEI Code: COUCASKBAA
ID: RE-S-1800x4 FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 42 2d 34 34 47 42 23 42 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 31 33 31 38 30 33 00 00 00 04 03 07
Address 0x30: dd ff ff ff 54 32 30 32 37 44 42 2d 34 34 47 42
Address 0x40: 23 42 23 00 01 43 4f 55 43 41 53 4b 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 59 ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3831 MB UGB30SFA4000T1 SFA4000T1 000016CD Compact Flash
ad1 30533 MB UGB94BPH32H0S1-KCI 11000061346 Disk 1
usb0 (addr 1) EHCI root hub 0 Intel uhub0
usb0 (addr 2) product 0x0020 32 vendor 0x8087 uhub1
DIMM 0 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 1 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 2 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
DIMM 3 VL31B5263F-F8SD DIE REV-0 PCB REV-0 MFR ID-ce80
Routing Engine 1 REV 08 740-031116 9009124913 RE-S-1800x4
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 740-031116 S/N: 9009124913
Assembly ID: 0x09c0 Assembly Version: 01.08
Date: 01-09-2013 Assembly Flags: 0x00
Version: REV 08 CLEI Code: COUCASKBAA
ID: RE-S-1800x4 FRU Model Number: RE-S-1800X4-16G-S
Board Information Record:
Address 0x00: 54 32 30 32 37 44 42 2d 34 34 47 42 23 42 23 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 c0 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 31 31 31 36 00 00
Address 0x20: 39 30 30 39 31 32 34 39 31 33 00 00 00 09 01 07
Address 0x30: dd ff ff ff 54 32 30 32 37 44 42 2d 34 34 47 42
Address 0x40: 23 42 23 00 01 43 4f 55 43 41 53 4b 42 41 41 52
Address 0x50: 45 2d 53 2d 31 38 30 30 58 34 2d 31 36 47 2d 53
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 59 ff ff ff ff ff ff ff ff ff ff ff ff
ad0 3831 MB UGB30SFA4000T1 SFA4000T1 0000106D Compact Flash
ad1 30533 MB UGB94BPH32H0S1-KCI 11000052402 Disk 1
CB 0 REV 18 750-031391 CABF0579 Enhanced MX SCB
Jedec Code: 0x7fb0 EEPROM Version: 0x02
P/N: 750-031391 S/N: CABF0579
Assembly ID: 0x09b0 Assembly Version: 01.18
Date: 04-15-2013 Assembly Flags: 0x00
Version: REV 18 CLEI Code: COUCASRBAA
ID: Enhanced MX SCB FRU Model Number: SCBE-MX-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 12 52 45 56 20 31 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 42 46 30 35 37 39 00 0f 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 53 52 42 41 41 53

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Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 43 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff 7d ff ff ff ff ff ff ff ff ff ff ff
CB 1          REV 16    750-031391    CAAZ2471          Enhanced MX SCB
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-031391      S/N:          CAAZ2471
Assembly ID:  0x09b0          Assembly Version: 01.16
Date:         03-09-2013      Assembly Flags:  0x00
Version:      REV 16          CLEI Code:      COUCARCBAB
ID: Enhanced MX SCB          FRU Model Number:  SCBE-MX-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 41 5a 32 34 37 31 00 09 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 52 43 42 41 42 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff 6d ff ff ff ff ff ff ff ff ff ff ff
CB 2          REV 16    750-031391    CAAW9595          Enhanced MX SCB
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-031391      S/N:          CAAW9595
Assembly ID:  0x09b0          Assembly Version: 01.16
Date:         02-01-2013      Assembly Flags:  0x00
Version:      REV 16          CLEI Code:      COUCARCBAB
ID: Enhanced MX SCB          FRU Model Number:  SCBE-MX-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 b0 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 31 33 39 31 00 00
Address 0x20: 53 2f 4e 20 43 41 41 57 39 35 39 35 00 01 02 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 43 41 52 43 42 41 42 53
Address 0x50: 43 42 45 2d 4d 58 2d 53 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 42 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff 6d ff ff ff ff ff ff ff ff ff ff ff
FPC 0         REV 18    750-046005    CACE6574          MPC5E 3D Q 2CGE+4XGE
Jedec Code:   0x7fb0          EEPROM Version:   0x02
P/N:          750-046005      S/N:          CACE6574
Assembly ID:  0x0b8c          Assembly Version: 01.18
Date:         11-20-2013      Assembly Flags:  0x00
Version:      REV 18          CLEI Code:      PROTOXCLEI
ID: MPC5E 3D Q 2CGE+4XGE      FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 8c 01 12 52 45 56 20 31 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 36 30 30 35 00 00
Address 0x20: 53 2f 4e 20 43 41 43 45 36 35 37 34 00 14 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
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

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Date:          11-13-2013      Assembly Flags:    0x00
Version:       REV 09
ID: RMPC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 85 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 34 35 37 31 39 00 00
Address 0x20: 53 2f 4e 20 43 41 43 47 38 39 30 38 00 0d 0b 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
PIC 0          BUILTIN      BUILTIN      2X10GE SFPP OTN
Jedec Code:    0x0000      EEPROM Version: 0x00
P/N:          BUILTIN      S/N:          BUILTIN
Assembly ID:   0x0a90      Assembly Version: 00.00
Date:         00-00-0000   Assembly Flags: 0x00
ID: 2X10GE SFPP OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 90 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 02 ae dc 00 00 00 00 0a 6e 00 00
Xcvr 0         REV 01      740-021308   AQA0DYT      SFP+-10G-SR
Xcvr 1         REV 01      740-021308   AQGOMS7      SFP+-10G-SR
PIC 1          BUILTIN      BUILTIN      1X100GE CFP2 OTN
Jedec Code:    0x0000      EEPROM Version: 0x00
P/N:          BUILTIN      S/N:          BUILTIN
Assembly ID:   0x0a6e      Assembly Version: 00.00
Date:         00-00-0000   Assembly Flags: 0x00
ID: 1X100GE CFP2 OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 6e 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 03 f3 8c 31 5c e7 80 00 00 00 02
Xcvr 0         REV 01      740-046563   XD16FC03Z    CFP2-100G-SR10
PIC 2          BUILTIN      BUILTIN      2X10GE SFPP OTN
Jedec Code:    0x0000      EEPROM Version: 0x00
P/N:          BUILTIN      S/N:          BUILTIN
Assembly ID:   0x0a90      Assembly Version: 00.00
Date:         00-00-0000   Assembly Flags: 0x00
ID: 2X10GE SFPP OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 90 00 00 00 00 00 00 00 00 00 00

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Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 03 f5 6c 31 5c db 40 00 00 00 02
Xcvr 0      REV 01  740-021308  ANA0NAJ      SFP+-10G-SR
Xcvr 1      REV 01  740-021308  AQGOMRQ     SFP+-10G-SR
PIC 3              BUILTIN      BUILTIN      1X100GE CFP2 OTN
Jedec Code: 0x0000      EEPROM Version: 0x00
P/N:          BUILTIN    S/N:          BUILTIN
Assembly ID: 0x0a6e     Assembly Version: 00.00
Date:         00-00-0000 Assembly Flags: 0x00
ID: 1X100GE CFP2 OTN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 6e 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 25 73 3a 20
Address 0x20: 42 55 49 4c 54 49 4e 00 25 73 3a 20 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 c0 03 ed ec 31 5c e2 e8 00 00 00 02
Xcvr 0      REV 01  740-049775  J13K72993    CFP2-100G-LR4
FPC 1      REV 11  750-045372  CABK8154     MPCE Type 3 3D
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N:          750-045372 S/N:          CABK8154
Assembly ID: 0x09db     Assembly Version: 04.11
Date:         05-18-2013 Assembly Flags: 0x00
Version:      REV 11    CLEI Code:      COUIBBNBAA
ID: MPCE Type 3 3D     FRU Model Number: MX-MPC3E-3D
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 09 db 04 0b 52 45 56 20 31 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 35 33 37 32 00 00
Address 0x20: 53 2f 4e 20 43 41 42 4b 38 31 35 34 00 12 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4e 42 41 41 4d
Address 0x50: 58 2d 4d 50 43 33 45 2d 33 44 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 44 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff cf ff ff ff ff ff ff ff ff ff ff ff ff
CPU      REV 08  711-035209  CABE7370     HMPC PMB 2G
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N:          711-035209 S/N:          CABE7370
Assembly ID: 0x0b04     Assembly Version: 01.08
Date:         05-08-2013 Assembly Flags: 0x00
Version:      REV 08
ID: HMPC PMB 2G
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0b 04 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 35 32 30 39 00 00
Address 0x20: 53 2f 4e 20 43 41 42 45 37 33 37 30 00 08 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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

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Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00
MIC 0          REV 07    750-033307    CABD5255          10X10GE SFPP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-033307      S/N:          CABD5255
Assembly ID:   0x0a2a          Assembly Version: 02.07
Date:          04-25-2013      Assembly Flags: 0x00
Version:       REV 07          CLEI Code:     COUIBBJBAA
ID: 10X10GE SFPP              FRU Model Number: MIC3-3D-10XGE-SFPP
Board Information Record:
Address 0x00: 34 01 03 03 05 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0a 2a 02 07 52 45 56 20 30 37 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 33 33 30 37 00 00
Address 0x20: 53 2f 4e 20 43 41 42 44 35 32 35 35 00 19 04 07
Address 0x30: dd ff ff ff 34 01 03 03 05 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4a 42 41 41 4d
Address 0x50: 49 43 33 2d 33 44 2d 31 30 58 47 45 2d 53 46 50
Address 0x60: 50 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 82 c0 03 f0 bc 57 79 83 80 00 00 00 02
PIC 0          BUILTIN      BUILTIN          10X10GE SFPP
Xcvr 0         REV 01    740-021308    AQ50319          SFP+-10G-SR
Xcvr 1         REV 01    740-021308    AQ5035V          SFP+-10G-SR
Xcvr 2         REV 01    740-021308    AQ502XJ          SFP+-10G-SR
Xcvr 3         REV 01    740-021308    AQ43HHR          SFP+-10G-SR
Xcvr 4         REV 01    740-021308    AQ502YA          SFP+-10G-SR
Xcvr 5         REV 01    740-021308    AQ502EU          SFP+-10G-SR
Xcvr 6         REV 01    740-021308    AQ502HR          SFP+-10G-SR
Xcvr 7         REV 01    740-021308    AQ502A6          SFP+-10G-SR
Xcvr 8         REV 01    740-021308    AQ43H8M          SFP+-10G-SR
MIC 1          REV 14    750-033196    CAAP1398          1X100GE CXP
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-033196      S/N:          CAAP1398
Assembly ID:   0x0a29          Assembly Version: 03.14
Date:          10-27-2012      Assembly Flags: 0x00
Version:       REV 14          CLEI Code:     COUIBBKBAA
ID: 1X100GE CXP              FRU Model Number: MIC3-3D-1X100GE-CXP
Board Information Record:
Address 0x00: 34 01 07 07 08 ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0a 29 03 0e 52 45 56 20 31 34 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 33 31 39 36 00 00
Address 0x20: 53 2f 4e 20 43 41 41 50 31 33 39 38 00 1b 0a 07
Address 0x30: dc ff ff ff 34 01 07 07 08 ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 42 4b 42 41 41 4d
Address 0x50: 49 43 33 2d 33 44 2d 31 58 31 30 30 47 45 2d 43
Address 0x60: 58 50 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 96 c0 03 ef cc 57 79 85 08 00 00 00 02
PIC 2          BUILTIN      BUILTIN          1X100GE CXP
Xcvr 0         REV 01    740-046563    XD16FC064        CFP2-100G-SR10
FPC 3          REV 35    750-028467    CAAT9156          MPC 3D 16x 10GE
Jedec Code:    0x7fb0          EEPROM Version:    0x01
P/N:           750-028467      S/N:          CAAT9156
Assembly ID:   0x0997          Assembly Version: 01.35
Date:          12-17-2012      Assembly Flags: 0x00
Version:       REV 35
ID: MPC 3D 16x 10GE          FRU Model Number: MPC-3D-16XGE-SFPP
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 97 01 23 52 45 56 20 33 35 00 00

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Address 0x10: 00 00 00 00 37 35 30 2d 30 32 38 34 36 37 00 00
Address 0x20: 53 2f 4e 20 43 41 41 54 39 31 35 36 00 11 0c 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 4d
Address 0x50: 50 43 2d 33 44 2d 31 36 58 47 45 2d 53 46 50 50
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff 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
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 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 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-SFPP
  MIC 1       REV 14  750-033196  CAAP1398      MIC3-3D-1X100GE-CXP
FPC 3         REV 35  750-028467  CAAT9156      MPC-3D-16XGE-SFPP
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             CRAFT-MX960-S
PEM 0         Rev 10  740-027760             PWR-MX960-4100-AC-S
PEM 1         Rev 04  740-027760             PWR-MX960-4100-AC-S
PEM 2         Rev 09  740-027760             PWR-MX960-4100-AC-S
Routing Engine 0 REV 08  740-031116  COUCASKBAA     RE-S-1800X4-16G-S
Routing Engine 1 REV 08  740-031116  COUCASKBAA     RE-S-1800X4-16G-S
CB 0          REV 18  750-031391  COUCASRBAA     SCBE-MX-S
CB 1          REV 16  750-031391  COUCARCBAB     SCBE-MX-S
CB 2          REV 16  750-031391  COUCARCBAB     SCBE-MX-S
FPC 0         REV 18  750-046005  PROTOXCLEI     PROTO-ASSEMBLY

```


| | | | | |
|------------|-------------|------------|------------|---------------------|
| FPC 1 | REV 11 | 750-045372 | COUIBBNBAA | MX-MPC3E-3D |
| MIC 0 | REV 07 | 750-033307 | COUIBBJBAA | MIC3-3D-10XGE-SFPP |
| MIC 1 | REV 14 | 750-033196 | COUIBBKBAA | MIC3-3D-1X100GE-CXP |
| FPC 3 | REV 35 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 4 | REV 18 | 750-046005 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 5 | REV 18 | 750-046005 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 7 | REV 09 | 750-037355 | PROTOXCLEI | MPC4E-2CGE-8XGE |
| FPC 8 | REV 39 | 750-045715 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 9 | REV 05 | 750-044444 | COUIBBGBAA | MX-MPC2E-3D-P |
| MIC 0 | REV 28 | 750-028387 | COUIA16BAA | MIC-3D-4XGE-XFP |
| FPC 10 | REV 21.0.11 | 750-045715 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 11 | REV 17 | 750-037355 | IPU3A4DHAA | MPC4E-3D-2CGE-8XGE |
| Fan Tray 0 | REV 08 | 740-031521 | | FFANTRAY-MX960-HC-S |
| Fan Tray 1 | REV 08 | 740-031521 | | FFANTRAY-MX960-HC-S |

show chassis hardware (MX960 Router with MPC3E and 100-Gigabit DWDM OTN MIC)

user@host> show chassis hardware

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|---------------------------|
| Chassis | | | JN123F6D9AFA | MX960 |
| Midplane | REV 04 | 750-047849 | ACRC8764 | Enhanced MX960 Backplane |
| FPM Board | REV 03 | 710-014974 | CACS4395 | Front Panel Display |
| PDM | Rev 03 | 740-013110 | QCS1809500Z | Power Distribution Module |
| PEM 0 | Rev 08 | 740-029344 | QCS1817V0LK | DC 4.1kW Power Entry |
| Module | | | | |
| PEM 1 | Rev 08 | 740-029344 | QCS1814V01F | DC 4.1kW Power Entry |
| Module | | | | |
| PEM 2 | Rev 08 | 740-029344 | QCS1810V1EW | DC 4.1kW Power Entry |
| Module | | | | |
| PEM 3 | Rev 08 | 740-029344 | QCS1810V1K5 | DC 4.1kW Power Entry |
| Module | | | | |
| Routing Engine 0 | REV 11 | 740-031116 | 9013103483 | RE-S-1800x4 |
| Routing Engine 1 | REV 10 | 740-031116 | 9009198513 | RE-S-1800x4 |
| CB 0 | REV 23 | 750-031391 | CADW3218 | Enhanced MX SCB |
| CB 1 | REV 14 | 750-031391 | ABBK5220 | Enhanced MX SCB |
| FPC 1 | REV 14 | 750-045372 | CADK0464 | MPCE Type 3 3D |
| CPU | REV 10 | 711-035209 | CADM9839 | HMPC PMB 2G |
| MIC 0 | REV 19 | 750-033199 | CAAE5870 | 1X100GE CFP |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-032210 | UTH0H0W | CFP-100G-LR4 |
| FPC 2 | REV 14 | 750-045372 | CADN3262 | MPCE Type 3 3D |
| CPU | REV 10 | 711-035209 | CADN8129 | HMPC PMB 2G |
| FPC 3 | REV 14 | 750-045372 | CADH0146 | MPCE Type 3 3D |
| CPU | REV 10 | 711-035209 | CADT2458 | HMPC PMB 2G |
| MIC 0 | REV 03 | 750-057666 | CADP1386 | 1X100GE DWDM CFP2-ACO |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE DWDM CFP2-ACO |
| Xcvr 0 | REV 01 | 740-062357 | SMD5136.1 | OTN-100G-LH |
| FPC 4 | REV 18 | 750-045372 | CAEV5668 | MPCE Type 3 3D |
| CPU | REV 10 | 711-035209 | CAET7827 | HMPC PMB 2G |
| FPC 7 | REV 14 | 750-045372 | CADJ1947 | MPCE Type 3 3D |
| CPU | REV 10 | 711-035209 | CADJ1561 | HMPC PMB 2G |
| MIC 0 | REV 05 | 750-057666 | CAEB5763 | 1X100GE DWDM CFP2-ACO |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE DWDM CFP2-ACO |
| Xcvr 0 | REV 01 | 740-062357 | 1DJBZ052002 | OTN-100G-LH |
| FPC 8 | REV 14 | 750-045372 | CADK0485 | MPCE Type 3 3D |
| CPU | REV 10 | 711-035209 | CADM9828 | HMPC 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 | HMPC 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 (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 | SMPM PMB |
| PIC 0 | REV 17 | 750-059747 | ACNW3510 | 5X100GE DWDM CFP2-ACO |

| | | | | |
|------------|--------|------------|-------------|-----------------------|
| Xcvr 0 | REV 01 | 740-062357 | 1DJBZ040003 | OTN-100G-LH |
| Xcvr 2 | REV 01 | 740-062357 | 1DJBZ044004 | OTN-100G-LH |
| Xcvr 3 | REV 01 | 740-062357 | 1DJBZ03500P | OTN-100G-LH |
| Xcvr 4 | REV 01 | 740-062357 | 1DJBZ03700C | OTN-100G-LH |
| FPC 4 | REV 12 | 750-057064 | ACAM7153 | FPC3-SFF-PTX-1X |
| CPU | | BUILTIN | BUILTIN | SMPD PMB |
| PIC 0 | REV 17 | 750-059747 | ACNW3511 | 5X100GE DWDM CFP2-ACO |
| Xcvr 0 | REV 01 | 740-061663 | 47 | OTN-100G-LH |
| Xcvr 1 | REV 01 | 740-061663 | 39 | OTN-100G-LH |
| Xcvr 2 | REV 01 | 740-062357 | 1DJBZ044002 | OTN-100G-LH |
| Xcvr 3 | REV 01 | 740-062357 | 1DJBZ03700G | OTN-100G-LH |
| Xcvr 4 | REV 01 | 740-062357 | 1DJBZ041001 | OTN-100G-LH |
| FPC 8 | REV 11 | 750-057064 | ACAM6808 | FPC3-SFF-PTX-1X |
| CPU | | BUILTIN | BUILTIN | SMPD PMB |
| PIC 0 | REV 17 | 750-059747 | ACNW3508 | 5X100GE DWDM CFP2-ACO |
| Xcvr 0 | REV 01 | 740-061663 | 194 | OTN-100G-LH |
| Xcvr 1 | REV 01 | 740-061663 | 168 | OTN-100G-LH |
| Xcvr 2 | REV 01 | 740-061663 | 52 | OTN-100G-LH |
| Xcvr 3 | REV 01 | 740-061663 | 85 | OTN-100G-LH |
| Xcvr 4 | REV 01 | 740-061663 | 218 | OTN-100G-LH |
| SIB 0 | REV 03 | 750-057067 | ACAM8513 | SIB3-SFF-PTX |
| SIB 1 | REV 01 | 750-057067 | ACAM5918 | SIB3-SFF-PTX |
| SIB 2 | REV 01 | 711-057066 | ACAM4325 | SIB3-SFF-PTX |
| SIB 3 | REV 01 | 711-057066 | ACAM4328 | SIB3-SFF-PTX |
| SIB 4 | REV 01 | 711-057066 | ACAM4349 | SIB3-SFF-PTX |
| SIB 5 | REV 01 | 711-057066 | ACAM4323 | SIB3-SFF-PTX |
| SIB 6 | REV 01 | 711-057066 | ACAM4344 | SIB3-SFF-PTX |
| SIB 7 | REV 01 | 750-057067 | ACAM4346 | SIB3-SFF-PTX |
| SIB 8 | REV 01 | 750-057067 | ACAM5911 | SIB3-SFF-PTX |
| Fan Tray 0 | REV 13 | 760-044659 | ACMP6395 | Fan Tray (Exhaust) |
| Fan Tray 1 | REV 13 | 760-044659 | ACMZ6957 | Fan Tray (Exhaust) |

show chassis hardware clei-models (PTX3000 Router with 5-port 100-Gigabit DWDM OTN PIC)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|------------|-----------------------|
| Midplane | REV 22 | 750-044645 | IPMVN10FRA | CHAS-MP-PTX3000-S |
| FPM | REV 07 | 760-044663 | IPUCBE5CAA | FPD-SFF-PTX-S |
| PSM 1 | REV 02 | 740-044980 | PROTOPWRDC | PSM-SFF-PTX-DC-2200-S |
| PSM 2 | REV 06 | 740-044981 | IPUPAKOKAB | PSM-SFF-PTX-AC-S |
| PSM 3 | REV 06 | 740-044981 | IPUPAKOKAB | PSM-SFF-PTX-AC-S |
| PSM 4 | REV 04 | 740-044980 | IPUPAK1KAA | PSM-SFF-PTX-DC-S |
| Routing Engine 0 | REV 12 | 740-026942 | | RE-DUO-C2600-16G-S |
| CB 0 | REV 18 | 750-044656 | IPUCBE6CAB | CB-SFF-PTX-S |
| FPC 2 | REV 06 | 750-057064 | PROTOXCLEI | PROTO-ASSEMBLY |
| PIC 0 | REV 17 | 750-059747 | IPU3BC5HAA | PTX-5-100G-WDM |
| FPC 4 | REV 12 | 750-057064 | | |
| PIC 0 | REV 17 | 750-059747 | IPU3BC5HAA | PTX-5-100G-WDM |
| FPC 8 | REV 11 | 750-057064 | | |
| PIC 0 | REV 17 | 750-059747 | IPU3BC5HAA | PTX-5-100G-WDM |
| SIB 0 | REV 03 | 750-057067 | PROTOXCLEI | PROTO-ASSEMBLY |
| SIB 1 | REV 01 | 750-057067 | PROTOXCLEI | PROTO-ASSEMBLY |
| SIB 2 | REV 01 | 711-057066 | PROTOXCLEI | PROTO-ASSEMBLY |
| SIB 3 | REV 01 | 711-057066 | PROTOXCLEI | PROTO-ASSEMBLY |
| SIB 4 | REV 01 | 711-057066 | PROTOXCLEI | PROTO-ASSEMBLY |
| SIB 5 | REV 01 | 711-057066 | PROTOXCLEI | PROTO-ASSEMBLY |
| SIB 6 | REV 01 | 711-057066 | PROTOXCLEI | PROTO-ASSEMBLY |
| SIB 7 | REV 01 | 750-057067 | PROTOXCLEI | PROTO-ASSEMBLY |
| SIB 8 | REV 01 | 750-057067 | PROTOXCLEI | PROTO-ASSEMBLY |

| | | | | |
|------------|--------|------------|------------|---------------|
| Fan Tray 0 | REV 13 | 760-044659 | IPUCBE8CAA | FAN-SFF-PTX-S |
| Fan Tray 1 | REV 13 | 760-044659 | IPUCBE8CAA | FAN-SFF-PTX-S |

show chassis hardware (MX2010 Router)

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|----------------------|
| Chassis | | | JN11E3217AFK | MX2010 |
| Midplane | | | | 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 | CAA6135 | PMB Board |
| SPMB 1 | REV 02 | 711-041855 | CAA6137 | PMB Board |
| SFB 0 | REV 06 | 711-032385 | ZV1828 | Switch Fabric Board |
| SFB 1 | REV 07 | 711-032385 | ZZ2568 | Switch Fabric Board |
| SFB 2 | REV 07 | 711-032385 | ZZ2563 | Switch Fabric Board |
| SFB 3 | REV 07 | 711-032385 | ZZ2564 | Switch Fabric Board |
| SFB 4 | REV 07 | 711-032385 | ZZ2580 | Switch Fabric Board |
| SFB 5 | REV 07 | 711-032385 | ZZ2579 | Switch Fabric Board |
| SFB 6 | REV 07 | 711-032385 | CAAB4882 | Switch Fabric Board |
| SFB 7 | REV 07 | 711-032385 | CAAB4898 | Switch Fabric Board |
| FPC 0 | REV 33 | 750-028467 | CAAB1919 | MPC 3D 16x 10GE |
| CPU | REV 11 | 711-029089 | CAAB7174 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AMH02RE | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AMH038C | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AMH0390 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AMG0SUA | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AMH0579 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AMG0SGP | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AMH04SV | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AMH04X3 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AMH0135 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AMH02NC | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AMH02XB | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AMH02PN | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AMH057Y | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AMG0JHE | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AMH02HT | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AMH04V4 | SFP+-10G-SR |

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|--------|--------|------------|--------------|---------------------|
| FPC 1 | REV 21 | 750-033205 | ZG5027 | MPC Type 3 |
| CPU | REV 04 | 711-035209 | YT4780 | HMPD PMB 2G |
| MIC 0 | REV 03 | 750-033307 | ZV6299 | 10X10GE SFP |
| PIC 0 | | BUILTIN | BUILTIN | 10X10GE SFP |
| Xcvr 0 | REV 01 | 740-031980 | 083363A00410 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 083363A00334 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 113363A00125 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 083363A00953 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | AHR013D | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | AJ40JUR | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | AJ40JKL | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | AJ30ECK | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-021308 | 19T511100864 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | 19T511100868 | SFP+-10G-SR |
| MIC 1 | REV 03 | 750-033307 | ZV6268 | 10X10GE SFP |
| PIC 2 | | BUILTIN | BUILTIN | 10X10GE SFP |
| Xcvr 0 | REV 01 | 740-031980 | AJCOJML | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJ403PC | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJ10N25 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AJ40JF4 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | AJ40JSJ | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | AJ403V7 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | AJ40JN3 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | AJ40JSU | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-021308 | 19T511100468 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | 19T511101363 | SFP+-10G-SR |
| FPC 8 | REV 22 | 750-031089 | ZT9746 | MPC Type 2 3D |
| CPU | REV 06 | 711-030884 | ZS1271 | MPC PMB 2G |
| MIC 0 | REV 26 | 750-028392 | ABBS1150 | 3D 20x 1GE(LAN) SFP |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031851 | PLG023C | SFP-SX |
| Xcvr 1 | REV 01 | 740-031851 | PLG09C6 | SFP-SX |
| Xcvr 2 | REV 02 | 740-011613 | AM0950SF9L7 | SFP-SX |
| Xcvr 3 | REV 02 | 740-011613 | AM1001SFN1H | SFP-SX |
| Xcvr 4 | REV 02 | 740-011613 | AM1001SFM9D | SFP-SX |
| Xcvr 5 | REV 02 | 740-011613 | AM1001SFLTJ | SFP-SX |
| Xcvr 6 | REV 01 | 740-031851 | AC1108S03L9 | SFP-SX |
| Xcvr 7 | REV 01 | 740-031851 | AC1102S00NC | SFP-SX |
| Xcvr 8 | REV 01 | 740-031851 | AC1102S00MX | SFP-SX |
| Xcvr 9 | REV 01 | 740-031851 | AC1102S0085 | SFP-SX |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031851 | AC1102S00KU | SFP-SX |
| Xcvr 1 | REV 01 | 740-031851 | AC1102S00NG | SFP-SX |
| Xcvr 2 | REV 01 | 740-031851 | AC1102S00K3 | SFP-SX |
| Xcvr 3 | REV 01 | 740-031851 | AC1102S008R | SFP-SX |
| Xcvr 4 | REV 01 | 740-031851 | AM1107SUFVJ | SFP-SX |
| Xcvr 5 | REV 01 | 740-031851 | AC1108S03LG | SFP-SX |
| MIC 1 | REV 26 | 750-028387 | ABBR9582 | 3D 4x 10GE XFP |
| PIC 2 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | | NON-JNPR | T10A91703 | XFP-10G-SR |
| Xcvr 1 | | NON-JNPR | T09L42604 | XFP-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| FPC 9 | REV 11 | 750-036284 | ZL3591 | MPC 3D 16x 10GE EM |
| CPU | REV 10 | 711-029089 | ZL0513 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 1YT517101825 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 1YT517101821 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 1YT517101682 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | ALQ13R6 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 1YT517101828 | SFP+-10G-SR |

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|------------|--------|------------|--------------|------------------------|
| Xcvr 1 | REV 01 | 740-031980 | 1YT517101716 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 1YT517101732 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | ALP0TR1 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 1YT517101741 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 1YT517101829 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 1YT517101669 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | ALQ14E3 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 1YT517101826 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 1YT517101817 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 1YT517101735 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | ALQ159A | SFP+-10G-SR |
| ADC 0 | REV 05 | 750-043596 | CAAC2073 | Adapter Card |
| ADC 1 | REV 01 | 750-043596 | ZV4117 | Adapter Card |
| ADC 8 | REV 01 | 750-043596 | ZV4107 | Adapter Card |
| ADC 9 | REV 02 | 750-043596 | ZW1555 | Adapter Card |
| Fan Tray 0 | REV 2A | 760-046960 | ACAY0015 | 172mm FanTray - 6 Fans |
| Fan Tray 1 | REV 2A | 760-046960 | ACAY0019 | 172mm FanTray - 6 Fans |
| Fan Tray 2 | REV 2A | 760-046960 | ACAY0020 | 172mm FanTray - 6 Fans |
| Fan Tray 3 | REV 2A | 760-046960 | ACAY0021 | 172mm FanTray - 6 Fans |

show chassis hardware detail (MX2010 Router)

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Hardware inventory:
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

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|--------|----------|---------------------|----------------------|------------------------------|
| ad0 | 3998 MB | Virtium - TuffDrive | VCF P1T0200262860208 | 114 Compact Flash |
| ad1 | 30533 MB | UGB94ARF32H0S3-KC | UNIGEN-499551-000404 | Disk 1 |
| CB 0 | | REV 13 | 750-040257 | CAAF8436 Control Board |
| CB 1 | | REV 13 | 750-040257 | CAAF8434 Control Board |
| SPMB 0 | | REV 02 | 711-041855 | ABBV3825 PMB Board |
| SPMB 1 | | REV 02 | 711-041855 | ABBV3833 PMB Board |
| SFB 0 | | REV 05 | 711-044466 | ABBX5682 Switch Fabric Board |
| SFB 1 | | REV 05 | 711-044466 | ABBX5676 Switch Fabric Board |
| SFB 2 | | REV 05 | 711-044466 | ABBX5665 Switch Fabric Board |
| SFB 3 | | REV 05 | 711-044466 | ABBX5699 Switch Fabric Board |
| SFB 4 | | REV 05 | 711-044466 | ABBX5603 Switch Fabric Board |
| SFB 5 | | REV 05 | 711-044466 | ABBX5587 Switch Fabric Board |
| SFB 6 | | REV 05 | 711-044466 | ABBX5607 Switch Fabric Board |
| SFB 7 | | REV 05 | 711-044466 | ABBX5669 Switch Fabric Board |
| FPC 0 | | REV 09 | 750-037355 | CAAF0924 MPC Type 4-2 |
| CPU | | REV 08 | 711-035209 | CAAB9842 HMPC PMB 2G |
| PIC 0 | | | BUILTIN | BUILTIN 4x10GE SFPP |
| Xcvr 0 | | REV 01 | 740-021308 | 19T511101656 SFP+-10G-SR |
| Xcvr 1 | | REV 01 | 740-031980 | AMA04RU SFP+-10G-SR |
| Xcvr 2 | | REV 01 | 740-031980 | 193363A00558 SFP+-10G-SR |
| Xcvr 3 | | REV 01 | 740-031980 | B10M00202 SFP+-10G-SR |
| PIC 1 | | | BUILTIN | BUILTIN 1X100GE CFP |
| Xcvr 0 | | | NON-JNPR | X12J00328 CFP-100G-SR10 |
| PIC 2 | | | BUILTIN | BUILTIN 4x10GE SFPP |
| Xcvr 0 | | REV 01 | 740-031980 | AMA088W SFP+-10G-SR |
| Xcvr 1 | | REV 01 | 740-031980 | B10L04211 SFP+-10G-SR |
| Xcvr 2 | | REV 01 | 740-021308 | 19T511101602 SFP+-10G-SR |
| Xcvr 3 | | REV 01 | 740-031980 | B10L04151 SFP+-10G-SR |
| PIC 3 | | | BUILTIN | BUILTIN 1X100GE CFP |
| Xcvr 0 | | | NON-JNPR | X12J00332 CFP-100G-SR10 |
| FPC 1 | | REV 18 | 750-033205 | ZE0128 MPC Type 3 |
| CPU | | REV 06 | 711-035209 | ZG5431 HMPC PMB 2G |
| MIC 0 | | REV 15 | 750-033199 | ZP6435 1X100GE CFP |
| PIC 0 | | | BUILTIN | BUILTIN 1X100GE CFP |
| Xcvr 0 | | REV 01 | 740-032210 | J11E46118 CFP-100G-LR4 |
| MIC 1 | | REV 15 | 750-033199 | ZP6442 1X100GE CFP |
| PIC 2 | | | BUILTIN | BUILTIN 1X100GE CFP |
| Xcvr 0 | | REV 01 | 740-032210 | UMN03T4 CFP-100G-LR4 |
| FPC 2 | | REV 16 | 750-037358 | CAAL1001 MPC Type 4-1 |
| CPU | | REV 08 | 711-035209 | CAAK7927 HMPC PMB 2G |
| PIC 0 | | | BUILTIN | BUILTIN 8X10GE SFPP |
| Xcvr 0 | | REV 01 | 740-031980 | 193363A00589 SFP+-10G-SR |
| Xcvr 1 | | REV 01 | 740-021308 | 973152A00028 SFP+-10G-SR |
| Xcvr 2 | | REV 01 | 740-031980 | 193363A00376 SFP+-10G-SR |
| Xcvr 3 | | REV 01 | 740-021308 | 973152A00016 SFP+-10G-SR |
| Xcvr 4 | | REV 01 | 740-031980 | 193363A00499 SFP+-10G-SR |
| Xcvr 5 | | REV 01 | 740-021308 | 973152A00039 SFP+-10G-SR |
| Xcvr 6 | | REV 01 | 740-031980 | B11E01239 SFP+-10G-SR |
| Xcvr 7 | | REV 01 | 740-021308 | 973152A00058 SFP+-10G-SR |
| PIC 1 | | | BUILTIN | BUILTIN 8X10GE SFPP |
| Xcvr 0 | | REV 01 | 740-031980 | B10M00075 SFP+-10G-SR |
| Xcvr 1 | | REV 01 | 740-021308 | 973152A00014 SFP+-10G-SR |
| Xcvr 2 | | REV 01 | 740-031980 | AMA0638 SFP+-10G-SR |
| Xcvr 3 | | REV 01 | 740-021308 | 973152A00063 SFP+-10G-SR |
| Xcvr 4 | | REV 01 | 740-031980 | AMA0629 SFP+-10G-SR |
| Xcvr 5 | | REV 01 | 740-021308 | 973152A00053 SFP+-10G-SR |
| Xcvr 6 | | REV 01 | 740-031980 | 193363A00344 SFP+-10G-SR |
| Xcvr 7 | | REV 01 | 740-021308 | 973152A00046 SFP+-10G-SR |
| PIC 2 | | | BUILTIN | BUILTIN 8X10GE SFPP |
| Xcvr 0 | | REV 01 | 740-031980 | AMA062M SFP+-10G-SR |
| Xcvr 1 | | REV 01 | 740-021308 | 973152A00080 SFP+-10G-SR |

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| Xcvr 2 | REV 01 | 740-031980 | 193363A00580 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | 973152A00064 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | 093363A01494 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | 973152A00020 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | 123363A00047 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | 973152A00072 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | 03DZ06A01033 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 973152A00022 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | 03DZ06A01026 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | 973152A00013 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | 03DZ06A01028 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | 973152A00079 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | 03DZ06A01018 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | 973152A00025 | SFP+-10G-SR |
| FPC 3 | REV 33 | 750-028467 | CAAF5400 | MPC 3D 16x 10GE |
| CPU | REV 11 | 711-029089 | CAAH7626 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 973152A00066 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 973152A00021 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | 973152A00062 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | 973152A00027 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 973152A00065 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 973152A00069 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | 973152A00026 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | 973152A00003 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 973152A00035 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 973152A00004 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | 973152A00049 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | 973152A00055 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 973152A00010 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 973152A00001 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | 973152A00073 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | 973152A00012 | SFP+-10G-SR |
| FPC 4 | REV 21 | 750-033205 | ZG5028 | MPC Type 3 |
| CPU | REV 05 | 711-035209 | YX3911 | HMPM PMB 2G |
| MIC 0 | REV 03 | 750-036233 | ZL2036 | 2X40GE QSFP |
| PIC 0 | | BUILTIN | BUILTIN | 2X40GE QSFP |
| Xcvr 0 | REV 01 | 740-032986 | QB220708 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-032986 | QB220735 | QSFP+-40G-SR4 |
| MIC 1 | REV 03 | 750-036233 | ZL2028 | 2X40GE QSFP |
| PIC 2 | | BUILTIN | BUILTIN | 2X40GE QSFP |
| Xcvr 0 | REV 01 | 740-032986 | QB220727 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-032986 | QB220715 | QSFP+-40G-SR4 |
| FPC 5 | REV 11 | 750-037358 | CAAE2196 | MPC Type 4-1 |
| CPU | REV 08 | 711-035209 | CAAD9074 | HMPM PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AMA062S | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AMA062P | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AMA052R | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AMA0632 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | 193363A00564 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | 193363A00229 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | 193363A00363 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | 193363A00278 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AMA04CC | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AD0927A001W | SFP+-10G-SR |

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| Xcvr 2 | REV 01 | 740-031980 | AMA04N2 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AMA062U | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | 193363A00491 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | 183363A01511 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | 193363A00565 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | 193363A00405 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AMA07QX | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AMA06MS | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 193363A00318 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 193363A00402 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | 193363A00174 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | 193363A00388 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | 193363A00377 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | 193363A00234 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AMA062T | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 193363A00550 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 193363A00364 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AMA0630 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | 193363A00509 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | 193363A00459 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | 113363A00191 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | 193363A00352 | SFP+-10G-SR |
| FPC 6 | REV 33 | 750-028467 | CAAF5552 | MPC 3D 16x 10GE |
| CPU | REV 11 | 711-029089 | CAAH7601 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AD0927A0036 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AD0927A003M | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AD0927A003G | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AD0927A0031 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 193363A00331 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 193363A00325 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 193363A00417 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A02509 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | T09K75140 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11A04356 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01952 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K01914 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | T09K75157 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | T09K75194 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01926 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K01936 | SFP+-10G-SR |
| FPC 7 | REV 16 | 750-037358 | CAAL1012 | MPC Type 4-1 |
| CPU | REV 08 | 711-035209 | CAAJ3851 | HMPC PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AMA04NK | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11F00260 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11E02192 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AMA04CP | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | AJ40JKK | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | B11F00238 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | B10M00275 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | 193363A00211 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | B11D05577 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11G00586 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AMA08B7 | SFP+-10G-SR |

| | | | | |
|------------|--------|------------|--------------|------------------------|
| Xcvr 3 | REV 01 | 740-031980 | AMA04Q0 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | B11D05840 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | B11E00467 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | B11E00029 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | 19T511101712 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | 193363A00568 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B10M00166 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B10M00212 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11D05823 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | 03DZ06A01005 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | 03DZ06A01003 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | 03DZ06A01009 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | 03DZ06A01004 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 8X10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | 03DZ06A01017 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 03DZ06A01016 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | 03DZ06A01024 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | 03DZ06A01008 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-030658 | AD0946A02UH | SFP+-10G-USR |
| Xcvr 5 | REV 01 | 740-021308 | T09J67913 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AD0837ES09G | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | 03DZ06A01015 | SFP+-10G-SR |
| FPC 8 | REV 03 | 750-045372 | CAAD3111 | MPC Type 3 |
| CPU | REV 08 | 711-035209 | CAAD8033 | HMPD PMB 2G |
| MIC 0 | REV 03 | 750-036233 | ZL2032 | 2X40GE QSFP |
| PIC 0 | | BUILTIN | BUILTIN | 2X40GE QSFP |
| Xcvr 0 | REV 01 | 740-032986 | QB230273 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-032986 | QB230254 | QSFP+-40G-SR4 |
| MIC 1 | REV 03 | 750-036233 | ZL2021 | 2X40GE QSFP |
| PIC 2 | | BUILTIN | BUILTIN | 2X40GE QSFP |
| Xcvr 0 | REV 01 | 740-032986 | QB390962 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-032986 | QB390960 | QSFP+-40G-SR4 |
| FPC 9 | REV 09 | 750-037355 | CAAF1531 | MPC Type 4-2 |
| CPU | REV 08 | 711-035209 | CAAB9927 | HMPD PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | 193363A00525 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 193363A00504 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 193363A00368 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AJ40JSS | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | 123363A00042 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B10M00023 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJ802EM | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11E02348 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP |
| ADC 0 | REV 13 | 750-043596 | ABBX5532 | Adapter Card |
| ADC 1 | REV 13 | 750-043596 | ABBX5550 | Adapter Card |
| ADC 2 | REV 13 | 750-043596 | ABBX5571 | Adapter Card |
| ADC 3 | REV 13 | 750-043596 | ABBX5568 | Adapter Card |
| ADC 4 | REV 13 | 750-043596 | ABBX5556 | Adapter Card |
| ADC 5 | REV 13 | 750-043596 | ABBX5553 | Adapter Card |
| ADC 6 | REV 13 | 750-043596 | ABBX5541 | Adapter Card |
| ADC 7 | REV 13 | 750-043596 | ABBX5578 | Adapter Card |
| ADC 8 | REV 13 | 750-043596 | ABBX5560 | Adapter Card |
| ADC 9 | REV 07 | 750-043596 | ABBV7188 | Adapter Card |
| Fan Tray 0 | REV 03 | 760-046960 | ACAY0127 | 172mm FanTray - 6 Fans |
| Fan Tray 1 | REV 2A | 760-046960 | ACAY0068 | 172mm FanTray - 6 Fans |
| Fan Tray 2 | REV 2A | 760-046960 | ACAY0072 | 172mm FanTray - 6 Fans |
| Fan Tray 3 | REV 2A | 760-046960 | ACAY0070 | 172mm FanTray - 6 Fans |

show chassis hardware extensive (MX2010 Router)

```

user@host > show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11E233DAFK  MX2010
  Jedec Code:  0x7fb0                EEPROM Version: 0x02
                                     S/N:           JN11E233DAFK
  Assembly ID: 0x0557                Assembly Version: 00.00
  Date:         00-00-0000           Assembly Flags:  0x00
  ID: MX2010
Board Information Record:
  Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
  Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x20: 4a 4e 31 31 45 32 33 33 44 41 46 4b 00 00 00 00
  Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 26    750-044636  ABAB9357      Lower Backplane
  Jedec Code:  0x7fb0                EEPROM Version: 0x02
  P/N:         750-044636            S/N:           ABAB9357
  Assembly ID: 0x0b66                Assembly Version: 01.26
  Date:        08-28-2012            Assembly Flags: 0x00
  Version:     REV 26                CLEI Code:     PROTOXCLEI
  ID: Lower Backplane                FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ad 01 08 00 2c 21 72 70 a0 00 ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 66 01 1a 52 45 56 20 32 36 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
  Address 0x20: 53 2f 4e 20 41 42 41 42 39 33 35 37 00 1c 08 07
  Address 0x30: dc ff ff ff ad 01 08 00 2c 21 72 70 a0 00 ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1    REV 01    711-044557  ABAB8643      Upper Backplane
  Jedec Code:  0x7fb0                EEPROM Version: 0x01
  P/N:         711-044557            S/N:           ABAB8643
  Assembly ID: 0x0b65                Assembly Version: 01.01
  Date:        07-27-2012            Assembly Flags: 0x00
  Version:     REV 01
  ID: Upper Backplane
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0b 65 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 35 35 37 00 00
  Address 0x20: 53 2f 4e 20 41 42 41 42 38 36 34 33 00 1b 07 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP           REV 04    711-032426  ACAJ1677      Power Midplane
  Jedec Code:  0x7fb0                EEPROM Version: 0x01

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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 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:

```

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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 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          HMPD 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: HMPD 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
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 53 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 4d 58 43 00
Address 0x20: 42 55 49 4c 54 49 4e 00 4d 58 43 00 00 00 00
Address 0x30: 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

```

```

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 00 41 00 00 ff ff ff ff ff ff
Address 0x70: ff ff ff 3a 00 00 00 00 00 00 00 00 00 00 00 00
...

```

show chassis hardware models (MX2010 Router)

```

user@host > show chassis hardware models
Hardware inventory:

```

| Item | Version | Part number | Serial number | FRU model number |
|------------------|---------|-------------|---------------|--------------------------|
| FPM Board | REV 06 | 711-032349 | ZX8744 | 711-032349 |
| PSM 4 | REV 0C | 740-033727 | VK00254 | 000000000000000000000000 |
| PSM 5 | REV 0B | 740-033727 | VG00015 | 000000000000000000000000 |
| PSM 6 | REV 0B | 740-033727 | VH00097 | 000000000000000000000000 |
| PSM 7 | REV 0C | 740-033727 | VJ00151 | 000000000000000000000000 |
| PSM 8 | REV 0C | 740-033727 | VJ00149 | 000000000000000000000000 |
| PDM 0 | REV 0B | 740-038109 | WA00008 | |
| PDM 1 | REV 0B | 740-038109 | WA00014 | |
| Routing Engine 0 | REV 02 | 740-041821 | 9009094134 | RE-S-1800X4-16G-S |
| Routing Engine 1 | REV 02 | 740-041821 | 9009094141 | RE-S-1800X4-16G-S |
| CB 0 | REV 08 | 750-040257 | CAAB3491 | 750-040257 |
| CB 1 | REV 08 | 750-040257 | CAAB3489 | 750-040257 |
| SFB 0 | REV 06 | 711-032385 | ZV1828 | 711-032385 |
| SFB 1 | REV 07 | 711-032385 | ZZ2568 | 711-032385 |
| SFB 2 | REV 07 | 711-032385 | ZZ2563 | 711-032385 |
| SFB 3 | REV 07 | 711-032385 | ZZ2564 | 711-032385 |
| SFB 4 | REV 07 | 711-032385 | ZZ2580 | 711-032385 |
| SFB 5 | REV 07 | 711-032385 | ZZ2579 | 711-0323856 |
| SFB 6 | REV 07 | 711-032385 | CAAB4882 | 711-044170 |
| SFB 7 | REV 07 | 711-032385 | CAAB4898 | 711-044170 |
| FPC 0 | REV 33 | 750-028467 | CAAB1919 | MPC-3D-16XGE-SFPP |
| FPC 1 | REV 21 | 750-033205 | ZG5027 | MX-MPC3-3D |
| MIC 0 | REV 03 | 750-033307 | ZV6299 | MIC3-3D-10XGE-SFPP |
| MIC 1 | REV 03 | 750-033307 | ZV6268 | MIC3-3D-10XGE-SFPP |
| FPC 8 | REV 22 | 750-031089 | ZT9746 | MX-MPC2-3D |
| MIC 0 | REV 26 | 750-028392 | ABBS1150 | MIC-3D-20GE-SFP |
| MIC 1 | REV 26 | 750-028387 | ABBR9582 | MIC-3D-4XGE-XFP |
| FPC 9 | REV 11 | 750-036284 | ZL3591 | MPCE-3D-16XGE-SFPP |

| | | | | |
|------------|--------|------------|----------|------------|
| ADC 0 | REV 05 | 750-043596 | CAAC2073 | 750-043596 |
| ADC 1 | REV 01 | 750-043596 | ZV4117 | 750-043596 |
| ADC 8 | REV 01 | 750-043596 | ZV4107 | 750-043596 |
| ADC 9 | REV 02 | 750-043596 | ZW1555 | 750-043596 |
| Fan Tray 0 | REV 2A | 760-046960 | ACAY0015 | |
| Fan Tray 1 | REV 2A | 760-046960 | ACAY0019 | |
| Fan Tray 2 | REV 2A | 760-046960 | ACAY0020 | |
| Fan Tray 3 | REV 2A | 760-046960 | ACAY0021 | |

show chassis hardware clei-models (MX2010 Routers)

```
user@host > show chassis hardware clei-models
```

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|------------|--------------------------|
| FPM Board | REV 06 | 711-032349 | PROTOXCLEI | 711-032349 |
| PSM 4 | REV 0C | 740-033727 | 0000000000 | 000000000000000000000000 |
| PSM 5 | REV 0B | 740-033727 | 0000000000 | 000000000000000000000000 |
| PSM 6 | REV 0B | 740-033727 | 0000000000 | 000000000000000000000000 |
| PSM 7 | REV 0C | 740-033727 | 0000000000 | 000000000000000000000000 |
| PSM 8 | REV 0C | 740-033727 | 0000000000 | 000000000000000000000000 |
| PDM 0 | REV 0B | 740-038109 | | |
| PDM 1 | REV 0B | 740-038109 | | |
| Routing Engine 0 | REV 02 | 740-041821 | | RE-S-1800X4-16G-S |
| Routing Engine 1 | REV 02 | 740-041821 | | RE-S-1800X4-16G-S |
| CB 0 | REV 08 | 750-040257 | PROTOXCLEI | 750-040257 |
| CB 1 | REV 08 | 750-040257 | PROTOXCLEI | 750-040257 |
| SFB 0 | REV 06 | 711-032385 | PROTOXCLEI | 711-032385 |
| SFB 1 | REV 07 | 711-032385 | PROTOXCLEI | 711-032385 |
| SFB 2 | REV 07 | 711-032385 | PROTOXCLEI | 711-032385 |
| SFB 3 | REV 07 | 711-032385 | PROTOXCLEI | 711-032385 |
| SFB 4 | REV 07 | 711-032385 | PROTOXCLEI | 711-032385 |
| SFB 5 | REV 07 | 711-032385 | PROTOXCLEI | 711-0323856 |
| SFB 6 | REV 07 | 711-032385 | PROTOXCLEI | 711-044170 |
| SFB 7 | REV 07 | 711-032385 | PROTOXCLEI | 711-044170 |
| FPC 0 | REV 33 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 1 | REV 21 | 750-033205 | | MX-MPC3-3D |
| MIC 0 | REV 03 | 750-033307 | PROTOXCLEI | MIC3-3D-10XGE-SFPP |
| MIC 1 | REV 03 | 750-033307 | PROTOXCLEI | MIC3-3D-10XGE-SFPP |
| FPC 8 | REV 22 | 750-031089 | COUIBAYBAA | MX-MPC2-3D |
| MIC 0 | REV 26 | 750-028392 | COUIA15BAA | MIC-3D-20GE-SFP |
| MIC 1 | REV 26 | 750-028387 | COUIA16BAA | MIC-3D-4XGE-XFP |
| FPC 9 | REV 11 | 750-036284 | CMUIACGBAA | MPCE-3D-16XGE-SFPP |
| ADC 0 | REV 05 | 750-043596 | PROTOXCLEI | 750-043596 |
| ADC 1 | REV 01 | 750-043596 | PROTOXCLEI | 750-043596 |
| ADC 8 | REV 01 | 750-043596 | PROTOXCLEI | 750-043596 |
| ADC 9 | REV 02 | 750-043596 | PROTOXCLEI | 750-043596 |
| Fan Tray 0 | REV 2A | 760-046960 | | |
| Fan Tray 1 | REV 2A | 760-046960 | | |
| Fan Tray 2 | REV 2A | 760-046960 | | |
| Fan Tray 3 | REV 2A | 760-046960 | | |

show chassis hardware (MX2010 Routers with MPC6E and OTN MIC)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------|---------|-------------|---------------|-----------------|
| Chassis | | | JN11C9AFEAFK | MX2010 |
| Midplane | REV 35 | 750-044636 | ABAB9188 | Lower Backplane |
| Midplane 1 | REV 02 | 711-044557 | ABAB8729 | Upper Backplane |
| PMP | REV 04 | 711-032426 | ACAJ2432 | Power Midplane |

| | | | | |
|------------------|-------------|------------|-------------|----------------------|
| FPM Board | REV 09 | 760-044634 | ABCA4314 | Front Panel Display |
| PSM 0 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 |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | ALMOA6D | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AQFORB3 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 153363A00333 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AN10KYE | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | APK04YM | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AQFOH44 | SFP+-10G-SR |
| FPC 8 | REV 38 | 750-031090 | CABF7313 | MPC Type 2 3D EQ |
| CPU | REV 08 | 711-030884 | CABE6727 | MPC PMB 2G |
| MIC 0 | REV 18 | 750-028380 | YK8253 | 3D 2x 10GE XFP |
| PIC 0 | | BUILTIN | BUILTIN | 1x 10GE XFP |
| Xcvr 0 | REV 03 | 740-014289 | AD1148M00TP | XFP-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1x 10GE XFP |
| QXM 0 | REV 06 | 711-028408 | CABC5614 | MPC QXM |
| QXM 1 | REV 06 | 711-028408 | CABC5550 | MPC QXM |
| FPC 9 | REV 39 | 750-044130 | ABCK1652 | MPC6E 3D |
| CPU | REV 09 | 711-045719 | ABCK1655 | RMPC PMB |
| MIC 0 | REV 09 | 750-049457 | ABCP1230 | 2X100GE CFP2 OTN |
| PIC 0 | | BUILTIN | BUILTIN | 2X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | 37300222WP0002 | CFP2-100G-LR4-D |
| Xcvr 1 | | NON-JNPR | FD46F001Y | CFP2-100G-SR10 |
| MIC 1 | REV 07 | 750-049457 | ABCV6662 | 2X100GE CFP2 OTN |
| PIC 1 | | BUILTIN | BUILTIN | 2X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | UQD0014 | CFP2-100G-LR4-D |
| Xcvr 1 | | NON-JNPR | J13J68335 | CFP2-100G-LR4-D |
| XLM 0 | REV 07.2.00 | 711-046638 | ABCK5491 | MPC6E XL |
| XLM 1 | REV 07.2.00 | 711-046638 | ABCK5475 | MPC6E XL |
| ADC 1 | REV 17 | 750-043596 | ABCG9023 | Adapter Card |
| ADC 2 | REV 01 | 750-043596 | ZV4079 | Adapter Card |
| ADC 6 | REV 17 | 750-043596 | ABCG8866 | Adapter Card |
| ADC 8 | REV 17 | 750-043596 | ABCA8993 | Adapter Card |
| Fan Tray 0 | REV 06 | 760-046960 | ACAY0354 | 172mm FanTray - 6 Fans |
| Fan Tray 1 | REV 06 | 760-046960 | ACAY0831 | 172mm FanTray - 6 Fans |
| Fan Tray 2 | REV 06 | 760-046960 | ACAY0892 | 172mm FanTray - 6 Fans |
| Fan Tray 3 | REV 06 | 760-046960 | ACAY0839 | 172mm FanTray - 6 Fans |

show chassis hardware detail (MX2010 Routers with MPC6E and OTN MIC)

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

| Hardware inventory: | | | | |
|---------------------|---------|-------------|---------------|---------------------|
| Item | Version | Part number | Serial number | Description |
| Chassis | | | JN11C9AFEAFK | MX2010 |
| Midplane | REV 35 | 750-044636 | ABAB9188 | Lower Backplane |
| Midplane 1 | REV 02 | 711-044557 | ABAB8729 | Upper Backplane |
| PMP | REV 04 | 711-032426 | ACAJ2432 | Power Midplane |
| FPM Board | REV 09 | 760-044634 | ABCA4314 | Front Panel Display |
| PSM 0 | REV 01 | 740-050037 | 1EDB321015C | DC 52V Power Supply |
| Module | | | | |
| PSM 1 | REV 01 | 740-050037 | 1EDB321015J | DC 52V Power Supply |
| Module | | | | |
| PSM 2 | REV 01 | 740-050037 | 1EDB32000K8 | DC 52V Power Supply |
| Module | | | | |
| PSM 3 | REV 01 | 740-050037 | 1EDB32101JW | DC 52V Power Supply |
| Module | | | | |
| PSM 4 | REV 01 | 740-050037 | 1EDB321015G | DC 52V Power Supply |
| Module | | | | |
| PSM 5 | REV 01 | 740-050037 | 1EDB32101HH | DC 52V Power Supply |
| Module | | | | |

| | | | | |
|------------------|-------------|---------------------|----------------------|----------------------|
| PSM 6 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 |
| ad0 3998 MB | | Virtium - TuffDrive | VCF P1T0200274310822 | 191 Compact Flash |
| ad1 30533 MB | | UGB94BPH32H0S1-KCI | 11000043190 | Disk 1 |
| usb0 (addr 1) | | EHCI root hub 0 | Intel | uhub0 |
| usb0 (addr 2) | | product 0x0020 32 | vendor 0x8087 | uhub1 |
| DIMM 0 | | VL31B5263F-F8SD DIE | REV-0 PCB REV-0 | MFR ID-ce80 |
| DIMM 1 | | VL31B5263F-F8SD DIE | REV-0 PCB REV-0 | MFR ID-ce80 |
| DIMM 2 | | VL31B5263F-F8SD DIE | REV-0 PCB REV-0 | MFR ID-ce80 |
| DIMM 3 | | VL31B5263F-F8SD DIE | REV-0 PCB REV-0 | MFR ID-ce80 |
| Routing Engine 1 | REV 02 | 740-041821 | 9009099711 | RE-S-1800x4 |
| ad0 3998 MB | | Virtium - TuffDrive | VCF P1T0200262860208 | 30 Compact Flash |
| ad1 30533 MB | | UGB94ARF32H0S3-KC | UNIGEN-499551-000146 | Disk 1 |
| CB 0 | REV 23 | 750-040257 | CABE8395 | Control Board |
| CB 1 | REV 12 | 750-040257 | CAAD9499 | Control Board |
| SPMB 0 | REV 02 | 711-041855 | ABCG8426 | PMB Board |
| SPMB 1 | REV 02 | 711-041855 | ABBS1481 | PMB Board |
| SFB 0 | REV 06 | 711-044466 | ABCD5013 | Switch Fabric Board |
| SFB 1 | REV 06 | 711-044466 | ABCD5160 | Switch Fabric Board |
| SFB 2 | REV 06 | 711-044466 | ABCD5175 | Switch Fabric Board |
| SFB 3 | REV 06 | 711-044466 | ABCD4938 | Switch Fabric Board |
| SFB 4 | REV 06 | 711-044466 | ABCD4944 | Switch Fabric Board |
| SFB 5 | REV 06 | 711-044466 | ABCD4968 | Switch Fabric Board |
| SFB 6 | REV 06 | 711-044466 | ABCD5267 | Switch Fabric Board |
| SFB 7 | REV 06 | 711-044466 | ABCD4997 | Switch Fabric Board |
| FPC 0 | REV 59 | 750-044130 | ABCT7676 | MPC6E 3D |
| CPU | REV 10 | 711-045719 | ABCK8527 | RMPD PMB |
| XLM 0 | REV 13 | 711-046638 | ABCT7810 | MPC6E XL |
| XLM 1 | REV 13 | 711-046638 | ABCT7811 | MPC6E XL |
| FPC 2 | REV 27 | 750-033205 | ZL6014 | MPCE Type 3 3D |
| CPU | REV 07 | 711-035209 | ZK9068 | HMPD PMB 2G |
| MIC 0 | REV 14 | 750-033196 | CAAW9214 | 1X100GE CXP |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE CXP |
| Xcvr 0 | REV 01 | 740-046563 | XC49FC030 | CFP2-100G-SR10 |
| MIC 1 | REV 18 | 750-033199 | CAAC3231 | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CFP |
| FPC 3 | REV 59 | 750-044130 | ABCT7682 | MPC6E 3D |
| CPU | REV 10 | 711-045719 | ABCK8531 | RMPD PMB |
| XLM 0 | REV 13 | 711-046638 | ABCT7818 | MPC6E XL |
| XLM 1 | REV 13 | 711-046638 | ABCT7819 | MPC6E XL |
| FPC 4 | REV 33 | 750-044130 | ABBY9278 | MPC6E 3D |
| CPU | REV 09 | 711-045719 | ABBY8677 | RMPD PMB |
| XLM 0 | REV 06.2.00 | 711-046638 | ABBY8844 | MPC6E XL |
| XLM 1 | REV 06.2.00 | 711-046638 | ABBY8830 | MPC6E XL |
| FPC 5 | REV 59 | 750-044130 | ABCT7675 | MPC6E 3D |
| CPU | REV 10 | 711-045719 | ABCK8526 | RMPD PMB |
| XLM 0 | REV 13 | 711-046638 | ABCT7808 | MPC6E XL |
| XLM 1 | REV 13 | 711-046638 | ABCT7809 | MPC6E XL |
| FPC 6 | REV 30 | 750-028467 | ZM4986 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ZP6541 | AMPD PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ43GAC | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | ALMOA6D | SFP+-10G-SR |

| | | | | |
|------------|-------------|------------|----------------|------------------------|
| Xcvr 1 | REV 01 | 740-031980 | AQFORB3 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 153363A00333 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AN10KYE | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | APK04YM | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AQFOH44 | SFP+-10G-SR |
| FPC 8 | REV 38 | 750-031090 | CABF7313 | MPC Type 2 3D EQ |
| CPU | REV 08 | 711-030884 | CABE6727 | MPC PMB 2G |
| MIC 0 | REV 18 | 750-028380 | YK8253 | 3D 2x 10GE XFP |
| PIC 0 | | BUILTIN | BUILTIN | 1x 10GE XFP |
| Xcvr 0 | REV 03 | 740-014289 | AD1148M00TP | XFP-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1x 10GE XFP |
| QXM 0 | REV 06 | 711-028408 | CABC5614 | MPC QXM |
| QXM 1 | REV 06 | 711-028408 | CABC5550 | MPC QXM |
| FPC 9 | REV 39 | 750-044130 | ABCK1652 | MPC6E 3D |
| CPU | REV 09 | 711-045719 | ABCK1655 | RMPC PMB |
| MIC 0 | REV 09 | 750-049457 | ABCP1230 | 2X100GE CFP2 OTN |
| PIC 0 | | BUILTIN | BUILTIN | 2X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | 37300222WP0002 | CFP2-100G-LR4-D |
| Xcvr 1 | | NON-JNPR | FD46F001Y | CFP2-100G-SR10 |
| MIC 1 | REV 07 | 750-049457 | ABCV6662 | 2X100GE CFP2 OTN |
| PIC 1 | | BUILTIN | BUILTIN | 2X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | UQD0014 | CFP2-100G-LR4-D |
| Xcvr 1 | | NON-JNPR | J13J68335 | CFP2-100G-LR4-D |
| XLM 0 | REV 07.2.00 | 711-046638 | ABCK5491 | MPC6E XL |
| XLM 1 | REV 07.2.00 | 711-046638 | ABCK5475 | MPC6E XL |
| ADC 1 | REV 17 | 750-043596 | ABCG9023 | Adapter Card |
| ADC 2 | REV 01 | 750-043596 | ZV4079 | Adapter Card |
| ADC 6 | REV 17 | 750-043596 | ABCG8866 | Adapter Card |
| ADC 8 | REV 17 | 750-043596 | ABCA8993 | Adapter Card |
| Fan Tray 0 | REV 06 | 760-046960 | ACAY0354 | 172mm FanTray - 6 Fans |
| Fan Tray 1 | REV 06 | 760-046960 | ACAY0831 | 172mm FanTray - 6 Fans |
| Fan Tray 2 | REV 06 | 760-046960 | ACAY0892 | 172mm FanTray - 6 Fans |
| Fan Tray 3 | REV 06 | 760-046960 | ACAY0839 | 172mm FanTray - 6 Fans |

show chassis hardware extensive (MX2010 Routers with MPC6E and OTN MIC)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Jedec Code:   0x7fb0          EEPROM Version: 0x02
S/N:          JN11C9AFEAFK
Assembly ID:  0x0557          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MX2010
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 57 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 4a 4e 31 31 43 39 41 46 45 41 46 4b 00 00 00 00
Address 0x30: 00 00 00 ff 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 35      750-044636  ABAB9188      Lower Backplane
Jedec Code:   0x7fb0          EEPROM Version: 0x02
P/N:         750-044636      S/N:          ABAB9188

```

```

Assembly ID: 0x0b66      Assembly Version: 01.35
Date:          06-21-2013  Assembly Flags: 0x00
Version:       REV 35      CLEI Code:      IPMU810ARA
ID: Lower Backplane      FRU Model Number: CHAS-BP-MX2010-S
Board Information Record:
  Address 0x00: ad 01 08 00 3c 8a b0 38 68 00 ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0b 66 01 23 52 45 56 20 33 35 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 34 34 36 33 36 00 00
  Address 0x20: 53 2f 4e 20 41 42 41 42 39 31 38 38 00 15 06 07
  Address 0x30: dd ff ff ff ad 01 08 00 3c 8a b0 38 68 00 ff ff
  Address 0x40: ff ff ff ff 01 49 50 4d 55 38 31 30 41 52 41 43
  Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 31 30 2d 53 00
  Address 0x60: 00 00 00 00 00 00 30 36 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff f8 ff ff ff ff ff ff ff ff ff ff ff ff
Midplane 1      REV 02      711-044557      ABAB8729      Upper Backplane
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N: 711-044557      S/N: ABAB8729
Assembly ID: 0x0b65      Assembly Version: 01.02
Date: 03-21-2013      Assembly Flags: 0x00
Version: REV 02
ID: Upper Backplane
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0b 65 01 02 52 45 56 20 30 32 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 34 34 35 35 37 00 00
  Address 0x20: 53 2f 4e 20 41 42 41 42 38 37 32 39 00 15 03 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  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
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
PMP      REV 04      711-032426      ACAJ2432      Power Midplane
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N: 711-032426      S/N: ACAJ2432
Assembly ID: 0x045d      Assembly Version: 01.04
Date: 03-28-2013      Assembly Flags: 0x00
Version: REV 04
ID: Power Midplane
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 04 5d 01 04 52 45 56 20 30 34 00 00
  Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 36 00 00
  Address 0x20: 53 2f 4e 20 41 43 41 4a 32 34 33 32 00 1c 03 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 00
  Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board      REV 09      760-044634      ABCA4314      Front Panel Display
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 760-044634      S/N: ABCA4314
Assembly ID: 0x0b64      Assembly Version: 01.09
Date: 03-28-2013      Assembly Flags: 0x00
Version: REV 09      CLEI Code:      IPMYA4EJRA
ID: Front Panel Display      FRU Model Number: MX2010-CRAFT-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:

```

```

Address 0x00: 7f b0 02 ff 0b 64 01 09 52 45 56 20 30 39 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 34 34 36 33 34 00 00
Address 0x20: 53 2f 4e 20 41 42 43 41 34 33 31 34 00 1c 03 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 59 41 34 45 4a 52 41 4d
Address 0x50: 58 32 30 31 30 2d 43 52 41 46 54 2d 53 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 0          REV 01  740-050037  1EDB321015C      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB321015C
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-28-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 31 30 31 35 43 00 00 1c 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1          REV 01  740-050037  1EDB321015J      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB321015J
Assembly ID:   0x0478          Assembly Version: 01.01
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
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB32101HD
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-30-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 32 31 30 31 48 44 00 00 1e 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 01  740-050037  1EDB321015F      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB321015F
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-28-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 32 31 30 31 35 46 00 00 1c 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff 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  1EDB321015B      DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB321015B
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-28-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 32 31 30 31 35 42 00 00 1c 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PDM 0          REV 03  740-045234  1EFA3220433      DC Power Dist Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-045234      S/N:              1EFA3220433
Assembly ID:   0x047b          Assembly Version:  01.03

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```

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
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 00 31 30 33 ff ff ff ff ff ff
Address 0x70: ff ff ff 1d 00 00 00 00 00 00 00 00 00 00 00 00
PDM 1          REV 03      740-045234      1EFA3220425      DC Power Dist Module
Jedec Code:    0x7fb0      EEPROM Version:    0x02
P/N:           740-045234      S/N:              1EFA3220425
Assembly ID:   0x047b        Assembly Version:  01.03
Date:          05-30-2013      Assembly Flags:    0x00
Version:       REV 03          CLEI Code:         IPUPAJSKAA
ID: DC Power Dist Module      FRU Model Number:  MX2000-PDM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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 |

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| Module | | | | |
| PSM 15 | REV 01 | 740-045050 | 1E02224005M | DC 52V Power Supply |
| Module | | | | |
| PSM 16 | REV 01 | 740-045050 | 1E02224006S | DC 52V Power Supply |
| Module | | | | |
| PSM 17 | REV 01 | 740-045050 | 1E02224005Z | DC 52V Power Supply |
| Module | | | | |
| PDM 0 | REV 01 | 740-045234 | 1E012150033 | DC Power Dist Module |
| PDM 1 | REV 01 | 740-045234 | 1E012150027 | DC Power Dist Module |
| PDM 2 | REV 01 | 740-045234 | 1E012150028 | DC Power Dist Module |
| PDM 3 | REV 01 | 740-045234 | 1E012150045 | DC Power Dist Module |
| Routing Engine 0 | REV 02 | 740-041821 | 9009089704 | RE-S-1800x4 |
| Routing Engine 1 | REV 02 | 740-041821 | 9009094138 | RE-S-1800x4 |
| CB 0 | REV 14 | 750-040257 | CAAF8430 | Control Board |
| CB 1 | REV 08 | 750-040257 | CAAB3482 | Control Board |
| SPMB 0 | REV 01 | 711-041855 | ZS2290 | PMB Board |
| SPMB 1 | REV 02 | 711-041855 | CAA6141 | PMB Board |
| SFB 0 | REV 03 | 711-044466 | ABBV6789 | Switch Fabric Board |
| SFB 1 | REV 05 | 711-044466 | ABBX5666 | Switch Fabric Board |
| SFB 2 | REV 05 | 711-044466 | ABBX5678 | Switch Fabric Board |
| SFB 3 | REV 05 | 711-044466 | ABBX5687 | Switch Fabric Board |
| SFB 4 | REV 05 | 711-044466 | ABBX5609 | Switch Fabric Board |
| SFB 5 | REV 05 | 711-044466 | ABBX5675 | Switch Fabric Board |
| SFB 6 | REV 03 | 711-044466 | ABBV6805 | Switch Fabric Board |
| SFB 7 | REV 05 | 711-044466 | ABBX5701 | Switch Fabric Board |
| FPC 0 | REV 30 | 750-028467 | ABBN0284 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0507 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E00990 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E04357 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01327 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E04375 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02760 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02904 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E03963 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E00756 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04418 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01077 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01128 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01253 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E01140 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11F01626 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01075 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E01177 | SFP+-10G-USR |
| FPC 1 | REV 30 | 750-028467 | ABBN0208 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBJ1084 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04745 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11F01570 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E04388 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01439 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04739 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11F01869 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01675 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01901 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01346 | SFP+-10G-USR |

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| Xcvr 1 | REV 01 | 740-030658 | B11F01288 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01824 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E04312 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02811 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E03847 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01495 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01265 | SFP+-10G-USR |
| FPC 2 | REV 30 | 750-028467 | ZM5111 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ZP6607 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LJA | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MFZ | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NKL | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80KF4 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80FBJ | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MM2 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LJV | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NXV | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80N1H | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NLS | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80FL5 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NL9 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NG2 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80KDU | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80MG1 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80MM0 | SFP+-10G-SR |
| FPC 3 | REV 30 | 750-028467 | ABBN0302 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0495 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01581 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01176 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01251 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E02752 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E00786 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01020 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01023 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E02819 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02812 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11D04437 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01279 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01333 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E00978 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01018 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01784 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NKP | SFP+-10G-SR |
| FPC 4 | REV 30 | 750-028467 | ABBN0308 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN1095 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04305 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01147 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01195 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01743 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01892 | SFP+-10G-USR |

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| Xcvr 1 | REV 01 | 740-030658 | B11E02880 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E00725 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E01057 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02816 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11C04501 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E02764 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E00789 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01250 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02847 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E00787 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E03803 | SFP+-10G-USR |
| FPC 5 | REV 30 | 750-028467 | ABBN0316 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABB11082 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00523 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K01848 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01865 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K00540 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00422 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K00428 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K00423 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K01855 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K01847 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K00526 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K00529 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K00525 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00425 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K00530 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01851 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K00528 | SFP+-10G-SR |
| FPC 6 | REV 32 | 750-028467 | ABBN6832 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6534 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80MB4 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80FQ6 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80N1F | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NLQ | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80KDR | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80FGJ | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80N5G | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80KD8 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LET | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80N1X | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NRF | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NL2 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80N3D | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MRB | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LEQ | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LER | SFP+-10G-SR |
| FPC 7 | REV 32 | 750-028467 | ABBN6811 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN7288 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NK8 | SFP+-10G-SR |

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| Xcvr 1 | REV 01 | 740-031980 | AK80LJG | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LBU | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80N21 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LEU | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NLM | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NL6 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LES | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LEN | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80ME0 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LMG | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80MM1 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80MG7 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80KF9 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NRQ | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NLE | SFP+-10G-SR |
| FPC 8 | REV 23 | 750-028467 | YN2977 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | YP1856 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 183363A00875 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00851 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 183363A00772 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A00882 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 183363A00735 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00169 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 183363A00726 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A00077 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 183363A00168 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00676 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 183363A00732 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A00091 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 183363A00725 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00642 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 183363A00871 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A00853 | SFP+-10G-SR |
| FPC 9 | REV 32 | 750-028467 | ABBN6798 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6556 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 9ZDZ06A00055 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00239 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AD0915E003K | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AD0915E003A | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80MRC | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NL5 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NKN | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80N3U | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80N1T | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJ808DJ | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NG4 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80FND | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80FKQ | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NLT | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NKR | SFP+-10G-SR |

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| Xcvr 3 | REV 01 | 740-031980 | AK80LKM | SFP+-10G-SR |
| FPC 10 | REV 32 | 750-028467 | ABBN6813 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6542 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NA3 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NLF | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80MRH | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80KE4 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 973152A00030 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80L9H | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80ME8 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NLR | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NG1 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MCA | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LFC | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LEM | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80N9X | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80LAC | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LF2 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80N8T | SFP+-10G-SR |
| FPC 11 | REV 30 | 750-028467 | ABBN0281 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0526 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01326 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E03973 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E00950 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E00674 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E00775 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E04461 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01074 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E02821 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04501 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E00757 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01623 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E01022 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04359 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02751 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E02736 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E01178 | SFP+-10G-USR |
| FPC 12 | REV 32 | 750-028467 | ABBN6796 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN7259 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K01856 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K01853 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01863 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02863 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02668 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02881 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A01671 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02627 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02725 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02692 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02730 | SFP+-10G-SR |

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|--------|--------|------------|--------------|-------------------|
| Xcvr 3 | REV 01 | 740-031980 | 163363A03081 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02736 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02568 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02747 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02579 | SFP+-10G-SR |
| FPC 13 | REV 30 | 750-028467 | ABBN0270 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBJ0966 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NL1 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NXW | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80KD2 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80FMD | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NKQ | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MGH | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80N38 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NL7 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LEL | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NKD | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80KCY | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LHK | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80M5J | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MBE | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NLG | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LFH | SFP+-10G-SR |
| FPC 14 | REV 32 | 750-028467 | ABBN6790 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6515 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LZM | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MCC | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80KCM | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80KE0 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021310 | C10F99155 | SFP+-10G-LRM |
| Xcvr 1 | REV 01 | 740-021310 | C10F99049 | SFP+-10G-LRM |
| Xcvr 2 | REV 01 | 740-021310 | C10F99128 | SFP+-10G-LRM |
| Xcvr 3 | REV 01 | 740-021310 | C10F99169 | SFP+-10G-LRM |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LF3 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02597 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A03060 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03057 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LEX | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80FEU | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80FNM | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AJQQQ5G | SFP+-10G-SR |
| FPC 15 | REV 32 | 750-028467 | ABBN6791 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN7289 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00424 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K01849 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01862 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K01852 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00427 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K00430 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01854 | SFP+-10G-SR |

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|--------|--------|------------|--------------|-------------------|
| Xcvr 3 | REV 01 | 740-031980 | B11K00426 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00429 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K01864 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01850 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K00522 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E01144 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E00985 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E00796 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-031980 | B11K01866 | SFP+-10G-SR |
| FPC 16 | REV 30 | 750-028467 | ABBM4592 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0465 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01435 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01052 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01328 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01254 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02738 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02881 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01624 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E00889 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02883 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E00681 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E04306 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E02813 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01801 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02753 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01156 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E04324 | SFP+-10G-USR |
| FPC 17 | REV 32 | 750-028467 | ABBN6810 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN7237 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02638 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02082 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A01674 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03058 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A03048 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02729 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02566 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02567 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02878 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02739 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A01959 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02660 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02731 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02588 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02673 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02654 | SFP+-10G-SR |
| FPC 18 | REV 30 | 750-028467 | ABBM4739 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0487 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02569 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02886 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A03082 | SFP+-10G-SR |

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| Xcvr 3 | REV 01 | 740-031980 | 133363A00297 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02726 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A03050 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02884 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03076 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02581 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02873 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02582 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03083 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031981 | UL70BU6 | SFP+-10G-LR |
| Xcvr 1 | REV 01 | 740-031981 | UL50QC6 | SFP+-10G-LR |
| Xcvr 2 | REV 01 | 740-031981 | UL708N6 | SFP+-10G-LR |
| Xcvr 3 | REV 01 | 740-031981 | UL603KK | SFP+-10G-LR |
| FPC 19 | REV 32 | 750-028467 | ABBN6827 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6508 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A01688 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A01724 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A01773 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02593 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A03061 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A03056 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02669 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03070 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02572 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02697 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02585 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03052 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02591 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02649 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02577 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02698 | SFP+-10G-SR |
| ADC 0 | REV 13 | 750-043596 | ABBX5561 | Adapter Card |
| ADC 1 | REV 13 | 750-043596 | ABBX5546 | Adapter Card |
| ADC 2 | REV 13 | 750-043596 | ABBX5535 | Adapter Card |
| ADC 3 | REV 13 | 750-043596 | ABBX5552 | Adapter Card |
| ADC 4 | REV 13 | 750-043596 | ABBX5581 | Adapter Card |
| ADC 5 | REV 13 | 750-043596 | ABBX5545 | Adapter Card |
| ADC 6 | REV 13 | 750-043596 | ABBX5554 | Adapter Card |
| ADC 7 | REV 07 | 750-043596 | ABBV7194 | Adapter Card |
| ADC 8 | REV 07 | 750-043596 | ABBV7251 | Adapter Card |
| ADC 9 | REV 07 | 750-043596 | ABBV7202 | Adapter Card |
| ADC 10 | REV 13 | 750-043596 | ABBX5538 | Adapter Card |
| ADC 11 | REV 13 | 750-043596 | ABBX5566 | Adapter Card |
| ADC 12 | REV 13 | 750-043596 | ABBX5542 | Adapter Card |
| ADC 13 | REV 13 | 750-043596 | ABBX5539 | Adapter Card |
| ADC 14 | REV 13 | 750-043596 | ABBX5555 | Adapter Card |
| ADC 15 | REV 13 | 750-043596 | ABBX5557 | Adapter Card |
| ADC 16 | REV 13 | 750-043596 | ABBX5536 | Adapter Card |
| ADC 17 | REV 13 | 750-043596 | ABBX5559 | Adapter Card |
| ADC 18 | REV 13 | 750-043596 | ABBX5537 | Adapter Card |
| ADC 19 | REV 11 | 750-043596 | ABBW5685 | Adapter Card |
| Fan Tray 0 | REV 2A | 760-046960 | ACAY0030 | 172mm FanTray - 6 Fans |
| Fan Tray 1 | REV 2A | 760-046960 | ACAY0039 | 172mm FanTray - 6 Fans |

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|------------|--------|------------|----------|------------------------|
| Fan Tray 2 | REV 2A | 760-046960 | ACAY0033 | 172mm FanTray - 6 Fans |
| Fan Tray 3 | REV 2A | 760-046960 | ACAY0062 | 172mm FanTray - 6 Fans |

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Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN11E2227AFJ  MX2020
Midplane      REV 27   750-040240   ABAB9384      Lower Power Midplane
Midplane 1    REV 04   711-032386   ABAB9386      Upper Backplane
PMP 1         REV 05   711-032428   ACAJ1821      Upper Power Midplane
PMP 0         REV 04   711-032426   ACAJ1524      Lower Power Midplane
FPM Board     REV 06   760-040242   ABBT8837      Front Panel Display
PSM 0         REV 01   740-045050   1E02224006G   DC 52V Power Supply
Module
PSM 1         REV 01   740-045050   1E022240053   DC 52V Power Supply
Module
PSM 2         REV 01   740-045050   1E02224004K   DC 52V Power Supply
Module
PSM 3         REV 01   740-045050   1E022240056   DC 52V Power Supply
Module
PSM 4         REV 01   740-045050   1E022240054   DC 52V Power Supply
Module
PSM 5         REV 01   740-045050   1E02224005H   DC 52V Power Supply
Module
PSM 6         REV 01   740-045050   1E02224006S   DC 52V Power Supply
Module
PSM 7         REV 01   740-045050   1E02224005M   DC 52V Power Supply
Module
PSM 8         REV 01   740-045050   1E022240062   DC 52V Power Supply
Module
PSM 9         REV 03   740-045050   1EDB2350095   DC 52V Power Supply
Module
PSM 10        REV 03   740-045050   1EDB235009L   DC 52V Power Supply
Module
PSM 11        REV 03   740-045050   1EDB2350092   DC 52V Power Supply
Module
PSM 12        REV 03   740-045050   1EDB23500AT   DC 52V Power Supply
Module
PSM 13        REV 03   740-045050   1EDB2350094   DC 52V Power Supply
Module
PSM 15        REV 03   740-045050   1EDB235008X   DC 52V Power Supply
Module
PDM 0         REV 01   740-045234   1E012150033   DC Power Dist Module
PDM 1         REV 01   740-045234   1E012150027   DC Power Dist Module
PDM 2         REV 01   740-045234   1E262250072   DC Power Dist Module
Routing Engine 0 REV 02   740-041821   9009094138     RE-S-1800x4
  ad0    3998 MB  Virtium - TuffDisk VCF3 20110825A021D0000064 Compact Flash
  ad1    30533 MB UGB94ARF32H0S3-KC  UNIGEN-499551-000347 Disk 1
  usb0 (addr 1) EHCI root hub 0    Intel    uhub0
  usb0 (addr 2) product 0x0020 32 vendor 0x8087    uhub1
  DIMM 0    SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 1    SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 2    SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
  DIMM 3    SGU04G72H1BD2SA-BB DIE REV-52 PCB REV-54 MFR ID-ce80
Routing Engine 1 REV 02   740-041821   9009089709     RE-S-1800x4
  ad0    3831 MB  UGB30SFA4000T1    SFA4000T1 00000113 Compact Flash
  ad1    30533 MB UGB94ARF32H0S3-KC  UNIGEN-478612-001044 Disk 1
CB 0         REV 08   750-040257   CAAB3482      Control Board
CB 1         REV 04   750-040257   ZT2864        Control Board

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|--------|--------|------------|-----------|---------------------|
| SPMB 0 | REV 02 | 711-041855 | CAAA6141 | PMB Board |
| SPMB 1 | REV 01 | 711-041855 | ZS2275 | PMB Board |
| SFB 0 | REV 05 | 711-044466 | ABBT2161 | Switch Fabric Board |
| SFB 1 | REV 05 | 711-044466 | ABBT2159 | Switch Fabric Board |
| SFB 2 | REV 05 | 711-044466 | ABBX3718 | Switch Fabric Board |
| SFB 3 | REV 05 | 711-044466 | ABBT2152 | Switch Fabric Board |
| SFB 4 | REV 05 | 711-044466 | ABBT2160 | Switch Fabric Board |
| SFB 5 | REV 05 | 711-044466 | ABBT2145 | Switch Fabric Board |
| SFB 6 | REV 05 | 711-044466 | ABBT2150 | Switch Fabric Board |
| SFB 7 | REV 05 | 711-044466 | ABBT2163 | Switch Fabric Board |
| FPC 0 | REV 30 | 750-028467 | ABBN0284 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0507 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E00990 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E04357 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01327 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E04375 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02760 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02904 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E03963 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E00756 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04418 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01077 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01128 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01253 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E01140 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11F01626 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01075 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E01177 | SFP+-10G-USR |
| FPC 1 | REV 30 | 750-028467 | ABBN0308 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBJ1095 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04305 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01147 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01195 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01743 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01892 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02880 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E00725 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E01057 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02816 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11C04501 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E02764 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E00789 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01250 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02847 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E00787 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E03803 | SFP+-10G-USR |
| FPC 2 | REV 30 | 750-028467 | ABBN0316 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBJ1082 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00523 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K01848 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01865 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11K00540 | SFP+-10G-SR |

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| PIC 1 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00422 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | B11K00428 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | B11K00423 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | B11K01855 | SFP+-10G-SR | |
| PIC 2 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K01847 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | B11K00526 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | B11K00529 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | B11K00525 | SFP+-10G-SR | |
| PIC 3 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00425 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | B11K00530 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | B11K01851 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | B11K00528 | SFP+-10G-SR | |
| FPC 3 | REV 32 | 750-028467 | ABBN6832 | MPC 3D 16x 10GE | |
| CPU | REV 10 | 711-029089 | ABBN6534 | AMPC PMB | |
| PIC 0 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80MB4 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | AK80FQ6 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | AK80N1F | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | AK80NLQ | SFP+-10G-SR | |
| PIC 1 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80KDR | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | AK80FGJ | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | AK80N5G | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | AK80KD8 | SFP+-10G-SR | |
| PIC 2 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LET | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | AK80N1X | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | AK80NRF | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | AK80NL2 | SFP+-10G-SR | |
| PIC 3 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80N3D | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | AK80MRB | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | AK80LEQ | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | AK80LER | SFP+-10G-SR | |
| FPC 4 | REV 32 | 750-028467 | ABBN6811 | MPC 3D 16x 10GE | |
| CPU | REV 10 | 711-029089 | ABBN7288 | AMPC PMB | |
| PIC 0 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NK8 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | AK80LJG | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | AK80LBU | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | AK80N21 | SFP+-10G-SR | |
| PIC 1 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LEU | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | AK80NLM | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | AK80NL6 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | AK80LES | SFP+-10G-SR | |
| PIC 2 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LEN | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | AK80ME0 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | AK80LMG | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | AK80MM1 | SFP+-10G-SR | |
| PIC 3 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80MG7 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | AK80KF9 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | AK80NRQ | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | AK80NLE | SFP+-10G-SR | |
| FPC 5 | REV 32 | 750-028467 | ABBN6791 | MPC 3D 16x 10GE | |
| CPU | REV 10 | 711-029089 | ABBN7289 | AMPC PMB | |

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| PIC 0 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00424 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | B11K01849 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | B11K01862 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | B11K01852 | SFP+-10G-SR | |
| PIC 1 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031980 | B11K00427 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | B11K00430 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | B11K01854 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | B11K00426 | SFP+-10G-SR | |
| PIC 2 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K00429 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | B11K01864 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | B11K01850 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | B11K00522 | SFP+-10G-SR | |
| PIC 3 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E01144 | SFP+-10G-USR | |
| Xcvr 1 | REV 01 | 740-030658 | B11E00985 | SFP+-10G-USR | |
| Xcvr 2 | REV 01 | 740-030658 | B11E00796 | SFP+-10G-USR | |
| Xcvr 3 | REV 01 | 740-031980 | B11K01866 | SFP+-10G-SR | |
| FPC 6 | REV 30 | 750-028467 | ABBM4592 | MPC 3D 16x 10GE | |
| CPU | REV 10 | 711-029089 | ABBN0465 | AMPC PMB | |
| PIC 0 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01435 | SFP+-10G-USR | |
| Xcvr 1 | REV 01 | 740-030658 | B11E01052 | SFP+-10G-USR | |
| Xcvr 2 | REV 01 | 740-030658 | B11F01328 | SFP+-10G-USR | |
| Xcvr 3 | REV 01 | 740-030658 | B11F01254 | SFP+-10G-USR | |
| PIC 1 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02738 | SFP+-10G-USR | |
| Xcvr 1 | REV 01 | 740-030658 | B11E02881 | SFP+-10G-USR | |
| Xcvr 2 | REV 01 | 740-030658 | B11F01624 | SFP+-10G-USR | |
| Xcvr 3 | REV 01 | 740-030658 | B11E00889 | SFP+-10G-USR | |
| PIC 2 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02883 | SFP+-10G-USR | |
| Xcvr 1 | REV 01 | 740-030658 | B11E00681 | SFP+-10G-USR | |
| Xcvr 2 | REV 01 | 740-030658 | B11E04306 | SFP+-10G-USR | |
| Xcvr 3 | REV 01 | 740-030658 | B11E02813 | SFP+-10G-USR | |
| PIC 3 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01801 | SFP+-10G-USR | |
| Xcvr 1 | REV 01 | 740-030658 | B11E02753 | SFP+-10G-USR | |
| Xcvr 2 | REV 01 | 740-030658 | B11E01156 | SFP+-10G-USR | |
| Xcvr 3 | REV 01 | 740-030658 | B11E04324 | SFP+-10G-USR | |
| FPC 7 | REV 32 | 750-028467 | ABBN6810 | MPC 3D 16x 10GE | |
| CPU | REV 10 | 711-029089 | ABBN7237 | AMPC PMB | |
| PIC 0 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A03058 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02082 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | 163363A01674 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02638 | SFP+-10G-SR | |
| PIC 1 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A03048 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02729 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02566 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02567 | SFP+-10G-SR | |
| PIC 2 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02878 | SFP+-10G-SR | |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02739 | SFP+-10G-SR | |
| Xcvr 2 | REV 01 | 740-031980 | 163363A01959 | SFP+-10G-SR | |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02660 | SFP+-10G-SR | |
| PIC 3 | | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02731 | SFP+-10G-SR | |

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| Xcvr 1 | REV 01 | 740-031980 | 163363A02588 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02673 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02654 | SFP+-10G-SR |
| FPC 8 | REV 30 | 750-028467 | ABBM4739 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0487 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02569 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02886 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A03082 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 133363A00297 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02726 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A03050 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02884 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03076 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02581 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02873 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02582 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03083 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031981 | UL70BU6 | SFP+-10G-LR |
| Xcvr 1 | REV 01 | 740-031981 | UL50QC6 | SFP+-10G-LR |
| Xcvr 2 | REV 01 | 740-031981 | UL708N6 | SFP+-10G-LR |
| Xcvr 3 | REV 01 | 740-031981 | UL603KK | SFP+-10G-LR |
| FPC 9 | REV 32 | 750-028467 | ABBN6827 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6508 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A01688 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A01724 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A01773 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02593 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A03061 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A03056 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02669 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03070 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02572 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02697 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02585 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03052 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02591 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02649 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02577 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02698 | SFP+-10G-SR |
| FPC 10 | REV 30 | 750-028467 | ABBN0302 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0495 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01581 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01176 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01251 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E02752 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E00786 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01020 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01023 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E02819 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02812 | SFP+-10G-USR |

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|--------|--------|------------|--------------|-------------------|
| Xcvr 1 | REV 01 | 740-030658 | B11D04437 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01279 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01333 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E00978 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E01018 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01784 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NKP | SFP+-10G-SR |
| FPC 11 | REV 32 | 750-028467 | ABBN6790 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6515 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LZM | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MCC | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80KCM | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80KE0 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021310 | C10F99155 | SFP+-10G-LRM |
| Xcvr 1 | REV 01 | 740-021310 | C10F99049 | SFP+-10G-LRM |
| Xcvr 2 | REV 01 | 740-021310 | C10F99128 | SFP+-10G-LRM |
| Xcvr 3 | REV 01 | 740-021310 | C10F99169 | SFP+-10G-LRM |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LF3 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02597 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A03060 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03057 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LEX | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80FEU | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80FNM | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AJQQQ5G | SFP+-10G-SR |
| FPC 12 | REV 30 | 750-028467 | ZM5111 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ZP6607 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LJA | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MFZ | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NKL | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80KF4 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80FBJ | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MM2 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LJV | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NXV | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80N1H | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NLS | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80FL5 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NL9 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NG2 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80KDU | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80MG1 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80MM0 | SFP+-10G-SR |
| FPC 13 | REV 30 | 750-028467 | ABBN0208 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBJ1084 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04745 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11F01570 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E04388 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01439 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04739 | SFP+-10G-USR |

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|--------|--------|------------|--------------|-------------------|
| Xcvr 1 | REV 01 | 740-030658 | B11F01869 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01675 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01901 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01346 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11F01288 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01824 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E04312 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E02811 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E03847 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01495 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11F01265 | SFP+-10G-USR |
| FPC 14 | REV 23 | 750-028467 | YN2977 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | YP1856 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 183363A00875 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00851 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 183363A00772 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A00882 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 183363A00735 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00169 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 183363A00726 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A00077 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 183363A00168 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00676 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 183363A00732 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A00091 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 183363A00725 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00642 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 183363A00871 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 183363A00853 | SFP+-10G-SR |
| FPC 15 | REV 32 | 750-028467 | ABBN6798 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6556 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 9ZD06A00055 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 183363A00239 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AD0915E003K | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AD0915E003A | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80MRC | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NL5 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NKN | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80N3U | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80N1T | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJ808DJ | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NG4 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80FND | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80FKQ | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NLT | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NKR | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LKM | SFP+-10G-SR |
| FPC 16 | REV 30 | 750-028467 | ABBN0270 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBJ0966 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NL1 | SFP+-10G-SR |

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|--------|--------|------------|--------------|-------------------|
| Xcvr 1 | REV 01 | 740-031980 | AK80NXW | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80KD2 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80FMD | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NKQ | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MGH | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80N38 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NL7 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80M5J | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NKD | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80KCY | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LHK | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LEL | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MBE | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80NLG | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LFH | SFP+-10G-SR |
| FPC 17 | REV 32 | 750-028467 | ABBN6796 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN7259 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | B11K01856 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11K01853 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11K01863 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02863 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02668 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02881 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A01671 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02627 | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02725 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02692 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02730 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A03081 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 163363A02736 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 163363A02568 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | 163363A02747 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | 163363A02579 | SFP+-10G-SR |
| FPC 18 | REV 30 | 750-028467 | ABBN0281 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBN0526 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11F01326 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E03973 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E00950 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E00674 | SFP+-10G-USR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E00775 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E04461 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E01074 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E02821 | SFP+-10G-USR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04501 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E00757 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11F01623 | SFP+-10G-USR |
| Xcvr 3 | REV 01 | 740-030658 | B11E01022 | SFP+-10G-USR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-030658 | B11E04359 | SFP+-10G-USR |
| Xcvr 1 | REV 01 | 740-030658 | B11E02751 | SFP+-10G-USR |
| Xcvr 2 | REV 01 | 740-030658 | B11E02736 | SFP+-10G-USR |

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|------------|--------|------------|--------------|------------------------|
| Xcvr 3 | REV 01 | 740-030658 | B11E01178 | SFP+-10G-USR |
| FPC 19 | REV 32 | 750-028467 | ABBN6813 | MPC 3D 16x 10GE |
| CPU | REV 10 | 711-029089 | ABBK6542 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NA3 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80NLF | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80MRH | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80KE4 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | 973152A00030 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80L9H | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80ME8 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80NLR | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80NG1 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80MCA | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LFC | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80LEM | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80N9X | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AK80LAC | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80LF2 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AK80N8T | SFP+-10G-SR |
| ADC 0 | REV 13 | 750-043596 | ABBX5561 | Adapter Card |
| ADC 1 | REV 13 | 750-043596 | ABBX5546 | Adapter Card |
| ADC 2 | REV 13 | 750-043596 | ABBX5535 | Adapter Card |
| ADC 3 | REV 13 | 750-043596 | ABBX5552 | Adapter Card |
| ADC 4 | REV 13 | 750-043596 | ABBX5581 | Adapter Card |
| ADC 5 | REV 13 | 750-043596 | ABBX5545 | Adapter Card |
| ADC 6 | REV 13 | 750-043596 | ABBX5554 | Adapter Card |
| ADC 7 | REV 07 | 750-043596 | ABBV7194 | Adapter Card |
| ADC 8 | REV 07 | 750-043596 | ABBV7251 | Adapter Card |
| ADC 9 | REV 07 | 750-043596 | ABBV7202 | Adapter Card |
| ADC 10 | REV 13 | 750-043596 | ABBX5579 | Adapter Card |
| ADC 11 | REV 13 | 750-043596 | ABBX5548 | Adapter Card |
| ADC 12 | REV 13 | 750-043596 | ABBX5575 | Adapter Card |
| ADC 13 | REV 13 | 750-043596 | ABBX5539 | Adapter Card |
| ADC 14 | REV 13 | 750-043596 | ABBX5555 | Adapter Card |
| ADC 15 | REV 13 | 750-043596 | ABBX5557 | Adapter Card |
| ADC 16 | REV 13 | 750-043596 | ABBX5536 | Adapter Card |
| ADC 17 | REV 13 | 750-043596 | ABBX5559 | Adapter Card |
| ADC 18 | REV 13 | 750-043596 | ABBX5537 | Adapter Card |
| ADC 19 | REV 11 | 750-043596 | ABBW5685 | Adapter Card |
| Fan Tray 0 | REV 04 | 760-046960 | ACAY0090 | 172mm FanTray - 6 Fans |
| Fan Tray 1 | REV 04 | 760-046960 | ACAY0088 | 172mm FanTray - 6 Fans |
| Fan Tray 2 | REV 04 | 760-046960 | ACAY0089 | 172mm FanTray - 6 Fans |
| Fan Tray 3 | REV 04 | 760-046960 | ACAY0108 | 172mm FanTray - 6 Fans |

show chassis hardware models (MX2020 Router)

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Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 27   750-040240   ABAB9384      750-040240
FPM Board     REV 06   760-040242   ABBT8837      760-040242
PSM 0         REV 01   740-045050   1E02224006G   MX2000-PSM-HC-DC-S-A
PSM 1         REV 01   740-045050   1E022240053   MX2000-PSM-HC-DC-S-A
PSM 2         REV 01   740-045050   1E02224004K   MX2000-PSM-HC-DC-S-A
PSM 3         REV 01   740-045050   1E022240056   MX2000-PSM-HC-DC-S-A
PSM 4         REV 01   740-045050   1E022240054   MX2000-PSM-HC-DC-S-A
PSM 5         REV 01   740-045050   1E02224005H   MX2000-PSM-HC-DC-S-A

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|------------------|--------|------------|-------------|----------------------|
| PSM 6 | REV 01 | 740-045050 | 1E02224006S | MX2000-PSM-HC-DC-S-A |
| PSM 7 | REV 01 | 740-045050 | 1E02224005M | MX2000-PSM-HC-DC-S-A |
| PSM 8 | REV 01 | 740-045050 | 1E022240062 | MX2000-PSM-HC-DC-S-A |
| PSM 9 | REV 03 | 740-045050 | 1EDB2350095 | MX2000-PSM-DC-S-A |
| PSM 10 | REV 03 | 740-045050 | 1EDB235009L | MX2000-PSM-DC-S-A |
| PSM 11 | REV 03 | 740-045050 | 1EDB2350092 | MX2000-PSM-DC-S-A |
| PSM 12 | REV 03 | 740-045050 | 1EDB23500AT | MX2000-PSM-DC-S-A |
| PSM 13 | REV 03 | 740-045050 | 1EDB2350094 | MX2000-PSM-DC-S-A |
| PSM 15 | REV 03 | 740-045050 | 1EDB235008X | MX2000-PSM-DC-S-A |
| PDM 0 | REV 01 | 740-045234 | 1E012150033 | |
| PDM 1 | REV 01 | 740-045234 | 1E012150027 | |
| PDM 2 | REV 01 | 740-045234 | 1E262250072 | MX2000-PDM-DC-S-A |
| Routing Engine 0 | REV 02 | 740-041821 | 9009094138 | RE-S-1800X4-16G-S |
| Routing Engine 1 | REV 02 | 740-041821 | 9009089709 | RE-S-1800X4-16G-S |
| CB 0 | REV 08 | 750-040257 | CAAB3482 | 750-040257 |
| CB 1 | REV 04 | 750-040257 | ZT2864 | 750-040257 |
| SFB 0 | REV 05 | 711-044466 | ABBT2161 | MX2000-SFB-S |
| SFB 1 | REV 05 | 711-044466 | ABBT2159 | MX2000-SFB-S |
| SFB 2 | REV 05 | 711-044466 | ABBX3718 | MX2000-SFB-S |
| SFB 4 | REV 05 | 711-044466 | ABBT2160 | MX2000-SFB-S |
| SFB 5 | REV 05 | 711-044466 | ABBT2145 | MX2000-SFB-S |
| SFB 7 | REV 05 | 711-044466 | ABBT2163 | MX2000-SFB-S |
| FPC 0 | REV 30 | 750-028467 | ABBN0284 | MPC-3D-16XGE-SFPP |
| FPC 1 | REV 30 | 750-028467 | ABBN0308 | MPC-3D-16XGE-SFPP |
| FPC 2 | REV 30 | 750-028467 | ABBN0316 | MPC-3D-16XGE-SFPP |
| FPC 3 | REV 32 | 750-028467 | ABBN6832 | MPC-3D-16XGE-SFPP |
| FPC 4 | REV 32 | 750-028467 | ABBN6811 | MPC-3D-16XGE-SFPP |
| FPC 5 | REV 32 | 750-028467 | ABBN6791 | MPC-3D-16XGE-SFPP |
| FPC 6 | REV 30 | 750-028467 | ABBM4592 | MPC-3D-16XGE-SFPP |
| FPC 7 | REV 32 | 750-028467 | ABBN6810 | MPC-3D-16XGE-SFPP |
| FPC 8 | REV 30 | 750-028467 | ABBM4739 | MPC-3D-16XGE-SFPP |
| FPC 9 | REV 32 | 750-028467 | ABBN6827 | MPC-3D-16XGE-SFPP |
| FPC 10 | REV 30 | 750-028467 | ABBN0302 | MPC-3D-16XGE-SFPP |
| FPC 11 | REV 32 | 750-028467 | ABBN6790 | MPC-3D-16XGE-SFPP |
| FPC 12 | REV 30 | 750-028467 | ZM5111 | MPC-3D-16XGE-SFPP |
| FPC 13 | REV 30 | 750-028467 | ABBN0208 | MPC-3D-16XGE-SFPP |
| FPC 14 | REV 23 | 750-028467 | YN2977 | MPC-3D-16XGE-SFPP |
| FPC 15 | REV 32 | 750-028467 | ABBN6798 | MPC-3D-16XGE-SFPP |
| FPC 16 | REV 30 | 750-028467 | ABBN0270 | MPC-3D-16XGE-SFPP |
| FPC 17 | REV 32 | 750-028467 | ABBN6796 | MPC-3D-16XGE-SFPP |
| FPC 18 | REV 30 | 750-028467 | ABBN0281 | MPC-3D-16XGE-SFPP |
| FPC 19 | REV 32 | 750-028467 | ABBN6813 | MPC-3D-16XGE-SFPP |
| ADC 0 | REV 13 | 750-043596 | ABBX5561 | PROTO-ASSEMBLY |
| ADC 1 | REV 13 | 750-043596 | ABBX5546 | PROTO-ASSEMBLY |
| ADC 2 | REV 13 | 750-043596 | ABBX5535 | MX2000-LC-ADAPTER |
| ADC 3 | REV 13 | 750-043596 | ABBX5552 | MX2000-LC-ADAPTER |
| ADC 4 | REV 13 | 750-043596 | ABBX5581 | MX2000-LC-ADAPTER |
| ADC 5 | REV 13 | 750-043596 | ABBX5545 | PROTO-ASSEMBLY |
| ADC 6 | REV 13 | 750-043596 | ABBX5554 | PROTO-ASSEMBLY |
| ADC 7 | REV 07 | 750-043596 | ABBV7194 | MX2000-LC-ADAPTER |
| ADC 8 | REV 07 | 750-043596 | ABBV7251 | MX2000-LC-ADAPTER |
| ADC 9 | REV 07 | 750-043596 | ABBV7202 | MX2000-LC-ADAPTER |
| ADC 10 | REV 13 | 750-043596 | ABBX5579 | MX2000-LC-ADAPTER |
| ADC 12 | REV 13 | 750-043596 | ABBX5575 | MX2000-LC-ADAPTER |
| ADC 13 | REV 13 | 750-043596 | ABBX5539 | PROTO-ASSEMBLY |
| ADC 14 | REV 13 | 750-043596 | ABBX5555 | PROTO-ASSEMBLY |
| ADC 15 | REV 13 | 750-043596 | ABBX5557 | MX2000-LC-ADAPTER |
| ADC 16 | REV 13 | 750-043596 | ABBX5536 | PROTO-ASSEMBLY |
| ADC 17 | REV 13 | 750-043596 | ABBX5559 | PROTO-ASSEMBLY |
| ADC 18 | REV 13 | 750-043596 | ABBX5537 | PROTO-ASSEMBLY |
| ADC 19 | REV 11 | 750-043596 | ABBW5685 | PROTO-ASSEMBLY |

| | | | |
|------------|--------|------------|----------|
| Fan Tray 0 | REV 04 | 760-046960 | ACAY0090 |
| Fan Tray 1 | REV 04 | 760-046960 | ACAY0088 |
| Fan Tray 2 | REV 04 | 760-046960 | ACAY0089 |
| Fan Tray 3 | REV 04 | 760-046960 | ACAY0108 |

show chassis hardware clei-models (MX2020 Router)

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user@ host > show chassis hardware clei-models
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Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|------------|----------------------|
| Midplane | REV 27 | 750-040240 | PROTOXCLEI | 750-040240 |
| FPM Board | REV 06 | 760-040242 | PROTOXCLEI | 760-040242 |
| PSM 0 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 1 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 2 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 3 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 4 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 5 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 6 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 7 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 8 | REV 01 | 740-045050 | IPUPAJMCAA | MX2000-PSM-HC-DC-S-A |
| PSM 9 | REV 03 | 740-045050 | IPUPAJMCAA | MX2000-PSM-DC-S-A |
| PSM 10 | REV 03 | 740-045050 | IPUPAJMCAA | MX2000-PSM-DC-S-A |
| PSM 11 | REV 03 | 740-045050 | IPUPAJMCAA | MX2000-PSM-DC-S-A |
| PSM 12 | REV 03 | 740-045050 | IPUPAJMCAA | MX2000-PSM-DC-S-A |
| PSM 13 | REV 03 | 740-045050 | IPUPAJMCAA | MX2000-PSM-DC-S-A |
| PSM 15 | REV 03 | 740-045050 | IPUPAJMCAA | MX2000-PSM-DC-S-A |
| PDM 0 | REV 01 | 740-045234 | | |
| PDM 1 | REV 01 | 740-045234 | | |
| PDM 2 | REV 01 | 740-045234 | IPUPAJSKAA | MX2000-PDM-DC-S-A |
| Routing Engine 0 | REV 02 | 740-041821 | | RE-S-1800X4-16G-S |
| Routing Engine 1 | REV 02 | 740-041821 | | RE-S-1800X4-16G-S |
| CB 0 | REV 08 | 750-040257 | PROTOXCLEI | 750-040257 |
| CB 1 | REV 04 | 750-040257 | PROTOXCLEI | 750-040257 |
| SFB 0 | REV 05 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 1 | REV 05 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 2 | REV 05 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 4 | REV 05 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 5 | REV 05 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 7 | REV 05 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| FPC 0 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 1 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 2 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 3 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 4 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 5 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 6 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 7 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 8 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 9 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 10 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 11 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 12 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 13 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 14 | REV 23 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 15 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 16 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 17 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 18 | REV 30 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 19 | REV 32 | 750-028467 | | MPC-3D-16XGE-SFPP |
| ADC 0 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |

| | | | | |
|------------|--------|------------|------------|-------------------|
| ADC 1 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 2 | REV 13 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 3 | REV 13 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 4 | REV 13 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 5 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 6 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 7 | REV 07 | 750-043596 | PROTOXCLEI | MX2000-LC-ADAPTER |
| ADC 8 | REV 07 | 750-043596 | PROTOXCLEI | MX2000-LC-ADAPTER |
| ADC 9 | REV 07 | 750-043596 | PROTOXCLEI | MX2000-LC-ADAPTER |
| ADC 10 | REV 13 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 12 | REV 13 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 13 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 14 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 15 | REV 13 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 16 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 17 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 18 | REV 13 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 19 | REV 11 | 750-043596 | PROTOXCLEI | PROTO-ASSEMBLY |
| Fan Tray 0 | REV 04 | 760-046960 | | |
| Fan Tray 1 | REV 04 | 760-046960 | | |
| Fan Tray 2 | REV 04 | 760-046960 | | |
| Fan Tray 3 | REV 04 | 760-046960 | | |

show chassis hardware (MX2020 Router with MPC5EQ and MPC6E)

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user@host> show chassis hardware
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Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------|---------|-------------|---------------|----------------------|
| Chassis | | | JN120BADBAFJ | MX2020 |
| Midplane | REV 51 | 750-040240 | ABAB9243 | Lower Backplane |
| Midplane 1 | REV 04 | 711-032386 | ABAB9399 | Upper Backplane |
| PMP 1 | REV 05 | 711-032428 | ACAJ2541 | Upper Power Midplane |
| PMP 0 | REV 04 | 711-032426 | ACAJ2194 | Lower Power Midplane |
| FPM Board | REV 13 | 760-040242 | ABCA8835 | Front Panel Display |
| PSM 0 | REV 01 | 740-050037 | 1EDB32403L5 | DC 52V Power Supply |
| Module | | | | |
| PSM 1 | REV 01 | 740-050037 | 1EDB32403L3 | DC 52V Power Supply |
| Module | | | | |
| PSM 2 | REV 01 | 740-050037 | 1EDB32403KM | DC 52V Power Supply |
| Module | | | | |
| PSM 3 | REV 01 | 740-050037 | 1EDB3130079 | DC 52V Power Supply |
| Module | | | | |
| PSM 4 | REV 01 | 740-050037 | 1EDB3130077 | DC 52V Power Supply |
| Module | | | | |
| PSM 5 | REV 01 | 740-050037 | 1EDB3130020 | DC 52V Power Supply |
| Module | | | | |
| PSM 6 | REV 01 | 740-050037 | 1EDB313009S | DC 52V Power Supply |
| Module | | | | |
| PSM 7 | REV 01 | 740-050037 | 1EDB313008E | DC 52V Power Supply |
| Module | | | | |
| PSM 8 | REV 01 | 740-050037 | 1EDB3130063 | DC 52V Power Supply |
| Module | | | | |
| PSM 12 | REV 01 | 740-050037 | 1EDB3130026 | DC 52V Power Supply |
| Module | | | | |
| PSM 13 | REV 01 | 740-050037 | 1EDB3130074 | DC 52V Power Supply |
| Module | | | | |
| PSM 14 | REV 01 | 740-050037 | 1EDB313009D | DC 52V Power Supply |
| Module | | | | |
| PSM 15 | REV 01 | 740-050037 | 1EDB3130024 | DC 52V Power Supply |
| Module | | | | |
| PSM 16 | REV 01 | 740-050037 | 1EDB3130054 | DC 52V Power Supply |

| | | | | |
|------------------|--------|------------|--------------|------------------------|
| Module | | | | |
| PSM 17 | REV 01 | 740-050037 | 1EDB3130080 | DC 52V Power Supply |
| Module | | | | |
| PDM 0 | REV 03 | 740-045234 | 1EGA3170144 | DC Power Dist Module |
| PDM 1 | REV 03 | 740-045234 | 1EGA3170158 | DC Power Dist Module |
| PDM 2 | REV 03 | 740-045234 | 1EGA3170182 | DC Power Dist Module |
| PDM 3 | REV 03 | 740-045234 | 1EGA3170207 | DC Power Dist Module |
| Routing Engine 0 | REV 02 | 740-041821 | 9009112112 | RE-S-1800x4 |
| Routing Engine 1 | REV 02 | 740-041821 | 9009112087 | RE-S-1800x4 |
| CB 0 | REV 23 | 750-040257 | CABA2295 | Control Board |
| CB 1 | REV 23 | 750-040257 | CABE8379 | Control Board |
| SPMB 0 | REV 02 | 711-041855 | ABCE8851 | PMB Board |
| SPMB 1 | REV 02 | 711-041855 | ABCE8839 | PMB Board |
| SFB 0 | REV 06 | 711-044466 | ABCD5001 | Switch Fabric Board |
| SFB 1 | REV 06 | 711-044466 | ABCD5034 | Switch Fabric Board |
| SFB 2 | REV 06 | 711-044466 | ABCH3899 | Switch Fabric Board |
| SFB 3 | REV 06 | 711-044466 | ABCD5020 | Switch Fabric Board |
| SFB 4 | REV 06 | 711-044466 | ABCD4975 | Switch Fabric Board |
| SFB 5 | REV 06 | 711-044466 | ABCH3881 | Switch Fabric Board |
| SFB 6 | REV 06 | 711-044466 | ABCD5026 | Switch Fabric Board |
| SFB 7 | REV 06 | 711-044466 | ABCD5032 | Switch Fabric Board |
| FPC 0 | REV 39 | 750-045715 | CACD1902 | MPC5E 3D Q 24XGE+6XLGE |
| CPU | REV 09 | 711-045719 | CACB1933 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-031980 | B11F00361 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | 19T511101854 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | 19T511100377 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | ANT0878 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | 19T511100398 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQ4363J | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | 19T511101377 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | ANT072M | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | AG90C7N | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | AM30M09 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | B10E01016 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-031980 | B10L04151 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | 19T511101379 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ5036J | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AG90C4M | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | 19T511101104 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | AQ502ZM | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AN10KY2 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQ43G41 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-021308 | AQ41F04 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | AMS16N3 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-021308 | AMH04Y3 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-021308 | ANA093E | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| PIC 3 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| WAN MEZZ | REV 09 | 750-049136 | CABN0410 | MPC5E 24XGE OTN Mezz |
| FPC 1 | REV 11 | 750-045372 | CABK8112 | MPCE Type 3 3D |
| CPU | REV 08 | 711-035209 | CABJ6621 | HMPC PMB 2G |
| MIC 0 | REV 07 | 750-033307 | CAAZ2897 | 10X10GE SFPP |
| PIC 0 | | BUILTIN | BUILTIN | 10X10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | AQ501VK | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ501YC | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ43HJF | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ43H8D | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | 19T511100370 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | 153363A00763 | SFP+-10G-SR |

| | | | | |
|--------|--------|------------|-----------|----------------------|
| Xcvr 6 | REV 01 | 740-021308 | APH2LXB | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | AMCOLVV | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | B11F00230 | SFP+-10G-SR |
| MIC 1 | REV 14 | 750-033196 | CAAP1390 | 1X100GE CXP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CXP |
| Xcvr 0 | REV 01 | 740-032166 | XB11F000M | CFP2-100G-SR10 |
| FPC 2 | REV 17 | 750-037355 | CAAS5826 | MPC4E 3D 2CGE+8XGE |
| CPU | REV 08 | 711-035209 | CAAR3986 | HMPC PMB 2G |
| PIC 0 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-021308 | T09F43722 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | ALP0KXF | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ502FG | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ502T7 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-035329 | X12J00571 | CFP-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 4x10GE SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AJ71KEH | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11E01355 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11F00249 | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP |
| FPC 3 | REV 05 | 750-044444 | CAAY9920 | MPCE Type 2 3D P |
| CPU | REV 04 | 711-038484 | CAAW3639 | MPCE PMB 2G |
| MIC 0 | REV 28 | 750-028387 | CAAX1083 | 3D 4x 10GE XFP |
| PIC 0 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | | NON-JNPR | CC07BK05B | XFP-10G-SR |
| Xcvr 1 | REV 01 | 740-011571 | C728XJ00U | XFP-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | | NON-JNPR | T12L92339 | XFP-10G-SR |
| QXM 0 | REV 06 | 711-028408 | CAAW4915 | MPC QXM |
| QXM 1 | REV 06 | 711-028408 | CAAW4894 | MPC QXM |
| FPC 4 | REV 18 | 750-046005 | CACH5661 | MPC5E 3D Q 2CGE+4XGE |
| CPU | REV 09 | 711-045719 | CACF2880 | RMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| PIC 1 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | REV 01 | 740-046563 | XD16FC03Y | CFP2-100G-SR10 |
| PIC 2 | | BUILTIN | BUILTIN | 2X10GE SFPP OTN |
| PIC 3 | | BUILTIN | BUILTIN | 1X100GE CFP2 OTN |
| Xcvr 0 | REV 01 | 740-049775 | J13K72997 | CFP2-100G-LR4-D |
| FPC 5 | REV 35 | 750-028467 | CAAR2623 | MPC 3D 16x 10GE |
| CPU | REV 11 | 711-029089 | CAAR0491 | AMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ5027T | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ502J0 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ5027S | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ501Y7 | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ501YB | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ503EB | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ43HJH | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ43J0Y | SFP+-10G-SR |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ50352 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ501X6 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQ502NV | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ502ZJ | SFP+-10G-SR |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-021308 | AQ502H4 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQ43HJK | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJ30CU7 | SFP+-10G-SR |
| FPC 9 | REV 30 | 750-044130 | ABCF5773 | MPC6E 3D |
| CPU | REV 09 | 711-045719 | ABCF1270 | RMPC PMB |

| | | | | |
|---------|-------------|------------|-----------|------------------|
| MIC 0 | REV 05 | 750-049457 | ABCD7829 | 2X100GE CFP2 OTN |
| PIC 0 | | BUILTIN | BUILTIN | 2X100GE CFP2 OTN |
| Xcvr 0 | | NON-JNPR | FE13F000K | CFP2-100G-SR10 |
| Xcvr 1 | REV 01 | 740-048813 | XD32FE017 | CFP2-100G-LR-D |
| MIC 1 | REV 07 | 750-049457 | ABCK2812 | 2X100GE CFP2 OTN |
| PIC 1 | | BUILTIN | BUILTIN | 2X100GE CFP2 OTN |
| Xcvr 0 | REV 01 | 740-048813 | XD32FE018 | CFP2-100G-SR10 |
| Xcvr 1 | | NON-JNPR | FE13F000E | CFP2-100G-LR4-D |
| XLM 0 | REV 05.2.00 | 711-046638 | ABCF5915 | MPC6E XL |
| XLM 1 | REV 05.2.00 | 711-046638 | ABCF5916 | MPC6E XL |
| FPC 10 | REV 36 | 750-044130 | ABCS8602 | MPC6E 3D |
| CPU | REV 09 | 711-045719 | ABCS8779 | RMPK PMB |
| MIC 0 | REV 06 | 750-049979 | ABCK2656 | 24X10GE SFPP OTN |
| PIC 0 | | BUILTIN | BUILTIN | 24X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-021308 | AQ43J08 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQE1Y2E | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQE1UW4 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQE1MQF | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | AQGOMN1 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | AQE1L9M | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQGOMPD | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQE1Y2B | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-021308 | AQGOLT5 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | AQD2ET4 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-021308 | AQGOMPC | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-021308 | AQGOM63 | SFP+-10G-SR |
| Xcvr 12 | REV 01 | 740-021308 | AQGOLT1 | SFP+-10G-SR |
| Xcvr 13 | REV 01 | 740-021308 | AQGOM4L | SFP+-10G-SR |
| Xcvr 14 | REV 01 | 740-021308 | AQGOLS7 | SFP+-10G-SR |
| Xcvr 15 | REV 01 | 740-021308 | AQE1MQB | SFP+-10G-SR |
| Xcvr 16 | REV 01 | 740-021308 | AQGOLZP | SFP+-10G-SR |
| Xcvr 17 | REV 01 | 740-021308 | AQE1LU9 | SFP+-10G-SR |
| Xcvr 18 | REV 01 | 740-021308 | AQGOMRZ | SFP+-10G-SR |
| Xcvr 19 | REV 01 | 740-021308 | AQE1MQ9 | SFP+-10G-SR |
| Xcvr 20 | REV 01 | 740-021308 | AQGOLRX | SFP+-10G-SR |
| Xcvr 21 | REV 01 | 740-021308 | AQE1UWD | SFP+-10G-SR |
| Xcvr 22 | REV 01 | 740-021308 | AQGOLT4 | SFP+-10G-SR |
| Xcvr 23 | REV 01 | 740-021308 | AQE1MQL | SFP+-10G-SR |
| MIC 1 | REV 12 | 750-050008 | ABCK5372 | 4X100GE CXP |
| PIC 1 | | BUILTIN | BUILTIN | 4X100GE CXP |
| Xcvr 3 | REV 01 | 740-046563 | XD16FC02Z | CFP2-100G-SR10 |
| XLM 0 | REV 07.2.00 | 711-046638 | ABCK3481 | MPC6E XL |
| XLM 1 | REV 07.2.00 | 711-046638 | ABCK4725 | MPC6E XL |
| FPC 17 | REV 28 | 750-044130 | ABBZ3873 | MPC6E 3D |
| CPU | REV 08 | 711-045719 | ABBZ3770 | RMPK PMB |
| MIC 0 | REV 11 | 750-046535 | ABCC7731 | 24X10GE SFPP |
| PIC 0 | | BUILTIN | BUILTIN | 24X10GE SFPP |
| Xcvr 1 | REV 01 | 740-021308 | APK0543 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B10G01119 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQ502SX | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | AQ43H84 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | AQ501TB | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQ502JZ | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQ502SC | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-021308 | AQ502JW | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | AQ502RM | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | AHK013B | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-021308 | AQGOMRT | SFP+-10G-SR |
| Xcvr 13 | REV 01 | 740-031980 | AMC0JTC | SFP+-10G-SR |
| Xcvr 14 | REV 01 | 740-021308 | ANA0MQ0 | SFP+-10G-SR |
| Xcvr 15 | REV 01 | 740-021308 | AQ502GS | SFP+-10G-SR |

| | | | | |
|------------|-------------|------------|--------------|------------------------|
| Xcvr 16 | REV 01 | 740-021308 | AQGOM0J | SFP+-10G-SR |
| Xcvr 17 | REV 01 | 740-021308 | AQGOMUR | SFP+-10G-SR |
| Xcvr 18 | REV 01 | 740-021308 | AQGOMRR | SFP+-10G-SR |
| Xcvr 19 | REV 01 | 740-021308 | AQGOM0F | SFP+-10G-SR |
| Xcvr 20 | REV 01 | 740-021308 | AQ50312 | SFP+-10G-SR |
| Xcvr 21 | REV 01 | 740-021308 | AQ5032U | SFP+-10G-SR |
| Xcvr 22 | REV 01 | 740-021308 | APE17B5 | SFP+-10G-SR |
| Xcvr 23 | REV 01 | 740-021309 | 91D104A00011 | SFP+-10G-LR |
| MIC 1 | REV 03 | 750-050008 | ABCC4522 | 4X100GE CXP |
| PIC 1 | | BUILTIN | BUILTIN | 4X100GE CXP |
| Xcvr 0 | REV 01 | 740-046563 | XD16FC02U | CFP2-100G-SR10 |
| Xcvr 1 | REV 01 | 740-046563 | XC42FC03K | CFP2-100G-SR10 |
| Xcvr 2 | REV 01 | 740-046563 | XC42FC01Z | CFP2-100G-SR10 |
| Xcvr 3 | REV 01 | 740-046563 | XC42FC02U | CFP2-100G-SR10 |
| XLM 0 | REV 04.2.00 | 711-046638 | ABBZ3779 | MPC6E XL |
| XLM 1 | REV 04.2.00 | 711-046638 | ABBZ3780 | MPC6E XL |
| FPC 18 | REV 39 | 750-045715 | CACD1910 | MPC5E 3D Q 24XGE+6XLGE |
| CPU | REV 09 | 711-045719 | CACD1817 | RMPD PMB |
| PIC 0 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| PIC 1 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| PIC 2 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| Xcvr 0 | REV 01 | 740-046565 | QD130194 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-046565 | QD130193 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-046565 | QD130196 | QSFP+-40G-SR4 |
| PIC 3 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| Xcvr 0 | REV 01 | 740-046565 | QD130191 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-046565 | QD130198 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-046565 | QD130192 | QSFP+-40G-SR4 |
| WAN MEZZ | REV 09 | 750-049136 | CABN0411 | MPC5E 24XGE OTN Mezz |
| FPC 19 | REV 39 | 750-045715 | CACD1908 | MPC5E 3D Q 24XGE+6XLGE |
| CPU | REV 09 | 711-045719 | CACD1820 | RMPD PMB |
| PIC 0 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| Xcvr 0 | REV 01 | 740-021308 | AQA0EXJ | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-021308 | AQGOM6D | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-021308 | AQGOLW7 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-021308 | AQA0JKB | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-021308 | AQGOMTM | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-021308 | AQA07NE | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-021308 | AQGOM41 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-021308 | AQGOMU7 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-021308 | AQGOMUG | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-021308 | AQGOMMX | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-021308 | AQGOM5K | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-021308 | AQGOLVZ | SFP+-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 12X10GE SFPP OTN |
| PIC 2 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| PIC 3 | | BUILTIN | BUILTIN | 3X40GE QSFPP |
| Xcvr 0 | REV 01 | 740-046565 | QD130242 | QSFP+-40G-SR4 |
| Xcvr 1 | REV 01 | 740-046565 | QD130245 | QSFP+-40G-SR4 |
| Xcvr 2 | REV 01 | 740-046565 | QD130613 | QSFP+-40G-SR4 |
| WAN MEZZ | REV 09 | 750-049136 | CABN0418 | MPC5E 24XGE OTN Mezz |
| ADC 0 | REV 17 | 750-043596 | ABCD5378 | Adapter Card |
| ADC 1 | REV 17 | 750-043596 | ABCD5465 | Adapter Card |
| ADC 2 | REV 17 | 750-043596 | ABCD5431 | Adapter Card |
| ADC 3 | REV 17 | 750-043596 | ABCD5356 | Adapter Card |
| ADC 4 | REV 02 | 750-043596 | ZW1545 | Adapter Card |
| ADC 5 | REV 17 | 750-043596 | ABCD5517 | Adapter Card |
| ADC 18 | REV 17 | 750-043596 | ABCD5535 | Adapter Card |
| ADC 19 | REV 01 | 750-043596 | ZV4127 | Adapter Card |
| Fan Tray 0 | REV 06 | 760-046960 | ACAY0791 | 172mm FanTray - 6 Fans |
| Fan Tray 1 | REV 06 | 760-046960 | ACAY0788 | 172mm FanTray - 6 Fans |

| | | | | |
|------------|--------|------------|----------|------------------------|
| Fan Tray 2 | REV 06 | 760-046960 | ACAY0755 | 172mm FanTray - 6 Fans |
| Fan Tray 3 | REV 06 | 760-046960 | ACAY0441 | 172mm FanTray - 6 Fans |

show chassis hardware detail (MX2020 Router with MPC5EQ and MPC6E)

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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

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| | | | | |
|------------|--------|------------|----------|------------------------|
| 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 | MPC5E Type 3 3D |
| CPU | | | | |
| FPC 2 | REV 17 | 750-037355 | CAAS5826 | MPC4E 3D 2CGE+8XGE |
| CPU | | | | |
| FPC 3 | REV 05 | 750-044444 | CAAY9920 | MPC5E 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)

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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

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I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 22 01 33 52 45 56 20 35 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 34 30 32 34 30 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 32 34 33 00 1e 05 07
Address 0x30: dd ff ff ff ad 01 10 00 4c 96 14 72 30 08 ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 55 37 31 30 41 52 41 43
Address 0x50: 48 41 53 2d 42 50 2d 4d 58 32 30 32 30 2d 53 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff d3 ff ff ff ff ff ff ff ff ff ff ff ff

Midplane 1      REV 04      711-032386      ABAB9399      Upper Backplane
Jedec Code:    0x7fb0      EEPROM Version:    0x01
P/N:          711-032386      S/N:              ABAB9399
Assembly ID:   0x0b23      Assembly Version:  01.04
Date:         10-22-2012      Assembly Flags:    0x00
Version:      REV 04
ID: Upper Backplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 fe 0b 23 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 33 38 36 00 00
Address 0x20: 53 2f 4e 20 41 42 41 42 39 33 39 39 00 16 0a 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

PMP 1          REV 05      711-032428      ACAJ2541      Upper Power Midplane
Jedec Code:    0x7fb0      EEPROM Version:    0x01
P/N:          711-032428      S/N:              ACAJ2541
Assembly ID:   0x045c      Assembly Version:  01.05
Date:         04-26-2013      Assembly Flags:    0x00
Version:      REV 05
ID: Upper Power Midplane
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 04 5c 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 32 34 32 38 00 00
Address 0x20: 53 2f 4e 20 41 43 41 4a 32 35 34 31 00 1a 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Board      REV 13    760-040242    ABCA8835      Front Panel Display
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          760-040242    S/N:          ABCA8835
Assembly ID:   0x0b24      Assembly Version: 01.13
Date:         04-13-2013    Assembly Flags: 0x00
Version:       REV 13      CLEI Code:     IPMYAESJRA
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
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 24 01 0d 52 45 56 20 31 33 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 34 30 32 34 32 00 00
Address 0x20: 53 2f 4e 20 41 42 43 41 38 38 33 35 00 0d 04 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 4d 59 41 45 35 4a 52 41 4d
Address 0x50: 58 32 30 32 30 2d 43 52 41 46 54 2d 53 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 95 ff ff ff ff ff ff ff ff ff ff ff ff
PSM 0          REV 01    740-050037    1EDB32403L5    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          740-050037    S/N:          1EDB32403L5
Assembly ID:   0x0478      Assembly Version: 01.01
Date:         06-21-2013    Assembly Flags: 0x00
Version:       REV 01      CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 34 30 33 4c 35 00 00 15 06 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 1          REV 01    740-050037    1EDB32403L3    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:          740-050037    S/N:          1EDB32403L3
Assembly ID:   0x0478      Assembly Version: 01.01
Date:         06-21-2013    Assembly Flags: 0x00
Version:       REV 01      CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 34 30 33 4c 33 00 00 15 06 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 2          REV 01    740-050037    1EDB32403KM    DC 52V Power Supply
Module
Jedec Code:    0x7fb0      EEPROM Version: 0x02

```

```

P/N:          740-050037          S/N:          1EDB32403KM
Assembly ID:  0x0478             Assembly Version: 01.01
Date:         06-21-2013         Assembly Flags:  0x00
Version:      REV 01             CLEI Code:       IPUPAKRKAA
ID: DC 52V Power Supply Module   FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 32 34 30 33 4b 4d 00 00 15 06 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 3          REV 01    740-050037    1EDB3130079    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-050037          S/N:          1EDB3130079
Assembly ID:   0x0478          Assembly Version: 01.01
Date:         05-16-2013        Assembly Flags:  0x00
Version:      REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module   FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 37 39 00 00 10 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 4          REV 01    740-050037    1EDB3130077    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-050037          S/N:          1EDB3130077
Assembly ID:   0x0478          Assembly Version: 01.01
Date:         05-17-2013        Assembly Flags:  0x00
Version:      REV 01          CLEI Code:     IPUPAKRKAA
ID: DC 52V Power Supply Module   FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
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
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 5          REV 01    740-050037    1EDB3130020    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version: 0x02
P/N:          740-050037          S/N:          1EDB3130020
Assembly ID:   0x0478          Assembly Version: 01.01
Date:         05-16-2013        Assembly Flags:  0x00
Version:      REV 01          CLEI Code:     IPUPAKRKAA

```

```
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 31 33 30 30 32 30 00 00 10 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 6          REV 01   740-050037   1EDB313009S   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB313009S
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 31 33 30 30 39 53 00 00 11 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 01   740-050037   1EDB313008E   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB313008E
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 33 31 33 30 30 38 45 00 00 11 05 07
  Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 8          REV 01   740-050037   1EDB3130063   DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:  0x02
P/N:           740-050037      S/N:             1EDB3130063
Assembly ID:   0x0478          Assembly Version: 01.01
Date:          05-17-2013      Assembly Flags:   0x00
Version:       REV 01          CLEI Code:        IPUPAKRKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
```



```

Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 33 31 33 30 30 36 33 00 00 11 05 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 4b 52 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 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 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00

```

```
PSM 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 00 31 30 31 ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00

```

```
PSM 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
Address 0x60: 00 00 00 00 00 00 31 30 31 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 2a 00 00 00 00 00 00 00 00 00 00 00 00
PSM 15          REV 01    740-050037    1EDB3130024    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB3130024
Assembly ID:   0x0478          Assembly Version:  01.01
Date:          05-16-2013      Assembly Flags:    0x00
Version:       REV 01          CLEI Code:         IPUPAKRKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 01 52 45 56 20 30 31 00 00
...
```

show chassis hardware models (MX2020 Routers with MPC5EQ and MPC6E)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 51    750-040240   ABAB9243      CHAS-BP-MX2020-S
FPM Board     REV 13    760-040242   ABCA8835      MX2020-CRAFT-S
PSM 0         REV 01    740-050037   1EDB32403L5   MX2000-PSM-DC-S
PSM 1         REV 01    740-050037   1EDB32403L3   MX2000-PSM-DC-S
PSM 2         REV 01    740-050037   1EDB32403KM   MX2000-PSM-DC-S
PSM 3         REV 01    740-050037   1EDB3130079   MX2000-PSM-DC-S
PSM 4         REV 01    740-050037   1EDB3130077   MX2000-PSM-DC-S
PSM 5         REV 01    740-050037   1EDB3130020   MX2000-PSM-DC-S
PSM 6         REV 01    740-050037   1EDB313009S   MX2000-PSM-DC-S
PSM 7         REV 01    740-050037   1EDB313008E   MX2000-PSM-DC-S
PSM 8         REV 01    740-050037   1EDB3130063   MX2000-PSM-DC-S
PSM 12        REV 01    740-050037   1EDB3130026   MX2000-PSM-DC-S
PSM 13        REV 01    740-050037   1EDB3130074   MX2000-PSM-DC-S
PSM 14        REV 01    740-050037   1EDB313009D   MX2000-PSM-DC-S
PSM 15        REV 01    740-050037   1EDB3130024   MX2000-PSM-DC-S
PSM 16        REV 01    740-050037   1EDB3130054   MX2000-PSM-DC-S
PSM 17        REV 01    740-050037   1EDB3130080   MX2000-PSM-DC-S
PDM 0         REV 03    740-045234   1EGA3170144   MX2000-PDM-DC-S
PDM 1         REV 03    740-045234   1EGA3170158   MX2000-PDM-DC-S
PDM 2         REV 03    740-045234   1EGA3170182   MX2000-PDM-DC-S
PDM 3         REV 03    740-045234   1EGA3170207   MX2000-PDM-DC-S
Routing Engine 0 REV 02    740-041821   9009112112    RE-MX2000-1800X4-S
Routing Engine 1 REV 02    740-041821   9009112087    RE-MX2000-1800X4-S
CB 0          REV 23    750-040257   CABA2295      RE-MX2000-1800X4-S
CB 1          REV 23    750-040257   CABE8379      RE-MX2000-1800X4-S
SFB 0         REV 06    711-044466   ABCD5001      MX2000-SFB-S
SFB 1         REV 06    711-044466   ABCD5034      MX2000-SFB-S
SFB 2         REV 06    711-044466   ABCH3899      MX2000-SFB-S
SFB 3         REV 06    711-044466   ABCD5020      MX2000-SFB-S
SFB 4         REV 06    711-044466   ABCD4975      MX2000-SFB-S
SFB 5         REV 06    711-044466   ABCH3881      MX2000-SFB-S
SFB 6         REV 06    711-044466   ABCD5026      MX2000-SFB-S
SFB 7         REV 06    711-044466   ABCD5032      MX2000-SFB-S
FPC 0         REV 39    750-045715   CACD1902      PROTO-ASSEMBLY
FPC 1         REV 11    750-045372   CABK8112      MX-MPC3E-3D
FPC 2         REV 17    750-037355   CAAS5826      MPC4E-3D-2CGE-8XGE
FPC 3         REV 05    750-044444   CAAY9920      MX-MPC2E-3D-P
FPC 4         REV 18    750-046005   CACH5661      PROTO-ASSEMBLY
```

| | | | | |
|------------|--------|------------|----------|-------------------|
| FPC 5 | REV 35 | 750-028467 | CAAR2623 | MPC-3D-16XGE-SFPP |
| FPC 9 | REV 30 | 750-044130 | ABCF5773 | PROTO-ASSEMBLY |
| FPC 10 | REV 36 | 750-044130 | ABCS8602 | PROTO-ASSEMBLY |
| FPC 17 | REV 28 | 750-044130 | ABBZ3873 | PROTO-ASSEMBLY |
| FPC 18 | REV 39 | 750-045715 | CACD1910 | PROTO-ASSEMBLY |
| FPC 19 | REV 39 | 750-045715 | CACD1908 | PROTO-ASSEMBLY |
| ADC 0 | REV 17 | 750-043596 | ABCD5378 | MX2000-LC-ADAPTER |
| ADC 1 | REV 17 | 750-043596 | ABCD5465 | MX2000-LC-ADAPTER |
| ADC 2 | REV 17 | 750-043596 | ABCD5431 | MX2000-LC-ADAPTER |
| ADC 3 | REV 17 | 750-043596 | ABCD5356 | MX2000-LC-ADAPTER |
| ADC 4 | REV 02 | 750-043596 | ZW1545 | 750-043596 |
| ADC 5 | REV 17 | 750-043596 | ABCD5517 | MX2000-LC-ADAPTER |
| ADC 18 | REV 17 | 750-043596 | ABCD5535 | MX2000-LC-ADAPTER |
| ADC 19 | REV 01 | 750-043596 | ZV4127 | 750-043596 |
| Fan Tray 0 | REV 06 | 760-046960 | ACAY0791 | MX2000-FANTRAY-S |
| Fan Tray 1 | REV 06 | 760-046960 | ACAY0788 | MX2000-FANTRAY-S |
| Fan Tray 2 | REV 06 | 760-046960 | ACAY0755 | MX2000-FANTRAY-S |
| Fan Tray 3 | REV 06 | 760-046960 | ACAY0441 | MX2000-FANTRAY-S |

show chassis hardware clei-models (MX2020 Router with MPC5EQ and MPC6E)

```

user@host> show chassis hardware clei-models
Hardware inventory:

```

| Item | Version | Part number | CLEI code | FRU model number |
|-----------|---------|-------------|------------|--------------------|
| Midplane | REV 51 | 750-040240 | IPMU710ARA | CHAS-BP-MX2020-S |
| FPM Board | REV 13 | 760-040242 | IPMYAE5JRA | MX2020-CRAFT-S |
| PSM 0 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 1 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 2 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 3 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 4 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 5 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 6 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 7 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 8 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 12 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 13 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 14 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 15 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 16 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PSM 17 | REV 01 | 740-050037 | IPUPAKRKAA | MX2000-PSM-DC-S |
| PDM 0 | REV 03 | 740-045234 | IPUPAJSKAA | MX2000-PDM-DC-S |
| PDM 1 | REV 03 | 740-045234 | IPUPAJSKAA | MX2000-PDM-DC-S |
| PDM 2 | REV 03 | 740-045234 | IPUPAJSKAA | MX2000-PDM-DC-S |
| PDM 3 | REV 03 | 740-045234 | IPUPAJSKAA | MX2000-PDM-DC-S |
| CB 0 | REV 23 | 750-040257 | IPUCBA7CTA | RE-MX2000-1800X4-S |
| CB 1 | REV 23 | 750-040257 | IPUCBA7CTA | RE-MX2000-1800X4-S |
| SFB 0 | REV 06 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 1 | REV 06 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 2 | REV 06 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 3 | REV 06 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 4 | REV 06 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 5 | REV 06 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 6 | REV 06 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| SFB 7 | REV 06 | 711-044466 | IPUCBA6CAA | MX2000-SFB-S |
| FPC 0 | REV 39 | 750-045715 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 1 | REV 11 | 750-045372 | COUIBBNBAA | MX-MPC3E-3D |
| FPC 2 | REV 17 | 750-037355 | IPU3A4DHAA | MPC4E-3D-2CGE-8XGE |
| FPC 3 | REV 05 | 750-044444 | COUIBBGBAA | MX-MPC2E-3D-P |
| MIC 0 | REV 28 | 750-028387 | COUIA16BAA | MIC-3D-4XGE-XFP |
| FPC 4 | REV 18 | 750-046005 | PROTOXCLEI | PROTO-ASSEMBLY |

| | | | | |
|------------|--------|------------|------------|-------------------|
| FPC 5 | REV 35 | 750-028467 | | MPC-3D-16XGE-SFPP |
| FPC 9 | REV 30 | 750-044130 | PROTOXCLEI | PROTO-ASSEMBLY |
| MIC 0 | REV 05 | 750-049457 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 10 | REV 36 | 750-044130 | PROTOXCLEI | PROTO-ASSEMBLY |
| MIC 0 | REV 06 | 750-049979 | PROTOXCLEI | PROTO-ASSEMBLY |
| MIC 1 | REV 12 | 750-050008 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 17 | REV 28 | 750-044130 | PROTOXCLEI | PROTO-ASSEMBLY |
| MIC 1 | REV 03 | 750-050008 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 18 | REV 39 | 750-045715 | PROTOXCLEI | PROTO-ASSEMBLY |
| FPC 19 | REV 39 | 750-045715 | PROTOXCLEI | PROTO-ASSEMBLY |
| ADC 0 | REV 17 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 1 | REV 17 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 2 | REV 17 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 3 | REV 17 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 4 | REV 02 | 750-043596 | PROTOXCLEI | 750-043596 |
| ADC 5 | REV 17 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 18 | REV 17 | 750-043596 | IPUCBA8CAA | MX2000-LC-ADAPTER |
| ADC 19 | REV 01 | 750-043596 | PROTOXCLEI | 750-043596 |
| Fan Tray 0 | REV 06 | 760-046960 | IPUCBA5CAA | MX2000-FANTRAY-S |
| Fan Tray 1 | REV 06 | 760-046960 | IPUCBA5CAA | MX2000-FANTRAY-S |
| Fan Tray 2 | REV 06 | 760-046960 | IPUCBA5CAA | MX2000-FANTRAY-S |
| Fan Tray 3 | REV 06 | 760-046960 | IPUCBA5CAA | MX2000-FANTRAY-S |

show chassis hardware (MX Series routers with ATM MIC)

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|------------------------|
| Chassis | | | JN115736EAF | MX240 |
| Midplane | REV 07 | 760-021404 | ABAA5038 | MX240 Backplane |
| FPM Board | REV 03 | 760-021392 | ABBA2758 | Front Panel Display |
| PEM 0 | Rev 01 | 740-022697 | QCS0937C07K | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| PEM 1 | Rev 01 | 740-022697 | QCS0939C04X | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| PEM 2 | Rev 01 | 740-022697 | QCS0937C06B | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| PEM 3 | Rev 01 | 740-022697 | QCS0937C07U | PS 1.2-1.7kW; 100-240V |
| AC in | | | | |
| Routing Engine 0 | REV 12 | 740-013063 | 9009042291 | RE-S-2000 |
| Routing Engine 1 | REV 12 | 740-013063 | 9009042266 | RE-S-2000 |
| CB 0 | REV 06 | 710-021523 | ABBC1435 | MX SCB |
| CB 1 | REV 06 | 710-021523 | ABBC1497 | MX SCB |
| FPC 2 | REV 14 | 750-031088 | YH8446 | MPC Type 2 3D Q |
| CPU | REV 06 | 711-030884 | YH9612 | MPC PMB 2G |
| MIC 0 | | | | |
| MIC 1 | REV 10 | 750-036132 | ZP7062 | 2x0C12/8x0C3 CC-CE |
| PIC 2 | | BUILTIN | BUILTIN | 2x0C12/8x0C3 CC-CE |
| Xcvr 0 | | NON-JNPR | 23393-00492 | UNKNOWN |
| Xcvr 1 | | NON-JNPR | 23393-00500 | UNKNOWN |
| Xcvr 2 | | NON-JNPR | 23393-00912 | UNKNOWN |
| Xcvr 3 | REV 01 | 740-015638 | 22216-00575 | Load SFP |
| Xcvr 4 | REV 01 | 740-015638 | 24145-00110 | Load SFP |
| Xcvr 5 | REV 01 | 740-015638 | 24145-00016 | Load SFP |
| Xcvr 6 | REV 01 | 740-015638 | 24145-00175 | Load SFP |
| Xcvr 7 | | NON-JNPR | 23393-00627 | UNKNOWN |
| QXM 0 | REV 05 | 711-028408 | YF4681 | MPC QXM |
| QXM 1 | REV 05 | 711-028408 | YF4817 | MPC QXM |
| Fan Tray 0 | REV 01 | 710-021113 | XL3645 | MX240 Fan Tray |

show chassis hardware (MX240, MX480, MX960 routers with Application Services Modular Line Card)

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|---------------------------|
| Chassis | | | JN1D969BAFA | 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 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         Rev 04    740-028288   VE05267        AC Power Entry Module
PEM 1         Rev 04    740-028288   VE05270        AC Power Entry Module
Routing Engine                               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
TFEB 0                               BUILTIN
FPC 0                               BUILTIN
FPC 1                               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 | RMPCE 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

```

```

ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 4e 59 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 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 4          REV 06   740-050037   1EDB61200N2       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200N2
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 4e 32 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
  Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
  Address 0x60: 00 00 00 00 00 00 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 5          REV 06   740-050037   1EDB61200RN       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200RN
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
  Address 0x20: 31 45 44 42 36 31 32 30 30 52 4e 00 00 10 03 07
  Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff 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 6          REV 06   740-050037   1EDB61200RF       DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-050037      S/N:              1EDB61200RF
Assembly ID:   0x0478          Assembly Version:  01.06
Date:          03-16-2016      Assembly Flags:    0x00
Version:       REV 06          CLEI Code:         IPUPAPDKAA
ID: DC 52V Power Supply Module  FRU Model Number:  MX2000-PSM-DC-S
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff 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 46 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00
PSM 7          REV 06    740-050037    1EDB61200R7    DC 52V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          740-050037      S/N:              1EDB61200R7
Assembly ID:   0x0478          Assembly Version:  01.06
Date:         03-16-2016      Assembly Flags:    0x00
Version:      REV 06          CLEI Code:        IPUPAPDKAA
ID: DC 52V Power Supply Module FRU Model Number: MX2000-PSM-DC-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 78 01 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 35 30 30 33 37 00 00
Address 0x20: 31 45 44 42 36 31 32 30 30 52 37 00 00 10 03 07
Address 0x30: e0 72 75 ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 50 41 50 44 4b 41 41 4d
Address 0x50: 58 32 30 30 30 2d 50 53 4d 2d 44 43 2d 53 00 00
Address 0x60: 00 00 00 00 00 00 31 30 36 ff ff ff ff ff ff
Address 0x70: ff ff ff 26 00 00 00 00 00 00 00 00 00 00 00
PDM 0          REV 01    740-060189    1EFF5250143    DC PDM Optimized
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          740-060189      S/N:              1EFF5250143
Assembly ID:   0x0495          Assembly Version:  01.01
Date:         07-21-2015      Assembly Flags:    0x00
Version:      REV 01          CLEI Code:        IPUPAN1KAA
ID: DC PDM Optimized          FRU Model Number:  MX2K-PDM-OP-DC-S
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 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
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
Address 0x70: ff ff ff 84 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
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
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

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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 84 00 00 00 00 00 00 00 00 00 00 00 00
Routing Engine 0          BUILTIN          BUILTIN          RE-S-2X00x8
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N: BUILTIN          S/N: BUILTIN
Assembly ID: 0x0c10          Assembly Version: 00.00
Date: 00-00-0000          Assembly Flags: 0x00
ID: RE-S-2X00x8
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0c 10 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 00 00 00 00
Address 0x20: 42 55 49 4c 54 49 4e 00 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
vtbd0 15361 MB          Virtio Block Disk
vtbd1 15360 MB          Virtio Block Disk
ada0 511 MB QEMU HARDDISK QM00002 Emulated IDE Disk
usb0 (addr 1) XHCI root HUB 0 0x8086 uhub0
Routing Engine 1          BUILTIN          BUILTIN          RE-S-2X00x8
Jedec Code: 0x0000          EEPROM Version: 0x00
P/N: BUILTIN          S/N: BUILTIN
Assembly ID: 0x0c10          Assembly Version: 00.00
Date: 00-00-0000          Assembly Flags: 0x00
ID: RE-S-2X00x8
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0c 10 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 00 00 00 00
Address 0x20: 42 55 49 4c 54 49 4e 00 00 00 00 00 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
vtbd0 15361 MB          Virtio Block Disk
vtbd1 15360 MB          Virtio Block Disk
ada0 511 MB QEMU HARDDISK QM00002 Emulated IDE Disk
usb0 (addr 1) XHCI root HUB 0 0x8086 uhub0
CB 0          REV 01 750-067373 ABDJ0047          Control Board
Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-067373          S/N: ABDJ0047
Assembly ID: 0x0c96          Assembly Version: 01.01
Date: 06-21-2016          Assembly Flags: 0x00
Version: REV 01          CLEI Code: PROTOXCLEI
ID: Control Board          FRU Model Number: PROTO-ASSEMBLY
Board Information Record:
Address 0x00: ad 01 00 20 28 8a 1c 6d c4 7e ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 0c 96 01 01 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 33 00 00
Address 0x20: 53 2f 4e 20 41 42 44 4a 30 30 34 37 00 15 06 07
Address 0x30: e0 ff ff ff ad 01 00 20 28 8a 1c 6d c4 7e ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff

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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
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 02 00 48 00
SFB 3          REV 08    750-067371  ABDK7143          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:           ABDK7143
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-27-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 34 33 00 1b 09 07
  Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 50
  Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
  Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 03 00 48 00
SFB 4          REV 08    750-067371  ABDK7030          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:           ABDK7030
Assembly ID:   0x0c97          Assembly Version: 01.08
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
  Address 0x70: ff ff ff c2 07 00 00 00 00 00 00 00 04 00 48 00
SFB 5          REV 08    750-067371  ABDK7146          Switch Fabric Board
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           750-067371      S/N:           ABDK7146
Assembly ID:   0x0c97          Assembly Version: 01.08
Date:          09-27-2016      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     PROTOXCLEI
ID: Switch Fabric Board        FRU Model Number:  PROTO-ASSEMBLY
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 fe 0c 97 01 08 52 45 56 20 30 38 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 36 37 33 37 31 00 00
  Address 0x20: 53 2f 4e 20 41 42 44 4b 37 31 34 36 00 1b 09 07

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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
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
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:

```

```

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 35 34 38 32 00 15 0a 07
Address 0x30: dd ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 50
Address 0x50: 52 4f 54 4f 2d 41 53 53 45 4d 42 4c 59 00 00 00
Address 0x60: 00 00 00 00 00 00 41 30 30 ff ff ff ff ff ff ff
Address 0x70: ff ff ff c2 00 00 00 00 00 00 00 00 00 00 00 00
FPC 1          REV 22    750-063414    CAFJ3026          MPC9E 3D
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          750-063414      S/N:          CAFJ3026
Assembly ID:   0x0c43          Assembly Version: 01.22
Date:          03-28-2016      Assembly Flags: 0x00
Version:       REV 22          CLEI Code:     IPUCBMUCAA
ID: MPC9E 3D          FRU Model Number: MX2K-MPC9E
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0c 43 01 16 52 45 56 20 32 32 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 36 33 34 31 34 00 00
Address 0x20: 53 2f 4e 20 43 41 46 4a 33 30 32 36 00 1c 03 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 4d 55 43 41 41 4d
Address 0x50: 58 32 4b 2d 4d 50 43 39 45 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff ff
CPU          REV 16    750-057177    CAFF9332          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
I2C Hex Data:
Address 0x00: 7f b0 01 ff 0c 22 01 10 52 45 56 20 31 36 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 35 37 31 37 37 00 00
Address 0x20: 53 2f 4e 20 43 41 46 46 39 33 33 32 00 14 03 07
Address 0x30: e0 ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 38 f9 0d e0 4f d1 4b 08
FPC 7          REV 08    750-038492    ZX4080          MPCE Type 2 3D EQ
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:          750-038492      S/N:          ZX4080
Assembly ID:   0x0b35          Assembly Version: 01.08
Date:          02-03-2012      Assembly Flags: 0x00
Version:       REV 08          CLEI Code:     COUIBA5BAA
ID: MPCE Type 2 3D EQ          FRU Model Number: MX-MPC2E-3D-EQ
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 35 01 08 52 45 56 20 30 38 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 38 34 39 32 00 00
Address 0x20: 53 2f 4e 20 5a 58 34 30 38 30 00 00 00 03 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 43 4f 55 49 42 41 35 42 41 41 4d

```

```

Address 0x50: 58 2d 4d 50 43 32 45 2d 33 44 2d 45 51 00 00 00
Address 0x60: 00 00 00 00 00 00 41 00 00 ff ff ff ff ff ff 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 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 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 4f 4d
Address 0x50: 49 43 2d 33 44 2d 38 44 53 33 2d 45 33 00 00 00
Address 0x60: 00 00 00 00 00 00 41 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 7b c0 03 e5 7c 4f 8a 9e 10 00 00 00 02
PIC 2          BUILTIN    BUILTIN          MIC-3D-8DS3-E3
QXM 0          REV 06    711-028408    ZW8299          MPC QXM
Jedec Code:  0x7fb0          EEPROM Version:  0x01

```

```

P/N:          711-028408      S/N:          ZW8299
Assembly ID:  0x097a         Assembly Version: 02.06
Date:         01-19-2012     Assembly Flags:  0x00
Version:      REV 06
ID: MPC QXM

```

Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 01 ff 09 7a 02 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 32 38 34 30 38 00 00
Address 0x20: 53 2f 4e 20 5a 57 38 32 39 39 00 00 00 13 01 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00

```

```
QXM 1          REV 06      711-028408      ZY0609          MPC QXM
```

```

Jedec Code:    0x7fb0        EEPROM Version:  0x01
P/N:          711-028408      S/N:          ZY0609
Assembly ID:   0x097a         Assembly Version: 02.06
Date:         01-19-2012     Assembly Flags:  0x00
Version:      REV 06
ID: MPC QXM

```

Board Information Record:

```
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
```

I2C Hex Data:

```

Address 0x00: 7f b0 01 ff 09 7a 02 06 52 45 56 20 30 36 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 32 38 34 30 38 00 00
Address 0x20: 53 2f 4e 20 5a 59 30 36 30 39 00 00 00 13 01 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff
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
```

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
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
```

```

I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 96 02 0a 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 35 32 34 36 37 00 00
Address 0x20: 53 2f 4e 20 41 43 41 59 36 31 39 30 00 12 09 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 45 4e 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 46 41 4e 54 52 41 59 2d 53 00
Address 0x60: 00 00 00 00 00 00 31 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 1a ff ff ff ff ff ff ff ff ff ff ff
Fan Tray 1      REV 01    760-052467    ACAY6414      172mm FanTray - 6 Fans
Jedec Code:    0x7fb0      EEPROM Version: 0x02
P/N:           760-052467    S/N:          ACAY6414
Assembly ID:   0x0b96      Assembly Version: 02.10
Date:          10-28-2015    Assembly Flags: 0x00
Version:       REV 01      CLEI Code:     IPUCBENCAA
ID: 172mm FanTray - 6 Fans    FRU Model Number: MX2000-FANTRAY-S
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 96 02 0a 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 37 36 30 2d 30 35 32 34 36 37 00 00
Address 0x20: 53 2f 4e 20 41 43 41 59 36 34 31 34 00 1c 0a 07
Address 0x30: df ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 49 50 55 43 42 45 4e 43 41 41 4d
Address 0x50: 58 32 30 30 30 2d 46 41 4e 54 52 41 59 2d 53 00
Address 0x60: 00 00 00 00 00 00 31 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 1a ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware models (MX2008 Router)

```

user@host>show chassis hardware models
Hardware inventory:

```

| Item | Version | Part number | Serial number | FRU model number |
|-----------|---------|-------------|---------------|------------------------|
| Midplane | REV 47 | 750-044636 | ABAD1739 | CHAS-BP-MX2010-S |
| PMP | REV 01 | 711-051406 | ACVD0738 | |
| FPM Board | REV 02 | 760-068193 | ABDG7408 | PROTO-ASSEMBLY |
| PSM 1 | REV 06 | 740-050037 | 1EDB61200R8 | MX2000-PSM-DC-S |
| PSM 2 | REV 06 | 740-050037 | 1EDB61200WA | MX2000-PSM-DC-S |
| PSM 3 | REV 06 | 740-050037 | 1EDB61200NY | MX2000-PSM-DC-S |
| PSM 4 | REV 06 | 740-050037 | 1EDB61200N2 | MX2000-PSM-DC-S |
| PSM 5 | REV 06 | 740-050037 | 1EDB61200RN | MX2000-PSM-DC-S |
| PSM 6 | REV 06 | 740-050037 | 1EDB61200RF | MX2000-PSM-DC-S |
| PSM 7 | REV 06 | 740-050037 | 1EDB61200R7 | MX2000-PSM-DC-S |
| PDM 0 | REV 01 | 740-060189 | 1EFF5250143 | MX2K-PDM-OP-DC-S |
| PDM 1 | REV 01 | 740-060189 | 1EFF5250074 | MX2K-PDM-OP-DC-S |
| CB 0 | REV 01 | 750-067373 | ABDJ0047 | PROTO-ASSEMBLY |
| CB 1 | REV 03 | 750-067373 | ABDH3016 | PROTO-ASSEMBLY |
| SFB 0 | REV 08 | 750-067371 | ABDK7180 | PROTO-ASSEMBLY |
| SFB 1 | REV 08 | 750-067371 | ABDK7024 | PROTO-ASSEMBLY |
| SFB 2 | REV 08 | 750-067371 | ABDK7188 | PROTO-ASSEMBLY |
| SFB 3 | REV 08 | 750-067371 | ABDK7143 | PROTO-ASSEMBLY |
| SFB 4 | REV 08 | 750-067371 | ABDK7030 | PROTO-ASSEMBLY |
| SFB 5 | REV 08 | 750-067371 | ABDK7146 | PROTO-ASSEMBLY |
| SFB 6 | REV 08 | 750-067371 | ABDK7203 | PROTO-ASSEMBLY |
| SFB 7 | REV 08 | 750-067371 | ABDK7238 | PROTO-ASSEMBLY |
| FPC 0 | REV 36 | 750-044130 | ABCS8607 | PROTO-ASSEMBLY |
| MIC 0 | REV 21 | 750-050008 | ABCT5920 | MIC6-100G-CXP |
| FPC 1 | REV 22 | 750-063414 | CAFJ3026 | MX2K-MPC9E |
| FPC 7 | REV 08 | 750-038492 | ZX4080 | MX-MPC2E-3D-EQ |
| MIC 0 | REV 05 | 750-037128 | ZR4031 | MIC-3D-4CHOC3-10C12-CE |
| MIC 1 | REV 23 | 750-032479 | CADE8614 | MIC-3D-8DS3-E3 |

| | | | | |
|------------|--------|------------|----------|-------------------|
| ADC 7 | REV 17 | 750-043596 | ABCA0990 | MX2000-LC-ADAPTER |
| Fan Tray 0 | REV 01 | 760-052467 | ACAY6190 | MX2000-FANTRAY-S |
| Fan Tray 1 | REV 01 | 760-052467 | ACAY6414 | MX2000-FANTRAY-S |

show chassis hardware clei-models (MX2008 Router)

```
user@host>show chassis hardware clei-models
Hardware inventory:
Item                Version  Part number  CLEI code  FRU model number
Midplane            REV 47    750-044636  IPMU810ARB  CHAS-BP-MX2010-S
PMP                 REV 01    711-051406
FPM Board           REV 02    760-068193  PROTOXCLEI  PROTO-ASSEMBLY
PSM 1               REV 06    740-050037  IPUPAPDKAA  MX2000-PSM-DC-S
PSM 2               REV 06    740-050037  IPUPAPDKAA  MX2000-PSM-DC-S
PSM 3               REV 06    740-050037  IPUPAPDKAA  MX2000-PSM-DC-S
PSM 4               REV 06    740-050037  IPUPAPDKAA  MX2000-PSM-DC-S
PSM 5               REV 06    740-050037  IPUPAPDKAA  MX2000-PSM-DC-S
PSM 6               REV 06    740-050037  IPUPAPDKAA  MX2000-PSM-DC-S
PSM 7               REV 06    740-050037  IPUPAPDKAA  MX2000-PSM-DC-S
PDM 0               REV 01    740-060189  IPUPAN1KAA  MX2K-PDM-OP-DC-S
PDM 1               REV 01    740-060189  IPUPAN1KAA  MX2K-PDM-OP-DC-S
CB 0                REV 01    750-067373  PROTOXCLEI  PROTO-ASSEMBLY
CB 1                REV 03    750-067373  PROTOXCLEI  PROTO-ASSEMBLY
SFB 0               REV 08    750-067371  PROTOXCLEI  PROTO-ASSEMBLY
SFB 1               REV 08    750-067371  PROTOXCLEI  PROTO-ASSEMBLY
SFB 2               REV 08    750-067371  PROTOXCLEI  PROTO-ASSEMBLY
SFB 3               REV 08    750-067371  PROTOXCLEI  PROTO-ASSEMBLY
SFB 4               REV 08    750-067371  PROTOXCLEI  PROTO-ASSEMBLY
SFB 5               REV 08    750-067371  PROTOXCLEI  PROTO-ASSEMBLY
SFB 6               REV 08    750-067371  PROTOXCLEI  PROTO-ASSEMBLY
SFB 7               REV 08    750-067371  PROTOXCLEI  PROTO-ASSEMBLY
FPC 0               REV 36    750-044130  PROTOXCLEI  PROTO-ASSEMBLY
  MIC 0             REV 21    750-050008  IP9IATYDAA  MIC6-100G-CXP
FPC 1               REV 22    750-063414  IPUCBMUCAA  MX2K-MPC9E
FPC 7               REV 08    750-038492  COUIBA5BAA  MX-MPC2E-3D-EQ
  MIC 0             REV 05    750-037128  PROTOXCLEI  MIC-3D-4CHOC3-10C12-CE
  MIC 1             REV 23    750-032479  COUIA8DBAA  MIC-3D-8DS3-E3
ADC 7               REV 17    750-043596  IPUCBA8CAA  MX2000-LC-ADAPTER
Fan Tray 0          REV 01    760-052467  IPUCBENCAA  MX2000-FANTRAY-S
Fan Tray 1          REV 01    760-052467  IPUCBENCAA  MX2000-FANTRAY-S
```

show chassis hardware (MX10003 Router)

```
user@host> show chassis hardware

Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis                                     BLANK          JNP10003 [MX10003]
Midplane            REV 01    750-066883  CAGM0759      Midplane 2
Routing Engine 0    BUILTIN  BUILTIN     Routing Engine
Routing Engine 1    BUILTIN  BUILTIN     Routing Engine
CB 0                REV 07    750-067071  CAGX4354      SPM
  Mezz              REV 10    711-066896  CAHS7200      SPM Mezz Board
CB 1                REV 07    750-067071  CAGX4363      SPM
  Mezz              REV 10    711-066896  CAHS7193      SPM Mezz Board
FPC 0               REV 05    750-066879  CAGV0273      LC2103
  CPU               BUILTIN  BUILTIN     SMPC PMB
  PIC 0
  PIC 1
FPC 1               REV 05    750-066879  CAGV0278      LC2103
```

| | | | | |
|------------|--------|------------|-------------|----------------|
| CPU | | BUILTIN | BUILTIN | SMPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 6xQSFP |
| PIC 1 | | | | |
| PEM 0 | REV 01 | 740-066937 | 1HS16320003 | JNP-PWR1600-AC |
| PEM 1 | REV 01 | 740-066937 | 1HS16320002 | JNP-PWR1600-AC |
| Fan Tray 0 | REV 02 | 760-069329 | CAGS7731 | JNP FAN 3RU |
| Fan Tray 1 | REV 02 | 760-069329 | CAGS7776 | JNP FAN 3RU |
| Fan Tray 2 | REV 02 | 760-069329 | CAGS7659 | JNP FAN 3RU |
| Fan Tray 3 | REV 02 | 760-069329 | CAGS7669 | JNP FAN 3RU |

show chassis hardware (MX204 Router)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-------------------------|
| Chassis | | | BB768 | JNP204 [MX204] |
| Routing Engine 0 | | BUILTIN | BUILTIN | RE-S-2X00x6 |
| CB 0 | REV 11 | 750-069579 | CAJD3113 | JNP204 [MX204] |
| FPC 0 | | BUILTIN | BUILTIN | MPC |
| PIC 0 | | BUILTIN | BUILTIN | 4XQSFP28 PIC |
| Xcvr 0 | REV 01 | 740-061405 | 1ACQ110409R | QSFP-100GBASE-SR4 |
| Xcvr 1 | REV 01 | 740-054053 | QF027546 | QSFP+-4X10G-SR |
| Xcvr 2 | REV 01 | 740-058732 | 1AMQA142092 | QSFP-100GBASE-LR4 |
| Xcvr 3 | REV 01 | 740-058732 | 1AMQA14203J | QSFP-100GBASE-LR4 |
| PIC 1 | | BUILTIN | BUILTIN | 8XSFP PIC |
| PEM 1 | REV 04 | 740-043886 | 1GA46361256 | JPSU-650W-DC-AFO |
| Fan Tray 0 | | | | Fan Tray, Front to Back |
| Airflow - AFO | | | | |
| Fan Tray 1 | | | | Fan Tray, Front to Back |
| Airflow - AFO | | | | |
| Fan Tray 2 | | | | Fan Tray, Front to Back |
| Airflow - AFO | | | | |

show chassis hardware (vMX running in lite mode)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|----------|-------------|---------------|-------------|
| Chassis | | | VM54599D128A | VMX |
| Midplane | | | | |
| Routing Engine 0 | | | | RE-VMX |
| CB 0 | | | | VMX SCB |
| CB 1 | | | | VMX SCB |
| FPC 0 | | | | Virtual FPC |
| CPU | Rev. 1.0 | RIOT-LITE | BUILTIN | |
| MIC 0 | | | | Virtual |
| PIC 0 | | BUILTIN | BUILTIN | Virtual |

show chassis hardware (vMX running in performance mode)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-------------|
| Chassis | | | VM54599D128A | VMX |
| Midplane | | | | |
| Routing Engine 0 | | | | RE-VMX |
| CB 0 | | | | VMX SCB |
| CB 1 | | | | VMX SCB |
| FPC 0 | | | | Virtual FPC |

```

CPU          Rev. 1.0 RIOT-PERF    BUILTIN
MIC 0
PIC 0          BUILTIN    BUILTIN    Virtual
Virtual

```

show chassis hardware (T320 Router)

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|--------------------|
| Chassis | | | 19093 | T320 |
| Midplane | REV 04 | 710-004339 | BC1436 | T320 Backplane |
| FPM GBUS | REV 03 | 710-004461 | BC1407 | T320 FPM Board |
| FPM Display | REV 04 | 710-002897 | BE0763 | FPM Display |
| CIP | REV 05 | 710-002895 | BB2311 | T Series CIP |
| PEM 0 | Rev 01 | 740-004359 | NB12546 | Power Entry Module |
| SCG 0 | REV 06 | 710-004455 | AY4522 | T320 Sonet |
| Clock Gen. | | | | |
| Routing Engine 0 | | | | unknown |
| CB 0 | REV 13 | 710-002728 | BC1577 | T Series |
| Control Board | | | | |
| CB 1 | REV 13 | 710-002728 | BC1595 | T Series |
| Control Board | | | | |
| FPC 1 | REV 09 | 710-007531 | HS1572 | FPC Type 2 |
| CPU | REV 15 | 710-001726 | HR8763 | FPC CPU |
| PIC 0 | REV 01 | 750-010618 | CB5579 | 4x G/E SFP, |
| 1000 BASE | | | | |
| SFP 0 | REV 01 | 740-007326 | P5809Z1 | SFP-SX |
| SFP 1 | REV 01 | 740-007326 | P4Q10XU | SFP-SX |
| SFP 2 | | NON-JNPR | RA45020031 | SFP-SX |
| SFP 3 | | NON-JNPR | RA45020032 | SFP-SX |
| PIC 1 | REV 01 | 750-010618 | CD9587 | 4x G/E SFP, |
| 1000 BASE | | | | |
| SFP 0 | | NON-JNPR | P5A08QZ | SFP-T |
| SFP 1 | REV 01 | 740-007326 | P4Q133K | SFP-SX |
| SFP 2 | REV 01 | 740-007326 | P5809YY | SFP-SX |
| SFP 3 | REV 01 | 740-007327 | 4C81704 | SFP-LX |
| MMB 1 | REV 03 | 710-005555 | HR9401 | MMB-288mbit |
| PPB 0 | REV 04 | 710-003758 | HR2886 | PPB Type 2 |
| FPC 2 | REV 07 | 710-005860 | HP2392 | FPC Type 1 |
| CPU | REV 14 | 710-001726 | HP7797 | FPC CPU |
| PIC 0 | REV 02 | 750-007643 | HM0853 | 1x G/E QPP, |
| 1000 BASE | | | | |
| SFP 0 | REV 01 | 740-007326 | P11E9JJ | SFP-SX |
| MMB 1 | REV 02 | 710-005555 | HN2379 | MMB-288mbit |
| PPB 0 | REV 04 | 710-003758 | HP8092 | PPB Type 2 |
| FPC 3 | REV 07 | 710-005860 | HP2393 | FPC Type 1 |
| CPU | REV 14 | 710-001726 | HP0968 | FPC CPU |
| PIC 0 | REV 01 | 750-010240 | CB5363 | 1x G/E SFP, |
| 1000 BASE | | | | |
| SFP 0 | REV 01 | 740-007326 | P4R0PNH | SFP-SX |
| PIC 1 | REV 03 | 750-003034 | HD2832 | 4x OC-3 SONET, |
| SMIR | | | | |
| MMB 1 | REV 02 | 710-005555 | HN6307 | MMB-288mbit |
| PPB 0 | REV 04 | 710-003758 | HP5051 | PPB Type 2 |
| FPC 4 | REV 01 | 710-010845 | JD3872 | FPC Type 4 |
| CPU | REV 02 | 710-011481 | JB6042 | FPC CPU |
| 5 | REV 01 | 710-005802 | BC1566 | FPC Type 2 |
| CPU | REV 09 | 710-001726 | AY4922 | FPC CPU |
| PIC 0 | REV 02 | 750-008155 | BE2114 | 2x G/E QPP, |
| 1000 BASE | | | | |
| SFP 0 | REV 01 | 740-007326 | P4R0PMQ | SFP-SX |

| | | | | |
|-----------|--------|------------|---------|-------------|
| SFP 1 | REV 01 | 740-007326 | P4R0PN9 | SFP-SX |
| PIC 1 | REV 01 | 750-008155 | BE2116 | 2x G/E QPP, |
| 1000 BASE | | | | |
| SFP 0 | REV 01 | 740-007326 | P4R0PNZ | SFP-SX |
| SFP 1 | | NON-JNPR | 2908 | SFP-T |
| MMB 1 | REV 01 | 710-005555 | AZ2246 | MMB-288mbit |
| PPB 0 | REV 03 | 710-003758 | AY4839 | PPB Type 2 |
| FPC 7 | REV 01 | 710-005803 | AZ2123 | FPC Type 3 |
| ... | | | | |

show chassis hardware (T640 Router)

```
user@host> show chassis hardware
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|------------------------|
| Chassis | | | 19182 | T640 |
| Midplane | REV 04 | 710-002726 | AX5608 | T640 Backplane |
| FPM GBUS | REV 02 | 710-002901 | HE3064 | T640 FPM Board |
| FPM Display | REV 02 | 710-002897 | HE7864 | FPM Display |
| CIP | REV 05 | 710-002895 | HA5024 | T Series CIP |
| PEM 0 | Rev 02 | 740-029522 | VH26235 | AC PEM 10kW US |
| PEM 1 | Rev 02 | 740-029522 | VH26230 | AC PEM 10kW US |
| SCG 0 | REV 03 | 710-003423 | HA4508 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 02 | 740-005022 | 210865700483 | RE-3.0 (RE-600) |
| CB 0 | REV 01 | 710-002728 | HD3044 | T Series Control Board |
| FPC 2 | REV 04 | 710-001721 | HD5572 | FPC Type 3 |
| CPU | REV 06 | 710-001726 | HA4712 | FPC CPU |
| PIC 1 | REV 03 | 750-009567 | HV2331 | 1x 10GE(LAN),XENPAK |
| SFP 0 | REV 01 | 740-009898 | USC202R103 | XENPAK-SR |
| PIC 2 | REV 03 | 750-009567 | HV2332 | 1x 10GE(LAN),XENPAK |
| SFP 0 | REV 01 | 740-011268 | USC202R112 | XENPAK-ZR |
| PIC 3 | REV 03 | 750-009567 | HX4416 | 1x 10GE(LAN),XENPAK |
| SFP 0 | REV 01 | 740-012056 | 434TC004 | XENPAK-CX4 |
| PIC 4 | REV 03 | 750-009567 | HX4420 | 1x 10GE(LAN),XENPAK |
| SFP 0 | REV 01 | 740-012058 | 434TC124 | XENPAK-LX4 |
| FPC 5 | REV 01 | 710-013553 | JE4839 | E2-FPC Type 1 |
| CPU | REV 01 | 710-013569 | JW9163 | FPC CPU |
| PIC 0 | REV 01 | 750-009567 | HX4419 | 1x 10GE(LAN),XENPAK |
| SFP 0 | REV 01 | 740-009898 | USC202RT05 | XENPAK-LR |
| PIC 1 | REV 03 | 750-009567 | HN7426 | 1x 10GE(LAN),XENPAK |
| SFP 0 | REV 01 | 740-009550 | 03L90051 | XENPAK-ER |
| PIC 2 | REV 03 | 750-009467 | HT7423 | 1x 10GE(LAN),XENPAK |
| SFP 0 | | NON-JNPR | | UNKNOWN |
| PIC 3 | REV 04 | 750-005100 | AY4850 | 1x 10GE(LAN),DWDM |
| FPC 4 | REV 01 | 710-010845 | JD3872 | FPC Type 4 |
| CPU | REV 02 | 710-011481 | JB6042 | FPC CPU |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray |

show chassis hardware models (T640 Router)

```
user@host> show chassis hardware models
Hardware inventory:
```

| Item | Version | Part number | CLEI code | FRU model number |
|-------------|---------|-------------|-----------|------------------|
| Midplane | REV 04 | 710-002726 | | CHAS-BP-T640-S |
| FPM Display | REV 02 | 710-002897 | | CRAFT-T640-S |
| CIP | REV 05 | 710-002895 | | CIP-L-T640-S |
| PEM 0 | Rev 01 | 740-002595 | | PWR-T-DC-S |
| SCG 0 | REV 04 | 710-003423 | | SCG-T-S |

| | | | |
|------------------|--------|------------|--------------------|
| SCG 1 | REV 04 | 710-003423 | SCG-T-S |
| Routing Engine 0 | REV 01 | 740-005022 | RE-600-2048-S |
| Routing Engine 1 | REV 07 | 740-005022 | RE-600-2048-S |
| CB 0 | REV 06 | 710-002726 | CHAS-BP-T640-S |
| CB 1 | REV 06 | 710-002728 | CB-L-T-S |
| FPC 5 | REV 05 | 710-007527 | T640-FPC2 |
| PIC 0 | REV 05 | 750-002510 | PB-2GE-SX |
| PIC 1 | REV 05 | 750-001901 | PB-40C12-SON-SMIR |
| FPC 6 | REV 03 | 710-001721 | T640-FPC3 |
| PIC 1 | REV 01 | 750-009553 | PC-40C48-SON-SFP |
| SIB 4 | REV 02 | 750-005486 | SIB-I-T640-S |
| Fan Tray 0 | | | FANTRAY-T-S |
| Fan Tray 1 | | | FANTRAY-T-S |
| Fan Tray 2 | | | FAN-REAR-TX-T640-S |

show chassis hardware extensive (T640 Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N: ..... S/N: .....
Assembly ID: 0x0507      Assembly Version: 00.00
Date: 00-00-0000      Assembly Flags: 0x00
Version: .....
ID: Gibson LCC Chassis
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 01 ff 05 07 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: ff ff ff ff ff ff ff ff ff ff ff ff ff 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane
REV 04 710-002726 AX5633
Jedec Code: 0x7fb0      EEPROM Version: 0x01
P/N: 710-002726. S/N: AX5633.
Assembly ID: 0x0127      Assembly Version: 01.04
Date: 06-27-2001      Assembly Flags: 0x00
Version: REV 04.....
ID: Gibson Backplane
Board Information Record:
Address 0x00: ad 01 08 00 00 90 69 0e f8 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 01 27 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 30 32 37 32 36 00 00
Address 0x20: 53 2f 4e 20 41 58 35 36 33 33 00 00 00 1b 06 07
Address 0x30: d1 ff ff ff ad 01 08 00 00 90 69 0e f8 00 ff ff
Address 0x40: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM GBUS
REV 02 710-002901 HE3245
...
FPM Display
REV 02 710-002897 HA4873
...
CIP
REV 05 710-002895 HA4729
...
PEM 1
RevX02 740-002595 MD21815 Power Entry Module
...
SCG 0
REV 04 710-003423 HF6023
...
SCG 1
REV 04 710-003423 HF6061

```

```

...
Routing Engine 0 REV 01 740-005022 210865700292 RE-3.0
...
CB 0 REV 06 710-002728 HE3614
...
FPC 1 REV 01 710-002385 HE3009 FPC Type 1
...
REV 06 710-001726 HC0010

```

show chassis hardware (T4000 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN1172F25AHA   T4000
Midplane      REV 01   710-027486   RC8355        T-series Backplane
FPM GBUS      REV 13   710-002901   BBAE0927      T640 FPM Board
FPM Display   REV 01   710-021387   EF6764        T1600 FPM Display
CIP           REV 06   710-002895   BBAD9210      T-series CIP
PEM 0         REV 01   740-036442   VA00016       Power Entry Module 6x60
SCG 0         REV 18   710-003423   BBAD7248      T640 Sonet Clock Gen.
SCG 1         REV 18   710-003423   BBAE3874      T640 Sonet Clock Gen.
Routing Engine 0 REV 05   740-026941   P737F-002248  RE-DUO-1800
Routing Engine 1 REV 06   740-026941   P737F-002653  RE-DUO-1800
CB 0          REV 09   710-022597   ED0295        LCC Control Board
CB 1          REV 09   710-022597   EA6050        LCC Control Board
FPC 0         REV 26   750-032819   EK1173        FPC Type 5-3D
CPU           REV 12   711-030686   EJ8584        SNG PMB
PIC 0         REV 07   750-034624   EF6837        12x10GE (LAN/WAN) SFPP
  Xcvr 0      REV 01   740-031980   123363A01145  SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   123363A01147  SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   AJJ01P3       SFP+-10G-SR
  Xcvr 3      REV 01   740-031980   B10M03256     SFP+-10G-SR
  Xcvr 4      REV 01   740-031980   AJJ01M2       SFP+-10G-SR
  Xcvr 5      REV 01   740-031980   123363A01137  SFP+-10G-SR
  Xcvr 6      REV 01   740-031980   AJJ01PN       SFP+-10G-SR
  Xcvr 7      REV 01   740-031980   AJJ01NW       SFP+-10G-SR
  Xcvr 8      REV 01   740-031980   123363A01139  SFP+-10G-SR
  Xcvr 9      REV 01   740-031980   AJJ01KE       SFP+-10G-SR
  Xcvr 10     REV 01   740-031980   123363A01336  SFP+-10G-SR
  Xcvr 11     REV 01   740-031980   B10M01325     SFP+-10G-SR
PIC 1         REV 07   750-034624   EF6800        12x10GE (LAN/WAN) SFPP
  Xcvr 0      REV 01   740-031980   AJJ01SA       SFP+-10G-SR
  Xcvr 1      REV 01   740-031980   AJJ01QZ       SFP+-10G-SR
  Xcvr 2      REV 01   740-031980   AJH0217       SFP+-10G-SR
  Xcvr 3      REV 01   740-031980   AJJ01TE       SFP+-10G-SR
  Xcvr 4      REV 01   740-031980   AJJ01KV       SFP+-10G-SR
  Xcvr 5      REV 01   740-031980   AJJ01MU       SFP+-10G-SR
  Xcvr 6      REV 01   740-031980   AJJ01R0       SFP+-10G-SR
  Xcvr 7      REV 01   740-031980   AJJ01TC       SFP+-10G-SR
  Xcvr 8      REV 01   740-031980   AJJ0364       SFP+-10G-SR
  Xcvr 9      REV 01   740-031980   AJD0GV3       SFP+-10G-SR
  Xcvr 10     REV 01   740-031980   B10M03343     SFP+-10G-SR
  Xcvr 11     REV 01   740-031980   AJJ01QJ       SFP+-10G-SR
LMB 0         REV 05   711-034381   EJ8490        Type-0 LMB
LMB 1         REV 04   711-035774   EJ8517        Type-1 LMB
LMB 2         REV 05   711-034381   EJ8489        Type-0 LMB
FPC 3         REV 07   750-032819   EG3637        FPC Type 5-3D
CPU           REV 09   711-030686   EG0150        SNG PMB
PIC 0         REV 08   750-035293   EF3657        1x100GE
  Xcvr 0      REV 01   740-032210   C22CQNJ       CFP-100G-LR4
PIC 1         REV 10   750-034624   BBAN4098      12x10GE (LAN/WAN) SFPP

```

| | | | | |
|----------|--------|------------|--------------|------------------------|
| Xcvr 0 | REV 01 | 740-031980 | B11J04902 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11J04891 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJJ01MX | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11J04183 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | B11J04894 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | B11J04184 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | B11J04897 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | B11J04899 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | AJJ01TV | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | B11J04057 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | AJJ01M4 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | B11J04905 | SFP+-10G-SR |
| LMB 0 | REV 04 | 711-034381 | EG1524 | Type-0 LMB |
| LMB 1 | REV 03 | 711-035774 | EG0345 | Type-1 LMB |
| LMB 2 | REV 04 | 711-034381 | EG1522 | Type-0 LMB |
| FPC 5 | REV 03 | 710-033871 | BBAJ0768 | FPC Type 4-ES |
| CPU | REV 11 | 710-016744 | BBAH9342 | ST-PMB2 |
| PIC 0 | REV 09 | 750-029262 | EE6789 | 100GE |
| PIC 1 | REV 03 | 750-034781 | EE6655 | 100GE CFP |
| Xcvr 0 | REV 01 | 740-032210 | J11A22334 | CFP-100G-LR4 |
| BRIDGE 0 | REV 03 | 711-029995 | EE6572 | 100GE Bridge Board |
| MMB 0 | REV 07 | 710-025563 | BBAJ4657 | ST-MMB2 |
| MMB 1 | REV 07 | 710-025563 | BBAJ3073 | ST-MMB2 |
| FPC 6 | REV 05 | 750-010153 | EF4936 | FPC Type 5-3D |
| CPU | REV 06 | 711-030686 | EF4189 | SNG PMB |
| PIC 0 | REV 10 | 750-034624 | BBAN4109 | 12x10GE (LAN/WAN) SFPP |
| Xcvr 0 | REV 01 | 740-031980 | B11J04895 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11J04898 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11J04021 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11J04903 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | B11J04311 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | B11J04059 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | B11J04016 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | B11J04017 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | B11J04887 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | B11J04297 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | B11J04893 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | B11J04022 | SFP+-10G-SR |
| PIC 1 | REV 02 | 750-034624 | EE3711 | 12x10GE (LAN/WAN) SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AJH033X | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJJ01N0 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJJ01SV | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AJJ032L | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | B10M01593 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | AJD0FF1 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | AJJ01NU | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | 123363A01305 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | B10M00361 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | AJJ01M7 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | AJJ032X | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | AJJ01PG | SFP+-10G-SR |
| LMB 0 | REV 04 | 711-034381 | EF3838 | Type-0 LMB |
| LMB 1 | REV 03 | 711-035774 | EF3821 | Type-1 LMB |
| LMB 2 | REV 04 | 711-034381 | EF3834 | Type-0 LMB |
| SPMB 0 | REV 05 | 710-023321 | ED1990 | LCC Switch CPU |
| SPMB 1 | REV 05 | 710-023321 | EA2768 | LCC Switch CPU |
| SIB 0 | REV 02 | 711-036340 | EF8802 | SIB-HC-3D |
| SIB 1 | REV 07 | 711-036340 | EG2286 | SIB-HC-3D |
| SIB 2 | REV 07 | 711-036340 | EG2252 | SIB-HC-3D |
| SIB 3 | REV 02 | 711-036340 | EF1358 | SIB-HC-3D |
| SIB 4 | REV 02 | 711-036340 | EF8806 | SIB-HC-3D |

```

Fan Tray 0
Fan Tray 1
-- Rev 2
Fan Tray 2

```

```

Front Top Fan Tray
Front Bottom Fan Tray

Rear Fan Tray -- Rev 3

```

show chassis hardware (T4000 Router with 16-GB Line Card Chassis (LCC) Routing Engine)

```

user@host> show chassis hardware
Hardware inventory:

```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-------------------------|
| Chassis | | | JN11BDF2CAHA | T1600 |
| Midplane | REV 01 | 710-027486 | ACA30774 | T640 Backplane |
| FPM GBUS | REV 13 | 710-002901 | BBAL6812 | T640 FPM Board |
| FPM Display | REV 04 | 710-021387 | BBAP2679 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | BBAP4758 | T-series CIP |
| PEM 0 | Rev 03 | 740-026384 | XF86421 | Power Entry Module 3x80 |
| PEM 1 | Rev 03 | 740-026384 | XF86429 | Power Entry Module 3x80 |
| SCG 0 | REV 18 | 710-003423 | BBAP1896 | T640 Sonet Clock Gen. |
| SCG 1 | REV 18 | 710-003423 | BBAN8659 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 01 | 740-042243 | 737F-002238 | RE-DUO-1800-16G |
| Routing Engine 1 | REV 01 | 740-042243 | 737F-002403 | RE-DUO-1800-16G |
| CB 1 | REV 11 | 710-022597 | EK4526 | LCC Control Board |
| CB 1 | REV 11 | 710-022597 | EK4527 | LCC Control Board |
| FPC 0 | REV 05 | 710-033871 | EK5644 | FPC Type 4-ES |
| CPU | REV 11 | 710-016744 | EK3428 | ST-PMB2 |
| PIC 0 | REV 20 | 750-017405 | EJ3041 | 4x 10GE (LAN/WAN) XFP |
| PIC 1 | REV 17 | 750-026962 | EH7536 | 10x10GE (LAN/WAN) SFPP |
| MMB 0 | REV 07 | 710-025563 | EK6039 | ST-MMB2 |
| MMB 1 | REV 07 | 710-025563 | EK6086 | ST-MMB2 |
| FPC 1 | REV 05 | 710-033871 | EK6583 | FPC Type 4-ES |
| CPU | REV 11 | 710-016744 | EK3401 | ST-PMB2 |
| PIC 0 | REV 17 | 750-026962 | EJ8948 | 10x10GE (LAN/WAN) SFPP |
| MMB 0 | REV 07 | 710-025563 | EK6202 | ST-MMB2 |
| MMB 1 | REV 07 | 710-025563 | EK6112 | ST-MMB2 |
| SPMB 1 | REV 05 | 710-023321 | EK4900 | LCC Switch CPU |
| SIB 0 | REV 11 | 710-013074 | EK5958 | SIB-I8-SF |
| SIB 1 | REV 11 | 710-013074 | EK4606 | SIB-I8-SF |
| SIB 2 | REV 11 | 710-013074 | EK5971 | SIB-I8-SF |
| SIB 3 | REV 11 | 710-013074 | EK4609 | SIB-I8-SF |
| SIB 4 | REV 11 | 710-013074 | EK4602 | SIB-I8-SF |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 2 |

show chassis hardware (T4000 Router with LSR FPC)

```

user@host> show chassis hardware
Hardware inventory:

```

| Item | Version | Part number | Serial number | Description |
|---------|---------|-------------|---------------|------------------------|
| Chassis | | | JN1173A24AHA | T4000 |
| FPC 3 | REV | 750-048373 | AN7797 | FPC Type 5-LSR |
| CPU | REV 10 | 711-030686 | AN6649 | SNG PMB |
| PIC 0 | REV 07 | 750-034624 | EF6830 | 12x10GE (LAN/WAN) SFPP |

show chassis hardware clei-models (T4000 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:

```

| Item | Version | Part number | CLEI code | FRU model number |
|----------|---------|-------------|------------|------------------|
| Midplane | REV 01 | 710-027486 | IPMJ700DRD | CHAS-BP-T1600-S |

| | | | | |
|------------------|--------|------------|------------|-------------------|
| FPM Display | REV 01 | 710-021387 | | CRAFT-T1600-S |
| CIP | REV 06 | 710-002895 | | CIP-L-T640-S |
| PEM 0 | REV 01 | 740-036442 | IPUPAG6KAA | PWR-T-6-60-DC |
| SCG 0 | REV 18 | 710-003423 | | SCG-T-S |
| SCG 1 | REV 18 | 710-003423 | | SCG-T-S |
| Routing Engine 0 | REV 05 | 740-026941 | | RE-DUO-C1800-8G-S |
| Routing Engine 1 | REV 06 | 740-026941 | | RE-DUO-C1800-8G-S |
| CB 0 | REV 09 | 710-022597 | | CB-LCC-S |
| CB 1 | REV 09 | 710-022597 | | CB-LCC-S |
| FPC 3 | | | | |
| PIC 0 | REV 08 | 750-035293 | XXXXXXXXBB | PF-1CGE-CFP |
| PIC 1 | REV 10 | 750-034624 | XXXXXXXXCC | PF-12XGE-SFPP |
| FPC 5 | REV 03 | 710-033871 | IPUCAMBCTD | T1600-FPC4-ES |
| PIC 1 | REV 03 | 750-034781 | IPUIBKLMMA | PD-1CE-CFP-FPC4 |
| FPC 6 | | | | |
| PIC 0 | REV 10 | 750-034624 | XXXXXXXXCC | PF-12XGE-SFPP |
| Fan Tray 0 | | | | FANTRAY-T-S |
| Fan Tray 1 | | | | FANTRAY-T4000-S |
| Fan Tray 2 | | | | FANTRAY-TXP-R-S |

show chassis hardware detail (T4000 Router)

user@host> show chassis hardware detail

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|----------|-----------------------|----------------------|-------------------------|
| Chassis | | | JN1172F25AHA | T4000 |
| Midplane | REV 01 | 710-027486 | RC8355 | T-series Backplane |
| FPM GBUS | REV 13 | 710-002901 | BBAE0927 | T640 FPM Board |
| FPM Display | REV 01 | 710-021387 | EF6764 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | BBAD9210 | T-series CIP |
| PEM 0 | REV 01 | 740-036442 | VA00016 | Power Entry Module 6x60 |
| SCG 0 | REV 18 | 710-003423 | BBAD7248 | T640 Sonet Clock Gen. |
| SCG 1 | REV 18 | 710-003423 | BBAE3874 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 05 | 740-026941 | P737F-002248 | RE-DUO-1800 |
| ad0 | 3823 MB | SMART CF | 2009121602A661576157 | Compact Flash |
| ad1 | 59690 MB | STEC MACH-8 SSD | STM000103FDB | Disk 1 |
| Routing Engine 1 | REV 06 | 740-026941 | P737F-002653 | RE-DUO-1800 |
| ad0 | 3823 MB | SMART CF | 201011150153F52CF52C | Compact Flash |
| ad1 | 62720 MB | SMART Lite SATA Drive | 2010110900150A880A88 | Disk 1 |
| CB 0 | REV 09 | 710-022597 | ED0295 | LCC Control Board |
| CB 1 | REV 09 | 710-022597 | EA6050 | LCC Control Board |
| FPC 0 | REV 26 | 750-032819 | EK1173 | FPC Type 5-3D |
| CPU | REV 12 | 711-030686 | EJ8584 | SNG PMB |
| PIC 0 | REV 07 | 750-034624 | EF6837 | 12x10GE (LAN/WAN) SFPP |
| Xcvr 0 | REV 01 | 740-031980 | 123363A01145 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | 123363A01147 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJJ01P3 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B10M03256 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | AJJ01M2 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | 123363A01137 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | AJJ01PN | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | AJJ01NW | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | 123363A01139 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | AJJ01KE | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | 123363A01336 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | B10M01325 | SFP+-10G-SR |
| PIC 1 | REV 07 | 750-034624 | EF6800 | 12x10GE (LAN/WAN) SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AJJ01SA | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJJ01QZ | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJH0217 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AJJ01TE | SFP+-10G-SR |

| | | | | |
|----------|--------|------------|-----------|------------------------|
| Xcvr 4 | REV 01 | 740-031980 | AJJ01KV | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | AJJ01MU | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | AJJ01R0 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | AJJ01TC | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | AJJ0364 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | AJD0GV3 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | B10M03343 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | AJJ01QJ | SFP+-10G-SR |
| LMB 0 | REV 05 | 711-034381 | EJ8490 | Type-0 LMB |
| LMB 1 | REV 04 | 711-035774 | EJ8517 | Type-1 LMB |
| LMB 2 | REV 05 | 711-034381 | EJ8489 | Type-0 LMB |
| FPC 3 | REV 07 | 750-032819 | EG3637 | FPC Type 5-3D |
| CPU | REV 09 | 711-030686 | EG0150 | SNG PMB |
| PIC 0 | REV 08 | 750-035293 | EF3657 | 1x100GE |
| Xcvr 0 | REV 01 | 740-032210 | C22CQNJ | CFP-100G-LR4 |
| PIC 1 | REV 10 | 750-034624 | BBAN4098 | 12x10GE (LAN/WAN) SFPP |
| Xcvr 0 | REV 01 | 740-031980 | B11J04902 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11J04891 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJJ01MX | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11J04183 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | B11J04894 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | B11J04184 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | B11J04897 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | B11J04899 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | AJJ01TV | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | B11J04057 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | AJJ01M4 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | B11J04905 | SFP+-10G-SR |
| LMB 0 | REV 04 | 711-034381 | EG1524 | Type-0 LMB |
| LMB 1 | REV 03 | 711-035774 | EG0345 | Type-1 LMB |
| LMB 2 | REV 04 | 711-034381 | EG1522 | Type-0 LMB |
| FPC 5 | REV 03 | 710-033871 | BBAJ0768 | FPC Type 4-ES |
| CPU | REV 11 | 710-016744 | BBAH9342 | ST-PMB2 |
| PIC 0 | REV 09 | 750-029262 | EE6789 | 100GE |
| PIC 1 | REV 03 | 750-034781 | EE6655 | 100GE CFP |
| Xcvr 0 | REV 01 | 740-032210 | J11A22334 | CFP-100G-LR4 |
| BRIDGE 0 | REV 03 | 711-029995 | EE6572 | 100GE Bridge Board |
| MMB 0 | REV 07 | 710-025563 | BBAJ4657 | ST-MMB2 |
| MMB 1 | REV 07 | 710-025563 | BBAJ3073 | ST-MMB2 |
| FPC 6 | REV 05 | 750-010153 | EF4936 | FPC Type 5-3D |
| CPU | REV 06 | 711-030686 | EF4189 | SNG PMB |
| PIC 0 | REV 10 | 750-034624 | BBAN4109 | 12x10GE (LAN/WAN) SFPP |
| Xcvr 0 | REV 01 | 740-031980 | B11J04895 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11J04898 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | B11J04021 | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | B11J04903 | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | B11J04311 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | B11J04059 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | B11J04016 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | B11J04017 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | B11J04887 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | B11J04297 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | B11J04893 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | B11J04022 | SFP+-10G-SR |
| PIC 1 | REV 02 | 750-034624 | EE3711 | 12x10GE (LAN/WAN) SFPP |
| Xcvr 0 | REV 01 | 740-031980 | AJH033X | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | AJJ01N0 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AJJ01SV | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031980 | AJJ032L | SFP+-10G-SR |
| Xcvr 4 | REV 01 | 740-031980 | B10M01593 | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | AJD0FF1 | SFP+-10G-SR |

| | | | | |
|------------|--------|------------|--------------|------------------------|
| Xcvr 6 | REV 01 | 740-031980 | AJJ01NU | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | 123363A01305 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | B10M00361 | SFP+-10G-SR |
| Xcvr 9 | REV 01 | 740-031980 | AJJ01M7 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | AJJ032X | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | AJJ01PG | SFP+-10G-SR |
| LMB 0 | REV 04 | 711-034381 | EF3838 | Type-0 LMB |
| LMB 1 | REV 03 | 711-035774 | EF3821 | Type-1 LMB |
| LMB 2 | REV 04 | 711-034381 | EF3834 | Type-0 LMB |
| SPMB 0 | REV 05 | 710-023321 | ED1990 | LCC Switch CPU |
| SPMB 1 | REV 05 | 710-023321 | EA2768 | LCC Switch CPU |
| SIB 0 | REV 02 | 711-036340 | EF8802 | SIB-HC-3D |
| SIB 1 | REV 07 | 711-036340 | EG2286 | SIB-HC-3D |
| SIB 2 | REV 07 | 711-036340 | EG2252 | SIB-HC-3D |
| SIB 3 | REV 02 | 711-036340 | EF1358 | SIB-HC-3D |
| SIB 4 | REV 02 | 711-036340 | EF8806 | SIB-HC-3D |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| -- Rev 2 | | | | |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 3 |

show chassis hardware models (T4000 Router)

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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
Fan Tray 1
Fan Tray 2          FAN-REAR-TXP-LCC
```

show chassis hardware lcc (TX Matrix Router)

```
user@host> show chassis hardware lcc 0
lcc0-re0:
```

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Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis
Midplane            REV 03   710-005608   RA1408         T640 Backplane
FPM GBUS            REV 09   710-002901   RA2784         T640 FPM Board
FPM Display         REV 05   710-002897   RA2825         FPM Display
CIP                 REV 06   710-002895   HT0684         T Series CIP
```

| | | | | |
|------------------|--------|------------|--------------|-------------------------|
| PEM 0 | Rev 11 | 740-002595 | PM18483 | Power Entry Module |
| PEM 1 | Rev 11 | 740-002595 | qb13984 | Power Entry Module |
| SCG 0 | REV 11 | 710-003423 | HT0022 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 13 | 740-005022 | 210865700363 | RE-3.0 (RE-600) |
| CB 0 | REV 03 | 710-007655 | HW1195 | Control Board (CB-T) |
| FPC 1 | REV 05 | 710-007527 | HM3245 | FPC Type 2 |
| CPU | REV 14 | 710-001726 | HM1084 | FPC CPU |
| PIC 0 | REV 02 | 750-007218 | AZ1112 | 2x OC-12 ATM2 IQ, SMIR |
| PIC 1 | REV 02 | 750-007745 | HG3462 | 4x OC-3 SONET, SMIR |
| PIC 2 | REV 14 | 750-001901 | BA5390 | 4x OC-12 SONET, SMIR |
| PIC 3 | REV 09 | 750-008155 | HS3012 | 2x G/E IQ, 1000 BASE |
| SFP 0 | | NON-JNPR | P1186TY | SFP-S |
| SFP 1 | REV 01 | 740-007326 | P11WLTF | SFP-SX |
| MMB 1 | REV 02 | 710-005555 | HL7514 | MMB-288mbit |
| PPB 0 | REV 04 | 710-003758 | HM4405 | PPB Type 2 |
| PPB 1 | REV 04 | 710-003758 | AV1960 | PPB Type 2 |
| FPC 2 | REV 08 | 710-010154 | HZ3578 | E-FPC Type 3 |
| CPU | REV 05 | 710-010169 | HZ3219 | FPC CPU-Enhanced |
| PIC 0 | REV 02 | 750-009567 | HX2882 | 1x 10GE(LAN), XENPAK |
| SFP 0 | REV 01 | 740-009898 | USC202U709 | XENPAK-LR |
| PIC 1 | REV 03 | 750-003336 | HJ9954 | 4x OC-48 SONET, SMSR |
| PIC 2 | REV 01 | 750-004535 | HC0235 | 1x OC-192 SM SR1 |
| PIC 3 | REV 07 | 750-007141 | HX1699 | 10x 1GE(LAN), 1000 BASE |
| SFP 0 | REV 01 | 740-007326 | 2441042 | SFP-SX |
| SFP 1 | REV 01 | 740-007326 | 2441027 | SFP-SX |
| MMB 0 | REV 03 | 710-010171 | HV2365 | MMB-5M3-288mbit |
| MMB 1 | REV 03 | 710-010171 | HZ3888 | MMB-5M3-288mbit |
| SPMB 0 | REV 09 | 710-003229 | HW5245 | T Series Switch CPU |
| SIB 3 | REV 07 | 710-005781 | HR5927 | SIB-L8-F16 |
| B Board | REV 06 | 710-005782 | HR5971 | SIB-L8-F16 (B) |
| SIB 4 | REV 07 | 710-005781 | HR5903 | SIB-L8-F16 |
| B Board | REV 06 | 710-005782 | HZ5275 | SIB-L8-F16 (B) |

show chassis hardware scc (TX Matrix Router)

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user@host> show chassis hardware scc
scc-re0:
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Hardware inventory:
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

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| | | | | |
|------------------|--------|------------|-------------|--------------------------|
| 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 |

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|------------|--------|------------|---------|------------------------|
| Xcvr 5 | REV 01 | 740-011782 | P8Q21YC | SFP-SX |
| Xcvr 6 | REV 01 | 740-011782 | P8Q27HQ | SFP-SX |
| Xcvr 7 | REV 01 | 740-011613 | P8E2SSU | SFP-SX |
| PIC 3 | REV 15 | 750-009450 | NB6790 | 1x OC-192 SM SR2 |
| MMB 0 | REV 03 | 710-005555 | HZ3450 | MMB-288mbit |
| MMB 1 | REV 03 | 710-005555 | HZ3415 | MMB-288mbit |
| PPB 0 | REV 04 | 710-002845 | HP0887 | PPB Type 3 |
| PPB 1 | REV 04 | 710-002845 | HW5255 | PPB Type 3 |
| SPMB 0 | REV 10 | 710-003229 | HX3699 | T-series Switch CPU |
| SPMB 1 | REV 12 | 710-003229 | DT3091 | T-series Switch CPU |
| SIB 0 | REV 07 | 710-013074 | DS4747 | SIB-I8-SF |
| SIB 1 | REV 07 | 710-013074 | DS4942 | SIB-I8-SF |
| SIB 2 | REV 07 | 710-013074 | DS4965 | SIB-I8-SF |
| SIB 3 | REV 07 | 710-013074 | DS4990 | SIB-I8-SF |
| SIB 4 | REV 07 | 710-013074 | DS4944 | SIB-I8-SF |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 2 |

show chassis hardware (TX Matrix Plus Router)

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user@host> show chassis hardware
sfc0-re0:
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----- Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|--------------------|
| Chassis | | | JN113186EAHB | TXP |
| Midplane | REV 05 | 710-022574 | TS3822 | SFC Midplane |
| FPM Display | REV 03 | 710-024027 | DW4701 | TXP FPM Display |
| CIP 0 | REV 05 | 710-023792 | DW7998 | TXP CIP |
| CIP 1 | REV 05 | 710-023792 | DW7999 | TXP CIP |
| PEM 0 | Rev 04 | 740-027463 | UM26367 | Power Entry Module |
| PEM 1 | Rev 04 | 740-027463 | UM26346 | Power Entry Module |
| Routing Engine 0 | REV 06 | 740-026942 | 737A-1081 | RE-DUO-2600 |
| Routing Engine 1 | REV 06 | 740-026942 | 737A-1043 | RE-DUO-2600 |
| CB 0 | REV 05 | 710-022606 | DW4435 | SFC Control Board |
| CB 1 | REV 09 | 710-022606 | DW6100 | SFC Control Board |
| SPMB 0 | | BUILTIN | | SFC Switch CPU |
| SPMB 1 | | BUILTIN | | SFC Switch CPU |
| SIB F13 0 | REV 04 | 750-024564 | DW5764 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9053 | F13 SIB Mezz |
| SIB F13 3 | REV 04 | 750-024564 | DW5785 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9030 | F13 SIB Mezz |
| SIB F13 6 | | | | |
| SIB F13 8 | REV 04 | 750-024564 | DW5752 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9051 | F13 SIB Mezz |
| SIB F13 11 | REV 04 | 750-024564 | DW5782 | F13 SIB |
| B Board | REV 03 | 710-023431 | DW9058 | F13 SIB Mezz |
| SIB F13 12 | REV 03 | 750-024564 | DT9466 | F13 SIB |
| B Board | REV 02 | 710-023431 | DT6556 | F13 SIB Mezz |
| SIB F2S 0/0 | REV 05 | 710-022603 | DW7898 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7625 | F2S SIB Mezz |
| SIB F2S 0/2 | REV 05 | 710-022603 | DW7811 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7550 | F2S SIB Mezz |
| SIB F2S 0/4 | REV 04 | 710-022603 | DW4873 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW8509 | F2S SIB Mezz |
| SIB F2S 0/6 | REV 04 | 710-022603 | DW4867 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW8472 | F2S SIB Mezz |
| SIB F2S 1/0 | REV 04 | 710-022603 | DW4871 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW8497 | F2S SIB Mezz |
| SIB F2S 1/2 | REV 05 | 710-022603 | DW7868 | F2S SIB |

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|-------------|--------|------------|--------|----------------|
| 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 |

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|--------|--------|------------|-------------|--------------------------|
| 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 |

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| Xcvr 1 | REV 01 | 740-011782 | PCH2V19 | SFP-SX |
| PIC 3 | REV 03 | 750-014638 | JS9493 | 1x OC-48-12-3 SFP |
| Xcvr 0 | REV 01 | 740-011785 | P6Q0ENK | SFP-SR |
| MMB 0 | REV 05 | 710-016036 | DP3323 | ST-MMB2 |
| SPMB 0 | REV 04 | 710-023321 | DX3004 | LCC Switch CPU |
| SPMB 1 | REV 04 | 710-023321 | DX3009 | LCC Switch CPU |
| SIB 0 | REV 07 | 710-022594 | DW4195 | LCC SIB |
| B Board | REV 07 | 710-023185 | DW3930 | LCC SIB Mezz |
| SIB 1 | REV 07 | 710-022594 | DW4179 | LCC SIB |
| B Board | REV 07 | 710-023185 | DW3919 | LCC SIB Mezz |
| SIB 2 | | | | |
| SIB 3 | REV 06 | 710-022594 | DT8251 | LCC SIB |
| B Board | REV 06 | 710-023185 | DT5792 | LCC SIB Mezz |
| SIB 4 | REV 08 | 710-022594 | DW8014 | LCC SIB |
| B Board | REV 07 | 710-023185 | DW3917 | LCC SIB Mezz |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 3 |

lcc1-re0:

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|--------------------------|
| Chassis | | | JN1102270AHA | T1600 |
| Midplane | REV 04 | 710-017247 | RC5358 | T-series Backplane |
| FPM GBUS | REV 10 | 710-002901 | DS3443 | T640 FPM Board |
| FPM Display | REV 01 | 710-021387 | DS6411 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | DS4235 | T-series CIP |
| PEM 0 | Rev 02 | 740-023211 | VM82438 | Power Entry Module 4x60A |
| SCG 0 | REV 15 | 710-003423 | DS6649 | T640 Sonet Clock Gen. |
| SCG 1 | REV 15 | 710-003423 | DR6775 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 01 | 740-026941 | 737F-1083 | RE-DUO-1800 |
| Routing Engine 1 | REV 01 | 740-026941 | 737F-1104 | RE-DUO-1800 |
| CB 0 | REV 06 | 710-022597 | DW8542 | LCC Control Board |
| CB 1 | REV 06 | 710-022597 | DW8530 | LCC Control Board |
| FPC 0 | REV 02 | 710-010845 | JE2392 | FPC Type 4 |
| CPU | REV 02 | 710-011481 | JF6820 | FPC CPU-Enhanced |
| PIC 0 | REV 11 | 750-017405 | DP7259 | 4x 10GE (LAN/WAN) XFP |
| Xcvr 0 | REV 01 | 740-014279 | AA0741N1C8T | XFP-10G-LR |
| Xcvr 1 | REV 01 | 740-014279 | AA0746N1GAM | XFP-10G-LR |
| Xcvr 2 | REV 01 | 740-014279 | AA0747N1H0B | XFP-10G-LR |
| Xcvr 3 | REV 01 | 740-014279 | AA0748N1HZ5 | XFP-10G-LR |
| MMB 0 | REV 03 | 710-010842 | HY7601 | ST-MMB |
| FPC 1 | REV 16 | 710-013037 | BBAA7398 | FPC Type 4-ES |
| CPU | REV 09 | 710-016744 | BBAA2329 | ST-PMB2 |
| PIC 0 | REV 03 | 711-029996 | EB1575 | 100GE |
| PIC 1 | REV 06 | 750-034781 | EB9980 | 100GE CFP |
| MMB 0 | REV 04 | 710-025563 | BBAA5325 | ST-MMB2 |
| MMB 1 | REV 04 | 710-025563 | BBAA5444 | ST-MMB2 |
| FPC 2 | REV 16 | 710-013037 | BBAA7185 | FPC Type 4-ES |
| CPU | REV 09 | 710-016744 | BBAA3522 | ST-PMB2 |
| PIC 0 | REV 03 | 711-029996 | EB1557 | 100GE |
| PIC 1 | REV 05 | 750-034781 | EB4660 | 100GE CFP |
| Xcvr 0 | REV 0 | 740-032210 | J10F73666 | CFP-100G-LR4 |
| BRIDGE 0 | REV 02 | 711-029995 | EB2237 | 100GE Bridge Board |
| MMB 0 | REV 04 | 710-025563 | BBAA5347 | ST-MMB2 |
| MMB 1 | REV 04 | 710-025563 | BBAA5401 | ST-MMB2 |
| FPC 3 | REV 10 | 710-021534 | DZ0941 | FPC Type 1-ES |
| CPU | REV 09 | 710-016744 | DY6364 | ST-PMB2 |
| PIC 0 | REV 13 | 750-012266 | DK9192 | 4x 1GE(LAN), IQ2 |
| Xcvr 0 | REV 01 | 740-011613 | AM0812S8WVD | SFP-SX |

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|---------|--------|------------|--------------|--------------------------|
| Xcvr 1 | | NON-JNPR | PDD63Q4 | SFP-SX |
| Xcvr 2 | | NON-JNPR | PDE4G54 | SFP-SX |
| Xcvr 3 | | NON-JNPR | PD40MAG | SFP-SX |
| PIC 1 | REV 01 | 750-007641 | HJ2003 | 1x G/E IQ, 1000 BASE |
| Xcvr 0 | REV 01 | 740-011613 | AM0812S8WVG | SFP-SX |
| PIC 3 | REV 17 | 750-007444 | JB6873 | 1x CHSTM1 IQ SDH, SMIR |
| MMB 0 | REV 04 | 710-025563 | DZ0281 | ST-MMB2 |
| FPC 4 | REV 06 | 710-013035 | DK0614 | FPC Type 3-ES |
| CPU | REV 07 | 710-016744 | DK1616 | ST-PMB2 |
| PIC 0 | REV 22 | 750-007141 | DM1870 | 10x 1GE(LAN), 1000 BASE |
| Xcvr 0 | REV 01 | 740-011782 | PCL3UKW | SFP-SX |
| Xcvr 1 | REV 01 | 740-011782 | P7E0T73 | SFP-SX |
| Xcvr 2 | REV 01 | 740-007326 | P4T0WLR | SFP-SX |
| Xcvr 3 | REV 01 | 740-011782 | PAR1LRL | SFP-SX |
| Xcvr 4 | REV 01 | 740-011782 | P9MOU3Z | SFP-SX |
| Xcvr 5 | REV 01 | 740-011782 | P9MOU0C | SFP-SX |
| Xcvr 6 | REV 01 | 740-011782 | P9M0TLG | SFP-SX |
| Xcvr 7 | REV 01 | 740-011782 | P9MOU0F | SFP-SX |
| Xcvr 8 | REV 01 | 740-011613 | PFA6LAP | SFP-SX |
| Xcvr 9 | REV 01 | 740-011782 | PCH2POU | SFP-SX |
| PIC 1 | REV 16 | 750-009450 | CV2565 | 1x OC-192 SM SR2 |
| PIC 2 | REV 05 | 750-004424 | HH3057 | 1x 10GE(LAN), 10GBASE-LR |
| PIC 3 | REV 12 | 750-013423 | DP0403 | MultiServices 500 |
| MMB 0 | REV 04 | 710-016036 | DK1988 | ST-MMB2 |
| FPC 5 | REV 07 | 710-013560 | DR0004 | E2-FPC Type 3 |
| CPU | REV 05 | 710-013563 | DR0089 | FPC CPU-Enhanced |
| PIC 0 | REV 11 | 750-012793 | DR6107 | 1x 10GE(LAN/WAN) IQ2 |
| Xcvr 0 | REV 01 | 740-014289 | C743XU074 | XFP-10G-SR |
| PIC 1 | REV 01 | 750-004695 | HD5980 | 1x Tunnel |
| PIC 2 | REV 32 | 750-003700 | DL3770 | 1x OC-192 12xMM VSR |
| PIC 3 | REV 12 | 750-009553 | WB8901 | 4x OC-48 SONET |
| Xcvr 0 | REV 01 | 740-011785 | P9D1GTQ | SFP-SR |
| Xcvr 1 | REV 01 | 740-011785 | PDSOMMB | SFP-SR |
| Xcvr 3 | REV 01 | 740-011785 | PDE1KXP | SFP-SR |
| MMB 0 | REV 07 | 710-010171 | DP7374 | MMB-5M3-288mbit |
| MMB 1 | REV 07 | 710-010171 | DP7404 | MMB-5M3-288mbit |
| FPC 6 | REV 07 | 710-013035 | DM0994 | FPC Type 3-ES |
| CPU | REV 07 | 710-016744 | DM3651 | ST-PMB2 |
| PIC 0 | REV 07 | 750-015217 | DN4743 | 8x 1GE(TYPE3), IQ2 |
| Xcvr 3 | REV 01 | 740-011613 | AM0812S8XB0 | SFP-SX |
| Xcvr 4 | REV 01 | 740-011782 | PB829RB | SFP-SX |
| Xcvr 5 | REV 01 | 740-011782 | P8J1SYX | SFP-SX |
| PIC 1 | REV 03 | 750-003336 | HJ9954 | 4x OC-48 SONET, SMSR |
| PIC 3 | REV 02 | 750-012793 | JM7665 | 1x 10GE(LAN/WAN) IQ2 |
| MMB 0 | REV 04 | 710-016036 | DN6913 | ST-MMB2 |
| FPC 7 | REV 08 | 710-010845 | JM3958 | FPC Type 4 |
| CPU | REV 04 | 710-011481 | JK3669 | FPC CPU-Enhanced |
| PIC 0 | REV 11 | 750-017405 | DP8837 | 4x 10GE (LAN/WAN) XFP |
| Xcvr 1 | REV 01 | 740-014279 | 753019A00277 | XFP-10G-LR |
| Xcvr 2 | REV 02 | 740-011571 | C850XJ00P | XFP-10G-SR |
| Xcvr 3 | REV 01 | 740-014279 | AA0813N1RTG | XFP-10G-LR |
| MMB 0 | REV 04 | 710-010842 | JN1971 | ST-MMB |
| SPMB 0 | REV 04 | 710-023321 | DW3629 | LCC Switch CPU |
| SPMB 1 | REV 04 | 710-023321 | DW3621 | LCC Switch CPU |
| SIB 0 | REV 07 | 710-022594 | DW4200 | LCC SIB |
| B Board | REV 07 | 710-023185 | DW3932 | LCC SIB Mezz |
| SIB 1 | REV 07 | 710-022594 | DW4193 | LCC SIB |
| B Board | REV 07 | 710-023185 | DW3904 | LCC SIB Mezz |
| SIB 2 | | | | |

| | | | | |
|------------|--------|------------|--------|------------------------|
| SIB 3 | REV 07 | 710-022594 | DW4210 | LCC SIB |
| B Board | REV 06 | 710-023185 | DT5780 | LCC SIB Mezz |
| SIB 4 | REV 08 | 710-022594 | DW8019 | LCC SIB |
| B Board | REV 06 | 710-023185 | DT5795 | LCC SIB Mezz |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 3 |

show chassis hardware sfc (TX Matrix Plus Router)

```
user@host> show chassis hardware sfc 0
sfc0-re0:
```

```
-----
Hardware inventory:
Item                Version  Part number  Serial number  Description
Chassis              JN112F007AHB  TXP
Midplane             REV 05  710-022574  TS4027         SFC Midplane
FPM Display          REV 03  710-024027  DX0282         TXP FPM Display
CIP 0                REV 04  710-023792  DW4889         TXP CIP
CIP 1                REV 04  710-023792  DW4887         TXP CIP
PEM 0                Rev 07  740-027463  UM26368        Power Entry Module
Routing Engine 0     REV 01  740-026942  737A-1064      SFC RE
Routing Engine 1     REV 01  740-026942  737A-1082      SFC RE
CB 0                 REV 09  710-022606  DW6099         SFC Control Board
CB 1                 REV 09  710-022606  DW6096         SFC Control Board
SPMB 0               BUILTIN                          SFC Switch CPU
SPMB 1               BUILTIN                          SFC Switch CPU
SIB F13 0            REV 04  710-022600  DX0841         F13 SIB
B Board              REV 03  710-023431  DX0966         F13 SIB Mezz
SIB F13 1            REV 04  750-024564  DW5776         F13 SIB
B Board              REV 03  710-023431  DW9028         F13 SIB
SIB F13 3            REV 04  750-024564  DW5762         F13 SIB
B Board              REV 03  710-023431  DW9059         F13 SIB
SIB F13 4            REV 04  750-024564  DW5797         F13 SIB
B Board              REV 03  710-023431  DW9041         F13 SIB
SIB F13 6            REV 04  750-024564  DW5770         F13 SIB
B Board              REV 03  710-023431  DW9079         F13 SIB Mezz
SIB F13 7            REV 04  750-024564  DW5758         F13 SIB
B Board              REV 03  710-023431  DW9047         F13 SIB
SIB F13 8            REV 04  750-024564  DW5761         F13 SIB
B Board              REV 03  710-023431  DW9043         F13 SIB Mezz
SIB F13 9            REV 04  750-024564  DW5754         F13 SIB
B Board              REV 03  710-023431  DW9078         F13 SIB Mezz
SIB F13 11           REV 04  710-022600  DX0826         F13 SIB
B Board              REV 03  710-023431  DX0967         F13 SIB Mezz
SIB F13 12           REV 04  750-024564  DW5794         F13 SIB
B Board              REV 03  710-023431  DW9044         F13 SIB Mezz
SIB F2S 0/0          REV 05  710-022603  DW7897         F2S SIB
B Board              REV 05  710-023787  DW7657         NEO PMB
SIB F2S 0/2          REV 05  710-022603  DW7833         F2S SIB
B Board              REV 05  710-023787  DW7526         NEO PMB
SIB F2S 0/4          REV 05  710-022603  DW7875         F2S SIB
B Board              REV 05  710-023787  DW7588         NEO PMB
SIB F2S 0/6          REV 05  710-022603  DW7860         F2S SIB
B Board              REV 05  710-023787  DW7589         NEO PMB
SIB F2S 1/0          REV 04  710-022603  DW4820         F2S SIB
B Board              REV 05  710-023787  DW8510         NEO PMB
SIB F2S 1/2          REV 05  710-022603  DW7849         F2S SIB
B Board              REV 05  710-023787  DW7525         NEO PMB
SIB F2S 1/4          REV 05  710-022603  DW7927         F2S SIB
B Board              REV 05  710-023787  DW7556         F2S SIB Mezz
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| | | | | |
|-------------|--------|------------|--------|----------------|
| SIB F2S 1/6 | REV 05 | 710-022603 | DW7866 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7651 | NEO PMB |
| SIB F2S 2/0 | REV 05 | 710-022603 | DW7880 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7523 | NEO PMB |
| SIB F2S 2/2 | REV 05 | 710-022603 | DW7895 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7591 | NEO PMB |
| SIB F2S 2/4 | REV 05 | 710-022603 | DW7907 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7590 | NEO PMB |
| SIB F2S 2/6 | REV 05 | 710-022603 | DW7785 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7524 | NEO PMB |
| SIB F2S 3/0 | REV 05 | 710-022603 | DW7782 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7634 | NEO PMB |
| SIB F2S 3/2 | REV 05 | 710-022603 | DW7793 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7548 | NEO PMB |
| SIB F2S 3/4 | REV 05 | 710-022603 | DW7779 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7587 | NEO PMB |
| SIB F2S 3/6 | REV 05 | 710-022603 | DW7930 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7505 | NEO PMB |
| SIB F2S 4/0 | REV 05 | 710-022603 | DW7867 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7656 | NEO PMB |
| SIB F2S 4/2 | REV 05 | 710-022603 | DW7917 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7640 | NEO PMB |
| SIB F2S 4/4 | REV 05 | 710-022603 | DW7929 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7643 | NEO PMB |
| SIB F2S 4/6 | REV 05 | 710-022603 | DW7870 | F2S SIB |
| B Board | REV 05 | 710-023787 | DW7635 | NEO PMB |
| Fan Tray 0 | REV 06 | 760-024497 | DV7831 | Front Fan Tray |
| Fan Tray 1 | REV 06 | 760-024497 | DV9614 | Front Fan Tray |
| Fan Tray 2 | REV 06 | 760-024502 | DV9618 | Rear Fan Tray |
| Fan Tray 3 | REV 06 | 760-024502 | DV9616 | Rear Fan Tray |
| Fan Tray 4 | REV 06 | 760-024502 | DV7807 | Rear Fan Tray |
| Fan Tray 5 | REV 06 | 760-024502 | DV7828 | Rear Fan Tray |

show chassis hardware extensive (TX Matrix Plus Router)

```
user@host> show chassis hardware extensive
sfc0-re0:
```

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|--------------|------------|-------------------|---------------|-------------|
| Chassis | | | JN112F007AHB | TXP |
| Jedec Code: | 0x7fb0 | EEPROM Version: | 0x02 | |
| | | S/N: | JN112F007AHB | |
| Assembly ID: | 0x052c | Assembly Version: | 00.00 | |
| Date: | 00-00-0000 | Assembly Flags: | 0x00 | |

ID: TXP

Board Information Record:

Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

I2C Hex Data:

Address 0x00: 7f b0 02 ff 05 2c 00 00 00 00 00 00 00 00 00 00

Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x20: 4a 4e 31 31 32 46 30 30 37 41 48 42 00 00 00 00

Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

| | | | | |
|----------|--------|------------|--------|--------------|
| Midplane | REV 05 | 710-022574 | TS4027 | SFC Midplane |
|----------|--------|------------|--------|--------------|

| | | | |
|-------------|--------|-----------------|------|
| Jedec Code: | 0x7fb0 | EEPROM Version: | 0x01 |
|-------------|--------|-----------------|------|

| | | | |
|------|------------|------|--------|
| P/N: | 710-022574 | S/N: | TS4027 |
|------|------------|------|--------|

| | | | |
|--------------|--------|-------------------|-------|
| Assembly ID: | 0x0962 | Assembly Version: | 01.05 |
|--------------|--------|-------------------|-------|

```

Date:          03-23-2009      Assembly Flags:  0x00
Version:       REV 05
ID: SFC Midplane
Board Information Record:
Address 0x00: ad 01 ff ff 00 1d b5 14 00 00 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 62 01 05 52 45 56 20 30 35 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 32 32 35 37 34 00 00
Address 0x20: 53 2f 4e 20 54 53 34 30 32 37 00 00 00 17 03 07
Address 0x30: d9 ff ff ff ad 01 ff ff 00 1d b5 14 00 00 ff ff
Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
FPM Display      REV 03      710-024027      DX0282      TXP FPM Display
Jedec Code:      0x7fb0      EEPROM Version:  0x01
P/N:             710-024027      S/N:            DX0282
Assembly ID:     0x096c      Assembly Version: 01.03
Date:           02-10-2009      Assembly Flags:  0x00
Version:         REV 03
ID: TXP FPM Display      FRU Model Number: CRAFT-TXP
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 01 ff 09 6c 01 03 52 45 56 20 30 33 00 00
Address 0x10: 00 00 00 00 37 31 30 2d 30 32 34 30 32 37 00 00
Address 0x20: 53 2f 4e 20 44 58 30 32 38 32 00 00 00 0a 02 07
Address 0x30: d9 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 00 00 00 00 00 00 00 00 00 00 43
Address 0x50: 52 41 46 54 2d 54 58 50 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 ff ff ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
CIP 0            REV 04      710-023792      DW4889      TXP CIP
Jedec Code:      0x7fb0      EEPROM Version:  0x01
P/N:             710-023792      S/N:            DW4889
Assembly ID:     0x0969      Assembly Version: 01.04
Date:           01-26-2009      Assembly Flags:  0x00
Version:         REV 04
ID: TXP CIP      FRU Model Number: CIP-TXP
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware clei-models (TX Matrix Plus Router)

```

user@host> show chassis hardware clei-models
sfc0-re0:

```

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|------------|--------------------|
| Midplane | REV 05 | 710-022574 | | CHAS-BP-TXP-S |
| FPM Display | REV 03 | 710-024027 | | CRAFT-TXP-S |
| CIP 0 | REV 05 | 710-023792 | | CIP-TXP-S |
| CIP 1 | REV 05 | 710-023792 | | CIP-TXP-S |
| PEM 0 | Rev 04 | 740-027463 | IPUPAFGKTA | PWR-TXP-7-60-DC |
| PEM 1 | Rev 04 | 740-027463 | IPUPAFGKTA | PWR-TXP-7-60-DC |
| Routing Engine 0 | REV 06 | 740-026942 | | RE-DUO-C2600-16G-S |
| Routing Engine 1 | REV 06 | 740-026942 | | RE-DUO-C2600-16G-S |
| CB 0 | REV 05 | 710-022606 | | CB-TXP-S |
| CB 1 | REV 09 | 710-022606 | | CB-TXP-S |
| SIB F13 0 | REV 04 | 750-024564 | | SIB-TXP-F13 |
| SIB F13 3 | REV 04 | 750-024564 | | SIB-TXP-F13 |

| | | | |
|-------------|--------|------------|-----------------|
| SIB F13 8 | REV 04 | 750-024564 | SIB-TXP-F13 |
| SIB F13 11 | REV 04 | 750-024564 | SIB-TXP-F13 |
| SIB F13 12 | REV 03 | 750-024564 | SIB-TXP-F13 |
| SIB F2S 0/0 | REV 05 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 0/2 | REV 05 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 0/4 | REV 04 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 0/6 | REV 04 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 1/0 | REV 04 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 1/2 | REV 05 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 1/4 | REV 04 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 1/6 | REV 05 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 2/0 | REV 04 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 2/2 | REV 04 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 2/4 | REV 05 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 2/6 | REV 04 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 3/0 | REV 05 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 3/2 | REV 03 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 3/4 | REV 05 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 3/6 | REV 03 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 4/0 | REV 03 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 4/2 | REV 05 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 4/4 | REV 04 | 710-022603 | SIB-TXP-F2S-S |
| SIB F2S 4/6 | REV 03 | 710-022603 | SIB-TXP-F2S-S |
| Fan Tray 0 | REV 02 | 760-024497 | FANTRAY-TXP-H-S |
| Fan Tray 1 | REV 02 | 760-024497 | FANTRAY-TXP-H-S |
| Fan Tray 2 | REV 05 | 760-024502 | FANTRAY-TXP-V-S |
| Fan Tray 3 | | | |
| Fan Tray 4 | REV 05 | 760-024502 | FANTRAY-TXP-V-S |
| Fan Tray 5 | REV 02 | 760-024502 | FANTRAY-TXP-V-S |

lcc0-re0:

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|------------|-------------------------|
| Midplane | REV 03 | 710-017247 | | CHAS-BP-T1600-S |
| FPM Display | REV 01 | 710-021387 | | CRAFT-T1600-S |
| CIP | REV 06 | 710-002895 | | CIP-L-T640-S |
| PEM 1 | Rev 02 | 740-023211 | IPUPAC8KTA | PWR-T1600-4-60-DC-S |
| SCG 0 | REV 15 | 710-003423 | | SCG-T-S |
| SCG 1 | REV 15 | 710-003423 | | SCG-T-S |
| Routing Engine 0 | REV 01 | 740-026941 | | RE-DUO-C1800-8G-S |
| Routing Engine 1 | REV 01 | 740-026941 | | RE-DUO-C1800-8G-S |
| CB 0 | REV 06 | 710-022597 | | CB-LCC-S |
| CB 1 | REV 06 | 710-022597 | | CB-LCC-S |
| FPC 1 | REV 07 | 710-013035 | | T640-FPC3-ES |
| PIC 0 | REV 05 | 750-015217 | | PC-8GE-TYPE3-SFP-IQ2 |
| PIC 1 | REV 03 | 750-004424 | | PC-1XGE-LR |
| PIC 2 | REV 01 | 750-003336 | | PC-40C48-SON-SMSR |
| FPC 3 | REV 12 | 710-013037 | | T1600-FPC4-ES |
| PIC 0 | REV 02 | 750-010850 | | PD-10C768-SON-SR |
| FPC 4 | REV 05 | 710-021534 | | T640-FPC1-ES |
| PIC 0 | REV 04 | 750-014627 | | PB-40C3-10C12-SON-SFP |
| PIC 1 | REV 22 | 750-005634 | | PB-1CHOC12SMIR-QPP |
| PIC 2 | REV 09 | 750-002911 | | PB-4FE-TX |
| PIC 3 | REV 08 | 750-021652 | | PB-1CHOC12-STM4-IQE-SFP |
| FPC 5 | REV 07 | 710-007529 | | T640-FPC3 |
| PIC 0 | REV 14 | 750-009567 | | PC-1XGE-XENPAK |
| PIC 1 | REV 16 | 750-007141 | | PC-10GE-SFP |
| PIC 2 | REV 12 | 750-009567 | | PC-1XGE-XENPAK |
| FPC 6 | REV 07 | 710-013035 | | T640-FPC3-ES |
| PIC 0 | REV 09 | 750-009567 | | PC-1XGE-XENPAK |

| | | | |
|------------|--------|------------|----------------------|
| PIC 1 | REV 06 | 750-015217 | PC-8GE-TYPE3-SFP-IQ2 |
| PIC 2 | REV 06 | 750-015217 | PC-8GE-TYPE3-SFP-IQ2 |
| FPC 7 | REV 03 | 710-021540 | T640-FPC2-ES |
| PIC 0 | REV 13 | 750-001901 | PB-40C12-SON-SMIR |
| PIC 1 | REV 05 | 750-001900 | PB-10C48-SON-SMSR |
| PIC 2 | REV 10 | 750-008155 | PB-2GE-SFP-QPP |
| PIC 3 | REV 03 | 750-014638 | PB-10C48-SON-B-SFP |
| SIB 0 | REV 07 | 710-022594 | SIB-TXP-T1600-S |
| SIB 1 | REV 07 | 710-022594 | SIB-TXP-T1600-S |
| SIB 3 | REV 06 | 710-022594 | SIB-TXP-T1600-S |
| SIB 4 | REV 08 | 710-022594 | SIB-TXP-T1600-S |
| Fan Tray 0 | | | FANTRAY-T-S |
| Fan Tray 1 | | | FANTRAY-T-S |
| Fan Tray 2 | | | FANTRAY-TXP-R-S |

lcc1-re0:

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|------------|-----------------------|
| Midplane | REV 04 | 710-017247 | | CHAS-BP-T1600-S |
| FPM Display | REV 01 | 710-021387 | | CRAFT-T1600-S |
| CIP | REV 06 | 710-002895 | | CIP-L-T640-S |
| PEM 0 | Rev 02 | 740-023211 | IPUPAC8KTA | PWR-T1600-4-60-DC-S |
| SCG 0 | REV 15 | 710-003423 | | SCG-T-S |
| SCG 1 | REV 15 | 710-003423 | | SCG-T-S |
| Routing Engine 0 | REV 01 | 740-026941 | | RE-DUO-C1800-8G-S |
| Routing Engine 1 | REV 01 | 740-026941 | | RE-DUO-C1800-8G-S |
| CB 0 | REV 06 | 710-022597 | | CB-LCC-S |
| CB 1 | REV 06 | 710-022597 | | CB-LCC-S |
| FPC 0 | REV 02 | 710-010845 | | T640-FPC4-ES |
| PIC 0 | REV 11 | 750-017405 | | PD-4XGE-XFP |
| FPC 1 | REV 16 | 710-013037 | | T1600-FPC4-ES |
| PIC 1 | REV 06 | 750-034781 | | PD-1CE-CFP |
| FPC 2 | REV 16 | 710-013037 | | T1600-FPC4-ES |
| PIC 1 | REV 05 | 750-034781 | | PD-1CE-CFP |
| FPC 3 | REV 10 | 710-021534 | | T640-FPC1-ES |
| PIC 0 | REV 13 | 750-012266 | | PB-4GE-TYPE1-SFP-IQ2 |
| PIC 1 | REV 01 | 750-007641 | | PE-1GE-SFP-QPP |
| PIC 3 | REV 17 | 750-007444 | | PB-1CHSTM1-SMIR-QPP |
| FPC 4 | REV 06 | 710-013035 | | T640-FPC3-ES |
| PIC 0 | REV 22 | 750-007141 | | PC-10GE-SFP |
| PIC 1 | REV 16 | 750-009450 | | PC-10C192-SON-SR2 |
| PIC 2 | REV 05 | 750-004424 | | PC-1XGE-LR |
| PIC 3 | REV 12 | 750-013423 | | PC-MS-500-3 |
| FPC 5 | REV 07 | 710-013560 | | T640-FPC3-E2 |
| PIC 0 | REV 11 | 750-012793 | | PC-1XGE-TYPE3-XFP-IQ2 |
| PIC 1 | REV 01 | 750-004695 | | PC-TUNNEL |
| PIC 2 | REV 32 | 750-003700 | | PC-10C192-SON-VSR |
| PIC 3 | REV 12 | 750-009553 | | PC-40C48-SON-SFP |
| FPC 6 | REV 07 | 710-013035 | | T640-FPC3-ES |
| PIC 0 | REV 07 | 750-015217 | | PC-8GE-TYPE3-SFP-IQ2 |
| PIC 1 | REV 03 | 750-003336 | | PC-40C48-SON-SMSR |
| PIC 3 | REV 02 | 750-012793 | | PC-1XGE-TYPE3-XFP-IQ2 |
| FPC 7 | REV 08 | 710-010845 | | T640-FPC4-ES |
| PIC 0 | REV 11 | 750-017405 | | PD-4XGE-XFP |
| SIB 0 | REV 07 | 710-022594 | | SIB-TXP-T1600-S |
| SIB 1 | REV 07 | 710-022594 | | SIB-TXP-T1600-S |
| SIB 3 | REV 07 | 710-022594 | | SIB-TXP-T1600-S |
| SIB 4 | REV 08 | 710-022594 | | SIB-TXP-T1600-S |
| Fan Tray 0 | | | | FANTRAY-T-S |

Fan Tray 1
Fan Tray 2

FANTRAY-T-S
FANTRAY-TXP-R-S

show chassis hardware detail (TX Matrix Plus Router)

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user@host> show chassis hardware detail
sfc0-re0:
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Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|------------------|-----------------|----------------------|--------------------|
| Chassis | | | JN111B023AHB | TXP |
| Midplane | REV 01 | 710-022574 | TR7990 | SFC Midplane |
| FPM Display | REV 03 | 710-024027 | DW4699 | TXP FPM Display |
| CIP 0 | REV 01 | 710-023792 | DR1437 | TXP CIP |
| CIP 1 | REV 02 | 710-023792 | DS4564 | TXP CIP |
| PEM 0 | Rev 07 | 740-027463 | UM26360 | Power Entry Module |
| Routing Engine 0 | REV 01 | 740-026942 | 737A-1024 | SFC RE |
| ad0 | 3887 MB SMART CF | | 200811050193CEB1CEB1 | Compact Flash |
| ad1 | 30533 MB SAMSUNG | MCBQE32G8MPP-0V | SY814A0762 | Disk 1 |
| Routing Engine 1 | REV 01 | 740-026942 | 737A-1024 | SFC RE |
| ad0 | 3887 MB SMART CF | | 20081105004C19A019A0 | Compact Flash |
| ad1 | 30533 MB SAMSUNG | MCBQE32G8MPP-0V | SY814A0794 | Disk 1 |
| CB 0 | REV 03 | 710-022606 | DR7134 | SFC Control Board |
| CB 1 | REV 01 | 710-022606 | DP8890 | SFC Control Board |
| SPMB 0 | | BUILTIN | | SFC Switch CPU |
| SPMB 1 | | BUILTIN | | SFC Switch CPU |
| SIB F13 0 | REV 03 | 750-024564 | DT9478 | F13 SIB |
| B Board | REV 02 | 710-023431 | DT6554 | F13 SIB |
| SIB F13 1 | REV 03 | 750-024564 | DT9454 | F13 SIB |
| B Board | REV 02 | 710-023431 | DT6551 | F13 SIB |
| SIB F2S 0/0 | REV 02 | 710-022603 | DT2838 | F2S SIB |
| B Board | REV 02 | 710-023787 | DT1725 | NEO PMB |
| SIB F2S 0/2 | REV 02 | 710-022603 | DT2824 | F2S SIB |
| B Board | REV 02 | 710-023787 | DT1706 | NEO PMB |
| SIB F2S 0/4 | REV 02 | 710-022603 | DT2822 | F2S SIB |
| B Board | REV 02 | 710-023787 | DT1696 | NEO PMB |
| SIB F2S 0/6 | REV 02 | 710-022603 | DT2823 | F2S SIB |
| B Board | REV 02 | 710-023787 | DT1717 | NEO PMB |
| SIB F2S 1/0 | REV 03 | 710-022603 | DV0059 | F2S SIB |
| B Board | REV 03 | 710-023787 | DT9942 | NEO PMB |
| SIB F2S 1/2 | REV 02 | 710-022603 | DT2826 | F2S SIB |
| B Board | REV 02 | 710-023787 | DT1713 | NEO PMB |
| SIB F2S 1/4 | REV 03 | 710-022603 | DV0092 | F2S SIB |
| B Board | REV 03 | 710-023787 | DV0000 | NEO PMB |
| SIB F2S 1/6 | REV 03 | 710-022603 | DV0079 | F2S SIB |
| B Board | REV 03 | 710-023787 | DT9972 | NEO PMB |
| SIB F2S 2/0 | REV 03 | 710-022603 | DV0100 | F2S SIB |
| B Board | REV 03 | 710-023787 | DT9925 | NEO PMB |
| SIB F2S 2/2 | REV 03 | 710-022603 | DV0050 | F2S SIB |
| B Board | REV 03 | 710-023787 | DV0005 | NEO PMB |
| SIB F2S 2/4 | REV 03 | 710-022603 | DV0097 | F2S SIB |
| B Board | REV 03 | 710-023787 | DT9936 | NEO PMB |
| Fan Tray 0 | REV 02 | 760-024497 | DR8286 | Front Fan Tray |
| Fan Tray 1 | REV 06 | 760-024497 | DV9624 | Front Fan Tray |
| Fan Tray 2 | REV 02 | 760-024502 | DR8259 | Rear Fan Tray |
| Fan Tray 3 | REV 02 | 760-024502 | DR8270 | Rear Fan Tray |
| Fan Tray 4 | REV 02 | 760-024502 | DR8284 | Rear Fan Tray |
| Fan Tray 5 | REV 06 | 760-024502 | DV7813 | Rear Fan Tray |

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1cc0-re0:
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Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|----------|-------------|----------------------------|-------------------------|
| Chassis | | | JN1101F27AHA | T1600 |
| Midplane | REV 04 | 710-017247 | RC5317 | T Series Backplane |
| FPM GBUS | REV 10 | 710-002901 | DS8197 | T640 FPM Board |
| FPM Display | REV 01 | 710-021387 | DS6433 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | DS1493 | T Series CIP |
| PEM 0 | Rev 08 | 740-017906 | UD26601 | Power Entry Module 3x80 |
| SCG 0 | REV 15 | 710-003423 | DP5847 | T640 Sonet Clock Gen. |
| SCG 1 | REV 15 | 710-003423 | DR0924 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 01 | 740-026942 | 737F-1024 | LCC RE |
| ad0 | 3887 MB | SMART CF | 2008110502B63E513E51 | Compact Flash |
| ad1 | 30533 MB | SAMSUNG | MCBQE32G8MPP-0V SY814A1208 | Disk 1 |
| Routing Engine 1 | REV 01 | 740-026942 | 737F-1024 | LCC RE |
| ad0 | 3887 MB | SMART CF | 2008110500F9A8A8A8A8 | Compact Flash |
| ad1 | 30533 MB | SAMSUNG | MCBQE32G8MPP-0V SY814A1076 | Disk 1 |
| CB 0 | REV 05 | 710-022597 | DV4264 | LCC Control Board |
| CB 1 | REV 03 | 710-022597 | DP8558 | LCC Control Board |
| FPC 0 | REV 14 | 710-013037 | DS9967 | FPC Type 4-ES |
| CPU | REV 08 | 710-016744 | DS3989 | ST-PMB2 |
| PIC 0 | REV 12 | 750-013198 | DL7506 | 1x Tunnel |
| PIC 1 | REV 12 | 750-013198 | DL7505 | 1x Tunnel |
| MMB 0 | REV 01 | 710-025563 | DS8524 | ST-MMB2 |
| MMB 1 | REV 01 | 710-025563 | DS8373 | ST-MMB2 |
| FPC 1 | REV 14 | 710-013037 | DT0027 | FPC Type 4-ES |
| CPU | REV 09 | 710-016744 | DS7684 | ST-PMB2 |
| PIC 0 | REV 12 | 750-013198 | DL7512 | 1x Tunnel |
| PIC 1 | REV 12 | 750-013198 | DL7498 | 1x Tunnel |
| MMB 0 | REV 01 | 710-025563 | DS8494 | ST-MMB2 |
| MMB 1 | REV 01 | 710-025563 | DS8436 | ST-MMB2 |
| SPMB 0 | REV 04 | 710-023321 | DV3867 | LCC Switch CPU |
| SPMB 1 | REV 02 | 710-023321 | DP0238 | LCC Switch CPU |
| SIB 0 | REV 06 | 710-022594 | DT8268 | LCC SIB |
| B Board | REV 06 | 710-023185 | DT5791 | LCC SIB Mezz |
| SIB 1 | REV 06 | 710-022594 | DT8261 | LCC SIB |
| B Board | REV 06 | 710-023185 | DT5769 | LCC SIB Mezz |
| SIB 2 | REV 04 | 710-022594 | DS2315 | LCC SIB |
| B Board | REV 06 | 710-023185 | DT5788 | LCC SIB Mezz |
| SIB 3 | REV 06 | 710-022594 | DT8253 | LCC SIB |
| B Board | REV 06 | 710-023185 | DT5811 | LCC SIB Mezz |
| SIB 4 | REV 06 | 710-022594 | DT8248 | LCC SIB |
| B Board | REV 06 | 710-023185 | DT5812 | LCC SIB Mezz |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray |

show chassis hardware models (TX Matrix Plus Router)

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user@host> show chassis hardware models
sfc0-re0:
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Hardware inventory:

| Item | Version | Part number | Serial number | FRU model number |
|------------------|---------|-------------|---------------|-------------------------|
| FPM Display | REV 03 | 710-024027 | DX0282 | CRAFT-TXP |
| CIP 0 | REV 04 | 710-023792 | DW4889 | CIP-TXP |
| CIP 1 | REV 04 | 710-023792 | DW4887 | CIP-TXP |
| PEM 0 | Rev 07 | 740-027463 | UM26368 | yyyyyyyyyyyyyyyyyyyy |
| Routing Engine 0 | REV 01 | 740-026942 | 737A-1064 | RE-TXP-SFC-DU0-2600-16G |
| Routing Engine 1 | REV 01 | 740-026942 | 737A-1082 | RE-TXP-SFC-DU0-2600-16G |
| CB 0 | REV 09 | 710-022606 | DW6099 | CB-TXP |
| CB 1 | REV 09 | 710-022606 | DW6096 | CB-TXP |

| | | | | |
|-------------|--------|------------|--------|---------------|
| SIB F13 1 | REV 04 | 750-024564 | DW5776 | SIB-TXP-F13 |
| SIB F13 3 | REV 04 | 750-024564 | DW5762 | SIB-TXP-F13 |
| SIB F13 4 | REV 04 | 750-024564 | DW5797 | SIB-TXP-F13 |
| SIB F13 6 | REV 04 | 750-024564 | DW5770 | SIB-TXP-F13 |
| SIB F13 7 | REV 04 | 750-024564 | DW5758 | SIB-TXP-F13 |
| SIB F13 8 | REV 04 | 750-024564 | DW5761 | SIB-TXP-F13 |
| SIB F13 9 | REV 04 | 750-024564 | DW5754 | SIB-TXP-F13 |
| SIB F13 12 | REV 04 | 750-024564 | DW5794 | SIB-TXP-F13 |
| SIB F2S 0/0 | REV 05 | 710-022603 | DW7897 | |
| SIB F2S 0/2 | REV 05 | 710-022603 | DW7833 | |
| SIB F2S 0/4 | REV 05 | 710-022603 | DW7875 | |
| SIB F2S 0/6 | REV 05 | 710-022603 | DW7860 | |
| SIB F2S 1/0 | REV 04 | 710-022603 | DW4820 | |
| SIB F2S 1/2 | REV 05 | 710-022603 | DW7849 | |
| SIB F2S 1/4 | REV 05 | 710-022603 | DW7927 | SIB-TXP-F2S |
| SIB F2S 1/6 | REV 05 | 710-022603 | DW7866 | |
| SIB F2S 2/0 | REV 05 | 710-022603 | DW7880 | |
| SIB F2S 2/2 | REV 05 | 710-022603 | DW7895 | |
| SIB F2S 2/4 | REV 05 | 710-022603 | DW7907 | |
| SIB F2S 2/6 | REV 05 | 710-022603 | DW7785 | |
| SIB F2S 3/0 | REV 05 | 710-022603 | DW7782 | |
| SIB F2S 3/2 | REV 05 | 710-022603 | DW7793 | |
| SIB F2S 3/4 | REV 05 | 710-022603 | DW7779 | |
| SIB F2S 3/6 | REV 05 | 710-022603 | DW7930 | |
| SIB F2S 4/0 | REV 05 | 710-022603 | DW7867 | |
| SIB F2S 4/2 | REV 05 | 710-022603 | DW7917 | |
| SIB F2S 4/4 | REV 05 | 710-022603 | DW7929 | |
| SIB F2S 4/6 | REV 05 | 710-022603 | DW7870 | |
| Fan Tray 0 | REV 06 | 760-024497 | DV7831 | FANTRAY-TXP-F |
| Fan Tray 1 | REV 06 | 760-024497 | DV9614 | FANTRAY-TXP-F |
| Fan Tray 2 | REV 06 | 760-024502 | DV9618 | FANTRAY-TXP-R |
| Fan Tray 3 | REV 06 | 760-024502 | DV9616 | FANTRAY-TXP-R |
| Fan Tray 4 | REV 06 | 760-024502 | DV7807 | FANTRAY-TXP-R |
| Fan Tray 5 | REV 06 | 760-024502 | DV7828 | FANTRAY-TXP-R |

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lcc0-re0:
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Hardware inventory:
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| Item | Version | Part number | Serial number | FRU model number |
|-------------|---------|-------------|---------------|---------------------|
| Midplane | REV 03 | 710-017247 | RC3765 | CHAS-BP-T1600-S |
| FPM Display | REV 01 | 710-021387 | DN5441 | CRAFT-T1600-S |
| CIP | REV 06 | 710-002895 | DP6021 | CIP-L-T640-S |
| PEM 0 | Rev 07 | 740-017906 | UA26384 | PWR-T1600-3-80-DC-S |
| PEM 1 | Rev 07 | 740-017906 | UA26296 | PWR-T1600-3-80-DC-S |
| SCG 0 | REV 15 | 710-003423 | DR0875 | SCG-T-S |
| CB 0 | REV 06 | 710-022597 | DW8534 | CB-LCC |
| CB 1 | REV 06 | 710-022597 | DW8527 | CB-LCC |
| FPC 4 | REV 12 | 710-013037 | DJ8717 | T1600-FPC4-ES |
| PIC 0 | REV 11 | 750-017405 | DP8795 | PD-4XGE-XFP |
| PIC 1 | REV 11 | 750-017405 | DP8794 | PD-4XGE-XFP |
| FPC 6 | REV 14 | 710-013037 | DS5335 | T1600-FPC4-ES |
| PIC 0 | REV 13 | 750-017405 | DS7634 | PD-4XGE-XFP |
| PIC 1 | REV 13 | 750-017405 | DS7637 | PD-4XGE-XFP |
| FPC 7 | REV 07 | 710-013035 | DM0990 | T1600-FPC3-ES |
| PIC 0 | REV 16 | 750-007141 | JJ8067 | PC-10GE-SFP |
| PIC 1 | REV 08 | 750-015749 | WE9598 | PC-10C192-SON-XFP |
| PIC 2 | REV 10 | 750-009450 | HX6466 | PC-10C192-SON-SR2 |
| SIB 0 | REV 08 | 710-022594 | DW8033 | SIB-TXP-T1600-S |
| SIB 1 | REV 08 | 710-022594 | DW8044 | SIB-TXP-T1600-S |
| SIB 2 | REV 08 | 710-022594 | DW8020 | SIB-TXP-T1600-S |
| SIB 3 | REV 08 | 710-022594 | DW8063 | SIB-TXP-T1600-S |

| | | | | |
|------------|--------|------------|--------|-----------------|
| SIB 4 | REV 08 | 710-022594 | DW8064 | SIB-TXP-T1600-S |
| Fan Tray 0 | | | | FANTRAY-T-S |
| Fan Tray 1 | | | | FANTRAY-T-S |
| Fan Tray 2 | | | | FANTRAY-TXP-R-S |

lcc1-re0:

Hardware inventory:

| Item | Version | Part number | Serial number | FRU model number |
|-------------|---------|-------------|---------------|---------------------|
| Midplane | REV 04 | 710-017247 | RC5361 | CHAS-BP-T1600-S |
| FPM Display | REV 01 | 710-021387 | DS6430 | CRAFT-T1600-S |
| CIP | REV 06 | 710-002895 | DS4239 | CIP-L-T640-S |
| PEM 0 | Rev 08 | 740-017906 | UD26649 | PWR-T1600-3-80-DC-S |
| SCG 0 | REV 15 | 710-003423 | DP5820 | SCG-T-S |
| CB 0 | REV 06 | 710-022597 | DW8523 | CB-LCC |
| CB 1 | REV 06 | 710-022597 | DW8528 | CB-LCC |
| FPC 4 | REV 12 | 710-013037 | DP8509 | T1600-FPC4-ES |
| PIC 0 | REV 11 | 750-017405 | DP8808 | PD-4XGE-XFP |
| PIC 1 | REV 11 | 750-017405 | DP7263 | PD-4XGE-XFP |
| FPC 6 | REV 14 | 710-013037 | DS9961 | T1600-FPC4-ES |
| PIC 0 | REV 13 | 750-017405 | DS5532 | PD-4XGE-XFP |
| PIC 1 | REV 13 | 750-017405 | DS7639 | PD-4XGE-XFP |
| FPC 7 | REV 03 | 710-013035 | DF5564 | T1600-FPC3-ES |
| PIC 0 | REV 16 | 750-007141 | JJ8063 | PC-10GE-SFP |
| SIB 0 | REV 08 | 710-022594 | DW8035 | SIB-TXP-T1600-S |
| SIB 1 | REV 10 | 710-022594 | DX7672 | SIB-TXP-T1600-S |
| SIB 2 | REV 08 | 710-022594 | DW8060 | SIB-TXP-T1600-S |
| SIB 3 | REV 08 | 710-022594 | DW8072 | SIB-TXP-T1600-S |
| SIB 4 | REV 08 | 710-022594 | DW8043 | SIB-TXP-T1600-S |
| Fan Tray 0 | | | | FANTRAY-T-S |
| Fan Tray 1 | | | | FANTRAY-T-S |
| Fan Tray 2 | | | | FANTRAY-TXP-R-S |

lcc2-re0:

Hardware inventory:

| Item | Version | Part number | Serial number | FRU model number |
|-------------|---------|-------------|---------------|---------------------|
| Midplane | REV 03 | 710-017247 | RC3956 | CHAS-BP-T1600-S |
| FPM Display | REV 01 | 710-021387 | DN7030 | CRAFT-T1600-S |
| CIP | REV 06 | 710-002895 | DM3962 | CIP-L-T640-S |
| PEM 0 | Rev 08 | 740-017906 | UD26519 | PWR-T1600-3-80-DC-S |
| PEM 1 | Rev 07 | 740-017906 | UC26601 | PWR-T1600-3-80-DC-S |
| SCG 0 | REV 15 | 710-003423 | DP0277 | SCG-T-S |
| CB 0 | REV 06 | 710-022597 | DW8524 | CB-LCC |
| CB 1 | REV 06 | 710-022597 | DW8536 | CB-LCC |
| FPC 4 | REV 12 | 710-013037 | DR1194 | T1600-FPC4-ES |
| PIC 0 | REV 11 | 750-017405 | DP8811 | PD-4XGE-XFP |
| PIC 1 | REV 11 | 750-017405 | DP8823 | PD-4XGE-XFP |
| FPC 5 | REV 12 | 710-013037 | DR1184 | T1600-FPC4-ES |
| PIC 1 | REV 11 | 750-017405 | DP4744 | PD-4XGE-XFP |
| FPC 6 | REV 12 | 710-013037 | DN8622 | T1600-FPC4-ES |
| PIC 0 | REV 14 | 750-012518 | JY9924 | PD-40C192-S0N-XFP |
| PIC 1 | REV 11 | 750-017405 | DP8776 | PD-4XGE-XFP |
| FPC 7 | REV 04 | 710-013560 | JR3968 | T640-FPC3-E2 |
| PIC 0 | REV 16 | 750-007141 | NC9330 | PC-10GE-SFP |
| SIB 0 | REV 07 | 710-022594 | DW4217 | SIB-TXP-T1600-S |
| SIB 1 | REV 07 | 710-022594 | DW4213 | SIB-TXP-T1600-S |
| SIB 2 | REV 07 | 710-022594 | DW4189 | SIB-TXP-T1600-S |
| SIB 3 | REV 07 | 710-022594 | DW4173 | SIB-TXP-T1600-S |
| SIB 4 | REV 07 | 710-022594 | DW4201 | SIB-TXP-T1600-S |
| Fan Tray 0 | | | | FANTRAY-T-S |

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Fan Tray 1
Fan Tray 2

FANTRAY-T-S
FANTRAY-TXP-R-S

lcc3-re0:
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Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane      REV 04   710-017247   RC5319         CHAS-BP-T1600-S
FPM Display   REV 01   710-021387   DS6402         CRAFT-T1600-S
CIP           REV 06   710-002895   DR9973         CIP-L-T640-S
PEM 0         Rev 07   740-017906   UC26496        PWR-T1600-3-80-DC-S
PEM 1         Rev 07   740-017906   UC26599        PWR-T1600-3-80-DC-S
SCG 0         REV 15   710-003423   DP5831         SCG-T-S
CB 0          REV 06   710-022597   DW8533         CB-LCC
CB 1          REV 06   710-022597   DW8538         CB-LCC
FPC 0         REV 14   710-013037   DS5345         T1600-FPC4-ES
  PIC 0       REV 13   750-017405   DS7641         PD-4XGE-XFP
  PIC 1       REV 13   750-017405   DS5479         PD-4XGE-XFP
FPC 1         REV 14   710-013037   DS7338         T1600-FPC4-ES
  PIC 0       REV 13   750-017405   DS7631         PD-4XGE-XFP
  PIC 1       REV 13   750-017405   DS7632         PD-4XGE-XFP
FPC 2         REV 14   710-013037   DS9962         T1600-FPC4-ES
  PIC 0       REV 13   750-017405   DS7581         PD-4XGE-XFP
  PIC 1       REV 13   750-017405   DS7627         PD-4XGE-XFP
FPC 4         REV 10   710-010845   JZ6573         T640-FPC4-ES
  PIC 0       REV 14   750-012518   JT5124         PD-40C192-SON-XFP
FPC 5         REV 14   710-013037   DT0016         T1600-FPC4-ES
  PIC 0       REV 14   750-012518   JY9918         PD-40C192-SON-XFP
FPC 7         REV 07   710-013035   DM0967         T1600-FPC3-ES
  PIC 0       REV 16   750-007141   JJ8059         PC-10GE-SFP
  PIC 1       REV 13   750-004695   DM5712         PC-TUNNEL
SIB 0         REV 07   710-022594   DW4174         SIB-TXP-T1600-S
SIB 1         REV 07   710-022594   DW4207         SIB-TXP-T1600-S
SIB 2         REV 06   710-022594   DT8231         SIB-TXP-T1600-S
SIB 3         REV 07   710-022594   DW4175         SIB-TXP-T1600-S
SIB 4         REV 07   710-022594   DW4209         SIB-TXP-T1600-S
Fan Tray 0    FANTRAY-T-S
Fan Tray 1    FANTRAY-T-S
Fan Tray 2    FANTRAY-TXP-R-S

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show chassis hardware (TX Matrix Plus Router with 3D SIBs)

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user@host> show chassis hardware
sfc0-re0:
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Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis              JN11CAAA4AHB  TXP
Midplane            REV 05   710-022574   ABAC4696      SFC Midplane
FPM Display         REV 09   710-024027   EH3138        TXP FPM Display
CIP 0               REV 12   710-023792   EF6349        TXP CIP
CIP 1               REV 12   710-023792   EG5294        TXP CIP
PEM 0               Rev 06   740-027463   XH04595       Power Entry Module
PEM 1               Rev 06   740-027463   XH04592       Power Entry Module
Routing Engine 0    REV 07   740-026942   P737A-002541  RE-DUO-2600
Routing Engine 1    REV 07   740-026942   P737A-002602  RE-DUO-2600
CB 0                REV 15   710-022606   EH4376        SFC Control Board
CB 1                REV 15   710-022606   EH4379        SFC Control Board
SPMB 0              BUILTIN                      SFC Switch CPU
SPMB 1              BUILTIN                      SFC Switch CPU
SIB F13 0           REV 10   750-035002   EM9305        F13 SIB 3D

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|-------------|--------|------------|-----------|------------------|
| B Board | REV 06 | 711-035082 | EM9667 | F13 SIB 3D Mezz |
| P Board | REV 05 | 711-043544 | EM9708 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB34FB00S | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB01H | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB34FB02W | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB34FB01T | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB00W | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB34FB01S | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB34FB03H | CXP Module |
| Xcvr 14 | REV 01 | 740-047547 | XB34FB023 | CXP Module |
| SIB F13 3 | REV 01 | 710-035001 | EJ2612 | F13 SIB 3D |
| B Board | REV 01 | 711-035082 | EJ3815 | F13 SIB 3D Mezz |
| P Board | REV 01 | 711-043544 | EJ2678 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB04C | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB00Z | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB47FB036 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB47FB029 | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB02N | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB42FB0CS | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB47FB01X | CXP Module |
| Xcvr 14 | REV 01 | 740-047547 | XB48FB02F | CXP Module |
| SIB F13 6 | REV 05 | 750-035002 | EK2675 | F13 SIB 3D |
| B Board | REV 03 | 711-035082 | EK2612 | F13 SIB 3D Mezz |
| P Board | REV 04 | 711-043544 | EK1179 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB01T | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB02M | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB031 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB04P | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB02T | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB34FB01V | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB48FB02C | CXP Module |
| Xcvr 14 | | NON-JNPR | | No Module |
| SIB F13 12 | REV 01 | 710-035001 | EJ2631 | F13 SIB 3D |
| B Board | REV 01 | 711-035082 | EJ3808 | F13 SIB 3D Mezz |
| P Board | REV 01 | 711-043544 | EJ2676 | F13 SIB 3D Power |
| SIB F2S 0/0 | REV 01 | 711-034977 | EH9829 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9927 | F2S SIB 3D Mezz |
| SIB F2S 0/2 | REV 01 | 711-034977 | EH9791 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9852 | F2S SIB 3D Mezz |
| SIB F2S 0/4 | REV 01 | 711-034977 | EH9803 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9915 | F2S SIB 3D Mezz |
| SIB F2S 0/6 | REV 01 | 711-034977 | EH9763 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9880 | F2S SIB 3D Mezz |
| SIB F2S 1/0 | REV 01 | 711-034977 | EH9757 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9889 | F2S SIB 3D Mezz |
| SIB F2S 1/2 | REV 01 | 711-034977 | EH9815 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9890 | F2S SIB 3D Mezz |
| SIB F2S 1/4 | REV 08 | 750-034978 | EN1954 | F2S SIB 3D |
| B Board | REV 02 | 711-034979 | EN1436 | F2S SIB 3D Mezz |
| SIB F2S 1/6 | REV 01 | 711-034977 | EJ7054 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EJ8238 | F2S SIB 3D Mezz |
| SIB F2S 2/0 | REV 01 | 711-034977 | EH9830 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9844 | F2S SIB 3D Mezz |
| SIB F2S 2/2 | REV 01 | 711-034977 | EH9818 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9888 | F2S SIB 3D Mezz |
| SIB F2S 2/4 | REV 01 | 711-034977 | EH9795 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9869 | F2S SIB 3D Mezz |
| SIB F2S 2/6 | REV 01 | 711-034977 | EJ7026 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EJ8273 | F2S SIB 3D Mezz |
| SIB F2S 3/0 | REV 01 | 711-034977 | EH9811 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9892 | F2S SIB 3D Mezz |

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|-------------|--------|------------|--------|-----------------|
| SIB F2S 3/2 | REV 01 | 711-034977 | EH9812 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9877 | F2S SIB 3D Mezz |
| SIB F2S 3/4 | REV 08 | 750-034978 | EN1947 | F2S SIB 3D |
| B Board | REV 02 | 711-034979 | EN1471 | F2S SIB 3D Mezz |
| Fan Tray 0 | REV 10 | 760-024497 | EH3313 | Front Fan Tray |
| Fan Tray 1 | REV 10 | 760-024497 | EH3290 | Front Fan Tray |
| Fan Tray 2 | REV 10 | 760-024502 | EH3292 | Rear Fan Tray |
| Fan Tray 3 | REV 10 | 760-024502 | EH3287 | Rear Fan Tray |
| Fan Tray 4 | REV 10 | 760-024502 | EH3286 | Rear Fan Tray |
| Fan Tray 5 | REV 10 | 760-024502 | EH3285 | Rear Fan Tray |

lcc0-re0:

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-------------------------|
| Chassis | | | JN11B23FEAHA | T1600 |
| Midplane | REV 01 | 710-027486 | RC9787 | T-series Backplane |
| FPM GBUS | REV 13 | 710-002901 | BBAG5132 | T640 FPM Board |
| FPM Display | REV 04 | 710-021387 | BBAL9612 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | BBAN0605 | T-series CIP |
| PEM 0 | REV 05 | 740-036442 | 1G022060143 | Power Entry Module 6x60 |
| PEM 1 | REV 05 | 740-036442 | 1G022060011 | Power Entry Module 6x60 |
| SCG 0 | REV 18 | 710-003423 | BBAL7318 | T640 Sonet Clock Gen. |
| SCG 1 | REV 18 | 710-003423 | BBAL7255 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 07 | 740-026941 | P737F-002933 | RE-DUO-1800 |
| Routing Engine 1 | REV 06 | 740-026941 | P737F-002749 | RE-DUO-1800 |
| CB 0 | REV 11 | 710-022597 | EH3611 | LCC Control Board |
| CB 1 | REV 11 | 710-022597 | EH4798 | LCC Control Board |
| FPC 5 | REV 17 | 710-013037 | BBAC5333 | FPC Type 4-ES |
| CPU | REV 10 | 710-016744 | BBAB7619 | ST-PMB2 |
| PIC 0 | REV 18 | 750-017405 | BBAE3420 | 4x 10GE (LAN/WAN) XFP |
| Xcvr 0 | REV 03 | 740-014289 | T10C90659 | XFP-10G-SR |
| MMB 0 | REV 05 | 710-025563 | BBAB9538 | ST-MMB2 |
| MMB 1 | REV 05 | 710-025563 | BBAB9502 | ST-MMB2 |
| FPC 7 | REV 01 | 750-045173 | BBAV0032 | FPC Type 5-3D |
| CPU | | | | |
| SPMB 0 | REV 05 | 710-023321 | EG9434 | LCC Switch CPU |
| SPMB 1 | REV 05 | 710-023321 | EH3878 | LCC Switch CPU |
| SIB 0 | REV 01 | 750-041657 | EH7997 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7674 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB014 | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB05A | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB052 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB01B | CXP Module |
| SIB 1 | REV 01 | 750-041657 | EH8023 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7659 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB05J | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB01E | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB01J | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB02S | CXP Module |
| SIB 2 | REV 03 | 750-041657 | EJ6554 | LCC SIB 3D |
| B Board | REV 02 | 711-042424 | EJ5756 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB34FB01Z | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB34FB013 | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB04Z | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB05N | CXP Module |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 4 |

lcc2-re0:

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|---------------------|---------|-------------|---------------|-------------------------|
| Hardware inventory: | | | | |
| Item | Version | Part number | Serial number | Description |
| Chassis | | | JN11B3975AHA | T1600 |
| Midplane | REV 01 | 710-027486 | RC9826 | T-series Backplane |
| FPM GBUS | REV 13 | 710-002901 | BBAG5124 | T640 FPM Board |
| FPM Display | REV 03 | 710-021387 | BBAJ1112 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | BBAL3744 | T-series CIP |
| PEM 0 | REV 05 | 740-036442 | 1G022060081 | Power Entry Module 6x60 |
| PEM 1 | REV 05 | 740-036442 | 1G022060188 | Power Entry Module 6x60 |
| SCG 0 | REV 18 | 710-003423 | BBAH8775 | T640 Sonet Clock Gen. |
| SCG 1 | REV 18 | 710-003423 | BBAL7272 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 07 | 740-026941 | P737F-002992 | RE-DUO-1800 |
| Routing Engine 1 | REV 07 | 740-026941 | P737F-002938 | RE-DUO-1800 |
| CB 0 | REV 11 | 710-022597 | EH4805 | LCC Control Board |
| CB 1 | REV 11 | 710-022597 | EH4786 | LCC Control Board |
| FPC 1 | REV 01 | 710-033873 | BBAH0320 | FPC Type 3-ES |
| CPU | REV 11 | 710-016744 | BBAF3281 | ST-PMB2 |
| MMB 0 | REV 06 | 710-025563 | BBAF5061 | ST-MMB2 |
| FPC 5 | REV 04 | 710-033871 | BBAM5070 | FPC Type 4-ES |
| CPU | REV 11 | 710-016744 | BBAM6653 | ST-PMB2 |
| PIC 1 | REV 20 | 750-017405 | BBAM1296 | 4x 10GE (LAN/WAN) XFP |
| Xcvr 0 | REV 03 | 740-014289 | T10B42981 | XFP-10G-SR |
| MMB 0 | REV 07 | 710-025563 | BBAN2631 | ST-MMB2 |
| MMB 1 | REV 07 | 710-025563 | BBAN2538 | ST-MMB2 |
| SPMB 0 | REV 05 | 710-023321 | EH3903 | LCC Switch CPU |
| SPMB 1 | REV 05 | 710-023321 | EH3902 | LCC Switch CPU |
| SIB 0 | REV 01 | 750-041657 | EH8019 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7680 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB04F | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB04S | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB04B | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB043 | CXP Module |
| SIB 1 | REV 01 | 750-041657 | EH8012 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7658 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB05E | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB01Z | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB018 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB054 | CXP Module |
| SIB 2 | REV 01 | 750-041657 | EH7993 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7678 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB05C | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB47FB00N | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB05U | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB05L | CXP Module |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 4 |

show chassis hardware clei-models (TX Matrix Plus Router with 3D SIBs)

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user@host> show chassis hardware clei-models
sfc0-re0:
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| ----- | | | | |
|---------------------|---------|-------------|------------|-------------------|
| Hardware inventory: | | | | |
| Item | Version | Part number | CLEI code | FRU model number |
| Midplane | REV 05 | 710-022574 | | CHAS-BP-TXP-S |
| FPM Display | REV 09 | 710-024027 | | CRAFT-TXP-S |
| CIP 0 | REV 12 | 710-023792 | | CIP-TXP-S |
| CIP 1 | REV 12 | 710-023792 | | CIP-TXP-S |
| PEM 0 | Rev 06 | 740-027463 | IPUPAFGKTA | PWR-TXP-7-60-DC-S |

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|------------------|--------|------------|------------|--------------------|
| Routing Engine 0 | REV 07 | 740-026942 | | RE-DUO-C2600-16G-S |
| Routing Engine 1 | REV 07 | 740-026942 | | RE-DUO-C2600-16G-S |
| CB 0 | REV 13 | 710-022606 | | CB-TXP-S |
| CB 1 | REV 14 | 710-022606 | | CB-TXP-S |
| SIB F13 0 | REV 10 | 750-035002 | PROTOXCLEI | SIB-TXP-3D-F13-S |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |
| Xcvr 6 | REV 01 | 740-048813 | | |
| Xcvr 7 | REV 01 | 740-048813 | | |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 10 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| SIB F13 1 | REV 10 | 750-035002 | PROTOXCLEI | SIB-TXP-3D-F13-S |
| Xcvr 0 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 1 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 2 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 3 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 4 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 5 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 6 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 7 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 10 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |
| Xcvr 6 | REV 01 | 740-048813 | | |
| Xcvr 7 | REV 01 | 740-048813 | | |
| Xcvr 8 | REV 01 | 740-048813 | | |
| Xcvr 10 | REV 01 | 740-048813 | | |
| Xcvr 12 | REV 01 | 740-048813 | | |
| Xcvr 14 | REV 01 | 740-048813 | | |
| Xcvr 0 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 1 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 2 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 3 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 4 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 5 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 6 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 7 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 10 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| SIB F13 6 | REV 16 | 750-035002 | PROTOXCLEI | SIB-TXP-3D-F13 |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |

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| Xcvr 6 | REV 01 | 740-048813 | | |
| Xcvr 7 | REV 01 | 740-048813 | | |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 10 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| SIB F13 7 | REV 10 | 750-035002 | PROTOXCLEI | SIB-TXP-3D-F13-S |
| Xcvr 0 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 1 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 2 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 3 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 4 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 5 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 6 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 7 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 10 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 6 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 7 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 10 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| SIB F13 9 | REV 16 | 750-035002 | PROTOXCLEI | SIB-TXP-3D-F13 |
| Xcvr 0 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 1 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 2 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 3 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 4 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 5 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 6 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 7 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 10 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| SIB F13 11 | REV 10 | 750-035002 | PROTOXCLEI | 750-035002 |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |
| Xcvr 6 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 7 | REV 01 | 740-048813 | | |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| SIB F13 12 | REV 16 | 750-035002 | PROTOXCLEI | SIB-TXP-3D-F13 |
| Xcvr 0 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 1 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 2 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 3 | REV 01 | 740-047547 | | CXP-TXP-3D |

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|-------------|--------|------------|------------|-----------------|
| Xcvr 4 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 5 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 6 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 7 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 8 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 10 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 12 | REV 01 | 740-047547 | | CXP-TXP-3D |
| Xcvr 14 | REV 01 | 740-047547 | | CXP-TXP-3D |
| SIB F2S 0/0 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 0/2 | REV 07 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 0/4 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 0/6 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 1/0 | REV 07 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 1/2 | REV 07 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 1/4 | REV 07 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 1/6 | REV 08 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 2/0 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 2/2 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 2/4 | REV 07 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 2/6 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 3/0 | REV 07 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 3/2 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 3/4 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 3/6 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 4/0 | REV 07 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 4/2 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 4/4 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| SIB F2S 4/6 | REV 06 | 750-034978 | PROTOXCLEI | SIB-TXP-3D-F2S |
| Fan Tray 0 | REV 10 | 760-024497 | | FANTRAY-TXP-H-S |
| Fan Tray 1 | REV 10 | 760-024497 | | FANTRAY-TXP-H-S |
| Fan Tray 2 | REV 10 | 760-024502 | | FANTRAY-TXP-V-S |
| Fan Tray 3 | REV 10 | 760-024502 | | FANTRAY-TXP-V-S |
| Fan Tray 4 | REV 10 | 760-024502 | | FANTRAY-TXP-V-S |
| Fan Tray 5 | REV 10 | 760-024502 | | FANTRAY-TXP-V-S |

lcc0-re0:

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|------------|-------------------|
| Midplane | REV 01 | 710-027486 | IPMJ700DRD | CHAS-BP-T1600-S |
| FPM Display | REV 04 | 710-021387 | | CRAFT-T1600-S |
| CIP | REV 06 | 710-002895 | | CIP-L-T640-S |
| PEM 0 | REV 05 | 740-036442 | IPUPAG6KAA | PWR-T-6-60-DC-S |
| PEM 1 | REV 05 | 740-036442 | IPUPAG6KAA | PWR-T-6-60-DC-S |
| SCG 0 | REV 18 | 710-003423 | | SCG-T-S |
| SCG 1 | REV 18 | 710-003423 | | SCG-T-S |
| Routing Engine 0 | REV 10 | 740-026941 | | RE-DU0-C1800-8G-S |
| Routing Engine 1 | REV 07 | 740-026941 | | RE-DU0-C1800-8G-S |
| CB 0 | REV 11 | 710-022597 | | CB-LCC-S |
| CB 1 | REV 11 | 710-022597 | | CB-LCC-S |
| FPC 0 | REV 01 | 750-045173 | IP9IAL4DAB | T4000-FPC5-3D |
| PIC 0 | REV 17 | 750-034624 | IP9IAL2DAA | PF-12XGE-SFPP |
| PIC 1 | REV 17 | 750-034624 | IP9IAL2DAA | PF-12XGE-SFPP |
| FPC 3 | REV 01 | 750-045173 | IP9IAL4DAB | T4000-FPC5-3D |
| PIC 0 | REV 13 | 750-033423 | XXXXXXXXDD | PF-12-24XGE-SFPP |
| FPC 4 | REV 02 | 750-045173 | IP9IAL4DAC | T4000-FPC5-3D |
| PIC 0 | REV 17 | 750-034624 | IP9IAL2DAA | PF-12XGE-SFPP |
| PIC 1 | REV 17 | 750-034624 | IP9IAL2DAA | PF-12XGE-SFPP |
| FPC 5 | REV 01 | 750-045173 | IP9IAL4DAB | T4000-FPC5-3D |
| PIC 0 | REV 17 | 750-034624 | IP9IAL2DAA | PF-12XGE-SFPP |
| PIC 1 | REV 17 | 750-034624 | IP9IAL2DAA | PF-12XGE-SFPP |

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|--------------------|--------|------------|------------|-----------------------|
| FPC 6 | REV 01 | 750-045173 | IP9IAL4DAB | T4000-FPC5-3D |
| PIC 0 | REV 17 | 750-034624 | IP9IAL2DAA | PF-12XGE-SFPP |
| PIC 1 | REV 10 | 750-035293 | IP9IAL3DAA | PF-1CGE-CFP |
| SIB 0 | REV 06 | 750-041657 | PROTOXCLEI | SIB-TXP-3D-LCC |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |
| Xcvr 6 | REV 01 | 740-048813 | | |
| Xcvr 7 | REV 01 | 740-048813 | | |
| SIB 1 | REV 06 | 750-041657 | PROTOXCLEI | SIB-TXP-3D-LCC |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |
| Xcvr 6 | REV 01 | 740-048813 | | |
| Xcvr 7 | REV 01 | 740-048813 | | |
| SIB 2 | REV 06 | 750-041657 | PROTOXCLEI | SIB-TXP-3D-LCC |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |
| Xcvr 6 | REV 01 | 740-048813 | | |
| Xcvr 7 | REV 01 | 740-048813 | | |
| SIB 3 | REV 07 | 750-041657 | PROTOXCLEI | SIB-TXP-3D-LCC |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |
| Xcvr 6 | REV 01 | 740-048813 | | |
| Xcvr 7 | REV 01 | 740-048813 | | |
| SIB 4 | REV 06 | 750-041657 | PROTOXCLEI | SIB-TXP-3D-LCC |
| Xcvr 0 | REV 01 | 740-048813 | | |
| Xcvr 1 | REV 01 | 740-048813 | | |
| Xcvr 2 | REV 01 | 740-048813 | | |
| Xcvr 3 | REV 01 | 740-048813 | | |
| Xcvr 4 | REV 01 | 740-048813 | | |
| Xcvr 5 | REV 01 | 740-048813 | | |
| Xcvr 6 | REV 01 | 740-048813 | | |
| Xcvr 7 | REV 01 | 740-048813 | | |
| Fan Tray 0 | | | | FANTRAY-T-S |
| Fan Tray 1 | | | | FANTRAY-T-S |
| Fan Tray 2 | | | | FANTRAY-TXP3D-LCC-R-S |
| [Output Truncated] | | | | |

show chassis hardware detail (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis hardware detail
sfc0-re0:
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Hardware inventory:
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| Item | Version | Part number | Serial number | Description |
|---------|---------|-------------|---------------|-------------|
| Chassis | | | JN11CAA4AHB | TXP |

| | | | | |
|------------------|-----------------------|------------|----------------------|--------------------|
| Midplane | REV 05 | 710-022574 | ABAC4696 | SFC Midplane |
| FPM Display | REV 09 | 710-024027 | EH3138 | TXP FPM Display |
| CIP 0 | REV 12 | 710-023792 | EF6349 | TXP CIP |
| CIP 1 | REV 12 | 710-023792 | EG5294 | TXP CIP |
| PEM 0 | Rev 06 | 740-027463 | XH04595 | Power Entry Module |
| PEM 1 | Rev 06 | 740-027463 | XH04592 | Power Entry Module |
| Routing Engine 0 | REV 07 | 740-026942 | P737A-002541 | RE-DUO-2600 |
| ad0 3823 MB | SMART CF | | 2011030400062C132C13 | Compact Flash |
| ad1 62720 MB | SMART Lite SATA Drive | | 201105100009A452A452 | Disk 1 |
| Routing Engine 1 | REV 07 | 740-026942 | P737A-002602 | RE-DUO-2600 |
| ad0 3823 MB | SMART CF | | 20110508085EE471E471 | Compact Flash |
| ad1 62720 MB | SMART Lite SATA Drive | | 201110210089DF39DF39 | Disk 1 |
| CB 0 | REV 15 | 710-022606 | EH4376 | SFC Control Board |
| CB 1 | REV 15 | 710-022606 | EH4379 | SFC Control Board |
| SPMB 0 | | BUILTIN | | SFC Switch CPU |
| SPMB 1 | | BUILTIN | | SFC Switch CPU |
| SIB F13 0 | REV 10 | 750-035002 | EM9305 | F13 SIB 3D |
| B Board | REV 06 | 711-035082 | EM9667 | F13 SIB 3D Mezz |
| P Board | REV 05 | 711-043544 | EM9708 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB34FB00S | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB01H | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB34FB02W | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB34FB01T | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB00W | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB34FB01S | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB34FB03H | CXP Module |
| Xcvr 14 | REV 01 | 740-047547 | XB34FB023 | CXP Module |
| SIB F13 3 | REV 01 | 710-035001 | EJ2612 | F13 SIB 3D |
| B Board | REV 01 | 711-035082 | EJ3815 | F13 SIB 3D Mezz |
| P Board | REV 01 | 711-043544 | EJ2678 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB04C | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB00Z | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB47FB036 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB47FB029 | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB02N | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB42FB0CS | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB47FB01X | CXP Module |
| Xcvr 14 | REV 01 | 740-047547 | XB48FB02F | CXP Module |
| SIB F13 6 | REV 05 | 750-035002 | EK2675 | F13 SIB 3D |
| B Board | REV 03 | 711-035082 | EK2612 | F13 SIB 3D Mezz |
| P Board | REV 04 | 711-043544 | EK1179 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB01T | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB02M | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB031 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB04P | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB02T | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB34FB01V | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB48FB02C | CXP Module |
| Xcvr 14 | | NON-JNPR | | No Module |
| SIB F13 12 | REV 01 | 710-035001 | EJ2631 | F13 SIB 3D |
| B Board | REV 01 | 711-035082 | EJ3808 | F13 SIB 3D Mezz |
| P Board | REV 01 | 711-043544 | EJ2676 | F13 SIB 3D Power |
| SIB F2S 0/0 | REV 01 | 711-034977 | EH9829 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9927 | F2S SIB 3D Mezz |
| SIB F2S 0/2 | REV 01 | 711-034977 | EH9791 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9852 | F2S SIB 3D Mezz |
| SIB F2S 0/4 | REV 01 | 711-034977 | EH9803 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9915 | F2S SIB 3D Mezz |
| SIB F2S 0/6 | REV 01 | 711-034977 | EH9763 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9880 | F2S SIB 3D Mezz |
| SIB F2S 1/0 | REV 01 | 711-034977 | EH9757 | F2S SIB 3D |

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|-------------|--------|------------|--------|-----------------|
| B Board | REV 01 | 711-034979 | EH9889 | F2S SIB 3D Mezz |
| SIB F2S 1/2 | REV 01 | 711-034977 | EH9815 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9890 | F2S SIB 3D Mezz |
| SIB F2S 1/4 | REV 08 | 750-034978 | EN1954 | F2S SIB 3D |
| B Board | REV 02 | 711-034979 | EN1436 | F2S SIB 3D Mezz |
| SIB F2S 1/6 | REV 01 | 711-034977 | EJ7054 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EJ8238 | F2S SIB 3D Mezz |
| SIB F2S 2/0 | REV 01 | 711-034977 | EH9830 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9844 | F2S SIB 3D Mezz |
| SIB F2S 2/2 | REV 01 | 711-034977 | EH9818 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9888 | F2S SIB 3D Mezz |
| SIB F2S 2/4 | REV 01 | 711-034977 | EH9795 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9869 | F2S SIB 3D Mezz |
| SIB F2S 2/6 | REV 01 | 711-034977 | EJ7026 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EJ8273 | F2S SIB 3D Mezz |
| SIB F2S 3/0 | REV 01 | 711-034977 | EH9811 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9892 | F2S SIB 3D Mezz |
| SIB F2S 3/2 | REV 01 | 711-034977 | EH9812 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9877 | F2S SIB 3D Mezz |
| SIB F2S 3/4 | REV 08 | 750-034978 | EN1947 | F2S SIB 3D |
| B Board | REV 02 | 711-034979 | EN1471 | F2S SIB 3D Mezz |
| Fan Tray 0 | REV 10 | 760-024497 | EH3313 | Front Fan Tray |
| Fan Tray 1 | REV 10 | 760-024497 | EH3290 | Front Fan Tray |
| Fan Tray 2 | REV 10 | 760-024502 | EH3292 | Rear Fan Tray |
| Fan Tray 3 | REV 10 | 760-024502 | EH3287 | Rear Fan Tray |
| Fan Tray 4 | REV 10 | 760-024502 | EH3286 | Rear Fan Tray |
| Fan Tray 5 | REV 10 | 760-024502 | EH3285 | Rear Fan Tray |

1cc0-re0:

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|----------|-----------------------|----------------------|-------------------------|
| Chassis | | | JN11B23FEAHA | T1600 |
| Midplane | REV 01 | 710-027486 | RC9787 | T-series Backplane |
| FPM GBUS | REV 13 | 710-002901 | BBAG5132 | T640 FPM Board |
| FPM Display | REV 04 | 710-021387 | BBAL9612 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | BBAN0605 | T-series CIP |
| PEM 0 | REV 05 | 740-036442 | 1G022060143 | Power Entry Module 6x60 |
| PEM 1 | REV 05 | 740-036442 | 1G022060011 | Power Entry Module 6x60 |
| SCG 0 | REV 18 | 710-003423 | BBAL7318 | T640 Sonet Clock Gen. |
| SCG 1 | REV 18 | 710-003423 | BBAL7255 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 07 | 740-026941 | P737F-002933 | RE-DUO-1800 |
| ad0 | 3823 MB | SMART CF | 201103030490604E604E | Compact Flash |
| ad1 | 62720 MB | SMART Lite SATA Drive | 20110729028B11D411D4 | Disk 1 |
| Routing Engine 1 | REV 06 | 740-026941 | P737F-002749 | RE-DUO-1800 |
| ad0 | 3823 MB | SMART CF | 2011010504EB99649964 | Compact Flash |
| ad1 | 62720 MB | SMART Lite SATA Drive | 201102140058934A934A | Disk 1 |
| CB 0 | REV 11 | 710-022597 | EH3611 | LCC Control Board |
| CB 1 | REV 11 | 710-022597 | EH4798 | LCC Control Board |
| FPC 5 | REV 17 | 710-013037 | BBAC5333 | FPC Type 4-ES |
| CPU | REV 10 | 710-016744 | BBAB7619 | ST-PMB2 |
| PIC 0 | REV 18 | 750-017405 | BBAE3420 | 4x 10GE (LAN/WAN) XFP |
| Xcvr 0 | REV 03 | 740-014289 | T10C90659 | XFP-10G-SR |
| MMB 0 | REV 05 | 710-025563 | BBAB9538 | ST-MMB2 |
| MMB 1 | REV 05 | 710-025563 | BBAB9502 | ST-MMB2 |
| FPC 7 | REV 01 | 750-045173 | BBAV0032 | FPC Type 5-3D |
| CPU | | | | |
| SPMB 0 | REV 05 | 710-023321 | EG9434 | LCC Switch CPU |
| SPMB 1 | REV 05 | 710-023321 | EH3878 | LCC Switch CPU |
| SIB 0 | REV 01 | 750-041657 | EH7997 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7674 | LCC SIB 3D Mezz |

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|------------|--------|------------|-----------|------------------------|
| Xcvr 0 | REV 01 | 740-047547 | XB48FB014 | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB05A | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB052 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB01B | CXP Module |
| SIB 1 | REV 01 | 750-041657 | EH8023 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7659 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB05J | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB01E | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB01J | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB02S | CXP Module |
| SIB 2 | REV 03 | 750-041657 | EJ6554 | LCC SIB 3D |
| B Board | REV 02 | 711-042424 | EJ5756 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB34FB01Z | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB34FB013 | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB04Z | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB05N | CXP Module |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 4 |

lcc2-re0:

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|-----------------------|-------------|----------------------|-------------------------|
| Chassis | | | JN11B3975AHA | T1600 |
| Midplane | REV 01 | 710-027486 | RC9826 | T-series Backplane |
| FPM GBUS | REV 13 | 710-002901 | BBAG5124 | T640 FPM Board |
| FPM Display | REV 03 | 710-021387 | BBAJ1112 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | BBAL3744 | T-series CIP |
| PEM 0 | REV 05 | 740-036442 | 1G022060081 | Power Entry Module 6x60 |
| PEM 1 | REV 05 | 740-036442 | 1G022060188 | Power Entry Module 6x60 |
| SCG 0 | REV 18 | 710-003423 | BBAH8775 | T640 Sonet Clock Gen. |
| SCG 1 | REV 18 | 710-003423 | BBAL7272 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 07 | 740-026941 | P737F-002992 | RE-DUO-1800 |
| ad0 3823 MB | SMART CF | | 201103030356329E329E | Compact Flash |
| ad1 62720 MB | SMART Lite SATA Drive | | 2011051000488D8B8D8B | Disk 1 |
| Routing Engine 1 | REV 07 | 740-026941 | P737F-002938 | RE-DUO-1800 |
| ad0 3823 MB | SMART CF | | 20110304000F02680268 | Compact Flash |
| ad1 62720 MB | SMART Lite SATA Drive | | 201105300A70F325F325 | Disk 1 |
| CB 0 | REV 11 | 710-022597 | EH4805 | LCC Control Board |
| CB 1 | REV 11 | 710-022597 | EH4786 | LCC Control Board |
| FPC 1 | REV 01 | 710-033873 | BBAH0320 | FPC Type 3-ES |
| CPU | REV 11 | 710-016744 | BBAF3281 | ST-PMB2 |
| MMB 0 | REV 06 | 710-025563 | BBAF5061 | ST-MMB2 |
| FPC 5 | REV 04 | 710-033871 | BBAM5070 | FPC Type 4-ES |
| CPU | REV 11 | 710-016744 | BBAM6653 | ST-PMB2 |
| PIC 1 | REV 20 | 750-017405 | BBAM1296 | 4x 10GE (LAN/WAN) XFP |
| Xcvr 0 | REV 03 | 740-014289 | T10B42981 | XFP-10G-SR |
| MMB 0 | REV 07 | 710-025563 | BBAN2631 | ST-MMB2 |
| MMB 1 | REV 07 | 710-025563 | BBAN2538 | ST-MMB2 |
| SPMB 0 | REV 05 | 710-023321 | EH3903 | LCC Switch CPU |
| SPMB 1 | REV 05 | 710-023321 | EH3902 | LCC Switch CPU |
| SIB 0 | REV 01 | 750-041657 | EH8019 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7680 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB04F | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB04S | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB04B | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB043 | CXP Module |
| SIB 1 | REV 01 | 750-041657 | EH8012 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7658 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB05E | CXP Module |

| | | | | |
|------------|--------|------------|-----------|------------------------|
| Xcvr 2 | REV 01 | 740-047547 | XB48FB01Z | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB018 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB054 | CXP Module |
| SIB 2 | REV 01 | 750-041657 | EH7993 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7678 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB05C | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB47FB00N | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB05U | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB05L | CXP Module |
| Fan Tray 0 | | | | Front Top Fan Tray |
| Fan Tray 1 | | | | Front Bottom Fan Tray |
| Fan Tray 2 | | | | Rear Fan Tray -- Rev 4 |

show chassis hardware lcc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis hardware lcc 0
lcc0-re0:
```

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|-------------------------|
| Chassis | | | JN11B23FEAHA | T1600 |
| Midplane | REV 01 | 710-027486 | RC9787 | T-series Backplane |
| FPM GBUS | REV 13 | 710-002901 | BBAG5132 | T640 FPM Board |
| FPM Display | REV 04 | 710-021387 | BBAL9612 | T1600 FPM Display |
| CIP | REV 06 | 710-002895 | BBAN0605 | T-series CIP |
| PEM 0 | REV 05 | 740-036442 | 1G022060143 | Power Entry Module 6x60 |
| PEM 1 | REV 05 | 740-036442 | 1G022060011 | Power Entry Module 6x60 |
| SCG 0 | REV 18 | 710-003423 | BBAL7318 | T640 Sonet Clock Gen. |
| SCG 1 | REV 18 | 710-003423 | BBAL7255 | T640 Sonet Clock Gen. |
| Routing Engine 0 | REV 07 | 740-026941 | P737F-002933 | RE-DUO-1800 |
| Routing Engine 1 | REV 06 | 740-026941 | P737F-002749 | RE-DUO-1800 |
| CB 0 | REV 11 | 710-022597 | EH3611 | LCC Control Board |
| CB 1 | REV 11 | 710-022597 | EH4798 | LCC Control Board |
| FPC 5 | REV 17 | 710-013037 | BBAC5333 | FPC Type 4-ES |
| CPU | REV 10 | 710-016744 | BBAB7619 | ST-PMB2 |
| PIC 0 | REV 18 | 750-017405 | BBAE3420 | 4x 10GE (LAN/WAN) XFP |
| Xcvr 0 | REV 03 | 740-014289 | T10C90659 | XFP-10G-SR |
| MMB 0 | REV 05 | 710-025563 | BBAB9538 | ST-MMB2 |
| MMB 1 | REV 05 | 710-025563 | BBAB9502 | ST-MMB2 |
| FPC 7 | REV 01 | 750-045173 | BBAV0032 | FPC Type 5-3D |
| CPU | | | | |
| SPMB 0 | REV 05 | 710-023321 | EG9434 | LCC Switch CPU |
| SPMB 1 | REV 05 | 710-023321 | EH3878 | LCC Switch CPU |
| SIB 0 | REV 01 | 750-041657 | EH7997 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7674 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB014 | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB05A | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB052 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB01B | CXP Module |
| SIB 1 | REV 01 | 750-041657 | EH8023 | LCC SIB 3D |
| B Board | REV 01 | 711-042424 | EH7659 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB05J | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB01E | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB01J | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB02S | CXP Module |
| SIB 2 | REV 03 | 750-041657 | EJ6554 | LCC SIB 3D |
| B Board | REV 02 | 711-042424 | EJ5756 | LCC SIB 3D Mezz |
| Xcvr 0 | REV 01 | 740-047547 | XB34FB01Z | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB34FB013 | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB04Z | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB05N | CXP Module |

Fan Tray 0
Fan Tray 1
Fan Tray 2

Front Top Fan Tray
Front Bottom Fan Tray
Rear Fan Tray -- Rev 4

show chassis hardware sfc (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis hardware sfc 0
sfc0-re0:
```

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|--------------------|
| Chassis | | | JN11CAAA4AHB | TXP |
| Midplane | REV 05 | 710-022574 | ABAC4696 | SFC Midplane |
| FPM Display | REV 09 | 710-024027 | EH3138 | TXP FPM Display |
| CIP 0 | REV 12 | 710-023792 | EF6349 | TXP CIP |
| CIP 1 | REV 12 | 710-023792 | EG5294 | TXP CIP |
| PEM 0 | Rev 06 | 740-027463 | XH04595 | Power Entry Module |
| PEM 1 | Rev 06 | 740-027463 | XH04592 | Power Entry Module |
| Routing Engine 0 | REV 07 | 740-026942 | P737A-002541 | RE-DUO-2600 |
| Routing Engine 1 | REV 07 | 740-026942 | P737A-002602 | RE-DUO-2600 |
| CB 0 | REV 15 | 710-022606 | EH4376 | SFC Control Board |
| CB 1 | REV 15 | 710-022606 | EH4379 | SFC Control Board |
| SPMB 0 | | BUILTIN | | SFC Switch CPU |
| SPMB 1 | | BUILTIN | | SFC Switch CPU |
| SIB F13 0 | REV 10 | 750-035002 | EM9305 | F13 SIB 3D |
| B Board | REV 06 | 711-035082 | EM9667 | F13 SIB 3D Mezz |
| P Board | REV 05 | 711-043544 | EM9708 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB34FB00S | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB01H | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB34FB02W | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB34FB01T | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB00W | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB34FB01S | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB34FB03H | CXP Module |
| Xcvr 14 | REV 01 | 740-047547 | XB34FB023 | CXP Module |
| SIB F13 3 | REV 01 | 710-035001 | EJ2612 | F13 SIB 3D |
| B Board | REV 01 | 711-035082 | EJ3815 | F13 SIB 3D Mezz |
| P Board | REV 01 | 711-043544 | EJ2678 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB04C | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB00Z | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB47FB036 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB47FB029 | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB02N | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB42FB0CS | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB47FB01X | CXP Module |
| Xcvr 14 | REV 01 | 740-047547 | XB48FB02F | CXP Module |
| SIB F13 6 | REV 05 | 750-035002 | EK2675 | F13 SIB 3D |
| B Board | REV 03 | 711-035082 | EK2612 | F13 SIB 3D Mezz |
| P Board | REV 04 | 711-043544 | EK1179 | F13 SIB 3D Power |
| Xcvr 0 | REV 01 | 740-047547 | XB48FB01T | CXP Module |
| Xcvr 2 | REV 01 | 740-047547 | XB48FB02M | CXP Module |
| Xcvr 4 | REV 01 | 740-047547 | XB48FB031 | CXP Module |
| Xcvr 6 | REV 01 | 740-047547 | XB48FB04P | CXP Module |
| Xcvr 8 | REV 01 | 740-047547 | XB48FB02T | CXP Module |
| Xcvr 10 | REV 01 | 740-047547 | XB34FB01V | CXP Module |
| Xcvr 12 | REV 01 | 740-047547 | XB48FB02C | CXP Module |
| Xcvr 14 | | NON-JNPR | | No Module |
| SIB F13 12 | REV 01 | 710-035001 | EJ2631 | F13 SIB 3D |
| B Board | REV 01 | 711-035082 | EJ3808 | F13 SIB 3D Mezz |
| P Board | REV 01 | 711-043544 | EJ2676 | F13 SIB 3D Power |
| SIB F2S 0/0 | REV 01 | 711-034977 | EH9829 | F2S SIB 3D |

| | | | | |
|-------------|--------|------------|--------|-----------------|
| B Board | REV 01 | 711-034979 | EH9927 | F2S SIB 3D Mezz |
| SIB F2S 0/2 | REV 01 | 711-034977 | EH9791 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9852 | F2S SIB 3D Mezz |
| SIB F2S 0/4 | REV 01 | 711-034977 | EH9803 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9915 | F2S SIB 3D Mezz |
| SIB F2S 0/6 | REV 01 | 711-034977 | EH9763 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9880 | F2S SIB 3D Mezz |
| SIB F2S 1/0 | REV 01 | 711-034977 | EH9757 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9889 | F2S SIB 3D Mezz |
| SIB F2S 1/2 | REV 01 | 711-034977 | EH9815 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9890 | F2S SIB 3D Mezz |
| SIB F2S 1/4 | REV 08 | 750-034978 | EN1954 | F2S SIB 3D |
| B Board | REV 02 | 711-034979 | EN1436 | F2S SIB 3D Mezz |
| SIB F2S 1/6 | REV 01 | 711-034977 | EJ7054 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EJ8238 | F2S SIB 3D Mezz |
| SIB F2S 2/0 | REV 01 | 711-034977 | EH9830 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9844 | F2S SIB 3D Mezz |
| SIB F2S 2/2 | REV 01 | 711-034977 | EH9818 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9888 | F2S SIB 3D Mezz |
| SIB F2S 2/4 | REV 01 | 711-034977 | EH9795 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9869 | F2S SIB 3D Mezz |
| SIB F2S 2/6 | REV 01 | 711-034977 | EJ7026 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EJ8273 | F2S SIB 3D Mezz |
| SIB F2S 3/0 | REV 01 | 711-034977 | EH9811 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9892 | F2S SIB 3D Mezz |
| SIB F2S 3/2 | REV 01 | 711-034977 | EH9812 | F2S SIB 3D |
| B Board | REV 01 | 711-034979 | EH9877 | F2S SIB 3D Mezz |
| SIB F2S 3/4 | REV 08 | 750-034978 | EN1947 | F2S SIB 3D |
| B Board | REV 02 | 711-034979 | EN1471 | F2S SIB 3D Mezz |
| Fan Tray 0 | REV 10 | 760-024497 | EH3313 | Front Fan Tray |
| Fan Tray 1 | REV 10 | 760-024497 | EH3290 | Front Fan Tray |
| Fan Tray 2 | REV 10 | 760-024502 | EH3292 | Rear Fan Tray |
| Fan Tray 3 | REV 10 | 760-024502 | EH3287 | Rear Fan Tray |
| Fan Tray 4 | REV 10 | 760-024502 | EH3286 | Rear Fan Tray |
| Fan Tray 5 | REV 10 | 760-024502 | EH3285 | Rear Fan Tray |

show chassis hardware (16-Port 10-Gigabit Ethernet MPC with SFP+ Optics [MX Series Routers])

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|---------|-------------|---------------|----------------------|
| Chassis | | | JN112D865AFA | MX960 |
| Midplane | REV 03 | 710-013698 | TS3339 | MX960 Backplane |
| FPM Board | REV 03 | 710-014974 | WW6267 | Front Panel Display |
| PDM | Rev 03 | 740-013110 | QCS12485026 | Power Distribution |
| Module | | | | |
| PEM 0 | Rev 04 | 740-013682 | QCS12434086 | PS 1.7kw; 200-240VAC |
| in | | | | |
| PEM 1 | Rev 04 | 740-013682 | QCS1243408Z | PS 1.7kw; 200-240VAC |
| in | | | | |
| PEM 2 | Rev 04 | 740-013682 | QCS1243407X | PS 1.7kw; 200-240VAC |
| in | | | | |
| Routing Engine 0 | REV 07 | 740-015113 | 9009009677 | RE-S-1300 |
| Routing Engine 1 | REV 07 | 740-015113 | 9009011510 | RE-S-1300 |
| CB 0 | REV 03 | 710-021523 | XF0394 | MX SCB |
| CB 1 | REV 03 | 710-021523 | XF0550 | MX SCB |
| CB 2 | REV 03 | 710-021523 | XD7455 | MX SCB |
| FPC 4 | REV 02 | 750-028467 | JR6127 | MPC M 16x 10GE |
| CPU | REV 02 | 711-029089 | JX0129 | AS PMB |
| PIC 0 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |

| | | | | |
|------------|--------|------------|---------|-------------------|
| PIC 1 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| PIC 2 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| PIC 3 | | BUILTIN | BUILTIN | 4x 10GE(LAN) SFP+ |
| Fan Tray 0 | REV 05 | 740-014971 | TP9990 | Fan Tray |
| Fan Tray 1 | REV 05 | 740-014971 | VS1709 | Fan Tray |

show chassis hardware (MPC3E [MX Series Routers])

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

```
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------------------|-------------|-------------|---------------|------------------------|
| Chassis | | | JN1101AFEAFB | MX480 |
| Midplane | REV 05 | 710-017414 | TR4444 | MX480 Midplane |
| FPM Board | REV 02 | 710-017254 | KG6056 | Front Panel Display |
| PEM 0 | Rev 03 | 740-017330 | QCS082090FC | PS 1.2-1.7kW; 100-240V |
| PEM 1 | Rev 03 | 740-017330 | QCS082090FD | PS 1.2-1.7kW; 100-240V |
| Routing Engine 0 | REV 07 | 740-013063 | 9009004124 | RE-S-2000 |
| Routing Engine 1 | REV 07 | 740-013063 | 9009005569 | RE-S-2000 |
| CB 0 | REV 07 | 710-021523 | XZ3587 | MX SCB |
| CB 1 | REV 03 | 710-021523 | KH8306 | MX SCB |
| FPC 1 | REV 04.1.07 | 750-033205 | P1240 | MPC Type 3 |
| CPU | REV 01 | 711-035209 | YL0504 | HMPC PMB 2G |
| MIC 1 | REV 10 | 750-033199 | YX4495 | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-032210 | C22CQNE | CFP-100G-LR4 |
| FPC 2 | REV 26 | 750-016670 | KH0045 | DPCE 40x 1GE R EQ |
| CPU | REV 07 | 710-013713 | KF5448 | DPC PMB |
| PIC 0 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| Xcvr 0 | REV 01 | 740-011613 | PF21JHU | SFP-SX |
| PIC 1 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| Xcvr 9 | REV 01 | 740-011613 | AM0813S8ZL6 | SFP-SX |
| PIC 2 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| Xcvr 0 | REV 02 | 740-011613 | PGL2KYF | SFP-SX |
| Xcvr 2 | REV 01 | 740-011613 | AM0806S8N4P | SFP-SX |
| PIC 3 | | BUILTIN | BUILTIN | 10x 1GE(LAN) EQ |
| Xcvr 5 | REV 01 | 740-011613 | AM0815S967N | SFP-SX |
| Xcvr 7 | REV 01 | 740-011613 | AM0806S8N1X | SFP-SX |
| Xcvr 8 | REV 01 | 740-011613 | AM0815S967J | SFP-SX |
| Xcvr 9 | REV 01 | 740-011613 | AM0815S967M | SFP-SX |
| FPC 3 | REV 12.2.09 | 750-033205 | YR9443 | MPC Type 3 |
| CPU | REV 03 | 711-035209 | YL6931 | HMPC PMB 2G |
| MIC 0 | REV 05 | 750-033199 | YR3269 | 1X100GE CFP |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-032210 | ULH0KG3 | CFP-100G-LR4 |
| MIC 1 | REV 02 | 750-033199 | YG3245 | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-032210 | ULH0KGF | CFP-100G-LR4 |
| FPC 4 | REV 12.3.09 | 750-033205 | YR9437 | MPC Type 3 |
| CPU | REV 03 | 711-035209 | YT5857 | HMPC PMB 2G |
| MIC 0 | REV 05 | 750-033199 | YR3295 | 1X100GE CFP |
| PIC 0 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | | NON-JNPR | X12000187 | CFP-100G-SR10 |
| MIC 1 | REV 10 | 750-033199 | YX4518 | 1X100GE CFP |
| PIC 2 | | BUILTIN | BUILTIN | 1X100GE CFP |
| Xcvr 0 | REV 01 | 740-035329 | X12J00008 | CFP-100G-SR10 |
| FPC 5 | REV 06 | 750-024884 | JW9769 | MPC Type 2 3D EQ |
| CPU | REV 02 | 711-028401 | JR6158 | MPC PMB 2G Proto |
| MIC 0 | REV 05 | 750-028387 | JR6197 | 3D 4x 10GE XFP |

| | | | | |
|----------|--------|------------|-------------|---------------------|
| PIC 0 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| Xcvr 0 | REV 01 | 740-014289 | T07M71112 | XFP-10G-SR |
| Xcvr 1 | REV 02 | 740-014289 | T08L85610 | XFP-10G-SR |
| PIC 1 | | BUILTIN | BUILTIN | 2x 10GE XFP |
| MIC 1 | REV 22 | 750-028392 | YM0053 | 3D 20x 1GE(LAN) SFP |
| PIC 2 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-011613 | AM0703S005B | SFP-SX |
| Xcvr 1 | REV 01 | 740-011613 | E07L01352 | SFP-SX |
| PIC 3 | | BUILTIN | BUILTIN | 10x 1GE(LAN) SFP |
| Xcvr 5 | REV 01 | 740-013111 | 6500217 | SFP-T |
| Xcvr 9 | REV 02 | 740-013111 | 8499527 | SFP-T |
| Fan Tray | | | | Left Fan Tray |

The PIC number for MIC 1 always starts from 2 (even if the first MIC is a 1X100GE CFP or a legacy MIC).

show chassis hardware (QFX3500 Switches)

```
user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               QFX3500
Routing Engine 0                       BUILTIN      BUILTIN      QFX Routing Engine
FPC 0         REV 04   750-044071   BBAR3902     QFX3500-48S4Q-AFI
CPU                               BUILTIN      BUILTIN      FPC CPU
PIC 0                               BUILTIN      BUILTIN      48x 10G-SFP+
PIC 1                               BUILTIN      BUILTIN      15x 10G-SFP+
MGMT BRD      REV 02   750-044063   BBAR0398     QFX3500-MGMT-SFP-AFO
Xcvr 0        REV 01   740-011614   AC0946S0BD1  SFP-LX10
Xcvr 1        REV 02   740-013111   A281922      SFP-T
Power Supply 0 Rev 04   740-032091   UI00677      JPSU-650W-AC-AFI
Power Supply 1 REV 00   740-041741   VJ00162      JPSU-650W-AC-AFO
Fan Tray 0                               QFX Fan Tray, Back to
Front Airflow
Fan Tray 1                               QFX Fan Tray, Back to
Front Airflow
Fan Tray 2                               QFX Fan Tray, Back to
Front Airflow
```

show chassis hardware detail (QFX3500 Switches)

```
user@switch> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN000TEST5   QFX3500
Routing Engine 0                       BUILTIN      BUILTIN      QFX Routing Engine
FPC 0         REV 05   750-036931   EE0823       QFX3500-48S4Q-AFI

CPU                               BUILTIN      BUILTIN      FPC CPU
PIC 0                               BUILTIN      BUILTIN      48x 10G-SFP+
Xcvr 0        REV 01   740-030589   S99E270079   SFP+-10G-LPBK
Xcvr 1        REV 01   740-030589   S9AK450099   SFP+-10G-LPBK
Xcvr 2        REV 01   740-030589   S99E270078   SFP+-10G-LPBK
Xcvr 3        REV 01   740-030589   S9AK450098   SFP+-10G-LPBK
Xcvr 4        REV 01   740-030589   S99E270075   SFP+-10G-LPBK
Xcvr 5        REV 01   740-030589   S9AK450093   SFP+-10G-LPBK
Xcvr 6        REV 01   740-030589   S9AK450097   SFP+-10G-LPBK
Xcvr 7        REV 01   740-030589   S9AK450095   SFP+-10G-LPBK
```

| | | | | |
|----------------|--------|------------|------------|----------------|
| Xcvr 8 | REV 01 | 740-030589 | S99E270072 | SFP+-10G-LPBK |
| Xcvr 9 | REV 01 | 740-030589 | S99E270073 | SFP+-10G-LPBK |
| Xcvr 10 | REV 01 | 740-030589 | S99E270080 | SFP+-10G-LPBK |
| Xcvr 11 | REV 01 | 740-030589 | S9AK450169 | SFP+-10G-LPBK |
| Xcvr 12 | REV 01 | 740-030589 | S99E270076 | SFP+-10G-LPBK |
| Xcvr 13 | REV 01 | 740-030589 | S9AK450167 | SFP+-10G-LPBK |
| Xcvr 14 | REV 01 | 740-030589 | S9AK450170 | SFP+-10G-LPBK |
| Xcvr 15 | REV 01 | 740-030589 | S9AK450166 | SFP+-10G-LPBK |
| Xcvr 16 | REV 01 | 740-030589 | S9AK450092 | SFP+-10G-LPBK |
| Xcvr 17 | REV 01 | 740-030589 | S9AK450163 | SFP+-10G-LPBK |
| Xcvr 18 | REV 01 | 740-030589 | S9AK450094 | SFP+-10G-LPBK |
| Xcvr 19 | REV 01 | 740-030589 | S9AK450100 | SFP+-10G-LPBK |
| Xcvr 20 | REV 01 | 740-030589 | S9AK450168 | SFP+-10G-LPBK |
| Xcvr 21 | REV 01 | 740-030589 | S9AK450165 | SFP+-10G-LPBK |
| Xcvr 22 | REV 01 | 740-030589 | S9AK450073 | SFP+-10G-LPBK |
| Xcvr 23 | REV 01 | 740-030589 | S9AK450164 | SFP+-10G-LPBK |
| Xcvr 24 | REV 01 | 740-030589 | S9AK450074 | SFP+-10G-LPBK |
| Xcvr 25 | REV 01 | 740-030589 | SA62270195 | SFP+-10G-LPBK |
| Xcvr 26 | REV 01 | 740-030589 | S9AK450078 | SFP+-10G-LPBK |
| Xcvr 27 | REV 01 | 740-030589 | S9AK450024 | SFP+-10G-LPBK |
| Xcvr 28 | REV 01 | 740-030589 | S9AK450027 | SFP+-10G-LPBK |
| Xcvr 29 | REV 01 | 740-030589 | S9AK450080 | SFP+-10G-LPBK |
| Xcvr 30 | REV 01 | 740-030589 | S9AK450030 | SFP+-10G-LPBK |
| Xcvr 31 | REV 01 | 740-030589 | S9AK450025 | SFP+-10G-LPBK |
| Xcvr 32 | REV 01 | 740-030589 | S9AK450023 | SFP+-10G-LPBK |
| Xcvr 33 | REV 01 | 740-030589 | S9AK450075 | SFP+-10G-LPBK |
| Xcvr 34 | REV 01 | 740-030589 | S9AK450161 | SFP+-10G-LPBK |
| Xcvr 35 | REV 01 | 740-030589 | S9AK450071 | SFP+-10G-LPBK |
| Xcvr 36 | REV 01 | 740-030589 | S9AK450072 | SFP+-10G-LPBK |
| Xcvr 37 | REV 01 | 740-030589 | S9AK450022 | SFP+-10G-LPBK |
| Xcvr 38 | REV 01 | 740-030589 | S9AK450021 | SFP+-10G-LPBK |
| Xcvr 39 | REV 01 | 740-030589 | S9AK450175 | SFP+-10G-LPBK |
| Xcvr 40 | REV 01 | 740-030589 | S9AK450162 | SFP+-10G-LPBK |
| Xcvr 41 | REV 01 | 740-030589 | S99E270074 | SFP+-10G-LPBK |
| Xcvr 42 | REV 01 | 740-030589 | S9AK450174 | SFP+-10G-LPBK |
| Xcvr 43 | REV 01 | 740-030589 | S9AK450077 | SFP+-10G-LPBK |
| Xcvr 44 | REV 01 | 740-030589 | S9AK450076 | SFP+-10G-LPBK |
| Xcvr 45 | REV 01 | 740-030589 | S9AK450026 | SFP+-10G-LPBK |
| Xcvr 46 | REV 01 | 740-030589 | S9AK450079 | SFP+-10G-LPBK |
| Xcvr 47 | REV 01 | 740-030589 | S9AK450029 | SFP+-10G-LPBK |
| PIC 1 | | BUILTIN | BUILTIN | 15x 10G-SFP+ |
| Xcvr 1 | REV 01 | 740-032986 | QA170087 | QSFP+-40G-SR4 |
| Xcvr 4 | REV 01 | 740-032986 | QA360442 | QSFP+-40G-SR4 |
| Xcvr 8 | REV 01 | 740-032986 | QA170091 | QSFP+-40G-SR4 |
| Xcvr 12 | REV 01 | 740-032986 | QA170042 | QSFP+-40G-SR4 |
| MGMT BRD | REV 08 | 750-036946 | EE0731 | QFX3500-MB |
| Power Supply 0 | Rev 04 | 740-032091 | UI00690 | QFX PS 650W AC |
| Power Supply 1 | Rev 04 | 740-032091 | UI00679 | QFX PS 650W AC |
| Fan Tray 0 | | | | QFX Fan Tray |
| Fan Tray 1 | | | | QFX Fan Tray |

show chassis hardware models (QFX3500 Switches)

```

user@switch> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Routing Engine 0
FPC 0         REV 02    711-032234  EC4074
Power Supply 0 PSMI 2C   11-d65800  --

```

show chassis hardware clei-models (QFX3500 Switches)

```

user@switch> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Routing Engine 0
FPC 0         REV 02    711-032234
Power Supply 0 PSMI 2C  11-d65800

```

show chassis hardware 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,

```

```

Front to Back Airflow - AFO
Fan Tray 2
Front to Back Airflow - AFO
QFX10002 Fan Tray 2,

```

show chassis hardware detail (QFX10002 Switches)

```

user@switch> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               12345         QFX10002-72Q
Pseudo CB 0
Routing Engine 0      BUILTIN    BUILTIN      RE-QFX10002-72Q
ada0   8193 MB  QEMU                QM000001     Virtio Block Disk
ada1   4096 MB  QEMU                QM000002     Virtio Block Disk
ada2   512 MB   QEMU                QM000003     Virtio Block Disk
ada3   1024 MB  QEMU                QM000004     Virtio Block Disk
usb0 (addr 0.1) UHCI root HUB 0   Intel        uhub0
usb0 (addr 1.1) EHCI root HUB 0   Intel        uhub1
usb0 (addr 1.2) product 0x0020 32   vendor 0x8087 uhub2
usb0 (addr 1.3) Ultra Fit 21891   SanDisk      umass0
FPC 0          REV 05   750-055415   ACAM4724     QFX10002-72Q
CPU           BUILTIN    BUILTIN      FPC CPU

```

show chassis hardware (QFX10008 and QFX10016 Switches)

```

user@switch> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               DE994         QFX10008
Midplane      REV 28   750-054097   ACPG3671      QFX10008 Midplane
Routing Engine 0      BUILTIN    BUILTIN      Routing Engine
Routing Engine 1      BUILTIN    BUILTIN      Routing Engine
CB 0          REV 03   750-068820   ACPA3224      Control Board
CB 1          REV 03   750-068820   ACPM9059      Control Board
FPC 0         REV 33   750-051354   ACNP4522      ULC-36Q-12Q28
CPU           BUILTIN    BUILTIN      FPC CPU
PIC 0         BUILTIN    BUILTIN      36X40G
  Xcvr 0      REV 01   740-038623   MOC16016230802 QSFP+-40G-CU1M
  Xcvr 1      REV 01   740-038623   MOC16016230802 QSFP+-40G-CU1M
  Xcvr 2      REV 01   740-038623   MOC16016231080 QSFP+-40G-CU1M
  Xcvr 3      REV 01   740-038623   MOC16016231080 QSFP+-40G-CU1M
  Xcvr 4      REV    740-038624   APF16220038H15 QSFP+-40G-CU3M
  Xcvr 5      REV    740-038624   APF16220038H5M QSFP+-40G-CU3M
  Xcvr 6      REV    740-038624   APF160600308W8 QSFP+-40G-CU3M
  Xcvr 8      REV    740-038624   APF16210038FFL QSFP+-40G-CU3M
  Xcvr 9      REV    740-038624   APF16210038F6F QSFP+-40G-CU3M
  Xcvr 10     REV    740-038624   APF1605003032B QSFP+-40G-CU3M
  Xcvr 11     REV    740-038624   APF16070030CDB QSFP+-40G-CU3M
  Xcvr 13     REV    740-038624   APF16210038FEW QSFP+-40G-CU3M
  Xcvr 15     REV 01   740-052307   APF16100071C1L QSFP+-40G-ACU7M
  Xcvr 16     REV    740-038625   APF1623005048E QSFP+-40G-CU5M
  Xcvr 17     REV    740-038625   APF16230050471 QSFP+-40G-CU5M
  Xcvr 18     REV    740-038625   APF1623005044D QSFP+-40G-CU5M
  Xcvr 19     REV 01   740-052307   APF16100071C30 QSFP+-40G-ACU7M
  Xcvr 20     REV    740-038625   APF16290055004 QSFP+-40G-CU5M
  Xcvr 21     REV 01   740-038153   APF1622003970G QSFP+-40G-CU3M
  Xcvr 22     REV    740-038624   APF16190036R90 QSFP+-40G-CU3M
  Xcvr 23     REV    740-038624   APF16050030374 QSFP+-40G-CU3M
  Xcvr 24     REV 01   740-038153   APF162400318HC QSFP+-40G-CU3M

```

| | | | | |
|----------------|--------|------------|----------------|-----------------|
| Xcvr 30 | REV | 740-038624 | APF1606003097A | QSFP+-40G-CU3M |
| Xcvr 31 | REV 01 | 740-052307 | APF160500702R9 | QSFP+-40G-ACU7M |
| Xcvr 32 | REV | 740-038624 | APF16220038GVR | QSFP+-40G-CU3M |
| FPD Board | REV 07 | 711-054687 | ACPC7158 | QFX10000 FPD |
| Power Supply 0 | REV 02 | 740-049388 | 1EDL63104D6 | QFX10000 AC |
| Power Supply 1 | REV 02 | 740-049388 | 1EDL62503XC | QFX10000 AC |
| Power Supply 2 | REV 02 | 740-049388 | 1EDL62503XS | QFX10000 AC |
| Power Supply 3 | REV 02 | 740-049388 | 1EDL62503T8 | QFX10000 AC |
| Power Supply 4 | REV 02 | 740-049388 | 1EDL62503TR | QFX10000 AC |
| Power Supply 5 | REV 02 | 740-049388 | 1EDL62503T5 | QFX10000 AC |
| FTC 0 | REV 15 | 750-050108 | ACPF4227 | QFX10000 FTC |
| FTC 1 | REV 15 | 750-050108 | ACPF4228 | QFX10000 FTC |
| Fan Tray 0 | REV 09 | 760-054372 | ACNV5506 | QFX10008 FHB |
| Fan Tray 1 | REV 09 | 760-054372 | ACNV5365 | QFX10008 FHB |
| SIB 0 | REV 27 | 750-050058 | ACPM4212 | QFX10008 SIB |
| SIB 1 | REV 27 | 750-050058 | ACPM4253 | QFX10008 SIB |
| SIB 2 | REV 27 | 750-050058 | ACPM4174 | QFX10008 SIB |
| SIB 3 | REV 27 | 750-050058 | ACPM4191 | QFX10008 SIB |
| SIB 4 | REV 27 | 750-050058 | ACPM4216 | QFX10008 SIB |
| SIB 5 | REV 27 | 750-050058 | ACPM4286 | QFX10008 SIB |

show chassis hardware detail (QFX10008 and QFX10016 Switches)

```

user@switch> show chassis hardware details
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               12345         QFX10008
Midplane      REV 01    750-054097   ACAM1754       QFX10008 Midplane
Routing Engine 0  BUILTIN  BUILTIN      Routing Engine
ada0  8193 MB  QEMU          QM00001       Virtio Block Disk
ada1  4096 MB  QEMU          QM00002       Virtio Block Disk
ada2  512 MB   QEMU          QM00003       Virtio Block Disk
ada3  1024 MB  QEMU          QM00004       Virtio Block Disk
usb0 (addr 1)  UHCI root HUB 0  Intel         uhub0
usb0 (addr 1)  EHCI root HUB 0  Intel         uhub1
usb0 (addr 2)  product 0x0020 32 vendor 0x8087 uhub2
Routing Engine 1  BUILTIN  BUILTIN      Routing Engine
ada0  8193 MB  QEMU          QM00001       Virtio Block Disk
ada1  4096 MB  QEMU          QM00002       Virtio Block Disk
ada2  512 MB   QEMU          QM00003       Virtio Block Disk
ada3  1024 MB  QEMU          QM00004       Virtio Block Disk
usb0 (addr 0.1) UHCI root HUB 0  Intel         uhub0
usb0 (addr 1.1) EHCI root HUB 0  Intel         uhub1
usb0 (addr 1.2) product 0x0020 32 vendor 0x8087 uhub2
CB 0          REV 16    750-052688   ACAM7936       Control Board
CB 1          REV 18    750-052688   ACAM7708       Control Board
FPC 0         REV 26    750-051351   ACPJ1372       ULC-60S-6Q Main Board
CPU           BUILTIN  BUILTIN      FPC CPU

```

show chassis hardware interconnect-device (QFabric Systems)

```

user@switch> show chassis hardware interconnect-device interconnect1
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis       REV 07                               QFX_olive
Midplane      REV 07    750-021261   BH0208188289  QFX Midplane
CB 0          REV 07    750-021261   BH0208188289  QFXIC08-CB4S

```


show chassis hardware node-device (QFabric Systems)

```

user@switch> show chassis hardware node-device node1
Routing Engine 0    BUILTIN    BUILTIN    QFX Routing Engine
node1              REV 05    711-032234 ED3694      QFX3500-48S4Q-AFI

CPU
PIC 0
Xcvr 8    REV 01    740-030658 AD0946A028B    FPC CPU
48x 10G-SFP+
SFP+-10G-USR
...

```

show chassis hardware (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN1D1FD7AJA    PTX5000
Midplane      REV 03    711-031896    ABAC5589      Midplane-8S
FPM           REV 08    760-030647    EG1679        Front Panel Display
PDU 0         Rev 05    740-032019    ZE00006       DC Power Dist Unit
  PSM 0        Rev 05    740-032022    ZJ00018       DC 12V Power Supply
  PSM 1        Rev 04    740-032022    ZC00052       DC 12V Power Supply
  PSM 2        Rev 04    740-032022    ZD00051       DC 12V Power Supply
  PSM 3        Rev 05    740-032022    ZJ00060       DC 12V Power Supply
CCG 0         REV 04    750-030653    EG3703        Clock Generator
CCG 1         REV 04    750-030653    EG3698        Clock Generator
Routing Engine 0 REV 05    740-026942    P737A-002231  RE-DUO-2600
Routing Engine 1 REV 06    740-026942    P737A-002438  RE-DUO-2600
CB 0          REV 08    750-030625    EG5519        Control Board
CB 1          REV 08    750-030625    EG5516        Control Board
FPC 0         REV 18    750-036844    EJ3080        FPC
  CPU         REV 12    711-030686    EJ3260        SNG PMB
FPC 2         REV 13    750-036844    EG5065        FPC
  CPU         REV 09    711-030686    EG4082        SNG PMB
  PIC 0        REV 14    750-031913    EG5127        24x 10GE(LAN) SFP+
    Xcvr 0      REV 01    740-031980    143363A00240  SFP+-10G-SR
    Xcvr 1      REV 01    740-031981    UK90PZ1       SFP+-10G-LR
    Xcvr 2      REV 01    740-031980    AD1141A04XH   SFP+-10G-SR
    Xcvr 3      REV 01    740-031981    UK90Q46       SFP+-10G-LR
    Xcvr 4      REV 01    740-031980    AD1141A04X4   SFP+-10G-SR
    Xcvr 6      REV 01    740-031980    B11H02560     SFP+-10G-SR
    Xcvr 7      REV 01    740-031980    B11C01589     SFP+-10G-SR
    Xcvr 8      REV 01    740-031980    AD1141A04XF   SFP+-10G-SR
    Xcvr 10     REV 01    740-031980    123363A01094  SFP+-10G-SR
    Xcvr 11     REV 01    740-031980    AK80LKF       SFP+-10G-SR
    Xcvr 12     REV 01    740-031980    183363A01528  SFP+-10G-SR
    Xcvr 14     REV 01    740-031980    193363A01079  SFP+-10G-SR
    Xcvr 15     REV 01    740-031980    AK80MC8       SFP+-10G-SR
    Xcvr 16     REV 01    740-031980    AJC0BHC       SFP+-10G-SR
    Xcvr 19     REV 01    740-021309    J08D26856     SFP+-10G-LR
    Xcvr 21     REV 01    740-031980    AK80KCT       SFP+-10G-SR
    Xcvr 22     REV 01    740-031981    UK90PZL       SFP+-10G-LR
    Xcvr 23     REV 01    740-031980    AK80N1V       SFP+-10G-SR
FPC 3         REV 13    750-036844    EG5074        FPC
  CPU         REV 09    711-030686    EG4064        SNG PMB
  PIC 1        REV 10    750-031903    EG0325        SNG Load
FPC 5         REV 06    750-036844    EH3198        FPC
  CPU
  PIC 0        REV 14    750-031913    EG5134        24x 10GE(LAN) SFP+

```

| | | | | |
|------------|--------|------------|--------------|---------------------|
| Xcvr 0 | REV 01 | 740-031980 | AK80LBH | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11B03724 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80FMH | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | B11J00818 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | 193363A00743 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | B11B06125 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | B11H02529 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | AK80LFB | SFP+-10G-SR |
| Xcvr 12 | REV 01 | 740-031980 | 193363A01061 | SFP+-10G-SR |
| Xcvr 15 | REV 01 | 740-031980 | B11J00687 | SFP+-10G-SR |
| Xcvr 16 | REV 01 | 740-031980 | 193363A00738 | SFP+-10G-SR |
| Xcvr 18 | REV 01 | 740-031980 | AK80MQX | SFP+-10G-SR |
| Xcvr 19 | REV 01 | 740-021309 | J08C17257 | SFP+-10G-LR |
| Xcvr 22 | REV 01 | 740-031980 | B11J00730 | SFP+-10G-SR |
| Xcvr 23 | REV 01 | 740-031980 | AK80KEE | SFP+-10G-SR |
| PIC 1 | REV 08 | 750-036710 | EG3105 | 2x 40GE CFP |
| Xcvr 0 | REV 01 | 740-034554 | B260HLT | CFP-40G-LR4 |
| Xcvr 1 | REV 01 | 740-034554 | B11C02847 | CFP-40G-LR4 |
| FPC 6 | REV 18 | 750-036844 | EJ4391 | FPC |
| CPU | REV 12 | 711-030686 | EJ3257 | SNG PMB |
| FPC 7 | REV 18 | 750-036844 | EJ4382 | FPC |
| CPU | REV 12 | 711-030686 | EJ3238 | SNG PMB |
| SPMB 0 | REV 10 | 711-030686 | EG5418 | SNG PMB |
| SPMB 1 | REV 09 | 711-030686 | EG5373 | SNG PMB |
| SIB 0 | REV 07 | 750-030631 | EG4858 | SIB-I-8S |
| SIB 1 | REV 07 | 750-030631 | EG4872 | SIB-I-8S |
| SIB 2 | REV 07 | 750-030631 | EG4866 | SIB-I-8S |
| SIB 3 | REV 07 | 750-030631 | EG6011 | SIB-I-8S |
| SIB 4 | REV 07 | 750-030631 | EG4907 | SIB-I-8S |
| SIB 5 | REV 07 | 750-030631 | EG4879 | SIB-I-8S |
| SIB 6 | REV 07 | 750-030631 | EG4864 | SIB-I-8S |
| SIB 7 | REV 07 | 750-030631 | EG4899 | SIB-I-8S |
| SIB 8 | REV 07 | 750-030631 | EG4880 | SIB-I-8S |
| Fan Tray 0 | REV 04 | 760-032784 | EG1496 | Vertical Fan Tray |
| Fan Tray 1 | REV 04 | 760-030642 | EG1335 | Horizontal Fan Tray |
| Fan Tray 2 | REV 02 | 760-030642 | ED4952 | Horizontal Fan Tray |

show chassis hardware (PTX5000 Packet Transport Router with AC PSM and PDU)

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

| Hardware inventory: | | | | |
|---------------------|---------|-------------|---------------|--------------------------|
| Item | Version | Part number | Serial number | Description |
| Chassis | | | JN12223A6AJA | PTX5000 |
| Midplane | REV 16 | 750-035893 | ACRA1350 | Midplane-8S |
| FPM | REV 12 | 760-030647 | BBBD5625 | Front Panel Display |
| PDU 0 | Rev 01 | 740-048338 | 1GB83360005 | High Capacity AC WYE PDU |
| | | | | |
| PSM 0 | Rev 01 | 740-048334 | 1GB43360074 | High Capacity AC PSM |
| PSM 1 | Rev 01 | 740-048334 | 1GB43360001 | High Capacity AC PSM |
| PSM 2 | Rev 01 | 740-048334 | 1GB43360104 | High Capacity AC PSM |
| PSM 3 | Rev 01 | 740-048334 | 1GB43360042 | High Capacity AC PSM |
| PSM 4 | Rev 01 | 740-048334 | 1GB43360068 | High Capacity AC PSM |
| PSM 5 | Rev 01 | 740-048334 | 1GB43360080 | High Capacity AC PSM |
| PSM 6 | Rev 01 | 740-048334 | 1GB43360046 | High Capacity AC PSM |
| PSM 7 | Rev 01 | 740-048334 | 1GB43360100 | High Capacity AC PSM |
| PDU 1 | Rev 01 | 740-048338 | 1GB83360006 | High Capacity AC WYE PDU |
| | | | | |
| PSM 0 | Rev 01 | 740-048334 | 1GB43360069 | High Capacity AC PSM |
| PSM 1 | Rev 01 | 740-048334 | 1GB43360099 | High Capacity AC PSM |
| PSM 2 | Rev 01 | 740-048334 | 1GB43360050 | High Capacity AC PSM |
| PSM 3 | Rev 01 | 740-048334 | 1GB43360095 | High Capacity AC PSM |

```

PSM 4          Rev 01  740-048334  1GB43360101  High Capacity AC PSM
PSM 5          Rev 01  740-048334  1GB43360075  High Capacity AC PSM
PSM 6          Rev 01  740-048334  1GB43360047  High Capacity AC PSM
PSM 7          Rev 01  740-048334  1GB43360019  High Capacity AC PSM
CCG 0          REV 09  750-030653  BBAZ5345     Clock Generator
...

```

show chassis hardware (PTX5000 Packet Transport Router with FPC2-PTX-PIA)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               JN1204FC0AJA  PTX5000
Midplane      REV 11   750-035893  ACAB8038      Midplane-8S
FPM           REV 12   760-030647  BBBD5619      Front Panel
Display
PDU 0         Rev 04   740-048336  1GB93470043   High Capacity DC PDU
  PSM 0        Rev 04   740-046988  1GB63500184   High Capacity DC PSM
  PSM 2        Rev 04   740-046988  1GB63500169   High Capacity DC PSM
  PSM 4        Rev 04   740-046988  1GB63500306   High Capacity DC PSM
  PSM 6        Rev 04   740-046988  1GB63500074   High Capacity DC PSM
PDU 1         Rev 04   740-048336  1GB93470045   High Capacity DC PDU
  PSM 1        Rev 04   740-046988  1GB63500193   High Capacity DC PSM
  PSM 3        Rev 04   740-046988  1GB63500143   High Capacity DC PSM
  PSM 5        Rev 04   740-046988  1GB63500146   High Capacity DC PSM
  PSM 7        Rev 04   740-046988  1GB63500192   High Capacity DC PSM
CCG 0         REV 09   750-030653  BBBC1909      Clock Generator
CCG 1         REV 09   750-030653  BBBD2970      Clock Generator
...

```

show chassis hardware clei-models (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
FPM           REV 08   760-030647  PROTOXCLEI     CRAFT-PTX5000-S
PDU 0         Rev 05   740-032019  IPUPAHLKAA     PWR-SAN-PDU-DC
  PSM 0        Rev 05   740-032022  IPUPAHNKAA     PSM-PTX-DC-120-S
  PSM 1        Rev 04   740-032022  032022XXXX     PWR-SAN-12-DC
  PSM 2        Rev 04   740-032022  032022XXXX     PWR-SAN-12-DC
  PSM 3        Rev 05   740-032022  IPUPAHNKAA     PSM-PTX-DC-120-S
CCG 0         REV 04   750-030653  PROTOXCLEI     CCG-PTX-S
CCG 1         REV 04   750-030653  PROTOXCLEI     CCG-PTX-S
Routing Engine 0 REV 05   740-026942                RE-DUO-C2600-16G-S
Routing Engine 1 REV 06   740-026942                RE-DUO-C2600-16G-S
CB 0          REV 08   750-030625  PROTOXCLEI     CB-PTX-S
CB 1          REV 08   750-030625  PROTOXCLEI     CB-PTX-S
FPC 0         REV 18   750-036844  PROTOXCLEI     FPC-PTX-P1-A
FPC 2         REV 13   750-036844  PROTOXCLEI     FPC-PTX-P1-A
  PIC 0        REV 14   750-031913  PROTOXCLEI     P1-PTX-24-10GE-SFPP
FPC 3         REV 13   750-036844  PROTOXCLEI     FPC-PTX-P1-A
FPC 5
  PIC 0        REV 14   750-031913  PROTOXCLEI     P1-PTX-24-10GE-SFPP
FPC 6         REV 18   750-036844  PROTOXCLEI     FPC-PTX-P1-A
FPC 7         REV 18   750-036844  PROTOXCLEI     FPC-PTX-P1-A
SIB 0         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008
SIB 1         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008
SIB 2         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008
SIB 3         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008
SIB 4         REV 07   750-030631  PROTOXCLEI     SIB-I-PTX5008

```

| | | | | |
|------------|--------|------------|------------|---------------|
| SIB 5 | REV 07 | 750-030631 | PROTOXCLEI | SIB-I-PTX5008 |
| SIB 6 | REV 07 | 750-030631 | PROTOXCLEI | SIB-I-PTX5008 |
| SIB 7 | REV 07 | 750-030631 | PROTOXCLEI | SIB-I-PTX5008 |
| SIB 8 | REV 07 | 750-030631 | PROTOXCLEI | SIB-I-PTX5008 |
| Fan Tray 1 | REV 04 | 760-030642 | PROTOXCLEI | FAN-PTX-H-S |

show chassis hardware clei-models (PTX5000 Packet Transport Router with AC PSM and PDU)

```
user@host> show chassis hardware clei-models
Hardware inventory:
```

| Item | Version | Part number | CLEI code | FRU model number |
|----------|---------|-------------|------------|-------------------|
| Midplane | REV 16 | 750-035893 | IPMUN00ARA | CHAS-MP-PTX5000-S |
| FPM | REV 12 | 760-030647 | IPUCA7SCAA | CRAFT-PTX5000-S |
| PDU 0 | Rev 01 | 740-048338 | PROTOACPDU | PDU2-PTX-AC-W |
| PSM 0 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 1 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 2 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 3 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 4 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 5 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 6 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 7 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PDU 1 | Rev 01 | 740-048338 | PROTOACPDU | PDU2-PTX-AC-W |
| PSM 0 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 1 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 2 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 3 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 4 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 5 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 6 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| PSM 7 | Rev 01 | 740-048334 | PROTOACPSM | PSM2-PTX-AC |
| CCG 0 | REV 09 | 750-030653 | IPUCA7DCAA | CCG-PTX-S |
| ... | | | | |

show chassis hardware clei-models (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```
user@host> show chassis hardware clei-models
Hardware inventory:
```

| Item | Version | Part number | CLEI code | FRU model number |
|----------|---------|-------------|------------|-------------------|
| Midplane | REV 11 | 750-035893 | IPMUN00ARA | CHAS-MP-PTX5000-S |
| FPM | REV 12 | 760-030647 | IPUCA7SCAA | CRAFT-PTX5000-S |
| PDU 0 | Rev 04 | 740-048336 | IPUPAL7KAA | PDU2-PTX-DC-S |
| PSM 0 | Rev 04 | 740-046988 | IPUPAL8KAA | PSM2-PTX-DC-S |
| PSM 2 | Rev 04 | 740-046988 | IPUPAL8KAA | PSM2-PTX-DC-S |
| PSM 4 | Rev 04 | 740-046988 | IPUPAL8KAA | PSM2-PTX-DC-S |
| PSM 6 | Rev 04 | 740-046988 | IPUPAL8KAA | PSM2-PTX-DC-S |
| PDU 1 | Rev 04 | 740-048336 | IPUPAL7KAA | PDU2-PTX-DC-S |
| PSM 1 | Rev 04 | 740-046988 | IPUPAL8KAA | PSM2-PTX-DC-S |
| PSM 3 | Rev 04 | 740-046988 | IPUPAL8KAA | PSM2-PTX-DC-S |
| PSM 5 | Rev 04 | 740-046988 | IPUPAL8KAA | PSM2-PTX-DC-S |
| PSM 7 | Rev 04 | 740-046988 | IPUPAL8KAA | PSM2-PTX-DC-S |
| CCG 0 | REV 09 | 750-030653 | IPUCA7DCAA | CCG-PTX-S |
| CCG 1 | REV 09 | 750-030653 | IPUCA7DCAA | CCG-PTX-S |
| ... | | | | |

show chassis hardware detail (PTX5000 Packet Transport Router)

```
user@host> show chassis hardware detail
Hardware inventory:
```

| Item | Version | Part number | Serial number | Description |
|------|---------|-------------|---------------|-------------|
|------|---------|-------------|---------------|-------------|

| | | | | |
|------------------|--------------------------------|------------|----------------------|---------------------|
| Chassis | | | JN11D1FD7AJA | PTX5000 |
| Midplane | REV 03 | 711-031896 | ABAC5589 | Midplane-8S |
| FPM | REV 08 | 760-030647 | EG1679 | Front Panel Display |
| PDU 0 | Rev 05 | 740-032019 | ZE00006 | DC Power Dist Unit |
| PSM 0 | Rev 05 | 740-032022 | ZJ00018 | DC 12V Power Supply |
| PSM 1 | Rev 04 | 740-032022 | ZC00052 | DC 12V Power Supply |
| PSM 2 | Rev 04 | 740-032022 | ZD00051 | DC 12V Power Supply |
| PSM 3 | Rev 05 | 740-032022 | ZJ00060 | DC 12V Power Supply |
| CCG 0 | REV 04 | 750-030653 | EG3703 | Clock Generator |
| CCG 1 | REV 04 | 750-030653 | EG3698 | Clock Generator |
| Routing Engine 0 | REV 05 | 740-026942 | P737A-002231 | RE-DUO-2600 |
| ad0 | 3823 MB SMART CF | | 201006190039C02DC02D | Compact Flash |
| ad1 | 62720 MB SMART Lite SATA Drive | | 2011042300CF4C6B4C6B | Disk 1 |
| Routing Engine 1 | REV 06 | 740-026942 | P737A-002438 | RE-DUO-2600 |
| ad0 | 3823 MB SMART CF | | 20100619053455F055F0 | Compact Flash |
| ad1 | 62720 MB SMART Lite SATA Drive | | 20110423000AE8E7E8E7 | Disk 1 |
| CB 0 | REV 08 | 750-030625 | EG5519 | Control Board |
| CB 1 | REV 08 | 750-030625 | EG5516 | Control Board |
| FPC 0 | REV 18 | 750-036844 | EJ3080 | FPC |
| CPU | REV 12 | 711-030686 | EJ3260 | SNG PMB |
| FPC 2 | REV 13 | 750-036844 | EG5065 | FPC |
| CPU | REV 09 | 711-030686 | EG4082 | SNG PMB |
| PIC 0 | REV 14 | 750-031913 | EG5127 | 24x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | 143363A00240 | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031981 | UK90PZ1 | SFP+-10G-LR |
| Xcvr 2 | REV 01 | 740-031980 | AD1141A04XH | SFP+-10G-SR |
| Xcvr 3 | REV 01 | 740-031981 | UK90Q46 | SFP+-10G-LR |
| Xcvr 4 | REV 01 | 740-031980 | AD1141A04X4 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | B11H02560 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | B11C01589 | SFP+-10G-SR |
| Xcvr 8 | REV 01 | 740-031980 | AD1141A04XF | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | 123363A01094 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | AK80LKF | SFP+-10G-SR |
| Xcvr 12 | REV 01 | 740-031980 | 183363A01528 | SFP+-10G-SR |
| Xcvr 14 | REV 01 | 740-031980 | 193363A01079 | SFP+-10G-SR |
| Xcvr 15 | REV 01 | 740-031980 | AK80MC8 | SFP+-10G-SR |
| Xcvr 16 | REV 01 | 740-031980 | AJCOBHC | SFP+-10G-SR |
| Xcvr 19 | REV 01 | 740-021309 | J08D26856 | SFP+-10G-LR |
| Xcvr 21 | REV 01 | 740-031980 | AK80KCT | SFP+-10G-SR |
| Xcvr 22 | REV 01 | 740-031981 | UK90PZL | SFP+-10G-LR |
| Xcvr 23 | REV 01 | 740-031980 | AK80N1V | SFP+-10G-SR |
| FPC 3 | REV 13 | 750-036844 | EG5074 | FPC |
| CPU | REV 09 | 711-030686 | EG4064 | SNG PMB |
| PIC 1 | REV 10 | 750-031903 | EG0325 | SNG Load |
| FPC 5 | REV 06 | 750-036844 | EH3198 | FPC |
| CPU | | | | |
| PIC 0 | REV 14 | 750-031913 | EG5134 | 24x 10GE(LAN) SFP+ |
| Xcvr 0 | REV 01 | 740-031980 | AK80LBH | SFP+-10G-SR |
| Xcvr 1 | REV 01 | 740-031980 | B11B03724 | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031980 | AK80FMH | SFP+-10G-SR |
| Xcvr 5 | REV 01 | 740-031980 | B11J00818 | SFP+-10G-SR |
| Xcvr 6 | REV 01 | 740-031980 | 193363A00743 | SFP+-10G-SR |
| Xcvr 7 | REV 01 | 740-031980 | B11B06125 | SFP+-10G-SR |
| Xcvr 10 | REV 01 | 740-031980 | B11H02529 | SFP+-10G-SR |
| Xcvr 11 | REV 01 | 740-031980 | AK80LFB | SFP+-10G-SR |
| Xcvr 12 | REV 01 | 740-031980 | 193363A01061 | SFP+-10G-SR |
| Xcvr 15 | REV 01 | 740-031980 | B11J00687 | SFP+-10G-SR |
| Xcvr 16 | REV 01 | 740-031980 | 193363A00738 | SFP+-10G-SR |
| Xcvr 18 | REV 01 | 740-031980 | AK80MQX | SFP+-10G-SR |
| Xcvr 19 | REV 01 | 740-021309 | J08C17257 | SFP+-10G-LR |
| Xcvr 22 | REV 01 | 740-031980 | B11J00730 | SFP+-10G-SR |

| | | | | |
|------------|--------|------------|-----------|---------------------|
| Xcvr 23 | REV 01 | 740-031980 | AK80KEE | SFP+-10G-SR |
| PIC 1 | REV 08 | 750-036710 | EG3105 | 2x 40GE CFP |
| Xcvr 0 | REV 01 | 740-034554 | B260HLT | CFP-40G-LR4 |
| Xcvr 1 | REV 01 | 740-034554 | B11C02847 | CFP-40G-LR4 |
| FPC 6 | REV 18 | 750-036844 | EJ4391 | FPC |
| CPU | REV 12 | 711-030686 | EJ3257 | SNG PMB |
| FPC 7 | REV 18 | 750-036844 | EJ4382 | FPC |
| CPU | REV 12 | 711-030686 | EJ3238 | SNG PMB |
| SPMB 0 | REV 10 | 711-030686 | EG5418 | SNG PMB |
| SPMB 1 | REV 09 | 711-030686 | EG5373 | SNG PMB |
| SIB 0 | REV 07 | 750-030631 | EG4858 | SIB-I-8S |
| SIB 1 | REV 07 | 750-030631 | EG4872 | SIB-I-8S |
| SIB 2 | REV 07 | 750-030631 | EG4866 | SIB-I-8S |
| SIB 3 | REV 07 | 750-030631 | EG6011 | SIB-I-8S |
| SIB 4 | REV 07 | 750-030631 | EG4907 | SIB-I-8S |
| SIB 5 | REV 07 | 750-030631 | EG4879 | SIB-I-8S |
| SIB 6 | REV 07 | 750-030631 | EG4864 | SIB-I-8S |
| SIB 7 | REV 07 | 750-030631 | EG4899 | SIB-I-8S |
| SIB 8 | REV 07 | 750-030631 | EG4880 | SIB-I-8S |
| Fan Tray 0 | REV 04 | 760-032784 | EG1496 | Vertical Fan Tray |
| Fan Tray 1 | REV 04 | 760-030642 | EG1335 | Horizontal Fan Tray |
| Fan Tray 2 | REV 02 | 760-030642 | ED4952 | Horizontal Fan Tray |

show chassis hardware detail (PTX5000 Packet Transport Router with AC PSM and PDU)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------|---------|-------------|---------------|--------------------------|
| Chassis | | | JN12223A6AJA | PTX5000 |
| Midplane | REV 16 | 750-035893 | ACRA1350 | Midplane-8S |
| FPM | REV 12 | 760-030647 | BBBD5625 | Front Panel Display |
| PDU 0 | Rev 01 | 740-048338 | 1GB83360005 | High Capacity AC WYE PDU |
| PSM 0 | Rev 01 | 740-048334 | 1GB43360074 | High Capacity AC PSM |
| PSM 1 | Rev 01 | 740-048334 | 1GB43360001 | High Capacity AC PSM |
| PSM 2 | Rev 01 | 740-048334 | 1GB43360104 | High Capacity AC PSM |
| PSM 3 | Rev 01 | 740-048334 | 1GB43360042 | High Capacity AC PSM |
| PSM 4 | Rev 01 | 740-048334 | 1GB43360068 | High Capacity AC PSM |
| PSM 5 | Rev 01 | 740-048334 | 1GB43360080 | High Capacity AC PSM |
| PSM 6 | Rev 01 | 740-048334 | 1GB43360046 | High Capacity AC PSM |
| PSM 7 | Rev 01 | 740-048334 | 1GB43360100 | High Capacity AC PSM |
| PDU 1 | Rev 01 | 740-048338 | 1GB83360006 | High Capacity AC WYE PDU |
| PSM 0 | Rev 01 | 740-048334 | 1GB43360069 | High Capacity AC PSM |
| PSM 1 | Rev 01 | 740-048334 | 1GB43360099 | High Capacity AC PSM |
| PSM 2 | Rev 01 | 740-048334 | 1GB43360050 | High Capacity AC PSM |
| PSM 3 | Rev 01 | 740-048334 | 1GB43360095 | High Capacity AC PSM |
| PSM 4 | Rev 01 | 740-048334 | 1GB43360101 | High Capacity AC PSM |
| PSM 5 | Rev 01 | 740-048334 | 1GB43360075 | High Capacity AC PSM |
| PSM 6 | Rev 01 | 740-048334 | 1GB43360047 | High Capacity AC PSM |
| PSM 7 | Rev 01 | 740-048334 | 1GB43360019 | High Capacity AC PSM |
| CCG 0 | REV 09 | 750-030653 | BBAZ5345 | Clock Generator |

show chassis hardware detail (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------|---------|-------------|---------------|-------------|
| Chassis | | | JN1204FC0AJA | PTX5000 |
| Midplane | REV 11 | 750-035893 | ACAB8038 | Midplane-8S |

| | | | | |
|---------|--------|------------|-------------|----------------------|
| FPM | REV 12 | 760-030647 | BBBD5619 | Front Panel |
| Display | | | | |
| PDU 0 | Rev 04 | 740-048336 | 1GB93470043 | High Capacity DC PDU |
| PSM 0 | Rev 04 | 740-046988 | 1GB63500184 | High Capacity DC PSM |
| PSM 2 | Rev 04 | 740-046988 | 1GB63500169 | High Capacity DC PSM |
| PSM 4 | Rev 04 | 740-046988 | 1GB63500306 | High Capacity DC PSM |
| PSM 6 | Rev 04 | 740-046988 | 1GB63500074 | High Capacity DC PSM |
| PDU 1 | Rev 04 | 740-048336 | 1GB93470045 | High Capacity DC PDU |
| PSM 1 | Rev 04 | 740-046988 | 1GB63500193 | High Capacity DC PSM |
| PSM 3 | Rev 04 | 740-046988 | 1GB63500143 | High Capacity DC PSM |
| PSM 5 | Rev 04 | 740-046988 | 1GB63500146 | High Capacity DC PSM |
| PSM 7 | Rev 04 | 740-046988 | 1GB63500192 | High Capacity DC PSM |
| CCG 0 | REV 09 | 750-030653 | BBBC1909 | Clock Generator |
| CCG 1 | REV 09 | 750-030653 | BBBD2970 | Clock Generator |
| ... | | | | |

show chassis hardware models (PTX5000 Packet Transport Router)

```
user@host> show chassis hardware models
Hardware inventory:
```

| Item | Version | Part number | Serial number | FRU model number |
|------------------|---------|-------------|---------------|---------------------|
| FPM | REV 08 | 760-030647 | EG1679 | CRAFT-PTX5000-S |
| PDU 0 | Rev 05 | 740-032019 | ZE00006 | PWR-SAN-PDU-DC |
| PSM 0 | Rev 05 | 740-032022 | ZJ00018 | PSM-PTX-DC-120-S |
| PSM 1 | Rev 04 | 740-032022 | ZC00052 | PWR-SAN-12-DC |
| PSM 2 | Rev 04 | 740-032022 | ZD00051 | PWR-SAN-12-DC |
| PSM 3 | Rev 05 | 740-032022 | ZJ00060 | PSM-PTX-DC-120-S |
| CCG 0 | REV 04 | 750-030653 | EG3703 | CCG-PTX-S |
| CCG 1 | REV 04 | 750-030653 | EG3698 | CCG-PTX-S |
| Routing Engine 0 | REV 05 | 740-026942 | P737A-002231 | RE-DUO-C2600-16G-S |
| Routing Engine 1 | REV 06 | 740-026942 | P737A-002438 | RE-DUO-C2600-16G-S |
| CB 0 | REV 08 | 750-030625 | EG5519 | CB-PTX-S |
| CB 1 | REV 08 | 750-030625 | EG5516 | CB-PTX-S |
| FPC 0 | REV 18 | 750-036844 | EJ3080 | FPC-PTX-P1-A |
| FPC 2 | REV 13 | 750-036844 | EG5065 | FPC-PTX-P1-A |
| PIC 0 | REV 14 | 750-031913 | EG5127 | P1-PTX-24-10GE-SFPP |
| FPC 3 | REV 13 | 750-036844 | EG5074 | FPC-PTX-P1-A |
| FPC 5 | | | | |
| PIC 0 | REV 14 | 750-031913 | EG5134 | P1-PTX-24-10GE-SFPP |
| FPC 6 | REV 18 | 750-036844 | EJ4391 | FPC-PTX-P1-A |
| FPC 7 | REV 18 | 750-036844 | EJ4382 | FPC-PTX-P1-A |
| SIB 0 | REV 07 | 750-030631 | EG4858 | SIB-I-PTX5008 |
| SIB 1 | REV 07 | 750-030631 | EG4872 | SIB-I-PTX5008 |
| SIB 2 | REV 07 | 750-030631 | EG4866 | SIB-I-PTX5008 |
| SIB 3 | REV 07 | 750-030631 | EG6011 | SIB-I-PTX5008 |
| SIB 4 | REV 07 | 750-030631 | EG4907 | SIB-I-PTX5008 |
| SIB 5 | REV 07 | 750-030631 | EG4879 | SIB-I-PTX5008 |
| SIB 6 | REV 07 | 750-030631 | EG4864 | SIB-I-PTX5008 |
| SIB 7 | REV 07 | 750-030631 | EG4899 | SIB-I-PTX5008 |
| SIB 8 | REV 07 | 750-030631 | EG4880 | SIB-I-PTX5008 |
| Fan Tray 1 | REV 04 | 760-030642 | EG1335 | FAN-PTX-H-S |

show chassis hardware models (PTX5000 Packet Transport Router with AC PSM and PDU)

```
user@host> show chassis hardware models
Hardware inventory:
```

| Item | Version | Part number | Serial number | FRU model number |
|----------|---------|-------------|---------------|-------------------|
| Midplane | REV 16 | 750-035893 | ACRA1350 | CHAS-MP-PTX5000-S |
| FPM | REV 12 | 760-030647 | BBBD5625 | CRAFT-PTX5000-S |
| PDU 0 | Rev 01 | 740-048338 | 1GB83360005 | PDU2-PTX-AC-W |

```

PSM 0      Rev 01  740-048334  1GB43360074  PSM2-PTX-AC
PSM 1      Rev 01  740-048334  1GB43360001  PSM2-PTX-AC
PSM 2      Rev 01  740-048334  1GB43360104  PSM2-PTX-AC
PSM 3      Rev 01  740-048334  1GB43360042  PSM2-PTX-AC
PSM 4      Rev 01  740-048334  1GB43360068  PSM2-PTX-AC
PSM 5      Rev 01  740-048334  1GB43360080  PSM2-PTX-AC
PSM 6      Rev 01  740-048334  1GB43360046  PSM2-PTX-AC
PSM 7      Rev 01  740-048334  1GB43360100  PSM2-PTX-AC
PDU 1      Rev 01  740-048338  1GB83360006  PDU2-PTX-AC-W
PSM 0      Rev 01  740-048334  1GB43360069  PSM2-PTX-AC
PSM 1      Rev 01  740-048334  1GB43360099  PSM2-PTX-AC
PSM 2      Rev 01  740-048334  1GB43360050  PSM2-PTX-AC
PSM 3      Rev 01  740-048334  1GB43360095  PSM2-PTX-AC
PSM 4      Rev 01  740-048334  1GB43360101  PSM2-PTX-AC
PSM 5      Rev 01  740-048334  1GB43360075  PSM2-PTX-AC
PSM 6      Rev 01  740-048334  1GB43360047  PSM2-PTX-AC
PSM 7      Rev 01  740-048334  1GB43360019  PSM2-PTX-AC
CCG 0      REV 09  750-030653  BBAZ5345     CCG-PTX-S
...

```

show chassis hardware models (PTX5000 Packet Transport Router with FPC2-PTX-P1A)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number  FRU model number
Midplane     REV 11   750-035893  ACAB8038      CHAS-MP-PTX5000-S
FPM          REV 12   760-030647  BBBD5619      CRAFT-PTX5000-S
PDU 0        Rev 04   740-048336  1GB93470043   PDU2-PTX-DC-S
  PSM 0      Rev 04   740-046988  1GB63500184   PSM2-PTX-DC-S
  PSM 2      Rev 04   740-046988  1GB63500169   PSM2-PTX-DC-S
  PSM 4      Rev 04   740-046988  1GB63500306   PSM2-PTX-DC-S
  PSM 6      Rev 04   740-046988  1GB63500074   PSM2-PTX-DC-S
PDU 1        Rev 04   740-048336  1GB93470045   PDU2-PTX-DC-S
  PSM 1      Rev 04   740-046988  1GB63500193   PSM2-PTX-DC-S
  PSM 3      Rev 04   740-046988  1GB63500143   PSM2-PTX-DC-S
  PSM 5      Rev 04   740-046988  1GB63500146   PSM2-PTX-DC-S
  PSM 7      Rev 04   740-046988  1GB63500192   PSM2-PTX-DC-S
CCG 0        REV 09   750-030653  BBBC1909      CCG-PTX-S
CCG 1        REV 09   750-030653  BBBD2970      CCG-PTX-S
...

```

show chassis hardware extensive (PTX5000 Packet Transport Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
.....
PDU 0        Rev 04   740-032019  UE0003         DC Power Dist Unit
Jedec Code:  0x7fb0          EEPROM Version:  0x02
P/N:         740-032019      S/N:            UE0003
Assembly ID: 0x043d          Assembly Version: 04.00
Date:        11-29-2010      Assembly Flags:  0x00
Version:     Rev 04          CLEI Code:       032022XXXX
ID: DC Power Dist Unit      FRU Model Number: PWR-SAN-PDU-DC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 3d 04 00 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 32 30 31 39 00 00
Address 0x20: 53 2f 4e 20 55 45 30 30 30 33 00 00 00 1d 0b 07

```



```

Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 30 33 32 30 32 32 58 58 58 58 50
Address 0x50: 57 52 2d 53 41 4e 2d 50 44 55 2d 44 43 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 a3 ff ff ff ff ff ff ff ff ff ff ff
PSM 0          Rev 04    740-032022    YG00065          DC 12V Power Supply
Module
Jedec Code:    0x7fb0          EEPROM Version:    0x02
P/N:           740-032022      S/N:              YG00065
Assembly ID:   0x0440          Assembly Version:  04.00
Date:          07-30-2010      Assembly Flags:    0x00
Version:       Rev 04          CLEI Code:         032022XXXX
ID: DC 12V Power Supply Module FRU Model Number: PWR-SAN-12-DC
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 04 40 04 00 52 65 76 20 30 34 00 00
Address 0x10: 00 00 00 00 37 34 30 2d 30 33 32 30 32 32 00 00
Address 0x20: 53 2f 4e 20 59 47 30 30 30 36 35 00 00 1e 07 07
Address 0x30: da ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 30 33 32 30 32 32 58 58 58 58 50
Address 0x50: 57 52 2d 53 41 4e 2d 31 32 2d 44 43 20 20 20 20
Address 0x60: 20 20 20 20 20 20 01 00 ff ff ff ff ff ff ff ff
Address 0x70: ff ff ff 0c ff ff ff ff ff ff ff ff ff ff ff ff

```

show chassis hardware extensive (PTX1000 Packet Transport Router)

```

user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               UNDEFINED    PTX1000
Pseudo CB 0
Routing Engine 0
FPC 0          REV 06    750-053330   ACAM4850       PTX1000-FPC-P2-BUILTIN
CPU            BUILTIN   BUILTIN      FPC CPU
PIC 0          BUILTIN   BUILTIN      288X10GE/72X40GE/24X100GE

Xcvr 2         REV 01    740-046565   QE240845       QSFP+-40G-SR4
Xcvr 3         REV 01    740-046565   QE240962       QSFP+-40G-SR4
Xcvr 5         REV 01    740-032986   ES400LZ        QSFP+-40G-SR4
Xcvr 12        REV 01    740-054053   QE419452       QSFP+-4X10G-SR
Xcvr 18        REV 01    740-054053   QE419481       QSFP+-4X10G-SR
Xcvr 30        REV 01    740-046565   QE440485       QSFP+-40G-SR4
Xcvr 48        REV 01    740-032986   ES400K3        QSFP+-40G-SR4
Xcvr 68        REV 01    740-046565   QF2805J3       QSFP+-40G-SR4
Mezz           REV 05    711-053333   ACAM4282       Mezzanine Board
Power Supply 2 REV 01    740-054405   1EDN4470131    AC AFO 1600W PSU
Power Supply 3 REV 01    740-054405   1EDN4470112    AC AFO 1600W PSU
Fan Tray 0                                           PTX1000 Fan Tray 0, Front
to Back Airflow - AFO
Fan Tray 1                                           PTX1000 Fan Tray 1, Front
to Back Airflow - AFO
Fan Tray 2                                           PTX1000 Fan Tray 2, Front
to Back Airflow - AFO

```

show chassis hardware extensive (PTX5000 with Control Board 2)

```

user@host> show chassis hardware grep CB
CB 0          REV 06    750-055537   ACLZ9541       Control Board 2
CB 1          REV 06    750-055537   ACLY5329       Control Board 2

```

show chassis hardware (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis hardware
Hardware inventory:
Item             Version  Part number  Serial number  Description
Chassis                               JN1100FB1AFB  MX480
Midplane          REV 05   710-017414   TR3310         MX480 Midplane
FPM Board         REV 02   710-017254   KG1872         Front Panel Display
PEM 2             Rev 02   740-017343   QCS0812A00N    DC Power Entry Module
PEM 3             Rev 02   740-017343   QCS0812A00U    DC Power Entry Module
Routing Engine 0  REV 07   740-015113   1000740938     RE-S-1300
CB 0              REV 03   710-021523   KF4630         MX SCB
FPC 1             REV 11   750-037207   ZW9726         AS-MCC
  CPU             REV 04   711-038173   ZW4819         AS-MCC PMB
  MIC 0           REV 06   750-037214   ZW3574         AS-MSC
    PIC 0         BUILTIN  BUILTIN        AS-MSC
  MIC 1           REV 00   750-037211        BUILTIN        AS-MXC
    PIC 2         BUILTIN  BUILTIN        AS-MXC

```

show chassis hardware extensive (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis hardware extensive
FPC 1             REV 11   750-037207   ZW9726         AS-MCC
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 750-037207        S/N: ZW9726
Assembly ID: 0x0b37     Assembly Version: 01.11
Date: 02-17-2012       Assembly Flags: 0x00
Version: REV 11        CLEI Code: PROTOXCLEI
ID: AS-MCC             FRU Model Number: 750-037207
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 37 01 0b 52 45 56 20 31 31 00 00
Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 30 37 00 00
Address 0x20: 53 2f 4e 20 5a 57 39 37 32 36 00 00 00 11 02 07
Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 35 30 2d 30 33 37 32 30 37 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 31 31 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 5e ff ff ff ff ff ff ff ff ff ff ff ff
CPU             REV 04   711-038173   ZW4819         AS-MCC-PMB
Jedec Code: 0x7fb0      EEPROM Version: 0x02
P/N: 711-038173        S/N: ZW4819
Assembly ID: 0x0b38     Assembly Version: 01.04
Date: 12-30-2011       Assembly Flags: 0x00
Version: REV 04
ID: AS-MCC PMB
Board Information Record:
Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 ff 0b 38 01 04 52 45 56 20 30 34 00 00
Address 0x10: 00 00 00 00 37 31 31 2d 30 33 38 31 37 33 00 00
Address 0x20: 53 2f 4e 20 5a 57 34 38 31 39 00 00 00 1e 0c 07
Address 0x30: db ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Address 0x40: ff ff ff ff 00 50 52 4f 54 4f 58 43 4c 45 49 37
Address 0x50: 31 31 2d 30 33 38 31 37 33 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 30 34 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 60 00 00 00 00 00 00 00 00 00 00 00 00
MIC 0           REV 06   750-037214   ZW3574         AS-MSC

```

```

Jedec Code: 0x7fb0          EEPROM Version: 0x02
P/N: 750-037214          S/N: ZW3574
Assembly ID: 0x0a44        Assembly Version: 01.06
Date: 02-19-2012          Assembly Flags: 0x00
Version: REV 06           CLEI Code: PROTOXCLEI
ID: AS-MSC                FRU Model Number: 750-037214
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 02 ff 0a 44 01 06 52 45 56 20 30 36 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 31 34 00 00
  Address 0x20: 53 2f 4e 20 5a 57 33 35 37 34 00 00 00 13 02 07
  Address 0x30: dc ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 37
  Address 0x50: 35 30 2d 30 33 37 32 31 34 00 00 00 00 00 00 00
  Address 0x60: 00 00 00 00 00 00 30 36 00 ff ff ff ff ff ff ff
  Address 0x70: ff ff ff 60 c0 03 e5 f4 00 00 00 00 00 00 00 00
  PIC 0                BUILTIN          BUILTIN          AS-MSC
MIC 1                REV 00          750-037211          AS-MXC
Jedec Code: 0x7fb0          EEPROM Version: 0x01
P/N: 750-037211
Assembly ID: 0x0a43        Assembly Version: 01.00
Date: 255-255-65535        Assembly Flags: 0x00
Version: REV 00
ID: AS-MXC
Board Information Record:
  Address 0x00: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
I2C Hex Data:
  Address 0x00: 7f b0 01 ff 0a 43 01 00 52 45 56 20 30 30 00 00
  Address 0x10: 00 00 00 00 37 35 30 2d 30 33 37 32 31 31 00 00
  Address 0x20: 00 00 00 00 00 00 00 00 00 00 00 00 00 ff ff ff
  Address 0x30: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x40: ff ff ff ff 00 ff ff ff ff ff ff ff ff ff ff ff
  Address 0x50: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x60: ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
  Address 0x70: ff ff ff ff c0 02 e6 6c 7f b0 02 ff 0a 44 01 06
  PIC 2                BUILTIN          BUILTIN          AS-MXC

```

show chassis hardware (ACX5048 Router)

```

user@host> show chassis hardware
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0
FPC 0          REV 05    650-056267  VF3714170810  ACX5048
CPU
PIC 0          BUILTIN   BUILTIN     48x10G-6x40G
  Xcvr 0        REV 02    740-011613  NR2051S       SFP-SX
  Xcvr 33       REV 01    740-030589  SE5N290041    SFP+-10G-LPBK
  Xcvr 35       REV 01    740-030589  SE5N290926    SFP+-10G-LPBK
  Xcvr 37       REV 01    740-030589  SE5N290049    SFP+-10G-LPBK
  Xcvr 39       REV 01    740-030589  SE5N290046    SFP+-10G-LPBK
  Xcvr 48       NON-JNPR  409310098   UNKNOWN
Power Supply 1 REV 03    740-041741  1GA24081097  JPSU-650W-AC-AFO
Fan Tray 0
to Back Airflow - AFO
Fan Tray 1
to Back Airflow - AFO

```

```

Fan Tray 2
to Back Airflow - AFO
Fan Tray 3
to Back Airflow - AFO
Fan Tray 4
to Back Airflow - AFO

```

ACX5K Fan Tray 2, Front

ACX5K Fan Tray 3, Front

ACX5K Fan Tray 4, Front

show chassis hardware detail (ACX5048 Router)

```

user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis
Pseudo CB 0
Routing Engine 0      BUILTIN    BUILTIN        ACX5K Routing Engine
ad0      509 MB  QEMU HARDDISK  QM00001      Hard Disk
ad1      4095 MB  QEMU HARDDISK  QM00002      Hard Disk
ad2       511 MB  QEMU HARDDISK  QM00003      Hard Disk
ad3      1023 MB  QEMU HARDDISK  QM00004      Hard Disk
usb0 (addr 1) product 0x0000 0 vendor 0x0000      uhub1
usb0 (addr 2) product 0x0020 32 vendor 0x8087      uhub2
FPC 0          REV 05    650-056267    VF3714170810  ACX5048
CPU           BUILTIN    BUILTIN        FPC CPU
PIC 0         BUILTIN    BUILTIN        48x10G-6x40G
Xcvr 0        REV 02    740-011613    NR2051S      SFP-SX
Xcvr 33       REV 01    740-030589    SE5N290041   SFP+-10G-LPBK
Xcvr 35       REV 01    740-030589    SE5N290926   SFP+-10G-LPBK
Xcvr 37       REV 01    740-030589    SE5N290049   SFP+-10G-LPBK
Xcvr 39       REV 01    740-030589    SE5N290046   SFP+-10G-LPBK
Xcvr 48       NON-JNPR   409310098     UNKNOWN      UNKNOWN
Power Supply 1  REV 03    740-041741    1GA24081097  JPSU-650W-AC-AFO
Fan Tray 0
to Back Airflow - AFO
Fan Tray 1
to Back Airflow - AFO
Fan Tray 2
to Back Airflow - AFO
Fan Tray 3
to Back Airflow - AFO
Fan Tray 4
to Back Airflow - AFO

```

ACX5K Fan Tray 0, Front

ACX5K Fan Tray 1, Front

ACX5K Fan Tray 2, Front

ACX5K Fan Tray 3, Front

ACX5K Fan Tray 4, Front

show chassis hardware clei-models (ACX5048 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Routing Engine 0      BUILTIN    CMMRG00BRA     ACX5048
FPC 0          REV 05    650-056267    CMMRG00BRA     ACX5048
PIC 0         BUILTIN    CMMRG00BRA     ACX5048
Power Supply 1  REV 03    740-041741    CMUPABHBAA     JPSU-650W-AC-AFO
Fan Tray 0
Fan Tray 1
Fan Tray 2
Fan Tray 3
Fan Tray 4

```

ACX5K-FAN

ACX5K-FAN

ACX5K-FAN

ACX5K-FAN

ACX5K-FAN

show chassis hardware models (ACX5048 Router)

```

user@host> show chassis hardware models

```

Hardware inventory:

| Item | Version | Part number | Serial number | FRU model number |
|------------------|---------|-------------|---------------|------------------|
| Routing Engine 0 | | BUILTIN | BUILTIN | ACX5048 |
| FPC 0 | REV 05 | 650-056267 | VF3714170810 | ACX5048 |
| PIC 0 | | BUILTIN | BUILTIN | ACX5048 |
| Power Supply 1 | REV 03 | 740-041741 | 1GA24081097 | JPSU-650W-AC-AFO |
| Fan Tray 0 | | | | ACX5K-FAN |
| Fan Tray 1 | | | | ACX5K-FAN |
| Fan Tray 2 | | | | ACX5K-FAN |
| Fan Tray 3 | | | | ACX5K-FAN |
| Fan Tray 4 | | | | ACX5K-FAN |

show chassis hardware (ACX5096 Router)

user@host> show chassis hardware

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|-----------------------|---------|-------------|---------------|-------------------------|
| Chassis | | | VB3714510139 | ACX5096 |
| Pseudo CB 0 | | | | |
| Routing Engine 0 | | BUILTIN | BUILTIN | ACX5K Routing Engine |
| FPC 0 | REV 09 | 650-053391 | VB3714510139 | ACX5096 |
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | | BUILTIN | BUILTIN | 96x10G-8x40G |
| Xcvr 0 | REV 01 | 740-021308 | ARS186H | SFP+-10G-SR |
| Xcvr 2 | REV 01 | 740-031851 | AM1045SUA1G | SFP-SX |
| Xcvr 10 | REV 02 | 740-011613 | NS11KRP | SFP-SX |
| Xcvr 14 | REV 01 | 740-031980 | AMCOLKL | SFP+-10G-SR |
| Xcvr 20 | REV 01 | 740-021308 | ARS18A2 | SFP+-10G-SR |
| Xcvr 30 | REV 02 | 740-011613 | PJ21954 | SFP-SX |
| Xcvr 35 | REV 01 | 740-031851 | PN344LV | SFP-SX |
| Xcvr 40 | REV 01 | 740-031851 | PLG028R | SFP-SX |
| Xcvr 41 | REV 01 | 740-021308 | L12D01919 | SFP+-10G-SR |
| Xcvr 46 | REV 01 | 740-011613 | PD91F10 | SFP-SX |
| Xcvr 64 | REV 01 | 740-031980 | AMSOYSS | SFP+-10G-SR |
| Xcvr 96 | REV 01 | 740-032986 | QE481421 | QSFP+-40G-SR4 |
| Xcvr 99 | REV 01 | 740-032986 | QE494942 | QSFP+-40G-SR4 |
| Xcvr 100 | REV 01 | 740-032986 | QE494756 | QSFP+-40G-SR4 |
| Power Supply 0 | REV 01 | 740-053352 | 1GD14220106 | JPSU-850W-AC-AFO |
| Power Supply 1 | REV 01 | 740-053352 | 1GD14220102 | JPSU-850W-AC-AFO |
| Fan Tray 0 | | | | ACX5K Fan Tray 0, Front |
| to Back Airflow - AFO | | | | |
| Fan Tray 1 | | | | ACX5K Fan Tray 1, Front |
| to Back Airflow - AFO | | | | |
| Fan Tray 2 | | | | ACX5K Fan Tray 2, Front |
| to Back Airflow - AFO | | | | |

show chassis hardware detail (ACX5096 Router)

user@host> show chassis hardware detail

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|------------------|-------------------|---------------|---------------|----------------------|
| Chassis | | | VB3714510139 | ACX5096 |
| Pseudo CB 0 | | | | |
| Routing Engine 0 | | BUILTIN | BUILTIN | ACX5K Routing Engine |
| ad0 | 509 MB | QEMU HARDDISK | QM00001 | Hard Disk |
| ad1 | 4095 MB | QEMU HARDDISK | QM00002 | Hard Disk |
| ad2 | 511 MB | QEMU HARDDISK | QM00003 | Hard Disk |
| ad3 | 1023 MB | QEMU HARDDISK | QM00004 | Hard Disk |
| usb0 (addr 1) | product 0x0000 0 | | vendor 0x0000 | uhub1 |
| usb0 (addr 2) | product 0x0020 32 | | vendor 0x8087 | uhub2 |

| | | | | |
|-----------------------|--------|------------|--------------|-------------------------|
| FPC 0 | REV 09 | 650-053391 | VB3714510139 | ACX5096 |
| CPU | | BUILTIN | BUILTIN | FPC CPU |
| PIC 0 | | BUILTIN | BUILTIN | 96x10G-8x40G |
| Xcvr 0 | REV 01 | 740-021308 | ARS186H | SFP+-10G-SR |
| Xcvr 10 | REV 02 | 740-011613 | NS11KRP | SFP-SX |
| Xcvr 14 | REV 01 | 740-031980 | AMCOLKL | SFP+-10G-SR |
| Xcvr 20 | REV 01 | 740-021308 | ARS18A2 | SFP+-10G-SR |
| Xcvr 30 | REV 02 | 740-011613 | PJ21954 | SFP-SX |
| Xcvr 41 | REV 01 | 740-021308 | L12D01919 | SFP+-10G-SR |
| Xcvr 46 | REV 01 | 740-011613 | PD91F10 | SFP-SX |
| Xcvr 64 | REV 01 | 740-031980 | AMSOYSS | SFP+-10G-SR |
| Xcvr 78 | REV 01 | 740-031851 | AM1045SUA1G | SFP-SX |
| Xcvr 96 | REV 01 | 740-032986 | QE481421 | QSFP+-40G-SR4 |
| Xcvr 99 | REV 01 | 740-032986 | QE494942 | QSFP+-40G-SR4 |
| Xcvr 100 | REV 01 | 740-032986 | QE494756 | QSFP+-40G-SR4 |
| Power Supply 0 | REV 01 | 740-053352 | 1GD14220106 | JPSU-850W-AC-AFO |
| Power Supply 1 | REV 01 | 740-053352 | 1GD14220102 | JPSU-850W-AC-AFO |
| Fan Tray 0 | | | | ACX5K Fan Tray 0, Front |
| to Back Airflow - AFO | | | | |
| Fan Tray 1 | | | | ACX5K Fan Tray 1, Front |
| to Back Airflow - AFO | | | | |
| Fan Tray 2 | | | | ACX5K Fan Tray 2, Front |
| to Back Airflow - AFO | | | | |

show chassis hardware clei-models (ACX5096 Router)

```
user@host> show chassis hardware clei-models
```

Hardware inventory:

| Item | Version | Part number | CLEI code | FRU model number |
|------------------|---------|-------------|------------|------------------|
| Routing Engine 0 | | BUILTIN | CMMNX10BRA | ACX5096 |
| FPC 0 | REV 09 | 650-053391 | CMMNX10BRA | ACX5096 |
| PIC 0 | | BUILTIN | CMMNX10BRA | ACX5096 |
| Power Supply 0 | REV 01 | 740-053352 | CMUPACSBAA | JPSU-850W-AC-AFO |
| Power Supply 1 | REV 01 | 740-053352 | CMUPACSBAA | JPSU-850W-AC-AFO |
| Fan Tray 0 | | | | ACX5K-FAN |
| Fan Tray 1 | | | | ACX5K-FAN |
| Fan Tray 2 | | | | ACX5K-FAN |

show chassis hardware models (ACX5096 Router)

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

Hardware inventory:

| Item | Version | Part number | Serial number | FRU model number |
|------------------|---------|-------------|---------------|------------------|
| Routing Engine 0 | | BUILTIN | BUILTIN | ACX5096 |
| FPC 0 | REV 09 | 650-053391 | VB3714510139 | ACX5096 |
| PIC 0 | | BUILTIN | BUILTIN | ACX5096 |
| Power Supply 0 | REV 01 | 740-053352 | 1GD14220106 | JPSU-850W-AC-AFO |
| Power Supply 1 | REV 01 | 740-053352 | 1GD14220102 | JPSU-850W-AC-AFO |
| Fan Tray 0 | | | | ACX5K-FAN |
| Fan Tray 1 | | | | ACX5K-FAN |
| Fan Tray 2 | | | | ACX5K-FAN |

show chassis hardware (ACX500 Router)

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

Hardware inventory:

| Item | Version | Part number | Serial number | Description |
|----------------|---------|-------------|---------------|----------------|
| Chassis | | | VJ0214510035 | ACX500-AC |
| Midplane | REV 01 | 650-055932 | VJ0214510035 | ACX500-AC |
| Routing Engine | | BUILTIN | BUILTIN | Routing Engine |

| | | | | |
|-----------|--------|------------|---------|-----------------------|
| FEB 0 | | BUILTIN | BUILTIN | Forwarding Engine |
| Processor | | | | |
| FPC 0 | | BUILTIN | BUILTIN | FPC BUILTIN |
| MIC 0 | | BUILTIN | BUILTIN | 2x 1GE(LAN) SFP |
| PIC 0 | | BUILTIN | BUILTIN | 2x 1GE(LAN) SFP |
| Xcvr 0 | REV 01 | 740-031851 | PMF2Y3C | SFP-SX |
| Xcvr 1 | REV 01 | 740-031851 | PN342QN | SFP-SX |
| MIC 1 | | BUILTIN | BUILTIN | 4x 1GE(LAN) SFP, RJ45 |
| PIC 1 | | BUILTIN | BUILTIN | 4x 1GE(LAN) SFP, RJ45 |
| Xcvr 0 | REV 01 | 740-011613 | PF30K0L | SFP-SX |
| MIC 2 | | BUILTIN | BUILTIN | MS BUILTIN |
| PIC 2 | | BUILTIN | BUILTIN | MS BUILTIN |

show chassis hardware detail (ACX500 Router)

```
user@host> show chassis hardware detail
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VJ0214510035  ACX500-AC
Midplane      REV 01   650-055932   VJ0214510035  ACX500-AC
Routing Engine BUILTIN  BUILTIN      Routing Engine
da0           3820 MB  USB DISK 2.0 Nand Flash 0
FEB 0                               BUILTIN      BUILTIN      Forwarding Engine
Processor
FPC 0                               BUILTIN      BUILTIN      FPC BUILTIN
MIC 0                               BUILTIN      BUILTIN      2x 1GE(LAN) SFP
PIC 0                               BUILTIN      BUILTIN      2x 1GE(LAN) SFP
Xcvr 0        REV 01   740-031851   PMF2Y3C       SFP-SX
Xcvr 1        REV 01   740-031851   PN342QN       SFP-SX
MIC 1                               BUILTIN      BUILTIN      4x 1GE(LAN) SFP, RJ45
PIC 1                               BUILTIN      BUILTIN      4x 1GE(LAN) SFP, RJ45
Xcvr 0        REV 01   740-011613   PF30K0L       SFP-SX
MIC 2                               BUILTIN      BUILTIN      MS BUILTIN
PIC 2                               BUILTIN      BUILTIN      MS BUILTIN
```

show chassis hardware extensive (ACX500 Router)

```
user@host> show chassis hardware extensive
Hardware inventory:
Item          Version  Part number  Serial number  Description
Chassis                               VJ0214510035  ACX500-AC
Jedec Code:   0x7fb0                      EEPROM Version: 0x02
S/N:          VJ0214510035
Assembly ID:  0x057c                      Assembly Version: 00.00
Date:         00-00-0000                  Assembly Flags:  0x00
ID: ACX500-AC
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 7f b0 02 ff 05 7c 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x20: 56 4a 30 32 31 34 35 31 30 30 33 35 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Midplane      REV 01   650-055932   VJ0214510035  ACX500-AC
Jedec Code:   0x7fb0                      EEPROM Version: 0x02
P/N:         650-055932                  S/N:          VJ0214510035
```

```

Assembly ID: 0x057c      Assembly Version: 01.00
Date: 12-23-2014        Assembly Flags: 0x00
Version: REV 01         CLEI Code: PROTOXCLEI
ID: ACX500-AC          FRU Model Number: ACX500-AC

Board Information Record:
Address 0x00: ad 01 00 80 f0 1c 2d 1b 60 80 ff ff ff ff ff ff
I2C Hex Data:
Address 0x00: 7f b0 02 fe 05 7c 01 00 52 45 56 20 30 31 00 00
Address 0x10: 00 00 00 00 36 35 30 2d 30 35 35 39 33 32 00 00
Address 0x20: 56 4a 30 32 31 34 35 31 30 30 33 35 00 17 0c 07
Address 0x30: de ff ff ff ad 01 00 80 f0 1c 2d 1b 60 80 ff ff
Address 0x40: ff ff ff ff 01 50 52 4f 54 4f 58 43 4c 45 49 41
Address 0x50: 43 58 35 30 30 2d 41 43 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 30 41 00 ff ff ff ff ff ff ff
Address 0x70: ff ff ff 93 56 4a 30 32 31 34 35 31 30 30 33 35
Routing Engine          BUILTIN          BUILTIN          Routing Engine
da0 3820 MB USB DISK 2.0 Nand Flash 0 Forwarding Engine
FEB 0 BUILTIN BUILTIN
Processor
FPC 0 BUILTIN BUILTIN FPC BUILTIN
MIC 0 BUILTIN BUILTIN 2x 1GE(LAN) SFP
Jedec Code: 0x0000 EEPROM Version: 0x00
P/N: BUILTIN S/N: BUILTIN
Assembly ID: 0x0a40 Assembly Version: 00.00
Date: 00-00-0000 Assembly Flags: 0x00
ID: 2x 1GE(LAN) SFP
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a 40 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 de ad be ef 64 20 22 a8 60 af 21 38
PIC 0 BUILTIN BUILTIN 2x 1GE(LAN) SFP
Xcvr 0 REV 01 740-031851 PMF2Y3C SFP-SX
Xcvr 1 REV 01 740-031851 PN342QN SFP-SX
MIC 1 BUILTIN BUILTIN 4x 1GE(LAN) SFP, RJ45
Jedec Code: 0x0000 EEPROM Version: 0x00
P/N: BUILTIN S/N: BUILTIN
Assembly ID: 0x0aac Assembly Version: 00.00
Date: 00-00-0000 Assembly Flags: 0x00
ID: 4x 1GE(LAN) SFP, RJ45
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a ac 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 00 00 00 00 64 20 b5 c0 60 af 21 38
PIC 1 BUILTIN BUILTIN 4x 1GE(LAN) SFP, RJ45
Xcvr 0 REV 01 740-011613 PF30K0L SFP-SX
MIC 2 BUILTIN BUILTIN MS BUILTIN
Jedec Code: 0x0000 EEPROM Version: 0x00

```



```

P/N:          BUILTIN          S/N:          BUILTIN
Assembly ID:  0x0aaf          Assembly Version: 00.00
Date:         00-00-0000      Assembly Flags:  0x00
ID: MS BUILTIN
Board Information Record:
Address 0x00: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
I2C Hex Data:
Address 0x00: 00 00 00 00 0a af 00 00 00 00 00 00 00 00 00 00
Address 0x10: 00 00 00 00 42 55 49 4c 54 49 4e 00 49 6e 76 61
Address 0x20: 42 55 49 4c 54 49 4e 00 49 6e 76 61 00 00 00 00
Address 0x30: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x40: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x50: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x60: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Address 0x70: 00 00 00 00 de ad be ef 64 22 cd 48 60 af 21 38
PIC 2          BUILTIN          BUILTIN          MS BUILTIN

```

show chassis hardware clei-models (ACX500 Router)

```

user@host> show chassis hardware clei-models
Hardware inventory:
Item          Version  Part number  CLEI code      FRU model number
Midplane      REV 01   650-055932  PROTOXCLEI     ACX500-AC
Routing Engine
FEB 0         BUILTIN
FPC 0         BUILTIN

```

show chassis hardware models (ACX500 Router)

```

user@host> show chassis hardware models
Hardware inventory:
Item          Version  Part number  Serial number   FRU model number
Midplane      REV 01   650-055932  VJ0214510035   ACX500-AC
Routing Engine
FEB 0         BUILTIN   BUILTIN
FPC 0         BUILTIN   BUILTIN

```

show configuration

| | |
|----------------------------|---|
| Syntax | <code>show configuration</code> <code><statement-path></code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. |
| Description | Display the configuration that currently is running on the router or switch, which is the last committed configuration. |
| Options | <p>none—Display the entire configuration.</p> <p>statement-path—(Optional) Display one of the following hierarchies in a configuration. (Each statement-path option has additional suboptions not described here. See the appropriate feature guide or EX Series switch documentation for more information.)</p> <ul style="list-style-type: none">• access—Network access configuration.• access-profile—Access profile configuration.• accounting-options—Accounting data configuration.• applications—Applications defined by protocol characteristics.• apply-groups—Groups from which configuration data is inherited.• chassis—Chassis configuration.• chassis network-services—Current running mode.• class-of-service—Class-of-service configuration.• diameter—Diameter base protocol layer configuration.• ethernet-switching-options—(EX Series switch only) Ethernet switching configuration.• event-options—Event processing configuration.• firewall—Firewall configuration.• forwarding-options—Options that control packet sampling.• groups—Configuration groups.• interfaces—Interface configuration.• jsrc—JSRC partition configuration.• jsrc-partition—JSRC partition configuration.• logical-systems—Logical system configuration.• poe—(EX Series switch only) Power over Ethernet configuration.• policy-options—Routing policy option configuration. |

- **protocols**—Routing protocol configuration.
- **routing-instances**—Routing instance configuration.
- **routing-options**—Protocol-independent routing option configuration.
- **security**—Security configuration.
- **services**—Service PIC applications configuration.
- **snmp**—Simple Network Management Protocol configuration.
- **system**—System parameters configuration.
- **virtual-chassis**—(EX Series switch only) Virtual Chassis configuration.
- **vlan**s—(EX Series switch only) VLAN configuration.

Additional Information The portions of the configuration that you can view depend on the user class that you belong to and the corresponding permissions. If you do not have permission to view a portion of the configuration, the text **ACCESS-DENIED** is substituted for that portion of the configuration. If you do not have permission to view authentication keys and passwords in the configuration, because the **secret** permission bit is not set for your user account, the text **SECRET-DATA** is substituted for that portion of the configuration. If an identifier in the configuration contains a space, the identifier is displayed in quotation marks.

Likewise, when you issue the **show configuration** command with the **| display set** pipe option to view the configuration as **set** commands, those portions of the configuration that you do not have permissions to view are substituted with the text **ACCESS-DENIED**.

Required Privilege Level view

Related Documentation

- *Displaying the Current Junos OS Configuration*
- *Overview of Junos OS CLI Operational Mode Commands*

List of Sample Output [show configuration on page 465](#)
[show configuration policy-options on page 466](#)

Output Fields This command displays information about the current running configuration.

Sample Output

show configuration

```
user@host> show configuration
## Last commit: 2006-10-31 14:13:00 PST by user1 version "8.2I0 [userb]"; ## last
  changed: 2006-10-31 14:05:53 PST
system {
  host-name exhost;
  domain-name ex1.net;
```

```
    backup-router 198.51.100.254;
time-zone America/Los_Angeles;
default-address-selection;
name-server {
    192.0.2.254;
    192.0.2.249;
    192.0.2.176;
}
services {
    telnet;
}
tacplus-server {
    10.2.3.4 {
        secret /* SECRET-DATA */;
        ...
    }
}
}
interfaces {
    ...
}
protocols {
    isis {
        export "direct routes";
    }
}
policy-options {
    policy-statement "direct routes" {
        from protocol direct;
        then accept;
    }
}
```

show configuration policy-options

```
user@host> show configuration policy-options
policy-options {
    policy-statement "direct routes" {
        from protocol direct;
        then accept;
    }
}
```

show host

| | |
|---------------------------------|--|
| Syntax | <code>show host <i>hostname</i></code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Display Domain Name System (DNS) hostname information. |
| Options | <i>hostname</i> —Hostname or address. |
| Additional Information | The <code>show host</code> command displays the raw data received from the DNS server. |
| Required Privilege Level | view |
| List of Sample Output | show host on page 467 |

Sample Output

show host

```
user@host> show host device
device.example.net has address 192.0.2.0

user@host> show host 192.0.2.0
Name: device.example.net
Address: 192.0.2.0
Aliases:
```

show log

List of Syntax [Syntax on page 468](#)
 [Syntax \(QFX Series and OCX Series\) on page 468](#)
 [Syntax \(TX Matrix Router\) on page 468](#)

Syntax `show log`
 `<filename | user <username>>`

Syntax (QFX Series and OCX Series) `show log filename`
 `<device-type (device-id | device-alias)>`

Syntax (TX Matrix Router) `show log`
 `<all-lcc | lcc number | scc>`
 `<filename | user <username>>`

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
 Command introduced in Junos OS Release 11.1 for the QFX Series.
 Option *device-type (device-id | device-alias)* is introduced in Junos OS Release 13.1 for the QFX Series.
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

Description List log files, display log file contents, or display information about users who have logged in to the router or switch.



NOTE: On MX Series routers, modifying a configuration to replace a service interface with another service interface is treated as a catastrophic event. When you modify a configuration, the entire configuration associated with the service interface—including NAT pools, rules, and service sets—is deleted and then re-created for the newly specified service interface. If there are active sessions associated with the service interface that is being replaced, these sessions are deleted and the NAT pools are then released, which leads to the generation of the NAT_POOL_RELEASE system log messages. However, because NAT pools are already deleted as a result of the catastrophic configuration change and no longer exist, the NAT_POOL_RELEASE system log messages are not generated for the changed configuration.

Options `none`—List all log files.

`<all-lcc | lcc number | scc>`—(Routing matrix only) (Optional) Display logging information about all T640 routers (or line-card chassis) or a specific T640 router (replace *number* with a value from 0 through 3) connected to a TX Matrix router. Or, display logging information about the TX Matrix router (or switch-card chassis).

device-type—(QFabric system only) (Optional) Display log messages for only one of the following device types:

- **director-device**—Display logs for Director devices.
- **infrastructure-device**—Display logs for the logical components of the QFabric system infrastructure, including the diagnostic Routing Engine, fabric control Routing Engine, fabric manager Routing Engine, and the default network Node group and its backup (NW-NG-0 and NW-NG-0-backup).
- **interconnect-device**—Display logs for Interconnect devices.
- **node-device**—Display logs for Node devices.



NOTE: If you specify the **device-type** optional parameter, you must also specify either the **device-id** or **device-alias** optional parameter.

(device-id | device-alias)—If a device type is specified, display logs for a device of that type. Specify either the device ID or the device alias (if configured).

filename—(Optional) Display the log messages in the specified log file. For the routing matrix, the filename must include the chassis information.



NOTE: The **filename** parameter is mandatory for the QFabric system. If you did not configure a syslog filename, specify the default filename of messages.

user <username>—(Optional) Display logging information about users who have recently logged in to the router or switch. If you include **username**, display logging information about the specified user.

Required Privilege Level trace

Related Documentation • [syslog \(System\)](#)

List of Sample Output [show log on page 470](#)
[show log filename on page 470](#)
[show log filename \(QFabric System\) on page 470](#)
[show log user on page 471](#)

Sample Output

show log

```
user@host> show log
total 57518
-rw-r--r-- 1 root bin      211663 Oct  1 19:44 dcd
-rw-r--r-- 1 root bin      999947 Oct  1 19:41 dcd.0
-rw-r--r-- 1 root bin      999994 Oct  1 17:48 dcd.1
-rw-r--r-- 1 root bin      238815 Oct  1 19:44 rpd
-rw-r--r-- 1 root bin     1049098 Oct  1 18:00 rpd.0
-rw-r--r-- 1 root bin     1061095 Oct  1 12:13 rpd.1
-rw-r--r-- 1 root bin     1052026 Oct  1 06:08 rpd.2
-rw-r--r-- 1 root bin     1056309 Sep 30 18:21 rpd.3
-rw-r--r-- 1 root bin     1056371 Sep 30 14:36 rpd.4
-rw-r--r-- 1 root bin     1056301 Sep 30 10:50 rpd.5
-rw-r--r-- 1 root bin     1056350 Sep 30 07:04 rpd.6
-rw-r--r-- 1 root bin     1048876 Sep 30 03:21 rpd.7
-rw-rw-r-- 1 root bin      19656 Oct  1 19:37 wtmp
```

show log filename

```
user@host> show log rpd
Oct  1 18:00:18 trace_on: Tracing to ?/var/log/rpd? started
Oct  1 18:00:18 EVENT <MTU> ds-5/2/0.0 index 24 <Broadcast PointToPoint Multicast
Oct  1 18:00:18
Oct  1 18:00:19 KRT recv len 56 V9 seq 148 op add Type route/if af 2 addr
192.0.2.21 nhop type local nhop 192.0.2.21
Oct  1 18:00:19 KRT recv len 56 V9 seq 149 op add Type route/if af 2 addr
192.0.2.22 nhop type unicast nhop 192.0.2.22
Oct  1 18:00:19 KRT recv len 48 V9 seq 150 op add Type ifaddr index 24 devindex
43
Oct  1 18:00:19 KRT recv len 144 V9 seq 151 op chnge Type ifdev devindex 44
Oct  1 18:00:19 KRT recv len 144 V9 seq 152 op chnge Type ifdev devindex 45
Oct  1 18:00:19 KRT recv len 144 V9 seq 153 op chnge Type ifdev devindex 46
Oct  1 18:00:19 KRT recv len 1272 V9 seq 154 op chnge Type ifdev devindex 47
...
```

show log filename (QFabric System)

```
user@qfabric> show log messages
Mar 28 18:00:06 qfabric chassisd: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:06 ED1486
chassisd: CHASSISD_SNMP_TRAP10: SNMP trap generated: FRU power on
(jnxFruContentsIndex 8, jnxFruL1Index 1, jnxFruL2Index 1, jnxFruL3Index 0,
jnxFruName PIC: 48x 10G-SFP+ @ 0/0/*, jnxFruType 11, jnxFruSlot 0,
jnxFruOfflineReason 2, jnxFruLastPowerOff 0, jnxFruLastPowerOn 2159)
Mar 28 18:00:07 qfabric chassisd: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:07 ED1486
chassisd: CHASSISD_SNMP_TRAP10: SNMP trap generated: FRU power on
(jnxFruContentsIndex 8, jnxFruL1Index 1, jnxFruL2Index 2, jnxFruL3Index 0,
jnxFruName PIC: @ 0/1/*, jnxFruType 11, jnxFruSlot 0, jnxFruOfflineReason 2,
jnxFruLastPowerOff 0, jnxFruLastPowerOn 2191)
Mar 28 18:00:07 qfabric chassisd: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:07 ED1492
chassisd: CHASSISD_SNMP_TRAP10: SNMP trap generated: FRU power on
(jnxFruContentsIndex 8, jnxFruL1Index 1, jnxFruL2Index 1, jnxFruL3Index 0,
jnxFruName PIC: 48x 10G-SFP+ @ 0/0/*, jnxFruType 11, jnxFruSlot 0,
jnxFruOfflineReason 2, jnxFruLastPowerOff 0, jnxFruLastPowerOn 242726)
Mar 28 18:00:07 qfabric chassisd: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:07 ED1492
chassisd: CHASSISD_SNMP_TRAP10: SNMP trap generated: FRU power on
(jnxFruContentsIndex 8, jnxFruL1Index 1, jnxFruL2Index 2, jnxFruL3Index 0,
```



```

jnxFruName PIC: @ 0/1/*, jnxFruType 11, jnxFruSlot 0, jnxFruOfflineReason 2,
jnxFruLastPowerOff 0, jnxFruLastPowerOn 242757)
Mar 28 18:00:16 qfabric file: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:16 ED1486
file: UI_COMMIT: User 'root' requested 'commit' operation (comment: none)
Mar 28 18:00:27 qfabric file: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:27 ED1486
file: UI_COMMIT: User 'root' requested 'commit' operation (comment: none)
Mar 28 18:00:50 qfabric file: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:50
_DCF_default__NW-INE-0_RE0_ file: UI_COMMIT: User 'root' requested 'commit'
operation (comment: none)
Mar 28 18:00:50 qfabric file: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:50
_DCF_default__NW-INE-0_RE0_ file: UI_COMMIT: User 'root' requested 'commit'
operation (comment: none)
Mar 28 18:00:55 qfabric file: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:00:55 ED1492
file: UI_COMMIT: User 'root' requested 'commit' operation (comment: none)
Mar 28 18:01:10 qfabric file: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:01:10 ED1492
file: UI_COMMIT: User 'root' requested 'commit' operation (comment: none)
Mar 28 18:02:37 qfabric chassisd: QFABRIC_INTERNAL_SYSLOG: Mar 28 18:02:37 ED1491
chassisd: CHASSISD_SNMP_TRAP10: SNMP trap generated: FRU power on
(jnxFruContentsIndex 8, jnxFruL1Index 1, jnxFruL2Index 1, jnxFruL3Index 0,
jnxFruName PIC: 48x 10G-SFP+ @ 0/0/*, jnxFruType 11, jnxFruSlot 0,
jnxFruOfflineReason 2, jnxFruLastPowerOff 0, jnxFruLastPowerOn 33809)

```

show log user

```

user@host> show log user

```

| | | | | |
|-------|--------|--------------|--------------------------|-----------------|
| usera | mg2546 | | Thu Oct 1 19:37 | still logged in |
| usera | mg2529 | | Thu Oct 1 19:08 - 19:36 | (00:28) |
| usera | mg2518 | | Thu Oct 1 18:53 - 18:58 | (00:04) |
| root | mg1575 | | Wed Sep 30 18:39 - 18:41 | (00:02) |
| root | ttyp2 | aaa.bbbb.com | Wed Sep 30 18:39 - 18:41 | (00:02) |
| userb | ttyp1 | 192.0.2.0 | Wed Sep 30 01:03 - 01:22 | (00:19) |

show system connections

List of Syntax [Syntax on page 472](#)
 [Syntax \(EX Series\) on page 472](#)
 [Syntax \(TX Matrix Router\) on page 472](#)
 [Syntax \(TX Matrix Plus Router\) on page 472](#)
 [Syntax \(MX Series Router\) on page 472](#)
 [Syntax \(QFX Series\) on page 472](#)
 [Syntax \(OCX Series\) on page 473](#)

Syntax show system connections
 <extensive>
 <all-chassis | all-lcc | lcc *number* | scc>
 <inet | inet6>
 <show-routing-instances>

Syntax (EX Series) show system connections
 <extensive>
 <all-members>
 <inet | inet6>
 <local>
 <member *member-id*>
 <show-routing-instances>

Syntax (TX Matrix Router) show system connections
 <extensive>
 <all-chassis | all-lcc | lcc *number* | scc>
 <inet | inet6>
 <show-routing-instances>

Syntax (TX Matrix Plus Router) show system connections
 <extensive>
 <all-chassis | all-lcc | lcc *number* | sfc *number*>
 <inet | inet6>
 <show-routing-instances>

Syntax (MX Series Router) show system connections
 <extensive>
 <all-members>
 <inet | inet6>
 <local>
 <member *member-id*>
 <show-routing-instances>

Syntax (QFX Series) show system connections
 <extensive>
 <inet>
 <infrastructure *name*>
 <interconnect-device *name*>
 <node-group *name*>

<show-routing-instances>

Syntax (OCX Series) show system connections
 <extensive>
 <inet>
 <show-routing-instances>

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.
 Command introduced in Junos OS Release 11.1 for the QFX Series.
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

Description Display information about the active IP sockets on the Routing Engine. Use this command to verify which servers are active on a system and what connections are currently in progress.

Options **none**—Display information about all active IP sockets on the Routing Engine.

extensive—(Optional) Display exhaustive system process information, which, for TCP connections, includes the TCP control block. This option is useful for debugging TCP connections.

all-chassis—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system connection activity for all the routers in the chassis.

all-lcc—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system connection activity for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system connection activity for all connected T1600 or T4000 LCCs

all-members—(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for all members of the Virtual Chassis configuration.

inet | inet6—(Optional) Display IPv4 connections or IPv6 connections, respectively.

infrastructure *name*—(QFabric systems only) (Optional) Display system connection activity for the fabric control Routing Engines or fabric manager Routing Engines.

interconnect-device *name*—(QFabric systems only) (Optional) Display system connection activity for the Interconnect device.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system connection activity for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system connection activity for a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Display system connection activity for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

node-group *name*—(QFabric systems only) (Optional) Display system connection activity for the Node group.

scc—(TX Matrix routers only) (Optional) Display system connection activity for the TX Matrix router (or switch-card chassis).

sfc—(TX Matrix routers only) (Optional) Display system connection activity for the TX Matrix Plus router.

show-routing-instances—(Optional) Display routing instances.

Additional Information By default, when you issue the **show system connections** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

Required Privilege Level view

Related Documentation

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output [show system connections on page 475](#)
[show system connections extensive on page 476](#)
[show system connections lcc \(TX Matrix Router\) on page 477](#)
[show system connections show-routing-instances on page 477](#)

[show system connections \(TX Matrix Plus Router\) on page 478](#)

[show system connections sfc \(TX Matrix Plus Router\) on page 481](#)

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Output Fields Table 10 on page 475 describes the output fields for the **show system connections** command. Output fields are listed in the approximate order in which they appear.

Table 10: show system connections Output Fields

| Field Name | Field Description |
|-------------------------|--|
| Proto | Protocol of the socket: IP , TCP , or UDP for IPv4 or IPv6. |
| Recv-Q | Number of input packets received by the protocol and waiting to be processed by the application. |
| Send-Q | Number of output packets sent by the application and waiting to be processed by the protocol. |
| Local Address | Local address and port of the socket, separated by a period. An asterisk (*) indicates that the bound address is the wildcard address. Server sockets typically have the wildcard address and a well-known port bound to them. |
| Foreign Address | Foreign address and port of the socket, separated by a period. An asterisk (*) indicates that the address or port is a wildcard. |
| Routing Instance | (Displayed only when the show-routing-instance option is used.) Routing instances associated with active IP sockets on the Routing Engine. |
| (state) | For TCP, the protocol state of the socket. |

Sample Output

show system connections

```

user@host> show system connections
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         (state)
tcp    0      2 192.0.2.16.513          192.0.2.254.894        ESTABLISHED
tcp    0      0 192.0.2.16.513          192.0.2.195.945        ESTABLISHED
tcp    0      0 *.23                    *.*                      LISTEN
tcp    0      0 *.22                    *.*                      LISTEN
tcp    0      0 *.513                   *.*                      LISTEN
tcp00 *.514                *.*                      LISTEN
tcp 0 0*.21                    *.*                      LISTEN
tcp00 *.79                *.*                      LISTEN
tcp 00 *.1023                *.*                      LISTEN
tcp 00 *.111                 *.*                      LISTEN
udp00192.192.0.2.1634    192.0.2.249.2049
udp00192.192.0.2.1627    192.0.2.254.2049
udp00192.192.0.2.1371    192.0.2.195.2049
udp00*.*.                *.*
udp00*.9999              *.*
```

```

udp00 *.161      *.*
udp00192.192.0.2.1039 192.0.2.16.1023
udp00192.192.0.2.1038 192.0.2.16.1023
udp 00 192.0.2.16.1037 192.0.2.16.1023
udp00 192.0.2.16.1036 192.0.2.16.1023
udp00*.1022      *.*
udp00*.1023      *.*
udp00*.111       *.*
udp00*.          *.*

```

show system connections extensive

```
user@host> show system connections extensive
```

```

Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address Foreign Address
      (state)
tcp4      0      6 192.0.2.15.23 192.0.2.138.3013
      ESTABLISHED
      sndsbcc:          6 sndsbmbcnt:        256 sndsbmbmax: 272000
      sndsblowat:      2048 sndsbhiwat:        34000
      rcvsbcc:          0 rcvsbmbcnt:        0 rcvsbmbmax: 533120
      rcvsblowat:      1 rcvsbhiwat:        66640
      proc id:          0 proc name:
      iss: 2566994072   sndup: 2566994491
      snduna: 2566994491 sndnxt: 2566994494   sndwnd: 64094
      sndmax: 2566994494 sndcwnd: 6589 sndssthresh: 2720
      irs: 236981199   rcvup: 236981325
      rcvnxt: 236981327 rcvadv: 237046862   rcvwnd: 66640
      rtt: 140058623   srtt: 15519   rttv: 908
      rxtcur: 1200   rxtshift: 0   rtseq: 2566994491
      rttmin: 1000   mss: 1360
      flags: SACK_PERMIT [0x2000200]
tcp4      0      0 10.255.165.93.179
10.255.165.203.65141 ESTABLISHED
      sndsbcc:          0 sndsbmbcnt:        0 sndsbmbmax: 131072
      sndsblowat:      2048 sndsbhiwat:        16384
      rcvsbcc:          0 rcvsbmbcnt:        0 rcvsbmbmax: 131072
      rcvsblowat:      1 rcvsbhiwat:        16384
      proc id:          0 proc name:
      iss: 2555961065   sndup: 2555995917
      snduna: 2555995917 sndnxt: 2555995917   sndwnd: 16384
      sndmax: 2555995917 sndcwnd: 1000 sndssthresh: 1073725440
      irs: 2123825753   rcvup: 2123860681
      rcvnxt: 2123860681 rcvadv: 2123877065   rcvwnd: 16384
      rtt: 0   srtt: 3309   rttv: 72
      rxtcur: 1200   rxtshift: 0   rtseq: 2555995898
      rttmin: 1000   mss: 500
      flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x3e0]
tcp4      0      0 10.255.165.93.179
10.255.165.93.179 ESTABLISHED
      sndsbcc:          0 sndsbmbcnt:        0 sndsbmbmax: 131072
      sndsblowat:      2048 sndsbhiwat:        16384
      rcvsbcc:          0 rcvsbmbcnt:        0 rcvsbmbmax: 131072
      rcvsblowat:      1 rcvsbhiwat:        16384
      proc id:          5022 proc name: rpd
      iss: 2123825753   sndup: 2123860662
      snduna: 2123860681 sndnxt: 2123860681   sndwnd: 16384
      sndmax: 2123860681 sndcwnd: 1000 sndssthresh: 1073725440
      irs: 2555961065   rcvup: 2555995917
      rcvnxt: 2555995917 rcvadv: 2556012301   rcvwnd: 16384

```

```

      rtt:          0      srtt:          3279      rttv:          22
    rxtcur:        1200    rxtshift:        0      rtseq: 2123860662
    rttmin:        1000    mss:           500
    flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x100003e0]
tcp4      0      0 10.255.165.203.179
10.255.165.113.52404 ESTABLISHED
    sndsbcc:        0    sndsbmbcnt:        0    sndsbmbmax:    131072
    sndsblowat:      2048    sndsbhiwat:    16384
    rcvsbcc:        0    rcvsbmbcnt:        0    rcvsbmbmax:    131072
    rcvsblowat:      1    rcvsbhiwat:    16384
    proc id:        0    proc name:
      iss: 1109297190    sndup: 1109332099
    snduna: 1109332118    sndnxt: 1109332118    sndwnd:    16384
    sndmax: 1109332118    sndcwnd:    1000    sndssthresh: 1073725440
    irs: 1476831634    rcvup: 1476866449
    rcvnxt: 1476866449    rcvadv: 1476882833    rcvwnd:    16384
    rtt:          0      srtt:          3235      rttv:          18
    rxtcur:        1200    rxtshift:        0      rtseq: 1109332099
    rttmin:        1000    mss:           500
    flags: REQ_SCALE RCVD_SCALE REQ_TSTMP RCVD_TSTMP SACK_PERMIT [0x3e0]

```

show system connections lcc (TX Matrix Router)

```
user@host> show system connections lcc 2
```

```
lcc2-re0:
```

```

-----
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address      Foreign Address    (state)
tcp4      0      0 192.0.2.131.1342  192.0.2.130.23    ESTABLISHED
tcp4      0      0 192.0.2.131.2059  192.0.2.130.23    ESTABLISHED
tcp4      0      0 192.0.2.131.4571  192.0.2.130.23    ESTABLISHED
tcp4      0      0 192.0.2.131.2496  192.0.2.130.23    ESTABLISHED
tcp4      0      0 *.3221            *.*                LISTEN
tcp4      0      0 *.23              *.*                LISTEN
tcp4      0      0 *.22              *.*                LISTEN
tcp4      0      0 *.514             *.*                LISTEN
tcp4      0      0 *.513             *.*                LISTEN
tcp4      0      0 *.21              *.*                LISTEN
tcp4      0      0 *.79              *.*                LISTEN
tcp4      0      0 *.6234            *.*                LISTEN
udp4      0      0 *.514             *.*
udp4      0      0 *.6333            *.*
```

show system connections show-routing-instances

```

user@host> show system connections show-routing-instances
Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address      Foreign Address    Routing Instance
(state)
tcp4      0      0 192.0.2.204.23    192.0.2.19.4267    default
ESTABLISHED
tcp4      0      0 192.0.2.204.58540 10.209.7.138.23    default
ESTABLISHED
tcp4      0      0 192.0.2.204.23    192.0.2.19.1098    default
ESTABLISHED
tcp4      0      0 192.0.2.1.57668    192.0.2.1.179      default
ESTABLISHED
tcp4      0      0 192.0.2.1.179      192.0.2.1.49209    default
ESTABLISHED

```

```

tcp4      0      0 192.0.2.1.6234      192.0.2.17.1024
__juniper_private1__ ESTABLISHED
tcp4      0      0 192.0.2.4.9000      192.0.24.59103
__juniper_private1__ ESTABLISHED
tcp4      0      0 1192.0.2.4.59103    192.0.2.4.9000
__juniper_private1__ ESTABLISHED
tcp4      0      0 *.32012             *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.9000              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.33007             *.*
__juniper_private2__ LISTEN
tcp46     0      0 *.179               *.*
LISTEN
tcp4      0      0 *.179               *.*
LISTEN
tcp4      0      0 *.6154              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6153              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.7000              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6152              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.6156              *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.33005             *.*
__juniper_private2__ LISTEN
tcp4      0      0 *.31343             *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.31341             *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.32003             *.*
__juniper_private2__ LISTEN
tcp4      0      0 *.666               *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.38                *.*
__juniper_private1__ LISTEN
tcp4      0      0 *.3221              *.*
LISTEN

```

default

default

default

show system connections (TX Matrix Plus Router)

```

user@host> show system connections
sfc0-re0:
-
Active Internet connections (including servers)
Proto Recv-Q Send-Q Local Address           Foreign Address
      (state)
tcp4      0      3 192.0.2.11.23           192.0.2.19.3565
      ESTABLISHED
tcp4      0      0 192.0.2.11.23           192.0.2.204.62719
      ESTABLISHED
tcp4      0      0 192.0.2.11.23           1192.0.2.199.51255
      ESTABLISHED
tcp4      0      0 1192.0.2.11.23          1192.0.2.227.42860
      ESTABLISHED
tcp4      0      0 *.6156                  *.*
      LISTEN
tcp4      0      0 192.0.2.4.32012         192.0.2.5.58935
      ESTABLISHED

```



```

tcp4      0      0 *.32012          *.*
          LISTEN
tcp4      0      0 *.33007          *.*
          LISTEN
tcp4      0      0 *.666            *.*
          LISTEN
tcp4      0      0 192.0.2.4.6161  192.0.2.5.62026
          ESTABLISHED
tcp4      0      0 *.33005          *.*
          LISTEN
tcp4      0      0 192.0.2.4.9000  192.0.2.4.51611
          ESTABLISHED
tcp4      0      0 192.0.2.4.51611 192.0.2.4.9000
          ESTABLISHED
tcp4      0      0 *.6151          *.*
          LISTEN
tcp4      0      0 *.6154          *.*
          LISTEN
tcp4      0      0 *.6153          *.*
          LISTEN
tcp4      0      0 *.31343         *.*
          LISTEN
tcp4      0      0 *.31341         *.*
          LISTEN
tcp4      0      0 *.9000          *.*
          LISTEN
tcp4      0      0 *.6152          *.*
          LISTEN
tcp4      0      0 *.32003         *.*
          LISTEN
tcp4      0      0 *.33009         *.*
          LISTEN
tcp4      0      0 *.3221          *.*
          LISTEN
tcp4      0      0 *.23            *.*
          LISTEN
tcp4      0      0 *.22            *.*
          LISTEN
tcp4      0      0 *.514           *.*
          LISTEN
tcp4      0      0 *.513           *.*
          LISTEN
tcp4      0      0 *.21            *.*
          LISTEN
tcp4      0      0 *.79            *.*
          LISTEN
tcp4      0      0 *.514           *.*
          LISTEN
tcp4      0      0 *.513           *.*
          LISTEN
tcp4      0      0 *.6234          *.*
          LISTEN
udp4      0      0 192.0.2.1.123   *.*
udp4      0      0 10.255.178.11.123 *.*
udp4      0      0 *.123           *.*
udp46     0      0 *.514           *.*
udp4      0      0 *.514           *.*
udp46     0      0 *.62027         *.*
udp4      0      0 *.59363         *.*
udp4      0      0 *.31342         *.*
udp46     0      0 *.161           *.*

```

```

udp4      0      0 *.161      *.*
udp4      0      0 *.31340    *.*
udp4      0      0 *.31340    *.*
udp46     0      0 *.49152    *.*
udp46     0      0 *.4784     *.*
udp46     0      0 *.3784     *.*
udp4      0      0 *.49152    *.*
udp4      0      0 *.4784     *.*
udp4      0      0 *.3784     *.*
udp4      0      0 *.6333     *.*
ip4       0      0 *.*        *.*
ip4       0      0 *.*        *.*

```

lcc0-re0:

-

Active Internet connections (including servers)

| Proto | Recv-Q | Send-Q | Local Address | Foreign Address |
|-------|--------|--------|-----------------------------|-------------------|
| | | | (state) | |
| tcp4 | 0 | 0 | 192.0.2.3.23 ESTABLISHED | 192.0.2.227.50399 |
| tcp4 | 0 | 0 | *.6234 LISTEN | *.* |
| tcp4 | 0 | 0 | *.7000 LISTEN | *.* |
| tcp4 | 0 | 0 | *.9000 LISTEN | *.* |
| tcp4 | 0 | 0 | *.33009 LISTEN | *.* |
| tcp4 | 0 | 0 | *.3221 LISTEN | *.* |
| tcp4 | 0 | 0 | *.23 LISTEN | *.* |
| tcp4 | 0 | 0 | *.22 LISTEN | *.* |
| tcp4 | 0 | 0 | *.514 LISTEN | *.* |
| tcp4 | 0 | 0 | *.513 LISTEN | *.* |
| tcp4 | 0 | 0 | *.21 LISTEN | *.* |
| tcp4 | 0 | 0 | *.79 LISTEN | *.* |
| tcp4 | 0 | 0 | *.514 LISTEN | *.* |
| tcp4 | 0 | 0 | *.513 LISTEN | *.* |
| udp46 | 0 | 0 | *.514 | *.* |
| udp4 | 0 | 0 | *.514 | *.* |
| udp46 | 0 | 0 | *.59924 | *.* |
| udp4 | 0 | 0 | *.59412 | *.* |
| udp46 | 0 | 0 | *.161 | *.* |
| udp4 | 0 | 0 | *.161 | *.* |
| udp4 | 0 | 0 | *.31342 | *.* |
| udp4 | 0 | 0 | *.6333 | *.* |

lcc1-re0:

-

Active Internet connections (including servers)

| Proto | Recv-Q | Send-Q | Local Address | Foreign Address |
|-------|--------|--------|---------------|-----------------|
| | | | (state) | |
| tcp4 | 0 | 0 | *.6234 | *.* |

```

tcp4      0      0 *.7000    LISTEN      *.
tcp4      0      0 *.9000    LISTEN      *.
tcp4      0      0 *.3221    LISTEN      *.
tcp4      0      0 *.23      LISTEN      *.
tcp4      0      0 *.22      LISTEN      *.
tcp4      0      0 *.514     LISTEN      *.
tcp4      0      0 *.513     LISTEN      *.
tcp4      0      0 *.21      LISTEN      *.
tcp4      0      0 *.79      LISTEN      *.
tcp4      0      0 *.514     LISTEN      *.
tcp4      0      0 *.513     LISTEN      *.
tcp4      0      0 *.33009   LISTEN      *.
udp46     0      0 *.514     *.
udp4      0      0 *.514     *.
udp46     0      0 *.59924   *.
udp4      0      0 *.59412   *.
udp4      0      0 *.31342   *.
udp46     0      0 *.161     *.
udp4      0      0 *.161     *.
udp4      0      0 *.6333    *.

```

```
lcc2-re0:
```

```
-
```

Active Internet connections (including servers)

| Proto | Recv-Q | Send-Q | Local Address | Foreign Address |
|-------|--------|--------|---------------|-----------------|
| | | | (state) | |
| tcp4 | 0 | 0 | *.6234 | *. * |
| | | | LISTEN | |
| tcp4 | 0 | 0 | *.7000 | *. * |
| | | | LISTEN | |
| tcp4 | 0 | 0 | *.9000 | *. * |
| | | | LISTEN | |
| tcp4 | 0 | 0 | *.33009 | *. * |
| | | | LISTEN | |
| tcp4 | 0 | 0 | *.3221 | *. * |
| | | | LISTEN | |
| tcp4 | 0 | 0 | *.23 | *. * |
| | | | LISTEN | |
| tcp4 | 0 | 0 | *.22 | *. * |
| | | | LISTEN | |
| tcp4 | 0 | 0 | *.514 | *. * |
| ... | | | | |

show system connections sfc (TX Matrix Plus Router)

```
user@host> show system connections sfc 0
```

```
sfc0-re0:
```

```
-
```

| Active Internet connections (including servers) | | | | | Foreign Address |
|---|--------|--------|--------------------------------|-------------------|-----------------|
| Proto | Recv-Q | Send-Q | Local Address (state) | | |
| tcp4 | 0 | 0 | 192.0.2.4.514 TIME_WAIT | 192.0.2.4.952 | |
| tcp4 | 0 | 0 | 1192.0.2.4.514 TIME_WAIT | 192.0.2.4.694 | |
| tcp4 | 0 | 0 | 192.0.2.4.514 TIME_WAIT | 192.0.2.4.860 | |
| tcp4 | 0 | 0 | 192.0.2.4.514 TIME_WAIT | 192.0.2.4.716 | |
| tcp4 | 0 | 0 | 192.0.2.4.996 TIME_WAIT | 192.0.2.4.514 | |
| tcp4 | 0 | 0 | 192.0.2.4.798 TIME_WAIT | 192.0.2.4.514 | |
| tcp4 | 0 | 0 | 192.0.2.4.995 TIME_WAIT | 192.0.2.4.514 | |
| tcp4 | 0 | 0 | 192.0.2.4.895 TIME_WAIT | 192.0.2.4.514 | |
| tcp4 | 0 | 0 | 192.0.2.11.21 TIME_WAIT | 192.0.2.64662 | |
| tcp4 | 0 | 0 | 192.0.2.178.11.21 TIME_WAIT | | |
| 192.0.2.204.51612 | | | | | |
| tcp4 | 0 | 0 | *,6156 LISTEN | *,* | |
| tcp4 | 0 | 0 | *,9000 LISTEN | *,* | |
| tcp4 | 0 | 0 | *,666 LISTEN | *,* | |
| tcp4 | 0 | 2 | 192.0.2.11.23 ESTABLISHED | 192.0.2.19.3565 | |
| tcp4 | 0 | 0 | 192.0.2.11.23 ESTABLISHED | 192.0.2.204.62719 | |
| tcp4 | 0 | 0 | 192.0.2.11.23 ESTABLISHED | 192.0.2.199.51255 | |
| tcp4 | 0 | 0 | 192.0.2.11.23 ESTABLISHED | 1192.0.227.42860 | |
| tcp4 | 0 | 0 | 192.0.2.4.32012 ESTABLISHED | 192.0.2.5.58935 | |
| tcp4 | 0 | 0 | *,32012 LISTEN | *,* | |
| tcp4 | 0 | 0 | *,33007 LISTEN | *,* | |
| tcp4 | 0 | 1432 | 192.0.2.4.6161 ESTABLISHED | 192.0.2.5.62026 | |
| tcp4 | 0 | 0 | *,33005 LISTEN | *,* | |
| tcp4 | 0 | 0 | 192.0.2.4.9000 FIN_WAIT_2 | 192.0.2.4.51611 | |
| tcp4 | 0 | 0 | 192.0.2.4.51611 CLOSE_WAIT | 192.0.2.4.9000 | |
| tcp4 | 0 | 0 | *,6151 LISTEN | *,* | |
| tcp4 | 0 | 0 | *,6154 LISTEN | *,* | |
| tcp4 | 0 | 0 | *,6153 LISTEN | *,* | |
| tcp4 | 0 | 0 | *,31343 LISTEN | *,* | |
| tcp4 | 0 | 0 | *,31341 LISTEN | *,* | |

```

tcp4      0      0 *.6152          *.*
          LISTEN
tcp4      0      0 *.32003         *.*
          LISTEN
tcp4      0      0 *.33009         *.*
          LISTEN
tcp4      0      0 *.3221          *.*
          LISTEN
tcp4      0      0 *.23            *.*
          LISTEN
tcp4      0      0 *.22            *.*
          LISTEN
tcp4      0      0 *.514           *.*
          LISTEN
tcp4      0      0 *.513           *.*
          LISTEN
tcp4      0      0 *.21            *.*
          LISTEN
tcp4      0      0 *.79            *.*
          LISTEN
tcp4      0      0 *.514           *.*
          LISTEN
tcp4      0      0 *.513           *.*
          LISTEN
tcp4      0      0 *.6234          *.*
          LISTEN
udp4      0      0 127.0.0.1.123   *.*
udp4      0      0 10.255.178.11.123 *.*
udp4      0      0 *.123           *.*
udp46     0      0 *.514           *.*
udp4      0      0 *.514           *.*
udp46     0      0 *.50895         *.*
udp4      0      0 *.50794         *.*
udp4      0      0 *.31342         *.*
udp46     0      0 *.161           *.*
udp4      0      0 *.161           *.*
udp4      0      0 *.31340         *.*
udp4      0      0 *.31340         *.*
udp46     0      0 *.49152         *.*
udp46     0      0 *.4784          *.*
udp46     0      0 *.3784          *.*
udp4      0      0 *.49152         *.*
udp4      0      0 *.4784          *.*
udp4      0      0 *.3784          *.*
udp4      0      0 *.6333          *.*
ip4       104    0 *.*             *.*
ip4       0      0 *.*             *.*
ip4       0      0 *.*             *.*

```

show system connections show-routing-instances (TX Matrix Plus Router)

```

user@host> show system connections show-routing-instances
sfc0-re0:
-
Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address           Routing Instance      (state) Foreign Address
tcp4      0      0 *.6156               __juniper_private1__  LISTEN                *.*
tcp4      0      0 *.9000               __juniper_private1__  LISTEN                *.*

```

| | | | | | | |
|----------------------|---|---|-------------------|----------------------|-------------|-----------------|
| tcp4 | 0 | 0 | *.666 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 2 | 192.168.178.11.23 | | | |
| 172.17.28.19.3565 | | | | default | | ESTABLISHED |
| tcp4 | 0 | 0 | 192.168.178.11.23 | | | |
| 172.17.28.204.62719 | | | | default | | ESTABLISHED |
| tcp4 | 0 | 0 | 192.168.178.11.23 | | | |
| 192.168.69.199.51255 | | | | default | | ESTABLISHED |
| tcp4 | 0 | 0 | 192.168.178.11.23 | | | |
| 172.24.26.227.42860 | | | | default | | ESTABLISHED |
| tcp4 | 0 | 0 | 162.0.0.4.32012 | | | 162.0.0.5.58935 |
| | | | | __juniper_private1__ | ESTABLISHED | |
| tcp4 | 0 | 0 | *.32012 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.33007 | | | *.* |
| | | | | __juniper_private2__ | LISTEN | |
| tcp4 | 0 | 0 | 162.0.0.4.6161 | | | 162.0.0.5.62026 |
| | | | | __juniper_private1__ | ESTABLISHED | |
| tcp4 | 0 | 0 | *.33005 | | | *.* |
| | | | | __juniper_private2__ | LISTEN | |
| tcp4 | 0 | 0 | 162.0.0.4.9000 | | | 162.0.0.4.51611 |
| | | | | __juniper_private1__ | FIN_WAIT_2 | |
| tcp4 | 0 | 0 | 162.0.0.4.51611 | | | 162.0.0.4.9000 |
| | | | | __juniper_private1__ | CLOSE_WAIT | |
| tcp4 | 0 | 0 | *.6151 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.6154 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.6153 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.31343 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.31341 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.6152 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.32003 | | | *.* |
| | | | | __juniper_private2__ | LISTEN | |
| tcp4 | 0 | 0 | *.33009 | | | *.* |
| | | | | __juniper_private2__ | LISTEN | |
| tcp4 | 0 | 0 | *.3221 | | | *.* |
| | | | | default | LISTEN | |
| tcp4 | 0 | 0 | *.23 | | | *.* |
| | | | | default | LISTEN | |
| tcp4 | 0 | 0 | *.22 | | | *.* |
| | | | | default | LISTEN | |
| tcp4 | 0 | 0 | *.514 | | | *.* |
| | | | | default | LISTEN | |
| tcp4 | 0 | 0 | *.513 | | | *.* |
| | | | | default | LISTEN | |
| tcp4 | 0 | 0 | *.21 | | | *.* |
| | | | | default | LISTEN | |
| tcp4 | 0 | 0 | *.79 | | | *.* |
| | | | | default | LISTEN | |
| tcp4 | 0 | 0 | *.514 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.513 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.6234 | | | *.* |
| | | | | __juniper_private1__ | LISTEN | |
| udp4 | 0 | 0 | 127.0.0.1.123 | | | *.* |

```

                                default
udp4      0      0 10.255.178.11.123             *. *
                                default
udp4      0      0 *.123                         *. *
                                default
udp46     0      0 *.514                         *. *
                                default
udp4      0      0 *.514                         *. *
                                default
udp46     0      0 *.50895                       *. *
                                default
udp4      0      0 *.50794                       *. *
                                default
udp4      0      0 *.31342                       *. *
                                __juniper_private1__
udp46     0      0 *.161                         *. *
                                default
udp4      0      0 *.161                         *. *
                                default
udp4      0      0 *.31340                       *. *
                                __juniper_private2__
udp4      0      0 *.31340                       *. *
                                __juniper_private1__
udp46     0      0 *.49152                       *. *
                                default
udp46     0      0 *.4784                        *. *
                                default
udp46     0      0 *.3784                        *. *
                                default
udp4      0      0 *.49152                       *. *
                                default
udp4      0      0 *.4784                        *. *
                                default
udp4      0      0 *.3784                        *. *
                                default
udp4      0      0 *.6333                       *. *
                                __juniper_private1__
ip4       0      0 *. *                          *. *
                                default
ip4       0      0 *. *                          *. *
                                default
ip4       0      0 *. *                          *. *
                                default

```

lcc0-re0:

-

Active Internet connections (including servers) (including routing-instances)

| Proto | Recv-Q | Send-Q | Local Address | Routing Instance | (state) | Foreign Address |
|-------|--------|--------|---------------|----------------------|-------------|-------------------|
| tcp4 | 0 | 0 | *.7000 | | | *. * |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | 192.0.2.3.23 | | | 192.0.2.227.50399 |
| | | | default | | ESTABLISHED | |
| tcp4 | 0 | 0 | *.6234 | | | *. * |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.9000 | | | *. * |
| | | | | __juniper_private1__ | LISTEN | |
| tcp4 | 0 | 0 | *.33009 | | | *. * |
| | | | | __juniper_private2__ | LISTEN | |
| tcp4 | 0 | 0 | *.3221 | | | *. * |
| | | | | default | LISTEN | |

| | | | | | | |
|-------|---|---|---------|----------------------|--------|-----|
| tcp4 | 0 | 0 | *.23 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.22 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.514 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.513 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.21 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.79 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.514 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.513 | __juniper_private1__ | LISTEN | *.* |
| udp46 | 0 | 0 | *.514 | default | | *.* |
| udp4 | 0 | 0 | *.514 | default | | *.* |
| udp46 | 0 | 0 | *.59924 | default | | *.* |
| udp4 | 0 | 0 | *.59412 | default | | *.* |
| udp46 | 0 | 0 | *.161 | default | | *.* |
| udp4 | 0 | 0 | *.161 | default | | *.* |
| udp4 | 0 | 0 | *.31342 | __juniper_private1__ | | *.* |
| udp4 | 0 | 0 | *.6333 | __juniper_private1__ | | *.* |

lcc1-re0:

-

Active Internet connections (including servers) (including routing-instances)

| Proto | Recv-Q | Send-Q | Local Address | Routing Instance | (state) | Foreign Address |
|-------|--------|--------|---------------|----------------------|---------|-----------------|
| tcp4 | 0 | 0 | *.7000 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.6234 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.9000 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.3221 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.23 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.22 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.514 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.513 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.21 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.79 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.514 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.513 | | | *.* |


```

tcp4      0      0 *.33009    __juniper_private1__ LISTEN      *.*
udp46     0      0 *.514      __juniper_private2__ LISTEN      *.*
udp4      0      0 *.514      default      *.*
udp46     0      0 *.59924    default      *.*
udp4      0      0 *.59412    default      *.*
udp4      0      0 *.31342    default      *.*
udp46     0      0 *.161      __juniper_private1__ *.*
udp4      0      0 *.161      default      *.*
udp4      0      0 *.6333     default      *.*
          0      0          __juniper_private1__

```

```
lcc2-re0:
```

```
-
```

Active Internet connections (including servers) (including routing-instances)

| Proto | Recv-Q | Send-Q | Local Address | Routing Instance | (state) | Foreign Address |
|-------|--------|--------|---------------|----------------------|---------|-----------------|
| tcp4 | 0 | 0 | *.7000 | | | *.* |
| tcp4 | 0 | 0 | *.6234 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.9000 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.33009 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.3221 | __juniper_private2__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.23 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.22 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.514 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.513 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.21 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.79 | default | LISTEN | *.* |
| tcp4 | 0 | 0 | *.514 | __juniper_private1__ | LISTEN | *.* |
| tcp4 | 0 | 0 | *.513 | __juniper_private1__ | LISTEN | *.* |
| udp46 | 0 | 0 | *.514 | __juniper_private1__ | LISTEN | *.* |
| udp4 | 0 | 0 | *.514 | default | | *.* |
| udp4 | 0 | 0 | *.31342 | default | | *.* |
| udp46 | 0 | 0 | *.62103 | __juniper_private1__ | | *.* |
| udp4 | 0 | 0 | *.59924 | default | | *.* |
| | | | | default | | |

```

udp46      0      0 *.161
                        default
udp4        0      0 *.161
                        default
udp4        0      0 *.6333
                        __juniper_private1__

lcc3-re0:
-
Active Internet connections (including servers) (including routing-instances)
Proto Recv-Q Send-Q Local Address           Routing Instance      (state)        Foreign Address
tcp4        0      0 *.7000
                        __juniper_private1__ LISTEN          *.
tcp4        0      0 *.6234
                        __juniper_private1__ LISTEN          *.
tcp4        0      0 *.9000
                        __juniper_private1__ LISTEN          *.
tcp4        0      0 *.33009
                        __juniper_private2__ LISTEN          *.
tcp4        0      0 *.3221
                        default          LISTEN          *.
tcp4        0      0 *.23
                        default          LISTEN          *.
tcp4        0      0 *.22
                        default          LISTEN          *.
tcp4        0      0 *.514
                        default          LISTEN          *.
tcp4        0      0 *.513
                        default          LISTEN          *.
tcp4        0      0 *.21
                        default          LISTEN          *.
tcp4        0      0 *.79
                        default          LISTEN          *.
tcp4        0      0 *.514
                        __juniper_private1__ LISTEN          *.
tcp4        0      0 *.513
                        __juniper_private1__ LISTEN          *.
udp46       0      0 *.514
                        default          *.
udp4        0      0 *.514
                        default          *.
udp46       0      0 *.62103
                        default          *.
udp4        0      0 *.59924
                        default          *.
udp4        0      0 *.31342
                        __juniper_private1__ *.
udp46       0      0 *.161
                        default          *.
udp4        0      0 *.161
                        default          *.
udp4        0      0 *.6333
                        __juniper_private1__

```

show system name-resolution

| | |
|---------------------------------|--|
| Syntax | show system name-resolution |
| Release Information | Command introduced in Junos OS Release 9.6. |
| Description | Display hostname-to-IP-address mappings. |
| Options | This command has no options. |
| Required Privilege Level | view |
| Output Fields | Table 11 on page 489 lists the output fields for the show system name-resolution command. Output fields are listed in the approximate order in which they appear. |

Table 11: show system name-resolution Output Fields

| Field Name | Field Description |
|------------------|---|
| Last update | Date and time when the hostname-to-IP address mapping were last resolved. |
| Refresh interval | Interval for refreshing the cache with the updated hostname-to-IP address mappings. |
| Addresses | Resolved IP addresses based on the hostname-to-IP address mappings. |
| Error | Error message displayed if there is a DNS hostname lookup failure. |
| Last change | Timestamp for the last change in the hostname-to-IP address mappings. |

show system name-resolution

```

user@host> show system name-resolution

Hostname to IP-address mappings:
-----
Last update: Mon Sep 29 18:42:21 2008
Refresh interval: 600 secs
Host: ntp1
  Addresses:
    3.3.3.11
  Last change: Mon Sep 29 18:42:20 2008
Host: radauth1
  Error: Host name lookup failure
Last change: Mon Sep 29 18:42:20 2008
Host: radacct1
  Error: Host name lookup failure
Host: snmp1
  Addresses:
    4.4.4.1
    4.4.4.2

```

```
Last change: Mon Sep 29 18:45:20 2008
Host: sys1
Addresses:
  192.168.68.69
Last change: Mon Sep 29 18:42:21 2008
```

show version

| | |
|---|--|
| List of Syntax | Syntax on page 491 Syntax (EX Series Switches) on page 491 Syntax (TX Matrix Router) on page 491 Syntax (TX Matrix Plus Router) on page 491 Syntax (MX Series Router) on page 491 Syntax (QFX Series) on page 491 Syntax (ACX5048 and ACX5096 Routers) on page 491 |
| Syntax | <pre>show version <brief detail></pre> |
| Syntax (EX Series Switches) | <pre>show version <all-members> <brief detail> <local> <member <i>member-id</i>></pre> |
| Syntax (TX Matrix Router) | <pre>show version <brief detail> <all-chassis all-lcc lcc <i>number</i> scc></pre> |
| Syntax (TX Matrix Plus Router) | <pre>show version <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>> <brief detail></pre> |
| Syntax (MX Series Router) | <pre>show version <brief detail> <all-members> <local> <member <i>member-id</i>></pre> |
| Syntax (QFX Series) | <pre>show version <brief detail> <component <i>component-name</i> all></pre> |
| Syntax (ACX5048 and ACX5096 Routers) | <pre>show version <brief detail></pre> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 15.1X54-D20 for ACX5048 and ACX5096 Routers.</p> |

Description Display the hostname and version information about the software running on the router or switch.

Beginning in Junos OS Release 13.3, the **show version** command output includes the **Junos** field that displays the Junos OS version running on the device. This field provides a consistent means of identifying the Junos OS version, rather than extracting that information from the list of installed sub-packages.

Options **none**—Display standard information about the hostname and version of the software running on the router or switch.

brief | detail—(Optional) Display the specified level of output.

all-members—(EX4200 switches and MX Series routers only) (Optional) Display standard information about the hostname and version of the software running on all members of the Virtual Chassis configuration.

component all—(QFabric systems only) (Optional) Display the host name and version information about the software running on all the components on the QFabric system.

component *component-name*—(QFabric systems only) (Optional) Display the host name and version information about the software running on a specific QFabric system component. Replace *component-name* with the name of the QFabric system component. The *component-name* can be the name of a diagnostics Routing Engine, Director group, fabric control Routing Engine, fabric manager Routing Engine, Interconnect device, or Node group.

local—(EX4200 switches and MX Series routers only) (Optional) Display standard information about the hostname and version of the software running on the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Display standard information about the hostname and version of the software running on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

scc—(TX Matrix routers only) (Optional) Display the hostname and version information about the software running on the TX Matrix router (or switch-card chassis).

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display the host name and version information about the software running on for a specified T640 router (line-card chassis or LCC) that is connected to the TX Matrix router. On a TX Matrix Plus router, display the host name and version information about the software running for a specified T1600 or T4000 router (LCC) that is connected to the TX Matrix Plus router.

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

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

sfc *number*—(TX Matrix Plus routers only) (Optional) Display the hostname and version information about the software running on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

Additional Information By default, when you issue the **show version** command on a TX Matrix or TX Matrix Plus master Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on a TX Matrix router) or T1600 or T4000 (in a routing matrix based on a TX Matrix Plus router) master Routing Engines connected to it. Likewise, if you issue the same command on the TX Matrix or TX Matrix Plus backup Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on a TX Matrix router) or T1600 or T4000 (in a routing matrix based on a TX Matrix Plus router) backup Routing Engines that are connected to it.

Required Privilege Level

view

List of Sample Output [show version \(Devices Running Junos OS Release 13.3 and Later\) on page 494](#)
[show version on page 494](#)
[show version \(TX Matrix Plus Router\) on page 495](#)
[show version \(TX Matrix Plus Router with 3D SIBs\) on page 497](#)
[show version \(MX Series Router\) on page 501](#)
[show version \(QFX3500 Switch\) on page 501](#)
[show version \(QFabric System\) on page 501](#)
[show version component all \(QFabric System\) on page 502](#)
[show version \(ACX5048 Router\) on page 503](#)
[show version \(ACX5096 Router\) on page 504](#)

Sample Output

show version (Devices Running Junos OS Release 13.3 and Later)

The following output is from the MX240 Router and shows the **Junos** field introduced in Junos OS 13.3. Depending on the platform running Junos OS 13.3, you might see different installed sub-packages, but the **Junos** field is common across all platforms that run Junos OS 13.3 and later.

```
user@host > show version
Hostname: lab
Model: mx240
Junos: 13.3R1.4
JUNOS Base OS boot [13.3R1.4]
JUNOS Base OS Software Suite [13.3R1.4]
JUNOS Kernel Software Suite [13.3R1.4]
JUNOS Crypto Software Suite [13.3R1.4]
JUNOS Packet Forwarding Engine Support (M/T/EX Common) [13.3R1.4]
JUNOS Packet Forwarding Engine Support (MX Common) [13.3R1.4]
JUNOS Online Documentation [13.3R1.4]
JUNOS Services AACL Container package [13.3R1.4]
JUNOS Services Application Level Gateways [13.3R1.4]
JUNOS AppId Services [13.3R1.4]
JUNOS Border Gateway Function package [13.3R1.4]
JUNOS Services Captive Portal and Content Delivery Container package [13.3R1.4]
JUNOS Services HTTP Content Management package [13.3R1.4]
JUNOS IDP Services [13.3R1.4]
JUNOS Services Jflow Container package [13.3R1.4]
JUNOS Services LL-PDF Container package [13.3R1.4]
JUNOS Services MobileNext Software package [13.3R1.4]
JUNOS Services Mobile Subscriber Service Container package [13.3R1.4]
JUNOS Services NAT [13.3R1.4]
JUNOS Services PTSP Container package [13.3R1.4]
JUNOS Services RPM [13.3R1.4]
JUNOS Services Stateful Firewall [13.3R1.4]
JUNOS Voice Services Container package [13.3R1.4]
JUNOS Services Crypto [13.3R1.4]
JUNOS Services SSL [13.3R1.4]
JUNOS Services IPSec [13.3R1.4]
JUNOS platform Software Suite [13.3R1.4]
JUNOS Runtime Software Suite [13.3R1.4]
JUNOS Routing Software Suite [13.3R1.4]
JUNOS py-base-i386 [13.3R1.4]
```

show version

```
user@host> show version
Hostname: router1
Model: m20
JUNOS Base OS boot [7.2-20050312.0]
JUNOS Base OS Software Suite [7.2-20050312.0]
JUNOS Kernel Software Suite [7.2R1.7]
JUNOS Packet Forwarding Engine Support (M20/M40) [7.2R1.7]
JUNOS Routing Software Suite [7.2R1.7]
JUNOS Online Documentation [7.2R1.7]
JUNOS Crypto Software Suite [7.2R1.7]
```

```
{master}
```



```

user@host> show version psd 1
psd1-re0:
-----
Hostname: china
Model: t640
JUNOS Base OS boot [9.1I20080311_1959_builder]
JUNOS Base OS Software Suite [9.1-20080321.0]
JUNOS Kernel Software Suite [9.1-20080321.0]
JUNOS Crypto Software Suite [9.1-20080321.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [9.1-20080321.0]
JUNOS Packet Forwarding Engine Support (T-series) [9.1-20080321.0]
JUNOS Online Documentation [9.1-20080321.0]
JUNOS Routing Software Suite [9.1-20080321.0]
labpkg [7.0]

```

show version (TX Matrix Plus Router)

```

user@host> show version
sfc0-re0:
-----
Hostname: host
Model: txp
JUNOS Base OS boot [12.3-20121019.0]
JUNOS Base OS Software Suite [12.3-20121019.0]
JUNOS Kernel Software Suite [12.3-20121019.0]
JUNOS Crypto Software Suite [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (T-Series) [12.3-20121019.0]
JUNOS Online Documentation [12.3-20121019.0]
JUNOS Services AACL Container package [12.3-20121019.0]
JUNOS Services Application Level Gateways [12.3-20121019.0]
JUNOS AppId Services [12.3-20121019.0]
JUNOS Border Gateway Function package [12.3-20121019.0]
JUNOS Services Captive Portal and Content Delivery Container package
[12.3-20121019.0]
JUNOS Services HTTP Content Management package [12.3-20121019.0]
JUNOS IDP Services [12.3-20121019.0]
JUNOS Services LL-PDF Container package [12.3-20121019.0]
JUNOS Services NAT [12.3-20121019.0]
JUNOS Services PTSP Container package [12.3-20121019.0]
JUNOS Services RPM [12.3-20121019.0]
JUNOS Services Stateful Firewall [12.3-20121019.0]
JUNOS Voice Services Container package [12.3-20121019.0]
JUNOS Services Example Container package [12.3-20121019.0]
JUNOS Services Crypto [12.3-20121019.0]
JUNOS Services SSL [12.3-20121019.0]
JUNOS Services IPSec [12.3-20121019.0]
JUNOS Runtime Software Suite [12.3-20121019.0]
JUNOS Routing Software Suite [12.3-20121019.0]

lcc0-re0:
-----
Hostname: host1
Model: t1600
JUNOS Base OS boot [12.3-20121019.0]
JUNOS Base OS Software Suite [12.3-20121019.0]
JUNOS Kernel Software Suite [12.3-20121019.0]
JUNOS Crypto Software Suite [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (T-Series) [12.3-20121019.0]
JUNOS Online Documentation [12.3-20121019.0]

```

```
JUNOS Services AACL Container package [12.3-20121019.0]
JUNOS Services Application Level Gateways [12.3-20121019.0]
JUNOS AppId Services [12.3-20121019.0]
JUNOS Border Gateway Function package [12.3-20121019.0]
JUNOS Services Captive Portal and Content Delivery Container package
[12.3-20121019.0]
JUNOS Services HTTP Content Management package [12.3-20121019.0]
JUNOS IDP Services [12.3-20121019.0]
JUNOS Services LL-PDF Container package [12.3-20121019.0]
JUNOS Services NAT [12.3-20121019.0]
JUNOS Services PTSP Container package [12.3-20121019.0]
JUNOS Services RPM [12.3-20121019.0]
JUNOS Services Stateful Firewall [12.3-20121019.0]
JUNOS Voice Services Container package [12.3-20121019.0]
JUNOS Services Example Container package [12.3-20121019.0]
JUNOS Services Crypto [12.3-20121019.0]
JUNOS Services SSL [12.3-20121019.0]
JUNOS Services IPSec [12.3-20121019.0]
JUNOS Runtime Software Suite [12.3-20121019.0]
JUNOS Routing Software Suite [12.3-20121019.0]
```

```
lcc1-re0:
```

```
-----
Hostname: host2
Model: t1600
JUNOS Base OS boot [12.3-20121019.0]
JUNOS Base OS Software Suite [12.3-20121019.0]
JUNOS Kernel Software Suite [12.3-20121019.0]
JUNOS Crypto Software Suite [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (T-Series) [12.3-20121019.0]
JUNOS Online Documentation [12.3-20121019.0]
JUNOS Services AACL Container package [12.3-20121019.0]
JUNOS Services Application Level Gateways [12.3-20121019.0]
JUNOS AppId Services [12.3-20121019.0]
JUNOS Border Gateway Function package [12.3-20121019.0]
JUNOS Services Captive Portal and Content Delivery Container package
[12.3-20121019.0]
JUNOS Services HTTP Content Management package [12.3-20121019.0]
JUNOS IDP Services [12.3-20121019.0]
JUNOS Services LL-PDF Container package [12.3-20121019.0]
JUNOS Services NAT [12.3-20121019.0]
JUNOS Services PTSP Container package [12.3-20121019.0]
JUNOS Services RPM [12.3-20121019.0]
JUNOS Services Stateful Firewall [12.3-20121019.0]
JUNOS Voice Services Container package [12.3-20121019.0]
JUNOS Services Example Container package [12.3-20121019.0]
JUNOS Services Crypto [12.3-20121019.0]
JUNOS Services SSL [12.3-20121019.0]
JUNOS Services IPSec [12.3-20121019.0]
JUNOS Runtime Software Suite [12.3-20121019.0]
JUNOS Routing Software Suite [12.3-20121019.0]
```

```
lcc2-re0:
```

```
-----
Hostname: host3
Model: t1600
JUNOS Base OS boot [12.3-20121019.0]
JUNOS Base OS Software Suite [12.3-20121019.0]
JUNOS Kernel Software Suite [12.3-20121019.0]
JUNOS Crypto Software Suite [12.3-20121019.0]
```

```

JUNOS Packet Forwarding Engine Support (M/T Common) [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (T-Series) [12.3-20121019.0]
JUNOS Online Documentation [12.3-20121019.0]
JUNOS Services AACL Container package [12.3-20121019.0]
JUNOS Services Application Level Gateways [12.3-20121019.0]
JUNOS AppId Services [12.3-20121019.0]
JUNOS Border Gateway Function package [12.3-20121019.0]
JUNOS Services Captive Portal and Content Delivery Container package
[12.3-20121019.0]
JUNOS Services HTTP Content Management package [12.3-20121019.0]
JUNOS IDP Services [12.3-20121019.0]
JUNOS Services LL-PDF Container package [12.3-20121019.0]
JUNOS Services NAT [12.3-20121019.0]
JUNOS Services PTSP Container package [12.3-20121019.0]
JUNOS Services RPM [12.3-20121019.0]
JUNOS Services Stateful Firewall [12.3-20121019.0]
JUNOS Voice Services Container package [12.3-20121019.0]
JUNOS Services Example Container package [12.3-20121019.0]
JUNOS Services Crypto [12.3-20121019.0]
JUNOS Services SSL [12.3-20121019.0]
JUNOS Services IPSec [12.3-20121019.0]
JUNOS Runtime Software Suite [12.3-20121019.0]
JUNOS Routing Software Suite [12.3-20121019.0]

```

```
lcc3-re0:
```

```

-----
Hostname: host4
Model: t1600
JUNOS Base OS boot [12.3-20121019.0]
JUNOS Base OS Software Suite [12.3-20121019.0]
JUNOS Kernel Software Suite [12.3-20121019.0]
JUNOS Crypto Software Suite [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [12.3-20121019.0]
JUNOS Packet Forwarding Engine Support (T-Series) [12.3-20121019.0]
JUNOS Online Documentation [12.3-20121019.0]
JUNOS Services AACL Container package [12.3-20121019.0]
JUNOS Services Application Level Gateways [12.3-20121019.0]
JUNOS AppId Services [12.3-20121019.0]
JUNOS Border Gateway Function package [12.3-20121019.0]
JUNOS Services Captive Portal and Content Delivery Container package
[12.3-20121019.0]
JUNOS Services HTTP Content Management package [12.3-20121019.0]
JUNOS IDP Services [12.3-20121019.0]
JUNOS Services LL-PDF Container package [12.3-20121019.0]
JUNOS Services NAT [12.3-20121019.0]
JUNOS Services PTSP Container package [12.3-20121019.0]
JUNOS Services RPM [12.3-20121019.0]
JUNOS Services Stateful Firewall [12.3-20121019.0]
JUNOS Voice Services Container package [12.3-20121019.0]
JUNOS Services Example Container package [12.3-20121019.0]
JUNOS Services Crypto [12.3-20121019.0]
JUNOS Services SSL [12.3-20121019.0]
JUNOS Services IPSec [12.3-20121019.0]
JUNOS Runtime Software Suite [12.3-20121019.0]
JUNOS Routing Software Suite [12.3-20121019.0]

```

show version (TX Matrix Plus Router with 3D SIBs)

```

user@host>show version
sfc0-re0:

```

```
Hostname: sfc0
Model: txp
JUNOS Base OS boot [13.1-20130306.0]
JUNOS Base OS Software Suite [13.1-20130306.0]
JUNOS Kernel Software Suite [13.1-20130306.0]
JUNOS Crypto Software Suite [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130306.0]
JUNOS Online Documentation [13.1-20130306.0]
JUNOS Services AACL Container package [13.1-20130306.0]
JUNOS Services Application Level Gateways [13.1-20130306.0]
JUNOS AppId Services [13.1-20130306.0]
JUNOS Border Gateway Function package [13.1-20130306.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130306.0]
JUNOS Services HTTP Content Management package [13.1-20130306.0]
JUNOS IDP Services [13.1-20130306.0]
JUNOS Services Jflow Container package [13.1-20130306.0]
JUNOS Services LL-PDF Container package [13.1-20130306.0]
JUNOS Services MobileNext Software package [13.1-20130306.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130306.0]
JUNOS Services NAT [13.1-20130306.0]
JUNOS Services PTSP Container package [13.1-20130306.0]
JUNOS Services RPM [13.1-20130306.0]
JUNOS Services Stateful Firewall [13.1-20130306.0]
JUNOS Voice Services Container package [13.1-20130306.0]
JUNOS Services Example Container package [13.1-20130306.0]
JUNOS Services Crypto [13.1-20130306.0]
JUNOS Services SSL [13.1-20130306.0]
JUNOS Services IPSec [13.1-20130306.0]
JUNOS Runtime Software Suite [13.1-20130306.0]
JUNOS Routing Software Suite [13.1-20130306.0]
```

lcc0-re0:

```
-----
Hostname: lcc0
Model: t4000
JUNOS Base OS boot [13.1-20130306.0]
JUNOS Base OS Software Suite [13.1-20130306.0]
JUNOS Kernel Software Suite [13.1-20130306.0]
JUNOS Crypto Software Suite [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130306.0]
JUNOS Online Documentation [13.1-20130306.0]
JUNOS Services AACL Container package [13.1-20130306.0]
JUNOS Services Application Level Gateways [13.1-20130306.0]
JUNOS AppId Services [13.1-20130306.0]
JUNOS Border Gateway Function package [13.1-20130306.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130306.0]
JUNOS Services HTTP Content Management package [13.1-20130306.0]
JUNOS IDP Services [13.1-20130306.0]
JUNOS Services Jflow Container package [13.1-20130306.0]
JUNOS Services LL-PDF Container package [13.1-20130306.0]
JUNOS Services MobileNext Software package [13.1-20130306.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130306.0]
JUNOS Services NAT [13.1-20130306.0]
JUNOS Services PTSP Container package [13.1-20130306.0]
JUNOS Services RPM [13.1-20130306.0]
JUNOS Services Stateful Firewall [13.1-20130306.0]
JUNOS Voice Services Container package [13.1-20130306.0]
```

```
JUNOS Services Example Container package [13.1-20130306.0]
JUNOS Services Crypto [13.1-20130306.0]
JUNOS Services SSL [13.1-20130306.0]
JUNOS Services IPSec [13.1-20130306.0]
JUNOS Runtime Software Suite [13.1-20130306.0]
JUNOS Routing Software Suite [13.1-20130306.0]
```

```
lcc2-re0:
```

```
-----
Hostname: lcc2
Model: t4000
JUNOS Base OS boot [13.1-20130306.0]
JUNOS Base OS Software Suite [13.1-20130306.0]
JUNOS Kernel Software Suite [13.1-20130306.0]
JUNOS Crypto Software Suite [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130306.0]
JUNOS Online Documentation [13.1-20130306.0]
JUNOS Services ACL Container package [13.1-20130306.0]
JUNOS Services Application Level Gateways [13.1-20130306.0]
JUNOS AppId Services [13.1-20130306.0]
JUNOS Border Gateway Function package [13.1-20130306.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130306.0]
JUNOS Services HTTP Content Management package [13.1-20130306.0]
JUNOS IDP Services [13.1-20130306.0]
JUNOS Services Jflow Container package [13.1-20130306.0]
JUNOS Services LL-PDF Container package [13.1-20130306.0]
JUNOS Services MobileNext Software package [13.1-20130306.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130306.0]
JUNOS Services NAT [13.1-20130306.0]
JUNOS Services PTSP Container package [13.1-20130306.0]
JUNOS Services RPM [13.1-20130306.0]
JUNOS Services Stateful Firewall [13.1-20130306.0]
JUNOS Voice Services Container package [13.1-20130306.0]
JUNOS Services Example Container package [13.1-20130306.0]
JUNOS Services Crypto [13.1-20130306.0]
JUNOS Services SSL [13.1-20130306.0]
JUNOS Services IPSec [13.1-20130306.0]
JUNOS Runtime Software Suite [13.1-20130306.0]
JUNOS Routing Software Suite [13.1-20130306.0]
```

```
lcc4-re0:
```

```
-----
Hostname: lcc4
Model: t4000
JUNOS Base OS boot [13.1-20130306.0]
JUNOS Base OS Software Suite [13.1-20130306.0]
JUNOS Kernel Software Suite [13.1-20130306.0]
JUNOS Crypto Software Suite [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130306.0]
JUNOS Online Documentation [13.1-20130306.0]
JUNOS Services ACL Container package [13.1-20130306.0]
JUNOS Services Application Level Gateways [13.1-20130306.0]
JUNOS AppId Services [13.1-20130306.0]
JUNOS Border Gateway Function package [13.1-20130306.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130306.0]
JUNOS Services HTTP Content Management package [13.1-20130306.0]
```

JUNOS IDP Services [13.1-20130306.0]
JUNOS Services Jflow Container package [13.1-20130306.0]
JUNOS Services LL-PDF Container package [13.1-20130306.0]
JUNOS Services MobileNext Software package [13.1-20130306.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130306.0]
JUNOS Services NAT [13.1-20130306.0]
JUNOS Services PTSP Container package [13.1-20130306.0]
JUNOS Services RPM [13.1-20130306.0]
JUNOS Services Stateful Firewall [13.1-20130306.0]
JUNOS Voice Services Container package [13.1-20130306.0]
JUNOS Services Example Container package [13.1-20130306.0]
JUNOS Services Crypto [13.1-20130306.0]
JUNOS Services SSL [13.1-20130306.0]
JUNOS Services IPSec [13.1-20130306.0]
JUNOS Runtime Software Suite [13.1-20130306.0]
JUNOS Routing Software Suite [13.1-20130306.0]

lcc6-re0:

Hostname: lcc6
Model: t1600
JUNOS Base OS boot [13.1-20130306.0]
JUNOS Base OS Software Suite [13.1-20130306.0]
JUNOS Kernel Software Suite [13.1-20130306.0]
JUNOS Crypto Software Suite [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130306.0]
JUNOS Online Documentation [13.1-20130306.0]
JUNOS Services ACL Container package [13.1-20130306.0]
JUNOS Services Application Level Gateways [13.1-20130306.0]
JUNOS AppId Services [13.1-20130306.0]
JUNOS Border Gateway Function package [13.1-20130306.0]
JUNOS Services Captive Portal and Content Delivery Container package [13.1-20130306.0]
JUNOS Services HTTP Content Management package [13.1-20130306.0]
JUNOS IDP Services [13.1-20130306.0]
JUNOS Services Jflow Container package [13.1-20130306.0]
JUNOS Services LL-PDF Container package [13.1-20130306.0]
JUNOS Services MobileNext Software package [13.1-20130306.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130306.0]
JUNOS Services NAT [13.1-20130306.0]
JUNOS Services PTSP Container package [13.1-20130306.0]
JUNOS Services RPM [13.1-20130306.0]
JUNOS Services Stateful Firewall [13.1-20130306.0]
JUNOS Voice Services Container package [13.1-20130306.0]
JUNOS Services Example Container package [13.1-20130306.0]
JUNOS Services Crypto [13.1-20130306.0]
JUNOS Services SSL [13.1-20130306.0]
JUNOS Services IPSec [13.1-20130306.0]
JUNOS Runtime Software Suite [13.1-20130306.0]
JUNOS Routing Software Suite [13.1-20130306.0]

lcc7-re0:

Hostname: lcc7
Model: t1600
JUNOS Base OS boot [13.1-20130306.0]
JUNOS Base OS Software Suite [13.1-20130306.0]
JUNOS Kernel Software Suite [13.1-20130306.0]
JUNOS Crypto Software Suite [13.1-20130306.0]

```

JUNOS Packet Forwarding Engine Support (M/T Common) [13.1-20130306.0]
JUNOS Packet Forwarding Engine Support (T-Series) [13.1-20130306.0]
JUNOS Online Documentation [13.1-20130306.0]
JUNOS Services AACL Container package [13.1-20130306.0]
JUNOS Services Application Level Gateways [13.1-20130306.0]
JUNOS AppId Services [13.1-20130306.0]
JUNOS Border Gateway Function package [13.1-20130306.0]
JUNOS Services Captive Portal and Content Delivery Container package
[13.1-20130306.0]
JUNOS Services HTTP Content Management package [13.1-20130306.0]
JUNOS IDP Services [13.1-20130306.0]
JUNOS Services Jflow Container package [13.1-20130306.0]
JUNOS Services LL-PDF Container package [13.1-20130306.0]
JUNOS Services MobileNext Software package [13.1-20130306.0]
JUNOS Services Mobile Subscriber Service Container package [13.1-20130306.0]
JUNOS Services NAT [13.1-20130306.0]
JUNOS Services PTSP Container package [13.1-20130306.0]
JUNOS Services RPM [13.1-20130306.0]
JUNOS Services Stateful Firewall [13.1-20130306.0]
JUNOS Voice Services Container package [13.1-20130306.0]
JUNOS Services Example Container package [13.1-20130306.0]
JUNOS Services Crypto [13.1-20130306.0]
JUNOS Services SSL [13.1-20130306.0]
JUNOS Services IPSec [13.1-20130306.0]
JUNOS Runtime Software Suite [13.1-20130306.0]
JUNOS Routing Software Suite [13.1-20130306.0]

```

show version (MX Series Router)

```

user@host5> show version
Hostname: host5
Model: mx80
JUNOS Base OS boot [11.3-20110717.0]
JUNOS Base OS Software Suite [11.3-20110717.0]
JUNOS Kernel Software Suite [11.3-20110717.0]
JUNOS Crypto Software Suite [11.3-20110717.0]
JUNOS Packet Forwarding Engine Support (MX80) [11.3-20110717.0]
JUNOS Online Documentation [11.3-20110717.0]
JUNOS Routing Software Suite [11.3-20110717.0]

```

show version (QFX3500 Switch)

```

user@switch> show version
Hostname: switch
Model: qfx_s3500
JUNOS Base OS boot [11.1R1]
JUNOS Base OS Software Suite [11.1R1]
JUNOS Kernel Software Suite [11.1R1]
JUNOS Crypto Software Suite [11.1R1]
JUNOS Online Documentation [11.1R1]
JUNOS Enterprise Software Suite [11.1R1]
JUNOS Packet Forwarding Engine Support (QFX) [11.1R1]
JUNOS Routing Software Suite [11.1R1]

```

show version (QFabric System)

```

user@qfabric> show version
Hostname: qfabric
Model: qfx3000-g

```

```
Serial Number: qfsn-0123456789
QFabric System ID: f158527a-f99e-11e0-9fbd-00e081c57cda
JUNOS Base Version [12.2I20111018_0215_dc-builder]
```

show version component all (QFabric System)

```
user@switch> show version component all
dg1:
-
Hostname: qfabric
Model: qfx3100
JUNOS Base Version [11.3R1.6]

dg0:
-
Hostname: qfabric
Model: qfx3100
JUNOS Base Version [11.3R1.6]

NW-NG-0:
-
Hostname: qfabric
Model: qfx-jvre
JUNOS Base OS boot [11.3R1.6]
JUNOS Base OS Software Suite [11.3R1.6]
JUNOS Kernel Software Suite [11.3R1.6]
JUNOS Crypto Software Suite [11.3R1.6]
JUNOS Online Documentation [11.3R1.6]
JUNOS Enterprise Software Suite [11.3R1.6]
JUNOS Packet Forwarding Engine Support (QFX RE) [11.3R1.6]
JUNOS Routing Software Suite [11.3R1.6]

FC-0:
-
Hostname: qfabric
Model: qfx-jvre
JUNOS Base OS boot [11.3R1.6]
JUNOS Base OS Software Suite [11.3R1.6]
JUNOS Kernel Software Suite [11.3R1.6]
JUNOS Crypto Software Suite [11.3R1.6]
JUNOS Online Documentation [11.3R1.6]
JUNOS Enterprise Software Suite [11.3R1.6]
JUNOS Packet Forwarding Engine Support (QFX RE) [11.3R1.6]
JUNOS Routing Software Suite [11.3R1.6]

FC-1:
Hostname: qfabric
Model: qfx-jvre
JUNOS Base OS boot [11.3R1.6]
JUNOS Base OS Software Suite [11.3R1.6]
JUNOS Kernel Software Suite [11.3R1.6]
JUNOS Crypto Software Suite [11.3R1.6]
JUNOS Online Documentation [11.3R1.6]
JUNOS Enterprise Software Suite [11.3R1.6]
JUNOS Packet Forwarding Engine Support (QFX RE) [11.3R1.6]
JUNOS Routing Software Suite [11.3R1.6]

DRE-0:
-
Hostname: dre-0
Model: qfx-jvre
```



```

JUNOS Base OS boot [11.3R1.6]
JUNOS Base OS Software Suite [11.3R1.6]
JUNOS Kernel Software Suite [11.3R1.6]
JUNOS Crypto Software Suite [11.3R1.6]
JUNOS Online Documentation [11.3R1.6]
JUNOS Enterprise Software Suite [11.3R1.6]
JUNOS Packet Forwarding Engine Support (QFX RE) [11.3R1.6]
JUNOS Routing Software Suite [11.3R1.6]

```

```
FM-0:
```

```

-
Hostname: qfabric
Model: qfx-jvre
JUNOS Base OS boot [11.3R1.6]
JUNOS Base OS Software Suite [11.3R1.6]
JUNOS Kernel Software Suite [11.3R1.6]
JUNOS Crypto Software Suite [11.3R1.6]
JUNOS Online Documentation [11.3R1.6]
JUNOS Enterprise Software Suite [11.3R1.6]
JUNOS Packet Forwarding Engine Support (QFX RE) [11.3R1.6]
JUNOS Routing Software Suite [11.3R1.6]

```

```
nodedevice1:
```

```

-
Hostname: qfabric
Model: QFX3500
JUNOS Base OS boot [11.3R1.6]
JUNOS Base OS Software Suite [11.3R1.6]
JUNOS Kernel Software Suite [11.3R1.6]
JUNOS Crypto Software Suite [11.3R1.6]
JUNOS Online Documentation [11.3R1.6]
JUNOS Enterprise Software Suite [11.3R1.6]
JUNOS Packet Forwarding Engine Support (QFX RE) [11.3R1.6]
JUNOS Routing Software Suite [11.3R1.6]

```

```
interconnectdevice1:
```

```

-
Hostname: qfabric
Model: QFX3108
JUNOS Base OS boot [11.3R1.6]
JUNOS Base OS Software Suite [11.3R1.6]
JUNOS Kernel Software Suite [11.3R1.6]
JUNOS Crypto Software Suite [11.3R1.6]
JUNOS Online Documentation [11.3R1.6]
JUNOS Enterprise Software Suite [11.3R1.6]
JUNOS Packet Forwarding Engine Support (QFX RE) [11.3R1.6]
JUNOS Routing Software Suite [11.3R1.6]
warning: from interconnectdevice0: Disconnected

```

show version (ACX5048 Router)

```

user@host> show version
fpc0:
Hostname: acx5k11-ac
Model: acx5048
Junos: 15.1X54-D20.3
JUNOS Base OS boot [15.1X54-D20.3]
JUNOS Online Documentation [15.1X54-D20.3]
JUNOS Crypto Software Suite [15.1X54-D20.3]
JUNOS Base OS Software Suite [15.1X54-D20.3]
JUNOS Kernel Software Suite [15.1X54-D20.3]


```

```
JUNOS Packet Forwarding Engine Support (acx5k) [15.1X54-D20.3]
JUNOS Enterprise Software Suite [15.1X54-D20.3]
JUNOS Routing Software Suite [15.1X54-D20.3]
JUNOS py-base-i386 [15.1X54-D20.3]
JUNOS Host Software [15.1X54-D20.3]
```

show version (ACX5096 Router)

```
user@host> show version
fpc0:
Hostname: acx5k13-ac
Model: acx5096
Junos: 15.1X54-D20.3
JUNOS Base OS boot [15.1X54-D20.3]
JUNOS Online Documentation [15.1X54-D20.3]
JUNOS Crypto Software Suite [15.1X54-D20.3]
JUNOS Base OS Software Suite [15.1X54-D20.3]
JUNOS Kernel Software Suite [15.1X54-D20.3]
JUNOS Packet Forwarding Engine Support (acx5k) [15.1X54-D20.3]
JUNOS Enterprise Software Suite [15.1X54-D20.3]
JUNOS Routing Software Suite [15.1X54-D20.3]
JUNOS py-base-i386 [15.1X54-D20.3]
JUNOS Host Software [15.1X54-D20.3]
```

start shell

| | |
|---|--|
| Syntax | start shell (csh sh) <user <i>username</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Exit from the CLI environment and create a UNIX-level shell. To return to the CLI, type exit from the shell. |
| <div>  NOTE: <ul style="list-style-type: none"> To issue this command, the user must have the required login access privileges configured by including the permissions statement at the [edit system login class <i>class-name</i>] hierarchy level. UNIX wheel group membership or permissions are no longer required to issue this command. </div> | |
| Options | csh —Create a UNIX C shell. sh —Create a UNIX Bourne shell. user <i>username</i> —(Optional) Start the shell as another user. |
| Additional Information | When you are in the shell, the shell prompt has the following format: <i>username@hostname%</i> An example of the prompt is: root@host% |
| Required Privilege Level | shell and maintenance |
| List of Sample Output | start shell csh on page 506 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

start shell csh

```
user@host> start shell csh
%

exit
%

username@hostname% start shell sh
%

exit
user@host>
```

CHAPTER 10

System Software Monitoring Commands

- `show system commit`
- `show system configuration archival`
- `show system configuration database usage`
- `show system configuration rescue`
- `show system processes`
- `show system queues`
- `show system reboot`
- `show system rollback`
- `show system snapshot`
- `show system software`
- `show system statistics`
- `show system storage`
- `show system switchover`
- `show system uptime`
- `show system virtual-memory`
- `show task`
- `show task io`
- `show task logical-system-mux`
- `show task memory`
- `show task replication`
- `test configuration`

show system commit


| | |
|--|---|
| Syntax | <code>show system commit</code> <code><revision></code> <code><server></code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. Option server introduced in Junos OS Release 12.1 for the PTX Series router. Option revision introduced in Junos OS Release 14.1. Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches. |
| Description | Display the system commit history and any pending commit operation. |
| Options | none —Display the last 50 commit operations listed, most recent to first. revision —(Optional) Display the revision number of the active configuration of the Routing Engine(s). server — (Optional) Display commit server status. |
| <div> NOTE: By default, the status of the commit server is “Not running”. The commit server starts running only when a commit job is added to the batch.</div> | |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none">• clear system commit on page 175• show system commit revision |
| List of Sample Output | show system commit on page 510 show system commit (At a Particular Time) on page 510 show system commit (At the Next Reboot) on page 510 show system commit (Rollback Pending) on page 510 show system commit (QFX Series) on page 510 |
| Output Fields | Table 12 on page 509 describes the output fields for the show system commit command. Output fields are listed in the approximate order in which they appear. |

Table 12: show system commit Output Fields

| Field Name | Field Description | Level of Output |
|--------------------------------------|---|-----------------|
| <number> | Displays the last 50 commit operations listed, most recent to first. The identifier <number> designates a configuration created for recovery using the request system configuration rescue save command. | none |
| <time-stamp> | Date and time of the commit operation. | none |
| <root>/<username> | User who executed the commit operation. | none |
| <method> | Method used to execute the commit operation: <ul style="list-style-type: none"> • CLI—CLI interactive user performed the commit operation. • Junos XML protocol—Junos XML protocol client performed the commit operation. • synchronize—The commit synchronize command was performed on the other Routing Engine. • snmp—An SNMP set request caused the commit operation. • button—A button on the router or switch was pressed to commit a rescue configuration for recovery. • autoinstall—A configuration obtained through autoinstallation was committed. • other—When there is no login name associated with the session, the values for user and client default to root and other. For example, during a reboot after package installation, mgd commits the configuration as a system commit, and there is no login associated with the commit. | none |

Sample Output

show system commit

```
user@host> show system commit
0   2003-07-28 19:14:04 PDT by root via other
1   2003-07-25 22:01:36 PDT by user via cli
2   2003-07-25 22:01:32 PDT by user via cli
3   2003-07-25 21:30:13 PDT by root via button
4   2003-07-25 13:46:48 PDT by user via cli
5   2003-07-25 05:33:21 PDT by root via autoinstall
...
rescue 2002-05-10 15:32:03 PDT by root via other
```

show system commit (At a Particular Time)

```
user@host> show system commit
commit requested by root via cli at Tue May  7 15:59:00 2002
```

show system commit (At the Next Reboot)

```
user@host> show system commit
commit requested by root via cli at reboot
```

show system commit (Rollback Pending)

```
user@host> show system commit
0 2005-01-05 15:00:37 PST by root via cli commit confirmed, rollback in 3mins
```

show system commit (QFX Series)

```
user@switch> show system commit
0 2011-11-25 19:17:49 PST by root via cli
```


show system configuration archival

Syntax show system configuration archival

Release Information Introduced in Junos OS Release 7.6.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
 Command introduced in Junos OS Release 11.1 for the QFX Series.
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

Description Display directory and number of files queued for archival transfer.



NOTE: The [edit system configuration] hierarchy is not available on QFabric systems.

Options This command has no options.

Required Privilege Level maintenance

List of Sample Output [show system configuration archival on page 511](#)

Sample Output

show system configuration archival

```
user@host> show system configuration archival

/var/transfer/config/:
total 8
```

show system configuration database usage

| | |
|---------------------------------|---|
| Syntax | show system configuration database usage |
| Release Information | Command introduced in Junos OS Release 15.1. |
| Description | Display configuration database disk space usage statistics. |
| Options | This command has no options. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> Overview for Routing Devices |
| List of Sample Output | show system configuration database usage on page 512 |
| Output Fields | Table 13 on page 512 describes the output fields for the show system configuration database usage command. Output fields are listed in the approximate order in which they appear. |

Table 13: show system configuration database usage Output Fields

| Field Name | Field Description |
|-------------------------------|---|
| Maximum size of the database | Display the maximum available space on the disk to store the configuration database |
| Current database size on disk | Display the total space on the disk used by the current configuration database |
| Actual database usage | Display the actual space on the disk used by the current configuration data |
| Available database space | Display the free space available on the disk to store the configuration database |

Sample Output

show system configuration database usage

```

user@host> show system configuration database usage
Maximum size of the database: 665.99 MB
Current database size on disk: 1.50 MB
Actual database usage: 1.48 MB
Available database space: 664.51 MB

```

show system configuration rescue

Syntax show system configuration rescue

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
 Command introduced in Junos OS Release 11.1 for the QFX Series.
 Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.

Description Display a rescue configuration, if one exists.



NOTE: The [edit system configuration] hierarchy is not available on QFabric systems.

Options This command has no options.

Required Privilege Level maintenance

Related Documentation • [show system configuration archival on page 511](#)

List of Sample Output [show system configuration rescue on page 513](#)

Sample Output

show system configuration rescue

```
user@switch> show system configuration rescue
version "7.3"; groups {
  global {
    system {
      host-name router1;
      domain-name customer.net;
      domain-search [ customer.net ];
      backup-router 192.0.2.0;
      name-server {
        192.0.2.11;
        192.0.2.101;
        192.0.2.100;
        192.0.2.10;
      }
    }
  }
  login {
    user user1 {
      uid 928;
      class ;
      shell csh;
      authentication {
        encrypted-password "$ABC123"; ## SECRET-DATA
      }
    }
  }
}
```

```
        }  
    }  
    services {  
        ftp;  
        rlogin;  
        rsh;  
        telnet;  
    }  
}  
.....
```

show system processes

List of Syntax [Syntax on page 515](#)
 [Syntax \(EX Series Switches\) on page 515](#)
 [Syntax \(QFX Series Switches\) on page 515](#)
 [Syntax \(MX Series Routers\) on page 515](#)
 [Syntax \(OCX Series\) on page 515](#)
 [Syntax \(TX Matrix Routers\) on page 516](#)
 [Syntax \(TX Matrix Plus Router\) on page 516](#)

Syntax show system processes
 <brief | detail | extensive | summary>
 <health (pid *process-identifier* | process-name *process-name*)>
 <providers>
 <resource-limits (brief | detail) *process-name*>
 <wide>

Syntax (EX Series Switches) show system processes
 <all-members>
 <brief | detail | extensive | summary>
 <health (pid *process-identifier* | process-name *process-name*)>
 <local>
 <member *member-id*>
 <providers>
 <resource-limits (brief | detail) *process-name*>
 <wide>

Syntax (QFX Series Switches) show system processes
 <all-members>
 <brief | detail | extensive | summary>
 <health (pid *process-identifier* | process-name *process-name*)>
 host-processes (brief|detail)
 <local>
 <member *member-id*>
 <providers>
 <resource-limits (brief | detail) *process-name*>
 <wide>

Syntax (MX Series Routers) show system processes
 <all-members>
 <brief | detail | extensive | summary>
 <health (pid *process-identifier* | process-name *process-name*)>
 <local>
 <member *member-id*>
 <providers>
 <resource-limits (brief | detail) *process-name*>
 <wide>

Syntax (OCX Series) show system processes
 <brief | detail | extensive | summary >
 <health (pid *process-identifier* | process-name *process-name*)>

| | |
|---------------------------------------|--|
| | <pre>host-processes (brief detail) <providers> <resource-limits> <wide></pre> |
| Syntax (TX Matrix Routers) | <pre>show system processes <brief detail extensive summary> <all-chassis all-lcc lcc <i>number</i> scc> <wide></pre> |
| Syntax (TX Matrix Plus Router) | <pre>show system processes <brief detail extensive summary> <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>> <wide></pre> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Option sfc introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> <p>Enhanced output regarding per CPU usage introduced in Junos OS Release 16.1R3 for Junos OS with upgraded FreeBSD.</p> |
| Description | Display information about software processes that are running on the router or switch and that have controlling terminals. |
| Options | <p>none—Display standard information about system processes.</p> <p>brief detail extensive summary—(Optional) Display the specified level of detail.</p> <p>adaptive-services—(Optional) Display the configuration management process that manages the configuration for stateful firewall, Network Address Translation (NAT), intrusion detection services (IDS), and IP Security (IPsec) services on the Adaptive Services PIC.</p> <p>alarm-control—(Optional) Display the process to configure the system alarm.</p> <p>all-chassis—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display standard system process information about all the T640 routers (in a routing matrix based on the TX Matrix router) or all the T1600 or T4000 routers (in a routing matrix based on the TX Matrix Plus router) in the chassis.</p> <p>all-lcc—(TX Matrix routers and TX Matrix Plus router only) (Optional) Display standard system process information for all T640 routers (or line-card chassis) connected to the TX Matrix router. Display standard system process information for all connected T1600 or T4000 LCCs.</p> <p>all-members—(EX4200 switches, QFX Series Virtual Chassis, and MX Series routers) (Optional) Display standard system process information for all members of the Virtual Chassis configuration.</p> |

ancpd-service—Display the Access Node Control Protocol (ANCP) process, which works with a special Internet Group Management Protocol (IGMP) session to collect outgoing interface mapping events in a scalable manner.

application-identification —Display the process that identifies an application using intrusion detection and prevention (IDP) to allow or deny traffic based on applications running on standard or nonstandard ports.

audit-process—(Optional) Display the RADIUS accounting process.

auto-configuration—Display the Interface Auto-Configuration process.

bootp—Display the process that enables a router, switch, or interface to act as a Dynamic Host Configuration Protocol (DHCP) or bootstrap protocol (BOOTP) relay agent. DHCP relaying is disabled.

captive-portal-content-delivery—Display the HTTP redirect service by specifying the location to which a subscriber's initial Web browser session is redirected, enabling initial provisioning and service selection for the subscriber.

ce-l2tp-service—(Optional) (M10, M10i, M7i, and MX Series routers only) Display the Universal Edge Layer 2 Tunneling Protocol (L2TP) process, which establishes L2TP tunnels and Point-to-Point Protocol (PPP) sessions through L2TP tunnels.

cfm—Display Ethernet Operations, Administration, and Maintenance (OAM) connectivity fault management (CFM) process, which can be used to monitor the physical link between two switches.

chassis-control—(Optional) Display the chassis management process.

class-of-service—(Optional) Display the class-of-service (CoS) process, which controls the router's or switch's CoS configuration.

clksyncd-service—Display the external clock synchronization process, which uses synchronous Ethernet (SyncE).

craft-control—Display the process for the I/O of the craft interface.

database-replication—(EX Series switches and MX Series routers only) (Optional) Display the database replication process.

datapath-trace-service—Display the packet path tracing process.

dhcp-service—(EX Series switches and MX Series routers only) (Optional) Display the Dynamic Host Configuration Protocol process, which enables a DHCP server to allocate network IP addresses and deliver configuration settings to client hosts without user intervention.

diameter-service—(Optional) Display the diameter process.

disk-monitoring—(Optional) Display the disk monitoring process, which checks the health of the hard disk drive on the Routing Engine.

dynamic-flow-capture—(Optional) Display the dynamic flow capture (DFC) process, which controls DFC configurations on Monitoring Services III PICs.

ecc-error-logging—(Optional) Display the error checking and correction (ECC) process, which logs ECC parity errors in memory on the Routing Engine.

ethernet-connectivity-fault-management— Display the process that provides IEEE 802.1ag OAM connectivity fault management (CFM) database information for CFM maintenance association end points (MEPs) in a CFM session.

ethernet-link-fault-management—(EX Series switches and MX Series routers only) (Optional) Display the process that provides the OAM link fault management (LFM) information for Ethernet interfaces.

event-processing—(Optional) Display the event process (eventd).

firewall—(Optional) Display the firewall management process, which manages the firewall configuration and enables accepting or rejecting packets that are transiting an interface on a router or switch.

general-authentication-service—(EX Series switches and MX Series routers only) (Optional) Display the general authentication process.

health (pid *process-identifier* | process-name *process-name*)—(Optional) Display process health information, either by process id (PID) or by process name.

host-processes—Display process information of processes running on the host system.

(On OCX Series only) The following options are available:

- **brief | detail**—(Optional) Display the specified level of detail.

iccp-service—Display the Inter-Chassis Communication Protocol (ICCP) process.

idp-policy—Display the intrusion detection and prevention (IDP) protocol process.

ilmi—Display the Integrated Local Management Interface (ILMI) protocol process, which provides bidirectional exchange of management information between two ATM interfaces across a physical connection.

inet-process—Display the IP multicast family process.

init—Display the process that initializes the USB modem.

interface-control—(Optional) Display the interface process, which controls the router's or switch's physical interface devices and logical interfaces.

kernel-replication—(Optional) Display the kernel replication process, which replicates the state of the backup Routing Engine when graceful Routing Engine switchover (GRES) is configured.

l2-learning—(Optional) Display the Layer 2 address flooding and learning process.

l2cpd-service—Display the Layer 2 Control Protocol process, which enables features such as Layer 2 protocol tunneling and nonstop bridging.

lACP—(Optional) Display the Link Aggregation Control Protocol (LACP) process. LACP provides a standardized means for exchanging information between partner systems on a link to allow their link aggregation control instances to reach agreement on the identity of the LAG to which the link belongs, and then to move the link to that LAG, and to enable the transmission and reception processes for the link to function in an orderly manner.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display standard system process information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display standard system process information for a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches, QFX Series Virtual Chassis, and MX Series routers) (Optional) Display standard system process information for the local Virtual Chassis member.

local-policy-decision-function—Display the process for the Local Policy Decision Function, which regulates collection of statistics related to applications and application groups and tracking of information about dynamic subscribers and static interfaces.

logical-system-mux—Display the logical router multiplexer process (lrmuxd), which manages the multiple instances of the routing protocols process (rpd) on a machine running logical routers.

mac-validation—Display the MAC validation process, which configures MAC address validation for subscriber interfaces created on demux interfaces in dynamic profiles on MX Series routers.

member *member-id*—(EX4200 switches, QFX Series Virtual Chassis, and MX Series routers) (Optional) Display standard system process information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

mib-process—(Optional) Display the MIB II process, which provides the router's MIB II agent.

mobile-ip—(Optional) Display the Mobile IP process, which configures Junos OS Mobile IP features.

moundd-service—(EX Series switches and MX Series routers only) (Optional) Display the service for NFS mounts requests.

mpls-traceroute—(Optional) Display the MPLS Periodic Traceroute process.

mspd—(Optional) Display the Multiservice process.

multicast-snooping—(EX Series switches and MX Series routers only) (Optional) Display the multicast snooping process, which makes Layer 2 devices such as VLAN switches aware of Layer 3 information, such as the media access control (MAC) addresses of members of a multicast group.

named-service—(Optional) Display the DNS Server process, which is used by a router or a switch to resolve hostnames into addresses.

neighbor-liveness—Display the process, which specifies the maximum length of time that the router waits for its neighbor to re-establish an LDP session.

nfsd-service—(Optional) Display the Remote NFS Server process, which provides remote file access for applications that need NFS-based transport.

ntp—Display the Network Time Protocol (NTP) process, which provides the mechanisms to synchronize time and coordinate time distribution in a large, diverse network.

packet-triggered-subscribers—Display the packet-triggered subscribers and policy control (PTSP) process, which allows the application of policies to dynamic subscribers that are controlled by a subscriber termination device.

peer-selection-service—(Optional) Display the Peer Selection Service process.

periodic-packet-services—Display the Periodic packet management process, which is responsible for processing a variety of time-sensitive periodic tasks so that other processes can more optimally direct their resources.

pfe—Display the Packet Forwarding Engine management process.

pgcp-service—(Optional) Display the pgcpd service process running on the Routing Engine.

pgm—Display the Pragmatic General Multicast (PGM) protocol process, which enables a reliable transport layer for multicast applications.

pic-services-logging—(Optional) Display the logging process for some PICs. With this process, also known as fsad (the file system access daemon), PICs send special logging information to the Routing Engine for archiving on the hard disk.

ppp—(Optional) Display the Point-to-Point Protocol (PPP) process, which is the encapsulation protocol process for transporting IP traffic across point-to-point links.

ppp-service—Display the Universal edge PPP process, which is the encapsulation protocol process for transporting IP traffic across universal edge routers.

pppoe—(Optional) Display the Point-to-Point Protocol over Ethernet (PPPoE) process, which combines PPP that typically runs over broadband connections with the Ethernet link-layer protocol that allows users to connect to a network of hosts over a bridge or access concentrator.

process-monitor—Display the process health monitor process (pmond).

providers—(Optional) Display provider processes.

redundancy-interface-process—(Optional) Display the ASP redundancy process.

remote-operations—(Optional) Display the remote operations process, which provides the ping and traceroute MIBs.

resource-cleanup—Display the resource cleanup process.

resource-limits (brief | detail) process-name—(Optional) Display process resource limits.

routing—(Optional) Display the routing protocol process.

sampling—(Optional) Display the sampling process, which performs packet sampling based on particular input interfaces and various fields in the packet header.

sbc-configuration-process—Display the session border controller (SBC) process of the border signaling gateway (BSG).

scc—(TX Matrix routers only) (Optional) Display standard system process information for the TX Matrix router (or switch-card chassis).

sdk-service—Display the SDK Service process, which runs on the Routing Engine and is responsible for communications between the SDK application and Junos OS. Although the SDK Service process is present on the router, it is turned off by default.

secure-neighbor-discovery—(EX Series switches and MX Series routers only) (Optional) Display the secure Neighbor Discovery Protocol (NDP) process, which provides support for protecting NDP messages.

send—(Optional) Display the Secure Neighbor Discovery Protocol (SEND) process, which provides support for protecting Neighbor Discovery Protocol (NDP) messages.

service-deployment—(Optional) Display the service deployment process, which enables Junos OS to work with the Session and Resource Control (SRC) software.

sfc number—(TX Matrix Plus routers only) (Optional) Display system process information for the TX Matrix Plus router. Replace *number* with 0.

snmp—Display the SNMP process, which enables the monitoring of network devices from a central location and provides the router's or switch's SNMP master agent.

sonet-aps—Display the SONET Automatic Protection Switching (APS) process, which monitors any SONET interface that participates in APS.

static-subscribers—(Optional) Display the Static subscribers process, which associates subscribers with statically configured interfaces and provides dynamic service activation and activation for these subscribers.

tunnel-oamd—(Optional) Display the Tunnel OAM process, which enables the Operations, Administration, and Maintenance of Layer 2 tunneled networks. Layer 2 protocol tunneling (L2PT) allows service providers to send Layer 2 protocol data units (PDUs) across the provider's cloud and deliver them to Juniper Networks EX Series Ethernet Switches that are not part of the local broadcast domain.

vrrp—(EX Series switches and MX Series routers only) (Optional) Display the Virtual Router Redundancy Protocol (VRRP) process, which enables hosts on a LAN to make use of redundant routing platforms on that LAN without requiring more than the static configuration of a single default route on the hosts.

watchdog—Display the watchdog timer process, which enables the watchdog timer when Junos OS encounters a problem.

wide—(Optional) Display process information that might be wider than 80 columns.

Additional Information By default, when you issue the **show system processes** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

Required Privilege Level

view

Related Documentation

- [List of Junos OS Processes on page 10](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

[show system processes on page 526](#)
[show system processes brief on page 526](#)
[show system processes detail on page 526](#)
[show system processes extensive on page 527](#)
[show system processes extensive \(EX9200 Switch\) on page 527](#)
[show system processes host processes \(OCX1100 Switch\) on page 528](#)
[show system processes lcc wide \(TX Matrix Routing Matrix\) on page 528](#)
[show system processes summary on page 529](#)
[show system processes \(TX Matrix Plus Router\) on page 529](#)
[show system processes sfc \(TX Matrix Plus Router\) on page 537](#)
[show system processes lcc wide \(TX Matrix Plus Routing Matrix\) on page 539](#)
[show system processes \(QFX Series and OCX Series\) on page 541](#)

Output Fields Table 14 on page 523 describes the output fields for the **show system processes** command. Output fields are listed in the approximate order in which they appear.

Table 14: show system processes Output Fields

| Field Name | Field Description | Level of Output |
|----------------------|---|----------------------------|
| last pid | Last process identifier assigned to the process. | brief extensive summary |
| load averages | Three load averages followed by the current time. | brief extensive summary |
| processes | Number of existing processes and the number of processes in each state (sleeping , running , starting , zombies , and stopped). | brief extensive summary |
| CPU | <p>(For systems running Junos OS with upgraded FreeBSD only) Breakdown of the percent usage on a per-CPU basis into the following categories: % user, % nice, % system, % interrupt, % idle.</p> <p>NOTE: This field shows up in the second frame of output.</p> <p>To see which platforms run Junos OS with upgraded FreeBSD, see <i>Release Information for Junos OS with Upgraded FreeBSD</i>.</p> | extensive |
| Mem | Information about physical and virtual memory allocation. | brief extensive summary |
| Active | <p>Memory allocated and actively used by the program.</p> <p>When the system is under memory pressure, the pageout process reuses memory from the free, cache, inact and, if necessary, active pages. When the pageout process runs, it scans memory to see which pages are good candidates to be unmapped and freed up. Thus, the distinction between Active and Inact memory is only used by the pageout process to determine which pool of pages to free first at the time of a memory shortage.</p> <p>The pageout process first scans the Inact list, and checks whether the pages on this list have been accessed since the time they have been listed here. The pages that have been accessed are moved from the Inact list to the Active list. On the other hand, pages that have not been accessed become prime candidates to be freed by the pageout process. If the pageout process cannot produce enough free pages from the Inact list, pages from the Active list get freed up.</p> <p>Because the pageout process runs only when the system is under memory pressure, the pages on the Inact list remain untouched – even if they have not been accessed recently – when the amount of Free memory is adequate.</p> | brief extensive summary |
| Inact | <p>Memory allocated but not recently used or memory freed by the programs. Inactive memory remains mapped in the address space of one or more processes and, therefore, counts toward the RSS value of those processes.</p> <p>Any amount of memory freed by the routing protocol process might still be considered part of the RES value. Generally, the kernel delays the migrating of memory out of the Inact queue into the Cache or Free list unless there is a memory shortage.</p> | brief extensive summary |

Table 14: show system processes Output Fields (*continued*)

| Field Name | Field Description | Level of Output |
|--------------|---|---------------------------------|
| Wired | Memory that is not eligible to be swapped, usually used for in-kernel memory structures and/or memory physically locked by a process. | brief extensive summary |
| Cache | Memory that is not associated with any program and does not need to be swapped before being reused. | brief extensive summary |
| Buf | Size of memory buffer used to hold data recently called from the disk. | brief extensive summary |
| Free | Memory that is not associated with any programs. Memory freed by a process can become Inactive , Cache , or Free , depending on the method used by the process to free the memory. | brief extensive summary |
| Swap | Information about physical and virtual memory allocation. NOTE: Memory can remain swapped out indefinitely if it is not accessed again. Therefore, the show system process extensive command shows that memory is swapped to disk even though there is plenty of free memory, and such a situation is not unusual. | brief extensive summary |
| PID | Process identifier. | detail extensive summary |
| TT | Control terminal name. | none detail |
| STAT | Symbolic process state. The state is given by a sequence of letters. The first letter indicates the run state of the process: <ul style="list-style-type: none"> • D—In disk or other short-term, uninterruptible wait • I—Idle (sleeping longer than about 20 seconds) • R—Runnable • S—Sleeping for less than 20 seconds • T—Stopped • Z—Dead (zombie) • + —The process is in the foreground process group of its control terminal. • <—The process has raised CPU scheduling priority. • >—The process has specified a soft limit on memory requirements and is currently exceeding that limit; such a process is not swapped. • A—The process requested random page replacement. • E—The process is trying to exit. • L—The process has pages locked in core. • N—The process has reduced CPU scheduling priority. • S—The process requested first-in, first-out (FIFO) page replacement. • s—The process is a session leader. • V—The process is temporarily suspended. • W—The process is swapped out. • X—The process is being traced or debugged. | none detail |

Table 14: show system processes Output Fields (*continued*)

| Field Name | Field Description | Level of Output |
|------------|---|--------------------------|
| UID | User identifier. | detail |
| USERNAME | Process owner. | extensive summary |
| PPID | Parent process identifier. | detail |
| CPU | <p>(D)—Short-term CPU usage.</p> <p>(E and S)—Raw (unweighted) CPU usage. The value of this field is used to sort the processes in the output.</p> | detail extensive summary |
| RSS | Resident set size. | detail |
| WCHAN | Symbolic name of the wait channel. | detail |
| STARTED | Local time when the process started running. | detail |
| PRI | Current priority of the process. A lower number indicates a higher priority. | detail extensive summary |
| NI or NICE | UNIX "niceness" value. A lower number indicates a higher priority. | detail extensive summary |
| SIZE | Total size of the process (text, data, and stack), in kilobytes. | extensive summary |
| RES | <p>Current amount of program resident memory, in kilobytes.</p> <p>This is also known as RSS or Resident Set Size. The RES value includes shared library pages used by the process. Any amount of memory freed by the process might still be considered part of the RES value. Generally, the kernel delays the migrating of memory out of the Inact queue into the Cache or Free list unless there is a memory shortage. This can lead to large discrepancies between the values reported by the routing protocol process and the kernel, even after the routing protocol process has freed a large amount of memory.</p> | extensive summary |
| STATE | Current state of the process (for example, sleep , wait , run , idle , zombie , or stop). | extensive summary |
| TIME | <p>(S)—Number of system and user CPU seconds that the process has used.</p> <p>(None, D, and E)—Total amount of time that the command has been running.</p> | detail extensive summary |
| WCPU | Weighted CPU usage. | extensive summary |
| COMMAND | <p>Command that is currently running.</p> <p>(MX Series routers only) When you display the software processes for an MX Series Virtual Chassis, the show system processes command does not display information about the relayd process.</p> | detail extensive summary |
| THR | Number of threads in the process | extensive |

Sample Output

show system processes

```
user@host> show system processes
PID  TT  STAT      TIME COMMAND
   0  ??  DLs       0:00.70 (swapper)
   1  ??  Is        0:00.35 /sbin/init --
   2  ??  DL        0:00.00 (pagedaemon)
   3  ??  DL        0:00.00 (vmdaemon)
   4  ??  DL        0:42.37 (update)
   5  ??  DL        0:00.00 (if_jnx)
  80  ??  Ss        0:14.66 syslogd -s
  96  ??  Is        0:00.01 portmap
 128  ??  Is        0:02.70 cron
 173  ??  Is        0:02.24 /usr/local/sbin/sshd (sshd1)
 189  ??  S         0:03.80 /sbin/watchdog -t180
 190  ??  I         0:00.03 /usr/sbin/tnetd -N
 191  ??  S         2:24.76 /sbin/ifd -N
 192  ??  S<        0:55.44 /usr/sbin/xntpd -N
 195  ??  S         0:53.11 /usr/sbin/snmpd -N
 196  ??  S         1:15.73 /usr/sbin/mib2d -N
 198  ??  I         0:00.75 /usr/sbin/inetd -N
2677  ??  I         0:00.01 /usr/sbin/mgd -N
2712  ??  Ss        0:00.24 rlogind
2735  ??  R         0:00.00 /bin/ps -ax
1985  p0- S       0:07.41 ./rpd -N
2713  p0  Is        0:00.24 -tcsh (tcsh)
2726  p0  S+        0:00.07 cli
```

show system processes brief

```
user@host> show system processes brief
last pid: 543; load averages: 0.00, 0.00, 0.00 18:29:47
37 processes: 1 running, 36 sleeping

Mem: 25M Active, 3976K Inact, 19M Wired, 8346K Buf, 202M Free
Swap: 528M Total, 64K Used, 528M Free
```

show system processes detail

```
user@host> show system processes detail
PID  UID  PPID  CPU  PRI  NI  RSS  WCHAN  STARTED  TT  STAT      TIME COMMAND
3151 1049 3129   2   28   0  672  -      1:13PM  p0  R+       0:00.00 ps -ax -r
   1   0   0   0   10   0  376  wait   1:51PM  ??  Is       0:00.29 /sbin/init
   2   0   0   0  -18   0   12  psleep  1:51PM  ??  DL       0:00.00 (pagedae
   3   0   0   0   28   0   12  psleep  1:51PM  ??  DL       0:00.00 (vmdaemo
   4   0   0   0   28   0   12  update  1:51PM  ??  DL       0:07.15 (update)
   5   0   0   0   2    0   12  pfesel  1:51PM  ??  IL       0:02.90 (if_pfe)
  27   0   1   0   10   0 17936  mfsidl  1:51PM  ??  Is       0:00.46 mfs /dev/
  81   0   1   0   2    0  496  select  1:52PM  ??  Ss       0:31.21 syslogd -
 119   1   1   0   2    0  492  select  1:52PM  ??  Is       0:00.00 portmap
 134   0   1   0   2    0  580  select  1:52PM  ??  S        0:02.95 amd -p -a
 151   0   1   0   18   0  532  pause   1:52PM  ??  Is       0:00.34 cron
 183   0   1   0   2    0  420  select  1:52PM  ??  Ss       0:00.07 /usr/loca
 206   0   1   0   18   0   72  pause   1:52PM  ??  S        0:00.51 /sbin/wat
 207   0   1   0   2    0  520  select  1:52PM  ??  I        0:00.16 /usr/sbin
 208   0   1   0   2    0  536  select  1:52PM  ??  S        0:08.21 /sbin/dcd
 210   0   1  255   2  -12  740  select  1:52PM  ??  S<       0:05.83 /usr/sbin
```



```

211    0    1    0    2    0  376 select  1:52PM  ??  S    0:00.03 /usr/sbin
215    0    1    0    2    0  548 select  1:52PM  ??  I    0:00.50 /usr/sbin
219    0    1    0    3    0  540 ttyin   1:52PM  v0  Is+  0:00.02 /usr/libe
220    0    1    0    3    0  540 ttyin   1:52PM  v1  Is+  0:00.01 /usr/libe
221    0    1    0    3    0  540 ttyin   1:52PM  v2  Is+  0:00.01 /usr/libe
222    0    1    0    3    0  540 ttyin   1:52PM  v3  Is+  0:00.01 /usr/libe
735    0    1    0    2    0  468 select  2:47PM  ??  S    0:19.14 /usr/sbin
736    0    1    0    2    0  212 select  2:47PM  ??  S    0:14.13 /usr/sbin
1380   0    1    0    3    0  888 ttyin   7:32PM  d0  Is+  0:00.46 bash
3019   0   207    0    2    0  636 select  10:49AM  ??  Ss   0:02.93 tnp.chass
3122   0  1380    0    2    0  1764 select  12:33PM  d0  S    0:00.77 ./rpd -N
3128   0   215    0    2    0   580 select  12:45PM  ??  Ss   0:00.12 rlogind
3129  1049  3128    0   18    0   944 pause   12:45PM  p0  Ss   0:00.14 -tcsh (tc
0      0      0    0  -18    0      0 sched    1:51PM  ??  DLs   0:00.10 (swapper

```

show system processes extensive

```
user@host> show system processes extensive
```

```
Mem: 241M Active, 99M Inact, 78M Wired, 325M Cache, 69M Buf, 1251M Free
```

```
Swap: 2048M Total, 2048M Free
```

| PID | USERNAME | THR | PRI | NICE | SIZE | RES | STATE | TIME | WCPU | COMMAND |
|------|----------|-----|-----|------|--------|--------|--------|--------|--------|--------------------|
| 11 | root | 1 | 171 | 52 | OK | 12K | RUN | 807.5H | 98.73% | idle |
| 13 | root | 1 | -20 | -139 | OK | 12K | WAIT | 36:17 | 0.00% | swi7: clock sio |
| 1499 | root | 1 | 96 | 0 | 7212K | 3040K | select | 34:01 | 0.00% | license-check |
| 1621 | root | 1 | 96 | 0 | 20968K | 11216K | select | 20:25 | 0.00% | mib2d |
| 1465 | root | 2 | 8 | -88 | 115M | 11748K | nanslp | 14:32 | 0.00% | chassisd |
| 1478 | root | 1 | 96 | 0 | 6336K | 3816K | select | 11:28 | 0.00% | ppmd |
| 20 | root | 1 | -68 | -187 | OK | 12K | WAIT | 10:28 | 0.00% | irq10: em0 em1+++* |
| 1490 | root | 1 | 96 | 0 | 11792K | 4336K | select | 9:44 | 0.00% | shm-rtssdbd |
| 1618 | root | 1 | 96 | 0 | 39584K | 7464K | select | 8:47 | 0.00% | pfed |
| 1622 | root | 1 | 96 | 0 | 15268K | 10988K | select | 6:16 | 0.00% | snmpd |
| 1466 | root | 1 | 96 | 0 | 7408K | 2896K | select | 5:44 | 0.00% | alarmd |
| 7 | root | 1 | -16 | 0 | OK | 12K | client | 5:09 | 0.00% | ifstate notify |
| 1480 | root | 1 | 96 | 0 | 5388K | 2660K | select | 4:29 | 0.00% | ksyncd |
| 12 | root | 1 | -40 | -159 | OK | 12K | WAIT | 4:15 | 0.00% | swi2: netisr 0 |
| 1462 | root | 1 | 96 | 0 | 1836K | 1240K | select | 3:57 | 0.00% | bslockd |
| 55 | root | 1 | -16 | 0 | OK | 12K | - | 3:44 | 0.00% | schedcpu |
| 1392 | root | 1 | 16 | 0 | OK | 12K | bcmsem | 3:37 | 0.00% | bcmLINK.0 |
| 47 | root | 1 | -16 | 0 | OK | 12K | psleep | 3:25 | 0.00% | vmkmemdaemon |
| 36 | root | 1 | 20 | 0 | OK | 12K | syncer | 2:46 | 0.00% | syncer |
| 1484 | root | 1 | 96 | 0 | 7484K | 3428K | select | 2:38 | 0.00% | clksyncd |
| 1616 | root | 1 | 96 | 0 | 4848K | 2848K | select | 2:18 | 0.00% | irsd |
| 1487 | root | 1 | 96 | 0 | 32800K | 6992K | select | 2:10 | 0.00% | smid |
| 1623 | root | 1 | 96 | 0 | 34616K | 5464K | select | 2:01 | 0.00% | dcd |
| 15 | root | 1 | -16 | 0 | OK | 12K | - | 1:59 | 0.00% | yarrow |
| 49 | root | 1 | -16 | 0 | OK | 12K | . | 1:51 | 0.00% | ddostasks |

show system processes extensive (EX9200 Switch)

```
user@switch> show system processes extensive
```

```
last pid: 3372; load averages: 0.02, 0.02, 0.00 up 0+01:42:22 16:39:57
```

```
151 processes: 4 running, 131 sleeping, 1 zombie, 15 waiting
```

```
Mem: 935M Active, 122M Inact, 108M Wired, 838M Cache, 214M Buf, 5872M Free
```

```
Swap: 8192M Total, 8192M Free
```

| PID | USERNAME | THR | PRI | NICE | SIZE | RES | STATE | TIME | WCPU | COMMAND |
|-----|----------|-----|-----|------|------|-----|-------|------|------|---------|
|-----|----------|-----|-----|------|------|-----|-------|------|------|---------|

```

10 root      1 171  52    OK    16K RUN      96:34 92.19% idle
3317 root    1  97   0 40412K 30944K select 0:00  5.13% mgd
3316 root    1  96   0 26672K 20516K select 0:00  3.08% cli
1626 root    2   8  -88   124M 20332K nanslp  3:19  2.39% chassisd
260 root     1  -8   0    OK    16K mdwait  0:16  0.00% md16
19 root     1 -68 -187   OK    16K WAIT    0:12  0.00% irq11: em0 em1
em2*
1642 root    1  96   0  8052K 3936K RUN      0:10  0.00% clksyncd
11 root     1 -20 -139   OK    16K WAIT    0:07  0.00% swi7: clock sio
154 root     1  -8   0    OK    16K mdwait  0:06  0.00% md8
1784 root    1  96   0   98M 33720K select 0:05  0.00% authd
1646 root    1  96   0  7776K 2944K select 0:03  0.00% license-check
1807 root    1  96   0 41340K 9944K select 0:02  0.00% mib2d

```

[...Output truncated...]

show system processes host processes (OCX1100 Switch)

```

user@switch> show system processes host processes
fpc0:
-----
top - 14:14:32 up  2:05,  0 users,  load average: 0.11, 0.39, 0.39
Tasks: 101 total,  1 running, 98 sleeping,  0 stopped,  2 zombie
Cpu(s):  3.1%us,  2.2%sy,  0.0%ni, 94.2%id,  0.4%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:  3881300k total, 2667040k used, 1214260k free,  53232k buffers
Swap:  15620k total,    0k used,  15620k free,  808492k cached

  PID USER      PR  NI  VIRT  RES  SHR  S  %CPU  %MEM    TIME+  COMMAND
2780 root      20   0 1860m 1.5g 3780 S   14 41.7 20:56.05 kvm
1482 bind      20   0 24676 5912 1944 S    2  0.2  0:00.07 named
4631 root      20   0  648m  94m  13m S    2  2.5  4:19.59 dcpfe
9230 root      20   0 15208 1092  832 R    2  0.0  0:00.01 top
   1 root      20   0  4216  660  576 S    0  0.0  2:09.61 init
   2 root      20   0     0     0     0 S    0  0.0  0:00.00 kthreadd
   3 root      20   0     0     0     0 S    0  0.0  0:00.21 ksoftirqd/0
   4 root      20   0     0     0     0 S    0  0.0  0:00.00 kworker/0:0
   5 root       0 -20     0     0     0 S    0  0.0  0:00.00 kworker/0:0H
   7 root      RT   0     0     0     0 S    0  0.0  0:00.52 migration/0
   8 root      20   0     0     0     0 S    0  0.0  0:04.36 rcu_preempt
   9 root      20   0     0     0     0 S    0  0.0  0:00.00 rcu_bh
  10 root      20   0     0     0     0 S    0  0.0  0:00.00 rcu_sched
  11 root      RT   0     0     0     0 S    0  0.0  0:00.53 migration/1

```

[...Output truncated...]

show system processes lcc wide (TX Matrix Routing Matrix)

```

user@host> show system processes lcc 2 wide
lcc2-re0:
-----
  PID  TT  STAT      TIME  COMMAND
   0  ??  DLs      0:00.00  (swapper)
   1  ??  ILs      0:00.10  /sbin/preinit -- (init)
   2  ??  DL       0:00.00  (pagedaemon)
   3  ??  DL       0:00.00  (vmdaemon)
   4  ??  DL       0:00.00  (bufdaemon)
   5  ??  DL       0:00.04  (syncer)
   6  ??  DL       0:00.00  (netdaemon)
   7  ??  IL       0:00.00  (if_pic_listen)
   8  ??  IL       0:00.00  (scs_housekeeping)

```

```

    9  ??  IL    0:00.00  (if_pfe_listen)
   10  ??  DL    0:00.00  (vmuncachedaemon)
   11  ??  SL    0:00.02  (cb_poll)
  172  ??  ILs   0:00.21  mfs -o noauto /dev/ad1s1b /tmp (newfs)
2909  ??  Is    0:00.00  pccardd
2932  ??  Ss    0:00.07  syslogd -r -s
3039  ??  Is    0:00.00  cron
3217  ??  I     0:00.00  /sbin/watchdog -d
3218  ??  I     0:00.02  /usr/sbin/tnetd -N
3221  ??  S     0:00.11  /usr/sbin/alarmd -N
3222  ??  S     0:00.85  /usr/sbin/craftd -N
3223  ??  S     0:00.05  /usr/sbin/mgd -N
3224  ??  I     0:00.02  /usr/sbin/inetd -N
3225  ??  I     0:00.00  /usr/sbin/tnp.snptd -N
3226  ??  I     0:00.01  /usr/sbin/tnp.snptc -N
3228  ??  I     0:00.01  /usr/sbin/smartd -N
3231  ??  I     0:00.01  /usr/sbin/eccd -N
3425  ??  S     0:00.09  /usr/sbin/dfwd -N
3426  ??  S     0:00.19  /sbin/dcd -N
3427  ??  I     0:00.04  /usr/sbin/pfed -N
3430  ??  S     0:00.10  /usr/sbin/ksyncd -N
3482  ??  S     1:53.63  /usr/sbin/chassisd -N
4285  ??  SL    0:00.01  (peer proxy)
4286  ??  SL    0:00.00  (peer proxy)
4303  ??  Ss    0:00.00  mgd: (mgd) (root) (mgd)
4304  ??  R     0:00.00  /bin/ps -ax -ww
3270  d0  Is+   0:00.00  /usr/libexec/getty std.9600 ttyd0

```

show system processes summary

```

user@host> show system processes summary
last pid:  543;  load averages:  0.00,  0.00,  0.00   18:29:47
37 processes:  1 running, 36 sleeping

```

```

Mem: 25M Active, 3976K Inact, 19M Wired, 8346K Buf, 202M Free
Swap: 528M Total, 64K Used, 528M Free

```

| PID | USERNAME | PRI | NICE | SIZE | RES | STATE | TIME | WCPU | CPU | COMMAND |
|-----|----------|-----|------|------|------|--------|------|-------|-------|---------|
| 527 | root | 2 | 0 | 176K | 580K | select | 0:00 | 0.04% | 0.04% | rlogind |
| 543 | root | 30 | 0 | 604K | 768K | RUN | 0:00 | 0.00% | 0.00% | top |

show system processes (TX Matrix Plus Router)

```

user@host> show system processes
sfc0-re0:

```

```

-----
PID  TT  STAT      TIME  COMMAND
  0  ??  WLS      0:00.00  [swapper]
  1  ??  ILs      0:00.18  /packages/mnt/jbase/sbin/init --
  2  ??  DL       0:00.20  [g_event]
  3  ??  DL       0:00.39  [g_up]
  4  ??  DL       0:00.32  [g_down]
  5  ??  DL       0:00.00  [thread taskq]
  6  ??  DL       0:00.09  [kqueue taskq]
  7  ??  DL       0:00.01  [pagedaemon]
  8  ??  DL       0:00.00  [vmdaemon]
  9  ??  DL       0:06.63  [pagezero]
 10  ??  DL       0:00.00  [ktrace]
 11  ??  RL      310:52.98  [idle]
 12  ??  WL       0:11.03  [swi2: net]

```

```

13 ?? WL 0:27.58 [swi7: clock sio]
14 ?? WL 0:00.00 [swi6: vm]
15 ?? DL 0:03.02 [yarrow]
16 ?? WL 0:00.00 [swi9: +]
17 ?? WL 0:00.00 [swi8: +]
18 ?? WL 0:00.00 [swi5: cambio]
19 ?? WL 0:00.00 [swi9: task queue]
20 ?? WL 0:11.41 [irq16: uhci0 uhci*]
21 ?? DL 0:00.00 [usb0]
22 ?? DL 0:00.00 [usbtask]
23 ?? WL 0:39.51 [irq17: uhci1 uhci*]
24 ?? DL 0:00.00 [usb1]
25 ?? WL 0:00.00 [irq18: uhci2 uhci*]
26 ?? DL 0:00.83 [usb2]
27 ?? DL 0:00.00 [usb3]
28 ?? DL 0:00.00 [usb4]
29 ?? DL 0:00.00 [usb5]
30 ?? DL 0:00.73 [usb6]
31 ?? DL 0:00.00 [usb7]
32 ?? WL 0:00.00 [irq14: ata0]
33 ?? WL 0:00.00 [irq15: ata1]
34 ?? WL 0:00.00 [irq1: atkbd0]
35 ?? WL 0:00.00 [swi0: sio]
36 ?? WL 0:00.00 [irq11: isab0]
37 ?? WL 0:00.00 [swi3: ip6opt ipopt]
38 ?? WL 0:00.00 [swi4: ip6mismatch+]
39 ?? WL 0:00.00 [swi1: ipfwd]
40 ?? DL 0:00.02 [bufdaemon]
41 ?? DL 0:00.02 [vnlr]
42 ?? DL 0:00.39 [syncer]
43 ?? DL 0:00.05 [softdepflush]
44 ?? DL 0:00.00 [netdaemon]
45 ?? DL 0:00.02 [vmuncachedaemon]
46 ?? DL 0:00.00 [if_pic_listen]
47 ?? DL 0:00.35 [vmkmemdaemon]
48 ?? DL 0:00.00 [cb_poll]
49 ?? DL 0:00.06 [if_pfe_listen]
50 ?? DL 0:00.00 [scs_housekeeping]
51 ?? IL 0:00.00 [kern_dump_proc]
52 ?? IL 0:00.00 [nfsiod 0]
53 ?? IL 0:00.00 [nfsiod 1]
54 ?? IL 0:00.00 [nfsiod 2]
55 ?? IL 0:00.00 [nfsiod 3]
56 ?? DL 0:00.37 [schedcpu]
57 ?? DL 0:00.56 [md0]
79 ?? DL 0:02.58 [md1]
100 ?? DL 0:00.03 [md2]
118 ?? DL 0:00.01 [md3]
139 ?? DL 0:00.95 [md4]
160 ?? DL 0:00.12 [md5]
181 ?? DL 0:00.00 [md6]
217 ?? DL 0:00.02 [md7]
227 ?? DL 0:00.05 [md8]
1341 ?? SL 0:01.34 [bcmTX]
1342 ?? SL 0:01.68 [bcmXGS3AsyncTX]
1343 ?? SL 0:41.40 [bcmLINK.0]
1345 ?? SL 0:33.83 [bcmLINK.1]
1350 ?? Is 0:00.01 /usr/sbin/cron
1502 ?? S 0:00.01 /sbin/watchdog -t-1
1503 ?? S 0:00.86 /usr/libexec/bslockd -mp -N
1504 ?? S 0:00.01 /usr/sbin/tnetd -N

```

```

1507 ?? S      0:01.32 /usr/sbin/alarmd -N
1508 ?? S      0:14.54 /usr/sbin/craftd -N
1509 ?? S      0:01.19 /usr/sbin/mgd -N
1512 ?? I      0:00.05 /usr/sbin/inetd -N
1513 ?? S      0:00.10 /usr/sbin/tnp.snptd -N
1517 ?? S      0:00.11 /usr/sbin/smartd -N
1525 ?? S      0:01.10 /usr/sbin/idpd -N
1526 ?? S      0:01.43 /usr/sbin/license-check -U -M -p 10 -i 10
1527 ?? I      0:00.01 /usr/libexec/getty Pc ttyv0
1616 ?? DL     0:00.30 [peer proxy]
1617 ?? DL     0:00.32 [peer proxy]
1618 ?? DL     0:00.34 [peer proxy]
1619 ?? DL     0:00.30 [peer proxy]
2391 ?? Is     0:00.01 telnetd
7331 ?? Ss     0:00.03 telnetd
9538 ?? DL     0:01.16 [jsr_kkcm]
9613 ?? DL     0:00.18 [peer proxy]
23781 ?? Ss    0:00.01 telnetd
23926 ?? Ss    0:00.01 mgd: (mgd) (user)/dev/tty2 (mgd)
36867 ?? S      0:03.14 /usr/sbin/rpd -N
36874 ?? S      0:00.08 /usr/sbin/lmpd
36876 ?? S      0:00.17 /usr/sbin/lacpd -N
36877 ?? S      0:00.15 /usr/sbin/bfdd -N
36878 ?? S      0:05.05 /usr/sbin/ppmd -N
36907 ?? S      0:25.07 /usr/sbin/chassisd -N
37775 ?? S      0:00.01 /usr/sbin/bdbrepd -N
45727 ?? S      0:00.02 /usr/sbin/xntpd -j -N -g (ntpd)
45729 ?? S      0:00.38 /usr/sbin/l2ald -N
45730 ?? S<    0:00.12 /usr/sbin/apspd -N
45731 ?? SN     0:00.10 /usr/sbin/sampled -N
45732 ?? S      0:00.03 /usr/sbin/ilmid -N
45733 ?? S      0:00.09 /usr/sbin/rmopd -N
45734 ?? S      0:00.30 /usr/sbin/cosd
45735 ?? I      0:00.00 /usr/sbin/rtspd -N
45736 ?? S      0:00.06 /usr/sbin/fsad -N
45737 ?? S      0:00.05 /usr/sbin/rdd -N
45738 ?? S      0:00.10 /usr/sbin/pppd -N
45739 ?? S      0:00.05 /usr/sbin/dfcd -N
45740 ?? S      0:00.07 /usr/sbin/lfmd -N
45741 ?? S      0:00.01 /usr/sbin/mpiisoamd -N
45742 ?? I      0:00.01 /usr/sbin/sendd -N
45743 ?? S      0:00.08 /usr/sbin/appidd -N
45744 ?? S      0:00.05 /usr/sbin/mspd -N
45745 ?? S      0:00.25 /usr/sbin/jdiameterd -N
45746 ?? S      0:00.10 /usr/sbin/pfed -N
45747 ?? S      0:00.19 /usr/sbin/lpdfd -N
45748 ?? S      0:00.63 /sbin/dcd -N
45750 ?? S      0:00.45 /usr/sbin/mib2d -N
45751 ?? S      0:00.15 /usr/sbin/dfwd -N
45752 ?? S      0:00.15 /usr/sbin/irsd -N
45764 ?? S      0:20.59 /usr/sbin/snmpd -N
56479 ?? Ss    0:00.00 mgd: (mgd) (root) (mgd)
56480 ?? R      0:00.00 /bin/ps -ax
1142 d0- I      0:00.01 /usr/sbin/usbd -N
1160 d0- S      0:29.17 /usr/sbin/eventd -N -r -s -A
6527 d0 Is+    0:00.00 /usr/libexec/getty std.9600 ttyd0
2392 p1 Is     0:00.00 login [pam] (login)
2393 p1 I       0:00.00 -csh (csh)
2394 p1 I       0:00.00 su -
2395 p1 I+      0:00.01 -su (csh)
23782 p2 Is     0:00.00 login [pam] (login)

```

```

23881 p2 I      0:00.00 -csh (csh)
23925 p2 S+    0:00.03 cli
7332  p3 Is    0:00.00 login [pam] (login)
7333  p3 I      0:00.00 -csh (csh)
23780 p3 S+    0:00.02 telnet aj

```

```
lcc0-re0:
```

```

-----
PID  TT  STAT      TIME COMMAND
  0  ??  Wls      0:00.00 [swapper]
  1  ??  ILs      0:00.16 /packages/mnt/jbase/sbin/init --
  2  ??  DL       0:00.01 [g_event]
  3  ??  DL       0:00.16 [g_up]
  4  ??  DL       0:00.11 [g_down]
  5  ??  DL       0:00.00 [thread taskq]
  6  ??  DL       0:00.00 [kqueue taskq]
  7  ??  DL       0:00.00 [pagedaemon]
  8  ??  DL       0:00.00 [vmdaemon]
  9  ??  DL       0:01.77 [pagezero]
10  ??  DL       0:00.00 [ktrace]
11  ??  RL      17:22.31 [idle]
12  ??  WL       0:00.32 [swi2: net]
13  ??  WL       0:01.21 [swi7: clock sio]
14  ??  WL       0:00.00 [swi6: vm]
15  ??  DL       0:00.10 [yarrow]
16  ??  WL       0:00.00 [swi9: +]
17  ??  WL       0:00.00 [swi8: +]
18  ??  WL       0:00.00 [swi5: cambio]
19  ??  WL       0:00.00 [swi9: task queue]
20  ??  WL       0:02.73 [irq10: bcm0 uhci1*]
21  ??  WL       0:00.02 [irq11: cb0 uhci0+*]
22  ??  DL       0:00.00 [usb0]
23  ??  DL       0:00.00 [usbtask]
24  ??  DL       0:00.00 [usb1]
25  ??  DL       0:00.05 [usb2]
26  ??  DL       0:00.00 [usb3]
27  ??  DL       0:00.00 [usb4]
28  ??  DL       0:00.00 [usb5]
29  ??  DL       0:00.04 [usb6]
30  ??  DL       0:00.00 [usb7]
31  ??  WL       0:00.00 [irq14: ata0]
32  ??  WL       0:00.00 [irq15: ata1]
33  ??  WL       0:00.00 [irq1: atkbd0]
34  ??  WL       0:00.00 [swi0: sio]
35  ??  WL       0:00.00 [swi3: ip6opt ipopt]
36  ??  WL       0:00.00 [swi4: ip6mismatch+]
37  ??  WL       0:00.00 [swi1: ipfwd]
38  ??  DL       0:00.00 [bufdaemon]
39  ??  DL       0:00.00 [vn1ru]
40  ??  DL       0:00.01 [syncer]
41  ??  DL       0:00.00 [softdepflush]
42  ??  DL       0:00.00 [netdaemon]
43  ??  DL       0:00.00 [vmuncachedaemon]
44  ??  DL       0:00.00 [if_pic_listen]
45  ??  DL       0:00.02 [vmkmemdaemon]
46  ??  DL       0:00.01 [cb_poll]
47  ??  DL       0:00.00 [if_pfe_listen]
48  ??  DL       0:00.00 [scs_housekeeping]
49  ??  IL       0:00.00 [kern_dump_proc]
50  ??  IL       0:00.00 [nfsiod 0]
51  ??  IL       0:00.00 [nfsiod 1]

```

```

52 ?? IL 0:00.00 [nfsiod 2]
53 ?? IL 0:00.00 [nfsiod 3]
54 ?? DL 0:00.01 [schedcpu]
55 ?? DL 0:00.73 [md0]
77 ?? DL 0:03.54 [md1]
98 ?? DL 0:00.37 [md2]
116 ?? DL 0:00.02 [md3]
137 ?? DL 0:00.56 [md4]
158 ?? DL 0:00.15 [md5]
179 ?? DL 0:00.00 [md6]
215 ?? DL 0:00.03 [md7]
225 ?? DL 0:00.03 [md8]
1078 ?? DL 0:00.00 [jsr_kkcm]
1363 ?? SL 0:00.09 [bcmTX]
1364 ?? SL 0:00.10 [bcmXGS3AsyncTX]
1365 ?? SL 0:03.08 [bcmLINK.0]
1370 ?? Is 0:00.00 /usr/sbin/cron
1522 ?? S 0:00.00 /sbin/watchdog -t-1
1523 ?? S 0:00.05 /usr/libexec/bslockd -mp -N
1524 ?? I 0:00.01 /usr/sbin/tnetd -N
1526 ?? S 0:04.98 /usr/sbin/chassisd -N
1527 ?? S 0:00.04 /usr/sbin/alarmd -N
1528 ?? I 0:00.40 /usr/sbin/craftd -N
1529 ?? S 0:00.08 /usr/sbin/mgd -N
1532 ?? I 0:00.04 /usr/sbin/inetd -N
1533 ?? I 0:00.00 /usr/sbin/tnp.snptd -N
1534 ?? I 0:00.00 /usr/sbin/tnp.snptc -N
1536 ?? S 0:00.01 /usr/sbin/smartd -N
1540 ?? I 0:00.07 /usr/sbin/jcsd -N
1541 ?? S 0:00.11 /usr/sbin/idpd -N
1542 ?? I 0:00.00 /usr/libexec/getty Pc ttyv0
2089 ?? DL 0:00.01 [peer proxy]
2090 ?? DL 0:00.01 [peer proxy]
2091 ?? DL 0:00.01 [peer proxy]
2657 ?? S 0:00.02 /usr/sbin/dfwd -N
2658 ?? S 0:00.02 /sbin/dcd -N
2659 ?? S 0:00.05 /usr/sbin/snmpd -N
2660 ?? S 0:00.01 /usr/sbin/mib2d -N
2661 ?? S 0:00.01 /usr/sbin/pfed -N
2662 ?? S 0:00.01 /usr/sbin/irsd -N
2667 ?? S 0:00.13 /usr/sbin/ksyncd -N
2690 ?? Ss 0:00.00 mgd: (mgd) (root) (mgd)
2691 ?? R 0:00.00 /bin/ps -ax
1164 d0- S 0:00.00 /usr/sbin/usbd -N
1182 d0- S 0:00.34 /usr/sbin/eventd -N -r -s -A
1543 d0 Is+ 0:00.00 /usr/libexec/getty std.9600 ttyd0

```

lcc1-re0:

```

-----
PID TT STAT TIME COMMAND
0 ?? Wls 0:00.00 [swapper]
1 ?? ILs 0:00.17 /packages/mnt/jbase/sbin/init --
2 ?? DL 0:00.01 [g_event]
3 ?? DL 0:00.16 [g_up]
4 ?? DL 0:00.11 [g_down]
5 ?? DL 0:00.00 [thread taskq]
6 ?? DL 0:00.00 [kqueue taskq]
7 ?? DL 0:00.00 [pagedaemon]
8 ?? DL 0:00.00 [vmdaemon]
9 ?? DL 0:01.77 [pagezero]
10 ?? DL 0:00.00 [ktrace]

```

```

11 ?? RL 17:22.83 [idle]
12 ?? WL 0:00.35 [swi2: net]
13 ?? WL 0:01.20 [swi7: clock sio]
14 ?? WL 0:00.00 [swi6: vm]
15 ?? DL 0:00.10 [yarrow]
16 ?? WL 0:00.00 [swi9: +]
17 ?? WL 0:00.00 [swi8: +]
18 ?? WL 0:00.00 [swi5: cambio]
19 ?? WL 0:00.00 [swi9: task queue]
20 ?? WL 0:02.87 [irq10: bcm0 uhci1*]
21 ?? WL 0:00.02 [irq11: cb0 uhci0+*]
22 ?? DL 0:00.00 [usb0]
23 ?? DL 0:00.00 [usbtask]
24 ?? DL 0:00.00 [usb1]
25 ?? DL 0:00.05 [usb2]
26 ?? DL 0:00.00 [usb3]
27 ?? DL 0:00.00 [usb4]
28 ?? DL 0:00.00 [usb5]
29 ?? DL 0:00.04 [usb6]
30 ?? DL 0:00.00 [usb7]
31 ?? WL 0:00.00 [irq14: ata0]
32 ?? WL 0:00.00 [irq15: ata1]
33 ?? WL 0:00.00 [irq1: atkbd0]
34 ?? WL 0:00.00 [swi0: sio]
35 ?? WL 0:00.00 [swi3: ip6opt ipopt]
36 ?? WL 0:00.00 [swi4: ip6mismatch+]
37 ?? WL 0:00.00 [swi1: ipfwd]
38 ?? DL 0:00.00 [bufdaemon]
39 ?? DL 0:00.00 [vn1ru]
40 ?? DL 0:00.01 [syncer]
41 ?? DL 0:00.00 [softdepflush]
42 ?? DL 0:00.00 [netdaemon]
43 ?? DL 0:00.00 [vmuncachedaemon]
44 ?? DL 0:00.00 [if_pic_listen]
45 ?? DL 0:00.02 [vmkmemdaemon]
46 ?? DL 0:00.01 [cb_poll]
47 ?? DL 0:00.00 [if_pfe_listen]
48 ?? DL 0:00.00 [scs_housekeeping]
49 ?? IL 0:00.00 [kern_dump_proc]
50 ?? IL 0:00.00 [nfsiod 0]
51 ?? IL 0:00.00 [nfsiod 1]
52 ?? IL 0:00.00 [nfsiod 2]
53 ?? IL 0:00.00 [nfsiod 3]
54 ?? DL 0:00.02 [schedcpu]
55 ?? DL 0:00.75 [md0]
77 ?? DL 0:03.40 [md1]
98 ?? DL 0:00.37 [md2]
116 ?? DL 0:00.02 [md3]
137 ?? DL 0:00.56 [md4]
158 ?? DL 0:00.15 [md5]
179 ?? DL 0:00.00 [md6]
215 ?? DL 0:00.03 [md7]
225 ?? DL 0:00.03 [md8]
1052 ?? DL 0:00.00 [jsr_kkcm]
1337 ?? SL 0:00.09 [bcmTX]
1338 ?? SL 0:00.10 [bcmXGS3AsyncTX]
1339 ?? SL 0:03.10 [bcmLINK.0]
1344 ?? Is 0:00.00 /usr/sbin/cron
1496 ?? S 0:00.00 /sbin/watchdog -t-1
1497 ?? S 0:00.05 /usr/libexec/bslockd -mp -N
1498 ?? I 0:00.01 /usr/sbin/tnetd -N

```



```

1500 ?? S      0:04.97 /usr/sbin/chassisd -N
1501 ?? S      0:00.04 /usr/sbin/alarmd -N
1502 ?? I      0:00.40 /usr/sbin/craftd -N
1503 ?? S      0:00.08 /usr/sbin/mgd -N
1506 ?? I      0:00.04 /usr/sbin/inetd -N
1507 ?? I      0:00.00 /usr/sbin/tnp.snmpd -N
1508 ?? I      0:00.00 /usr/sbin/tnp.sntpc -N
1510 ?? S      0:00.01 /usr/sbin/smartd -N
1514 ?? I      0:00.07 /usr/sbin/jcsd -N
1515 ?? S      0:00.18 /usr/sbin/idpd -N
1516 ?? I      0:00.00 /usr/libexec/getty Pc ttyv0
2068 ?? DL     0:00.01 [peer proxy]
2069 ?? DL     0:00.01 [peer proxy]
2070 ?? DL     0:00.01 [peer proxy]
2666 ?? S      0:00.02 /sbin/dcd -N
2667 ?? S      0:00.01 /usr/sbin/irsd -N
2668 ?? S      0:00.01 /usr/sbin/pfed -N
2669 ?? S      0:00.05 /usr/sbin/snmpd -N
2670 ?? S      0:00.01 /usr/sbin/mib2d -N
2671 ?? S      0:00.02 /usr/sbin/dfwd -N
2675 ?? S      0:00.13 /usr/sbin/ksyncd -N
2699 ?? Ss     0:00.00 mgd: (mgd) (root) (mgd)
2700 ?? R      0:00.00 /bin/ps -ax
1138 d0- S     0:00.00 /usr/sbin/usbd -N
1156 d0- S     0:00.37 /usr/sbin/eventd -N -r -s -A
1517 d0 Is+    0:00.00 /usr/libexec/getty std.9600 ttyd0

```

lcc2-re0:

```

-----
PID TT  STAT      TIME COMMAND
  0 ??  Wls      0:00.00 [swapper]
  1 ??  ILs      0:00.18 /packages/mnt/jbase/sbin/init --
  2 ??  DL        0:00.01 [g_event]
  3 ??  DL        0:00.17 [g_up]
  4 ??  DL        0:00.12 [g_down]
  5 ??  DL        0:00.00 [thread taskq]
  6 ??  DL        0:00.00 [kqueue taskq]
  7 ??  DL        0:00.00 [pagedaemon]
  8 ??  DL        0:00.00 [vmdaemon]
  9 ??  DL        0:01.77 [pagezero]
 10 ??  DL        0:00.00 [ktrace]
 11 ??  RL       17:19.13 [idle]
 12 ??  WL        0:00.36 [swi2: net]
 13 ??  WL        0:01.20 [swi7: clock sio]
 14 ??  WL        0:00.00 [swi6: vm]
 15 ??  DL        0:00.13 [yarrow]
 16 ??  WL        0:00.00 [swi9: +]
 17 ??  WL        0:00.00 [swi8: +]
 18 ??  WL        0:00.00 [swi5: cambio]
 19 ??  WL        0:00.00 [swi9: task queue]
 20 ??  WL        0:03.03 [irq10: bcm0 uhci1*]
 21 ??  WL        0:00.02 [irq11: cb0 uhci0+*]
 22 ??  DL        0:00.00 [usb0]
 23 ??  DL        0:00.00 [usbtask]
 24 ??  DL        0:00.00 [usb1]
 25 ??  DL        0:00.05 [usb2]
 26 ??  DL        0:00.00 [usb3]
 27 ??  DL        0:00.00 [usb4]
 28 ??  DL        0:00.00 [usb5]
 29 ??  DL        0:00.04 [usb6]
 30 ??  DL        0:00.00 [usb7]

```

```

31 ?? WL 0:00.00 [irq14: ata0]
32 ?? WL 0:00.00 [irq15: ata1]
33 ?? WL 0:00.00 [irq1: atkbd0]
34 ?? WL 0:00.00 [swi0: sio]
35 ?? WL 0:00.00 [swi3: ip6opt ipopt]
36 ?? WL 0:00.00 [swi4: ip6mismatch+]
37 ?? WL 0:00.00 [swi1: ipfwd]
38 ?? DL 0:00.00 [bufdaemon]
39 ?? DL 0:00.00 [vnlr]
40 ?? DL 0:00.01 [syncer]
41 ?? DL 0:00.00 [softdepflush]
42 ?? DL 0:00.00 [netdaemon]
43 ?? DL 0:00.00 [vmuncachedaemon]
44 ?? DL 0:00.00 [if_pic_listen]
45 ?? DL 0:00.02 [vmkmemdaemon]
46 ?? DL 0:00.01 [cb_poll]
47 ?? DL 0:00.00 [if_pfe_listen]
48 ?? DL 0:00.00 [scs_housekeeping]
49 ?? IL 0:00.00 [kern_dump_proc]
50 ?? IL 0:00.00 [nfsiod 0]
51 ?? IL 0:00.00 [nfsiod 1]
52 ?? IL 0:00.00 [nfsiod 2]
53 ?? IL 0:00.00 [nfsiod 3]
54 ?? DL 0:00.02 [schedcpu]
55 ?? DL 0:00.75 [md0]
77 ?? DL 0:03.48 [md1]
98 ?? DL 0:00.59 [md2]
116 ?? DL 0:00.02 [md3]
137 ?? DL 0:00.56 [md4]
158 ?? DL 0:00.15 [md5]
179 ?? DL 0:00.00 [md6]
215 ?? DL 0:00.03 [md7]
225 ?? DL 0:00.03 [md8]
1052 ?? DL 0:00.00 [jsr_kkcm]
1337 ?? SL 0:00.09 [bcmTX]
1338 ?? SL 0:00.10 [bcmXGS3AsyncTX]
1339 ?? SL 0:03.22 [bcmLINK.0]
1344 ?? Is 0:00.00 /usr/sbin/cron
1496 ?? S 0:00.00 /sbin/watchdog -t-1
1497 ?? S 0:00.05 /usr/libexec/bslockd -mp -N
1498 ?? S 0:00.01 /usr/sbin/tinetd -N
1500 ?? R 0:05.17 /usr/sbin/chassisd -N
1501 ?? S 0:00.04 /usr/sbin/alarmd -N
1502 ?? I 0:00.39 /usr/sbin/craftd -N
1503 ?? S 0:00.08 /usr/sbin/mgd -N
1506 ?? I 0:00.05 /usr/sbin/inetd -N
1507 ?? I 0:00.00 /usr/sbin/tnp.snptd -N
1508 ?? I 0:00.00 /usr/sbin/tnp.snptc -N
1510 ?? S 0:00.01 /usr/sbin/smartd -N
1514 ?? I 0:00.07 /usr/sbin/jcsd -N
1515 ?? S 0:00.17 /usr/sbin/idpd -N
1516 ?? I 0:00.00 /usr/libexec/getty Pc ttyv0
2591 ?? DL 0:00.01 [peer proxy]
2592 ?? DL 0:00.01 [peer proxy]
2593 ?? DL 0:00.01 [peer proxy]
2597 ?? DL 0:00.00 [peer proxy]
3192 ?? S 0:00.01 /usr/sbin/irsd -N
3193 ?? S 0:00.05 /usr/sbin/snmpd -N
3194 ?? S 0:00.02 /sbin/dcd -N
3195 ?? S 0:00.01 /usr/sbin/pfed -N
3196 ?? S 0:00.01 /usr/sbin/mib2d -N

```

```

3197 ?? S      0:00.02 /usr/sbin/dfwd -N
3198 ?? S      0:00.13 /usr/sbin/ksyncd -N
3228 ?? Ss     0:00.00 mgd: (mgd) (root) (mgd)
3229 ?? R      0:00.00 /bin/ps -ax
1138 d0- S     0:00.00 /usr/sbin/usbd -N
1156 d0- S     0:00.42 /usr/sbin/eventd -N -r -s -A
1517 d0 Is+    0:00.00 /usr/libexec/getty std.9600 ttyd0
...

```

show system processes sfc (TX Matrix Plus Router)

```

user@host> show system processes sfc 0
sfc0-re0:

```

```

-----
PID  TT  STAT      TIME COMMAND
 0  ??  Wls     0:00.00 [swapper]
 1  ??  SLs     0:00.18 /packages/mnt/jbase/sbin/init --
 2  ??  DL      0:00.20 [g_event]
 3  ??  DL      0:00.39 [g_up]
 4  ??  DL      0:00.32 [g_down]
 5  ??  DL      0:00.00 [thread taskq]
 6  ??  DL      0:00.09 [kqueue taskq]
 7  ??  DL      0:00.01 [pagedaemon]
 8  ??  DL      0:00.00 [vmdaemon]
 9  ??  DL      0:06.63 [pagezero]
10  ??  DL      0:00.00 [ktrace]
11  ??  RL      312:09.00 [idle]
12  ??  WL      0:11.07 [swi2: net]
13  ??  WL      0:27.70 [swi7: clock sio]
14  ??  WL      0:00.00 [swi6: vm]
15  ??  DL      0:03.03 [yarrow]
16  ??  WL      0:00.00 [swi9: +]
17  ??  WL      0:00.00 [swi8: +]
18  ??  WL      0:00.00 [swi5: cambio]
19  ??  WL      0:00.00 [swi9: task queue]
20  ??  WL      0:11.46 [irq16: uhci0 uhci*]
21  ??  DL      0:00.00 [usb0]
22  ??  DL      0:00.00 [usbtask]
23  ??  WL      0:39.63 [irq17: uhci1 uhci*]
24  ??  DL      0:00.00 [usb1]
25  ??  WL      0:00.00 [irq18: uhci2 uhci*]
26  ??  DL      0:00.84 [usb2]
27  ??  DL      0:00.00 [usb3]
28  ??  DL      0:00.00 [usb4]
29  ??  DL      0:00.00 [usb5]
30  ??  DL      0:00.73 [usb6]
31  ??  DL      0:00.00 [usb7]
32  ??  WL      0:00.00 [irq14: ata0]
33  ??  WL      0:00.00 [irq15: ata1]
34  ??  WL      0:00.00 [irq1: atkbd0]
35  ??  WL      0:00.00 [swi0: sio]
36  ??  WL      0:00.00 [irq11: isab0]
37  ??  WL      0:00.00 [swi3: ip6opt ipopt]
38  ??  WL      0:00.00 [swi4: ip6mismatch+]
39  ??  WL      0:00.00 [swi1: ipfwd]
40  ??  DL      0:00.02 [bufdaemon]
41  ??  DL      0:00.02 [vn1ru]
42  ??  DL      0:00.39 [syncer]
43  ??  DL      0:00.05 [softdepflush]
44  ??  DL      0:00.00 [netdaemon]
45  ??  DL      0:00.02 [vmuncachedaemon]

```

```

46 ?? DL 0:00.00 [if_pic_listen]
47 ?? DL 0:00.35 [vmkmemdaemon]
48 ?? DL 0:00.00 [cb_poll]
49 ?? DL 0:00.06 [if_pfe_listen]
50 ?? DL 0:00.00 [scs_housekeeping]
51 ?? IL 0:00.00 [kern_dump_proc]
52 ?? IL 0:00.00 [nfsiod 0]
53 ?? IL 0:00.00 [nfsiod 1]
54 ?? IL 0:00.00 [nfsiod 2]
55 ?? IL 0:00.00 [nfsiod 3]
56 ?? DL 0:00.37 [schedcpu]
57 ?? DL 0:00.56 [md0]
79 ?? DL 0:02.58 [md1]
100 ?? DL 0:00.03 [md2]
118 ?? DL 0:00.01 [md3]
139 ?? DL 0:00.95 [md4]
160 ?? DL 0:00.12 [md5]
181 ?? DL 0:00.00 [md6]
217 ?? DL 0:00.02 [md7]
227 ?? DL 0:00.05 [md8]
1341 ?? SL 0:01.35 [bcmTX]
1342 ?? SL 0:01.69 [bcmXGS3AsyncTX]
1343 ?? SL 0:41.57 [bcmLINK.0]
1345 ?? SL 0:33.97 [bcmLINK.1]
1350 ?? Is 0:00.01 /usr/sbin/cron
1502 ?? S 0:00.01 /sbin/watchdog -t-1
1503 ?? S 0:00.86 /usr/libexec/bslockd -mp -N
1504 ?? I 0:00.01 /usr/sbin/tnetd -N
1507 ?? S 0:01.32 /usr/sbin/alarmd -N
1508 ?? S 0:14.54 /usr/sbin/craftd -N
1509 ?? S 0:01.20 /usr/sbin/mgd -N
1512 ?? S 0:00.05 /usr/sbin/inetd -N
1513 ?? S 0:00.10 /usr/sbin/tnp.sntpd -N
1517 ?? S 0:00.11 /usr/sbin/smartd -N
1525 ?? S 0:01.11 /usr/sbin/idpd -N
1526 ?? S 0:01.43 /usr/sbin/license-check -U -M -p 10 -i 10
1527 ?? I 0:00.01 /usr/libexec/getty Pc ttyv0
1616 ?? DL 0:00.30 [peer proxy]
1617 ?? DL 0:00.32 [peer proxy]
1618 ?? DL 0:00.34 [peer proxy]
1619 ?? DL 0:00.30 [peer proxy]
2391 ?? Is 0:00.01 telnetd
7331 ?? Ss 0:00.03 telnetd
9538 ?? DL 0:01.16 [jsr_kkcm]
9613 ?? DL 0:00.18 [peer proxy]
23781 ?? Ss 0:00.01 telnetd
23926 ?? Ss 0:00.03 mgd: (mgd) (user)/dev/tty2 (mgd)
36867 ?? S 0:03.14 /usr/sbin/rpd -N
36874 ?? S 0:00.08 /usr/sbin/lmpd
36876 ?? S 0:00.17 /usr/sbin/lacpd -N
36877 ?? S 0:00.15 /usr/sbin/bfdd -N
36878 ?? S 0:05.05 /usr/sbin/ppmd -N
36907 ?? S 0:26.63 /usr/sbin/chassisd -N
37775 ?? S 0:00.01 /usr/sbin/bdbrepd -N
45727 ?? S 0:00.02 /usr/sbin/xntpd -j -N -g (ntpd)
45729 ?? S 0:00.40 /usr/sbin/l2ald -N
45730 ?? S< 0:00.13 /usr/sbin/apds -N
45731 ?? SN 0:00.10 /usr/sbin/sampled -N
45732 ?? S 0:00.03 /usr/sbin/ilmid -N
45733 ?? S 0:00.09 /usr/sbin/rmopd -N
45734 ?? S 0:00.31 /usr/sbin/cosd

```

```

45735 ?? I      0:00.00 /usr/sbin/rtspd -N
45736 ?? S      0:00.06 /usr/sbin/fsad -N
45737 ?? S      0:00.05 /usr/sbin/rdd -N
45738 ?? S      0:00.10 /usr/sbin/pppd -N
45739 ?? S      0:00.05 /usr/sbin/dfcd -N
45740 ?? S      0:00.08 /usr/sbin/lfmd -N
45741 ?? S      0:00.01 /usr/sbin/mpiisoamd -N
45742 ?? I      0:00.01 /usr/sbin/sendd -N
45743 ?? S      0:00.08 /usr/sbin/appidd -N
45744 ?? S      0:00.05 /usr/sbin/mspd -N
45745 ?? S      0:00.27 /usr/sbin/jdiameterd -N
45746 ?? S      0:00.10 /usr/sbin/pfed -N
45747 ?? S      0:00.19 /usr/sbin/lpdfd -N
45748 ?? S      0:00.64 /sbin/dcd -N
45750 ?? S      0:00.46 /usr/sbin/mib2d -N
45751 ?? S      0:00.16 /usr/sbin/dfwd -N
45752 ?? S      0:00.15 /usr/sbin/irsd -N
45764 ?? S      0:20.60 /usr/sbin/snmpd -N
56481 ?? Ss     0:00.02 telnetd
56548 ?? Rs     0:00.19 mgd: (mgd) (user)/dev/tty0 (mgd)
56577 ?? Ss     0:00.00 mgd: (mgd) (root) (mgd)
56578 ?? R      0:00.00 /bin/ps -ax
1142 d0- S      0:00.01 /usr/sbin/usbd -N
1160 d0- S      0:29.71 /usr/sbin/eventd -N -r -s -A
6527 d0 Is+    0:00.00 /usr/libexec/getty std.9600 ttyd0
56482 p0 Is     0:00.00 login [pam] (login)
56483 p0 S       0:00.01 -csh (csh)
56547 p0 S+     0:00.02 cli
2392 p1 Is     0:00.00 login [pam] (login)
2393 p1 I       0:00.00 -csh (csh)
2394 p1 I       0:00.00 su -
2395 p1 I+     0:00.01 -su (csh)
23782 p2 Is     0:00.00 login [pam] (login)
23881 p2 I       0:00.00 -csh (csh)
23925 p2 S+    0:00.03 cli
7332 p3 Is     0:00.00 login [pam] (login)
7333 p3 I       0:00.00 -csh (csh)
23780 p3 S+    0:00.02 telnet aj

```

show system processes lcc wide (TX Matrix Plus Routing Matrix)

```

user@host> show system processes lcc 2 wide
lcc2-re0:

```

```

-----
PID  TT  STAT  TIME PROVIDER COMMAND
0   ??  Wls    0:00.00 (null)  [swapper]
1   ??  ILs    0:00.19          /packages/mnt/jbase/sbin/init --
2   ??  DL     0:00.02          [g_event]
3   ??  DL     0:00.19          [g_up]
4   ??  DL     0:00.13          [g_down]
5   ??  DL     0:00.00          [thread taskq]
6   ??  DL     0:00.00          [kqueue taskq]
7   ??  DL     0:00.00          [pagedaemon]
8   ??  DL     0:00.00          [vmdaemon]
9   ??  DL     0:01.77          [pagezero]
10  ??  DL     0:00.00          [ktrace]
11  ??  RL     20:33.81          [idle]
12  ??  WL     0:00.38          [swi2: net]
13  ??  WL     0:01.43          [swi7: clock sio]
14  ??  WL     0:00.00          [swi6: vm]
15  ??  DL     0:00.14          [yarrow]

```

| | | | | |
|------|----|----|---------|-----------------------------|
| 16 | ?? | WL | 0:00.00 | [swi9: +] |
| 17 | ?? | WL | 0:00.00 | [swi8: +] |
| 18 | ?? | WL | 0:00.00 | [swi5: cambio] |
| 19 | ?? | WL | 0:00.00 | [swi9: task queue] |
| 20 | ?? | WL | 0:03.18 | [irq10: bcm0 uhci1*] |
| 21 | ?? | WL | 0:00.03 | [irq11: cb0 uhci0+*] |
| 22 | ?? | DL | 0:00.00 | [usb0] |
| 23 | ?? | DL | 0:00.00 | [usbtask] |
| 24 | ?? | DL | 0:00.00 | [usb1] |
| 25 | ?? | DL | 0:00.06 | [usb2] |
| 26 | ?? | DL | 0:00.00 | [usb3] |
| 27 | ?? | DL | 0:00.00 | [usb4] |
| 28 | ?? | DL | 0:00.00 | [usb5] |
| 29 | ?? | DL | 0:00.05 | [usb6] |
| 30 | ?? | DL | 0:00.00 | [usb7] |
| 31 | ?? | WL | 0:00.00 | [irq14: ata0] |
| 32 | ?? | WL | 0:00.00 | [irq15: ata1] |
| 33 | ?? | WL | 0:00.00 | [irq1: atkbd0] |
| 34 | ?? | WL | 0:00.00 | [swi0: sio] |
| 35 | ?? | WL | 0:00.00 | [swi3: ip6opt ipopt] |
| 36 | ?? | WL | 0:00.00 | [swi4: ip6mismatch+] |
| 37 | ?? | WL | 0:00.00 | [swi1: ipfwd] |
| 38 | ?? | DL | 0:00.00 | [bufdaemon] |
| 39 | ?? | DL | 0:00.00 | [vn1ru] |
| 40 | ?? | DL | 0:00.02 | [syncer] |
| 41 | ?? | DL | 0:00.01 | [softdepflush] |
| 42 | ?? | DL | 0:00.00 | [netdaemon] |
| 43 | ?? | DL | 0:00.00 | [vmuncachedaemon] |
| 44 | ?? | DL | 0:00.00 | [if_pic_listen] |
| 45 | ?? | DL | 0:00.03 | [vmkmemdaemon] |
| 46 | ?? | DL | 0:00.01 | [cb_poll] |
| 47 | ?? | DL | 0:00.00 | [if_pfe_listen] |
| 48 | ?? | DL | 0:00.00 | [scs_housekeeping] |
| 49 | ?? | IL | 0:00.00 | [kern_dump_proc] |
| 50 | ?? | IL | 0:00.00 | [nfsiod 0] |
| 51 | ?? | IL | 0:00.00 | [nfsiod 1] |
| 52 | ?? | IL | 0:00.00 | [nfsiod 2] |
| 53 | ?? | IL | 0:00.00 | [nfsiod 3] |
| 54 | ?? | DL | 0:00.02 | [schedcpu] |
| 55 | ?? | DL | 0:00.75 | [md0] |
| 77 | ?? | DL | 0:03.84 | [md1] |
| 98 | ?? | DL | 0:00.59 | [md2] |
| 116 | ?? | DL | 0:00.02 | [md3] |
| 137 | ?? | DL | 0:00.72 | [md4] |
| 158 | ?? | DL | 0:00.15 | [md5] |
| 179 | ?? | DL | 0:00.00 | [md6] |
| 215 | ?? | DL | 0:00.03 | [md7] |
| 225 | ?? | DL | 0:00.03 | [md8] |
| 1052 | ?? | DL | 0:00.00 | [jsr_kkcm] |
| 1337 | ?? | SL | 0:00.11 | [bcmTX] |
| 1338 | ?? | SL | 0:00.12 | [bcmXGS3AsyncTX] |
| 1339 | ?? | SL | 0:03.82 | [bcmLINK.0] |
| 1344 | ?? | Is | 0:00.00 | /usr/sbin/cron |
| 1496 | ?? | I | 0:00.00 | /sbin/watchdog -t-1 |
| 1497 | ?? | S | 0:00.06 | /usr/libexec/bslockd -mp -N |
| 1498 | ?? | I | 0:00.01 | /usr/sbin/tnetd -N |
| 1500 | ?? | S | 0:09.93 | /usr/sbin/chassisd -N |
| 1501 | ?? | S | 0:00.05 | /usr/sbin/alarmd -N |
| 1502 | ?? | I | 0:00.39 | /usr/sbin/craftd -N |
| 1503 | ?? | S | 0:00.09 | /usr/sbin/mgd -N |
| 1506 | ?? | I | 0:00.05 | /usr/sbin/inetd -N |

```

1507 ?? I      0:00.00      /usr/sbin/tnp.sntpd -N
1508 ?? I      0:00.00      /usr/sbin/tnp.sntpc -N
1510 ?? S      0:00.01      /usr/sbin/smartd -N
1514 ?? I      0:00.07      /usr/sbin/jcsd -N
1515 ?? S      0:00.17      /usr/sbin/idpd -N
1516 ?? I      0:00.00      /usr/libexec/getty Pc ttyv0
2591 ?? DL     0:00.01      [peer proxy]
2592 ?? DL     0:00.01      [peer proxy]
2593 ?? DL     0:00.01      [peer proxy]
2597 ?? DL     0:00.01      [peer proxy]
3192 ?? S      0:00.02      /usr/sbin/irsd -N
3193 ?? S      0:00.05      /usr/sbin/snmpd -N
3194 ?? S      0:00.04      /sbin/dcd -N
3195 ?? I      0:00.01      /usr/sbin/pfed -N
3196 ?? S      0:00.02      /usr/sbin/mib2d -N
3197 ?? I      0:00.03      /usr/sbin/dfwd -N
3198 ?? S      0:00.15      /usr/sbin/ksyncd -N
3559 ?? Ss     0:00.00      mgd: (mgd) (root) (mgd)
3560 ?? R      0:00.00      /bin/ps -ax -Jpww
1138 d0- S      0:00.00      /usr/sbin/usbd -N
1156 d0- S      0:00.50      /usr/sbin/eventd -N -r -s -A
1517 d0 Is+    0:00.00      /usr/libexec/getty std.9600 ttyd0

```

show system processes (QFX Series and OCX Series)

```

user@switch> show system processes
PID TT STAT      TIME COMMAND
  0 ?? Wls    -2341043:-31.01 [swapper]
  1 ?? SLs     0:01.34 /packages/mnt/jbase/sbin/init --
  2 ?? DL      2:48.31 [g_event]
  3 ?? DL      1:47.44 [g_up]
  4 ?? DL      1:37.82 [g_down]
  5 ?? DL      0:00.00 [kdm_tcp_poller]
  6 ?? DL      0:00.00 [thread taskq]
  7 ?? DL      0:04.86 [kqueue taskq]
  9 ?? DL      0:03.94 [pagedaemon]
 10 ?? DL      0:00.00 [ktrace]
 11 ?? RL      0:00.00 [idle: cpu31]
 12 ?? RL      0:00.00 [idle: cpu30]
 13 ?? RL      0:00.00 [idle: cpu29]
 14 ?? RL      0:00.00 [idle: cpu28]
 15 ?? RL      0:00.00 [idle: cpu27]
 16 ?? RL      0:00.00 [idle: cpu26]
 17 ?? RL      0:00.00 [idle: cpu25]
 18 ?? RL      0:00.00 [idle: cpu24]
 19 ?? RL      0:00.00 [idle: cpu23]
 20 ?? RL      0:00.00 [idle: cpu22]
 21 ?? RL      0:00.00 [idle: cpu21]
 22 ?? RL      0:00.00 [idle: cpu20]
 23 ?? RL      0:00.00 [idle: cpu19]
 24 ?? RL      0:00.00 [idle: cpu18]
 25 ?? RL      0:00.00 [idle: cpu17]
 26 ?? RL      0:00.00 [idle: cpu16]
 27 ?? RL      0:00.00 [idle: cpu15]
 28 ?? RL      0:00.00 [idle: cpu14]
 29 ?? RL      0:00.00 [idle: cpu13]
 30 ?? RL      0:00.00 [idle: cpu12]
 31 ?? RL      0:00.00 [idle: cpu11]
 32 ?? RL      0:00.00 [idle: cpu10]
 33 ?? RL      0:00.00 [idle: cpu9]
 34 ?? RL      18184:07.25 [idle: cpu8]

```

```

35 ?? RL      0:00.00 [idle: cpu7]
36 ?? RL    17862:11.31 [idle: cpu6]
37 ?? RL    19343:45.16 [idle: cpu5]
38 ?? RL    5192:38.30 [idle: cpu4]
39 ?? RL      0:00.00 [idle: cpu3]
40 ?? RL    19278:02.24 [idle: cpu2]
41 ?? RL    19291:00.72 [idle: cpu1]
42 ?? RL    18910:31.21 [idle: cpu0]
43 ?? WL     19:03.74 [swi2: net]
44 ?? WL    261:43.82 [swi7: clock sio]
45 ?? WL      0:00.00 [swi6: vm]
46 ?? DL     2:18.57 [yarrow]
47 ?? WL      0:00.00 [swi9: +]
48 ?? WL      0:00.00 [swi8: +]
49 ?? WL     0:12.36 [swi5: cambio]
50 ?? WL      0:00.00 [swi9: task queue]
51 ?? WL      0:00.00 [swi0: sio]
52 ?? WL     0:32.40 [irq39: ehci0]
53 ?? DL      0:00.21 [usb0]
54 ?? DL      0:00.00 [usbtask]
55 ?? WL      0:00.00 [irq22: xlr_lbus0]
56 ?? WL      0:00.00 [irq38: xlr_lbus0]
57 ?? WL      0:00.00 [swi3: ip6opt ipopt]
58 ?? WL      0:00.00 [swi4: ip6mismatch+]
59 ?? WL      0:00.00 [swi1: ipfwd]
60 ?? DL     0:18.65 [pagezero]
61 ?? DL     0:18.59 [bufdaemon]
62 ?? DL     1:10.44 [vnlr_u_mem]
63 ?? DL     1:51.66 [syncer]
64 ?? DL     0:20.22 [vnlr_u]
65 ?? DL     0:40.48 [softdepflush]
66 ?? DL      0:00.00 [netdaemon]
67 ?? DL    20:47.67 [vmkmemdaemon]
68 ?? DL      0:00.00 [if_pfe_listen]
69 ?? SL     0:02.80 [kdm_checkkcore]
70 ?? SL     0:03.34 [kdm_savekcore]
71 ?? SL     0:04.31 [kdm_livekcore]
72 ?? SL     0:06.14 [kdm_logger]
73 ?? SL     0:04.31 [kdm_kdb]
74 ?? SL     0:00.02 [devrt_kernel_thread]
75 ?? DL     0:21.54 [vmuncachedaemon]
76 ?? DL      0:00.00 [if_pic_listen0]
77 ?? SL      0:00.00 [nfsiod 0]
78 ?? SL      0:00.00 [nfsiod 1]
79 ?? SL      0:00.00 [nfsiod 2]
80 ?? SL      0:00.00 [nfsiod 3]
81 ?? WL     5:59.98 [irq13: +]
82 ?? RL    105:06.81 [pkt_sender: cpu0]
83 ?? DL     0:03.62 [md0]
95 ?? DL     0:37.04 [md1]
115 ?? DL     0:06.01 [md2]
135 ?? DL     0:00.75 [md3]
155 ?? DL     0:21.17 [md4]
175 ?? DL     0:01.90 [md5]
195 ?? DL     0:06.26 [md6]
231 ?? DL     0:00.01 [md7]
755 ?? Ss     0:04.17 /usr/sbin/cron
847 ?? S       0:00.10 /usr/sbin/tinetd -N
849 ?? S       0:06.82 /usr/sbin/mgd -N
850 ?? S       0:00.32 /usr/sbin/inetd -N
852 ?? S       1:05.34 /usr/sbin/dhcpd -N

```



```

853 ?? S      0:00.18 /usr/sbin/inetd -p /var/run/inetd_4.pid -N -JU __juni
855 ?? L 1181:02.21 /usr/sbin/dc-pfe -N (pafxpc)
857 ?? S      17:55.86 /usr/sbin/vccpd -N
896 ?? S      93:43.45 /usr/sbin/chassism -N
953 ?? S      0:02.89 /sbin/watchdog -t-1
954 ?? S      3:34.00 /sbin/dcd -N
955 ?? S     10:30.13 /usr/sbin/chassisd -N
956 ?? DL     0:00.21 [peer proxy]
957 ?? S      4:07.43 /usr/sbin/alarmd -N
958 ?? S      0:31.69 /usr/sbin/craftd -N
959 ?? S      0:55.16 /usr/sbin/mib2d -N
960 ?? S      3:40.64 /usr/sbin/rpd -N
961 ?? S      0:00.03 /usr/sbin/tnp.snmpd -N
962 ?? S      0:51.94 /usr/sbin/pfed -N
963 ?? S      0:47.31 /usr/sbin/rmopd -N
964 ?? S      0:33.65 /usr/sbin/cosd
965 ?? S      1:48.41 /usr/sbin/ppmd -N
966 ?? S      0:07.18 /usr/sbin/dfwd -N
967 ?? S      1:02.56 /usr/sbin/bfdd -N
968 ?? S      0:00.63 /usr/sbin/rdd -N
969 ?? S      0:40.61 /usr/sbin/dfcd -N
971 ?? S      0:07.81 /usr/sbin/bdbrepd -N
972 ?? S      0:00.28 /usr/sbin/sendd -N
973 ?? S      1:37.69 /usr/sbin/xntpd -j -N -g -JU __example_process4__ (nt
974 ?? S      5:56.28 /usr/sbin/snmpd -N -JU __example_process4__
975 ?? S     16:46.82 /usr/sbin/jdiameterd -N
976 ?? S      2:34.13 /usr/sbin/eswd -N
977 ?? S      1:03.05 /usr/sbin/sflowd -N
978 ?? S      0:22.30 /usr/sbin/fcd -N
979 ?? S      1:07.01 /usr/sbin/vccpdf -N
982 ?? S      0:25.25 /usr/sbin/mcsnoopd -N
983 ?? S      3:45.68 /usr/sbin/rpdf -N
1043 ?? S      0:37.87 /usr/sbin/lacpd -N
1048 ?? DL     0:01.29 [peer proxy]
1111 ?? WL     0:00.00 [swi2: FMNITHRD+]
1112 ?? DL     0:00.03 [peer proxy]
12816 ?? S     15:35.32 /usr/sbin/sfid -N
30893 ?? Ss     0:00.65 sshd: tlewis@tty0 (sshd)
30897 ?? Ss     0:00.15 mgd: (mgd) (tlewis)/dev/tty0 (mgd)
30905 ?? Ss     0:00.64 sshd: tlewis@tty1 (sshd)
30909 ?? Ss     0:00.15 mgd: (mgd) (tlewis)/dev/tty1 (mgd)
30910 ?? Ss     0:01.26 sshd: tcheng@tty2 (sshd)
30914 ?? Ss     0:00.80 mgd: (mgd) (tcheng)/dev/tty2 (mgd)
30937 ?? R      0:00.03 /bin/ps -ax
    661 d0- S      0:21.24 /usr/sbin/eventd -N -r -s -A
    860 d0 Ss+     0:00.07 /usr/libexec/getty std.9600 ttyd0
30896 p0 Ss+     0:00.55 -cli (cli)
30908 p1 Ss+     0:00.50 -cli (cli)
30913 p2 Ss+     0:00.85 -cli (cli)

```

show system queues

| | |
|--------------------------------|--|
| List of Syntax | Syntax on page 544 |
| | Syntax (TX Matrix Router) on page 544 |
| | Syntax (TX Matrix Plus Router) on page 544 |
| | Syntax (MX Series Router) on page 544 |
| Syntax | show system queues |
| Syntax (TX Matrix Router) | show system queues <all-chassis all-lcc lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | show system queues <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > |
| Syntax (MX Series Router) | show system queues <all-members> <local> <member <i>member-id</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. |
| Description | Display queue statistics. |
| Options | all-chassis —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system queue statistics for all the T640 routers in the chassis that are connected to the TX Matrix router. On a TX Matrix Plus router, display system queue statistics for all the T1600 or T4000 routers in the chassis that are connected to the TX Matrix Plus router. |
| | all-lcc —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system queue statistics for all LCC chassis attached to the TX Matrix or TX Matrix Plus router. |
| | all-members —(MX Series routers only) (Optional) Display system queue statistics for all members of the Virtual Chassis configuration. |
| | lcc <i>number</i> —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system queue statistics for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system queue statistics for a specific connected router that is connected to the TX Matrix Plus router. |

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

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

local—(MX Series routers only) (Optional) Display system queue statistics for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display system queue statistics for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

scc—(TX Matrix routers only) (Optional) Display queue statistics for the TX Matrix router.

sfc *number*—(TX Matrix Plus routers only) (Optional) Display system queue statistics for the TX Matrix Plus router. Replace *number* with 0.

| | |
|---------------------------------|--|
| Additional Information | By default, when you issue the show system queues command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix. |
| Required Privilege Level | maintenance |
| Related Documentation | <ul style="list-style-type: none"> • Routing Matrix with a TX Matrix Plus Router Solutions Page |
| List of Sample Output | show system queues on page 546 show system queues scc (TX Matrix Router) on page 546 show system queues sfc (TX Matrix Router) on page 547 |
| Output Fields | Table 15 on page 546 lists the output fields for the show system queues command. Output fields are listed in the approximate order in which they appear. |

Table 15: show system queues Output Fields

| Field Name | Field Description |
|-------------------------|---|
| Output interface | Interface on the router on which the queue exists: <ul style="list-style-type: none"> • fxp0—Management Ethernet interface • fxp1—Internal Ethernet interface • lsi—Internally generated interface and not configurable • dsc—Discard interface |
| bytes | Number of bytes in the queue. |
| max | Maximum number of bytes allowed in the queue. |
| packets | Number of packets in the queue. |
| max | Maximum number of packets allowed in the queue. |
| drops | Number of packets dropped from the queue. |

Sample Output

show system queues

```

user@host> show system queues
output interface      bytes      max  packets      max  drops
fxp0                  0    1250000        0    4166        6
fxp1                  0    1250000        0    4166       19
lsi                   0      12500        0      41         0
dsc                   0         0         0         0         0

```

show system queues scc (TX Matrix Router)

```

user@host> show system queues scc
output interface      bytes      max  packets      max  drops
fxp0                  0    1250000        0    4166        5
lsi                   0      12500        0      41         0
dsc                   0         0         0         0         0
lo0                   0         0         0         0         0
bcm0                  0    12500000        0    30000        0
em0                   0    12500000        0    30000        0
gre                   0      12500        0      41         0
ipip                  0      12500        0      41         0
tap                   0         0         0         0         0
pime                  0      12500        0      41         0
pimd                  0      12500        0      41         0
mtun                  0      12500        0      41         0
so-1/0/0              0      125000        0     416         0
so-1/1/0              0      125000        0     416         0
so-21/0/0             0      125000        0     416         0
ge-21/1/0             0    12500000        0    4166         0
ge-21/1/1             0    12500000        0    4166         3
ge-21/2/0             0    12500000        0    4166         0
ge-21/2/1             0    12500000        0    4166         3
so-21/3/0             0      125000        0     416         0

```

| | | | | | |
|----------------|-------|---------|---------|------|-------|
| so-0/0/0 | 0 | 125000 | 0 | 416 | 0 |
| so-0/1/0 | 0 | 125000 | 0 | 416 | 0 |
| so-0/2/0 | 0 | 125000 | 0 | 416 | 0 |
| pd-0/3/0 | 0 | 12500 | 0 | 41 | 0 |
| pe-0/3/0 | 0 | 12500 | 0 | 41 | 0 |
| gr-0/3/0 | 0 | 12500 | 0 | 41 | 0 |
| ip-0/3/0 | 0 | 12500 | 0 | 41 | 0 |
| vt-0/3/0 | 0 | 12500 | 0 | 41 | 0 |
| mt-0/3/0 | 0 | 12500 | 0 | 41 | 0 |
| lt-0/3/0 | 0 | 12500 | 0 | 41 | 0 |
| so-17/0/0 | 0 | 125000 | 0 | 416 | 0 |
| input protocol | bytes | max | packets | max | drops |
| sp1fwdq | 0 | 1000000 | 0 | 1000 | 0 |
| sp1netq | 0 | 1000000 | 0 | 1000 | 0 |
| arpintrq | 0 | 1000 | 0 | 50 | 0 |
| optionq | 0 | 200000 | 0 | 200 | 0 |
| icmpq | 0 | 50000 | 0 | 50 | 0 |
| frlmiq | 0 | 0 | 0 | 0 | 0 |
| spppintrq | 0 | 25000 | 0 | 250 | 0 |
| clnlintrq | 0 | 200000 | 0 | 200 | 0 |
| tnpintrq | 0 | 1250000 | 0 | 4166 | 0 |
| tagintrq | 0 | 200000 | 0 | 200 | 0 |
| tagfragq | 0 | 200000 | 0 | 200 | 0 |

show system queues sfc (TX Matrix Router)

```
user@host> show system queues sfc 0
sfc0-re0:
```

| output interface | bytes | max | packets | max | drops |
|------------------|-------|-----------|---------|-------|-------|
| ixgbe1 | 0 | 125000000 | 0 | 45000 | 4384 |
| ixgbe0 | 0 | 125000000 | 0 | 45000 | 0 |
| lsi | 0 | 12500 | 0 | 41 | 0 |
| dsc | 0 | 0 | 0 | 0 | 0 |
| lo0 | 0 | 0 | 0 | 0 | 0 |
| em0 | 0 | 12500000 | 0 | 41666 | 1 |
| gre | 0 | 12500 | 0 | 41 | 0 |
| ipip | 0 | 12500 | 0 | 41 | 0 |
| tap | 0 | 0 | 0 | 0 | 0 |
| pime | 0 | 12500 | 0 | 41 | 0 |
| pimd | 0 | 12500 | 0 | 41 | 0 |
| mtun | 0 | 12500 | 0 | 41 | 0 |
| xe-12/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-12/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-12/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-12/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-12/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-12/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-12/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-12/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-20/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-20/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-20/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-20/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-20/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-20/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-20/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-20/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-15/0/0 | 0 | 1250000 | 0 | 4166 | 75 |
| ge-15/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-15/0/2 | 0 | 1250000 | 0 | 4166 | 75 |

| | | | | | |
|-----------|---|---------|---|------|----|
| ge-15/0/3 | 0 | 1250000 | 0 | 4166 | 75 |
| ge-15/0/4 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-15/0/5 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-15/0/6 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-15/0/7 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-15/0/8 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-15/0/9 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-4/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-4/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-4/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-4/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-4/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-4/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-4/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-4/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-24/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-24/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-24/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-24/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-24/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-24/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-24/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-24/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/3 | 0 | 1250000 | 0 | 4166 | 75 |
| ge-7/0/4 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/5 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/6 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/7 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/8 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-7/0/9 | 0 | 1250000 | 0 | 4166 | 0 |
| so-7/1/0 | 0 | 125000 | 0 | 416 | 0 |
| so-7/2/0 | 0 | 125000 | 0 | 416 | 0 |
| xe-21/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-21/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-21/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-21/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-21/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-21/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-21/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-21/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-14/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-14/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-14/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-14/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-14/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-14/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-14/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-14/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-25/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-25/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-25/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-25/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-25/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-25/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-25/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-25/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| so-22/0/0 | 0 | 125000 | 0 | 416 | 0 |
| so-22/0/1 | 0 | 125000 | 0 | 416 | 0 |

| | | | | | |
|-----------|---|---------|---|------|----|
| so-22/0/2 | 0 | 125000 | 0 | 416 | 0 |
| so-22/0/3 | 0 | 125000 | 0 | 416 | 0 |
| xe-22/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-22/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-22/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-22/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-6/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-6/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-6/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-6/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-6/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-6/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-6/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-6/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-26/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-26/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-26/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-26/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-26/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-26/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-26/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-26/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-31/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-31/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-31/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-31/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-31/0/4 | 0 | 1250000 | 0 | 4166 | 75 |
| ge-31/0/5 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-31/0/6 | 0 | 1250000 | 0 | 4166 | 75 |
| ge-31/0/7 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-31/0/8 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-31/0/9 | 0 | 1250000 | 0 | 4166 | 0 |
| pd-31/1/0 | 0 | 12500 | 0 | 41 | 0 |
| pe-31/1/0 | 0 | 12500 | 0 | 41 | 0 |
| gr-31/1/0 | 0 | 12500 | 0 | 41 | 0 |
| ip-31/1/0 | 0 | 12500 | 0 | 41 | 0 |
| vt-31/1/0 | 0 | 12500 | 0 | 41 | 0 |
| mt-31/1/0 | 0 | 12500 | 0 | 41 | 0 |
| lt-31/1/0 | 0 | 12500 | 0 | 41 | 0 |
| so-29/0/0 | 0 | 125000 | 0 | 416 | 0 |
| so-29/0/1 | 0 | 125000 | 0 | 416 | 0 |
| so-29/0/2 | 0 | 125000 | 0 | 416 | 0 |
| so-29/0/3 | 0 | 125000 | 0 | 416 | 0 |
| xe-29/1/0 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-29/1/1 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-29/1/2 | 0 | 1250000 | 0 | 4166 | 0 |
| xe-29/1/3 | 0 | 1250000 | 0 | 4166 | 0 |
| so-28/0/0 | 0 | 125000 | 0 | 416 | 0 |
| so-28/0/1 | 0 | 125000 | 0 | 416 | 0 |
| so-28/0/2 | 0 | 125000 | 0 | 416 | 0 |
| so-28/0/3 | 0 | 125000 | 0 | 416 | 0 |
| ge-23/0/0 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/1 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/2 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/3 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/4 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/5 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/6 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/7 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/8 | 0 | 1250000 | 0 | 4166 | 0 |
| ge-23/0/9 | 0 | 1250000 | 0 | 4166 | 0 |

| input protocol | bytes | max | packets | max | drops |
|----------------|-------|---------|---------|------|-------|
| splfwdq | 0 | 1000000 | 0 | 1000 | 0 |
| splnetq | 0 | 1000000 | 0 | 1000 | 0 |
| arpintrq | 0 | 1000 | 0 | 50 | 0 |
| optionq | 0 | 200000 | 0 | 200 | 0 |
| icmpq | 0 | 50000 | 0 | 50 | 0 |
| frlmiq | 0 | 0 | 0 | 0 | 0 |
| spppintrq | 0 | 25000 | 0 | 250 | 0 |
| atmctlpktq | 0 | 0 | 0 | 0 | 0 |
| atmoamq | 0 | 0 | 0 | 0 | 0 |
| tnpintrq | 0 | 1250000 | 0 | 4166 | 0 |
| tagintrq | 0 | 200000 | 0 | 200 | 0 |
| tagfragq | 0 | 200000 | 0 | 200 | 0 |

show system reboot

| | |
|---|---|
| List of Syntax | Syntax on page 551 Syntax (EX Series Switches) on page 551 Syntax (TX Matrix Router) on page 551 Syntax (TX Matrix Plus Router) on page 551 Syntax (MX Series Router) on page 551 Syntax (QFX Series and OCX Series) on page 551 |
| Syntax | show system reboot <both-routing-engines> |
| Syntax (EX Series Switches) | show system reboot <all-members> <both-routing-engines> <local> <member <i>member-id</i> > |
| Syntax (TX Matrix Router) | show system reboot <all-chassis all-lcc lcc <i>number</i> scc> <both-routing-engines> |
| Syntax (TX Matrix Plus Router) | show system reboot <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > <both-routing-engines> |
| Syntax (MX Series Router) | show system reboot <all-members> <both-routing-engines> <local> <member <i>member-id</i> > |
| Syntax (QFX Series and OCX Series) | show system reboot <both-routing-engines> <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-device <i>name</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Display pending system reboots or halts. |
| Options | none —Display pending reboots or halts on the active Routing Engine. |

all-chassis—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display halt or reboot request information for all the T640 routers in the chassis that are connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for all the T1600 or T4000 routers in the chassis that are connected to the TX Matrix Plus router.

all-members—(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for all members of the Virtual Chassis configuration.

all-lcc—(TX Matrix routers and TX Matrix Plus router only) (Optional) On a TX Matrix router, display system halt or reboot request information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for all connected T1600 or T4000 LCCs.

both-routing-engines—(Systems with multiple Routing Engines) (Optional) Display halt or reboot request information on both Routing Engines.

infrastructure *name*—(QFabric systems only) (Optional) Display reboot request information on the fabric manager Routing Engines and fabric control Routing Engines.

interconnect-device *name*—(QFabric systems only) (Optional) Display reboot request information on the Interconnect device.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display halt or reboot request information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display halt or reboot request information for a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Display halt or reboot request information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

node-group *name*—(QFabric systems only) (Optional) Display reboot request information on the Node group.

scc—(TX Matrix router only) (Optional) Display halt or reboot request information for the TX Matrix router (or switch-card chassis).

sfc—(TX Matrix Plus router only) (Optional) Display halt or reboot request information for the TX Matrix Plus router.

Additional Information By default, when you issue the **show system reboot** command on a TX Matrix or TX Matrix Plus master Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) master Routing Engines connected to it. Likewise, if you issue the same command on the TX Matrix or TX Matrix Plus backup Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) backup Routing Engines that are connected to it.

Required Privilege Level maintenance

Related Documentation • [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output [show system reboot on page 553](#)
[show system reboot all-lcc \(TX Matrix Router\) on page 553](#)
[show system reboot sfc \(TX Matrix Plus Router\) on page 553](#)
[show system reboot \(QFX3500 Switch\) on page 554](#)

Sample Output

show system reboot

```
user@host> show system reboot
reboot requested by root at Wed Feb 10 17:40:46 1999
[process id 17885]
```

show system reboot all-lcc (TX Matrix Router)

```
user@host> show system reboot all-lcc
lcc0-re0:
```

```
-----
No shutdown/reboot scheduled.
```

```
lcc2-re0:
```

```
-----
No shutdown/reboot scheduled.
```

show system reboot sfc (TX Matrix Plus Router)

```
user@host> show system sfc 0
No shutdown/reboot scheduled.
```

show system reboot (QFX3500 Switch)

```
user@switch> show system reboot
No shutdown/reboot scheduled.
```

show system rollback

Syntax `show system rollback number`
`<compare number>`

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
 Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches.
 Command introduced in Junos OS Release 11.1 for the QFX Series.

Description Display the contents of a previously committed configuration, or the differences between two previously committed configurations.



NOTE: The `show system rollback` command is a purely operational mode command and cannot be issued with `run` from the configuration mode.

Options *number*—Number of a configuration to view. The output displays the configuration. The range of values is 0 through 49.

compare number —(Optional) Number of another previously committed (rollback) configuration to compare to rollback *number*. The output displays the differences between the two configurations. The range of values is 0 through 49.

Required Privilege Level view

List of Sample Output [show system rollback compare on page 555](#)

Sample Output

show system rollback compare

```
user@host> show system rollback 3 compare 1
[edit]
+ interfaces {
+   ge-1/1/1 {
+     unit 0 {
+       family inet {
+         filter {
+           input mf_plp;
+         }
+         address 10.1.1.1/10;
+       }
+     }
+   }
+   ge-1/2/1 {
+     unit 0 {
+       family inet {
+         filter {
```

```
+             input mf_plp;
+         }
+         address 10.1.1.1/10;
+     }
+ }
+ ge-1/3/0 {
+     unit 0 {
+         family inet {
+             filter {
+                 input mf_plp;
+             }
+             address 10.1.1.1/10;
+         }
+     }
+ }
+ }
```

show system snapshot

List of Syntax [Syntax on page 557](#)
 [Syntax \(EX Series Switches\) on page 557](#)

Syntax show system snapshot

Syntax (EX Series Switches) show system snapshot
 <all-members | local | member *member-id*>
 <media (external | internal)>

Release Information Command introduced in Junos OS Release 7.6.
 Command introduced in Junos OS Release 10.0 for EX Series switches.
 Option **slice** deprecated for Junos OS with Upgraded FreeBSD in Junos OS Release 15.1.



NOTE: To determine which platforms run Junos OS with Upgraded FreeBSD, see the table listing the platforms currently running Junos OS with upgraded FreeBSD in *Release Information for Junos OS with Upgraded FreeBSD*.

Description Display information about the backup software:

- On the routers, display information about the backup software, which is located in the **/altroot**, and **/altconfig** file systems or on the alternate media.
- On the switches, display information about the backup of the root file system (**/**) and directories **/altroot**, **/config**, **/var**, and **/var/tmp**, which are located either on an external USB flash drive or in internal flash memory.



NOTE: To back up software, use the **request system snapshot** command.

Options **none**—Display information about the backup software.

all-members | local | member *member-id*—(EX Series switch Virtual Chassis only)
 (Optional) Display the snapshot in a Virtual Chassis:

- **all-members**—Display the snapshot for all members of the Virtual Chassis.
- **local**—Display the snapshot on the member of the Virtual Chassis that you are currently logged into.
- **member *member-id***—Display the snapshot for the specified member of the Virtual Chassis.

media (external | internal)—(EX Series switch only) (Optional) Display the destination media location for the snapshot. The **external** option specifies the snapshot on an external mass storage device, such as a USB flash drive. The **internal** option specifies the snapshot on an internal memory source, such as internal flash memory. If no additional options are specified, the command displays the snapshot stored in both slices.

Required Privilege Level view

Related Documentation

- [request system snapshot on page 212](#)

List of Sample Output

- [show system snapshot \(Router\) on page 558](#)
- [show system snapshot media external \(Switch\) on page 558](#)
- [show system snapshot media internal \(Switch\) on page 559](#)

Output Fields Table 16 on page 558 lists the output fields for the **show system snapshot** command. Output fields are listed in the approximate order in which they appear.

Table 16: show system snapshot Output Fields

| Field Name | Field Description |
|---------------------------|--|
| Creation date | Date and time of the last snapshot. |
| JUNOS version on snapshot | Junos OS release number of individual software packages. |

Sample Output

show system snapshot (Router)

```
user@host> show system snapshot
Information for snapshot on hard-disk
Creation date: Oct 5 13:53:29 2005
JUNOS version on snapshot:
  jbase   : 7.3R2.5
  jcrypto: 7.3R2.5
  jdocs   : 7.3R2.5
  jkernel: 7.3R2.5
  jpfe    : M40-7.3R2.5
  jroute  : 7.3R2.5
```

show system snapshot media external (Switch)

```
user@switch> show system snapshot media external
Information for snapshot on          external (/dev/dals1a) (backup)
Creation date: Mar 19 03:37:18 2012
JUNOS version on snapshot:
  jbase   : ex-12.1I20120111_0048_user
  jcrypto-ex: 12.1I20120111_0048_user
  jdocs-ex: 12.1I20120111_0048_user
```



```

jroute-ex: 12.1I20120111_0048_user
jswitch-ex: 12.1I20120111_0048_user
jweb-ex: 12.1I20120111_0048_user
Information for snapshot on      external (/dev/da1s2a) (primary)
Creation date: Mar 19 03:38:25 2012
JUNOS version on snapshot:
  jbase   : ex-12.2I20120305_2240_user
  jcrypto-ex: 12.2I20120305_2240_user
  jdocs-ex: 12.2I20120305_2240_user
  jroute-ex: 12.2I20120305_2240_user
  jswitch-ex: 12.2I20120305_2240_user
  jweb-ex: 12.2I20120305_2240_user

```

show system snapshot media internal (Switch)

```

user@switch> show system snapshot media internal
Information for snapshot on internal (/dev/da0s1a) (backup)
Creation date: Mar 14 05:01:02 2011
JUNOS version on snapshot:
  jbase   : 11.1R1.9
  jcrypto-ex: 11.1R1.9
  jdocs-ex: 11.1R1.9
  jkernel-ex: 11.1R1.9
  jroute-ex: 11.1R1.9
  jswitch-ex: 11.1R1.9
  jweb-ex: 11.1R1.9
  jpfe-ex42x: 11.1R1.9
Information for snapshot on internal (/dev/da0s2a) (primary)
Creation date: Mar 30 08:46:27 2011
JUNOS version on snapshot:
  jbase   : 11.2-20110330.0
  jcrypto-ex: 11.2-20110330.0
  jdocs-ex: 11.2-20110330.0
  jkernel-ex: 11.2-20110330.0
  jroute-ex: 11.2-20110330.0
  jswitch-ex: 11.2-20110330.0
  jweb-ex: 11.2-20110330.0
  jpfe-ex42x: 11.2-20110330.0

```

show system software

| | |
|---------------------------------------|---|
| List of Syntax | Syntax on page 560 Syntax (EX Series Switches) on page 560 Syntax (TX Matrix Router) on page 560 Syntax (TX Matrix Plus Router) on page 560 Syntax (QFX Series) on page 560 |
| Syntax | show system software <detail> |
| Syntax (EX Series Switches) | show system software <all-members> <detail> <local> <member <i>member-id</i> > |
| Syntax (TX Matrix Router) | show system software <all-chassis all-lcc lcc <i>number</i> scc> <detail> |
| Syntax (TX Matrix Plus Router) | show system software <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > <detail> |
| Syntax (QFX Series) | show system software <detail> <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-group <i>name</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Display the Junos OS extensions loaded on your router or switch. |
| Options | none —Display standard information about all loaded Junos OS extensions. all-chassis —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system software information for all the T640 routers (TX Matrix Router) or all the routers (TX Matrix Plus Router) in the chassis. all-lcc —(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system software information for all T640 routers connected to the |

TX Matrix router. On a TX Matrix Plus router, display system software information for all connected T1600 or T4000 LCCs.

all-members—(EX4200 switches only) (Optional) Display the system software running on all members of the Virtual Chassis configuration.

detail—(Optional) Display detailed information about available Junos OS extensions.

infrastructure *name*—(QFabric systems only) (Optional) Display the system software running on the fabric control Routing Engine and the fabric manager Routing Engine.

interconnect-device *name*—(QFabric systems only) (Optional) Display the system software running on the Interconnect device.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system software information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system software information for a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches only) (Optional) Display the system software running on the local Virtual Chassis member.

member *member-id*—(EX4200 switches only) (Optional) Display the system software running on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value from 0 through 9.

node-group *name*—(QFabric systems only) (Optional) Display the system software running on the Node group.

scc—(Routing matrix only) (Optional) Display the system software running on a TX Matrix router (or switch-card chassis).

sfc—(TX Matrix Plus routers only) (Optional) Display system software information for the TX Matrix Plus router.

Required Privilege Level maintenance

| | |
|-----------------------|---|
| Related Documentation | <ul style="list-style-type: none">• Routing Matrix with a TX Matrix Plus Router Solutions Page |
| List of Sample Output | show system software on page 562 show system software (TX Matrix Plus Router) on page 562 show system software (QFX Series) on page 566 |
| Output Fields | When you enter this command, you are provided a list of Junos OS packages installed on the router and their corresponding Junos OS release number. |

Sample Output

show system software

```
user@host> show system software
Information for jbase:

Comment:
JUNOS Base OS Software Suite [7.2R1.7]

Information for jcrypto:

Comment:
JUNOS Crypto Software Suite [7.2R1.7]
Information for jdocs:

Comment:
JUNOS Online Documentation [7.2R1.7]

Information for jkernel:

Comment:
JUNOS Kernel Software Suite [7.2R1.7]

Information for jpfe:

Comment:
JUNOS Packet Forwarding Engine Support (M20/M40) [7.2R1.7]

Information for jroute:

Comment:
JUNOS Routing Software Suite [7.2R1.7]

Information for junos:

Comment:
JUNOS Base OS boot [7.2R1.7]
```

show system software (TX Matrix Plus Router)

```
user@host> show system software
```

sfc0-re0:

Information for jbase:

Comment:

JUNOS Base OS Software Suite [9.6-20090515.0]

Information for jcrypto:

Comment:

JUNOS Crypto Software Suite [9.6-20090515.0]

Information for jdocs:

Comment:

JUNOS Online Documentation [9.6-20090515.0]

Information for jkernel:

Comment:

JUNOS Kernel Software Suite [9.6-20090515.0]

Information for jpfe:

Comment:

JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090515.0]

Information for jpfe-common:

Comment:

JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090515.0]

Information for jroute:Comment:

JUNOS Routing Software Suite [9.6-20090515.0]

Information for jservices-aacl:

Comment:

JUNOS Services ACL Container package [9.6-20090515.0]

Information for jservices-appid:

Comment:

JUNOS AppId Services [9.6-20090515.0]

Information for jservices-bgpf:

Comment:
JUNOS Border Gateway Function package [9.6-20090515.0]
Information for jservices-idp:

Comment:
JUNOS IDP Services [9.6-20090515.0]

Information for jservices-llpdf:

Comment:
JUNOS Services LL-PDF Container package [9.6-20090515.0]

Information for jservices-sfw:

Comment:
JUNOS Services Stateful Firewall [9.6-20090515.0]
Information for jservices-voice:

Comment:
JUNOS Voice Services Container package [9.6-20090515.0]

Information for junos:

Comment:
JUNOS Base OS boot [9.6-20090515.0]
...
lcc0-re0:

Information for jbase:

Comment:
JUNOS Base OS Software Suite [9.6-20090515.0]

Information for jcrypto:

Comment:
JUNOS Crypto Software Suite [9.6-20090515.0]

Information for jdocs:

Comment:
JUNOS Online Documentation [9.6-20090515.0]

Information for jkernel:

Comment:
JUNOS Kernel Software Suite [9.6-20090515.0]

Information for jpfe:

Comment:

JUNOS Packet Forwarding Engine Support (T-Series) [9.6-20090515.0]

Information for jpfe-common:

Comment:

JUNOS Packet Forwarding Engine Support (M/T Common) [9.6-20090515.0]

Information for jroute:

Comment:

JUNOS Routing Software Suite [9.6-20090515.0]

Information for jservices-aacl:

Comment:

JUNOS Services ACL Container package [9.6-20090515.0]

Information for jservices-appid:

Comment:

JUNOS AppId Services [9.6-20090515.0]

Information for jservices-bgf:

Comment:

JUNOS Border Gateway Function package [9.6-20090515.0]

Information for jservices-idp:

Comment:

JUNOS IDP Services [9.6-20090515.0]

Information for jservices-llpdf:

Comment:

JUNOS Services LL-PDF Container package [9.6-20090515.0]

Information for jservices-sfw:

Comment:

JUNOS Services Stateful Firewall [9.6-20090515.0]

Information for jservices-voice:

Comment:

JUNOS Voice Services Container package [9.6-20090515.0]

Information for junos:

Comment:

JUNOS Base OS boot [9.6-20090515.0]

lcc1-re0:

Information for jbase:

Comment:

JUNOS Base OS Software Suite [9.6-20090515.0]

Information for jcrypto:

Comment:

JUNOS Crypto Software Suite [9.6-20090515.0]

...

show system software (QFX Series)

user@switch> **show system software**

Information for jbase:

Comment:

JUNOS Base OS Software Suite [11.3-20110730.0]

Information for jcrypto:

Comment:

JUNOS Crypto Software Suite [11.3-20110730.0]

Information for jdocs:

Comment:

JUNOS Online Documentation [11.3-20110730.0]

Information for jkernel:

Comment:

JUNOS Kernel Software Suite [11.3-20110730.0]

Information for jpfe:

Comment:

JUNOS Packet Forwarding Engine Support (QFX) [11.3-20110730.0]

Information for jroute:

Comment:

JUNOS Routing Software Suite [11.3-20110730.0]

Information for jswitch:

Comment:

JUNOS Enterprise Software Suite [11.3-20110730.0]

Information for junos:

Comment:

JUNOS Base OS boot [11.3-20110730.0]

Information for jweb:

Comment:

JUNOS Web Management [11.3-20110730.0]

show system statistics

| | |
|---------------------------------------|--|
| List of Syntax | Syntax on page 568 Syntax (EX Series Switches) on page 568 Syntax (TX Matrix Router) on page 568 Syntax (TX Matrix Plus Router) on page 568 Syntax (MX Series Router) on page 568 Syntax (QFX Series) on page 568 |
| Syntax | show system statistics |
| Syntax (EX Series Switches) | show system statistics <all-members> <local> <member <i>member-id</i> > |
| Syntax (TX Matrix Router) | show system statistics <all-chassis all-lcc lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | show system statistics <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > |
| Syntax (MX Series Router) | show system statistics <all-members> <local> <member <i>member-id</i> > |
| Syntax (QFX Series) | show system statistics |
| Release Information | Command introduced before JUNOS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in JUNOS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Display system-wide protocol-related statistics. |
| Options | none —Display system statistics for all the following protocols: <ul style="list-style-type: none">• arp—Address Resolution Protocol• bridge—IEEE 802.1 Bridging• clns—Connectionless Network Service• esis—End System-to-Intermediate System• ethoamcfm—Ethernet OAM protocol for connectivity fault management |

- **ethoamlfm**—Ethernet OAM protocol for link fault management
- **icmp**—Internet Control Message Protocol
- **icmp6**—Internet Control Message Protocol version 6
- **igmp**—Internet Group Management Protocol
- **ip**—Internet Protocol version 4
- **ip6**—Internet Protocol version 6
- **jsr**—Juniper Socket Replication
- **mpls**—Multiprotocol Label Switching
- **rdp**—Reliable Datagram Protocol
- **tcp**—Transmission Control Protocol
- **tnp**—Trivial Network Protocol
- **ttp**—TNP Tunneling Protocol
- **tudp**—Trivial User Datagram Protocol
- **udp**—User Datagram Protocol
- **vpls**—Virtual Private LAN Service

all-chassis—(TX Matrix and TX Matrix Plus routers only) (Optional) Display system statistics for a protocol for all the routers in the chassis.

all-lcc—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for a protocol for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for a protocol for all routers (line-card chassis) connected to the TX Matrix Plus router

all-members—(EX4200 switches and MX Series routers only) (Optional) Display system statistics for a protocol for all members of the Virtual Chassis configuration.

lcc *number*—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system statistics for a protocol for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system statistics for a protocol for a specific router that is connected to the TX Matrix Plus router.

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

- 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix.
- 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

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

local—(EX4200 switches and MX Series routers only) (Optional) Display system statistics for a protocol for the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Display system statistics for a protocol for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace ***member-id*** with a value from 0 through 9. For an MX Series Virtual Chassis, replace ***member-id*** with a value of 0 or 1.

scc—(TX Matrix routers only) (Optional) Display system statistics for a protocol for the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Display system statistics for a protocol for the TX Matrix Plus router (or switch-fabric chassis). Replace ***number*** with 0.

Additional Information By default, when you issue the **show system statistics** command on a TX Matrix or TX Matrix Plus master Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) master Routing Engines connected to it. Likewise, if you issue the same command on the TX Matrix or TX Matrix Plus backup Routing Engine, the command is broadcast to all the T640 (in a routing matrix based on the TX Matrix router) or T1600 (in a routing matrix based on the TX Matrix Plus router) backup Routing Engines that are connected to it.

Required Privilege Level view

List of Sample Output [show system statistics on page 570](#)
[show system statistics \(EX Series Switches\) on page 580](#)
[show system statistics \(TX Matrix Router\) on page 589](#)
[show system statistics \(QFX Series\) on page 596](#)

Sample Output

[show system statistics](#)

```
user@host> show system statistics
ip:
    3682087 total packets received
    0 bad header checksums
    0 with size smaller than minimum
    0 with data size < data length
    0 with header length < data size
    0 with data length < header length
    0 with incorrect version number
```

```

0 packets destined to dead next hop
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped (queue overflow)
0 fragments dropped after timeout
0 fragments dropped due to over limit
0 packets reassembled ok
3664774 packets for this host
17316 packets for unknown/unsupported protocol
0 packets forwarded
0 packets not forwardable
0 redirects sent
6528 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
1123 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
1123 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
icmp:
0 drops due to rate limit
0 calls to icmp_error
0 errors not generated because old message was icmp
Output histogram:
    echo reply: 75
0 messages with bad code fields
0 messages less than the minimum length
0 messages with bad checksum
0 messages with bad source address
0 messages with bad length
0 echo drops with broadcast or multicast destination address
0 timestamp drops with broadcast or multicast destination address
Input histogram:
    echo: 75
    router advertisement: 130
75 message responses generated
tcp:
3844 packets sent
    3618 data packets (1055596 bytes)
    0 data packets (0 bytes) retransmitted
    0 resends initiated by MTU discovery
    205 ack-only packets (148 packets delayed)
    0 URG only packets
    0 window probe packets
    0 window update packets
    1079 control packets
5815 packets received
    3377 acks (for 1055657 bytes)
    24 duplicate acks

```

```

    0 acks for unsent data
    2655 packets (15004 bytes) received in-sequence
    1 completely duplicate packet (0 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    0 out-of-order packets (0 bytes)
    0 packets (0 bytes) of data after window
    0 window probes
    7 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
1 connection request
32 connection accepts
0 bad connection attempts
0 listen queue overflows
33 connections established (including accepts)
30 connections closed (including 0 drops)
    27 connections updated cached RTT on close
    27 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
0 embryonic connections dropped
3374 segments updated rtt (of 3220 attempts)
0 retransmit timeouts
    0 connections dropped by rexmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
344 keepalive timeouts
    0 keepalive probes sent
    0 connections dropped by keepalive
1096 correct ACK header predictions
1314 correct data packet header predictions
32 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    32 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
1058 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
udp:
    3658884 datagrams received
    0 with incomplete header
    0 with bad data length field
    0 with bad checksum
```

```

3657342 dropped due to no socket
3657342 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
4291311496 delivered
1551 datagrams output

ipsec:
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound AH packets considered authentic
0 inbound AH packets failed on authentication
0 inbound ESP packets considered authentic
0 inbound ESP packets failed on authentication
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route

igmp:
17186 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

arp:
44181302 datagrams received
2 ARP requests received
2028 ARP replies received
3156 resolution requests received
0 unrestricted proxy requests
0 received proxy requests
0 proxy requests not proxied
0 with bogus interface
787 with incorrect length
712 for non-IP protocol
0 with unsupported op code
0 with bad protocol address length
0 with bad hardware address length
0 with multicast source address
7611 with multicast target address
0 with my own hardware address
14241699 for an address not on the interface
0 with a broadcast source address
0 with source address duplicate to mine
29929250 which were not for me
0 packets discarded waiting for resolution
6 packets sent after waiting for resolution
17812 ARP requests sent
2 ARP replies sent
0 requests for memory denied

```

```
0 requests dropped on entry
0 requests dropped during retry
ip6:
0 total packets received
0 with size smaller than minimum
0 with data size < data length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragments that exceeded limit
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
Mbuf statistics:
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too many headers
0 failures of source address selection
0 forward cache hit
0 forward cache miss
0 packets destined to dead next hop
0 option packets dropped due to rate limit
0 packets dropped (src and int don't match)
0 packets dropped due to bad protocol
icmp6:
0 calls to icmp_error
0 errors not generated because old message was icmp error or so
0 errors not generated because rate limitation
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
Histogram of error messages to be generated:
    0 no route
    0 administratively prohibited
    0 beyond scope
    0 address unreachable
    0 port unreachable
    0 packet too big
    0 time exceed transit
    0 time exceed reassembly
    0 erroneous header field
    0 unrecognized next header
    0 unrecognized option
    0 redirect
    0 unknown
0 message responses generated
0 messages with too many ND options
```



```

ipsec6:
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound AH packets considered authentic
0 inbound AH packets failed on authentication
0 inbound ESP packets considered authentic
0 inbound ESP packets failed on authentication
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route

c1n1:
0 total packets received
0 packets delivered
0 too small
0 bad header length
0 bad checksum
0 bad version
0 unknown or unsupported protocol
0 bogus sdl size
0 no free memory in socket buffer
0 send packets discarded
0 sbappend failure
0 mcopy failure
0 address fields were not reasonable
0 segment information forgotten
0 forwarded packets
0 total packets sent
0 output packets discarded
0 non-forwarded packets
0 packets fragmented
0 fragments sent
0 fragments discarded
0 fragments timed out
0 fragmentation prohibited
0 packets reconstructed
0 packets destined to dead nexthop
0 packets discarded due to no route
0 Error pdu rate drops
0 ER pdu generation failure

esis:
0 total pkts received
0 total packets consumed by protocol
0 pdus received with bad checksum
0 pdus received with bad version number
0 pdus received with bad type field
0 short pdus received
0 bogus sdl size
0 bad header length
0 unknown or unsupported protocol
0 no free memory in socket buffer
0 send packets discarded
0 sbappend failure

```

```
0 mcopy failure
0 ISO family not configured
tnp:
146776365 unicast packets received
0 broadcast packets received
0 fragmented packets received
0 hello packets dropped
0 fragments dropped
0 fragment reassembly queue flushes
0 hello packets received
0 control packets received
49681642 rdp packets received
337175 udp packets received
96757548 tunnel packets received
0 input packets discarded with no protocol
98397591 unicast packets sent
0 broadcast packets sent
0 fragmented packets sent
0 hello packets dropped
0 fragments dropped
0 hello packets sent
0 control packets sent
49681642 rdp packets sent
337175 udp packets sent
48378774 tunnel packets sent
0 packets sent with unknown protocol
rdp:
49681642 input packets
0 discards for bad checksum
0 discards bad sequence number
0 refused connections
2031964 acks received
0 dropped due to full socket buffers
49692 retransmits
49681642 output packets
24815968 acks sent
28 connects
0 closes
22783990 keepalives received
22783990 keepalives sent
tudp:
337175 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
337175 delivered
337175 datagrams output
ttp:
398749 packets sent
0 packets sent while unconnected
0 packets sent while interface down
0 packets sent couldn't get buffer
0 packets sent couldn't find neighbor
44696687 L2 packets received
0 unknown L3 packets received
3682087 IPv4 L3 packets received
0 MPLS L3 packets received
0 MPLS->IPv4 L3 packets received
```

```

0 IPv4->MPLS L3 packets received
0 VPLS L3 packets received
0 IPv6 L3 packets received
0 ARP L3 packets received
0 CLNP L3 packets received
0 TNP L3 packets received
0 NULL L3 packets received
0 cyclotron cycle L3 packets received
0 cyclotron send L3 packets received
0 packets received while unconnected
0 packets received from unknown ifl
0 input packets couldn't get buffer
0 input packets with bad type
0 input packets with discard type
0 Input packets with too many tlvs
0 Input packets with bad tlv header
70633 Input packets with bad tlv type
68877 Input packets dropped based on tlv result
0 input packets for which rt lookup is bypassed

mpls:
0 total mpls packets received
0 packets forwarded
0 packets dropped
0 with header too small
0 after tagging, can't fit link MTU
0 with IPv4 explicit NULL tag
0 with IPv4 explicit NULL cksum errors
0 with router alert tag
0 lsp ping packets (ttl-expired/router alert)
0 with ttl expired
0 with tag encoding error
0 packets discarded, no route

jsr:
  Handle-inf:o
    0 Handles in use
    0 Handles allocated so far
    0 Handles freed so far
    0 Handles in delayed free state
  IHA:
    0 IHA invalid subtype messages
    0 IHA invalid length messages
    0 IHA invalid version messages
    0 IHA too short messages
    0 IHA invalid dst handle messages
    0 IHA invalid src handle messages
    0 IHA unmatched src handle messages
    0 IHA invalid messages for primary
    0 IHA invalid messages for secondary
    0 IHA invalid messages for current state
    0 IHA messages sent for subtype init
    0 IHA messages rcvd for subytpe init
    0 IHA messages sent for subtype init
    0 IHA messages rcvd for subytpe init
    0 IHA messages sent for subtype init
    0 IHA messages rcvd for subytpe init
    0 IHA messages sent for subtype init
    0 IHA messages rcvd for subytpe init
    0 IHA messages sent for subtype init
    0 IHA messages rcvd for subytpe init
    0 IHA message timeouts
    0 IHA socket unreplicate messages

```

SDRL:

- 0 SDRL socket teardowns
- 0 SDRL socket teardown failures
- 0 SDRL socket unreplicates
- 0 SDRL socket unreplicate failures
- 0 SDRL external timeouts
- 0 SDRL internal timeouts
- 0 SDRL ipc messages sent
- 0 SDRL ipc send failures
- 0 SDRL ipc messages recvd
- 0 SDRL ipc messages recvd
- 0 SDRL primary replication messages sent
- 0 SDRL primary replication message send failures
- 0 SDRL primary ack messages received
- 0 SDRL primary ack message receive failures
- 0 SDRL primary sock replication inits
- 0 SDRL primary sock replication init failures
- 0 SDRL primary throttle remove messages
- 0 SDRL primary throttle remove failures
- 0 SDRL primary init handshake messages
- 0 SDRL primary init handshake failures
- 0 SDRL secondary replication messages received
- 0 SDRL secondary replication message receive failures
- 0 SDRL secondary replication acks sent
- 0 SDRL secondary replication ack send failures
- 0 SDRL secondary sock splits
- 0 SDRL secondary sock split failures
- 0 SDRL secondary sock merges
- 0 SDRL secondary sock merge failures
- 0 SDRL secondary sockets closed
- 0 SDRL secondary rcv snoop fd close failures
- 0 SDRL secondary snd snoop fd close failures
- 0 SDRL secondary init handshake messages
- 0 SDRL secondary init handshake failures

PRL:

- 0 PRL packets enqueued
- 0 PRL packets failed to enqueue
- 0 PRL packets dequeued
- 0 PRL packets failed to dequeue
- 0 PRL queue entry allocations
- 0 PRL queue entry frees
- 0 calls to layer 4 input handlers
- 0 failed calls to layer 4 input handlers
- 0 PRL queue drains
- 0 PRL replication timeouts
- 0 PRL replication messages sent
- 0 PRL replication message send failures
- 0 PRL acknowledgment messages sent
- 0 PRL acknowledgement message send failures
- 0 PRL replication messages received
- 0 PRL replication message receive failures
- 0 PRL acknowledgement messages received
- 0 PRL acknowledgement receive failures
- 0 PRL messages with bad IPC type
- 0 PRL messages with no handler
- 2 PRL global state initializations
- 1 PRL global state cleanups
- 0 PRL per-socket state creations
- 0 PRL per-socket state creation failures
- 0 PRL per-socket state cleanups
- 0 PRL socket closes

```

0 PRL socket merges
0 PRL socket unreplicates
0 PRL primary socket replication initializations
0 PRL secondary socket replication initializations
0 PRL primary socket replication activations
0 PRL secondary socket replication activations
0 packets received from peers
0 PRL packets receive operations from peer failed
0 PRL buffer pullup failures
0 new pkts dropped on secondary socket
PSRM:
0 PSRM replication timeouts
0 PSRM replication messages sent
0 PSRM replication message send failures
0 PSRM acknowledgment messages sent
0 PSRM acknowledgement message send failures
0 PSRM flow control messages sent
0 PSRM flow control message send failures
0 PSRM replication messages received
0 PSRM replication message receive failures
0 PSRM acknowledgment messages received
0 PSRM acknowledgment message receive failures
0 PSRM flow control messages received
0 PSRM flow control message receive failures
0 SRM messages with bad IPC type
0 PSRM messages with no handler
2 PSRM global state initializations
1 PSRM global state cleanups
0 PSRM per-socket state creations
0 PSRM per-socket state creation failures
0 PSRM per-socket state cleanups
0 PSRM socket closes
0 PSRM socket merges
0 PSRM socket unreplicates
0 PSRM primary socket replication initializations
0 psrm-secondary-socket-replication-initializations
0 PSRM primary socket replication activations
0 secondary socket replication activations
0 PSRM tcpcb updates
0 PSRM buffer pullup failures
73 PSRM tcp timestamp msg rcv counters
0 PSRM tcp timestamp msg rcv failures
0 PSRM tcp timestamp msg send counters
0 PSRM tcp timestamp msg send failures
TCP:
0 TCP out-of-order packets on JSR sockets
vpls:
0 total packets received
0 with size smaller than minimum
0 with incorrect version number
0 packets for this host
0 packets with no logical interface
0 packets with no family
0 packets with no route table
0 packets with no auxiliary table
0 packets with no corefacing entry
0 packets with no CE-facing entry
0 mac route learning requests
0 mac routes learnt
0 requests to learn an existing route
0 learning requests while learning disabled on interface

```

```
0 learning requests over capacity
0 mac routes moved
0 requests to move static route
0 mac route aging requests
0 mac routes aged
0 bogus address in aging requests
0 requests to age static route
0 requests to re-ageout aged route
0 requests involving multiple peer FEs
0 aging acks from PFE
0 aging non-acks from PFE
0 aging requests timed out waiting on FEs
0 aging requests over max-rate
0 errors finding peer FEs
```

show system statistics (EX Series Switches)

```
user@host> show system statistics
```

```
Tcp:
```

```
571779 packets sent
    21517 data packets (1797102 bytes)
    2 data packets retransmitted (20 bytes)
    0 resends initiated by MTU discovery
    3708 ack only packets (531 packets delayed)
    0 URG only packets
    1 window probe packets
    1 window update packets
    1093063 control packets
1132541 packets received
    20961 acks(for 1796102 bytes)
    5861 duplicate acks
    0 acks for unsent data
    19556 packets received in-sequence(232079 bytes)
    3018 completely duplicate packets(0 bytes)
    0 old duplicate packets
    4 packets with some duplicate data(4 bytes duped)
    2 out-of-order packets(2 bytes)
    0 packets of data after window(0 bytes)
    0 window probes
    39 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
546519 connection requests
78 connection accepts
0 bad connection attempts
0 listen queue overflows
100 connections established (including accepts)
546596 connections closed (including 6 drops)
    47 connections updated cached RTT on close
    47 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
546497 embryonic connections dropped
20453 segments updated rtt(of 566914 attempts)
2 retransmit timeouts
    0 connections dropped by retransmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
3028 keepalive timeouts
    3027 keepalive probes sent
```

```

        1 connections dropped by keepalive
7515 correct ACK header predictions
12258 correct data packet header predictions
78 syncache entries added
    0 retransmitted
    0 dupsyn
    4 dropped
    78 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
1 SACK recovery episodes
1 segment retransmits in SACK recovery episodes
1 byte retransmits in SACK recovery episodes
71 SACK options (SACK blocks) received
1 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
546544 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
0 outgoing segments dropped due to policing
udp:
    147 datagrams received
    0 with incomplete header
    0 with bad data length field
    0 with bad checksum
    9 dropped due to no socket
    0 broadcast/multicast datagrams dropped due to no socket
    0 dropped due to full socket buffers
    0 not for hashed pcb
    138 delivered
    0 datagrams output
ip:
    73704 total packets received
    0 bad header checksums
    0 with size smaller than minimum
    0 with data size < data length
    0 with header length < data size
    0 with data length < header length
    0 with incorrect version number
    0 packets destined to dead next hop
    0 fragments received
    0 fragments dropped (dup or out of space)
    0 fragments dropped (queue overflow)
    0 fragments dropped after timeout
    0 fragments dropped due to over limit
    0 packets reassembled ok
    1133057 packets for this host
    0 packets for unknown/unsupported protocol

```

```
40146 packets forwarded
0 packets not forwardable
40146 redirects sent
1121700 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
0 packets with options handled without error
0 strict source and record route options
0 loose source and record route options
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
0 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
0 incoming ttpoip packets received
0 incoming ttpoip packets dropped
  0 outgoing TTPoIP packets sent
  0 outgoing TTPoIP packets dropped
icmp:
  0 drops due to rate limit
  9 calls to icmp_error
  0 errors not generated because old message was icmp
  Output histogram:
    295 echo reply
    9 destination unreachable
  0 messages with bad code fields
  0 messages less than the minimum length
  0 messages with bad checksum
  0 messages with bad source address
  0 messages with bad length
  0 echo drops with broadcast or multicast destination address
  0 timestamp drops with broadcast or multicast destination address
  Input histogram:
    295 echo
  295 message responses generated
igmp:
  0 messages received
  0 messages received with too few bytes
  0 messages received with bad checksum
  0 membership queries received
  0 membership queries received with invalid fields
  0 membership reports received
  0 membership reports received with invalid fields
  0 membership reports received for groups to which we belong
  0 Membership reports sent
raw_if:
  0 RAW packets transmitted
  0 PPPoE packets transmitted
  0 ISDN packets transmitted
  0 DIALER packets transmitted
  0 PPP packets transmitted to pppd
```



```

0 PPP packets transmitted to jppd
0 IGMPv2 packets transmitted
13 output drops due to tx error
0 MPU packets transmitted
0 PPPoE packets received
0 ISDN packets received
0 DIALER packets received
0 PPP packets received from pppd
0 MPU packets received
0 PPP packets received from jppd
0 IGMPv2 packets received
0 Input drops due to bogus protocol
0 input drops due to no mbufs available
0 input drops due to no space in socket
0 input drops due to no socket

arp:
186413 datagrams received
88 ARP requests received
88 ARP replies received
0 resolution request received
0 unrestricted proxy requests
0 restricted proxy requests
0 received proxy requests
0 proxy requests not proxied
0 restricted proxy requests not proxied
0 datagrams with bogus interface
0 datagrams with incorrect length
0 datagrams for non-IP protocol
0 datagrams with unsupported op code
0 datagrams with bad protocol address length
0 datagrams with bad hardware address length
0 datagrams with multicast source address
0 datagrams with multicast source address
0 datagrams with my own hardware address
164 datagrams for an address not on the interface
0 datagrams with a broadcast source address
0 datagrams with source address duplicate to mine
186065 datagrams which were not for me
0 packets discarded waiting for resolution
0 packets sent after waiting for resolution
50 ARP requests sent
88 ARP replies sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
0 requests dropped due to interface deletion
0 requests on unnumbered interfaces
0 new requests on unnumbered interfaces
0 replies for from unnumbered interfaces
0 requests on unnumbered interface with non-subnetted donor
0 replies from unnumbered interface with non-subnetted donor

ip6:
0 total packets received
0 packets with size smaller than minimum
0 packets with data size < data length
0 packets with bad options
0 packets with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragments that exceeded limit

```

```
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
0 packets whose headers are not continuous
0 tunneling packets that can't find gif
0 packets discarded due to too many headers
0 failures of source address selection
0 forward cache hit
0 forward cache miss
0 Packets destined to dead next hop
0 option packets dropped due to rate limit
0 Packets dropped (src and int don't match)
0 packets dropped due to bad protocol
0 transit re packet(null) dropped on mgmt i/f

icmp6:
0 Calls to icmp_error
0 Errors not generated because old message was icmp error
0 Errors not generated because rate limitation
0 Messages with bad code fields
0 Messages < minimum length
0 Bad checksums
0 Messages with bad length
    0 No route
    0 Administratively prohibited
    0 Beyond scope
    0 Address unreachable
    0 Port unreachable
    0 packet too big
    0 Time exceed transit
    0 Time exceed reassembly
    0 Erroneous header field
    0 Unrecognized next header
    0 Unrecognized option
    0 redirect
    0 Unknown
0 Message responses generated
0 Messages with too many ND options

pfkey:
0 Requests sent from userland
0 Bytes sent from userland
histogram by message type:
    0 reserved
    0 dump
0 Messages with invalid length field
0 Messages with invalid version field
0 Messages with invalid message type field
0 Messages too short
0 Messages with memory allocation failure
0 Messages with duplicate extension
0 Messages with invalid extension type
0 Messages with invalid sa type
```

```

0 Messages with invalid address extension
0 Requests sent to userland
0 Bytes sent to userland
histogram by message type:
    0 reserved
    0 dump
0 Messages toward single socket
0 Messages toward all sockets
0 Messages toward registered sockets
0 Messages with memory allocation failure
cInl:
0 Total packets received
0 Packets delivered
0 Too small packets
0 Packets with bad header length
0 Packets with bad checksum
0 Bad version packets
0 Unknown or unsupported protocol packets
0 Packets with bogus sdl size
0 No free memory in socket buffer
0 Send packets discarded
0 Sbappend failure
0 Mcopy failure
0 Address fields were not reasonable
0 Segment information forgotten
0 Forwarded packets
0 Total packets sent
0 Output packets discarded
0 Non-forwarded packets
0 Packets fragmented
0 Fragments sent
0 Fragments discarded
0 Fragments timed out
0 Fragmentation prohibited
0 Packets reconstructed
0 Packets destined to dead nexthop
0 Packets discarded due to no route
0 Error pdu rate drops
    0 ER pdu generation failure
esis:
0 Total pkts received
0 Total packets consumed by protocol
0 Pdus received with bad checksum
0 Pdus received with bad version number
0 Pdus received with bad type field
0 Short pdus received
0 Pdus with bogus sdl size
0 Pdus with bad header length
0 Pdus with unknown or unsupported protocol
0 No free memory in socket buffer
0 Send packets discarded
0 Sbappend failure
0 Mcopy failure
0 ISO family not configured
tnp:
0 Unicast packets received
0 Broadcast packets received
0 Fragmented packets received
0 Hello packets dropped
0 Fragments dropped
0 Fragment reassembly queue flushes

```

```
0 Packets with tnp src address collision received
0 Hello packets received
0 Control packets received
0 Rdp packets received
0 Udp packets received
0 Tunnel packets received
0 Input packets discarded with no protocol
0 Packets of version unspecified received
0 Packets of version 1 received
0 Packets of version 2 received
0 Packets of version 3 received
0 Unicast packets sent
0 Broadcast packets sent
0 Fragmented packets sent
0 Hello packets dropped
0 Fragments dropped
0 Hello packets sent
0 Control packets sent
0 Rdp packets sent
0 Udp packets sent
0 Tunnel packets sent
0 Packets sent with unknown protocol
0 Packets of version unspecified sent
0 Packets of version 1 sent
0 Packets of version 2 sent
0 Packets of version 3 sent
rdp:
0 Input packets
0 Packets discarded for bad checksum
0 Packets discarded due to bad sequence number
0 Refused connections
0 Acks received
0 Packets dropped due to full socket buffers
0 Retransmits
0 Output packets
0 Acks sent
0 Connects
0 Closes
0 Keepalives received
0 Keepalives sent
tudp:
67 Datagrams received
0 Datagrams with incomplete header
0 Datagrams with bad data length field
0 Datagrams with bad checksum
0 Datagrams dropped due to no socket
0 Broadcast/multicast datagrams dropped due to no socket
0 Datagrams dropped due to full socket buffers
67 Delivered
68 Datagrams output
ttp:
0 Packets sent
0 Packets sent while unconnected
0 Packets sent while interface down
0 Packets sent couldn't get buffer
0 Packets sent couldn't find neighbor
0 L2 packets received
0 Unknown L3 packets received
0 IPv4 L3 packets received
0 MPLS L3 packets received
0 MPLS->IPv4 L3 packets received
```

```

0 IPv4->MPLS L3 packets received
0 VPLS L3 packets received
0 IPv6 L3 packets received
0 ARP L3 packets received
0 CLNP L3 packets received
0 TNP L3 packets received
0 NULL L3 packets received
0 Cyclotron cycle L3 packets received
0 Cyclotron send L3 packets received
0 Packets received while unconnected
0 Packets received from unknown ifl
0 Input packets couldn't get buffer
0 Input packets with bad type
0 Input packets with discard type
0 Input packets with too many tlvs
0 Input packets with bad tlv header
70633 Input packets with bad tlv type
68877 Input packets dropped based on tlv result
0 Input packets for which rt lookup is bypassed

mpls:
0 Total MPLS packets received
0 Packets forwarded
0 Packets dropped
0 Packets with header too small
0 After tagging, packets can't fit link MTU
0 Packets with IPv4 explicit NULL tag
0 Packets with IPv4 explicit NULL cksum errors
0 Packets with router alert tag
0 LSP ping packets (ttl-expired/router alert)
0 Packets with ttl expired
0 Packets with tag encoding error
0 Packets discarded due to no route
0 Packets used first nexthop in ecmp unilist
0 Packets dropped due to ifl down

vpls:
0 Total packets received
0 Packets with size smaller than minimum
0 Packets with incorrect version number
0 Packets for this host
0 Packets with no logical interface
0 Packets with no family
0 Packets with no route table
0 Packets with no auxiliary table
0 Packets with no corefacing entry
0 packets with no CE-facing entry
0 MAC route learning requests
0 MAC routes learnt
0 Requests to learn an existing route
0 Learning requests while learning disabled on interface
0 Learning requests over capacity
0 MAC routes moved
0 Requests to move static route
0 MAC route aging requests
0 MAC routes aged
0 Bogus address in aging requests
0 Requests to age static route
0 Requests to re-ageout aged route
0 Requests involving multiple peer FEs
0 Aging acks from PFE
0 Aging non-acks from PFE

```

```
0 Aging requests timed out waiting on FEs
0 Aging requests over max-rate
0 Errors finding peer FEs
0 Unsupported platform
0 Packets dropped due to no l3 route table
0 Packets dropped due to no local ifl
0 Packets punted
0 Packets dropped due to no socket
bridge:
Input:
0 packets received
0 packets forwarded
0 packets failed to forward
0 packets dropped
0 packets with vmember lookup failures
0 packets with vlan lookup failures
0 packets with stp state lookup failures
0 packets dropped due to stp blocked/listening
0 packets dropped due to stp learning
0 packets with src MAC learning failures
0 packets with input control processing failures
Forward:
0 packets sent successfully
0 packets with send failures
0 packets forwarded to l3 interface
0 packets with l3 send failures
0 packets discarded
0 packets with l2ifl store failures
0 packets with ifl mismatch failures
0 packets with packet duplication failures
0 packets with tag lookup failures
0 packets with no route for DMAC
0 packets with no route table
0 packets with no nexthop
0 packets with dead nexthop
0 packets with eof reached error
Learning:
0 MACs learned
0 packets sent to l3 interface
0 packets with l3 send failures
0 packets hit holdq while learning
0 MAC moves
0 packets discarded
0 packets with no route for SMAC
0 packets with no nexthop
0 packets with dead nexthop
0 packets dropped due to no resolve route
0 packets with l3 ifd lookup failures
0 packets with l3 ifl lookup failures
0 packets with l3 invalid rnh
0 packets with no route for SMAC in clone learning
0 packets with no nexthop in clone learning
0 packets with dead nexthop in clone learning
0 packets dropped due to no resolve nh in clone learning
Output:
0 packets forwarded
0 packets failed to forward
0 packets with vmember lookup failures
0 packets with vlan lookup failures
0 packets with input control processing failures
Send:
```

```

0 packets sent successfully
0 packets with send failures
0 packets dropped due to interface down
0 packets with dev output failures
0 blocked ifl discards
0 packets with tag lookup failures
0 packets with stp state lookup failures
0 packets with tag insertion failures
0 packets with tag removal failures
Flood:
0 packets flooded
0 flood failures
IGMP:
0 packets sent successfully
0 packets with send failures
0 packets forwarded
0 packets failed to forward
0 packets with mpull failures
0 packets with vmember lookup failures
0 packets with vlan lookup failures
0 packets with ifl lookup failures
0 packets with tag lookup failures
Misc:
0 packets with size smaller than minimum
0 packets with double tags
0 packets with no ifl
0 packets with no family
0 packets with no route table

```

show system statistics (TX Matrix Router)

```

user@host> show system statistics
sfc0-re0:

```

```

-----
Tcp:
361694 packets sent
  326507 data packets (103237236 bytes)
  2343 data packets retransmitted (2673324 bytes)
  0 resends initiated by MTU discovery
  33857 ack only packets (31613 packets delayed)
  0 URG only packets
  14 window probe packets
  387 window update packets
  1108 control packets
345879 packets received
  298207 acks(for 103141728 bytes)
  438 duplicate acks
  0 acks for unsent data
  204578 packets received in-sequence(13820995 bytes)
  6 completely duplicate packets(18 bytes)
  0 old duplicate packets
  0 packets with some duplicate data(0 bytes duped)
  0 out-of-order packets(0 bytes)
  0 packets of data after window(0 bytes)
  0 window probes
  899 window update packets
  166 packets received after close
  0 discarded for bad checksums
  0 discarded for bad header offset fields
  0 discarded because packet too short
406 connection requests

```

```
233 connection accepts
0 bad connection attempts
0 listen queue overflows
616 connections established (including accepts)
911 connections closed (including 41 drops)
    346 connections updated cached RTT on close
    346 connections updated cached RTT variance on close
    200 connections updated cached ssthresh on close
23 embryonic connections dropped
298155 segments updated rtt(of 287216 attempts)
1163 retransmit timeouts
    27 connections dropped by retransmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
5 keepalive timeouts
    5 keepalive probes sent
    0 connections dropped by keepalive
69922 correct ACK header predictions
34993 correct data packet header predictions
233 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    233 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
23 SACK recovery episodes
68 segment retransmits in SACK recovery episodes
71542 byte retransmits in SACK recovery episodes
158 SACK options (SACK blocks) received
0 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
259 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
0 outgoing segments dropped due to policing
```

lcc0-re0:

Tcp:

```
346 packets sent
    222 data packets (22894 bytes)
    0 data packets retransmitted (0 bytes)
    0 resends initiated by MTU discovery
    80 ack only packets (12 packets delayed)
    0 URG only packets
    0 window probe packets
    5 window update packets
```



```

    42 control packets
358 packets received
    268 acks(for 22939 bytes)
    9 duplicate acks
    0 acks for unsent data
    203 packets received in-sequence(33820 bytes)
    0 completely duplicate packets(0 bytes)
    0 old duplicate packets
    0 packets with some duplicate data(0 bytes duped)
    0 out-of-order packets(0 bytes)
    0 packets of data after window(0 bytes)
    0 window probes
    6 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
13 connection requests
18 connection accepts
0 bad connection attempts
0 listen queue overflows
31 connections established (including accepts)
35 connections closed (including 2 drops)
    3 connections updated cached RTT on close
    3 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
0 embryonic connections dropped
268 segments updated rtt(of 247 attempts)
0 retransmit timeouts
    0 connections dropped by retransmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
0 keepalive timeouts
    0 keepalive probes sent
    0 connections dropped by keepalive
0 correct ACK header predictions
42 correct data packet header predictions
18 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    18 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
0 SACK recovery episodes
0 segment retransmits in SACK recovery episodes
0 byte retransmits in SACK recovery episodes
0 SACK options (SACK blocks) received
0 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address

```

- 0 out-of-sequence segment drops due to insufficient memory
- 5 RST packets
- 0 ICMP packets ignored by TCP
- 0 send packets dropped by TCP due to auth errors
- 0 rcv packets dropped by TCP due to auth errors
- 0 outgoing segments dropped due to policing

lcc1-re0:

Tcp:

- 348 packets sent
 - 223 data packets (22895 bytes)
 - 0 data packets retransmitted (0 bytes)
 - 0 resends initiated by MTU discovery
 - 81 ack only packets (13 packets delayed)
 - 0 URG only packets
 - 0 window probe packets
 - 5 window update packets
 - 42 control packets
- 360 packets received
 - 269 acks(for 22940 bytes)
 - 9 duplicate acks
 - 0 acks for unsent data
 - 203 packets received in-sequence(33820 bytes)
 - 0 completely duplicate packets(0 bytes)
 - 0 old duplicate packets
 - 0 packets with some duplicate data(0 bytes duped)
 - 0 out-of-order packets(0 bytes)
 - 0 packets of data after window(0 bytes)
 - 0 window probes
 - 6 window update packets
 - 0 packets received after close
 - 0 discarded for bad checksums
 - 0 discarded for bad header offset fields
 - 0 discarded because packet too short
- 13 connection requests
- 18 connection accepts
- 0 bad connection attempts
- 0 listen queue overflows
- 31 connections established (including accepts)
- 36 connections closed (including 2 drops)
 - 3 connections updated cached RTT on close
 - 3 connections updated cached RTT variance on close
 - 0 connections updated cached ssthresh on close
- 0 embryonic connections dropped
- 269 segments updated rtt(of 248 attempts)
- 0 retransmit timeouts
 - 0 connections dropped by retransmit timeout
- 0 persist timeouts
 - 0 connections dropped by persist timeout
- 0 keepalive timeouts
 - 0 keepalive probes sent
 - 0 connections dropped by keepalive
- 0 correct ACK header predictions
- 43 correct data packet header predictions
- 18 syncache entries added
 - 0 retransmitted
 - 0 dupsyn
 - 0 dropped
 - 18 completed
 - 0 bucket overflow

```

    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
0 SACK recovery episodes
0 segment retransmits in SACK recovery episodes
0 byte retransmits in SACK recovery episodes
0 SACK options (SACK blocks) received
0 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
5 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
0 outgoing segments dropped due to policing

```

1cc2-re0:

Tcp:

```

405 packets sent
    271 data packets (23926 bytes)
    0 data packets retransmitted (0 bytes)
    0 resends initiated by MTU discovery
    86 ack only packets (13 packets delayed)
    0 URG only packets
    0 window probe packets
    5 window update packets
    46 control packets
418 packets received
    321 acks(for 23975 bytes)
    9 duplicate acks
    0 acks for unsent data
    234 packets received in-sequence(34403 bytes)
    0 completely duplicate packets(0 bytes)
    0 old duplicate packets
    0 packets with some duplicate data(0 bytes duped)
    0 out-of-order packets(0 bytes)
    0 packets of data after window(0 bytes)
    0 window probes
    7 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
15 connection requests
19 connection accepts
0 bad connection attempts
0 listen queue overflows
34 connections established (including accepts)
39 connections closed (including 2 drops)
    4 connections updated cached RTT on close
    4 connections updated cached RTT variance on close

```

```
    0 connections updated cached ssthresh on close
0 embryonic connections dropped
321 segments updated rtt(of 299 attempts)
0 retransmit timeouts
    0 connections dropped by retransmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
0 keepalive timeouts
    0 keepalive probes sent
    0 connections dropped by keepalive
0 correct ACK header predictions
48 correct data packet header predictions
19 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    19 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
0 SACK recovery episodes
0 segment retransmits in SACK recovery episodes
0 byte retransmits in SACK recovery episodes
0 SACK options (SACK blocks) received
0 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
5 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
0 outgoing segments dropped due to policing
```

lcc3-re0:

Tcp:

```
346 packets sent
    221 data packets (22895 bytes)
    0 data packets retransmitted (0 bytes)
    0 resends initiated by MTU discovery
    81 ack only packets (13 packets delayed)
    0 URG only packets
    0 window probe packets
    5 window update packets
    42 control packets
360 packets received
    267 acks(for 22940 bytes)
    9 duplicate acks
    0 acks for unsent data
    203 packets received in-sequence(33820 bytes)
    0 completely duplicate packets(0 bytes)
```

```

    0 old duplicate packets
    0 packets with some duplicate data(0 bytes duped)
    0 out-of-order packets(0 bytes)
    0 packets of data after window(0 bytes)
    0 window probes
    6 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
13 connection requests
18 connection accepts
0 bad connection attempts
0 listen queue overflows
31 connections established (including accepts)
35 connections closed (including 2 drops)
    3 connections updated cached RTT on close
    3 connections updated cached RTT variance on close
    0 connections updated cached ssthresh on close
0 embryonic connections dropped
267 segments updated rtt(of 246 attempts)
0 retransmit timeouts
    0 connections dropped by retransmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
0 keepalive timeouts
    0 keepalive probes sent
    0 connections dropped by keepalive
0 correct ACK header predictions
43 correct data packet header predictions
18 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    18 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
0 SACK recovery episodes
0 segment retransmits in SACK recovery episodes
0 byte retransmits in SACK recovery episodes
0 SACK options (SACK blocks) received
0 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
5 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
0 outgoing segments dropped due to policing

```

show system statistics (QFX Series)

```
user@switch> show system statistics
Tcp:
571779 packets sent
21517 data packets (1797102 bytes)
2 data packets retransmitted (20 bytes)
0 resends initiated by MTU discovery
3708 ack only packets (531 packets delayed)
0 URG only packets
1 window probe packets
1 window update packets
1093063 control packets
1132541 packets received
20961 acks(for 1796102 bytes)
5861 duplicate acks
0 acks for unsent data
19556 packets received in-sequence(232079 bytes)
3018 completely duplicate packets(0 bytes)
0 old duplicate packets
4 packets with some duplicate data(4 bytes duped)
2 out-of-order packets(2 bytes)
0 packets of data after window(0 bytes)
0 window probes
39 window update packets
0 packets received after close
0 discarded for bad checksums
0 discarded for bad header offset fields
0 discarded because packet too short
546519 connection requests
78 connection accepts
0 bad connection attempts
0 listen queue overflows
100 connections established (including accepts)
546596 connections closed (including 6 drops)
47 connections updated cached RTT on close
47 connections updated cached RTT variance on close
0 connections updated cached ssthresh on close
546497 embryonic connections dropped
20453 segments updated rtt(of 566914 attempts)
2 retransmit timeouts
0 connections dropped by retransmit timeout
0 persist timeouts
0 connections dropped by persist timeout
3028 keepalive timeouts
3027 keepalive probes sent
1 connections dropped by keepalive
7515 correct ACK header predictions
12258 correct data packet header predictions
78 syncache entries added
0 retransmitted
0 dupsyn
4 dropped
78 completed
0 bucket overflow
0 cache overflow
0 reset
0 stale
0 aborted
0 badack
```

```

0 unreachable
0 zone failures
0 cookies sent
0 cookies received
1 SACK recovery episodes
1 segment retransmits in SACK recovery episodes
1 byte retransmits in SACK recovery episodes
71 SACK options (SACK blocks) received
1 SACK options (SACK blocks) sent
0 SACK scoreboard overflow
0 ACKs sent in response to in-window but not exact RSTs
0 ACKs sent in response to in-window SYNs on established connections
0 rcv packets dropped by TCP due to bad address
0 out-of-sequence segment drops due to insufficient memory
546544 RST packets
0 ICMP packets ignored by TCP
0 send packets dropped by TCP due to auth errors
0 rcv packets dropped by TCP due to auth errors
0 outgoing segments dropped due to policing
udp:
147 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
9 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
138 delivered
0 datagrams output
ip:
73704 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with header length < data size
0 with data length < header length
0 with incorrect version number
0 packets destined to dead next hop
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped (queue overflow)
0 fragments dropped after timeout
0 fragments dropped due to over limit
0 packets reassembled ok
1133057 packets for this host
0 packets for unknown/unsupported protocol
40146 packets forwarded
0 packets not forwardable
40146 redirects sent
1121700 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets with bad options
0 packets with options handled without error
0 strict source and record route options
0 loose source and record route options

```

```
0 record route options
0 timestamp options
0 timestamp and address options
0 timestamp and prespecified address options
0 option packets dropped due to rate limit
0 router alert options
0 multicast packets dropped (no iflist)
0 packets dropped (src and int don't match)
0 transit re packets dropped on mgmt i/f
0 packets used first nexthop in ecmp unilist
0 incoming ttpoip packets received
0 incoming ttpoip packets dropped
0 outgoing TTPoIP packets sent
0 outgoing TTPoIP packets dropped
icmp:
0 drops due to rate limit
9 calls to icmp_error
0 errors not generated because old message was icmp
Output histogram:
295 echo reply
9 destination unreachable
0 messages with bad code fields
0 messages less than the minimum length
0 messages with bad checksum
0 messages with bad source address
0 messages with bad length
0 echo drops with broadcast or multicast destination address
0 timestamp drops with broadcast or multicast destination address
Input histogram:
295 echo
295 message responses generated
igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid fields
0 membership reports received
0 membership reports received with invalid fields
0 membership reports received for groups to which we belong
0 Membership reports sent
raw_if:
0 RAW packets transmitted
0 PPPOE packets transmitted
0 ISDN packets transmitted
0 DIALER packets transmitted
0 PPP packets transmitted to pppd
0 PPP packets transmitted to jppd
0 IGMP2 packets transmitted
13 output drops due to tx error
0 MPU packets transmitted
0 PPPOE packets received
0 ISDN packets received
0 DIALER packets received
0 PPP packets received from pppd
0 MPU packets received
0 PPP packets received from jppd
0 IGMP2 packets received
0 Input drops due to bogus protocol
0 input drops due to no mbufs available
0 input drops due to no space in socket
```



```
0 input drops due to no socket
arp:
186413 datagrams received
88 ARP requests received
88 ARP replies received
0 resolution request received
0 unrestricted proxy requests
0 restricted proxy requests
0 received proxy requests
0 proxy requests not proxied
0 restricted proxy requests not proxied
0 datagrams with bogus interface
0 datagrams with incorrect length
0 datagrams for non-IP protocol
0 datagrams with unsupported op code
0 datagrams with bad protocol address length
0 datagrams with bad hardware address length
0 datagrams with multicast source address
0 datagrams with multicast source address
0 datagrams with my own hardware address
164 datagrams for an address not on the interface
0 datagrams with a broadcast source address
0 datagrams with source address duplicate to mine
186065 datagrams which were not for me
0 packets discarded waiting for resolution
0 packets sent after waiting for resolution
50 ARP requests sent
88 ARP replies sent
0 requests for memory denied
0 requests dropped on entry
0 requests dropped during retry
0 requests dropped due to interface deletion
0 requests on unnumbered interfaces
0 new requests on unnumbered interfaces
0 replies for from unnumbered interfaces
0 requests on unnumbered interface with non-subnetted donor
0 replies from unnumbered interface with non-subnetted donor
ip6:
0 total packets received
0 packets with size smaller than minimum
0 packets with data size < data length
0 packets with bad options
0 packets with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 fragments that exceeded limit
0 packets reassembled ok
0 packets for this host
0 packets forwarded
0 packets not forwardable
0 redirects sent
0 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 packets that violated scope rules
0 multicast packets which we don't join
0 packets whose headers are not continuous
```

```
0 tunneling packets that can't find gif
0 packets discarded due to too may headers
0 failures of source address selection
0 forward cache hit
0 forward cache miss
0 Packets destined to dead next hop
0 option packets dropped due to rate limit
0 Packets dropped (src and int don't match)
0 packets dropped due to bad protocol
0 transit re packet(null) dropped on mgmt i/f
icmp6:
0 Calls to icmp_error
0 Errors not generated because old message was icmp error
0 Errors not generated because rate limitation
0 Messages with bad code fields
0 Messages < minimum length
0 Bad checksums
0 Messages with bad length
0 No route
0 Administratively prohibited
0 Beyond scope
0 Address unreachable
0 Port unreachable
0 packet too big
0 Time exceed transit
0 Time exceed reassembly
0 Erroneous header field
0 Unrecognized next header
0 Unrecognized option
0 redirect
0 Unknown
0 Message responses generated
0 Messages with too many ND options
pfkey:
0 Requests sent from userland
0 Bytes sent from userland
histogram by message type:
0 reserved
0 dump
0 Messages with invalid length field
0 Messages with invalid version field
0 Messages with invalid message type field
0 Messages too short
0 Messages with memory allocation failure
0 Messages with duplicate extension
0 Messages with invalid extension type
0 Messages with invalid sa type
0 Messages with invalid address extension
0 Requests sent to userland
0 Bytes sent to userland
histogram by message type:
0 reserved
0 dump
0 Messages toward single socket
0 Messages toward all sockets
0 Messages toward registered sockets
0 Messages with memory allocation failure
c1n1:
0 Total packets received
0 Packets delivered
0 Too small packets
```

```
0 Packets with bad header length
0 Packets with bad checksum
0 Bad version packets
0 Unknown or unsupported protocol packets
0 Packets with bogus sdl size
0 No free memory in socket buffer
0 Send packets discarded
0 Sbappend failure
0 Mcopy failure
0 Address fields were not reasonable
0 Segment information forgotten
0 Forwarded packets
0 Total packets sent
0 Output packets discarded
0 Non-forwarded packets
0 Packets fragmented
0 Fragments sent
0 Fragments discarded
0 Fragments timed out
0 Fragmentation prohibited
0 Packets reconstructed
0 Packets destined to dead nexthop
0 Packets discarded due to no route
0 Error pdu rate drops
0 ER pdu generation failure
esis:
0 Total pkts received
0 Total packets consumed by protocol
0 Pdus received with bad checksum
0 Pdus received with bad version number
0 Pdus received with bad type field
0 Short pdus received
0 Pdus with bogus sdl size
0 Pdus with bad header length
0 Pdus with unknown or unsupported protocol
0 No free memory in socket buffer
0 Send packets discarded
0 Sbappend failure
0 Mcopy failure
0 ISO family not configured
tnp:
0 Unicast packets received
0 Broadcast packets received
0 Fragmented packets received
0 Hello packets dropped
0 Fragments dropped
0 Fragment reassembly queue flushes
0 Packets with tnp src address collision received
0 Hello packets received
0 Control packets received
0 Rdp packets received
0 Udp packets received
0 Tunnel packets received
0 Input packets discarded with no protocol
0 Packets of version unspecified received
0 Packets of version 1 received
0 Packets of version 2 received
0 Packets of version 3 received
0 Unicast packets sent
0 Broadcast packets sent
0 Fragmented packets sent
```

```
0 Hello packets dropped
0 Fragments dropped
0 Hello packets sent
0 Control packets sent
0 Rdp packets sent
0 Udp packets sent
0 Tunnel packets sent
0 Packets sent with unknown protocol
0 Packets of version unspecified sent
0 Packets of version 1 sent
0 Packets of version 2 sent
0 Packets of version 3 sent
rdp:
0 Input packets
0 Packets discarded for bad checksum
0 Packets discarded due to bad sequence number
0 Refused connections
0 Acks received
0 Packets dropped due to full socket buffers
0 Retransmits
0 Output packets
0 Acks sent
0 Connects
0 Closes
0 Keepalives received
0 Keepalives sent
tudp:
67 Datagrams received
0 Datagrams with incomplete header
0 Datagrams with bad data length field
0 Datagrams with bad checksum
0 Datagrams dropped due to no socket
0 Broadcast/multicast datagrams dropped due to no socket
0 Datagrams dropped due to full socket buffers
67 Delivered
68 Datagrams output
ttp:
0 Packets sent
0 Packets sent while unconnected
0 Packets sent while interface down
0 Packets sent couldn't get buffer
0 Packets sent couldn't find neighbor
0 L2 packets received
0 Unknown L3 packets received
0 IPv4 L3 packets received
0 MPLS L3 packets received
0 MPLS->IPv4 L3 packets received
0 IPv4->MPLS L3 packets received
0 VPLS L3 packets received
0 IPv6 L3 packets received
0 ARP L3 packets received
0 CLNP L3 packets received
0 TNP L3 packets received
0 NULL L3 packets received
0 Cyclotron cycle L3 packets received
0 Cyclotron send L3 packets received
0 Packets received while unconnected
0 Packets received from unknown ifl
0 Input packets couldn't get buffer
0 Input packets with bad type
0 Input packets with discard type
```

```

0 Input packets with too many tlvs
0 Input packets with bad tlv header
70633 Input packets with bad tlv type
68877 Input packets dropped based on tlv result0 Input packets for which rt lookup
  is bypassed
mpls:
0 Total MPLS packets received
0 Packets forwarded
0 Packets dropped
0 Packets with header too small
0 After tagging, packets can't fit link MTU
0 Packets with IPv4 explicit NULL tag
0 Packets with IPv4 explicit NULL cksum errors
0 Packets with router alert tag
0 LSP ping packets (ttl-expired/router alert)
0 Packets with ttl expired
0 Packets with tag encoding error
0 Packets discarded due to no route
0 Packets used first nexthop in ecmp unilist
0 Packets dropped due to ifl down
vpls:
0 Total packets received
0 Packets with size smaller than minimum
0 Packets with incorrect version number
0 Packets for this host
0 Packets with no logical interface
0 Packets with no family
0 Packets with no route table
582 Copyright © 2010, Juniper Networks, Inc.
0 Packets with no auxiliary table
0 Packets with no corefacing entry
0 packets with no CE-facing entry
0 MAC route learning requests
0 MAC routes learnt
0 Requests to learn an existing route
0 Learning requests while learning disabled on interface
0 Learning requests over capacity
0 MAC routes moved
0 Requests to move static route
0 MAC route aging requests
0 MAC routes aged
0 Bogus address in aging requests
0 Requests to age static route
0 Requests to re-ageout aged route
0 Requests involving multiple peer FEs
0 Aging acks from PFE
0 Aging non-acks from PFE
0 Aging requests timed out waiting on FEs
0 Aging requests over max-rate
0 Errors finding peer FEs
0 Unsupported platform
0 Packets dropped due to no l3 route table
0 Packets dropped due to no local ifl
0 Packets punted
0 Packets dropped due to no socket
bridge:
Input:
0 packets received
0 packets forwarded
0 packets failed to forward
0 packets dropped

```

```
0 packets with vmember lookup failures
0 packets with vlan lookup failures
0 packets with stp state lookup failures
0 packets dropped due to stp blocked/listening
0 packets dropped due to stp learning
0 packets with src MAC learning failures
0 packets with input control processing failures
Forward:
0 packets sent successfully
0 packets with send failures
0 packets forwarded to l3 interface
0 packets with l3 send failures
0 packets discarded
0 packets with l2ifl store failures
0 packets with ifl mismatch failures
0 packets with packet duplication failures
0 packets with tag lookup failures
0 packets with no route for DMAC
0 packets with no route table
0 packets with no nexthop
0 packets with dead nexthop
0 packets with eof reached error
Learning:
0 MACs learned
0 packets sent to l3 interface
0 packets with l3 send failures
0 packets hit holdq while learning
0 MAC moves
0 packets discarded
0 packets with no route for SMAC
0 packets with no nexthop
0 packets with dead nexthop
0 packets dropped due to no resolve route
0 packets with l3 ifd lookup failures
0 packets with l3 ifl lookup failures
0 packets with l3 invalid rnh
0 packets with no route for SMAC in clone learning
0 packets with no nexthop in clone learning
0 packets with dead nexthop in clone learning
0 packets dropped due to no resolve nh in clone learning
Output:
0 packets forwarded
0 packets failed to forward
0 packets with vmember lookup failures
0 packets with vlan lookup failures
0 packets with input control processing failures
Send:
0 packets sent successfully
0 packets with send failures
0 packets dropped due to interface down
0 packets with dev output failures
0 blocked ifl discards
0 packets with tag lookup failures
0 packets with stp state lookup failures
0 packets with tag insertion failures
0 packets with tag removal failures
Flood:
0 packets flooded
0 flood failures
IGMP:
0 packets sent successfully
```

```
0 packets with send failures
0 packets forwarded
0 packets failed to forward
0 packets with mpull failures
0 packets with vmember lookup failures
0 packets with vlan lookup failures
0 packets with ifl lookup failures
0 packets with tag lookup failures
Misc:
0 packets with size smaller than minimum
0 packets with double tags
0 packets with no ifl
0 packets with no family
0 packets with no route table
```

show system storage

| | |
|--|--|
| List of Syntax | Syntax on page 606 Syntax (EX Series Switches) on page 606 Syntax (MX Series Router) on page 606 Syntax (QFX Series) on page 606 Syntax (SRX Series) on page 606 Syntax (TX Matrix Router) on page 606 Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs) on page 606 |
| Syntax | <code>show system storage</code> <code><detail></code> <code><invoke-on (all-routing-engines other-routing-engine)></code> |
| Syntax (EX Series Switches) | <code>show system storage</code> <code><detail></code> <code><all-members></code> <code><local></code> <code><member <i>member-id</i>></code> <code><invoke-on (all-routing-engines other-routing-engine)></code> |
| Syntax (MX Series Router) | <code>show system storage</code> <code><detail></code> <code><all-members></code> <code><local></code> <code><member <i>member-id</i>></code> <code><invoke-on (all-routing-engines other-routing-engine)></code> |
| Syntax (QFX Series) | <code>show system storage</code> <code><detail></code> <code><infrastructure <i>name</i>></code> <code><interconnect-device <i>name</i>></code> <code><node-group <i>name</i>></code> <code><invoke-on (all-routing-engines other-routing-engine)></code> |
| Syntax (SRX Series) | <code>show system storage</code> <code><detail></code> <code><partitions></code> <code><invoke-on (all-routing-engines other-routing-engine)></code> |
| Syntax (TX Matrix Router) | <code>show system storage</code> <code><detail></code> <code><all-chassis all-lcc lcc <i>number</i> scc></code> <code><invoke-on (all-routing-engines other-routing-engine)></code> |
| Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs) | <code>show system storage</code> <code><detail></code> <code><all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>></code> <code><invoke-on (all-routing-engines other-routing-engine)></code> |

| | |
|----------------------------|--|
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option introduced for the TX Matrix Plus router in JUNOS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Option invoke-on (all-routing-engines other-routing-engine) introduced in Junos OS Release 14.1</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> |
| Description | <p>Display statistics about the amount of free disk space in the router's or switch's file systems.</p> |
| Options | <p>none—Display standard information about the amount of free disk space in the router's or switch's file systems.</p> <p>detail—(Optional) Display detailed output.</p> <p>invoke-on all-routing-engines—(Optional) Display the system storage information on all master and backup Routing Engines on a routing matrix based on the TX Matrix or TX Matrix Plus router or on a router that has dual Routing Engines.</p> <p>invoke-on other-routing-engines—(Optional) Display the system storage information on the other Routing Engine. For example, if you issue this command on the master Routing Engine on an M320 router, the JUNOS Software displays the system storage information on the backup Routing Engine. On a routing matrix based on the TX Matrix or TX Matrix Plus router, if you issue this command on the TX Matrix or TX Matrix Plus router's master Routing Engine, the JUNOS Software displays all the system storage information on all the backup Routing Engines.</p> <p>all-chassis—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system storage statistics for all the routers in the chassis.</p> <p>all-lcc—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system storage statistics for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display system storage statistics for all routers connected to the TX Matrix Plus router.</p> <p>all-members—(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for all members of the Virtual Chassis configuration.</p> <p>infrastructure name—(QFabric systems only) (Optional) Display system storage statistics for the fabric control Routing Engines or fabric manager Routing Engines.</p> <p>interconnect-device name—(QFabric systems only) (Optional) Display system storage statistics for the Interconnect device.</p> <p>lcc number—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display system storage statistics for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display system storage statistics for a specific router that is connected to the TX Matrix Plus router.</p> |

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

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

local—(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

node-group *name*—(QFabric systems only) (Optional) Display system storage statistics for the Node group.

scc—(TX Matrix routers only) (Optional) Display system storage statistics for the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Display system storage statistics for the TX Matrix Plus router. Replace *number* with 0.

Additional Information By default, when you issue the **show system storage** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

Required Privilege Level view

Related Documentation

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)
- [show system storage partitions \(View SRX Series\)](#)

List of Sample Output

- [show system storage on page 609](#)
- [show system storage \(TX Matrix Plus Router\) on page 609](#)
- [show system storage \(QFX3500 Switch\) on page 611](#)
- [show system storage invoke-on all-routing-engines on page 612](#)

[show system storage invoke-on other-routing-engine on page 613](#)

Output Fields [Table 17 on page 609](#) describes the output fields for the **show system storage** command. Output fields are listed in the approximate order in which they appear.

Table 17: show system storage Output Fields

| Field Name | Field Description |
|-------------------|--|
| Filesystem | Name of the filesystem. |
| Size | Size of the filesystem. |
| Used | Amount of space used in the filesystem. |
| Avail | Amount of space available in the filesystem. |
| Capacity | Percentage of the filesystem space that is being used. |
| Mounted on | Directory in which the filesystem is mounted. |

Sample Output

show system storage

```

user@host> show system storage
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a      77M       37M       34M     52%      /
devfs           16K       16K        0B    100%    /dev/
/dev/vn0        12M       12M        0B    100%    /packages/mnt/jbase
/dev/vn1        39M       39M        0B    100%
/packages/mnt/jkernel-7.2R1.7
/dev/vn2        12M       12M        0B    100%
/packages/mnt/jpfe-M40-7.2R1.7
/dev/vn3        2.3M      2.3M        0B    100%
/packages/mnt/jdocs-7.2R1.7
/dev/vn4        14M       14M        0B    100%
/packages/mnt/jroute-7.2R1.7
/dev/vn5        4.5M      4.5M        0B    100%
/packages/mnt/jcrypto-7.2R1.7
mfs:172         1.5G      4.0K       1.3G     0%      /tmp
/dev/ad0s1e      12M       20K        11M     0%      /config
procfs          4.0K      4.0K        0B    100%    /proc
/dev/ad1s1f      9.4G      4.9G       3.7G     57%     /var

```

show system storage (TX Matrix Plus Router)

```

user@host> show system storage
sfc0-re0:
-----
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a      3.4G      178M      2.9G     6%      /
devfs           1.0K      1.0K        0B    100%    /dev
devfs           1.0K      1.0K        0B    100%    /dev/
/dev/md0         33M       33M        0B    100%    /packages/mnt/jbase
/dev/md1        216M      216M        0B    100%

```

```

/packages/mnt/jkernel-9.6-20090519.0
/dev/md2          66M      66M      0B      100%
/packages/mnt/jpfe-T-9.6-20090519.0
/dev/md3          4.1M     4.1M     0B      100%
/packages/mnt/jdocs-9.6-20090519.0
/dev/md4          57M      57M      0B      100%
/packages/mnt/jroute-9.6-20090519.0
/dev/md5          15M      15M      0B      100%
/packages/mnt/jcrypto-9.6-20090519.0
/dev/md6          34M      34M      0B      100%
/packages/mnt/jpfe-common-9.6-20090519.0
/dev/md7          2.0G     10.0K    1.8G     0% /tmp
/dev/md8          2.0G     1.0M     1.8G     0% /mfs
/dev/ad0s1e       383M     82K      352M     0% /config
procfs           4.0K     4.0K     0B      100% /proc
/dev/ad1s1f       52G      7.5G     40G     16% /var

```

lcc0-re0:

```

-----
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a     3.4G     178M     2.9G      6% /
devfs           1.0K     1.0K      0B     100% /dev
devfs           1.0K     1.0K      0B     100% /dev/
/dev/md0        33M      33M      0B     100% /packages/mnt/jbase
/dev/md1        216M     216M      0B     100%
/packages/mnt/jkernel-9.6-20090519.0
/dev/md2        66M      66M      0B     100%
/packages/mnt/jpfe-T-9.6-20090519.0
/dev/md3        4.1M     4.1M      0B     100%
/packages/mnt/jdocs-9.6-20090519.0
/dev/md4        57M      57M      0B     100%
/packages/mnt/jroute-9.6-20090519.0
/dev/md5        15M      15M      0B     100%
/packages/mnt/jcrypto-9.6-20090519.0
/dev/md6        34M      34M      0B     100%
/packages/mnt/jpfe-common-9.6-20090519.0
/dev/md7        2.0G     10.0K    1.8G     0% /tmp
/dev/md8        2.0G     540K    1.8G     0% /mfs
/dev/ad0s1e     383M     88K      352M     0% /config
procfs          4.0K     4.0K      0B     100% /proc
/dev/ad1s1f     52G      6.3G     41G     13% /var

```

lcc1-re0:

```

-----
Filesystem      Size      Used      Avail  Capacity  Mounted on
/dev/ad0s1a     3.4G     178M     2.9G      6% /
devfs           1.0K     1.0K      0B     100% /dev
devfs           1.0K     1.0K      0B     100% /dev/
/dev/md0        33M      33M      0B     100% /packages/mnt/jbase
/dev/md1        216M     216M      0B     100%
/packages/mnt/jkernel-9.6-20090519.0
/dev/md2        66M      66M      0B     100%
/packages/mnt/jpfe-T-9.6-20090519.0
/dev/md3        4.1M     4.1M      0B     100%
/packages/mnt/jdocs-9.6-20090519.0
/dev/md4        57M      57M      0B     100%
/packages/mnt/jroute-9.6-20090519.0
/dev/md5        15M      15M      0B     100%
/packages/mnt/jcrypto-9.6-20090519.0
/dev/md6        34M      34M      0B     100%
/packages/mnt/jpfe-common-9.6-20090519.0

```

| | | | | | |
|-------------|------|-------|------|------|---------|
| /dev/md7 | 2.0G | 10.0K | 1.8G | 0% | /tmp |
| /dev/md8 | 2.0G | 540K | 1.8G | 0% | /mfs |
| /dev/ad0s1e | 383M | 88K | 352M | 0% | /config |
| procfs | 4.0K | 4.0K | 0B | 100% | /proc |
| /dev/ad1s1f | 23G | 13G | 7.7G | 64% | /var |

lcc2-re0:

| Filesystem | Size | Used | Avail | Capacity | Mounted on |
|--|------|-------|-------|----------|---------------------|
| /dev/ad0s1a | 3.4G | 178M | 2.9G | 6% | / |
| devfs | 1.0K | 1.0K | 0B | 100% | /dev |
| devfs | 1.0K | 1.0K | 0B | 100% | /dev/ |
| /dev/md0 | 33M | 33M | 0B | 100% | /packages/mnt/jbase |
| /dev/md1 | 216M | 216M | 0B | 100% | |
| /packages/mnt/jkernel-9.6-20090519.0 | | | | | |
| /dev/md2 | 66M | 66M | 0B | 100% | |
| /packages/mnt/jpfe-T-9.6-20090519.0 | | | | | |
| /dev/md3 | 4.1M | 4.1M | 0B | 100% | |
| /packages/mnt/jdocs-9.6-20090519.0 | | | | | |
| /dev/md4 | 57M | 57M | 0B | 100% | |
| /packages/mnt/jroute-9.6-20090519.0 | | | | | |
| /dev/md5 | 15M | 15M | 0B | 100% | |
| /packages/mnt/jcrypto-9.6-20090519.0 | | | | | |
| /dev/md6 | 34M | 34M | 0B | 100% | |
| /packages/mnt/jpfe-common-9.6-20090519.0 | | | | | |
| /dev/md7 | 2.0G | 10.0K | 1.8G | 0% | /tmp |
| /dev/md8 | 2.0G | 540K | 1.8G | 0% | /mfs |
| /dev/ad0s1e | 383M | 64K | 352M | 0% | /config |
| procfs | 4.0K | 4.0K | 0B | 100% | /proc |
| /dev/ad1s1f | 23G | 3.7G | 17G | 18% | /var |

lcc3-re0:

| Filesystem | Size | Used | Avail | Capacity | Mounted on |
|--|------|-------|-------|----------|---------------------|
| /dev/ad0s1a | 3.4G | 178M | 2.9G | 6% | / |
| devfs | 1.0K | 1.0K | 0B | 100% | /dev |
| devfs | 1.0K | 1.0K | 0B | 100% | /dev/ |
| /dev/md0 | 33M | 33M | 0B | 100% | /packages/mnt/jbase |
| /dev/md1 | 216M | 216M | 0B | 100% | |
| /packages/mnt/jkernel-9.6-20090519.0 | | | | | |
| /dev/md2 | 66M | 66M | 0B | 100% | |
| /packages/mnt/jpfe-T-9.6-20090519.0 | | | | | |
| /dev/md3 | 4.1M | 4.1M | 0B | 100% | |
| /packages/mnt/jdocs-9.6-20090519.0 | | | | | |
| /dev/md4 | 57M | 57M | 0B | 100% | |
| /packages/mnt/jroute-9.6-20090519.0 | | | | | |
| /dev/md5 | 15M | 15M | 0B | 100% | |
| /packages/mnt/jcrypto-9.6-20090519.0 | | | | | |
| /dev/md6 | 34M | 34M | 0B | 100% | |
| /packages/mnt/jpfe-common-9.6-20090519.0 | | | | | |
| /dev/md7 | 2.0G | 10.0K | 1.8G | 0% | /tmp |
| /dev/md8 | 2.0G | 540K | 1.8G | 0% | /mfs |
| /dev/ad0s1e | 383M | 34K | 352M | 0% | /config |
| procfs | 4.0K | 4.0K | 0B | 100% | /proc |
| /dev/ad1s1f | 23G | 18G | 3.5G | 84% | /var |

show system storage (QFX3500 Switch)

user@switch> show system storage

| Filesystem | Size | Used | Avail | Capacity | Mounted on |
|-------------|------|------|-------|----------|------------|
| /dev/da0s2a | 343M | 192M | 123M | 61% | / |

| | | | | | |
|---------------------------------------|------|------|------|------|---------------------|
| devfs | 1.0K | 1.0K | 0B | 100% | /dev |
| /dev/md0 | 119M | 119M | 0B | 100% | /packages/mnt/jbase |
| /dev/md1 | 513M | 513M | 0B | 100% | |
| /packages/mnt/jkernel-qfx-11.1R1.5 | | | | | |
| /dev/md2 | 37M | 37M | 0B | 100% | |
| /packages/mnt/jpfe-qfx-e9xxx-11.1R1.5 | | | | | |
| /dev/md3 | 6.0M | 6.0M | 0B | 100% | |
| /packages/mnt/jdocs-qfx-11.1R1.5 | | | | | |
| /dev/md4 | 216M | 216M | 0B | 100% | |
| /packages/mnt/jroute-qfx-11.1R1.5 | | | | | |
| /dev/md5 | 59M | 59M | 0B | 100% | |
| /packages/mnt/jcrypto-qfx-11.1R1.5 | | | | | |
| /dev/md6 | 85M | 85M | 0B | 100% | |
| /packages/mnt/jswitch-qfx-11.1R1.5 | | | | | |
| /dev/md7 | 63M | 8.0K | 58M | 0% | /tmp |
| /dev/da0s2f | 228M | 14M | 196M | 7% | /var |
| /dev/da0s3d | 590M | 3.0M | 540M | 1% | /var/tmp |
| /dev/da0s3e | 104M | 162K | 95M | 0% | /config |
| procfs | 4.0K | 4.0K | 0B | 100% | /proc |

show system storage invoke-on all-routing-engines

```
user@host> show system storage invoke-on all-routing-engines
re0:
```

| Filesystem | Size | Used | Avail | Capacity | Mounted on |
|--|------|------|-------|----------|---------------------|
| /dev/ad0s1a | 3.3G | 440M | 2.6G | 14% | / |
| devfs | 1.0K | 1.0K | 0B | 100% | /dev |
| /dev/md0 | 76M | 76M | 0B | 100% | /packages/mnt/jbase |
| /dev/md1 | 40M | 40M | 0B | 100% | |
| /packages/mnt/jkernel64-14.1-20140407.1 | | | | | |
| /dev/md2 | 219M | 219M | 0B | 100% | |
| /packages/mnt/jpfe-T-14.1-20140407.1 | | | | | |
| /dev/md3 | 5.4M | 5.4M | 0B | 100% | |
| /packages/mnt/jdocs-14.1-20140407.1 | | | | | |
| /dev/md4 | 116M | 116M | 0B | 100% | |
| /packages/mnt/jroute-14.1-20140407.1 | | | | | |
| /dev/md5 | 44M | 44M | 0B | 100% | |
| /packages/mnt/jcrypto64-14.1-20140407.1 | | | | | |
| /dev/md6 | 70M | 70M | 0B | 100% | |
| /packages/mnt/jpfe-common-14.1-20140407.1 | | | | | |
| /dev/md7 | 182K | 182K | 0B | 100% | |
| /packages/mnt/jplatform-14.1-20140407.1 | | | | | |
| /dev/md8 | 499M | 499M | 0B | 100% | |
| /packages/mnt/jruntime-14.1-20140407.1 | | | | | |
| /dev/md9 | 41M | 41M | 0B | 100% | |
| /packages/mnt/jruntime64-14.1-20140407.1 | | | | | |
| /dev/md10 | 12M | 12M | 0B | 100% | |
| /packages/mnt/py-base-i386-14.1-20140407.1 | | | | | |
| /dev/md11 | 3.2G | 8.0K | 2.9G | 0% | /tmp |
| /dev/md12 | 3.2G | 1.1M | 2.9G | 0% | /mfs |
| /dev/ad0s1e | 376M | 220K | 346M | 0% | /config |
| procfs | 4.0K | 4.0K | 0B | 100% | /proc |
| /dev/ad1s1f | 50G | 43G | 3.2G | 93% | /var |

```
re1:
```

| Filesystem | Size | Used | Avail | Capacity | Mounted on |
|-------------|------|------|-------|----------|---------------------|
| /dev/ad0s1a | 3.3G | 440M | 2.6G | 14% | / |
| devfs | 1.0K | 1.0K | 0B | 100% | /dev |
| /dev/md0 | 76M | 76M | 0B | 100% | /packages/mnt/jbase |

| | | | | | |
|--|------|------|------|------|---------|
| /dev/md1 | 40M | 40M | 0B | 100% | |
| /packages/mnt/jkernel64-14.1-20140407.1 | | | | | |
| /dev/md2 | 219M | 219M | 0B | 100% | |
| /packages/mnt/jpfe-T-14.1-20140407.1 | | | | | |
| /dev/md3 | 5.4M | 5.4M | 0B | 100% | |
| /packages/mnt/jdocs-14.1-20140407.1 | | | | | |
| /dev/md4 | 116M | 116M | 0B | 100% | |
| /packages/mnt/jroute-14.1-20140407.1 | | | | | |
| /dev/md5 | 44M | 44M | 0B | 100% | |
| /packages/mnt/jcrypto64-14.1-20140407.1 | | | | | |
| /dev/md6 | 70M | 70M | 0B | 100% | |
| /packages/mnt/jpfe-common-14.1-20140407.1 | | | | | |
| /dev/md7 | 182K | 182K | 0B | 100% | |
| /packages/mnt/jplatform-14.1-20140407.1 | | | | | |
| /dev/md8 | 499M | 499M | 0B | 100% | |
| /packages/mnt/jruntime-14.1-20140407.1 | | | | | |
| /dev/md9 | 41M | 41M | 0B | 100% | |
| /packages/mnt/jruntime64-14.1-20140407.1 | | | | | |
| /dev/md10 | 12M | 12M | 0B | 100% | |
| /packages/mnt/py-base-i386-14.1-20140407.1 | | | | | |
| /dev/md11 | 3.2G | 8.0K | 2.9G | 0% | /tmp |
| /dev/md12 | 3.2G | 662K | 2.9G | 0% | /mfs |
| /dev/ad0s1e | 375M | 230K | 344M | 0% | /config |
| procfs | 4.0K | 4.0K | 0B | 100% | /proc |
| /dev/ad1s1f | 52G | 46G | 2.2G | 95% | /var |

show system storage invoke-on other-routing-engine

```
user@host> show system storage invoke-on other-routing-engine
re1:
```

| Filesystem | Size | Used | Avail | Capacity | Mounted on |
|--|------|------|-------|----------|---------------------|
| /dev/ad0s1a | 3.3G | 440M | 2.6G | 14% | / |
| devfs | 1.0K | 1.0K | 0B | 100% | /dev |
| /dev/md0 | 76M | 76M | 0B | 100% | /packages/mnt/jbase |
| /dev/md1 | 40M | 40M | 0B | 100% | |
| /packages/mnt/jkernel64-14.1-20140407.1 | | | | | |
| /dev/md2 | 219M | 219M | 0B | 100% | |
| /packages/mnt/jpfe-T-14.1-20140407.1 | | | | | |
| /dev/md3 | 5.4M | 5.4M | 0B | 100% | |
| /packages/mnt/jdocs-14.1-20140407.1 | | | | | |
| /dev/md4 | 116M | 116M | 0B | 100% | |
| /packages/mnt/jroute-14.1-20140407.1 | | | | | |
| /dev/md5 | 44M | 44M | 0B | 100% | |
| /packages/mnt/jcrypto64-14.1-20140407.1 | | | | | |
| /dev/md6 | 70M | 70M | 0B | 100% | |
| /packages/mnt/jpfe-common-14.1-20140407.1 | | | | | |
| /dev/md7 | 182K | 182K | 0B | 100% | |
| /packages/mnt/jplatform-14.1-20140407.1 | | | | | |
| /dev/md8 | 499M | 499M | 0B | 100% | |
| /packages/mnt/jruntime-14.1-20140407.1 | | | | | |
| /dev/md9 | 41M | 41M | 0B | 100% | |
| /packages/mnt/jruntime64-14.1-20140407.1 | | | | | |
| /dev/md10 | 12M | 12M | 0B | 100% | |
| /packages/mnt/py-base-i386-14.1-20140407.1 | | | | | |
| /dev/md11 | 3.2G | 8.0K | 2.9G | 0% | /tmp |
| /dev/md12 | 3.2G | 662K | 2.9G | 0% | /mfs |
| /dev/ad0s1e | 375M | 230K | 344M | 0% | /config |
| procfs | 4.0K | 4.0K | 0B | 100% | /proc |
| /dev/ad1s1f | 52G | 46G | 2.2G | 95% | /var |

show system switchover

| | |
|--------------------------------|--|
| List of Syntax | Syntax on page 615 |
| | Syntax (TX Matrix Router) on page 615 |
| | Syntax (TX Matrix Plus Router) on page 615 |
| | Syntax (MX Series Router) on page 615 |
| Syntax | show system switchover |
| Syntax (TX Matrix Router) | show system switchover <all-chassis all-lcc lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | show system switchover <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > |
| Syntax (MX Series Router) | show system switchover <all-members> <local> <member <i>member-id</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced in Junos OS Release 13.2X51-D20 for QFX Series switches. |
| Description | Display whether graceful Routing Engine switchover is configured, the state of the kernel replication (ready or synchronizing), any replication errors, and whether the primary and standby Routing Engines are using compatible versions of the kernel database. |



NOTE: Issue the **show system switchover** command *only* on the backup Routing Engine. This command is *not* supported on the master Routing Engine because the kernel-replication process daemon does not run on the master Routing Engine. This process runs only on the backup Routing Engine.

Beginning Junos OS Release 9.6, the **show system switchover** command has been deprecated on the master Routing Engine on all routers other than a TX Matrix (switch-card chassis) or a TX Matrix Plus (switch-fabric chassis) router.

However, in a routing matrix, if you issue the **show system switchover** command on the master Routing Engine of the TX Matrix router (or switch-card chassis), the CLI displays graceful switchover information for the master Routing Engine of the T640 routers (or line-card chassis) in the routing matrix. Likewise, if you issue the **show system switchover** command on the master Routing Engine of a TX Matrix Plus router (or switch-fabric chassis), the CLI displays output for the master Routing Engine of T1600 or T4000 routers in the routing matrix.

Options **all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display graceful Routing Engine switchover information for all Routing Engines on the TX Matrix router and the T640 routers configured in the routing matrix. On a TX Matrix Plus router, display graceful Routing Engine switchover information for all Routing Engines on the TX Matrix Plus router and the T1600 or T4000 routers configured in the routing matrix.

all-lcc—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display graceful Routing Engine switchover information for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, display graceful Routing Engine switchover information for all connected T1600 or T4000 LCCs.

Note that in this instance, packets get dropped. The LCCs perform GRES on their own chassis (GRES cannot be handled by one particular chassis for the entire router) and synchronization is not possible as the LCC plane bringup time varies for each LCC. Therefore, when there is traffic on these planes, there may be a traffic drop.

all-members—(MX Series routers only) (Optional) Display graceful Routing Engine switchover information for all Routing Engines on all members of the Virtual Chassis configuration.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display graceful Routing Engine switchover information for a specific T640 router connected to the TX Matrix router. On a TX Matrix Plus router, display graceful Routing Engine switchover information for a specific router connected to the TX Matrix Plus router.

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

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

local—(MX Series routers only) (Optional) Display graceful Routing Engines switchover information for all Routing Engines on the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display graceful Routing Engine switchover information for all Routing Engines on the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

scc—(TX Matrix router only) (Optional) Display graceful Routing Engine switchover information for the TX Matrix router (or switch-card chassis).

sfc—(TX Matrix Plus routers only) (Optional) Display graceful Routing Engine switchover information for the TX Matrix Plus router.

Additional Information If you issue the **show system switchover** command on a TX Matrix backup Routing Engine, the command is broadcast to all the T640 backup Routing Engines that are connected to it.

Likewise, if you issue the **show system switchover** command on a TX Matrix Plus backup Routing Engine, the command is broadcast to all the T1600 or T4000 backup Routing Engines that are connected to it.

If you issue the **show system switchover** command on the active Routing Engine in the master router of an MX Series Virtual Chassis, the router displays a message that this command is not applicable on this member of the Virtual Chassis.

Required Privilege Level view

Related Documentation

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

[show system switchover \(Backup Routing Engine - Ready\) on page 618](#)
[show system switchover \(Backup Routing Engine - Not Ready\) on page 619](#)
[show system switchover \(MX Virtual Chassis\) on page 619](#)
[show system switchover \(MX Virtual Chassis\) on page 619](#)
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Master Ready on page 619](#)
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Master Not Ready on page 620](#)
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Backup Ready on page 620](#)
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Backup Not Ready on page 620](#)
[show system switchover all-lcc \(Routing Matrix and Routing Matrix Plus\) on page 621](#)

Output Fields [Table 18 on page 617](#) describes the output fields for the **show system switchover** command. Output fields are listed in the approximate order in which they appear.

Table 18: show system switchover Output Fields

| Field Name | Field Description |
|---------------------|--|
| Graceful switchover | Display graceful Routing Engine switchover status: <ul style="list-style-type: none"> • On—Indicates graceful-switchover is specified for the routing-options configuration command. • Off—Indicates graceful-switchover is not specified for the routing-options configuration command. |

Table 18: show system switchover Output Fields (*continued*)

| Field Name | Field Description |
|-------------------------------|--|
| Configuration database | <p>State of the configuration database:</p> <ul style="list-style-type: none"> • Ready—Configuration database has synchronized. • Synchronizing—Configuration database is synchronizing. Displayed when there are updates within the last 5 seconds. • Synchronize failed—Configuration database synchronize process failed. |
| Kernel database | <p>State of the kernel database:</p> <ul style="list-style-type: none"> • Ready—Kernel database has synchronized. This message implies that the system is ready for GRES. • Synchronizing—Kernel database is synchronizing. Displayed when there are updates within the last 5 seconds. • Version incompatible—The primary and standby Routing Engines are running incompatible kernel database versions. • Replication error—An error occurred when the state was replicated from the primary Routing Engine. Inspect Steady State for possible causes, or notify Juniper Networks customer support. |
| Peer state | <p>Routing Engine peer state:</p> <p>This field is displayed only when ksyncd is running in multichassis mode (LCC master).</p> <ul style="list-style-type: none"> • Steady State—Peer completed switchover transition. • Peer Connected—Peer in switchover transition. |
| Switchover Status | <p>Switchover Status:</p> <ul style="list-style-type: none"> • Ready—Message for system being switchover ready. • Not Ready—Message for system not being ready for switchover. |

Sample Output

show system switchover (Backup Routing Engine - Ready)

```
user@host> show system switchover
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

Switchover Status: Ready is the way the last line of the output reads if you are running Junos OS Release 16.1R1 or later. If you are running Junos OS Release 15.x, the last line of the output reads as Switchover Ready, for example:

```
user@host> show system switchover
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Ready
```

show system switchover (Backup Routing Engine - Not Ready)

```
user@host> show system switchover
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Not Ready
```

Switchover Status: Not Ready is the way the last line of the output reads if you are running Junos OS Release 16.1R1 or later. If you are running Junos OS Release 15.x, the last line of the output reads as Not ready for mastership switch, try after xxx secs, for example:

```
user@host> show system switchover
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Not ready for mastership switch, try after xxx secs.
```

show system switchover (MX Virtual Chassis)

```
{master:member1-re1}
user@host> show system switchover
member0:
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready

member1:
-----
Command is not applicable on this member of the virtual-chassis
```

show system switchover (MX Virtual Chassis)

```
{master:member1-re1}
user@host> show system switchover
member0:
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Ready

member1:
-----
Command is not applicable on this member of the virtual-chassis
```

show system switchover (Routing Matrix and Routing Matrix Plus) - Master Ready

```
user@host> show system switchover
lcc0-re1:
-----
Multichassis replication: On
Configuration database: Ready
```

```
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

```
lcc2-re0:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

show system switchover (Routing Matrix and Routing Matrix Plus) - Master Not Ready

```
user@host> show system switchover
lcc0-re1:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

```
lcc2-re1:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Not Ready
```

show system switchover (Routing Matrix and Routing Matrix Plus) - Backup Ready

```
user@host> show system switchover
scc-re0:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

```
lcc0-re0:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

```
lcc2-re1:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

show system switchover (Routing Matrix and Routing Matrix Plus) - Backup Not Ready

```
user@host> show system switchover
scc-re0:
```

```
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Not Ready
```

```
lcc0-re0:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

```
lcc2-re1:
```

```
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Status: Ready
```

show system switchover all-lcc (Routing Matrix and Routing Matrix Plus)

```
user@host> show system switchover all-lcc
```

```
lcc0-re0:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

```
lcc2-re0:
```

```
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover Status: Ready
```

show system uptime

| | |
|---------------------------------------|--|
| List of Syntax | Syntax on page 622 Syntax (EX Series Switches) on page 622 Syntax (QFX Series) on page 622 Syntax (TX Matrix Router) on page 622 Syntax (TX Matrix Plus Router) on page 622 Syntax (MX Series Router) on page 622 |
| Syntax | show system uptime |
| Syntax (EX Series Switches) | show system uptime <all-members> <local> <member <i>member-id</i> > |
| Syntax (QFX Series) | show system uptime <director-group <i>name</i> > <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-group <i>name</i> > |
| Syntax (TX Matrix Router) | show system uptime <all-chassis all-lcc lcc <i>number</i> scc> |
| Syntax (TX Matrix Plus Router) | show system uptime <detail> <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > |
| Syntax (MX Series Router) | show system uptime <all-members> <invoke-on> <local> <member <i>member-id</i> > |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. sfc option introduced for the TX Matrix Plus router in JUNOS Release 9.6. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. |
| Description | Display the current time and information about how long the router or switch, router or switch software, and routing protocols have been running. |



NOTE: Time values computed from differences in timestamps can vary due to the insertion or deletion of leap-seconds between them.

Options **none**—Show time since the system rebooted and processes started.

all-chassis—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Show time since the system rebooted and processes started on all the routers in the chassis.

all-lcc—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show time since the system rebooted and processes started for all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, show time since the system rebooted and processes started for all connected T1600 or T4000 LCCs.

all-members—(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on all members of the Virtual Chassis configuration.

director-group *name*—(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Director group.

infrastructure *name*—(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the fabric control Routing Engine and fabric manager Routing Engine.

interconnect-device *name*—(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Interconnect device.

invoke-on—(MX Series routers only) (Optional) Display the time since the system rebooted and processes started on the master Routing Engine, backup Routing Engine, or both, on a router with two Routing Engines.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show time since the system rebooted and processes started for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, show time since the system rebooted and processes started for a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Show time since the system rebooted and processes started on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace ***member-id*** with a value from 0 through 9. For an MX Series Virtual Chassis, replace ***member-id*** with a value of 0 or 1.

node-group *name*—(QFabric systems only) (Optional) Show time since the system rebooted and processes started on the Node group.

scc—(TX Matrix routers only) (Optional) Show time since the system rebooted and processes started for the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Show time since the system rebooted and processes started for the TX Matrix Plus router. Replace ***number*** with 0.

Additional Information By default, when you issue the **show system uptime** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.

Required Privilege Level view

Related Documentation

- [10-Gigabit Ethernet LAN/WAN PIC with XFP \(T640 Router\)](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

- [show system uptime on page 625](#)
- [show system uptime all-lcc \(TX Matrix Router\) on page 625](#)
- [show system uptime all-lcc \(TX Matrix Plus Router\) on page 625](#)
- [show system uptime \(EX Series\) on page 626](#)
- [show system uptime \(QFX Series\) on page 626](#)

Output Fields [Table 19 on page 624](#) describes the output fields for the **show system uptime** command. Output fields are listed in the approximate order in which they appear.

Table 19: show system uptime Output Fields

| Field Name | Field Description |
|---------------|---|
| Current time | Current system time in UTC. |
| Time Source | Reference time source that the system is locked to. |
| System booted | Date and time when the Routing Engine on the router or switch was last booted and how long it has been running. |

Table 19: show system uptime Output Fields (*continued*)

| Field Name | Field Description |
|--------------------------|---|
| Protocols started | Date and time when the routing protocols were last started and how long they have been running. |
| Last configured | Date and time when a configuration was last committed. Also shows the name of the user who issued the last commit command. |
| time and up | Current time, in the local time zone, and how long the router or switch has been operational. |
| users | Number of users logged in to the router or switch. |
| load averages | Load averages for the last 1 minute, 5 minutes, and 15 minutes. |

Sample Output

show system uptime

```

user@host> show system uptime
Current time:      1998-10-13 19:45:47 UTC
Time Source:      NTP CLOCK
System booted:     1998-10-12 20:51:41 UTC (22:54:06 ago)
Protocols started: 1998-10-13 19:33:45 UTC (00:12:02 ago)
Last configured:   1998-10-13 19:33:45 UTC (00:12:02 ago) by abc
12:45PM up 22:54, 2 users, load averages: 0.07, 0.02, 0.01

```

show system uptime all-lcc (TX Matrix Router)

```

user@host> show system uptime all-lcc
lcc0-re0:
-----
Current time: 2004-09-13 09:55:35 PDT
Time Source: LOCAL CLOCK
System booted: 2004-09-13 03:13:55 PDT (06:41:40 ago)
Last configured: 2004-09-13 03:17:48 PDT (06:37:47 ago) by root
9:55AM PDT up 6:42, 1 user, load averages: 0.02, 0.03, 0.00
lcc2-re0:
-----
Current time: 2004-09-13 09:55:35 PDT
Time Source: LOCAL CLOCK
System booted: 2004-09-12 03:23:43 PDT (1d 06:31 ago)
Last configured: 2004-09-13 03:05:36 PDT (06:49:59 ago) by root
9:55AM PDT up 1 day, 6:32, 1 user, load averages: 0.02, 0.01, 0.00

```

show system uptime all-lcc (TX Matrix Plus Router)

```

user@host> show system uptime all-lcc
sfc0-re0:
-----
Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:33 PDT (17:44:57 ago)
Protocols started: 2009-05-24 06:40:30 PDT (17:44:00 ago)
Last configured: 2009-05-24 06:33:27 PDT (17:51:03 ago) by user1
12:24AM up 17:45, 2 users, load averages: 0.07, 0.05, 0.01

```

lcc0-re0:

Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:46 PDT (17:44:44 ago)
error: the routing subsystem is not running
Last configured: 2009-05-24 06:40:47 PDT (17:43:43 ago) by root
12:24AM up 17:45, 0 users, load averages: 0.00, 0.00, 0.00

lcc1-re0:

Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:38 PDT (17:44:52 ago)
error: the routing subsystem is not running
Last configured: 2009-05-24 06:40:18 PDT (17:44:12 ago) by root
12:24AM up 17:45, 0 users, load averages: 0.00, 0.00, 0.00

lcc2-re0:

Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:48 PDT (17:44:42 ago)
error: the routing subsystem is not running
Last configured: 2009-05-24 06:40:44 PDT (17:43:46 ago) by root
12:24AM up 17:45, 0 users, load averages: 0.00, 0.00, 0.00

lcc3-re0:

Current time: 2009-05-25 00:24:30 PDT
Time Source: NTP CLOCK
System booted: 2009-05-24 06:39:44 PDT (17:44:46 ago)
error: the routing subsystem is not running
Last configured: 2009-05-24 06:40:08 PDT (17:44:22 ago) by root
12:24AM up 17:45, 0 users, load averages: 0.00, 0.00, 0.00

show system uptime (EX Series)

```
user@switch> show system uptime
Current time: 2014-03-12 16:39:56 UTC
Time Source: NTP CLOCK
System booted: 2014-03-12 14:58:05 UTC (01:41:51 ago)
Protocols started: 2014-03-12 14:59:48 UTC (01:40:08 ago)
Last configured: 2014-03-12 14:58:58 UTC (01:40:58 ago) by root
4:39PM up 1:42, 4 users, load averages: 0.02, 0.02, 0.00
```

show system uptime (QFX Series)

```
user@switch> show system uptime
Current time: 2010-08-27 03:12:30 PDT
Time Source: NTP CLOCK
System booted: 2010-08-13 17:11:54 PDT (1w6d 10:00 ago)
Protocols started: 2010-08-13 17:13:56 PDT (1w6d 09:58 ago)
Last configured: 2010-08-26 05:54:00 PDT (21:18:30 ago) by user
3:12AM up 13 days, 10:01, 3 users, load averages: 0.00, 0.00, 0.00
```

show system virtual-memory

| | |
|---------------------------------------|--|
| List of Syntax | Syntax on page 627 Syntax (EX Series) on page 627 Syntax (TX Matrix Router) on page 627 Syntax (TX Matrix Plus Router) on page 627 Syntax (MX Series Router) on page 627 Syntax (QFX Series) on page 627 |
| Syntax | <code>show system virtual-memory</code> |
| Syntax (EX Series) | <code>show system virtual-memory</code> <code><all-members></code> <code><local></code> <code><member <i>member-id</i>></code> |
| Syntax (TX Matrix Router) | <code>show system virtual-memory</code> <code><all-chassis all-lcc lcc <i>number</i> scc></code> |
| Syntax (TX Matrix Plus Router) | <code>show system virtual-memory</code> <code><all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>></code> |
| Syntax (MX Series Router) | <code>show system virtual-memory</code> <code><all-members></code> <code><local></code> <code><member <i>member-id</i>></code> |
| Syntax (QFX Series) | <code>show system virtual-memory</code> <code><infrastructure <i>name</i>></code> <code><interconnect-device <i>name</i>></code> <code><node-group <i>name</i>></code> |
| Release Information | <p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p> |
| Description | <p>Display the usage of Junos OS kernel memory listed first by size of allocation and then by type of usage. Use the show system virtual-memory command for troubleshooting with Juniper Networks Customer Support.</p> |
| Options | <p>none—Display kernel dynamic memory usage information.</p> <p>all-chassis—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display kernel dynamic memory usage information for all chassis.</p> |

all-lcc—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display kernel dynamic memory usage information for all T640 routers connected to the TX Matrix router. On a TX Matrix Plus router, display kernel dynamic memory usage information for all connected T1600 or T4000 LCCs.

all-members—(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for all members of the Virtual Chassis configuration.

infrastructure *name*—(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the fabric control Routing Engine and fabric manager Routing Engine.

interconnect-device *name*—(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the Interconnect device.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display kernel dynamic memory usage information for a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, display kernel dynamic memory usage information for a specific router that is connected to the TX Matrix Plus router.

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

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

local—(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Display kernel dynamic memory usage information for the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

node-group *name*—(QFabric systems only) (Optional) Display kernel dynamic memory usage information for the Node group.

scc—(TX Matrix routers only) (Optional) Display kernel dynamic memory usage information for the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Display kernel dynamic memory usage information for the TX Matrix Plus router. Replace *number* with 0.

Additional Information By default, when you issue the **show system virtual-memory** command on the master Routing Engine of a TX Matrix router or a TX Matrix Plus router, the command is broadcast to all the master Routing Engines of the LCCs connected to it in the routing matrix. Likewise, if you issue the same command on the backup Routing Engine of a TX Matrix or a TX Matrix Plus router, the command is broadcast to all backup Routing Engines of the LCCs that are connected to it in the routing matrix.



NOTE: The **show system virtual-memory** command with the **| display XML** pipe option now displays XML output for the command in the parent tags: **<vmstat-memstat-malloc>**, **<vmstat-memstat-zone>**, **<vmstat-sumstat>**, **<vmstat-intr>**, and **<vmstat-kernel-state>** with each child element as a separate XML tag. In Junos OS Releases 10.1 and earlier, the **| display XML** option for this command does not have an XML API element and the entire output is displayed in a single **<output>** tag element.

Required Privilege Level view

Related Documentation • [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output [show system virtual-memory on page 631](#)
[show system virtual-memory scc \(TX Matrix Router\) on page 635](#)
[show system virtual-memory sfc \(TX Matrix Plus Router\) on page 636](#)
[show system virtual-memory | display xml on page 639](#)
[show system virtual-memory \(QFX Series\) on page 662](#)

Output Fields [Table 20 on page 630](#) lists the output fields for the **show system virtual-memory** command. Output fields are listed in the approximate order in which they appear.

Table 20: show system virtual-memory Output Fields

| Field Name | Field Description |
|---|---|
| Memory statistics by bucket size | |
| Size | Memory block size (bytes). The kernel memory allocator appropriates blocks of memory whose size is exactly a power of 2. |
| In Use | Number of memory blocks of this size that are in use (bytes). |
| Free | Number of memory blocks of this size that are free (bytes). |
| Requests | Number of memory allocation requests made. |
| HighWater | Maximum value the free list can have. Once the system starts reclaiming physical memory, it continues until the free list is increased to this value. |
| Couldfree | Total number of times that the free elements for a bucket size exceed the high-water mark for that bucket size. |
| Memory usage type by bucket size | |
| Size | Memory block size (bytes). |
| Type(s) | Kernel modules that are using these memory blocks. For a definition of each type, refer to a FreeBSD book. |
| Memory statistics by type | |
| Type | Kernel module that is using dynamic memory. |
| InUse | Number of memory blocks used by this type. The number is rounded up. |
| MemUse | Amount of memory in use, in kilobytes (KB). |
| HighUse | Maximum memory ever used by this type. |
| Limit | Maximum memory that can be allocated to this type. |
| Requests | Total number of dynamic memory allocation requests this type has made. |
| Type Limit | Number of times requests were blocked for reaching the maximum limit. |
| Kern Limit | Number of times requests were blocked for the kernel map. |
| Size(s) | Memory block sizes this type is using. |
| Memory Totals | |
| In Use | Total kernel dynamic memory in use (bytes, rounded up). |
| Free | Total kernel dynamic memory free (bytes, rounded up). |

Table 20: show system virtual-memory Output Fields (*continued*)

| Field Name | Field Description |
|------------------|--|
| Requests | Total number of memory allocation requests. |
| ITEM | Kernel module that is using memory. |
| Size | Memory block size (bytes). |
| Limit | Maximum memory that can be allocated to this type. |
| Used | Number of memory blocks used by this type. The number is rounded up. |
| Free | Number of memory blocks available to this type. |
| Requests | Total number of memory allocation requests this type has made. |
| interrupt | Timer events and scheduling interruptions. |
| total | Total number of interruptions for each type. |
| rate | Interruption rate. |
| Total | Total for all interruptions. |

Sample Output

show system virtual-memory

```

user@host> show system virtual-memory
Memory statistics by bucket size
Size  In Use  Free  Requests  HighWater  Couldfree
16      906    118    154876    1280        0
32      455    313    209956    640         0
64     4412    260    75380     320        20
128    3200     32    19361     160        81
256    1510     10    8844      80         4
512     446      2    5085      40         0
1K       18      2    5901      20         0
2K     1128      2    4445      10       1368
4K       185      1     456        5         0
8K        5      1    2653        5         0
16K      181      0     233        5         0
32K        2      0    1848        5         0
64K       20      0      22        5         0
128K       5      0       5        5         0
256K        2      0       2        5         0
512K        1      0       1        5         0

Memory usage type by bucket size
Size  Type(s)
16  uc_devlist, nexusdev, iftable, temp, devbuf, atexit, COS, BPF,
    DEVFS mount, DEVFS node, vnodes, mount, pcb, soname, proc-args, kld,
    MD disk, rman, ATA generic, bus, sysctl, ippool, pfestat, ifstate,

```

```

pfe_ipc, mkey, rtable, ifmaddr, ipfw, rnode
32 atkbddev, dirrem, mkdir, diradd, freefile, freefrag, indirdep,
bmsafemap, newblk, temp, devbuf, COS, vnodes, cluster_save buffer,
pcb, soname, proc-args, sigio, kld, Gzip trees, taskqueue, SWAP,
eventhandler, bus, sysctl, uidinfo, subproc, pgrp, pfestat, itable32,
ifstate, pfe_ipc, mkey, rtable, ifmaddr, ipfw, rnode, rtnexthop
64 isadev, iftable, MFS node, allocindir, allocdirect, pagedep, temp,
devbuf, lockf, COS, NULLFS hash, DEVFS name, vnodes,
cluster_save buffer, vfscache, pcb, soname, proc-args, file,
AR driver, AD driver, Gzip trees, rman, eventhandler, bus, sysctl,
subproc, pfestat, pic, ifstate, pfe_ipc, mkey, ifaddr, rtable, ipfw
128 ZONE, freeblks, inodedep, temp, devbuf, zombie, COS, DEVFS node,
vnodes, mount, vfscache, pcb, soname, proc-args, ttys, dev_t,
timecounter, kld, Gzip trees, ISOFS node, bus, uidinfo, cred,
session, pic, itable16, ifstate, pfe_ipc, rtable, ifstat, metrics,
rtnexthop, iffamily
256 iflogical, iftable, MFS node, FFS node, newblk, temp, devbuf,
NFS daemon, vnodes, proc-args, kqueue, file desc, Gzip trees, bus,
subproc, itable16, ifstate, pfe_ipc, sysctl, rtnexthop
512 UFS mount, temp, devbuf, mount, BIO buffer, ptys, ttys, AR driver,
Gzip trees, ISOFS mount, msg, iocltops, ATA generic, bus, proc,
pfestat, lr, ifstate, pfe_ipc, rtable, ipfw, ifstat, rtnexthop
1K iftable, temp, devbuf, NQ NFS Lease, kqueue, kld, AD driver,
Gzip trees, sem, MD disk, bus, ifstate, pfe_ipc, ipfw
2K uc_devlist, UFS mount, temp, devbuf, BIO buffer, pcb, AR driver,
Gzip trees, iocltops, bus, ipfw, ifstat, rcache
4K memdesc, iftable, UFS mount, temp, devbuf, kld, Gzip trees, sem, msg
8K temp, devbuf, syncache, Gzip trees
16K indirdep, temp, devbuf, shm, msg
32K pagedep, kld, Gzip trees
64K VM pgdata, devbuf, MSDOSFS mount
128K UFS ihash, inodedep, NFS hash, kld, ISOFS mount
256K mbuf, vfscache
512K SWAP

```

| Memory statistics by type | | | | | Type | Kern | | |
|---------------------------|-------|--------|-------------|-------|----------|-------|-------|-----------------|
| Type | InUse | MemUse | HighUse | Limit | Requests | Limit | Limit | Size(s) |
| isadev | 13 | 1K | 1K127753K | 13 | 0 | 0 | 0 | 64 |
| atkbddev | 2 | 1K | 1K127753K | 2 | 0 | 0 | 0 | 32 |
| uc_devlist | 24 | 3K | 3K127753K | 24 | 0 | 0 | 0 | 16,2K |
| nexusdev | 3 | 1K | 1K127753K | 3 | 0 | 0 | 0 | 16 |
| memdesc | 1 | 4K | 4K127753K | 1 | 0 | 0 | 0 | 4K |
| mbuf | 1 | 152K | 152K127753K | 1 | 0 | 0 | 0 | 256K |
| iflogical | 6 | 2K | 2K127753K | 6 | 0 | 0 | 0 | 256 |
| iftable | 17 | 9K | 9K127753K | 18 | 0 | 0 | 0 | 16,64,256,1K,4K |
| ZONE | 15 | 2K | 2K127753K | 15 | 0 | 0 | 0 | 128 |
| VM pgdata | 1 | 64K | 64K127753K | 1 | 0 | 0 | 0 | 64K |
| UFS mount | 12 | 26K | 26K127753K | 12 | 0 | 0 | 0 | 512,2K,4K |
| UFS ihash | 1 | 128K | 128K127753K | 1 | 0 | 0 | 0 | 128K |
| MFS node | 6 | 2K | 3K127753K | 35 | 0 | 0 | 0 | 64,256 |
| FFS node | 906 | 227K | 227K127753K | 1352 | 0 | 0 | 0 | 256 |
| dirrem | 0 | 0K | 4K127753K | 500 | 0 | 0 | 0 | 32 |
| mkdir | 0 | 0K | 1K127753K | 38 | 0 | 0 | 0 | 32 |
| diradd | 0 | 0K | 6K127753K | 521 | 0 | 0 | 0 | 32 |
| freefile | 0 | 0K | 4K127753K | 374 | 0 | 0 | 0 | 32 |
| freeblks | 0 | 0K | 8K127753K | 219 | 0 | 0 | 0 | 128 |
| freefrag | 0 | 0K | 1K127753K | 193 | 0 | 0 | 0 | 32 |
| allocindir | 0 | 0K | 25K127753K | 1518 | 0 | 0 | 0 | 64 |
| indirdep | 0 | 0K | 17K127753K | 76 | 0 | 0 | 0 | 32,16K |
| allocdirect | 0 | 0K | 10K127753K | 760 | 0 | 0 | 0 | 64 |
| bmsafemap | 0 | 0K | 1K127753K | 72 | 0 | 0 | 0 | 32 |

| | | | | | | | |
|---------------------|------|-------|--------------|--------|---|---|------------------|
| newblk | 1 | 1K | 1K127753K | 2279 | 0 | 0 | 32,256 |
| inodedep | 1 | 128K | 175K127753K | 2367 | 0 | 0 | 128,128K |
| pagedep | 1 | 32K | 33K127753K | 47 | 0 | 0 | 64,32K |
| temp | 1239 | 92K | 96K127753K | 8364 | 0 | 0 | 16,32,64K |
| devbuf | 1413 | 5527K | 5527K127753K | 1535 | 0 | 0 | 16,32,64,128,256 |
| lockf | 38 | 3K | 3K127753K | 2906 | 0 | 0 | 64 |
| atexit | 1 | 1K | 1K127753K | 1 | 0 | 0 | 16 |
| zombie | 0 | 0K | 2K127753K | 3850 | 0 | 0 | 128 |
| NFS hash | 1 | 128K | 128K127753K | 1 | 0 | 0 | 128K |
| NQNFS Lease | 1 | 1K | 1K127753K | 1 | 0 | 0 | 1K |
| NFS daemon | 1 | 1K | 1K127753K | 1 | 0 | 0 | 256 |
| syncache | 1 | 8K | 8K127753K | 1 | 0 | 0 | 8K |
| COS | 353 | 44K | 44K127753K | 353 | 0 | 0 | 16,32,64,128 |
| BPF | 189 | 3K | 3K127753K | 189 | 0 | 0 | 16 |
| MSDOSFS mount | 1 | 64K | 64K127753K | 1 | 0 | 0 | 64K |
| NULLFS hash | 1 | 1K | 1K127753K | 1 | 0 | 0 | 64 |
| DEVFS mount | 2 | 1K | 1K127753K | 2 | 0 | 0 | 16 |
| DEVFS name | 487 | 31K | 31K127753K | 487 | 0 | 0 | 64 |
| DEVFS node | 471 | 58K | 58K127753K | 479 | 0 | 0 | 16,128 |
| vnodes | 28 | 7K | 7K127753K | 429 | 0 | 0 | 16,32,64,128,256 |
| mount | 15 | 8K | 8K127753K | 18 | 0 | 0 | 16,128,512 |
| cluster_save buffer | 0 | 0K | 1K127753K | 55 | 0 | 0 | 32,64 |
| vfscache | 1898 | 376K | 376K127753K | 3228 | 0 | 0 | 64,128,256K |
| BIO buffer | 49 | 98K | 398K127753K | 495 | 0 | 0 | 512,2K |
| pcb | 159 | 16K | 17K127753K | 399 | 0 | 0 | 16,32,64,128,2K |
| soname | 82 | 10K | 10K127753K | 42847 | 0 | 0 | 16,32,64,128 |
| proc-args | 57 | 2K | 3K127753K | 2105 | 0 | 0 | 16,32,64,128,256 |
| ptys | 32 | 16K | 16K127753K | 32 | 0 | 0 | 512 |
| ttys | 254 | 33K | 33K127753K | 522 | 0 | 0 | 128,512 |
| kqueue | 5 | 3K | 4K127753K | 23 | 0 | 0 | 256,1K |
| sigio | 1 | 1K | 1K127753K | 27 | 0 | 0 | 32 |
| file | 383 | 24K | 24K127753K | 16060 | 0 | 0 | 64 |
| file desc | 76 | 19K | 20K127753K | 3968 | 0 | 0 | 256 |
| shm | 1 | 12K | 12K127753K | 1 | 0 | 0 | 16K |
| dev_t | 286 | 36K | 36K127753K | 286 | 0 | 0 | 128 |
| timecounter | 10 | 2K | 2K127753K | 10 | 0 | 0 | 128 |
| kld | 11 | 117K | 122K127753K | 34 | 0 | 0 | 16,32,128,1K,4K |
| AR driver | 1 | 1K | 3K127753K | 5 | 0 | 0 | 64,512,2K |
| AD driver | 2 | 2K | 3K127753K | 2755 | 0 | 0 | 64,1K |
| Gzip trees | 0 | 0K | 46K127753K | 133848 | 0 | 0 | 32,64,128,256 |
| ISOFS node | 1136 | 142K | 142K127753K | 1189 | 0 | 0 | 128 |
| ISOFS mount | 9 | 132K | 132K127753K | 10 | 0 | 0 | 512,128K |
| sem | 3 | 6K | 6K127753K | 3 | 0 | 0 | 1K,4K |
| MD disk | 2 | 2K | 2K127753K | 2 | 0 | 0 | 16,1K |
| msg | 4 | 25K | 25K127753K | 4 | 0 | 0 | 512,4K,16K |
| rman | 59 | 4K | 4K127753K | 461 | 0 | 0 | 16,64 |
| ioctlops | 0 | 0K | 2K127753K | 992 | 0 | 0 | 512,2K |
| taskqueue | 2 | 1K | 1K127753K | 2 | 0 | 0 | 32 |
| SWAP | 2 | 413K | 413K127753K | 2 | 0 | 0 | 32,512K |
| ATA generic | 6 | 3K | 3K127753K | 6 | 0 | 0 | 16,512 |
| eventhandler | 17 | 1K | 1K127753K | 17 | 0 | 0 | 32,64 |
| bus | 340 | 30K | 31K127753K | 794 | 0 | 0 | 16,32,64,128,256 |
| sysctl | 0 | 0K | 1K127753K | 130262 | 0 | 0 | 16,32,64 |
| uidinfo | 4 | 1K | 1K127753K | 10 | 0 | 0 | 32,128 |
| cred | 22 | 3K | 3K127753K | 3450 | 0 | 0 | 128 |
| subproc | 156 | 10K | 10K127753K | 7882 | 0 | 0 | 32,64,256 |
| proc | 2 | 1K | 1K127753K | 2 | 0 | 0 | 512 |
| session | 12 | 2K | 2K127753K | 34 | 0 | 0 | 128 |
| pgrp | 16 | 1K | 1K127753K | 45 | 0 | 0 | 32 |
| ippool | 1 | 1K | 1K127753K | 1 | 0 | 0 | 16 |
| pfestat | 0 | 0K | 1K127753K | 47349 | 0 | 0 | 16,32,64,512 |

| | | | | | | | |
|-----------|-----|------|-------------|-------|---|---|------------------|
| pic | 5 | 1K | 1K127753K | 5 | 0 | 0 | 64,128 |
| lr | 1 | 1K | 1K127753K | 1 | 0 | 0 | 512 |
| itable32 | 110 | 4K | 4K127753K | 110 | 0 | 0 | 32 |
| itable16 | 161 | 26K | 26K127753K | 161 | 0 | 0 | 128,256 |
| ifstate | 694 | 159K | 160K127753K | 1735 | 0 | 0 | 16,32,64,128,1K |
| pfe_ipc | 0 | 0K | 1K127753K | 56218 | 0 | 0 | 16,32,64,128,1K |
| mkey | 250 | 4K | 4K127753K | 824 | 0 | 0 | 16,32,64 |
| ifaddr | 9 | 1K | 1K127753K | 9 | 0 | 0 | 64 |
| sysctl | 0 | 0K | 1K127753K | 30 | 0 | 0 | 256 |
| rtable | 49 | 6K | 6K127753K | 307 | 0 | 0 | 16,32,64,128,512 |
| ifmaddr | 22 | 1K | 1K127753K | 22 | 0 | 0 | 16,32 |
| ipfw | 23 | 10K | 10K127753K | 48 | 0 | 0 | 16,32,64,512,2K |
| ifstat | 698 | 805K | 805K127753K | 698 | 0 | 0 | 128,512,2K |
| rcache | 4 | 8K | 8K127753K | 4 | 0 | 0 | 2K |
| rnode | 27 | 1K | 1K127753K | 285 | 0 | 0 | 16,32 |
| metrics | 1 | 1K | 1K127753K | 3 | 0 | 0 | 128 |
| rtnexthop | 57 | 9K | 9K127753K | 312 | 0 | 0 | 32,128,256,512 |
| iffamily | 12 | 2K | 2K127753K | 12 | 0 | 0 | 128 |

| | | | |
|----------------|--------|------|----------|
| Memory Totals: | In Use | Free | Requests |
| | 9311K | 54K | 489068 |

| ITEM | SIZE | LIMIT | USED | FREE | REQUESTS |
|-------------|-------|---------|--------|---------|----------|
| PIPE: | 192, | 0, | 4, | 81, | 4422 |
| SWAPMETA: | 160, | 95814, | 0, | 0, | 0 |
| unpcb: | 160, | 0, | 114, | 36, | 279 |
| ripcb: | 192, | 25330, | 5, | 37, | 5 |
| syncache: | 128, | 15359, | 0, | 64, | 5 |
| tcpcb: | 576, | 25330, | 23, | 12, | 32 |
| udpcb: | 192, | 25330, | 14, | 28, | 255 |
| socket: | 256, | 25330, | 246, | 26, | 819 |
| KNOTE: | 96, | 0, | 27, | 57, | 71 |
| NFSNODE: | 352, | 0, | 0, | 0, | 0 |
| NFSMOUNT: | 544, | 0, | 0, | 0, | 0 |
| VNODE: | 224, | 0, | 2778, | 43, | 2778 |
| NAMEI: | 1024, | 0, | 0, | 8, | 40725 |
| VMSPACE: | 192, | 0, | 57, | 71, | 3906 |
| PROC: | 448, | 0, | 73, | 17, | 3923 |
| DP fakepg: | 64, | 0, | 0, | 0, | 0 |
| PV ENTRY: | 28, | 499566, | 44530, | 152053, | 1525141 |
| MAP ENTRY: | 48, | 0, | 1439, | 134, | 351075 |
| KMAP ENTRY: | 48, | 35645, | 179, | 119, | 10904 |
| MAP: | 108, | 0, | 7, | 3, | 7 |
| VM OBJECT: | 92, | 0, | 2575, | 109, | 66912 |

```

792644 cpu context switches
9863474 device interrupts
286510 software interrupts
390851 traps
3596829 system calls
  16 kernel threads created
 3880 fork() calls
   27 vfork() calls
    0 rfork() calls
    0 swap pager pageins
    0 swap pager pages paged in
    0 swap pager pageouts
    0 swap pager pages paged out
 380 vnode pager pageins
 395 vnode pager pages paged in
 122 vnode pager pageouts

```

```

1476 vnode pager pages paged out
    0 page daemon wakeups
    0 pages examined by the page daemon
101 pages reactivated
161722 copy-on-write faults
    0 copy-on-write optimized faults
84623 zero fill pages zeroed
83063 zero fill pages prezeroed
    7 intransit blocking page faults
535606 total VM faults taken
    0 pages affected by kernel thread creation
238254 pages affected by fork()
    2535 pages affected by vfork()
    0 pages affected by rfork()
283379 pages freed
    0 pages freed by daemon
190091 pages freed by exiting processes
17458 pages active
29166 pages inactive
    0 pages in VM cache
10395 pages wired down
134610 pages free
    4096 bytes per page
183419 total name lookups
    cache hits (90% pos + 7% neg) system 0% per-directory
    deletions 0%, falsehits 0%, toolong 0%

interrupt          total          rate
ata0 irq14         113338           3
mux irq7           727643          21
fxp1 irq10         1178671          34
sio0 irq4           833              0
clk irq0           3439769          99
rtc irq8           4403221          127
Total              9863475          286

Kernel direct memory map:
    4423 pages used
    4057340 pages maximum

```

Note: Kernel direct memory map only displays for 64 bit platform.

show system virtual-memory scc (TX Matrix Router)

```
user@host> show system virtual-memory scc
```

Memory statistics by bucket size

| Size | In Use | Free | Requests | HighWater | Couldfree |
|------|--------|-------|----------|-----------|-----------|
| 16 | 898 | 126 | 749493 | 1280 | 0 |
| 32 | 2018 | 1310 | 980643 | 640 | 632 |
| 64 | 3490 | 13342 | 935420 | 320 | 5365 |
| ... | | | | | |

Memory usage type by bucket size

| Size | Type(s) |
|------|--|
| 16 | uc_devlist, COS, BPF, DEVFS mount, DEVFS node, vnodes, mount, pcb, soname, rman, bus, sysctl, ifstate, pfe_ipc, mkey, socket, rtable, ifmaddr, ipfw, rnode, iftable, temp, devbuf, atexit, proc-args, kld, MD disk |
| 32 | atkbddev, Gzip trees, dirrem, mkdir, diradd, freefile, freefrag, indirdep, bmsafemap, newblk, tseg_qent, COS, vnodes, |

...

```

Memory statistics by type
      Type InUse MemUse HighUse Limit Requests Limit Limit Size(s)
      isadev 12 1K 1K166400K 12 0 0 64
      atkbddev 2 1K 1K166400K 2 0 0 32
      uc_devlist 24 3K 3K166400K 24 0 0 16,2K
      ....

Memory Totals: In Use Free Requests
                6091K 1554K 2897122

```

show system virtual-memory sfc (TX Matrix Plus Router)

```

user@host> show system virtual-memory sfc 0
sfc0-re0:

```

```

-----
      Type InUse MemUse HighUse Requests Size(s)
CAM dev queue 1 1K - 1 64
  entropy 1024 64K - 1024 64
  linker 487 6272K - 1163 16,32,64,4096,32768,131072
  USB 127 10K - 127 16,32,64,128,256,1024,2048
  lockf 46 3K - 98418 64
  USBdev 10 2K - 34 16,128,2048,16384
ifstateSLLNode 0 0K - 1096 16
  devbuf 21243 15683K - 21810
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768,65536,131072
  temp 1283 151K - 2483472
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768,65536,131072
  ip6ndp 0 0K - 4 64
  in6ifmulti 1 1K - 1 64
  in6grentry 1 1K - 1 64
  iflogical 20 5K - 29 2048
  iffamilly 45 6K - 69 32,1024,2048
  rtnexthop 266 46K - 608013 32,256,512,1024,2048,4096
  metrics 31 4K - 54 256
  rnode 212 4K - 607848 16,32
  rcache 4 8K - 4 65536
  iflist 0 0K - 6 16,64
  ifdevice 11 8K - 17 16,32768
  ifstat 424 472K - 427 512,16384,65536
  ipfw 42 23K - 145
16,32,64,128,256,512,1024,16384,32768,65536,131072
  ifmaddr 415 11K - 415 16,32
  rtable 329 28K - 608066 16,32,64,128,1024,16384
  sysctl 0 0K - 887976 16,32,64,4096,16384,32768
  ifaddr 64 5K - 70 32,64,128
  mkey 331 6K - 12528 16,128
  pfe_ipc 0 0K - 7299115
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768,65536,131072
  ifstate 1245054 70088K - 3040437
16,32,64,128,256,512,1024,2048,4096,8192,16384,32768
  idxbucket 1 1K - 1 16
  itable16 5069 1250K - 5103 1024,4096
  itable32 157 10K - 157 64
  itable64 2 1K - 2 128
  lr 1 1K - 4 16384
  pic 37 6K - 37 64,16384
  pfestat 0 0K - 6220 32,64,128,256,131072
  gencfg 1486 424K - 2614 16,32,64,256,512,16384,32768,65536

```

```

        jsr      2      1K      -      22  16
        idl      1      4K      -      165
32, 64, 128, 256, 512, 1024, 2048, 8192, 16384, 32768, 65536, 131072
        rtmsg    0      0K      -      16  131072
        module   250    16K      -      250  64, 128
        mtx_pool  1      8K      -      1   64, 128
        DEVFS3   113    13K      -      114  256
        DEVFS1   106    24K      -      106  2048
        pgrp     15      1K      -      8600 64
        session  11      2K      -      2829 512
        proc      2      1K      -      2   16384
        subproc   296    572K     -      24689 2048, 131072
        cred      38      5K      -      619244 256
        plimit    18      4K      -      21311 2048
        uidinfo   3      1K      -      10   32, 512
        sysctluid 2701    82K      -      2701 16, 32, 64
        sysctltmp  0      0K      -      15572 16, 32, 64, 1024
        umtx     171    11K      -      171   64
        SWAP      2     277K     -      2     64
        bus      779    125K     -      3072 16, 32, 64, 128, 32768
        bus-sc    67     62K      -      1477
16, 32, 64, 512, 1024, 2048, 8192, 16384, 65536, 131072
        devstat   8     17K      -      8   16, 131072
        eventhandler 46     2K      -      47   32, 128
        kobj      93    186K     -      111  65536
        DEVFS      8      1K      -      9   16, 64
        rman     106     7K      -      490 16, 32, 64
        sbuf      0      0K      -      28234 16, 32, 32768, 131072
...
lcc0-re0:

```

```

-----
      Type InUse MemUse HighUse Requests Size(s)
CAM dev queue    1     1K      -      1     64
      entropy  1024    64K      -     1024    64
      linker   487   6272K     -     1163 16, 32, 64, 4096, 32768, 131072
      USB     127    10K      -      127 16, 32, 64, 128, 256, 1024, 2048
      lockf    23     2K      -    169585    64
      USBdev   10     2K      -       34 16, 128, 2048, 16384
      devbuf   5128  10760K     -     5310
16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536, 131072
      temp    1285    151K     -     10770
16, 32, 64, 128, 256, 512, 2048, 4096, 8192, 16384, 32768, 65536, 131072
      ip6ndp    0      0K      -        4     64
      iflogical 20     5K      -       29   2048
      iffamilly 45     6K      -       69 32, 1024, 2048
      rtnexthop 189    29K      -    1211988 32, 256, 512, 1024, 2048, 4096
      metrics   11     2K      -       16    256
      rnode    135     3K      -    606391 16, 32
      rcache     4     8K      -        4  65536
      iflist     0      0K      -        6  16, 64
      ifdevice  11     8K      -       17 16, 32768
      ifstat    412   471K     -      415 512, 16384, 65536
      ipfw      42    23K      -        91
16, 32, 64, 128, 256, 512, 1024, 16384, 32768, 65536, 131072
      ifmaddr   415    11K      -      415 16, 32
      rtable    225    20K      -    606584 16, 32, 64, 128, 1024, 16384
      sysctl     0      0K      -    2302479 16, 32, 64
      ifaddr    53     4K      -        69 32, 64, 128
      mkey     133     3K      -     8974 16, 128
      pfe_ipc    0      0K      -    19035108
16, 32, 64, 128, 512, 1024, 2048, 8192, 16384, 32768, 65536, 131072

```

| | | | | | |
|---|--------|--------|---|---------|--------------------------------------|
| ifstate | 710270 | 42176K | - | 9583703 | |
| 16,32,64,128,256,512,1024,2048,8192,16384,32768 | | | | | |
| idxbucket | 1 | 1K | - | 1 | 16 |
| itable16 | 5045 | 1245K | - | 1825178 | 1024,4096 |
| itable32 | 157 | 10K | - | 157 | 64 |
| itable64 | 2 | 1K | - | 2 | 128 |
| lr | 1 | 1K | - | 4 | 16384 |
| pic | 37 | 6K | - | 37 | 64,16384 |
| pfestat | 0 | 0K | - | 1682 | 32,64,128,256,131072 |
| gencfg | 1486 | 424K | - | 2812 | 16,32,64,256,512,16384,32768,65536 |
| jsr | 0 | 0K | - | 22 | 16 |
| idl | 0 | 0K | - | 4 | 32768,131072 |
| rtmsg | 0 | 0K | - | 3 | 131072 |
| module | 250 | 16K | - | 250 | 64,128 |
| mtx_pool | 1 | 8K | - | 1 | 64,128 |
| DEVFS3 | 108 | 12K | - | 109 | 256 |
| DEVFS1 | 101 | 23K | - | 101 | 2048 |
| pgrp | 5 | 1K | - | 917 | 64 |
| session | 5 | 1K | - | 917 | 512 |
| proc | 2 | 1K | - | 2 | 16384 |
| subproc | 217 | 441K | - | 4867 | 2048,131072 |
| cred | 21 | 3K | - | 48719 | 256 |
| plimit | 9 | 2K | - | 5255 | 2048 |
| uidinfo | 2 | 1K | - | 2 | 32,512 |
| sysctluid | 2786 | 85K | - | 2786 | 16,32,64 |
| sysctltmp | 0 | 0K | - | 1833 | 16,32,64,1024 |
| umtx | 126 | 8K | - | 126 | 64 |
| SWAP | 2 | 277K | - | 2 | 64 |
| bus | 780 | 125K | - | 2734 | 16,32,64,128,32768 |
| bus-sc | 69 | 69K | - | 1194 | |
| 16,32,64,512,1024,2048,8192,16384,65536,131072 | | | | | |
| devstat | 8 | 17K | - | 8 | 16,131072 |
| eventhandler | 45 | 2K | - | 46 | 32,128 |
| kobj | 93 | 186K | - | 111 | 65536 |
| DEVFS | 8 | 1K | - | 9 | 16,64 |
| rman | 94 | 6K | - | 477 | 16,32,64 |
| sbuf | 0 | 0K | - | 532 | 16,32,32768,131072 |
| NULLFS hash | 1 | 1K | - | 1 | 64 |
| taskqueue | 5 | 1K | - | 5 | 64 |
| turnstiles | 127 | 8K | - | 127 | 64 |
| Unitno | 6 | 1K | - | 44 | 16,64 |
| ioctlops | 0 | 0K | - | 1771718 | 16,32,64,128,8192,16384,65536,131072 |
| iov | 0 | 0K | - | 79425 | 16,64,128,256,512,1024,2048,131072 |
| msg | 4 | 25K | - | 4 | 32768,131072 |
| sem | 4 | 7K | - | 4 | 16384,32768,131072 |
| shm | 2 | 13K | - | 4 | 32768 |
| ttys | 93 | 16K | - | 195 | 512,32768 |
| soname | 31 | 3K | - | 389284 | 16,32,64,256 |
| pcb | 101 | 16K | - | 4374 | |
| 16,32,64,128,1024,2048,4096,16384,65536 | | | | | |
| BIO buffer | 40 | 80K | - | 750 | 65536 |
| vfscache | 1 | 512K | - | 1 | 65536 |
| cluster_save buffer | 0 | OK | - | 55 | 32,64 |
| VFS hash | 1 | 256K | - | 1 | 32,64 |
| vnodes | 1 | 1K | - | 1 | 512 |
| mount | 266 | 21K | - | 481 | 16,32,64,128,256,4096,32768 |
| vnodemarker | 0 | 0K | - | 2497 | 16384 |
| pfs_nodes | 25 | 3K | - | 25 | 128 |
| pfs_vncache | 144 | 5K | - | 386 | 32 |
| STP | 1 | 1K | - | 1 | 64 |


```

        GEOM      173    15K      -    1068
16,32,64,128,256,512,2048,16384,32768,131072
        syncache    1     8K      -     1
16,32,64,128,256,512,2048,16384,32768,131072
        tlv_stat     0     0K      -    223
16,32,64,128,256,512,2048,16384,32768,131072
        NFS daemon   1     8K      -     1
16,32,64,128,256,512,2048,16384,32768,131072
        p1003.1b     1     1K      -     1  16
        MD disk      9    18K      -     9 65536
        ata_generic   2     2K      -    25 16,16384,32768
        ISOFS mount    7     1K      -    13  512
        ISOFS node 1439  135K      -   1453 128
        CAM SIM        1     1K      -     1  64
        CAM XPT        6     1K      -     9 16,64,16384
        CAM periph     1     1K      -     1 128
        ad_driver      2     1K      -     2 256
        pagedep        1    64K      -    105 64
        inodedep       1   256K      -    552 256
        newblk         1     1K      -    327 64,4096
        bmsafemap      0     0K      -     19 64
        allocdirect    0     0K      -    326 128
        freefrag       0     0K      -     31 32
        freeblks       0     0K      -    103 2048
        freefile       0     0K      -    175 32
        diradd         0     0K      -    590 64
        mkdir          0     0K      -    166 32
        dirrem         0     0K      -    382 32
        savedino       0     0K      -    283 512
        UFS mount      15    36K      -     15 2048,65536,131072
        ata_dma        6     1K      -     6 256
        UMAHash        1     4K      -     5 4096,16384,32768,65536,131072
        cdev           26     3K      -     26 256
        file desc     111    25K      -   5199 16,1024,2048,16384
        VM pgdata      2    65K      -     2 64
        sigio          1     1K      -     27 32
        kenv           30     5K      -    33 16,32,64,131072
        atkbddev       2     1K      -     2 32
        kqueue         0     0K      -    88 1024,4096,32768
        proc-args      28     2K      -   3970 32,64,128,256,512,1024
        isadev         23     2K      -    23 64
        zombie         1     1K      -   4651 128
        ithread        92     7K      -    92 16,64,256
        legacydrv      3     1K      -     3 16
        memdesc        1     4K      -     1 131072
        nexusdev       2     1K      -     2 16
        CAM queue      3     1K      -     3 16
        KTRACE        100    10K      -    100 128
        kbdmux         5     9K      -     5 128,2048,65536,131072
ITEM      SIZE      LIMIT      USED      FREE  REQUESTS
UMA Kegs:  136,      0,      71,      1,      71
...
```

show system virtual-memory | display xml

```

user@host> show system virtual-memory | display xml
<rpc-reply xmlns:junos="http://xml.device1.example.com/junos/10.2R1/junos">
  <system-virtual-memory-information>
    <vmstat-memstat-malloc>
      <memstat-name>CAM dev queue</memstat-name>
      <inuse>1</inuse>
    
```

```
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>entropy</memstat-name>
<inuse>1024</inuse>
<memuse>64</memuse>
<high-use>--</high-use>
<memstat-req>1024</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>linker</memstat-name>
<inuse>481</inuse>
<memuse>1871</memuse>
<high-use>--</high-use>
<memstat-req>1145</memstat-req>
<memstat-size>16,32,64,4096,32768,131072</memstat-size>
<memstat-name>lockf</memstat-name>
<inuse>56</inuse>
<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>5998</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>devbuf</memstat-name>
<inuse>2094</inuse>
<memuse>3877</memuse>
<high-use>--</high-use>
<memstat-req>2099</memstat-req>

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<memstat-name>temp</memstat-name>
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<memuse>66</memuse>
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<memstat-req>3127</memstat-req>

<memstat-size>16,32,64,128,256,512,2048,4096,8192,16384,32768,65536,131072</memstat-size>

<memstat-name>ip6ndp</memstat-name>
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<high-use>--</high-use>
<memstat-req>4</memstat-req>
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<memstat-name>in6ifmulti</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>in6grentry</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
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<memstat-name>iflogical</memstat-name>
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<memuse>3</memuse>
<high-use>--</high-use>
<memstat-req>13</memstat-req>
```

```

<memstat-size>64,2048</memstat-size>
<memstat-name>iffamily</memstat-name>
<inuse>28</inuse>
<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>28</memstat-req>
<memstat-size>32,1024,2048</memstat-size>
<memstat-name>rtnexthop</memstat-name>
<inuse>127</inuse>
<memuse>18</memuse>
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<memstat-req>129</memstat-req>
<memstat-size>32,256,512,1024,2048,4096</memstat-size>
<memstat-name>metrics</memstat-name>
<inuse>3</inuse>
<memuse>1</memuse>
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<memstat-name>inifmulti</memstat-name>
<inuse>3</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>3</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>ingrentry</memstat-name>
<inuse>6</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>6</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>rnode</memstat-name>
<inuse>68</inuse>
<memuse>2</memuse>
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<memstat-req>76</memstat-req>
<memstat-size>16,32</memstat-size>
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<memstat-name>ifdevice</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
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<memstat-name>ifstat</memstat-name>
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<memuse>22</memuse>
<high-use>--</high-use>
<memstat-req>40</memstat-req>
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<memstat-name>ipfw</memstat-name>
<inuse>42</inuse>
<memuse>23</memuse>
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<memstat-req>91</memstat-req>

```

```
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  <memuse>3</memuse>
  <high-use>--</high-use>
  <memstat-req>103</memstat-req>
  <memstat-size>16,32</memstat-size>
  <memstat-name>rtable</memstat-name>
  <inuse>129</inuse>
  <memuse>14</memuse>
  <high-use>--</high-use>
  <memstat-req>139</memstat-req>
  <memstat-size>16,32,64,128,1024,16384</memstat-size>
  <memstat-name>sysctl</memstat-name>
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  <memuse>0</memuse>
  <high-use>--</high-use>
  <memstat-req>14847</memstat-req>
  <memstat-size>16,32,64,4096,16384,32768</memstat-size>
  <memstat-name>ifaddr</memstat-name>
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  <memuse>3</memuse>
  <high-use>--</high-use>
  <memstat-req>29</memstat-req>
  <memstat-size>64,128</memstat-size>
  <memstat-name>mkey</memstat-name>
  <inuse>345</inuse>
  <memuse>6</memuse>
  <high-use>--</high-use>
  <memstat-req>2527</memstat-req>
  <memstat-size>16,128</memstat-size>
  <memstat-name>pfe_ipc</memstat-name>
  <inuse>0</inuse>
  <memuse>0</memuse>
  <high-use>--</high-use>
  <memstat-req>1422</memstat-req>

<memstat-size>16,32,64,128,512,1024,2048,8192,16384,32768,65536,131072</memstat-size>

  <memstat-name>ifstate</memstat-name>
  <inuse>594</inuse>
  <memuse>51</memuse>
  <high-use>--</high-use>
  <memstat-req>655</memstat-req>

<memstat-size>16,32,64,128,256,1024,2048,4096,16384,32768</memstat-size>
  <memstat-name>itable16</memstat-name>
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  <memstat-req>294</memstat-req>
  <memstat-size>1024,4096</memstat-size>
  <memstat-name>itable32</memstat-name>
  <inuse>160</inuse>
  <memuse>10</memuse>
  <high-use>--</high-use>
  <memstat-req>160</memstat-req>
  <memstat-size>64</memstat-size>
  <memstat-name>itable64</memstat-name>
  <inuse>2</inuse>
  <memuse>1</memuse>
```

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<memstat-name>lr</memstat-name>
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<memstat-name>pic</memstat-name>
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<memstat-name>gencfg</memstat-name>
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<memstat-name>module</memstat-name>
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<memstat-req>249</memstat-req>
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<memstat-name>mtx_pool</memstat-name>
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<memstat-name>DEVFS3</memstat-name>
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```

```
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<memstat-name>DEVFS1</memstat-name>
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<memstat-name>pgrp</memstat-name>
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<memstat-name>session</memstat-name>
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<memuse>1</memuse>
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<memstat-name>sysctlpid</memstat-name>
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<memuse>34</memuse>
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<memstat-req>1117</memstat-req>
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<memstat-name>sysctltmp</memstat-name>
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<memuse>0</memuse>
<high-use>--</high-use>
```

```

<memstat-req>743</memstat-req>
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<memstat-name>umtx</memstat-name>
<inuse>144</inuse>
<memuse>9</memuse>
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<memstat-req>144</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>SWAP</memstat-name>
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<memstat-req>2</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>bus</memstat-name>
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<memstat-name>bus-sc</memstat-name>
<inuse>23</inuse>
<memuse>33</memuse>
<high-use>--</high-use>
<memstat-req>335</memstat-req>

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<memstat-req>10</memstat-req>
<memstat-size>16,131072</memstat-size>
<memstat-name>eventhandler</memstat-name>
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<high-use>--</high-use>
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<memstat-size>32,128</memstat-size>
<memstat-name>kobj</memstat-name>
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<memuse>186</memuse>
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<memstat-req>111</memstat-req>
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<memstat-name>DEVFS</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
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<memstat-name>rman</memstat-name>
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<memstat-name>sbuf</memstat-name>
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<memuse>0</memuse>
<high-use>--</high-use>

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<memuse>1</memuse>
<high-use>--</high-use>
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<memstat-name>taskqueue</memstat-name>
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<high-use>--</high-use>
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<memstat-size>64</memstat-size>
<memstat-name>turnstile</memstat-name>
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<free>11</free>
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<count-limit>0</count-limit>
<used>199</used>
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<zone-name>PROC:</zone-name>
<zone-size>544</zone-size>
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<used>127</used>
<free>17</free>
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<zone-name>KSEGRP:</zone-name>
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<used>127</used>
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<zone-name>SLEEPQUEUE:</zone-name>
<zone-size>32</zone-size>
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<used>145</used>
<free>194</free>
<zone-req>145</zone-req>
<zone-name>VMSPACE:</zone-name>
<zone-size>268</zone-size>
```

```

<count-limit>0</count-limit>
<used>57</used>
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<zone-req>1335</zone-req>
<zone-name>mbuf_packet:</zone-name>
<zone-size>256</zone-size>
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<free>128</free>
<zone-req>49791</zone-req>
<zone-name>mbuf:</zone-name>
<zone-size>256</zone-size>
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<free>466</free>
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<zone-req>5976</zone-req>
<zone-name>mbuf_jumbo_pagesize:</zone-name>
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```

```
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<zone-name>VNODE:</zone-name>
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<zone-name>VNODEPOLL:</zone-name>
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<free>0</free>
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<zone-name>S VFS Cache:</zone-name>
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<zone-req>3824</zone-req>
<zone-name>L VFS Cache:</zone-name>
<zone-size>291</zone-size>
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<zone-name>NAMEI:</zone-name>
<zone-size>1024</zone-size>
<count-limit>0</count-limit>
<used>0</used>
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<free>0</free>
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<zone-size>460</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
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<free>9</free>
<zone-req>717</zone-req>
<zone-name>KNOTE:</zone-name>
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```

```
<free>64</free>
<zone-req>3311</zone-req>
<zone-name>socket:</zone-name>
<zone-size>412</zone-size>
<count-limit>25191</count-limit>
<used>343</used>
<free>8</free>
<zone-req>2524</zone-req>
<zone-name>unpcb:</zone-name>
<zone-size>140</zone-size>
<count-limit>25200</count-limit>
<used>170</used>
<free>26</free>
<zone-req>2157</zone-req>
<zone-name>ipq:</zone-name>
<zone-size>52</zone-size>
<count-limit>216</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>udpcb:</zone-name>
<zone-size>232</zone-size>
<count-limit>25194</count-limit>
<used>19</used>
<free>32</free>
<zone-req>31</zone-req>
<zone-name>inpcb:</zone-name>
<zone-size>232</zone-size>
<count-limit>25194</count-limit>
<used>40</used>
<free>28</free>
<zone-req>105</zone-req>
<zone-name>tcpcb:</zone-name>
<zone-size>520</zone-size>
<count-limit>25193</count-limit>
<used>40</used>
<free>16</free>
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<zone-name>tcptw:</zone-name>
<zone-size>56</zone-size>
<count-limit>5092</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>syncache:</zone-name>
<zone-size>128</zone-size>
<count-limit>15360</count-limit>
<used>0</used>
<free>60</free>
<zone-req>55</zone-req>
<zone-name>tcpreass:</zone-name>
<zone-size>20</zone-size>
<count-limit>1690</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>sackhole:</zone-name>
<zone-size>20</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
```

```

    <zone-req>0</zone-req>
    <zone-name>ripcb:</zone-name>
    <zone-size>232</zone-size>
    <count-limit>25194</count-limit>
    <used>5</used>
    <free>29</free>
    <zone-req>5</zone-req>
    <zone-name>SWAPMETA:</zone-name>
    <zone-size>276</zone-size>
    <count-limit>94948</count-limit>
    <used>0</used>
    <free>0</free>
    <zone-req>0</zone-req>
    <zone-name>FFS inode:</zone-name>
    <zone-size>132</zone-size>
    <count-limit>0</count-limit>
    <used>1146</used>
    <free>72</free>
    <zone-req>1306</zone-req>
    <zone-name>FFS1 dinode:</zone-name>
    <zone-size>128</zone-size>
    <count-limit>0</count-limit>
    <used>1146</used>
    <free>24</free>
    <zone-req>1306</zone-req>
    <zone-name>FFS2 dinode:</zone-name>
    <zone-size>256</zone-size>
    <count-limit>0</count-limit>
    <used>0</used>
    <free>0</free>
    <zone-req>0</zone-req>
</vmstat-memstat-zone>
<vmstat-sumstat>
  <cpu-context-switch>934906</cpu-context-switch>
  <dev-intr>1707986</dev-intr>
  <soft-intr>33819</soft-intr>
  <traps>203604</traps>
  <sys-calls>1200636</sys-calls>
  <kernel-thrds>60</kernel-thrds>
  <fork-calls>1313</fork-calls>
  <vfork-calls>21</vfork-calls>
  <rfork-calls>0</rfork-calls>
  <swap-pageins>0</swap-pageins>
  <swap-pagedin>0</swap-pagedin>
  <swap-pageouts>0</swap-pageouts>
  <swap-pagedout>0</swap-pagedout>
  <vnode-pageins>23094</vnode-pageins>
  <vnode-pagedin>23119</vnode-pagedin>
  <vnode-pageouts>226</vnode-pageouts>
  <vnode-pagedout>3143</vnode-pagedout>
  <page-daemon-wakeup>0</page-daemon-wakeup>
  <page-daemon-examined-pages>0</page-daemon-examined-pages>
  <pages-reactivated>8821</pages-reactivated>
  <copy-on-write-faults>48364</copy-on-write-faults>
  <copy-on-write-optimized-faults>31</copy-on-write-optimized-faults>
  <zero-fill-pages-zeroed>74665</zero-fill-pages-zeroed>
  <zero-fill-pages-prezeroed>70061</zero-fill-pages-prezeroed>
  <transit-blocking-page-faults>85</transit-blocking-page-faults>
  <total-vm-faults>191824</total-vm-faults>

<pages-affected-by-kernel-thrd-creat>0</pages-affected-by-kernel-thrd-creat>

```

```

    <pages-affected-by-fork>95343</pages-affected-by-fork>
    <pages-affected-by-vfork>3526</pages-affected-by-vfork>
    <pages-affected-by-rfork>0</pages-affected-by-rfork>
    <pages-freed>221502</pages-freed>
    <pages-freed-by-daemon>0</pages-freed-by-daemon>
    <pages-freed-by-exiting-proc>75630</pages-freed-by-exiting-proc>
    <pages-active>45826</pages-active>
    <pages-inactive>13227</pages-inactive>
    <pages-in-vm-cache>49278</pages-in-vm-cache>
    <pages-wired-down>10640</pages-wired-down>
    <pages-free>70706</pages-free>
    <bytes-per-page>4096</bytes-per-page>
    <swap-pages-used>0</swap-pages-used>
    <peak-swap-pages-used>0</peak-swap-pages-used>
    <total-name-lookups>214496</total-name-lookups>
    <positive-cache-hits>92</positive-cache-hits>
    <negative-cache-hits>5</negative-cache-hits>
    <pass2>0</pass2>
    <cache-deletions>0</cache-deletions>
    <cache-falsehits>0</cache-falsehits>
    <toolong>0</toolong>
</vmstat-sumstat>
<vmstat-intr>
    <intr-name>irq0: clk          </intr-name>
    <intr-cnt>1243455</intr-cnt>
    <intr-rate>999</intr-rate>
    <intr-name>irq4: sio0        </intr-name>
    <intr-cnt>1140</intr-cnt>
    <intr-rate>0</intr-rate>
    <intr-name>irq8: rtc         </intr-name>
    <intr-cnt>159164</intr-cnt>
    <intr-rate>127</intr-rate>
    <intr-name>irq9: cbb1 fxp0   </intr-name>
    <intr-cnt>28490</intr-cnt>
    <intr-rate>22</intr-rate>
    <intr-name>irq10: fxp1       </intr-name>
    <intr-cnt>20593</intr-cnt>
    <intr-rate>16</intr-rate>
    <intr-name>irq14: ata0       </intr-name>
    <intr-cnt>5031</intr-cnt>
    <intr-rate>4</intr-rate>
    <intr-name>Total</intr-name>
    <intr-cnt>1457873</intr-cnt>
    <intr-rate>1171</intr-rate>
</vmstat-intr>
<vm-kernel-state>
    <vm-kmem-map-free>248524800</vm-kmem-map-free>
</vm-kernel-state>
<kernel-direct-mm-size-information>
    <vm-directmm-size-used>4644</vm-directmm-size-used>
    <vm-directmm-size-max>4057334</vm-directmm-size-max>
</kernel-direct-mm-size-information>
</system-virtual-memory-information>
<cli>
    <banner></banner>
</cli>
</rpc-reply>

```

Note: <kernel-direct-mm-size-information> only displays for 64 bit platform.

show system virtual-memory (QFX Series)

```

user@switch> show system virtual-memory | display xml
<rpc-reply xmlns:junos="http://device1.example.com/junos/11.1R1/junos">
  <system-virtual-memory-information>
    <vmstat-memstat-malloc>
      <memstat-name>CAM dev queue</memstat-name>
      <inuse>1</inuse>
      <memuse>1</memuse>
      <high-use>-</high-use>
      <memstat-req>1</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>entropy</memstat-name>
      <inuse>1024</inuse>
      <memuse>64</memuse>
      <high-use>-</high-use>
      <memstat-req>1024</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>linker</memstat-name>
      <inuse>481</inuse>
      <memuse>1871</memuse>
      <high-use>-</high-use>
      <memstat-req>1145</memstat-req>
      <memstat-size>16,32,64,4096,32768,131072</memstat-size>
      <memstat-name>lockf</memstat-name>
      <inuse>56</inuse>
      <memuse>4</memuse>
      <high-use>-</high-use>
      <memstat-req>5998</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>devbuf</memstat-name>
      <inuse>2094</inuse>
      <memuse>3877</memuse>
      <high-use>-</high-use>
      <memstat-req>2099</memstat-req>

      <memstat-size>16,32,64,128,512,1024,4096,8192,16384,32768,65536,131072</memstat-size>

      <memstat-name>temp</memstat-name>
      <inuse>21</inuse>
      <memuse>66</memuse>
      <high-use>-</high-use>
      <memstat-req>3127</memstat-req>

      <memstat-size>16,32,64,128,256,512,2048,4096,8192,16384,32768,65536,131072</memstat-size>

      <memstat-name>ip6ndp</memstat-name>
      <inuse>0</inuse>
      <memuse>0</memuse>
      <high-use>-</high-use>
      <memstat-req>4</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>in6ifmulti</memstat-name>
      <inuse>1</inuse>
      <memuse>1</memuse>
      <high-use>-</high-use>
      <memstat-req>1</memstat-req>
      <memstat-size>64</memstat-size>
      <memstat-name>in6grentry</memstat-name>
      <inuse>1</inuse>
      <memuse>1</memuse>

```



```

<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>iflogical</memstat-name>
<inuse>13</inuse>
<memuse>3</memuse>
<high-use>--</high-use>
<memstat-req>13</memstat-req>
<memstat-size>64,2048</memstat-size>
<memstat-name>iffamily</memstat-name>
<inuse>28</inuse>
<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>28</memstat-req>
<memstat-size>32,1024,2048</memstat-size>
<memstat-name>rtnexthop</memstat-name>
<inuse>127</inuse>
<memuse>18</memuse>
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<memstat-req>129</memstat-req>
<memstat-size>32,256,512,1024,2048,4096</memstat-size>
<memstat-name>metrics</memstat-name>
<inuse>3</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>5</memstat-req>
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<memstat-name>inifmulti</memstat-name>
<inuse>3</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>3</memstat-req>
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<memstat-name>ingrentry</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>6</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>rnode</memstat-name>
<inuse>68</inuse>
<memuse>2</memuse>
<high-use>--</high-use>
<memstat-req>76</memstat-req>
<memstat-size>16,32</memstat-size>
<memstat-name>rcache</memstat-name>
<inuse>4</inuse>
<memuse>8</memuse>
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<memuse>1</memuse>
<high-use>--</high-use>
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<memstat-name>ifstat</memstat-name>
<inuse>40</inuse>
<memuse>22</memuse>
<high-use>--</high-use>

```

```
<memstat-req>40</memstat-req>
<memstat-size>512,16384,32768</memstat-size>
<memstat-name>ipfw</memstat-name>
<inuse>42</inuse>
<memuse>23</memuse>
<high-use>--</high-use>
<memstat-req>91</memstat-req>

<memstat-size>16,32,64,128,256,512,1024,16384,32768,65536,131072</memstat-size>
<memstat-name>ifmaddr</memstat-name>
<inuse>103</inuse>
<memuse>3</memuse>
<high-use>--</high-use>
<memstat-req>103</memstat-req>
<memstat-size>16,32</memstat-size>
<memstat-name>rtable</memstat-name>
<inuse>129</inuse>
<memuse>14</memuse>
<high-use>--</high-use>
<memstat-req>139</memstat-req>
<memstat-size>16,32,64,128,1024,16384</memstat-size>
<memstat-name>sysctl</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>14847</memstat-req>
<memstat-size>16,32,64,4096,16384,32768</memstat-size>
<memstat-name>ifaddr</memstat-name>
<inuse>29</inuse>
<memuse>3</memuse>
<high-use>--</high-use>
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<memstat-size>64,128</memstat-size>
<memstat-name>mkey</memstat-name>
<inuse>345</inuse>
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<high-use>--</high-use>
<memstat-req>2527</memstat-req>
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<memuse>0</memuse>
<high-use>--</high-use>
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<memuse>51</memuse>
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<memstat-req>655</memstat-req>

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<memstat-name>itable16</memstat-name>
<inuse>276</inuse>
<memuse>52</memuse>
<high-use>--</high-use>
<memstat-req>294</memstat-req>
<memstat-size>1024,4096</memstat-size>
<memstat-name>itable32</memstat-name>
```

```

<inuse>160</inuse>
<memuse>10</memuse>
<high-use>--</high-use>
<memstat-req>160</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>itable64</memstat-name>
<inuse>2</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>2</memstat-req>
<memstat-size>128</memstat-size>
<memstat-name>lr</memstat-name>
<inuse>1</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>16384</memstat-size>
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<inuse>5</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>5</memstat-req>
<memstat-size>64,512</memstat-size>
<memstat-name>pfestat</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
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<memstat-req>162</memstat-req>
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<memstat-name>gencfg</memstat-name>
<inuse>224</inuse>
<memuse>56</memuse>
<high-use>--</high-use>
<memstat-req>540</memstat-req>
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```
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```

```
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```



```

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```

```
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```

```

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```

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  <soft-intr>33819</soft-intr>
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  <swap-pageouts>0</swap-pageouts>
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  <vnode-pagedin>23119</vnode-pagedin>
  <vnode-pageouts>226</vnode-pageouts>
  <vnode-pagedout>3143</vnode-pagedout>
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  <page-daemon-examined-pages>0</page-daemon-examined-pages>
  <pages-reactivated>8821</pages-reactivated>
```

```

<copy-on-write-faults>48364</copy-on-write-faults>
<copy-on-write-optimized-faults>31</copy-on-write-optimized-faults>
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<pages-affected-by-rfork>0</pages-affected-by-rfork>
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<pages-inactive>13227</pages-inactive>
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  <intr-rate>999</intr-rate>
  <intr-name>irq4: sio0     </intr-name>
  <intr-cnt>1140</intr-cnt>
  <intr-rate>0</intr-rate>
  <intr-name>irq8: rtc      </intr-name>
  <intr-cnt>159164</intr-cnt>
  <intr-rate>127</intr-rate>
  <intr-name>irq9: cbb1 fxp0 </intr-name>
  <intr-cnt>28490</intr-cnt>
  <intr-rate>22</intr-rate>
  <intr-name>irq10: fxp1    </intr-name>
  <intr-cnt>20593</intr-cnt>
  <intr-rate>16</intr-rate>
  <intr-name>irq14: ata0    </intr-name>
  <intr-cnt>5031</intr-cnt>
  <intr-rate>4</intr-rate>
  <intr-name>Total</intr-name>
  <intr-cnt>1457873</intr-cnt>
  <intr-rate>1171</intr-rate>
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</vm-kernel-state>
</system-virtual-memory-information>
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  <banner></banner>
</cli>
</rpc-reply>

```


show task

| | |
|---------------------------------|--|
| Syntax | <pre>show task <logical-system (all <i>logical-system-name</i>)> <<i>task-name</i>> io logical-system-mux memory replication snooping summary</pre> |
| Release Information | Command introduced before Junos OS Release 7.4. |
| Description | Display routing protocol tasks on the Routing Engine. |
| Options | <p>none—Display all routing protocol tasks on the Routing Engine.</p> <p>logical-system (all <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>logical-system-mux— Display the logical router multiplexer process (lrmuxd) per-task information.</p> <p><i>task-name</i>—(Optional) Display information about running tasks for all tasks whose name begins with this string (for example, BGP_Group_69_153 and BGP_Group_70_153 are both displayed when you run the show task BGP_Group command).</p> <p>io— Show i/o statistics for all tasks displayed.</p> <p>memory— Show memory statistics for all tasks displayed.</p> <p>replication— Show only replication tasks.</p> <p>snooping— Show only snooping tasks.</p> <p>summary— (Optional) Display summary information about running tasks.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • show task io on page 688 • show task logical-system-mux on page 690 • show task memory on page 692 |
| List of Sample Output | show task on page 686 |
| Output Fields | Table 21 on page 686 describes the output fields for the show task command. Output fields are listed in the approximate order in which they appear. |

Table 21: show task Output Fields

| Field Name | Field Description |
|------------|--|
| Pri | Current priority of the process. A lower number indicates a higher priority. |
| Task Name | Name of the task. |
| Pro | IP protocol number associated with the process. |
| Port | TCP or UDP port number associated with the task. |
| So | Socket number of the task. |
| Flags | Flags for the task: <ul style="list-style-type: none"> • Accept—Task is waiting for incoming connections. • Connect—Task is waiting for a connection to be completed. • Delete—Task has been deleted and is being cleaned up. • LowPrio— Task will be dispatched to read its socket after other higher-priority tasks. |

Sample Output

show task

```

user@host> show task
Pri Task Name                               Pro  Port  So  Flags
10 IF
15 LABEL
15 ISO
15 INET                                     7
20 Aggregate
20 RT
30 ICMP                                   1    9
39 ISIS I/O                               12
40 IS-IS                                  10
40 BGP RT Background                       <LowPrio>
40 BGP.0.0.0.0+179                        179 15 <Accept LowPrio>
50 BGP_69.192.168.201.234+179             179 17 <LowPrio>
50 BGP_70.192.168.201.233+179             179 16 <LowPrio>
50 BGP_Group_69_153                       <LowPrio>
50 BGP_Group_70_153                       <LowPrio>
50 ASPaths
60 KRT                                   255    1
60 Redirect
70 MGMT.local                             14 <LowPrio>
70 MGMT_Listen./var/run/rpd_mgmt           13 <Accept LowPrio>
70 SNMP_Subagent./var/run/sub_rpd.sock     8 <LowPrio>
40 KRT IO task                            {krtio-th}
40 krtio-th                               {krtio-th}
60 krt solic client                        255   85 <ReadDisableWriteDisable>
{krtio-th}
13 rsvp-iobagent./var/run/sub_rpd.sock     46 <WriteDisable> {rsvp-io}
80 jtrace_jthr_task                       255   85 {TraceThread}

```


show task io

List of Syntax [Syntax on page 688](#)
[Syntax \(EX Series Switches\) on page 688](#)

Syntax show task io
 <logical-system (all | *logical-system-name*)>

Syntax (EX Series Switches) show task io

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.

Description Display I/O statistics for routing protocol tasks on the Routing Engine.

Options **none**—Display I/O statistics for routing protocol tasks on the Routing Engine.
logical-system (all | *logical-system-name*)—(Optional) Perform this operation on all logical systems or on a particular logical system.

Required Privilege Level view

List of Sample Output [show task io on page 689](#)

Output Fields [Table 22 on page 688](#) describes the output fields for the **show task io** command. Output fields are listed in the approximate order in which they appear.

Table 22: show task io Output Fields

| Field Name | Field Description |
|------------|--|
| Task Name | Name of the task. |
| Reads | Number of input ready notifications. |
| Writes | Number of output ready notifications. |
| Rcvd | Number of requests to the kernel for input. |
| Sent | Number of requests to the kernel for output. |
| Dropped | Number of sent requests that failed. |

Sample Output

show task io

```

user@host> show task io
Task Name                               Reads  Writes  Rcvd    Sent  Dropped
LMP Client                             1      1       0       0      0
IF                                       0      0       0       0      0
INET6                                   0      0       0       0      0
INET                                    0      0       0       0      0
ISO                                     0      0       0       0      0
Memory                                  0      0       0       0      0
RPD Unix Domain Server./var/ru         0      0       0       0      0
RPD Unix Domain Server./var/ru         1      0       0       0      0
RPD Unix Domain Server./var/ru         2      0       0       0      0
RPD Server.0.0.0.0+666                  0      0       0       0      0
Aggregate                               0      0       0       0      0
RT                                       0      0       0       0      0
ICMP                                    0      0       0       0      0
Router-Advertisement                    0      0       0       0      0
ICMPv6                                 0      0       0       0      0
IS-IS I/O./var/run/ppmd_control         1307    1       0       0      0
l2vpn global task                       0      0       0       0      0
IS-IS                                   0      0       0       0      0
BFD I/O./var/run/bfdd_control           1307    1       0       0      0
TED                                     0      0       0       0      0
ASPaths                                0      0       0       0      0
Resolve tree 1                          0      0       0       0      0
KStat                                   0      0       0       0      0
KRT Request                             0      0       63      0      0
KRT Ifstate                             106     0      295     0      0
KRT                                      0      0       0       0      0
Redirect                               0      0       0       0      0
KRT IO task                             0      0       0       0      0
  {krtio-th}
krtio-th                               0      0       0       0      0
  {krtio-th}
krt solic client                        0      1       0       0      0
  {krtio-th}
rsvp-io                                83826   0    117827  139682   0
  {rsvp-io}
jtrace_jthr_task                        0      0       0       0      0
  {TraceThread}

...

```

show task logical-system-mux

| | |
|---------------------------------|---|
| Syntax | <pre>show task logical-system-mux <task-name> io memory replication summary</pre> |
| Release Information | Command introduced in Junos OS Release 13.3. |
| Description | Display the logical router multiplexer process (lrmuxd) per-task information. |
| Options | <p>none— Display all the logical router multiplexer process (lrmuxd) per-task information.</p> <p>task-name— (Optional) Display information about running tasks for all tasks whose name begins with this string (for example, lsys_session_task:lr2 and lsys_session_task:lr1 are both displayed when you run the show task logical-system-mux lsys command).</p> <p>io— Show I/O statistics for all tasks displayed.</p> <p>memory— Show memory statistics for all lrmuxd processes displayed.</p> <p>replication— Show only replication tasks.</p> <p>summary— Display summary information about running tasks.</p> |
| Required Privilege Level | view |
| Related Documentation | <ul style="list-style-type: none"> • show task on page 685 • show task io on page 688 • show task memory on page 692 |
| List of Sample Output | show task logical-system-mux on page 691 show task logical-system-mux io on page 691 show task logical-system-mux memory on page 691 |
| Output Fields | <p>Table 23 on page 690 describes the output fields for the show task logical-system-mux command. Output fields are listed in the approximate order in which they appear.</p> |

Table 23: show task logical-system-mux Output Fields

| Field Name | Field Description |
|------------|--|
| Pri | Current priority of the process. A lower number indicates a higher priority. |

Table 23: show task logical-system-mux Output Fields (*continued*)

| Field Name | Field Description |
|------------------|--|
| Task Name | Name of the task. |
| Pro | IP number associated with the process. |
| Port | TCP or UDP port number associated with the task. |
| So | Socket number of the task. |
| Flags | Flags for the task: <ul style="list-style-type: none"> • Accept—Task is waiting for incoming connections. • Connect—Task is waiting for a connection to be completed. • Delete—Task has been deleted and is being cleaned up. • LowPrio— Task will be dispatched to read its socket after other higher-priority tasks. |

Sample Output

show task logical-system-mux

```

user@host> show task logical-system-mux
Pri Task Name                               Pro  Port  So  Flags
15 Memory
40 lsys_session_task:lr2                    14  <WriteDisable>
40 lsys_session_task:lr1                    11  <WriteDisable>
40 lrmuxd lsys info task
60 Mirror Task.128.0.0.6                    63793  9  <WriteDisable>
70 MGMT.local                               15  <WriteDisable>
70 MGMT_Listen./var/run/lrmuxd_mgmt          6  <Accept WriteDisable>

```

show task logical-system-mux io

```

user@host> show task logical-system-mux io
Task Name                               Reads  Writes  Rcvd  Sent  Dropped
Memory                                   0      0      0      0      0
lsys_session_task:lr2                   7      2      0      0      0
lsys_session_task:lr1                   7      2      0      0      0
lrmuxd lsys info task                   0      0      0      0      0
Mirror Task.128.0.0.6                  1940    1      0      0      0
MGMT.local                              0      0      1      0      0
MGMT_Listen./var/run/lrmuxd_mgmt        12      0     12      0      0

```

show task logical-system-mux memory

```

user@host> show task logical-system-mux memory
Memory                               Size (kB)  Percentage  When
Currently In Use:                    1483      0%         now
Maximum Ever Used:                   1483      0%         13/03/20 02:28:18
Available:                           1589641   100%       now

```

show task memory

List of Syntax [Syntax on page 692](#)
[Syntax \(EX Series Switches\) on page 692](#)

Syntax show task memory
 <brief | detail | history | summary>
 <logical-system (all | *logical-system-name*)>

Syntax (EX Series Switches) show task memory
 <brief | detail | history | summary>

Release Information Command introduced before Junos OS Release 7.4.
 Command introduced in Junos OS Release 9.0 for EX Series switches.

Description Display memory utilization for routing protocol tasks on the Routing Engine.



NOTE: The show task memory command does not display all the memory used by the routing protocol process. This value does not account for the memory used for the TEXT and STACK segments, or the memory used by the routing protocol process's internal memory manager.

Options **none**—Display standard information about memory utilization for routing protocol tasks on the Routing Engine on all logical systems.

brief | detail | history | summary—(Optional) Display the specified level of output. Use the **history** option to display a history of memory utilization information.

logical-system (all | *logical-system-name*)—(Optional) Perform this operation on all logical systems or on a particular logical system.

Required Privilege Level view

List of Sample Output [show task memory on page 694](#)
[show task memory detail on page 694](#)

Output Fields [Table 24 on page 692](#) describes the output fields for the **show task memory** command. Output fields are listed in the approximate order in which they appear.

Table 24: show task memory Output Fields

| Field Name | Field Description | Level of Output |
|--------------------------------|---|-----------------|
| Memory Currently In Use | Memory currently in use. Dynamically allocated memory plus the DATA segment memory in kilobytes. | All levels |

Table 24: show task memory Output Fields (*continued*)

| Field Name | Field Description | Level of Output |
|---------------------------------|---|--|
| Memory Maximum Ever Used | Maximum memory ever used. | none specified, brief , history |
| Memory Available | Memory currently available. NOTE: The maximum currently available memory is displayed incorrectly. On 32-bit Junos OS, the actual available memory is 2,097,152 kilobytes (2147483648 / 1048) but instead it is displayed as 2,147,484 kilobytes (2147483648 / 1000). On 64-bit Junos OS, the actual available memory is 3,145,728 kilobytes (3221225472 / 1048) but instead it is displayed as 3221225 kilobytes (3221225472 / 1000). | none specified, brief |
| Size (kB) | Memory capacity in 1000-byte kilobytes. | none specified, brief , history , summary |
| Percentage | Percentage of memory currently available. | none specified, brief |
| When | Timestamp. | none specified, brief , history |
| Overall Memory Report | Memory utilization by memory size: <ul style="list-style-type: none"> • Size—Block size, in bytes. • TXP—T indicates transient memory, X indicates exclusive memory, and P indicates full page. • Allocs—Number of blocks allocated for named objects. • Mallocs—Number of blocks allocated for anonymous objects. • Alloc Bytes—Number of blocks allocated times block size. • MaxAllocs—Maximum value of Allocs. • MaxBytes—Maximum value of Alloc Bytes. • FreeBytes—Total number of bytes unused on memory pages for this block size. | detail |
| Allocator Memory Report | Memory utilization by named objects: <ul style="list-style-type: none"> • Size—Size of the named object in bytes. • Alloc Size—Actual memory used by that object in bytes. • DTXP—D indicates debug, T indicates transient memory, X indicates exclusive memory, and P indicates full page. • Alloc Blocks—Number of named objects allocated. • AllocBytes—Number of blocks allocated times block size. • MaxAlloc Blocks—Maximum value of Alloc Blocks. • Max Alloc Bytes—Maximum value of AllocBytes. | detail |

Table 24: show task memory Output Fields (*continued*)

| Field Name | Field Description | Level of Output |
|-------------------------------------|--|-----------------|
| Malloc Usage Report | Memory utilization for miscellaneous use: <ul style="list-style-type: none"> • Allocs—Number of allocations. • Bytes—Total bytes consumed. • MaxAllocs—Maximum value of Allocs. • MaxBytes—Maximum value of Bytes. • FuncCalls—Cumulative number of Allocs. | detail |
| Dynamically allocated memory | Memory allocated dynamically by the system. | detail |
| Program data+BSS memory | Program and base station subsystem (BSS) memory. | detail |
| Page data overhead | Internal memory overhead. | detail |
| Page directory size | Internal memory overhead. | detail |
| Total bytes in use | Total memory, in bytes, that is currently in use and percentage of available memory (in parentheses). | detail |

Sample Output

show task memory

```

user@host> show task memory
Memory                Size (kB)  Percentage  When
Currently In Use:      29417      3%         now
Maximum Ever Used:     33882      4%         00/02/11 22:07:03
Available:             756281     100%       now

```

show task memory detail

```

user@host> show task memory detail
----- Overall Memory Report -----
Size TP   Allocs  Mallocs  AllocBytes  MaxAllocs  MaxBytes  FreeBytes
8         -       111      888        112        896       3208
12        92      149      2892       247        2964      1204
12 T      -       -        -          5          60        -
16        7       11       288        23         368       3808
20        100     33       2660       164        3280      1436
20 T      -       -        -          40         800       -
24        162     15       4248       177        4248      3944
24 T      -       -        -          4          96        -
28        371     -       10388      372       10416     1900
32        6      23       928        30         960      3168
...
-----
                               606182              715302      118810
----- Allocator Memory Report -----

```


| Name | Size | Alloc | DTP | Alloc Blocks | Alloc Bytes | MaxAlloc Blocks | MaxAlloc Bytes |
|------------------|------|-------|-----|-----------------|----------------|--------------------|-------------------|
| patroot | 8 | 12 | | 84 | 1008 | 87 | 1044 |
| sockaddr_un.i802 | 8 | 12 | | 2 | 24 | 2 | 24 |
| cos_nhm_nh | 8 | 12 | | 1 | 12 | 1 | 12 |
| sockaddr_un.tag | 8 | 12 | | 3 | 36 | 4 | 48 |
| gw_entry_list | 8 | 12 | | 1 | 12 | 1 | 12 |
| bgp_riblist_01 | 8 | 12 | | 1 | 12 | 2 | 24 |
| ospf_intf_ev | 8 | 12 | | - | - | 6 | 72 |
| krt_remnant_rt | 8 | 12 | T | - | - | 5 | 60 |

...

| | |
|--------|--------|
| 164108 | 221552 |
|--------|--------|

----- Malloc Usage Report -----

| Name | Allocs | Bytes | MaxAllocs | MaxBytes | FuncCalls |
|-------------------------|--------|-------|-----------|----------|-----------|
| MGMT.local | 1 | 8 | 1 | 8 | 1 |
| BGP.0.0.0.0+179 | - | - | 1 | 8 | 2 |
| BGP RT Background | 4 | 74748 | 4 | 74748 | 4 |
| SNMP Subagent./var/run/ | - | 52 | 1 | 9172 | 56 |
| OSPFv2 I/O./var/run/ppm | 1 | 66536 | 2 | 66552 | 4551 |
| OSPF | 6 | 67655 | 7 | 67703 | 68 |
| KRT | - | - | 1 | 3784 | 18 |
| ASPaths | 3 | 80 | 3 | 80 | 3 |
| -- sockaddr -- | 183 | 2100 | 184 | 2108 | 1645 |
| BFD I/O./var/run/bfdd_c | 1 | 65535 | 2 | 65551 | 4555 |
| RT | 48 | 872 | 48 | 872 | 48 |
| Scheduler | 42 | 628 | 43 | 628 | 88 |
| --Anonymous-- | 56 | 1100 | 58 | 1140 | 112 |
| --System-- | 82 | 58364 | 114 | 60044 | 4654 |

| | |
|--------|--------|
| 337678 | 352398 |
|--------|--------|

| | | | |
|-------------------------------|---------|----------|---------|
| Dynamically allocated memory: | 765952 | Maximum: | 765952 |
| Program data+BSS memory: | 1568768 | Maximum: | 1568768 |
| Page data overhead: | 53248 | Maximum: | 53248 |
| Page directory size: | 4096 | Maximum: | 4096 |

| | |
|---------------------|----------------------------------|
| Total bytes in use: | 2392064 (0% of available memory) |
|---------------------|----------------------------------|

show task replication

Syntax `show task replication`

Release Information Command introduced in Junos OS Release 8.5.
 Command introduced in Junos OS Release 9.0 for EX Series switches.
 Command introduced in Junos OS Release 13.2X51-D20 for QFX Series switches.
 Support for logical systems introduced in Junos OS Release 13.3

Description Displays nonstop active routing (NSR) status. When you issue this command on the master Routing Engine, the status of nonstop active routing synchronization is also displayed.



CAUTION: If BGP is configured, before attempting nonstop active routing switchover, check the output of `show bgp replication` to confirm that BGP routing table synchronization has completed on the backup Routing Engine. The complete status in the output of `show task replication` only indicates that the socket replication has completed and the BGP synchronization is in progress.

To determine whether BGP synchronization is complete, you must check the **Protocol state** and **Synchronization state** fields in the output of `show bgp replication` on the master Routing Engine. The **Protocol state** must be **idle** and the **Synchronization state** must be **complete**. If you perform NSR switchover before the BGP synchronization has completed, the BGP session might flap.

Options This command has no options.

Required Privilege Level view

List of Sample Output [show task replication \(Issued on the Master Routing Engine\) on page 697](#)
[show task replication \(Issued on the Backup Routing Engine\) on page 697](#)

Output Fields [Table 25 on page 696](#) lists the output fields for the `show task replication` command. Output fields are listed in the approximate order in which they appear.

Table 25: show task replication Output Fields

| Field Name | Field Description |
|-----------------------------|---|
| Stateful replication | Displays whether or not graceful Routing Engine switchover is configured. The status can be Enabled or Disabled . |

Table 25: show task replication Output Fields (*continued*)

| Field Name | Field Description |
|-------------------------------|---|
| RE mode | Displays the Routing Engine on which the command is issued: Master , Backup , or Not applicable (when the router has only one Routing Engine). |
| Protocol | Protocols that are supported by nonstop active routing. |
| Synchronization Status | Nonstop active routing synchronization status for the supported protocols. States are NotStarted , InProgress , and Complete . |

Sample Output

show task replication (Issued on the Master Routing Engine)

```

user@host> show task replication
          Stateful Replication: Enabled
          RE mode: Master

          Protocol      Synchronization Status
          OSPF           NotStarted
          BGP            Complete
          IS-IS          NotStarted
          LDP            Complete
          PIM            Complete

```

show task replication (Issued on the Backup Routing Engine)

```

user@host> show task replication
          Stateful Replication: Enabled
          RE mode: Backup

```

test configuration

| | |
|---------------------------------|---|
| Syntax | <code>test configuration <i>filename</i></code> <code>syntax-only</code> |
| Release Information | Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series. syntax-only option introduced in Junos OS Release 12.1. Command introduced in Junos OS Release 14.1X53-D20 for OCX Series switches. |
| Description | Verify that the syntax of a configuration file is correct. If the configuration contains any syntax or commit check errors, a message is displayed to indicate the line number and column number in which the error was found. This command only accepts text files. |
| Options | <i>filename</i> —Name of the configuration file. syntax-only —(Optional) Check the syntax of a partial configuration file, without checking for commit errors. |
| Required Privilege Level | view |
| List of Sample Output | test configuration on page 698 |
| Output Fields | When you enter this command, you are provided feedback on the status of your request. |

Sample Output

test configuration

```
user@host> test configuration terminal
[Type ^D to end input]
system {
host-name host;
test1;
login;
}
terminal:3:(8) syntax error: test
[edit system]
'test;'
syntax error
terminal:4:(11) statement must contain additional statements: ;
[edit system login]
'login ;'
statement must contain additional statements
configuration syntax failed
```