



Junos[®] OS for EX Series Ethernet Switches

System Setup Feature Guide for EX Series Switches

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Release 15.1
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About the Documentation

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- Supported Platforms on page xi
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- Documentation Feedback on page xv
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Documentation and Release Notes

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

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Supported Platforms

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

- EX 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.xml;
    }
  }
}
interfaces {
  fxp0 {
    disable;
    unit 0 {
      family inet {
        address 10.0.0.1/24;
      }
    }
  }
}
```

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

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

Merging a Snippet

To merge a snippet, follow these steps:

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

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

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

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

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

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

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

For more information about the **load** command, see the *CLI User Guide*.

Documentation Conventions

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

Table 1: Notice Icons

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

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

Table 2: Text and Syntax Conventions

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

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

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

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

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

Documentation Feedback

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:

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- E-mail—Send your comments to techpubs-comments@juniper.net. Include the document or topic name, URL or page number, and software version (if applicable).

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- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <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/>.
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- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>

- Download the latest versions of software and review release notes:
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- Search technical bulletins for relevant hardware and software notifications:
<http://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum:
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- 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://tools.juniper.net/SerialNumberEntitlementSearch/>

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

Overview

- [Software Overview on page 3](#)

CHAPTER 1

Software Overview

- [Understanding Software Infrastructure and Processes on page 3](#)

Understanding Software Infrastructure and Processes

Each switch runs the Juniper Networks Junos operating system (Junos OS) for Juniper Networks EX Series Ethernet Switches on its general-purpose processors. Junos OS includes processes for Internet Protocol (IP) routing and for managing interfaces, networks, and the chassis.

The Junos OS runs on the Routing Engine. The Routing Engine kernel coordinates communication among the Junos OS processes and provides a link to the Packet Forwarding Engine.

With the J-Web interface and the command-line interface (CLI) to the Junos OS, you configure switching features and routing protocols and set the properties of network interfaces on your switch. After activating a software configuration, use either the J-Web or CLI user interface to monitor the switch, manage operations, and diagnose protocol and network connectivity problems.

- [Routing Engine and Packet Forwarding Engine on page 3](#)
- [Junos OS Processes on page 4](#)

Routing Engine and Packet Forwarding Engine

A switch has two primary software processing components:

- **Packet Forwarding Engine**—Processes packets; applies filters, routing policies, and other features; and forwards packets to the next hop along the route to their final destination.
- **Routing Engine**—Provides three main functions:
 - Creates the packet forwarding switch fabric for the switch, providing route lookup, filtering, and switching on incoming data packets, then directing outbound packets to the appropriate interface for transmission to the network
 - Maintains the routing tables used by the switch and controls the routing protocols that run on the switch.

- Provides control and monitoring functions for the switch, including controlling power and monitoring system status.

Junos OS Processes

The Junos OS running on the Routing Engine and Packet Forwarding Engine consists of multiple processes that are responsible for individual functions.

The separation of functions provides operational stability, because each process accesses its own protected memory space. In addition, because each process is a separate software package, you can selectively upgrade all or part of the Junos OS, for added flexibility.

[Table 3 on page 4](#) describes the primary Junos OS processes.

Table 3: Junos OS Processes

Process	Name	Description
Chassis process	chassisd	<p>Detects hardware on the system that is used to configure network interfaces.</p> <p>Monitors the physical status of hardware components and field-replaceable units (FRUs), detecting when environment sensors such as temperature sensors are triggered.</p> <p>Relays signals and interrupts—for example, when devices are taken offline, so that the system can close sessions and shut down gracefully.</p>
Ethernet switching process	eswd	<p>Handles Layer 2 switching functionality such as MAC address learning, Spanning Tree protocol and access port security. The process is also responsible for managing Ethernet switching interfaces, VLANs, and VLAN interfaces.</p> <p>Manages Ethernet switching interfaces, VLANs, and VLAN interfaces.</p>
Forwarding process	pfem	<p>Defines how routing protocols operate on the switch. The overall performance of the switch is largely determined by the effectiveness of the forwarding process.</p>
Interface process	dcd	<p>Configures and monitors network interfaces by defining physical characteristics such as link encapsulation, hold times, and keepalive timers.</p>
Management process	mgd	<p>Provides communication between the other processes and an interface to the configuration database.</p> <p>Populates the configuration database with configuration information and retrieves the information when queried by other processes to ensure that the system operates as configured.</p> <p>Interacts with the other processes when commands are issued through one of the user interfaces on the switch.</p> <p>If a process terminates or fails to start when called, the management process attempts to restart it a limited number of times to prevent thrashing and logs any failure information for further investigation.</p>
Routing protocol process	rpd	<p>Defines how routing protocols such as RIP, OSPF, and BGP operate on the device, including selecting routes and maintaining forwarding tables.</p>

**Related
Documentation**

PART 2

Configuration

- [Initial Configuration on page 9](#)
- [Configuration Statements on page 23](#)

CHAPTER 2

Initial Configuration

- [Connecting and Configuring an EX Series Switch \(CLI Procedure\) on page 9](#)
- [Connecting and Configuring an EX Series Switch \(J-Web Procedure\) on page 12](#)
- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\) on page 17](#)
- [Configuring Date and Time for the EX Series Switch \(J-Web Procedure\) on page 19](#)
- [Configuring System Identity for an EX Series Switch \(J-Web Procedure\) on page 20](#)
- [Configuring the Console Port Type \(CLI Procedure\) on page 21](#)

Connecting and Configuring an EX Series Switch (CLI Procedure)

There are two ways to connect and configure an EX Series switch: one method is through the console by using the CLI and the other is by using the J-Web interface.



NOTE: EX2200-24T-4G-DC switches do not support switch connection and configuration through the J-Web interface.

This topic describes the CLI procedure.



NOTE: To run the `ezsetup` script, the switch must have the factory-default configuration as the active configuration. If you have configured anything on the switch and want to run `ezsetup`, revert to the factory-default configuration. See *Reverting to the Default Factory Configuration for the EX Series Switch*.

Using the CLI, set the following parameter values in the console server or PC:

- Baud rate—9600
- Flow control—None
- Data—8
- Parity—None
- Stop bits—1
- DCD state—Disregard

To connect and configure the switch from the console by using the CLI:

1. Connect the console port to a laptop or PC by using the RJ-45 to DB-9 serial port adapter. An Ethernet cable that has an RJ-45 connector at either end and an RJ-45 to DB-9 serial port adapter are supplied with the switch.

For the location of the console port on different EX Series switches:

- See *EX2200 Switches Hardware Overview*.
- See *EX2300 Switches Hardware Overview*.
- See *Rear Panel of an EX3200 Switch*.
- See *Rear Panel of an EX3300 Switch*.
- See *Rear Panel of an EX3400 Switch*.
- See *Rear Panel of an EX4200 Switch*.
- See *EX4300 Switches Hardware Overview*.
- See *Front Panel of an EX4500 Switch*.
- See *EX4550 Switches Hardware Overview*.
- See *Switch Fabric and Routing Engine (SRE) Module in an EX6200 Switch*.
- See *Switch Fabric and Routing Engine (SRE) Module in an EX8208 Switch*.
- See *Routing Engine (RE) Module in an EX8216 Switch*.



NOTE: In EX2200-C, EX2300-C, EX2300, EX4300, and EX4550 switches, you can also use the Mini-USB Type-B console port to connect to a laptop or PC.

- For EX2200-C switches, see *Connecting an EX2200 Switch to a Management Console Using Mini-USB Type-B Console Port*.
 - For EX2300-C and EX2300 switches, see *Connecting an EX2300 Switch to a Management Console by Using Mini-USB Type-B Console Port*.
 - For EX4300 switches, see *Connecting an EX4300 Switch to a Management Console Using the Mini-USB Type-B Console Port*.
 - For EX4550 switches, see *Connecting an EX4550 Switch to a Management Console Using the Mini-USB Type-B Console Port*.
-

2. At the Junos OS shell prompt **root%**, type **ezsetup**.
3. Enter the hostname. This is optional.
4. Enter the root password you want to use for the device. Reenter the root password when prompted.

5. Enable services such as SSH and Telnet.



NOTE: You will not be able to log in to the switch as the root user through Telnet. Root login is allowed only through SSH.

- The default option for SSH is **yes**. Select this to enable SSH.
 - The default option for Telnet is **no**. Change this to **yes** to enable Telnet.
6. Use the Management Options page to select the management scenario:



NOTE: On EX4500, EX6200, and EX8200 switches, only the out-of-band management option is available.

- *Configure in-band management.* In in-band management, you configure a network interface or an uplink module (expansion module) interface as the management interface and connect it to the management device. In this scenario, you have the following two options:
 - Use the automatically created VLAN *default* for management—Select this option to configure all data interfaces as members of the default VLAN. Specify the management IP address and the default gateway.
 - Create a new VLAN for management—Select this option to create a management VLAN. Specify the VLAN name, VLAN ID, management IP address, and default gateway. Select the ports that must be part of this VLAN.
 - *Configure out-of-band management*—Configure the management port. In out-of-band management, you use a dedicated management channel (**MGMT** port) to connect to the management device. Specify the IP address and gateway of the management interface. Use this IP address to connect to the switch.
7. Specify the SNMP read community, location, and contact to configure SNMP parameters. These parameters are optional.
 8. Specify the system date and time. Select the time zone from the list. These options are optional.
 9. The configured parameters are displayed. Enter **yes** to commit the configuration. The configuration is committed as the active configuration for the switch.
 10. (For EX4500 switches only) Enter the operational mode command **request chassis pic-mode intraconnect** to set the PIC mode to intraconnect.

You can now log in with the CLI or the J-Web interface to continue configuring the switch. If you use the J-Web interface to continue configuring the switch, the Web session is redirected to the new management IP address. If the connection cannot be made, the J-Web interface displays instructions for starting a J-Web session.

Related Documentation

- [Connecting and Configuring an EX Series Switch \(J-Web Procedure\) on page 12](#)
- [Installing and Connecting an EX2200 Switch](#)

- *Installing and Connecting an EX2300 Switch*
- *Installing and Connecting an EX3200 Switch*
- *Installing and Connecting an EX3300 Switch*
- *Installing and Connecting an EX3400 Switch*
- *Installing and Connecting an EX4200 Switch*
- *Installing and Connecting an EX4300 Switch*
- *Installing and Connecting an EX4550 Switch*
- *Installing and Connecting an EX4500 Switch*
- *Installing and Connecting an EX6210 Switch*
- *Installing and Connecting an EX8208 Switch*
- *Installing and Connecting an EX8216 Switch*

Connecting and Configuring an EX Series Switch (J-Web Procedure)

There are two ways to connect and configure an EX Series switch: one method is through the console by using the CLI and the other is by using the J-Web interface.



NOTE: EX2200-24T-4G-DC switches do not support switch connection and configuration through J-Web procedure.

This topic describes the J-Web procedure.



NOTE: To run the `ezsetup` script, the switch must have the factory-default configuration as the active configuration. If you have configured anything on the switch and want to run `ezsetup`, revert to the factory-default configuration. See *Reverting to the Default Factory Configuration for the EX Series Switch*.

Before you begin the configuration, enable a DHCP client on the management PC that you will connect to the switch so that the PC can obtain an IP address dynamically.



.....

NOTE: Read the following steps before you begin the configuration. You must complete the initial configuration by using EZSetup on the switches, except EX2300-C, EX2300, and EX3400 switches, within 10 minutes. The switches except EX2300-C, EX2300, and EX3400 switches, exit EZSetup after 10 minutes and reverts to the factory-default configuration, and the PC loses connectivity to the switch.

- EX2200, EX2200-C, EX2300, EX2300-C, and EX3400 switch—The LEDs on the RJ-45 network ports on the front panel blink when the switch is in the initial setup mode.
 - EX3200, EX3300, EX4200, EX4300, EX4500, EX4550, EX6200, and EX8200 switch—The LCD panel displays a countdown timer when the switch is in initial setup mode.
-

To connect and configure the switch by using the J-Web interface:

1. Transition the switch into initial setup mode:

- EX2200 and EX2200-C switches—Press the Factory Reset/Mode button located on the far right side of the front panel for 10 seconds.
- EX2300, EX2300-C, and EX3400 switches—If you have configured anything on the switch and want to revert the switch to factory-default configuration, press the Factory Reset/Mode button located on the far right side of the front panel for 10 seconds. Press the Factory Reset/Mode button again for 10 seconds to transition the switch to initial setup mode.
- EX3200, EX3300, EX4200, EX4300, EX4500, EX4550, EX6200, or EX8200 switch—Use the **Menu** and **Enter** buttons located to the right of the LCD panel (see [Figure 1 on page 14](#) or [Figure 2 on page 14](#)).

Figure 1: LCD Panel in an EX3200, EX4200, EX4500, EX4550, or EX8200 Switch

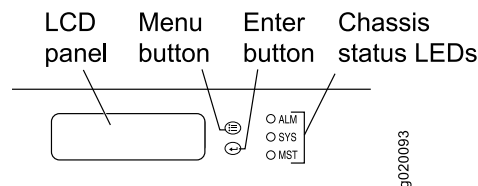
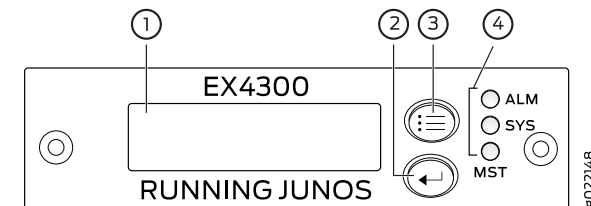


Figure 2: LCD Panel in an EX4300 Switch



1—LCD panel	3—LCD panel Menu button
2—LCD panel Enter button	4—Chassis status LEDs

1. Press the **Menu** button until you see **MAINTENANCE MENU**. Then press the **Enter** button.
2. Press **Menu** until you see **ENTER EZSetup**. Then press **Enter**.

If EZSetup does not appear as an option in the menu, select **Factory Default** to return the switch to the factory-default configuration. EZSetup is displayed in the menu of standalone switches only when a switch is set to the factory-default configuration.

3. Press **Enter** to confirm setup and continue with EZSetup.

2. Connect the Ethernet cable from the Ethernet port on the PC to the switch.

- EX2200, EX2200-C, EX2300, EX2300-C, EX3200, EX3400, or EX4200 switch—Connect the cable to port 0 (ge-0/0/0) on the front panel of the switch.
- EX3300, EX4500, or EX4550 switch—Connect the cable to the port labeled **MGMT** on the front panel (LCD panel side) of the switch.
- EX4300 switch—Connect the cable to the port labeled **MGMT** on the rear panel of the switch.
- EX6200 switch—Connect the cable to one of the ports labeled **MGMT** on the Switch Fabric and Routing Engine (SRE) module in slot 4 or 5 in an EX6210 switch.
- EX8200 switch—Connect the cable to the port labeled **MGMT** on the Switch Fabric and Routing Engine (SRE) module in slot SRE0 in an EX8208 switch or on the Routing Engine (RE) module in slot RE0 in an EX8216 switch.

These ports are configured as the DHCP server with the default IP address, 192.168.1.1. The switch can assign an IP address to the management PC in the IP address range 192.168.1.2 through 192.168.1.253.

3. From the PC, open a Web browser, type **http://192.168.1.1** in the address field, and press **Enter**.
4. On the J-Web login page, type **root** as the username, leave the password field blank, and click **Login**.
5. On the Introduction page, click **Next**.
6. On the Basic Settings page, modify the hostname, the root password, and date and time settings:
 - Enter the hostname. This is optional.
 - Enter a password and reenter the password.
 - Specify the time zone.
 - Synchronize the date and time settings of the switch with the management PC or set them manually by selecting the appropriate option button. This is optional.

Click **Next**.

7. Use the Management Options page to select the management scenario:



NOTE: On EX4500, EX6210, and EX8200 switches, only the out-of-band management option is available.

- **In-band Management—Use the automatically created VLAN default for management.**
Select this option to configure all data interfaces as members of the default VLAN. Click **Next**. Specify the management IP address and the default gateway for the default VLAN.
- **In-band Management—Create a new VLAN for management.**

Select this option to create a management VLAN. Click **Next**. Specify the VLAN name, VLAN ID, member interfaces, management IP address, and default gateway for the new VLAN.

- **Out-of-band Management—Configure management port.**

Select this option to configure only the management interface. Click **Next**. Specify the IP address and default gateway for the management interface.

8. Click **Next**.

9. On the Manage Access page, you can select options to enable Telnet, SSH, and SNMP services. For SNMP, you can configure the read community, location, and contact.

10. Click **Next**. The Summary screen displays the configured settings.

11. Click **Finish**. The configuration is committed as the active switch configuration.



NOTE: After the configuration is committed, the connectivity between the PC and the switch might be lost. To renew the connection, release and renew the IP address by executing the appropriate commands on the management PC or by removing and reinserting the Ethernet cable.

12. (For EX4500 switches only) In the CLI, enter the **request chassis pic-mode intraconnect** operational mode command to set the PIC mode to intraconnect.

You can now log in by using the CLI or the J-Web interface to continue configuring the switch.

If you use the J-Web interface to continue configuring the switch, the Web session is redirected to the new management IP address. If the connection cannot be made, the J-Web interface displays instructions for starting a J-Web session.

**Related
Documentation**

- [Connecting and Configuring an EX Series Switch \(CLI Procedure\) on page 9](#)
- *Installing and Connecting an EX2200 Switch*
- *Installing and Connecting an EX2300 Switch*
- *Installing and Connecting an EX3200 Switch*
- *Installing and Connecting an EX3300 Switch*
- *Installing and Connecting an EX4200 Switch*
- *Installing and Connecting an EX4300 Switch*
- *Installing and Connecting an EX4500 Switch*
- *Installing and Connecting an EX4550 Switch*
- *Installing and Connecting an EX6210 Switch*
- *Installing and Connecting an EX8208 Switch*
- *Installing and Connecting an EX8216 Switch*

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

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

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

This topic describes:

- [Disabling or Enabling Menus and Menu Options on the LCD Panel on page 17](#)
- [Configuring a Custom Display Message on page 18](#)

Disabling or Enabling Menus and Menu Options on the LCD Panel

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

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

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



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

To disable a menu:

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

To enable a menu:

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

To disable a menu option:

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

To enable a menu option:

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

Configuring a Custom Display Message

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

To display a custom message temporarily:

- On an EX3200 switch, a standalone EX3300 switch, a standalone EX4200 switch, a standalone EX4300 switch, a standalone EX4500 switch, a standalone EX4550 switch, an EX6200 switch, an EX8200 switch, or an XRE200 External Routing Engine:

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

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

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

To display a custom message permanently:

- On an EX3200 switch, a standalone EX3300 switch, a standalone EX4200 switch, a standalone EX4300 switch, a standalone EX4500 switch, a standalone EX4550 switch, an EX6200 switch, an EX8200 switch, or an XRE200 External Routing Engine:

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

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

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



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

To disable the display of the custom message:

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

You can view the custom message by issuing the [show chassis lcd](#) command.

Related Documentation

- LCD Panel in EX3200 Switches*
- LCD Panel in EX3300 Switches*
- LCD Panel in EX4200 Switches*
- LCD Panel in EX4300 Switches*
- LCD Panel in EX4500 Switches*
- LCD Panel in EX4550 Switches*
- LCD Panel in an EX6200 Switch*
- LCD Panel in an EX8200 Switch*
- LCD Panel in an XRE200 External Routing Engine*

Configuring Date and Time for the EX Series Switch (J-Web Procedure)



NOTE: This topic applies only to the J-Web Application package.

To configure date and time on an EX Series switch:

1. Select **Configure > System Properties > Date & Time**.
2. To modify the information, click **Edit**. Enter information into the Edit Date & Time page as described in [Table 4 on page 19](#).
3. Click one of the following options:
 - To apply the configuration, click **OK**.
 - To cancel your entries and return to the System Properties page, click **Cancel**.



NOTE: After you make changes to the configuration on this page, you must commit the changes for them to take effect. To commit all changes to the active configuration, select **Commit Options > Commit**. See [Using the Commit Options to Commit Configuration Changes](#) for details about all commit options.

Table 4: Date and Time Settings

Time	Function	Your Action
Time Zone	Identifies the timezone that the switching platform is located in.	Select the appropriate time zone from the list.
Set Time	Synchronizes the system time with that of the NTP server. You can also manually set the system time and date.	<p>To immediately set the time, Click one of the following options:</p> <ul style="list-style-type: none"> • Synchronize with PC time—The switch synchronizes the time with that of the PC. • NTP Servers—The switch sends a request to the NTP server and synchronizes the system time. • Manual—A pop-up window allows you to select the current date and time from a list.

Related Documentation • [J-Web User Interface for EX Series Switches Overview](#)

Configuring System Identity for an EX Series Switch (J-Web Procedure)



NOTE: This topic applies only to the J-Web Application package.

To configure identification details for an EX Series switch:

1. Select **Configure > System Properties > System Identity**. The System Identity page displays configuration details.
2. To modify the configuration, click **Edit**. Enter information into the System Identity page as described in [Table 5 on page 20](#).



NOTE: After you make changes to the configuration on this page, you must commit the changes for them to take effect. To commit all changes to the active configuration, select **Commit Options > Commit**. See [Using the Commit Options to Commit Configuration Changes](#) for details about all commit options.

Table 5: System Identity Configuration Summary

Field	Function	Your Action
Host Name	Defines the hostname of the switching platform.	Type the hostname.
Domain Name	Defines the network or subnetwork that the machine belongs to.	Type the domain name.
Root Password	Sets the root password that user <i>root</i> can use to log in to the switching platform.	Type a plain-text password. The system encrypts the password. NOTE: After a root password has been defined, it is required when you log in to the J-Web user interface or the CLI.
Confirm Root Password	Verifies that the root password has been typed correctly.	Retype the password.
DNS Name Servers	Specifies a DNS server for the switching platform to use to resolve hostnames into addresses.	To add an IP address, click Add . To edit an IP address, click Edit . To delete an IP address, click Delete .
Domain Search	Specifies the domains to be searched.	To add a domain, click Add . To edit a domain click Edit . To delete a domain, click Delete .

- Related Documentation**
- [Configuring Date and Time for the EX Series Switch \(J-Web Procedure\) on page 19](#)

Configuring the Console Port Type (CLI Procedure)

EX2200-C and EX4550 switches and OCX1100 switches provide two console ports: an RJ-45 console port that accepts a cable with an RJ-45 connector and a Mini-USB Type-B console port that accepts a cable with a Mini-USB Type-B plug (5-pin) connector. You can configure and manage the switch using RJ-45 console port as well as Mini-USB Type-B console port. However, the console input will be active only one port at a time, that is, only one port will be set active at a time. The active console port can display all the early boot and low-level message output and you can access the switch through this port in the debugger prompt.

By default, the RJ-45 console port is the active port and the Mini USB Type-B console port is the passive. That is, to make a connection on the RJ-45 console port you need not configure it as the active port while to make a connection to the Mini-USB Type-B console port, you must first explicitly configure this port as the active port. You can make either port the active port by using the **port-type** configuration statement.

To configure the RJ-45 or the Mini-USB Type-B console port as an active console port:

1. Connect the host machine to the switch using the management console port you want to activate.
2. Configure the port type:


```
[edit]
user@switch# set system ports auxiliary port-type type
```

For example, to activate the Mini USB Type-B console port:

```
user@switch# set system ports auxiliary port-type mini-usb
```
3. Commit the configuration and Exit.
4. Reboot the switch. The control and the boot log will appear on the activated console.



NOTE: Do not use the **Delete system ports auxiliary port-type** command to delete the port-type configuration. Always use **set system ports auxiliary port-type type** command to change the active management console port type.

- Related Documentation**
- [Connecting an EX2200 Switch to a Management Console Using Mini-USB Type-B Console Port](#)
 - [Connecting an EX4550 Switch to a Management Console Using the Mini-USB Type-B Console Port](#)
 - [EX2200 Switches Hardware Overview](#)
 - [EX4550 Switches Hardware Overview](#)

- *OCX1100 Switches Hardware Overview*

CHAPTER 3

Configuration Statements

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- [trusted-key](#) on page 64

arp (System)

Syntax	<pre>arp { aging-timer <i>minutes</i>; gratuitous-arp-delay <i>seconds</i>; gratuitous-arp-on-ifup; interfaces { <i>interface-name</i> { aging-timer <i>minutes</i>; } } passive-learning; purging; }</pre> <p>For EX-Series switches:</p> <pre>arp { aging-timer <i>minutes</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> <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 the OCX Series.</p>
Description	<p>Specify ARP options. You can enable backup VRRP routers to learn ARP requests for VRRP-IP to VRRP-MAC address translation. You can also set the time interval between ARP updates.</p> <p>For EX-Series switches, set only the time interval between ARP updates.</p>
Options	<p>aging-timer—Time interval in minutes between ARP updates. In environments where the number of ARP entries to update is high (for example, on routers only, metro Ethernet environments), increasing the time between updates can improve system performance.</p> <p>passive-learning (QFX-Series only)—Configure switches to learn the ARP mappings (IP-to-MAC address) for hosts sending the requests.</p> <p>Default: 20 minutes</p> <p>Range: 1 to 240 minutes</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"> • <i>Configuring Junos OS ARP Learning and Aging Options for Mapping IPv4 Network Addresses to MAC Addresses</i> • <i>Junos OS Network Interfaces Library for Routing Devices</i>

- [Junos OS System Basics Configuration Guide](#) .

authentication-key

Syntax	<code>authentication-key <i>key-number</i> type <i>type</i> value <i>password</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	<p>Configure Network Time Protocol (NTP) authentication keys so that the router or switch can send authenticated packets. If you configure the router or switch to operate in authenticated mode, you must configure a key.</p> <p>Both the keys and the authentication scheme (MD5) must be identical between a set of peers sharing the same key number.</p>
Options	<p><i>key-number</i>—Positive integer that identifies the key.</p> <p><i>type type</i>—Authentication type. It can only be md5.</p> <p><i>value password</i>—The key itself, which can be from 1 through 8 ASCII characters. If the key contains spaces, enclose it in quotation marks.</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 NTP Authentication Keys• broadcast on page 29• peer on page 55• server on page 60• trusted-key on page 64

auxiliary

Syntax	<pre> auxiliary { disable; insecure; type <i>terminal-type</i>; port-type (mini-usb rj45); } </pre>
Hierarchy Level	[edit system ports]
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 characteristics of the auxiliary port.</p> <p>Remaining statement is explained separately.</p>
Default	disable is the default option.
Options	<p>disable—Disable the port.</p> <p>insecure—Disable super user access or root logins to establish terminal connection.</p> <p>type <i>terminal-type</i>—Type of terminal that is connected to the port.</p> <p>Range: ansi, vt100, small-xterm, xterm</p> <p>Default: The terminal type is unknown, and the user is prompted for the terminal type. The remaining statement is 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"> <i>Configuring Junos OS to Set Console and Auxiliary Port Properties</i>

boot-server (NTP)

Syntax	<code>boot-server (address hostname);</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	<p>Configure the server that NTP queries when the router or switch boots to determine the local date and time.</p> <p>When you boot the router or switch, it issues an ntpdate request, which polls a network server to determine the local date and time. You need to configure a server that the router or switch uses to determine the time when the router or switch boots. You can either configure an IP address or a hostname for the boot server. If you configure a hostname instead of an IP address, the ntpdate request resolves the hostname to an IP address when the router or switch boots up.</p> <p>If you configure an NTP boot server, then when the router or switch boots, it immediately synchronizes with the boot server even if the NTP process is explicitly disabled or if the time difference between the client and the boot server exceeds the threshold value of 1000 seconds.</p>
Options	<ul style="list-style-type: none">• address—The IP address of an NTP boot server.• hostname—The hostname of an NTP boot 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">• <i>Synchronizing and Coordinating Time Distribution Using NTP</i>

broadcast

Syntax	<code>broadcast address <key key-number> <routing-instance-name routing-instance-name> <ttl value> <version value>;</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. routing-instance-name option added in Junos OS Release 14.1
Description	Configure the local router or switch to operate in broadcast mode with the remote system at the specified address . In this mode, the local router or switch sends periodic broadcast messages to a client population at the specified broadcast or multicast address . Normally, you include this statement only when the local router or switch is operating as a transmitter.
Options	<p>address—The broadcast address on one of the local networks or a multicast address assigned to NTP. You must specify an address, not a hostname. If the multicast address is used, it must be 224.0.1.1.</p> <p>key key-number—(Optional) All packets sent to the address include authentication fields that are encrypted using the specified key number. Range: Any unsigned 32-bit integer</p> <p>routing-instance-name routing-instance-name—(Optional) The routing instance name in which the interface has address in the broadcast subnet. Default: The default routing instance is used to broadcast packets.</p> <p>ttl value—(Optional) Time-to-live (TTL) value to use. Range: 1 through 255 Default: 1</p> <p>version value—(Optional) Specify the version number to be used in outgoing NTP packets. Range: 1 through 4 Default: 4</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 the NTP Time Server and Time Services</i>

broadcast-client

Syntax	<code>broadcast-client;</code>
Hierarchy Level	<code>[edit system ntp]</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 the local router or switch to listen for broadcast messages on the local network to discover other servers on the same subnet.
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 Router or Switch to Listen for Broadcast Messages Using NTP</i>

console (System Ports)

Syntax	<pre>console { authentication-order [<i>authentication-methods</i>]; disable; insecure; log-out-on-disconnect; type <i>terminal-type</i>; }</pre>
Hierarchy Level	[edit system ports]
Release Information	<p>Statement introduced before Junos OS Release 7.4.</p> <p>disable option added in Junos OS Release 7.6.</p> <p>Statement introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>authentication-order option added in Junos OS Release 12.2R3.</p>
Description	Configure the characteristics of the console port.
Default	The console port is enabled and its speed is 9600 baud.
Options	<p>authentication-order Specify the order in which the authentication methods such as password (for local password authentication), radius (for RADIUS server authentication), or tacplus (for TACACS+ server authentication) should be attempted.</p> <p>authentication-methods—One or more authentication methods, listed in the order in which they should be tried. The method can be one or more of the following:</p> <ul style="list-style-type: none"> • password—Use the password configured for the user with the authentication statement at the [edit system login user] hierarchy level. • radius—Use RADIUS authentication services. • tacplus—Use TACACS+ authentication services. <p>disable—Disable console login connections.</p> <p>insecure—Disable root login connections to the console and auxiliary ports. Configuring the console port as insecure also prevents superusers and anyone with a user identifier (UID) of 0 from establishing terminal connections in multiuser mode. 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.</p> <p>log-out-on-disconnect—Log out the session when the data carrier on the console port is lost.</p>



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

type *terminal-type*—Type of terminal that is connected to the port.

Range: ansi, vt100, small-xterm, xterm

Default: The terminal type is unknown, and the user is prompted for the terminal type.

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 Junos OS to Set Console and Auxiliary Port Properties</i>• <i>Junos OS Authentication Order for RADIUS, TACACS+, and Password Authentication</i>
------------------------------	--

default-address-selection

Syntax	default-address-selection;
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	Use the loopback interface, lo0 , as the source address for all locally generated IP packets when the packet is sent through a routed interface, and also when the packet is sent through a local interface such as fxp0 . The lo0 interface is the interface to the router's or switch's Routing Engine.
Default	<p>The default address is used as the source address for all locally generated IP packets on outgoing interfaces that are unnumbered. If an outgoing interface is numbered, the default address is chosen using the following sequence:</p> <ul style="list-style-type: none"> • The primary address on the loopback interface lo0 that is <i>not</i> 127.0.0.1 is used. • The primary address for the primary interface or the preferred address (if configured) for the primary interface is used. <p>By default, the primary address on an interface is selected as the numerically lowest local address configured on the interface.</p> <p>An interface's <i>primary address</i> is used by default as the local address for broadcast and multicast packets sourced locally and sent out through the interface. An interface's <i>preferred address</i> is the default local address used for packets sourced by the local router or switch to destinations on the subnet. By default, the numerically lowest local address configured for the interface is chosen as the preferred address on the subnet.</p> <p>To configure a different primary address or preferred address, include the primary or preferred statement at the [edit interfaces interface-name unit logical-unit-number family family address address] or [edit logical-systems logical-system-name interfaces interface-name unit logical-unit-number family family address address] hierarchy levels.</p> <p>For more information about default, primary, and preferred addresses for an interface, see “Configuring Default, Primary, and Preferred Addresses and Interfaces” in the <i>Junos OS Network Interfaces Library for Routing Devices</i>.</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 Junos OS to Select a Fixed Source Address for Locally Generated TCP/IP Packets</i> • <i>Junos OS Network Interfaces Library for Routing Devices</i>

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>

gre-path-mtu-discovery

Syntax	<code>(gre-path-mtu-discovery no-gre-path-mtu-discovery);</code>
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches.
Description	Configure path MTU discovery for outgoing GRE tunnel connections: <ul style="list-style-type: none">• gre-path-mtu-discovery—Path MTU discovery is enabled.• no-gre-path-mtu-discovery—Path MTU discovery is disabled.
Default	Path MTU discovery is enabled.
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 for Path MTU Discovery on Outgoing GRE Tunnel Connections</i>

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>

icmpv4-rate-limit

Syntax	<pre>icmpv4-rate-limit { bucket-size <i>seconds</i>; packet-rate <i>pps</i>; }</pre>
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches.
Description	Configure rate-limiting parameters for ICMPv4 messages sent.
Options	<p>bucket-size <i>seconds</i>—Number of seconds in the rate-limiting bucket. Range: 0 through 4294967295 seconds Default: 5</p> <p>packet-rate <i>pps</i>—Rate-limiting packets earned per second. Range: 0 through 4294967295 pps Default: 1000</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 Junos OS ICMPv4 Rate Limit for ICMPv4 Routing Engine Messages</i>

icmpv6-rate-limit

Syntax	<code>icmpv6-rate-limit { bucket-size <i>seconds</i>; packet-rate <i>packet-rate</i>; }</code>
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches.
Description	Configure rate-limiting parameters for ICMPv6 messages sent.
Options	bucket-size <i>seconds</i> —Number of seconds in the rate-limiting bucket. Range: 0 through 4294967295 seconds Default: 5 packet-rate <i>pps</i> —Rate-limiting packets earned per second. Range: 0 through 4294967295 pps Default: 1000
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 Junos OS ICMPv6 Rate Limit for ICMPv6 Routing Engine Messages</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	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 a Backup Router</i>

internet-options

Syntax	<pre> internet-options { (gre-path-mtu-discovery no-gre-path-mtu-discovery); icmpv4-rate-limit bucket-size <i>bucket-size</i> packet-rate <i>packet-rate</i>; icmpv6-rate-limit bucket-size <i>bucket-size</i> packet-rate <i>packet-rate</i>; (ipip-path-mtu-discovery no-ipip-path-mtu-discovery); ipv6-duplicate-addr-detection-transmits; (ipv6-reject-zero-hop-limit no-ipv6-reject-zero-hop-limit); (ipv6-path-mtu-discovery no-ipv6-path-mtu-discovery); ipv6-path-mtu-discovery-timeout; no-tcp-rfc1323; no-tcp-rfc1323-paws; (path-mtu-discovery no-path-mtu-discovery); source-port upper-limit <<i>upper-limit</i>>; (source-quench no-source-quench); tcp-drop-synfin-set; tcp-mss <i>mss-value</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 system IP options to protect against certain types of DoS attacks.</p> <p>The remaining statements are explained separately.</p>
Required Privilege Level	<p>admin—To view this statement in the configuration.</p> <p>admin-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none"> • <i>Configuring the Junos OS ICMPv4 Rate Limit for ICMPv4 Routing Engine Messages</i> • <i>Configuring the Junos OS ICMPv6 Rate Limit for ICMPv6 Routing Engine Messages</i> • <i>Configuring the Junos OS for IP-IP Path MTU Discovery on IP-IP Tunnel Connections</i> • <i>Configuring the Junos OS for Path MTU Discovery on Outgoing GRE Tunnel Connections</i> • <i>Configuring the Junos OS for Path MTU Discovery on Outgoing TCP Connections</i> • <i>Configuring the Junos OS for IPv6 Duplicate Address Detection Attempts</i> • <i>Configuring the Junos OS for Acceptance of IPv6 Packets with a Zero Hop Limit</i> • <i>Configuring the Junos OS to Ignore ICMP Source Quench Messages</i> • <i>Configuring the Junos OS to Enable the Router or Switch to Drop Packets with the SYN and FIN Bits Set</i> • <i>Configuring the Junos OS to Disable TCP RFC 1323 Extensions</i> • <i>Configuring the Junos OS to Disable the TCP RFC 1323 PAWS Extension</i> • <i>Configuring the Junos OS to Extend the Default Port Address Range</i>

- *Configuring TCP MSS for Session Negotiation*

ipip-path-mtu-discovery

Syntax	(<code>ipip-path-mtu-discovery</code> <code>no-ipip-path-mtu-discovery</code>);
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches.
Description	Configure path MTU discovery for outgoing IP-IP tunnel connections: <ul style="list-style-type: none"> • ipip-path-mtu-discovery—Path MTU discovery is enabled. • no-ipip-path-mtu-discovery—Path MTU discovery is disabled.
Default	Path MTU discovery is enabled.
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 Junos OS for IP-IP Path MTU Discovery on IP-IP Tunnel Connections</i> • internet-options on page 38

ipv6-duplicate-addr-detection-transmits

Syntax	<code>ipv6-duplicate-addr-detection-transmits</code> ;
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced in Junos OS Release 9.1. Statement introduced in Junos OS Release 9.1 for EX Series switches.
Description	Control the number of attempts for IPv6 duplicate address detection. The range of values supported for <code>ipv6-duplicate-addr-detection-transmits</code> is from 0 to 20.
Default	The default value is 3.
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 for IPv6 Duplicate Address Detection Attempts</i>

ipv6-path-mtu-discovery

Syntax	(ipv6-path-mtu-discovery no-ipv6-path-mtu-discovery);
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced in Junos OS Release 9.2. Statement introduced in Junos OS Release 9.2 for EX Series switches.
Description	Configure path MTU discovery for IPv6 packets: <ul style="list-style-type: none">• ipv6-path-mtu-discovery—IPv6 path MTU discovery is enabled.• no-ipv6-path-mtu-discovery—IPv6 path MTU discovery is disabled.
Default	IPv6 path MTU discovery is enabled.
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 Junos OS for IPv6 Path MTU Discovery</i>

ipv6-path-mtu-discovery-timeout

Syntax	ipv6-path-mtu-discovery-timeout <i>minutes</i> ;
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced in Junos OS Release 9.2. Statement introduced in Junos OS Release 9.2 for EX Series switches.
Description	Set the IPv6 path MTU discovery timeout interval.
Options	minutes —IPv6 path MTU discovery timeout. Default: 10 minutes
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 Junos OS for IPv6 Path MTU Discovery</i>

ipv6-reject-zero-hop-limit

Syntax	(ipv6-reject-zero-hop-limit no-ipv6-reject-zero-hop-limit);
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced in Junos OS Release 9.1. Statement introduced in Junos OS Release 9.1 for EX Series switches.
Description	Enable and disable rejecting incoming IPv6 packets with a zero hop limit value in their header.
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 for Acceptance of IPv6 Packets with a Zero Hop Limit</i>

lcd-menu

Syntax EX3200, EX3300, EX4200, or EX4500 switch:

```
lcd-menu fpc slot-number {
  menu-item (menu-name | menu-option) <disable>;
}
```

EX6200 or EX8200 switch or XRE200 External Routing Engine:

```
lcd-menu {
  menu-item (menu-name | menu-option) <disable>;
}
```

Hierarchy Level [edit chassis]

Release Information Statement introduced in Junos OS Release 10.2 for EX Series switches.

Description Disable or enable the Maintenance menu or the Status menu in the LCD panel.

Options none—(EX6200 and EX8200 switches and XRE200 External Routing Engines only) Disable or enable the specified menu or menu options.

fpc slot-number—(EX3200, EX3300, EX4200, and EX4500 switches only) Disable or enable the specified menu or menu options, where **slot-number** is:

- 0—On standalone switches.
- 0–9—On a device in a Virtual Chassis. The value is the member ID of the device.



NOTE: This option is not available on an EX8200 Virtual Chassis. The LCD panel on an XRE200 External Routing Engine provides information for the XRE200 External Routing Engine only.

disable—(Optional) Disable the specified menu.

The remaining statement is explained separately.

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

Related Documentation

- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\) on page 17](#)
- [LCD Panel in EX3200 Switches](#)
- [LCD Panel in EX3300 Switches](#)
- [LCD Panel in EX4200 Switches](#)
- [LCD Panel in EX4500 Switches](#)
- [LCD Panel in an EX6200 Switch](#)

- *LCD Panel in an EX8200 Switch*
- *LCD Panel in an XRE200 External Routing Engine*

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*

menu-item

Syntax	<code>menu-item (menu-name menu-option) <disable>;</code>
Hierarchy Level	<code>[edit chassis lcd-menu],</code> <code>[edit chassis lcd-menu fpc slot-number]</code>
Release Information	Statement introduced in Junos OS Release 10.2 for EX Series switches.
Description	<p>Disable or enable the Maintenance menu, the Status menu, or an individual option in one of those menus in the LCD panel.</p> <p>On EX3200, EX3300, EX4200, and EX4500 switches, you use menu-item at the <code>[edit chassis lcd-menu fpc slot-number]</code> hierarchy level.</p> <p>On EX6200 and EX8200 switches, and on XRE200 External Routing Engines, you use menu-item at the <code>[edit chassis lcd-menu]</code> hierarchy level.</p>
Options	<p>menu-name—Name of the LCD menu:</p> <ul style="list-style-type: none">• maintenance-menu• status-menu <p>menu-option—Specific option on one of the LCD menus. You must include the quotation marks when you type the option. Table 6 on page 47 describes the different menu options of the LCD menus supported on the switches.</p>

Table 6: Menu Options of the LCD Menus Supported on the Switches

Menu	Menu Options	Option Descriptions	Platforms Supported
maintenance-menu	"maintenance-menu halt-menu"	System halt option	All switches except EX2200
	"maintenance-menu system-reboot"	System reboot option	All switches except EX2200
	"maintenance-menu rescue-config"	Load rescue option	All switches except EX2200
	"maintenance-menu vc-uplink-config"	Request VC port option for a device in a Virtual Chassis configuration	EX3300, EX4200, and EX4500 switches and XRE200 External Routing Engines only
	"maintenance-menu factory-default"	Factory default option	All switches except EX2200
status-menu	"status-menu vcp-status"	Virtual Chassis port (VCP) status for a device in a Virtual Chassis configuration	EX3300, EX4200, and EX4500 switches and XRE200 External Routing Engines only
	"status-menu sf-status1-menu"	Status of the switch fabric on the Switch Fabric and Routing Engine (SRE) module in slot SRE0 on EX8208 switches	EX8208 and EX8216 switches only
		Status of the switch fabric on the Switch Fabric (SF) modules in slots SF0 and SF1 on EX8216 switches	
	"status-menu sf-status2-menu"	Status of the switch fabric on the SRE module in slot SRE1 on EX8208 switches	EX8208 and EX8216 switches only
		Status of the switch fabric on the SF modules in slots SF2–SF5 on EX8216 switches	
	"status-menu sf-status3-menu"	Status of the switch fabric on the SF modules in slots SF6 and SF7 on EX8216 switches	EX8216 switches only
	"status-menu power-status"	Status of the power supply or power supplies	EX3200, EX3300, EX4200, and EX4500 switches

Table 6: Menu Options of the LCD Menus Supported on the Switches (*continued*)

Menu	Menu Options	Option Descriptions	Platforms Supported
			and XRE200 External Routing Engines only
	"status-menu psu-status1-menu"	Status of the power supplies in slots P0 and P1	EX8208 and EX8216 switches only
	"status-menu psu-status2-menu"	Status of the power supplies in slots P2–P5	EX8208 and EX8216 switches only
	"status-menu environ-menu"	Status of the fan; current chassis temperature	All switches (except EX2200) and XRE200 External Routing Engine
	"status-menu show-version"	The version of Junos OS loaded on the switch	All switches except EX2200

disable—(Optional) Disable the specified menu.

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

Related Documentation

- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\) on page 17](#)
- *LCD Panel in EX3200 Switches*
- *LCD Panel in EX3300 Switches*
- *LCD Panel in EX4200 Switches*
- *LCD Panel in EX4500 Switches*
- *LCD Panel in EX4550 Switches*
- *LCD Panel in an EX6200 Switch*
- *LCD Panel in an EX8200 Switch*
- *LCD Panel in an XRE200 External Routing Engine*

multicast-client

Syntax	<code>multicast-client <address>;</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 local router or switch to listen for multicast messages on the local network to discover other servers on the same subnet.
Options	address —(Optional) One or more IP addresses. If you specify addresses, the router or switch joins those multicast groups. Default: 224.0.1.1.
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 Router or Switch to Listen for Multicast Messages Using NTP</i>

no-multicast-echo

Syntax	<code>no-multicast-echo</code>
Hierarchy Level	[edit system]
Release Information	Statement introduced in Junos OS Release 8.1.
Description	Disable the Routing Engine from responding to ICMP echo requests sent to multicast group addresses.
Default	The Routing Engine responds to ICMP echo requests sent to multicast group addresses.
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 Junos OS to Disable the Routing Engine Response to Multicast Ping Packets</i>

no-ping-record-route

Syntax	no-ping-record-route;
Hierarchy Level	[edit system]
Release Information	Statement introduced in Junos OS Release 9.4. Statement introduced in Junos OS Release 9.4 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	Configure the Junos OS to disable the reporting of the IP address in ping responses.
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 Junos OS to Disable the Reporting of IP Address and Timestamps in Ping Responses</i>

no-ping-time-stamp

Syntax	no-ping-time-stamp;
Hierarchy Level	[edit system]
Release Information	Statement introduced in Junos OS Release 9.4. Statement introduced in Junos OS Release 9.4 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	Configure the Junos OS to disable the recording of timestamps in ping responses.
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 Junos OS to Disable the Reporting of IP Address and Timestamps in Ping Responses</i>

no-redirects (IPv4 Traffic)

Syntax	no-redirects;
Hierarchy Level	[edit system], [edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i> family <i>family</i>]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 11.1 for the QFX Series. Statement introduced in Junos OS Release 12.3 for EX Series switches. Statement introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
Description	<p>Stop protocol redirect messages for IPv4 traffic from being sent on the entire switch or on an interface on the router or switch.</p> <p>To disable the sending of protocol redirect messages for the entire router or switch, include the no-redirects statement at the [edit system] hierarchy level.</p> <p>To disable the sending of protocol redirect messages on a specific interface, include the no-redirects statement at the [edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i> family <i>family</i>] hierarchy level.</p>
Default	The router or switch sends redirect messages.
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 Junos OS to Disable Protocol Redirect Messages on the Router or Switch</i> • <i>Understanding the Protocol Redirect Mechanism on EX Series Switches</i> • <i>Configuring Junos OS to Disable Sending Protocol Redirect Messages on EX Series Switches (CLI Procedure)</i> • <i>Junos OS Network Interfaces Library for Routing Devices</i>

no-tcp-rfc1323-paws

Syntax	no-tcp-rfc1323-paws;
Hierarchy Level	[edit system internet-options]
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 Junos OS to disable the RFC 1323 Protection Against Wrapped Sequence (PAWS) number extension.
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 Junos OS to Disable the TCP RFC 1323 PAWS Extension</i>

no-tcp-rfc1323

Syntax	no-tcp-rfc1323;
Hierarchy Level	[edit system internet-options]
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 Junos OS to disable RFC 1323 TCP extensions.
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 Junos OS to Disable TCP RFC 1323 Extensions</i>

ntp

Syntax	<pre> ntp { authentication-key number type type value password; boot-server address; broadcast <address> <key key-number> <routing-instance-name routing-instance-name> <version value> <ttl value>; broadcast-client; multicast-client <address>; peer address <key key-number> <version value> <prefer>; server address <key key-number> <version value> <prefer>; source-address source-address <routing-instance routing-instance-name>; trusted-key [key-numbers]; } </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 NTP on the router or switch.</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"> <i>Synchronizing and Coordinating Time Distribution Using NTP</i>

path-mtu-discovery

Syntax	(path-mtu-discovery no-path-mtu-discovery);
Hierarchy Level	[edit system internet-options]
Release Information	Statement introduced before Junos OS Release 7.4. Statement introduced in Junos OS Release 9.0 for EX Series switches.
Description	Configure path MTU discovery for outgoing Transmission Control Protocol (TCP) connections: <ul style="list-style-type: none">• path-mtu-discovery—Path MTU discovery is enabled.• no-path-mtu-discovery—Path MTU discovery is disabled.
Default	Path MTU discovery is enabled.
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 Junos OS for Path MTU Discovery on Outgoing TCP Connections</i>

peer (NTP)

Syntax	<code>peer address <key key-number> <version value> <prefer>;</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 local router or switch to operate in symmetric active mode with the remote system at the specified address. In this mode, the local router or switch and the remote system can synchronize with each other. This configuration is useful in a network in which either the local router or switch or the remote system might be a better source of time.
Options	<p>address—Address of the remote system. You must specify an address, not a hostname.</p> <p>key key-number—(Optional) All packets sent to the address include authentication fields that are encrypted using the specified key number.</p> <p>Range: Any unsigned 32-bit integer</p> <p>prefer—(Optional) Mark the remote system as the preferred host, which means that if all other factors are equal, this remote system is chosen for synchronization among a set of correctly operating systems.</p> <p>version value—(Optional) Specify the NTP version number to be used in outgoing NTP packets.</p> <p>Range: 1 through 4</p> <p>Default: 4</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 the NTP Time Server and Time Services</i>


port-type

Syntax	port-type (mini-usb rj45);
Hierarchy Level	[edit system ports auxiliary]
Release Information	Statement introduced in Junos OS Release 11.3 for EX Series switches.
Description	(EX2200-C and EX4550 switch only) Set the RJ-45 console port or the Mini-USB console port as the active console port.
Default	The RJ-45 console port is the active port.
Options	mini-usb —Set the Mini USB type-B console port as the active console port. rj45 —Set the RJ-45 console port as the active console port.
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 Console Port Type (CLI Procedure) on page 21

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"> <i>Configuring Junos OS to Set Console and Auxiliary Port Properties</i>

power

Syntax	<code>power (off on);</code>
Hierarchy Level	<code>[edit chassis fpc slot]</code>
Release Information	Statement introduced in Junos OS Release 9.4 for EX Series switches.
Description	On an EX6200 or EX8200 switch, turn a specified Flexible PIC Concentrator (FPC) on or off. See <i>EX Series Switches Hardware and CLI Terminology Mapping</i> .
<div> NOTE: On an EX6200 switch, the power statement has no effect when you configure it for an uplink port FPC on the Switch Fabric and Routing Engine (SRE) module. If you configure the statement for those FPCs, the configuration will be committed, but a message that informs you that the configuration has no effect is logged in the system log. You cannot turn the power on and off for these FPCs.</div>	
Options	<ul style="list-style-type: none">• <code>on</code>—Turn on the specified FPC.• <code>off</code>—Turn off the specified FPC.
Required Privilege Level	<code>interface</code> —To view this statement in the configuration. <code>interface-control</code> —To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Removing a Line Card from an EX6200 Switch</i>

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

server (NTP)

Syntax	<code>server address <key key-number> <version value> <prefer>;</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	<p>For NTP, configure the local router or switch to operate in client mode with the remote system at the specified address. In this mode, the local router or switch can be synchronized with the remote system, but the remote system can never be synchronized with the local router or switch.</p> <p>If the NTP client time drifts so that the difference in time from the NTP server exceeds 128 milliseconds, the client is automatically stepped back into synchronization. If the offset between the NTP client and server exceeds the 1000-second threshold, the client still synchronizes with the server, but it also generates a system log message noting that the threshold was exceeded.</p>
Options	<p>address—Address of the remote system. You must specify an address, not a hostname.</p> <p>key key-number—(Optional) Use the specified key number to encrypt authentication fields in all packets sent to the specified address.</p> <p>Range: Any unsigned 32-bit integer</p> <p>prefer—(Optional) Mark the remote system as preferred host, which means that if all other things are equal, this remote system is chosen for synchronization among a set of correctly operating systems.</p> <p>version value—(Optional) Specify the version number to be used in outgoing NTP packets.</p> <p>Range: 1 through 4</p> <p>Default: 4</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 the NTP Time Server and Time Services</i>

tcp-drop-synfin-set

Syntax	tcp-drop-synfin-set;
Hierarchy Level	[edit system internet-options]
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 router or switch to drop packets that have both the SYN and FIN bits set.
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 Junos OS to Enable the Router or Switch to Drop Packets with the SYN and FIN Bits Set</i>• <i>TCP Headers with SYN and FIN Flags Set</i>

traceoptions (SBC Configuration Process)

Syntax	<pre>traceoptions { file <i>filename</i> <files <i>number</i>> <match <i>regex</i>> <size <i>size</i>> <world-readable no-world-readable>; flag <i>flag</i>; }</pre>
Hierarchy Level	[edit system processes sbc-configuration-process]
Release Information	Statement introduced in Junos OS Release 9.5. Statement introduced in Junos OS Release 9.5 for EX Series switches.
Description	Configure trace options for the session border controller (SBC) process of the border signaling gateway (BSG).
Options	<p>file <i>filename</i>—Name of the file that receives the output of the tracing operation. Enclose the name in quotation marks. All files are placed in the directory <code>/var/log</code>. You can include the following file options:</p> <ul style="list-style-type: none">• files <i>number</i>—(Optional) Maximum number of trace files. When a trace file named trace-file reaches its maximum size, it is renamed trace-file.0, then trace-file.1, and so on, until the maximum number of trace files is reached. Then the oldest trace file is overwritten. <p>If you specify a maximum number of files, you must also specify a maximum file size with the size option and a filename.</p> <p>Range: 2 through 1000 Default: 3 files</p> <ul style="list-style-type: none">• match <i>regex</i>—(Optional) Refine the output to include lines that contain the regular expression.• no-world-readable—(Optional) Disable unrestricted file access.• size <i>size</i>—(Optional) Maximum size of each trace file, in kilobytes (KB), megabytes (MB), or gigabytes (GB). When a trace file named trace-file reaches this size, it is renamed trace-file.0. When the trace-file again reaches its maximum size, trace-file.0 is renamed trace-file.1 and trace-file is renamed trace-file.0. This renaming scheme continues until the maximum number of trace files is reached. Then the oldest trace file is overwritten. If you specify a maximum file size, you also must specify a maximum number of trace files with the files option and filename. <p>Syntax: xk to specify KB, xm to specify MB, or xg to specify GB. Range: 10 KB through 1 GB Default: 128 KB</p> <ul style="list-style-type: none">• world-readable—(Optional) Enable unrestricted file access.

flag flag—Tracing operation to perform. To specify more than one tracing operation, include multiple **flag** statements. You can include the following flags:

- **all trace-level**—Trace all SBC process operations.
- **common trace-level**—Trace common events.
- **configuration trace-level**—Trace configuration events.
- **device-monitor trace-level**—Trace device monitor events.
- **ipc trace-level**—Trace IPC events.
- **memory—pool trace-level**—Trace memory pool events.
- **trace-level**—Trace level options are related to the severity of the event being traced. When you choose a trace level, messages at that level and higher levels are captured. Enter one of the following trace levels as the **trace-level**:
 - **debug**—Log all code flow of control.
 - **error**—Log failures with a short-term effect.
 - **info**—Log summary for normal operations, such as the policy decisions made for a call.
 - **trace**—Log program trace START and EXIT macros.
 - **warning**—Log failure recovery events or failure of an external entity.
- **ui trace-level**—Trace user interface operations.

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">• See “Troubleshooting the IMSG” in the <i>Junos Multiplay Solutions Guide</i>• <i>System Management Configuration Statements</i>
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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>• authentication-key on page 26• broadcast on page 29• peer on page 55• server on page 60

PART 3

Administration

- [Operational Commands on page 67](#)

CHAPTER 4

Operational Commands

- clear chassis display message
- clear system reboot
- configure
- op
- request chassis pic
- request chassis routing-engine master
- request system halt
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- request system reboot
- request system reboot
- request system scripts convert
- request system scripts refresh-from commit
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- request system scripts refresh-from op
- request system storage cleanup
- restart
- set chassis display message
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- show chassis fan
- show chassis firmware
- show chassis lcd
- show configuration
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- `show system software`
- `show system storage`
- `show system switchover`
- `show system uptime`
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clear chassis display message

List of Syntax	Syntax on page 69 Syntax (TX Matrix Router) on page 69 Syntax (TX Matrix Plus Router) on page 69 Syntax (QFabric Systems) on page 69
Syntax	clear chassis display message
Syntax (TX Matrix Router)	clear chassis display message <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Router)	clear chassis display message <lcc <i>number</i> sfc <i>number</i> >
Syntax (QFabric Systems)	clear chassis display message <node-device <i>name</i> interconnect-device <i>name</i> >
Release Information	<p>Command introduced in Junos OS Release 7.5.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option for the TX Matrix Plus routers introduced in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>
Description	<p>(M40e, M160, M320, T Series routers, EX Series, and QFabric systems only) Clear or stop a text message on the craft interface display, which is on the front of the router or switch or on the LCD panel display on the router or switch. The craft interface alternates the display of text messages with standard craft interface messages, switching between messages every 2 seconds. By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.</p>
Options	<p>none—Clear or stop a text message on the craft interface display.</p> <p>interconnect-device <i>name</i>—(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Interconnect device.</p> <p>lcc <i>number</i>—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

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

node-device *name*—(QFabric systems only) (Optional) On a QFabric system, clear or stop a text message on the LCD panel display on the specified Node device in a Node group.

scc—(TX Matrix routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Clear or stop a text message on the craft interface on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

Required Privilege Level

clear

Related Documentation

- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\) on page 17](#)
- [set chassis display message on page 135](#)
- *show chassis craft-interface*

List of Sample Output [clear chassis display message on page 70](#)

Output Fields See *show chassis craft-interface* for an explanation of output fields.

Sample Output

clear chassis display message

The following example displays and then clears the text message on the craft interface display:

```
user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3  4  5  6  7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
      +-----+
      |NOC contact Dusty |
      |(888) 526-1234    |
      +-----+

user@host> clear chassis display message

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
```

```
Host OK LED:  On
Host fail LED: Off
FPCs      0  1  2  3  4  5  6  7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
+-----+
|host    |
|Up: 0+17:05:47|
|        |
|Temperature OK|
+-----+
```

clear system reboot

List of Syntax	Syntax on page 72 Syntax (EX Series Switches) on page 72 Syntax (TX Matrix Router) on page 72 Syntax (TX Matrix Plus Router) on page 72 Syntax (QFX Series) on page 72
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	<ul style="list-style-type: none">• request system reboot on page 102• Routing Matrix with a TX Matrix Plus Router Solutions Page
List of Sample Output	clear system reboot on page 75 clear system reboot (TX Matrix Router) on page 75 clear system reboot (QFX Series) on page 75
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 for Routing Devices</i> .
Required Privilege Level	configure
Related Documentation	<ul style="list-style-type: none">• show configuration on page 178
List of Sample Output	configure on page 77
Output Fields	When you enter this command, you are placed in configuration mode and the system prompt changes from <i>hostname></i> to <i>hostname#</i> .

Sample Output

configure

```
user@host> configure
Entering configuration mode
[edit]
user@host#
```

op

Syntax	<code>op filename</code> <code><detail></code> <code><argument-name argument-value></code> <code><key (md5 sha-256 sha1) key-value</code> <code><url url></code>
Release Information	Command introduced in Junos OS Release 7.6. Command introduced in Junos OS Release 9.0 for EX Series switches. key option introduced in Junos OS Release 10.0. url option introduced in Junos OS Release 10.0.
Description	Execute an op script stored in one of the following locations: <ul style="list-style-type: none">• On the router or switch in the <code>/var/db/scripts/op</code> directory• At a remote URL
Options	detail —(Optional) Display detailed output. argument-name argument-value —(Optional) Specify one or more arguments to the script. For each argument you include on the command line, you must specify a corresponding value for the argument. key (md5 sha-256 sha1) key-value —(Optional) With the <code><url></code> option, specify a checksum hash to verify the integrity of the script. You can include the <code><key></code> option if the checksum statement is included at the <code>[edit system scripts op file filename]</code> hierarchy level. url url —(Optional) Specify a URL where the script is located.
Additional Information	For more information about Junos op scripts, see the <i>Automation Scripting Feature Guide</i> .
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none">• <i>Executing an Op Script</i> in the <i>Automation Scripting Feature Guide</i>• <i>Executing an Op Script from a Remote Site</i> in the <i>Automation Scripting Feature Guide</i>• <i>checksum</i>• <i>file checksum md5</i>• <i>file checksum sha-256</i>• <i>file checksum sha1</i>
List of Sample Output	op on page 79 op url on page 79
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

op

```
user@host> op script1 interface ge-0/2/0.0 protocol inet
```

op url

```
user@host> op url https://www.example.net/opscripts/2009-04-01.01.slax key md5  
abcd1234dcba4321cdef5678fedc8765 interface ge-0/2/0.0 protocol inet
```

request chassis pic

List of Syntax	Syntax on page 80 Syntax (ACX4000 Series Routers) on page 80 Syntax (MX Series Routers) on page 80 Syntax (TX Matrix and TX Matrix Plus Routers) on page 80
Syntax	<code>request chassis pic (offline online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>
Syntax (ACX4000 Series Routers)	<code>request chassis pic (offline online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i></code>
Syntax (MX Series Routers)	<code>request chassis pic (offline online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> <member <i>member-id</i>></code>
Syntax (TX Matrix and TX Matrix Plus Routers)	<code>request chassis pic (offline online) fpc-slot <i>slot-number</i> pic-slot <i>slot-number</i> <lcc <i>number</i>></code>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.3 for ACX4000 Routers.</p> <p>Command introduced in Junos OS Release 13.2 for the QFX Series.</p> <p>Option member introduced in Junos OS Release 14.2 for MX Series routers.</p>
Description	Control the operation of the PIC.



NOTE: The `request chassis pic (offline | online) fpc-slot slot number pic-slot slot-number` command is not supported for built-in PICs on MX Series routers.

To view a list of built-in PICs on the router or switch chassis, use the `show chassis hardware` command.



NOTE: This command is not supported on MX960 and MX2020 routers with MPC5EQ.



NOTE: T1600 routers and TX Matrix Plus routers with 100-Gigabit Ethernet PICs require two adjacent PIC slots, 0 and 1, for each PIC. Therefore, only online and offline command options to PIC slot 0 are allowed. Use of the online and offline command options for PIC slot 1 with the described router and PIC combination is not allowed.



NOTE: In T Series routers, when the PIC state is set from offline to online or vice-versa before the processing is complete for the previous command, you are provided feedback on the status of your request. The following sample messages are displayed if you try to set a PIC offline or online:

```
user@switch> request chassis pic fpc-slot 1 pic-slot 0 online
fpc 1 pic 0 online initiated, use "show chassis fpc pic-status" to verify
```

```
user@switch> request chassis pic fpc-slot 1 pic-slot 0 online
FPC 1 PIC 0 already transitioning to online
```

When the same PIC is set to a different state while the transition is in progress, you are provided feedback on the status of your request.

```
user@switch> request chassis pic fpc-slot 1 pic-slot 0 offline
FPC 1, PIC 0 already transitioning to online. Please retry later.
```



NOTE: If a CLI-based firmware upgrade is in progress, it prevents the specified PIC from restarting. Starting in Junos OS Release 15.1, the following message is displayed:

```
user@host> request chassis pic fpc-slot 0 pic-slot 1 offline
PIC's Firmware update in progress. Wait!!!
```



NOTE: The command `request chassis pic (offline | online) fpc-slot slot-number pic-slot slot-number` is not supported on PTX1000 routers.

Options **offline**—Take the PIC offline.

online—Bring the PIC online.

fpc-slot *slot-number*—Flexible PIC Concentrator (FPC) slot number. Replace *slot-number* with a value appropriate for your router or switch:

- ACX4000 routers—1 or 2.
- EX Series switches:
 - EX3200 switches and EX4200 standalone switches—0.
 - EX4200 switches in a Virtual Chassis configuration—0 through 9 (switch's member ID).
 - EX8208 switches—0 through 7 (line card).
 - EX8216 switches—0 through 15 (line card).
- M5, M7i, M10, and M10i routers—0 or 1.
- M20 routers—0 through 3.

- M40 and M40e routers—0 through 7.
- M120 routers—0 through 5.
- M160 routers—0 through 7.
- M320 routers—0 through 7.
- MX 5, MX10, and MX40 routers—0 or 1.
- MX80 routers—0 or 1.
- MX240 routers—0 through 2
- MX480 routers—0 through 5
- MX2020 routers—0 through 19.
- MX2010 routers—0 through 9.
- MX960 routers—0 through 11.
- PTX5000 routers—0 or 1.
- T Series routers—0 through 7.
- TX Matrix and TX Matrix Plus routers only—On a TX Matrix router, if you specify the number of the T640 router by using the **lcc number** option (the recommended method), replace **slot-number** with a value from 0 through 7. Otherwise, replace **slot-number** with a value from 0 through 31.

Likewise, on a TX Matrix Plus router, if you specify the **number** of the T1600 or T4000 router by using the lcc number option (the recommended method), replace **slot-number** with a value from 0 through 7. Otherwise, for the FPC slot number, replace **slot-number** with a value from 0 through 31. On a TX Matrix Plus router with 3D SIBs to assign the FPC slot number, replace **slot-number** with a value from 0 through 63. For example, the following commands have the same result:

```
user@host> request chassis pic fpc-slot 1 lcc 1 pic-slot 0 offline
user@host> request chassis pic fpc-slot 9 pic-slot 0 offline
```

- QFX5100 standalone switches—0.

lcc number—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

member *member-id*—(MX Series routers only) (Optional) Change the PIC status on the specified member of the Virtual Chassis configuration. Replace *member-id* with the value that is assigned to the specified member.

offline—Take the PIC offline.

online—Bring the PIC online.

pic-slot *slot-number*—PIC slot number.

- EX3200 and EX4200 switches—0 for built-in network interfaces and 1 for interfaces on uplink modules.
- EX8208 and EX8216 switches—0.
- M Series routers—0, 1, 2, or 3
- MX960 router—***slot-number*** corresponds to the slot number of the Packet Forwarding Engine.
- PTX5000 routers—0 or 1.
- T320 router—0 or 1.
- T640 router—0, 1, 2, or 3.
- T1600 router—0, 1, 2, or 3.
- T4000 router—0, 1, 2, or 3.
- QFX5100 standalone switches—0, 1, or 2. PIC 0 is used for all interfaces that are not configured on expansion modules, and PIC 1 and PIC 2 are used for interfaces configured on expansion modules.

Required Privilege Level maintenance

Related Documentation

- *show chassis hardware*
- *show chassis pic*

List of Sample Output [request chassis pic on page 83](#)
[request chassis pic online member \(MX Series Routers\) on page 83](#)
[request chassis pic offline member \(MX Series Routers\) on page 84](#)

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

Sample Output

request chassis pic

```
user@host> request chassis pic pic-slot 0 online fpc-slot 0
FPC 0, PIC 0 is already online
```

request chassis pic online member (MX Series Routers)

```
user@host> request chassis pic online member 1 fpc-slot 11 pic-slot 3
```

```
fpc 11 pic 3 online initiated
```

request chassis pic offline member (MX Series Routers)

```
user@host> request chassis pic offline member 1 fpc-slot 11 pic-slot 3  
fpc 11 pic 3 offline initiated
```

request chassis routing-engine master

List of Syntax	Syntax on page 85 Syntax (M Series, MX Series, T Series Routers) on page 85 Syntax (TX Matrix Routers) on page 85 Syntax (TX Matrix Plus Routers) on page 85 Syntax (MX Series Virtual Chassis) on page 85 Syntax (QFX Series) on page 85
Syntax	request chassis routing-engine master (acquire release switch) <no-confirm>
Syntax (M Series, MX Series, T Series Routers)	request chassis routing-engine master (acquire release switch) <no-confirm> <check>
Syntax (TX Matrix Routers)	request chassis routing-engine master (acquire release switch) (lcc <i>number</i> scc all-chassis) <no-confirm>
Syntax (TX Matrix Plus Routers)	request chassis routing-engine master (acquire release switch) (lcc <i>number</i> sfc all-chassis all-lcc) <no-confirm>
Syntax (MX Series Virtual Chassis)	request chassis routing-engine master (acquire release switch) <all-members> <check> <local> <member <i>member-id</i> > <no-confirm>
Syntax (QFX Series)	request chassis routing-engine master (release switch) <check> <interconnect-device <i>name</i> > <node-group <i>name</i> > <no-confirm>
Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>all-chassis option added in Junos OS Release 8.0.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.3 for QFX Series.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>
Description	For routers or switches with multiple Routing Engines, control which Routing Engine is the master.



CAUTION: (Routing matrix based on the TX Matrix or TX Matrix Plus routers only) Within the routing matrix, we recommend that all Routing Engines run the same Junos OS Release. If you run different releases on the Routing Engines and a change in mastership occurs on any backup Routing Engine in the routing matrix, one or all routers (in a routing matrix based on the TX Matrix router or in a routing matrix based on a TX Matrix Plus router) might become logically disconnected from the TX Matrix router and cause data loss. For more information, see the [TX Matrix Router Hardware Guide](#) or the *Junos OS High Availability Library for Routing Devices*.



NOTE: Successive graceful Routing Engine switchover events must be a minimum of 240 seconds (4 minutes) apart after both Routing Engines have come up.

If the router or switch displays a warning message similar to “Standby Routing Engine is not ready for graceful switchover. Packet Forwarding Engines that are not ready for graceful switchover might be reset,” do not attempt switchover. If you choose to proceed with switchover, only the Packet Forwarding Engines that were not ready for graceful switchover are reset. None of the Flexible PIC concentrators (FPCs) should spontaneously restart. We recommend that you wait until the warning no longer appears and then proceed with the switchover.

You will receive an error message stating “Command aborted. Not ready for mastership switch, try after n seconds” when this command is re-entered before 240 seconds have elapsed on EX Series switches.



NOTE: On a QFabric system, to avoid traffic loss on the network Node group, switch mastership of the routing engine to the backup routing engine, and then reboot.

Options **acquire**—Attempt to become the master Routing Engine.

release—Request that the other Routing Engine become the master.

switch—Toggle mastership between Routing Engines.



NOTE: The **acquire** option should be used with caution because acquiring a Routing Engine may result in a corrupted database. If possible, use the **switch** option instead.

The **acquire**, **release**, and **switch** options have the following suboptions:

all-chassis—(TX Matrix and TX Matrix Plus routers only) On a routing matrix composed of a TX Matrix router and the attached T640 routers, switch mastership on all the Routing Engines in the routing matrix. Likewise, on a routing matrix composed of a TX Matrix Plus router and the attached T1600 or T4000 routers, switch mastership on all the Routing Engines in the routing matrix.

all-lcc—(TX Matrix Plus routers only) Request to acquire mastership for all line-card chassis (LCC).

all-members—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines in all member routers of the Virtual Chassis configuration.

check—(QFabric systems, MX104, MX480, MX960, MX2010, and MX2020 routers, and PTX5000 routers only) (Optional) Available with the **switch**, **release**, and **acquire** options. Check graceful switchover status of the standby Routing Engine before toggling mastership between Routing Engines.

interconnect-device *name*—(QFabric systems only) (Optional) Control Routing Engine mastership on the Routing Engines on an Interconnect device.

lcc *number*—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

local—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines in the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Control Routing Engine mastership on the Routing Engines of the specified member in the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

no-confirm—(Optional) Do not request confirmation for the switch.

node-group *name*—(QFabric systems only) (Optional) Control Routing Engine mastership on the Routing Engines on a Node group.

scc—(TX Matrix routers only) TX Matrix (switch-card chassis).

sfc—(TX Matrix Plus routers only) TX Matrix Plus router (or switch-fabric chassis).

Additional Information Because both Routing Engines are always running, the transition from one to the other as the master Routing Engine is immediate. However, the changeover interrupts communication to the System and Switch Board (SSB). The SSB takes several seconds to reinitialize the Flexible PIC Concentrators (FPCs) and restart the PICs. Interior gateway protocol (IGP) and BGP convergence times depend on the specific network environment.

By default, the Routing Engine in slot 0 (**RE0**) is the master and the Routing Engine in slot 1 (**RE1**) is the backup. To change the default master Routing Engine, include the **routing-engine** statement at the **[edit chassis redundancy]** hierarchy level in the configuration. For more information, see the *Junos OS Administration Library for Routing Devices*

To have the backup Routing Engine become the master Routing Engine, use the **request chassis routing-engine master switch** command. If you use this command to change the master and then restart the chassis software for any reason, the master reverts to the default setting.



NOTE: Although the configurations on the two Routing Engines do not have to be the same and are not automatically synchronized, we recommend making both configurations the same.

Required Privilege Level maintenance

Related Documentation

- [show chassis routing-engine](#)
- [Configuring Routing Engine Redundancy](#)
- [Switching the Global Master and Backup Roles in a Virtual Chassis Configuration](#)

List of Sample Output [request chassis routing-engine master acquire on page 88](#)
[request chassis routing-engine master switch on page 88](#)
[request chassis routing-engine master switch check on page 89](#)

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

Sample Output

[request chassis routing-engine master acquire](#)

```
user@host> request chassis routing-engine master acquire

warning: Traffic will be interrupted while the PFE is re-initialized

warning: The other routing engine's file system could be corrupted

Reset other routing engine and become master ? [yes,no] (no)
```

[request chassis routing-engine master switch](#)

```
user@host> request chassis routing-engine master switch
```



```
warning: Traffic will be interrupted while the PFE is re-initialized  
Toggle mastership between Routing Engines ? [yes,no] (no) yes
```

```
Resolving mastership...  
Complete. The other Routing Engine becomes the master.
```

Switch mastership back to the local Routing Engine:

```
user@host> request chassis routing-engine master switch
```

```
warning: Traffic will be interrupted while the PFE is re-initialized  
Toggle mastership between routing engines ? [yes,no] (no) yes
```

```
Resolving mastership...  
Complete. The local routing engine becomes the master.
```

request chassis routing-engine master switch check

Usage shown for M Series, MX Series, and T Series routers.

```
{master}[edit]
```

```
user@host> request chassis routing-engine master switch check
```

```
warning: Standby Routing Engine is not ready for graceful switchover.
```

```
{master}[edit]
```

```
user@host> request chassis routing-engine master switch check  
Switchover Ready
```

You can similarly check the backup Routing Engine.

request system halt

List of Syntax	Syntax on page 90 Syntax (EX Series Switches) on page 90 Syntax (PTX Series) on page 90 Syntax (TX Matrix Router) on page 90 Syntax (TX Matrix Plus Router) on page 90 Syntax (MX Series Router) on page 91 Syntax (QFX Series) on page 91
Syntax	<code>request system halt</code> <code><at <i>time</i>></code> <code><backup-routing-engine></code> <code><both-routing-engines></code> <code><other-routing-engine></code> <code><in <i>minutes</i>></code> <code><media (compact-flash disk removable-compact-flash usb)></code> <code><message "<i>text</i>"></code>
Syntax (EX Series Switches)	<code>request system halt</code> <code><all-members></code> <code><at <i>time</i>></code> <code><backup-routing-engine></code> <code><both-routing-engines></code> <code><in <i>minutes</i>></code> <code><local></code> <code><media (external internal)></code> <code><member <i>member-id</i>></code> <code><message "<i>text</i>"></code> <code><other-routing-engine></code> <code><slice <i>slice</i>></code>
Syntax (PTX Series)	<code>request system halt</code> <code><at <i>time</i>></code> <code><backup-routing-engine></code> <code><both-routing-engines></code> <code><other-routing-engine></code> <code><in <i>minutes</i>></code> <code><media (compact-flash disk)></code> <code><message "<i>text</i>"></code>
Syntax (TX Matrix Router)	<code>request system halt</code> <code><all-lcc lcc <i>number</i> scc></code> <code><at <i>time</i>></code> <code><backup-routing-engine></code> <code><both-routing-engines></code> <code><other-routing-engine></code> <code><in <i>minutes</i>></code> <code><media (compact-flash disk)></code> <code><message "<i>text</i>"></code>
Syntax (TX Matrix Plus Router)	<code>request system halt</code> <code><all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>></code>

	<pre> <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.

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 72](#)
- [request system power-off on page 97](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

- [request system halt on page 95](#)
- [request system halt \(In 2 Hours\) on page 95](#)
- [request system halt \(Immediately\) on page 95](#)
- [request system halt \(At 1:20 AM\) on page 95](#)

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 logout

Syntax	<code>request system logout (pid <i>pid</i> terminal <i>terminal</i> user <i>username</i>)</code> <code><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. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
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	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.) pid <i>pid</i> —Log out the user session using the specified management process identifier (PID). The PID type must be management process. terminal <i>terminal</i> —Log out the user for the specified terminal session. user <i>username</i> —Log out the specified user.
Required Privilege Level	configure
Related Documentation	<ul style="list-style-type: none">• <i>Log a User Out of the Router</i>
List of Sample Output	request system logout on page 96
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 tammy all
Connection closed by foreign host.
```


request system power-off

List of Syntax	Syntax on page 97 Syntax (EX Series Switches) on page 97 Syntax (TX Matrix Router) on page 97 Syntax (TX Matrix Plus Router) on page 97 Syntax (MX Series Router) on page 97 Syntax (QFX Series) on page 98
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> <in <i>minutes</i>> <local></pre>

	<pre> <media (external internal)> <member <i>member-id</i>> <message "<i>text</i>"> <other-routing-engine> </pre>
Syntax (QFX Series)	<pre> request system power-off <at <i>time</i>> <in <i>minutes</i>> <media (external internal)> <message "<i>text</i>"> <slice <i>slice</i>> </pre>
Release Information	<p>Command introduced in Junos OS Release 8.0.</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	Power off the software.



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.

Options	<p>none—Power off the router or switch software immediately.</p> <p>all-chassis—(Optional) (TX Matrix and TX Matrix Plus router only) Power off all Routing Engines in the chassis.</p> <p>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.</p> <p>all-members—(EX4200 switches and MX Series routers only) (Optional) Power off all members of the Virtual Chassis configuration.</p>
----------------	--

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 101](#)

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 102 Syntax (EX Series Switches) on page 102 Syntax (TX Matrix Router) on page 102 Syntax (TX Matrix Plus Router) on page 102 Syntax (MX Series Router) on page 102
Syntax	<code>request system reboot</code> <code><at <i>time</i>></code> <code><both-routing-engines></code> <code><in <i>minutes</i>></code> <code><media (compact-flash disk removable-compact-flash usb)></code> <code><message "<i>text</i>"></code> <code><other-routing-engine></code>
Syntax (EX Series Switches)	<code>request system reboot</code> <code><all-members></code> <code><at <i>time</i>></code> <code><both-routing-engines></code> <code><in <i>minutes</i>></code> <code><local></code> <code><media (external internal)></code> <code><member <i>member-id</i>></code> <code><message "<i>text</i>"></code> <code><other-routing-engine></code> <code><slice <i>slice</i>></code>
Syntax (TX Matrix Router)	<code>request system reboot</code> <code><all-chassis all-lcc lcc <i>number</i> scc></code> <code><at <i>time</i>></code> <code><both-routing-engines></code> <code><in <i>minutes</i>></code> <code><media (compact-flash disk)></code> <code><message "<i>text</i>"></code> <code><other-routing-engine></code>
Syntax (TX Matrix Plus Router)	<code>request system reboot</code> <code><all-chassis all-lcc lcc <i>number</i> sfc <i>number</i>></code> <code><at <i>time</i>></code> <code><both-routing-engines></code> <code><in <i>minutes</i>></code> <code><media (compact-flash disk)></code> <code><message "<i>text</i>"></code> <code><other-routing-engine></code> <code><partition (1 2 alternate)></code>
Syntax (MX Series Router)	<code>request system reboot</code> <code><all-members></code> <code><at <i>time</i>></code> <code><both-routing-engines></code> <code><in <i>minutes</i>></code> <code><local></code>

```

<media (external | internal)>
<member member-id>
<message "text">
<other-routing-engine>

```

Release Information	<p>Command introduced before Junos OS Release 7.4.</p> <p>Option other-routing-engine introduced in Junos OS Release 8.0.</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>Option both-routing-engines introduced in Junos OS Release 12.1.</p>
Description	Reboot the software.
Options	<p>none—Reboot the software immediately.</p> <p>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.</p> <p>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.</p> <p>all-members—(EX4200 switches and MX Series routers only) (Optional) Reboot the software on all members of the Virtual Chassis configuration.</p> <p>at <i>time</i>—(Optional) Time at which to reboot the software, specified in one of the following ways:</p> <ul style="list-style-type: none"> • now—Stop or reboot the software immediately. This is the default. • +<i>minutes</i>—Number of minutes from now to reboot the software. • <i>yymmddhhmm</i>—Absolute time at which to reboot the software, specified as year, month, day, hour, and minute. • <i>hh:mm</i>—Absolute time on the current day at which to stop the software, specified in 24-hour time. <p>both-routing-engines—(Optional) Reboot both Routing Engines at the same time.</p> <p>in <i>minutes</i>—(Optional) Number of minutes from now to reboot the software. This option is an alias for the at +<i>minutes</i> option.</p> <p>lcc <i>number</i>—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Line-card chassis number.</p> <p>Replace <i>number</i> with the following values depending on the LCC configuration:</p> <ul style="list-style-type: none"> • 0 through 3, when T640 routers are connected to a TX Matrix router in a routing matrix. • 0 through 3, when T1600 routers are connected to a TX Matrix Plus router in a routing matrix.

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

local—(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

- [clear system reboot on page 72](#)
- [request system halt on page 90](#)
- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

- [request system reboot on page 106](#)
- [request system reboot \(at 2300\) on page 106](#)
- [request system reboot \(in 2 Hours\) on page 106](#)
- [request system reboot \(Immediately\) on page 106](#)
- [request system reboot \(at 1:20 AM\) on page 106](#)

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@berry.network.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 reboot

Syntax	<pre>request system reboot <all-members local member member-id> <at time> <in minutes> <media (external internal)> <message "text"> <slice (1 2 alternate)></pre>
Release Information	<p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Option partition changed to slice in Junos OS Release 10.0 for EX Series switches.</p>
Description	<p>Reboot the Junos OS.</p> <p>Reboot requests are recorded in the system log files, which you can view with the show log command. You can view the process names with the show system processes command.</p>
Options	<p>none—Reboots the software immediately.</p> <p>all-members local member member-id—(Optional) Specify which member of the Virtual Chassis to reboot:</p> <ul style="list-style-type: none"> • all-members—Reboots each switch that is a member of the Virtual Chassis. • local—Reboots the local switch, meaning the switch you are logged into, only. • member member-id—Reboots the specified member switch of the Virtual Chassis. <p>at time—(Optional) Time at which to reboot the software, specified in one of the following ways:</p> <ul style="list-style-type: none"> • +minutes—Number of minutes from now to reboot the software. • hh:mm—Absolute time on the current day at which to reboot the software, specified in 24-hour time. • now—Stop or reboot the software immediately. This is the default. • yymmddhhmm—Absolute time at which to reboot the software, specified as year, month, day, hour, and minute. <p>in minutes—(Optional) Number of minutes from now to reboot the software. This option is an alias for the at +minutes option.</p> <p>media (external internal)—(Optional) Boot medium for the next boot. The external option reboots the switch using a software package stored on an external boot source, such as a USB flash drive. The internal option reboots the switch using a software package stored in an internal memory source.</p> <p>message "text"—(Optional) Message to display to all system users before rebooting the software.</p>

slice (1 | 2 | alternate)—(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, which is the partition that did not boot the switch at the last bootup.

Required Privilege Level maintenance

Related Documentation

- [clear system reboot on page 72](#)

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@berry.network.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 scripts convert

Syntax	<code>request system scripts convert (slax-to-xslt xslt-to-slax) source <i>source/filename</i> destination <i>destination/<filename></i> <partial> <version (1.0 1.1)></code>
Release Information	Command introduced in Junos OS Release 8.2. Command introduced in Junos OS Release 9.0 for EX Series switches. partial and version options added in Junos OS Release 12.2.
Description	Convert an Extensible Stylesheet Language Transformations (XSLT) script to Stylesheet Language Alternative Syntax (SLAX), or convert a SLAX script to XSLT.
Options	<p>destination <i>destination/<filename></i>—Specify a destination for the converted file.</p> <p>Optionally, you can specify a filename for the converted file. If you do not specify a filename, the software assigns one automatically. The default destination filename is SLAX-Conversion-Temp or slax-temp depending on the Junos OS release, with a randomly generated, five-character, alpha-numeric extension. For example, the software converts a source file called test.xml to slax-temp.kWwQk. The software converts a source file called test1.slax to slax-temp.zN61h.</p> <p>partial—(Optional) Convert partial script input.</p> <p>slax-to-xslt—Convert a SLAX script to XSLT.</p> <p>source <i>source/filename</i>—Specify a source file that you want to convert.</p> <p>version—(Optional) Specify the SLAX version listed in the version statement of the generated script for XSLT-to-SLAX conversions. Acceptable values are 1.0 and 1.1. The default is 1.1.</p> <p>xslt-to-slax—Convert an XSLT script to SLAX.</p>
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none"> • <i>Converting Scripts Between SLAX and XSLT</i>
List of Sample Output	request system scripts convert slax-to-xslt on page 109 request system scripts convert xslt-to-slax on page 110
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

request system scripts convert slax-to-xslt

```
user@host> request system scripts convert slax-to-xslt source /var/db/scripts/op/script1.slax
destination /var/db/scripts/op
conversion complete
```

request system scripts convert xslt-to-slax

```
user@host> request system scripts convert xslt-to-slax source /var/db/scripts/commit/script1.xml  
destination /var/db/scripts/commit partial version 1.0  
conversion complete
```

request system scripts refresh-from commit

Syntax	<code>request system scripts refresh-from commit file <i>file-name</i> url <i>url-path</i></code>
Release Information	Command introduced in Junos OS Release 10.1 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
Description	<p>Automatically download the initial Junos OS configuration and a set of standard commit scripts during a Junos XML management protocol/NETCONF session when a switch is brought up for the first time.</p> <p>The Junos XML management protocol equivalent for this operational mode command is:</p> <pre><request-script-refresh-from> <type>commit</type> <file>file-name</file> <URL>URL</URL> </request-script-refresh-from></pre>
Options	<p>file <i>file-name</i>—Name of the file to be downloaded.</p> <p>url <i>url-path</i>—URL of the file to be downloaded.</p>
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none"> • <i>Understanding Automatic Refreshing of Scripts on EX Series Switches</i> • <i>Junos OS Junos XML Management Protocol Guide</i> • <i>Junos OS NETCONF XML Management Protocol Guide</i>
List of Sample Output	<code>request system scripts refresh-from commit file config.txt url http://host1.example.net</code> on page 111

Sample Output

`request system scripts refresh-from commit file config.txt url http://host1.example.net`

```
user@switch> request system scripts refresh-from commit file config.txt url
http://host1.example.net
user@switch>
```

request system scripts refresh-from event

Syntax	<code>request system scripts refresh-from event file <i>file-name</i> url <i>url-path</i></code>
Release Information	Command introduced in Junos OS Release 10.1 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
Description	<p>Automatically download the initial Junos OS configuration and a set of standard event scripts during a Junos XML management protocol/NETCONF session when a switch is brought up for the first time.</p> <p>The Junos XML management protocol equivalent for this operational mode command is:</p> <pre><request-script-refresh-from> <type>event</type> <file>file-name</file> <URL>URL</URL> </request-script-refresh-from></pre>
Options	<p>file <i>file-name</i>—Name of the file to be downloaded.</p> <p>url <i>url-path</i>—URL of the file to be downloaded.</p>
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none">• Understanding Automatic Refreshing of Scripts on EX Series Switches• Junos OS Junos XML Management Protocol Guide• Junos OS NETCONF XML Management Protocol Guide
List of Sample Output	request system scripts refresh-from event file config.txt url http://host1.example.net on page 112

Sample Output

[request system scripts refresh-from event file config.txt url http://host1.example.net](#)

```
user@switch> request system scripts refresh-from event file config.txt url
http://host1.example.net
user@switch>
```


request system scripts refresh-from op

Syntax	<code>request system scripts refresh-from op file <i>file-name</i> url <i>url-path</i></code>
Release Information	Command introduced in Junos OS Release 10.1 for EX Series switches.
Description	<p>Automatically download the initial Junos OS configuration and a set of standard op scripts during a Junos XML management protocol/NETCONF session when a switch is brought up for the first time.</p> <p>The Junos XML management protocol equivalent for this operational mode command is:</p> <pre><request-script-refresh-from> <type>op</type> <file>file-name</file> <URL>URL</URL> </request-script-refresh-from></pre>
Options	<p>file <i>file-name</i>—Name of the file to be downloaded.</p> <p>url <i>url-path</i>—URL of the file to be downloaded.</p>
Required Privilege Level	maintenance
Related Documentation	<ul style="list-style-type: none"> • <i>Understanding Automatic Refreshing of Scripts on EX Series Switches</i> • <i>Junos OS Junos XML Management Protocol Guide</i> • <i>Junos OS NETCONF XML Management Protocol Guide</i>
List of Sample Output	request system scripts refresh-from op file config.txt url http://host1.example.net on page 113

Sample Output

`request system scripts refresh-from op file config.txt url http://host1.example.net`

```
user@switch> request system scripts refresh-from op file config.txt url http://host1.example.net
user@switch>
```

request system storage cleanup

List of Syntax	Syntax on page 114 Syntax (EX Series Switches) on page 114 Syntax (MX Series Router) on page 114 Syntax (QFX Series) on page 114 Syntax (SRX Series) on page 114
Syntax	<code>request system storage cleanup <dry-run></code>
Syntax (EX Series Switches)	<code>request system storage cleanup</code> <code><all-members></code> <code><dry-run></code> <code><local></code> <code><member <i>member-id</i>></code> <code><satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]></code>
Syntax (MX Series Router)	<code>request system storage cleanup</code> <code><all-members></code> <code><dry-run></code> <code><local></code> <code><member <i>member-id</i>></code> <code><satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]></code>
Syntax (QFX Series)	<code>request system storage cleanup</code> <code><component (<i>serial number</i> <i>UUID</i> all)></code> <code><director-group <i>name</i>></code> <code><dry-run></code> <code><infrastructure <i>name</i>></code> <code><interconnect-device <i>name</i>></code> <code><name-tag <i>name-tag</i>></code> <code><node-group <i>name</i>></code> <code><prune></code> <code><qfabric (component <i>name</i>) dry-run name-tag repository></code> <code><repository (core log)></code>
Syntax (SRX Series)	<code>request system storage cleanup</code> <code><dry-run></code>
Release Information	Command introduced in Junos OS Release 7.4. dry-run option introduced in Junos OS Release 7.6. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 9.2 for SRX Series. Command introduced in Junos OS Release 11.1 for the QFX Series. Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series. satellite option introduced in Junos OS Release 14.2R3.
Description	Free storage space on the router or switch by rotating log files and proposing a list of files for deletion. User input is required for file deletion. On a QFabric system, you can delete debug files located on individual devices or on the entire QFabric system.

Options **all-members**—(EX4200 switches and MX Series routers only) (Optional) Delete files on the Virtual Chassis master Routing Engine only.



NOTE: To delete files on the other members of the Virtual Chassis configuration, log in to each backup Routing Engine and delete the files using the **request system storage cleanup local** command.

component (*UUID | serial number | all*)—(QFabric systems only) (Optional) Delete files located on individual QFabric system devices or on the entire QFabric system.

director-group *name*—(QFabric systems only) (Optional) Delete files on the Director group.

dry-run—(Optional) List files proposed for deletion (without deleting them).

infrastructure *name*—(QFabric systems only) (Optional) Delete files on the fabric control Routing Engine and fabric manager Routing Engine.

interconnect-device *name*—(QFabric systems only) (Optional) Delete files on the Interconnect device.

local—(EX4200 switches and MX Series routers only) (Optional) Delete files on the local Virtual Chassis member.

member *member-id*—(EX4200 switches and MX Series routers only) (Optional) Delete files on the specified member of the Virtual Chassis configuration. For EX4200 switches, replace *member-id* with a value from 0 through 9. For an MX Series Virtual Chassis, replace *member-id* with a value of 0 or 1.

name-tag *name-tag*—(QFabric systems only) (Optional) Delete debug files that match a specific regular expression.

node-group *name*—(QFabric systems only) (Optional) Delete files on the Node group.

prune—(QFabric systems only) (Optional) Delete debug files located in either the core or log debug repositories of a QFabric system device.

qfabric component *name*—(QFabric systems only) (Optional) Delete debug files located in the debug repositories of a QFabric system device.

repository (*core | log*)—(QFabric systems only) (Optional) Specify the repository on the QFabric system device for which you want to delete debug files.

satellite [*slot-id slot-id | device-alias alias-name*]—(Junos Fusion only) (Optional) Specify the satellite device in the Junos Fusion by FPC ID or device alias name for which you want to delete debug files.

Additional Information If logging is configured and being used, the **dry-run** option rotates the log files. In that case, the output displays the message “Currently rotating log files, please wait.” If no logging is currently under way, the output displays only a list of files to delete.

Required Privilege Level maintenance

List of Sample Output

[request system storage cleanup dry-run on page 117](#)
[request system storage cleanup on page 117](#)
[request system storage cleanup director-group \(QFabric Systems\) on page 117](#)
[request system storage cleanup infrastructure device-name \(QFabric Systems\) on page 119](#)
[request system storage cleanup interconnect-device device-name \(QFabric Systems\) on page 120](#)
[request system storage cleanup node-group group-name \(QFabric Systems\) on page 121](#)
[request system storage cleanup qfabric component device-name \(QFabric Systems\) on page 122](#)
[request system storage cleanup qfabric component device-name repository core \(QFabric Systems\) on page 122](#)
[request system storage cleanup qfabric component all \(QFabric Systems\) on page 123](#)

Output Fields [Table 7 on page 116](#) describes the output fields for the **request system storage cleanup** command. Output fields are listed in the approximate order in which they appear.

Table 7: request system storage cleanup Output Fields

Field Name	Field Description
List of files to delete:	Shows list of files available for deletion.
Size	Size of the core-dump file.
Date	Last core-dump file modification date and time.
Name	Name of the core-dump file.
Directory to delete:	Shows list of directories available for deletion.
Repository scope:	Repository where core-dump files and log files are stored. The core-dump files are located in the core repository, and the log files are located in the log repository. The default Repository scope is shared since both the core and log repositories are shared by all of the QFabric system devices.
Repository head:	Name of the top-level repository location.
Repository name:	Name of the repository: core or log .
Creating list of debug artifacts to be removed under:	Shows location of files available for deletion.
List of debug artifacts to be removed under:	Shows list of files available for deletion.

Sample Output

request system storage cleanup dry-run

```
user@host> request system storage cleanup dry-run
Currently rotating log files, please wait.
This operation can take up to a minute.
```

List of files to delete:

Size	Date	Name
11.4K	Mar 8 15:00	/var/log/messages.1.gz
7245B	Feb 5 15:00	/var/log/messages.3.gz
11.8K	Feb 22 13:00	/var/log/messages.2.gz
3926B	Mar 16 13:57	/var/log/messages.0.gz
3962B	Feb 22 12:47	/var/log/sampled.1.gz
4146B	Mar 8 12:20	/var/log/sampled.0.gz
4708B	Dec 21 11:39	/var/log/sampled.2.gz
7068B	Jan 16 18:00	/var/log/messages.4.gz
13.7K	Dec 27 22:00	/var/log/messages.5.gz
890B	Feb 22 17:22	/var/tmp/sampled.pkts
65.8M	Oct 26 09:10	/var/sw/pkg/jinstall-7.4R1.7-export-signed.tgz
63.1M	Oct 26 09:13	/var/sw/pkg/jbundle-7.4R1.7.tgz

request system storage cleanup

```
user@host> request system storage cleanup
Currently rotating log files, please wait.
This operation can take up to a minute.
```

List of files to delete:

Size	Date	Name
11.4K	Mar 8 15:00	/var/log/messages.1.gz
7245B	Feb 5 15:00	/var/log/messages.3.gz
11.8K	Feb 22 13:00	/var/log/messages.2.gz
3926B	Mar 16 13:57	/var/log/messages.0.gz
11.6K	Mar 8 15:00	/var/log/messages.5.gz
7254B	Feb 5 15:00	/var/log/messages.6.gz
12.9K	Feb 22 13:00	/var/log/messages.8.gz
3726B	Mar 16 13:57	/var/log/messages.7.gz
3962B	Feb 22 12:47	/var/log/sampled.1.gz
4146B	Mar 8 12:20	/var/log/sampled.0.gz
4708B	Dec 21 11:39	/var/log/sampled.2.gz
7068B	Jan 16 18:00	/var/log/messages.4.gz
13.7K	Dec 27 22:00	/var/log/messages.5.gz
890B	Feb 22 17:22	/var/tmp/sampled.pkts
65.8M	Oct 26 09:10	/var/sw/pkg/jinstall-7.4R1.7-export-signed.tgz
63.1M	Oct 26 09:13	/var/sw/pkg/jbundle-7.4R1.7.tgz

Delete these files ? [yes,no] (yes)

request system storage cleanup director-group (QFabric Systems)

```
user@switch> request system storage cleanup director-group
List of files to delete:
```

Size	Date	Name
4.0K	2011-11-07 05:16:29	/tmp/2064.sfcauth
4.0K	2011-11-07 05:07:34	/tmp/30804.sfcauth
4.0K	2011-11-07 04:13:41	/tmp/26792.sfcauth

```

4.0K  2011-11-07 04:13:39 /tmp/26432.sfcauth
0      2011-11-07 07:45:40 /tmp/cluster_cleanup.log
1.3M  2011-11-07 07:39:11 /tmp/cn_monitor.20111107-052401.log
4.0K  2011-11-07 07:36:29 /tmp/clustat.28019.log
4.0K  2011-11-07 07:36:29 /tmp/clustat_x.28019.log
9.6M  2011-11-07 05:30:24 /tmp/sfc.2.log
4.0K  2011-11-07 05:28:11 /tmp/mgd-init.1320672491.log
248K  2011-11-07 05:19:24 /tmp/cn_monitor.20111107-045111.log
4.0K  2011-11-07 05:17:18 /tmp/clustat.3401.log
4.0K  2011-11-07 05:17:18 /tmp/clustat_x.3401.log
8.0K  2011-11-07 04:58:25 /tmp/mgd-init.1320670633.log
0      2011-11-07 04:54:01 /tmp/mysql_db_install_5.1.37.log
4.0K  2011-11-07 04:52:08 /tmp/cn_send.log
0      2011-11-07 04:52:00 /tmp/init_eth0.log
4.0K  2011-11-07 04:49:35 /tmp/install_interfaces.sh.log
4.0K  2011-11-07 04:48:15 /tmp/bootstrap.sh.log
160K  2011-11-07 04:47:43 /tmp/bootstrap_cleanup.log
38M   2011-11-07 04:42:42 /tmp/cn_monitor.20111104-110308.log
4.0K  2011-11-07 04:38:47 /tmp/clustat.30913.log
4.0K  2011-11-07 04:38:47 /tmp/clustat_x.30913.log
4.0K  2011-11-07 04:38:03 /tmp/dcf_upgrade.sh.remove.log
4.0K  2011-11-07 04:38:03 /tmp/peer_update.log
4.0K  2011-11-07 04:38:02 /tmp/dcf_upgrade.log
4.0K  2011-11-07 04:38:02 /tmp/perl_mark_upgrade.log
8.0K  2011-11-07 04:13:42 /tmp/install_dcf_rpm.log
4.0K  2011-11-07 04:13:06 /tmp/00_cleanup.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/ccif_patch_4410_4450.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/dcf-tools.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/initial.sh.1320667986.log
0      2011-11-07 04:13:06 /tmp/inventory.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/qf-db.sh.1320667986.log
4.0K  2011-11-07 04:13:06 /tmp/sfc.sh.1320667986.log
8.0K  2011-11-07 04:13:05 /tmp/jinstall-qfabric.log
8.0K  2011-11-04 11:10:24 /tmp/mgd-init.1320430192.log
4.0K  2011-11-04 11:07:03 /tmp/mysql_dcf_db_install.log
8.0K  2011-11-04 10:55:07 /tmp/ccif_patch_4410_4450.sh.1320429307.log
8.0K  2011-11-04 10:55:07 /tmp/initial.sh.1320429307.log
4.0K  2011-11-04 10:55:07 /tmp/inventory.sh.1320429307.log
8.0K  2011-11-04 10:55:07 /tmp/sfc.sh.1320429307.log
4.0K  2011-11-04 10:54:09 /tmp/ks-script-Ax0tz5.log
4.0K  2011-11-07 04:13:06 /tmp//sfc.sh.1320667986.log
8.0K  2011-11-04 10:55:07 /tmp//sfc.sh.1320429307.log

```

Directory to delete:

```

45M   2011-11-08 10:57:43 /tmp/sfc-captures

```

List of files to delete:

	Size	Date	Name
4.0K	2011-11-08	05:47:47	/tmp/5713.sfcauth
4.0K	2011-11-08	05:14:32	/tmp/14494.sfcauth
4.0K	2011-11-08	05:11:47	/tmp/9978.sfcauth
4.0K	2011-11-08	05:09:37	/tmp/6128.sfcauth
4.0K	2011-11-08	05:04:28	/tmp/29703.sfcauth
4.0K	2011-11-07	11:59:10	/tmp/7811.sfcauth
4.0K	2011-11-07	11:36:08	/tmp/32415.sfcauth
4.0K	2011-11-07	11:30:30	/tmp/22406.sfcauth
4.0K	2011-11-07	11:24:37	/tmp/12131.sfcauth
4.0K	2011-11-07	10:48:42	/tmp/12687.sfcauth
4.0K	2011-11-07	09:27:20	/tmp/31082.sfcauth
4.0K	2011-11-07	07:33:58	/tmp/14633.sfcauth

```

4.0K  2011-11-07 05:08:25 /tmp/15447.sfcauth
4.0K  2011-11-07 04:12:29 /tmp/26874.sfcauth
4.0K  2011-11-07 04:12:27 /tmp/26713.sfcauth
4.0K  2011-11-07 03:49:17 /tmp/17691.sfcauth
4.0K  2011-11-05 01:32:23 /tmp/5716.sfcauth
4.0K  2011-11-07 08:00:17 /tmp/sfcsnmpd.log
4.0K  2011-11-07 07:57:50 /tmp/cluster_cleanup.log
824K  2011-11-07 07:38:37 /tmp/cn_monitor.20111107-053643.log
4.0K  2011-11-07 07:36:30 /tmp/clustat.18399.log
4.0K  2011-11-07 07:36:30 /tmp/clustat_x.18399.log
4.0K  2011-11-07 07:35:47 /tmp/command_lock.log
4.0K  2011-11-07 05:39:54 /tmp/mgd-init.1320673194.log
92K   2011-11-07 05:19:25 /tmp/cn_monitor.20111107-050412.log
4.0K  2011-11-07 05:17:20 /tmp/clustat.30115.log
4.0K  2011-11-07 05:17:20 /tmp/clustat_x.30115.log
8.0K  2011-11-07 05:08:07 /tmp/mgd-init.1320671241.log
4.0K  2011-11-07 05:04:57 /tmp/cn_send.log
0     2011-11-07 05:04:52 /tmp/init_eth0.log
4.0K  2011-11-07 05:02:38 /tmp/install_interfaces.sh.log
4.0K  2011-11-07 05:01:19 /tmp/bootstrap.sh.log
160K  2011-11-07 05:00:47 /tmp/bootstrap_cleanup.log
28M   2011-11-07 04:42:27 /tmp/cn_monitor.20111104-112954.log
4.0K  2011-11-07 04:38:49 /tmp/clustat.6780.log
4.0K  2011-11-07 04:38:49 /tmp/clustat_x.6780.log
4.0K  2011-11-07 04:38:05 /tmp/issue_event.log
4.0K  2011-11-07 04:38:05 /tmp/peer_upgrade_reboot.log
12K   2011-11-07 04:38:05 /tmp/primary_update.log
4.0K  2011-11-07 04:38:04 /tmp/dcf_upgrade.sh.remove.log
4.0K  2011-11-07 04:38:04 /tmp/peer_rexec_upgrade.log
4.0K  2011-11-07 04:13:42 /tmp/peer_install_dcf_rpm.log
4.0K  2011-11-07 04:11:57 /tmp/dcf-tools.sh.1320667917.log
0     2011-11-07 04:11:57 /tmp/initial.sh.1320667917.log
0     2011-11-07 04:11:57 /tmp/inventory.sh.1320667917.log
4.0K  2011-11-07 04:11:57 /tmp/qf-db.sh.1320667917.log
4.0K  2011-11-07 04:11:57 /tmp/sfc.sh.1320667917.log
4.0K  2011-11-07 04:11:56 /tmp/00_cleanup.sh.1320667916.log
0     2011-11-07 04:11:56 /tmp/ccif_patch_4410_4450.sh.1320667916.log
8.0K  2011-11-07 04:11:56 /tmp/jinstall-qfabric.log
4.0K  2011-11-07 04:11:33 /tmp/dcf_upgrade.log
8.0K  2011-11-04 11:53:12 /tmp/mgd-init.1320432782.log
8.0K  2011-11-04 11:06:17 /tmp/ccif_patch_4410_4450.sh.1320429977.log
8.0K  2011-11-04 11:06:17 /tmp/initial.sh.1320429977.log
4.0K  2011-11-04 11:06:17 /tmp/inventory.sh.1320429977.log
8.0K  2011-11-04 11:06:17 /tmp/sfc.sh.1320429977.log
4.0K  2011-11-04 11:05:19 /tmp/ks-script-tnWeb.log
4.0K  2011-11-07 04:11:57 /tmp//sfc.sh.1320667917.log
8.0K  2011-11-04 11:06:17 /tmp//sfc.sh.1320429977.log

```

Directory to delete:

```
49M   2011-11-08 10:45:20 /tmp/sfc-captures
```

request system storage cleanup infrastructure device-name (QFabric Systems)

```
user@switch> request system storage cleanup infrastructure FC-0
re0:
```

List of files to delete:

Size	Date	Name
139B	Nov 8 19:03	/var/log/default-log-messages.0.gz

```

5602B Nov  8 19:03 /var/log/messages.0.gz
28.4K Nov  8 10:15 /var/log/messages.1.gz
35.2K Nov  7 13:45 /var/log/messages.2.gz
207B Nov  7 16:02 /var/log/wtmp.0.gz
27B Nov  7 12:14 /var/log/wtmp.1.gz
184.4M Nov  7 12:16
/var/sw/pkg/jinstall-dc-re-11.3I20111104_1216_dc-builder-domestic-signed.tgz
124.0K Nov  7 15:59 /var/tmp/gres-tp/env.dat
0B Nov  7 12:57 /var/tmp/gres-tp/lock
155B Nov  7 16:02 /var/tmp/krt_gencfg_filter.txt
0B Nov  7 12:35 /var/tmp/last_ccif_update
1217B Nov  7 12:15 /var/tmp/loader.conf.preinstall
184.4M Nov  6 07:11 /var/tmp/mchassis-install.tgz
10.8M Nov  7 12:16
/var/tmp/preinstall/bootstrap-install-11.3I20111104_1216_dc-builder.tar
57.4K Nov  7 12:16 /var/tmp/preinstall/configs-11.3I20111104_1216_dc-builder.tgz

259B Nov  7 12:16 /var/tmp/preinstall/install.conf
734.3K Nov  4 13:46
/var/tmp/preinstall/jboot-dc-re-11.3I20111104_1216_dc-builder.tgz
177.8M Nov  7 12:16
/var/tmp/preinstall/jbundle-dc-re-11.3I20111104_1216_dc-builder-domestic.tgz
124B Nov  7 12:15 /var/tmp/preinstall/metatags
1217B Nov  7 12:16 /var/tmp/preinstall_boot_loader.conf
0B Nov  7 16:02 /var/tmp/rtsdb/if-rtsdb

```

request system storage cleanup interconnect-device device-name (QFabric Systems)

```

user@switch> request system storage cleanup interconnect IC-WS001
re1:

```

List of files to delete:

Size	Date	Name
11B	Nov 7 15:55	/var/jail/tmp/alarmd.ts
128B	Nov 8 19:06	/var/log/default-log-messages.0.gz
9965B	Nov 8 19:06	/var/log/messages.0.gz
15.8K	Nov 8 12:30	/var/log/messages.1.gz
15.8K	Nov 8 11:00	/var/log/messages.2.gz
15.7K	Nov 8 07:30	/var/log/messages.3.gz
15.8K	Nov 8 04:00	/var/log/messages.4.gz
15.7K	Nov 8 00:30	/var/log/messages.5.gz
18.7K	Nov 7 21:00	/var/log/messages.6.gz
17.6K	Nov 7 19:00	/var/log/messages.7.gz
58.3K	Nov 7 16:00	/var/log/messages.8.gz
20.3K	Nov 7 15:15	/var/log/messages.9.gz
90B	Nov 7 15:41	/var/log/wtmp.0.gz
57B	Nov 7 12:41	/var/log/wtmp.1.gz
124.0K	Nov 7 15:42	/var/tmp/gres-tp/env.dat
0B	Nov 7 12:40	/var/tmp/gres-tp/lock
0B	Nov 7 12:41	/var/tmp/if-rtsdb/env.lck
12.0K	Nov 7 15:41	/var/tmp/if-rtsdb/env.mem
132.0K	Nov 7 15:55	/var/tmp/if-rtsdb/shm_usr1.mem
2688.0K	Nov 7 15:41	/var/tmp/if-rtsdb/shm_usr2.mem
2048.0K	Nov 7 15:41	/var/tmp/if-rtsdb/trace.mem
730B	Nov 7 19:57	/var/tmp/juniper.conf+.gz
155B	Nov 7 15:53	/var/tmp/krt_gencfg_filter.txt
0B	Nov 7 15:41	/var/tmp/rtsdb/if-rtsdb

re0:

List of files to delete:

	Size	Date	Name
	11B	Nov 7 15:55	/var/jail/tmp/alarmd.ts
	121B	Nov 8 19:06	/var/log/default-log-messages.0.gz
	16.7K	Nov 8 19:06	/var/log/messages.0.gz
	22.2K	Nov 8 17:45	/var/log/messages.1.gz
	18.4K	Nov 8 17:00	/var/log/messages.2.gz
	21.6K	Nov 8 16:00	/var/log/messages.3.gz
	17.9K	Nov 8 14:30	/var/log/messages.4.gz
	19.4K	Nov 8 13:30	/var/log/messages.5.gz
	18.2K	Nov 8 12:30	/var/log/messages.6.gz
	20.4K	Nov 8 11:30	/var/log/messages.7.gz
	21.4K	Nov 8 10:15	/var/log/messages.8.gz
	21.0K	Nov 8 09:00	/var/log/messages.9.gz
	19.9K	Nov 8 08:13	/var/log/snmp-traps.0.gz
	203B	Nov 8 15:36	/var/log/wtmp.0.gz
	57B	Nov 7 12:41	/var/log/wtmp.1.gz
	124.0K	Nov 7 15:42	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:40	/var/tmp/gres-tp/lock
	0B	Nov 7 12:41	/var/tmp/if-rtbdb/env.lck
	12.0K	Nov 7 15:41	/var/tmp/if-rtbdb/env.mem
	132.0K	Nov 7 15:55	/var/tmp/if-rtbdb/shm_usr1.mem
	2688.0K	Nov 7 15:41	/var/tmp/if-rtbdb/shm_usr2.mem
	2048.0K	Nov 7 15:41	/var/tmp/if-rtbdb/trace.mem
	727B	Nov 7 15:54	/var/tmp/juniper.conf+.gz
	155B	Nov 7 15:55	/var/tmp/krt_gencfg_filter.txt
	0B	Nov 7 15:41	/var/tmp/rtbdb/if-rtbdb

request system storage cleanup node-group group-name (QFabric Systems)

```
user@switch> request system storage cleanup node-group NW-NG-0
BBAK0372:
```

List of files to delete:

	Size	Date	Name
	126B	Nov 8 19:07	/var/log/default-log-messages.0.gz
	179B	Nov 7 13:32	/var/log/install.0.gz
	22.9K	Nov 8 19:07	/var/log/messages.0.gz
	26.5K	Nov 8 17:30	/var/log/messages.1.gz
	20.5K	Nov 8 13:15	/var/log/messages.2.gz
	33.2K	Nov 7 17:45	/var/log/messages.3.gz
	35.5K	Nov 7 15:45	/var/log/messages.4.gz
	339B	Nov 8 17:10	/var/log/wtmp.0.gz
	58B	Nov 7 12:40	/var/log/wtmp.1.gz
	124.0K	Nov 8 17:08	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:39	/var/tmp/gres-tp/lock
	0B	Nov 7 12:59	/var/tmp/if-rtbdb/env.lck
	12.0K	Nov 8 17:09	/var/tmp/if-rtbdb/env.mem
	2688.0K	Nov 8 17:09	/var/tmp/if-rtbdb/shm_usr1.mem
	132.0K	Nov 8 17:09	/var/tmp/if-rtbdb/shm_usr2.mem
	2048.0K	Nov 8 17:09	/var/tmp/if-rtbdb/trace.mem
	1082B	Nov 8 17:09	/var/tmp/juniper.conf+.gz
	155B	Nov 7 17:39	/var/tmp/krt_gencfg_filter.txt
	0B	Nov 8 17:09	/var/tmp/rtbdb/if-rtbdb

EE3093:

List of files to delete:

	Size	Date	Name
	11B	Nov 8 17:33	/var/jail/tmp/alarmd.ts
	119B	Nov 8 19:08	/var/log/default-log-messages.0.gz
	180B	Nov 7 17:41	/var/log/install.0.gz
	178B	Nov 7 13:32	/var/log/install.1.gz
	2739B	Nov 8 19:08	/var/log/messages.0.gz
	29.8K	Nov 8 18:45	/var/log/messages.1.gz
	31.8K	Nov 8 17:15	/var/log/messages.2.gz
	20.6K	Nov 8 16:00	/var/log/messages.3.gz
	15.4K	Nov 8 10:15	/var/log/messages.4.gz
	15.4K	Nov 8 02:15	/var/log/messages.5.gz
	25.5K	Nov 7 20:45	/var/log/messages.6.gz
	48.0K	Nov 7 17:45	/var/log/messages.7.gz
	32.8K	Nov 7 13:45	/var/log/messages.8.gz
	684B	Nov 8 17:02	/var/log/wtmp.0.gz
	58B	Nov 7 12:40	/var/log/wtmp.1.gz
	124.0K	Nov 7 17:34	/var/tmp/gres-tp/env.dat
	0B	Nov 7 12:40	/var/tmp/gres-tp/lock
	0B	Nov 7 12:59	/var/tmp/if-rtssdb/env.lck
	12.0K	Nov 7 17:39	/var/tmp/if-rtssdb/env.mem
	2688.0K	Nov 7 17:39	/var/tmp/if-rtssdb/shm_usr1.mem
	132.0K	Nov 7 17:40	/var/tmp/if-rtssdb/shm_usr2.mem
	2048.0K	Nov 7 17:39	/var/tmp/if-rtssdb/trace.mem
	155B	Nov 7 17:40	/var/tmp/krt_gencfg_filter.txt
	0B	Nov 7 17:39	/var/tmp/rtssdb/if-rtssdb

request system storage cleanup qfabric component device-name (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component A0001/YA0197
Repository type: regular
Repository head: /pbstorage
Creating list of debug artifacts to be removed under:
/pbstorage/rumps/A0001/YA0197
Removing debug artifacts ... (press control C to abort)
Removing /pbstorage/rumps/A0001/YA0197/cosd.core.0.0.05162011123308.gz ... done
Removing /pbstorage/rumps/A0001/YA0197/cosd.core.1.0.05162011123614.gz ... done
Removing /pbstorage/rumps/A0001/YA0197/cosd.core.2.0.05162011123920.gz ... done
Removing /pbstorage/rumps/A0001/YA0197/livecore.05132011163930.gz ... done
Removing /pbstorage/rumps/A0001/YA0197/tnetd.core.0.1057.05162011124500.gz ...
done
Removing /pbstorage/rumps/A0001/YA0197/vmcore.05132011120528.gz ... done
Removing /pbstorage/rumps/A0001/YA0197/vmcore.kz ... done
Creating list of debug artifacts to be removed under: /pbstorage/rlogs/A0001/YA0197
Removing debug artifacts ... (press control C to abort)
Removing /pbstorage/rlogs/A0001/YA0197/kdumpinfo.05132011120528 ... done
Removing /pbstorage/rlogs/A0001/YA0197/kernel.tarball.0.1039.05122011234415.tgz
... done
Removing /pbstorage/rlogs/A0001/YA0197/kernel.tarball.1.1039.05132011175544.tgz
... done
Removing /pbstorage/rlogs/A0001/YA0197/tnetd.tarball.0.1057.05162011175453.tgz
... done

```

request system storage cleanup qfabric component device-name repository core (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component EE3093 repository core
Repository scope: shared
Repository head: /pbdata/export

```

```

Repository name: core
Creating list of debug artifacts to be removed under: /pbdata/export/rdumps/EE3093
NOTE: core repository under /pbdata/export/rdumps/EE3093 empty

```

request system storage cleanup qfabric component all (QFabric Systems)

```

user@switch> request system storage cleanup qfabric component all
Repository scope: shared
Repository head: /pbdata/export
Creating list of debug artifacts to be removed under: /pbdata/export/rdumps
NOTE: core repository under /pbdata/export/rdumps/all empty
Creating list of debug artifacts to be removed under: /pbdata/export/rlogs
List of debug artifacts to clean up ... (press control C to abort)
/pbdata/export/rlogs/73747cd8-0710-11e1-b6a4-00e081c5297e/install-11072011125819.log
/pbdata/export/rlogs/77116f18-0710-11e1-a2a0-00e081c5297e/install-11072011125819.log
/pbdata/export/rlogs/BBAK0372/install-11072011121538.log
/pbdata/export/rlogs/BBAK0394/install-11072011121532.log
/pbdata/export/rlogs/EE3093/install-11072011121536.log
/pbdata/export/rlogs/WS001/YN5999/install-11072011121644.log
/pbdata/export/rlogs/WS001/YW3803/install-11072011122429.log
/pbdata/export/rlogs/cd78871a-0710-11e1-878e-00e081c5297e/install-11072011125932.log
/pbdata/export/rlogs/d0afda1e-0710-11e1-a1d0-00e081c5297e/install-11072011125930.log
/pbdata/export/rlogs/d0afda1e-0710-11e1-a1d0-00e081c5297e/install-11072011133211.log
/pbdata/export/rlogs/d0afda1e-0710-11e1-a1d0-00e081c5297e/install-11072011155302.log
/pbdata/export/rlogs/d31ab7a6-0710-11e1-ad1b-00e081c5297e/install-11072011125931.log
/pbdata/export/rlogs/d4d0f254-0710-11e1-90c3-00e081c5297e/install-11072011125932.log

```

restart

List of Syntax [Syntax on page 124](#)

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[Syntax \(Routing Matrix\) on page 125](#)
[Syntax \(TX Matrix Routers\) on page 125](#)
[Syntax \(TX Matrix Plus Routers\) on page 126](#)
[Syntax \(MX Series Routers\) on page 126](#)
[Syntax \(QFX Series\) on page 126](#)

Syntax restart

```

<adaptive-services | ancpd-service | application-identification | audit-process |
  auto-configuration | captive-portal-content-delivery | ce-l2tp-service | chassis-control |
  class-of-service | clksyncd-service | database-replication | datapath-trace-service
  | dhcp-service | diameter-service | disk-monitoring | dynamic-flow-capture |
  ecc-error-logging | ethernet-connectivity-fault-management
  | ethernet-link-fault-management | event-processing | firewall
  | general-authentication-service | gracefully | iccp-service | idp-policy | immediately
  | interface-control | ipsec-key-management | kernel-replication | l2-learning | l2cpd-service
  | l2tp-service | l2tp-universal-edge | lacp | license-service | link-management
  | local-policy-decision-function | mac-validation | mib-process | mounstd-service
  | mpls-traceroute | mspd | multicast-snooping | named-service | nfsd-service |
  packet-triggered-subscribers | peer-selection-service | pgm | pic-services-logging | pki-service
  | ppp | ppp-service | pppoe | protected-system-domain-service |
  redundancy-interface-process | remote-operations | root-system-domain-service | routing
  <logical-system logical-system-name> | sampling | sbc-configuration-process | sdk-service
  | service-deployment | services | snmp | soft | static-subscribers | statistics-service |
  subscriber-management | subscriber-management-helper | tunnel-oamd | usb-control |
  vrrp | web-management>
<gracefully | immediately | soft>

```

Syntax (ACX Series Routers)

```

restart
<adaptive-services | audit-process | auto-configuration | autoinstallation | chassis-control |
  class-of-service | clksyncd-service | database-replication | dhcp-service | diameter-service
  | disk-monitoring | dynamic-flow-capture | ethernet-connectivity-fault-management
  | ethernet-link-fault-management | event-processing | firewall
  | general-authentication-service | gracefully | immediately | interface-control |
  ipsec-key-management | l2-learning | lacp | link-management | mib-process | mounstd-service
  | mpls-traceroute | mspd | named-service | nfsd-service | pgm | pki-service | ppp | pppoe |
  redundancy-interface-process | remote-operations | routing | sampling | sdk-service
  | secure-neighbor-discovery | service-deployment | services | snmp | soft | statistics-service |
  subscriber-management | subscriber-management-helper | tunnel-oamd | vrrp>

```

Syntax (EX Series Switches)

```

restart
<autoinstallation | chassis-control | class-of-service | database-replication | dhcp |
  dhcp-service | diameter-service | dot1x-protocol | ethernet-link-fault-management |
  ethernet-switching | event-processing | firewall | general-authentication-service |
  interface-control | kernel-replication | l2-learning | lacp | license-service | link-management
  | lldpd-service | mib-process | mounstd-service | multicast-snooping | pgm |

```

	redundancy-interface-process remote-operations routing secure-neighbor-discovery service-deployment sflow-service snmp vrrp web-management>
Syntax (MX Series Routers)	restart <adaptive-services ancpd-service application-identification audit-process auto-configuration captive-portal-content-delivery ce-l2tp-service chassis-control class-of-service clksyncd-service database-replication datapath-trace-service dhcp-service diameter-service disk-monitoring dynamic-flow-capture ecc-error-logging ethernet-connectivity-fault-management ethernet-link-fault-management event-processing firewall general-authentication-service gracefully iccp-service idp-policy immediately interface-control ipsec-key-management kernel-replication l2-learning l2cpd-service l2tp-service l2tp-universal-edge lacp license-service link-management local-policy-decision-function mac-validation mib-process mountd-service mpls-traceroute mspd multicast-snooping named-service nfsd-service packet-triggered-subscribers peer-selection-service pgm pic-services-logging pki-service ppp ppp-service pppoe protected-system-domain-service redundancy-interface-process remote-operations root-system-domain-service routing routing <logical-system <i>logical-system-name</i> > sampling sbc-configuration-process sdk-service service-deployment services snmp soft static-subscribers statistics-service subscriber-management subscriber-management-helper tunnel-oamd usb-control vrrp web-management> <all-members> <gracefully immediately soft> <local> <member <i>member-id</i> >
Syntax (QFX Series)	restart <adaptive-services audit-process chassis-control class-of-service dialer-services diameter-service dlsw ethernet-connectivity event-processing fibre-channel firewall general-authentication-service igmp-host-services interface-control ipsec-key-management isdn-signaling l2ald l2-learning l2tp-service mib-process named-service network-access-service nstrace-process pgm ppp pppoe redundancy-interface-process remote-operations <i>logical-system-name</i> > routing sampling secure-neighbor-discovery service-deployment snmp usb-control web-management> <gracefully immediately soft>
Syntax (Routing Matrix)	restart <adaptive-services audit-process chassis-control class-of-service disk-monitoring dynamic-flow-capture ecc-error-logging event-processing firewall interface-control ipsec-key-management kernel-replication l2-learning l2tp-service lacp link-management mib-process pgm pic-services-logging ppp pppoe redundancy-interface-process remote-operations routing <logical-system <i>logical-system-name</i> > sampling service-deployment snmp> <all all-lcc lcc <i>number</i> > <gracefully immediately soft>
Syntax (TX Matrix Routers)	restart <adaptive-services audit-process chassis-control class-of-service dhcp-service diameter-service disk-monitoring dynamic-flow-capture ecc-error-logging event-processing firewall interface-control ipsec-key-management kernel-replication l2-learning l2tp-service lacp link-management mib-process pgm pic-services-logging ppp pppoe redundancy-interface-process remote-operations routing <logical-system <i>logical-system-name</i> > sampling service-deployment snmp statistics-service>

	<p><all-chassis all-lcc lcc <i>number</i> scc></p> <p><gracefully immediately soft></p>
Syntax (TX Matrix Plus Routers)	<p>restart</p> <p><adaptive-services audit-process chassis-control class-of-service dhcp-service diameter-service disk-monitoring dynamic-flow-capture ecc-error-logging event-processing firewall interface-control ipsec-key-management kernel-replication l2-learning l2tp-service lacp link-management mib-process pgm pic-services-logging ppp pppoe redundancy-interface-process remote-operations routing <logical-system <i>logical-system-name</i>> sampling service-deployment snmp statistics-service></p> <p><all-chassis all-lcc all-sfc lcc <i>number</i> sfc <i>number</i>></p> <p><gracefully immediately soft></p>
Syntax (MX Series Routers)	<p>restart</p> <p><adaptive-services ancpd-service application-identification audit-process auto-configuration captive-portal-content-delivery ce-l2tp-service chassis-control class-of-service clksyncd-service database-replication datapath-trace-service dhcp-service diameter-service disk-monitoring dynamic-flow-capture ecc-error-logging ethernet-connectivity-fault-management ethernet-link-fault-management event-processing firewall general-authentication-service gracefully iccp-service idp-policy immediately interface-control ipsec-key-management kernel-replication l2-learning l2cpd-service l2tp-service l2tp-universal-edge lacp license-service link-management local-policy-decision-function mac-validation mib-process mobile-ip mounstd-service mpls-traceroute mspd multicast-snooping named-service nfsd-service packet-triggered-subscribers peer-selection-service pgcp-service pgm pic-services-logging pki-service ppp ppp-service pppoe protected-system-domain-service redundancy-interface-process remote-operations root-system-domain-service routing routing <logical-system <i>logical-system-name</i>> sampling sbc-configuration-process sdk-service service-deployment services services pgcp gateway <i>gateway-name</i> snmp soft static-subscribers statistics-service subscriber-management subscriber-management-helper tunnel-oamd usb-control vrrp web-management></p> <p><all-members></p> <p><gracefully immediately soft></p> <p><local></p> <p><member <i>member-id</i>></p>
Syntax (QFX Series)	<p>restart</p> <p><adaptive-services audit-process chassis-control class-of-service dialer-services diameter-service dlsd ethernet-connectivity event-processing fibre-channel firewall general-authentication-service igmp-host-services interface-control ipsec-key-management isdn-signaling l2ald l2-learning l2tp-service mib-process named-service network-access-service nstrace-process pgm ppp pppoe redundancy-interface-process remote-operations <i>logical-system-name</i>> routing sampling secure-neighbor-discovery service-deployment snmp usb-control web-management></p> <p><gracefully immediately soft></p>
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 12.2 for ACX Series routers.</p>

Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

Options added:

- **dynamic-flow-capture** in Junos OS Release 7.4.
- **dls** in Junos OS Release 7.5.
- **event-processing** in Junos OS Release 7.5.
- **ppp** in Junos OS Release 7.5.
- **l2ald** in Junos OS Release 8.0.
- **link-management** in Release 8.0.
- **pgcp-service** in Junos OS Release 8.4.
- **sbc-configuration-process** in Junos OS Release 9.5.
- **services pgcp gateway** in Junos OS Release 9.6.
- **sfc** and **all-sfc** for the TX Matrix Router in Junos OS Release 9.6.

Description Restart a Junos OS process.



CAUTION: Never restart a software process unless instructed to do so by a customer support engineer. A restart might cause the router or switch to drop calls and interrupt transmission, resulting in possible loss of data.

Options **none**—Same as **gracefully**.

adaptive-services—(Optional) Restart 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.

all-chassis—(TX Matrix and TX Matrix Plus routers only) (Optional) Restart the software process on all chassis.

all-lcc—(TX Matrix and TX Matrix Plus routers only) (Optional) For a TX Matrix router, restart the software process on all T640 routers connected to the TX Matrix router. For a TX Matrix Plus router, restart the software process on all T1600 routers connected to the TX Matrix Plus router.

all-members—(MX Series routers only) (Optional) Restart the software process for all members of the Virtual Chassis configuration.

all-sfc—(TX Matrix Plus routers only) (Optional) For a TX Matrix Plus router, restart the software processes for the TX Matrix Plus router (or switch-fabric chassis).

ancpd-service—(Optional) Restart 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—(Optional) Restart 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) Restart the RADIUS accounting process that gathers statistical data that can be used for general network monitoring, analyzing, and tracking usage patterns, for billing a user based on the amount of time or type of services accessed.

auto-configuration—(Optional) Restart the Interface Auto-Configuration process.

autoinstallation—(EX Series switches only) (Optional) Restart the autoinstallation process.

captive-portal-content-delivery—(Optional) Restart 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—(M10, M10i, M7i, and MX Series routers only) (Optional) Restart the Universal Edge Layer 2 Tunneling Protocol (L2TP) process, which establishes L2TP tunnels and Point-to-Point Protocol (PPP) sessions through L2TP tunnels.

chassis-control—(Optional) Restart the chassis management process.

class-of-service—(Optional) Restart the class-of-service (CoS) process, which controls the router's or switch's CoS configuration.

clksyncd-service—(Optional) Restart the external clock synchronization process, which uses synchronous Ethernet (SyncE).

database-replication—(EX Series switches and MX Series routers only) (Optional) Restart the database replication process.

datapath-trace-service—(Optional) Restart the packet path tracing process.

dhcp—(EX Series switches only) (Optional) Restart the software process for a Dynamic Host Configuration Protocol (DHCP) server. A DHCP server allocates network IP addresses and delivers configuration settings to client hosts without user intervention.

dhcp-service—(Optional) Restart the Dynamic Host Configuration Protocol process.

dialer-services—(EX Series switches only) (Optional) Restart the ISDN dial-out process.

diameter-service—(Optional) Restart the diameter process.

disk-monitoring—(Optional) Restart disk monitoring, which checks the health of the hard disk drive on the Routing Engine.

dls—(QFX Series only) (Optional) Restart the data link switching (DLSw) service.

dot1x-protocol—(EX Series switches only) (Optional) Restart the port-based network access control process.

dynamic-flow-capture—(Optional) Restart the dynamic flow capture (DFC) process, which controls DFC configurations on Monitoring Services III PICs.

ecc-error-logging—(Optional) Restart the error checking and correction (ECC) process, which logs ECC parity errors in memory on the Routing Engine.

ethernet-connectivity-fault-management—(Optional) Restart the process that provides IEEE 802.1ag Operation, Administration, and Management (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) Restart the process that provides the OAM link fault management (LFM) information for Ethernet interfaces.

ethernet-switching—(EX Series switches only) (Optional) Restart the Ethernet switching process.

event-processing—(Optional) Restart the event process (eventd).

fibre-channel—(QFX Series only) (Optional) Restart the Fibre Channel process.

firewall—(Optional) Restart 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) Restart the general authentication process.

gracefully—(Optional) Restart the software process.

iccp-service—(Optional) Restart the Inter-Chassis Communication Protocol (ICCP) process.

idp-policy—(Optional) Restart the intrusion detection and prevention (IDP) protocol process.

immediately—(Optional) Immediately restart the software process.

interface-control—(Optional) Restart the interface process, which controls the router's or switch's physical interface devices and logical interfaces.

ipsec-key-management—(Optional) Restart the IPsec key management process.

isdn-signaling—(QFX Series only) (Optional) Restart the ISDN signaling process, which initiates ISDN connections.

kernel-replication—(Optional) Restart the kernel replication process, which replicates the state of the backup Routing Engine when graceful Routing Engine switchover (GRES) is configured.

l2-learning—(Optional) Restart the Layer 2 address flooding and learning process.

l2cpd-service—(Optional) Restart the Layer 2 Control Protocol process, which enables features such as Layer 2 protocol tunneling and nonstop bridging.

l2tp-service— (M10, M10i, M7i, and MX Series routers only) (Optional) Restart the Layer 2 Tunneling Protocol (L2TP) process, which sets up client services for establishing Point-to-Point Protocol (PPP) tunnels across a network and negotiating Multilink PPP if it is implemented.

l2tp-universal-edge— (MX Series routers only) (Optional) Restart the L2TP process, which establishes L2TP tunnels and PPP sessions through L2TP tunnels.

lACP— (Optional) Restart 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 and TX Matrix Plus routers only) (Optional) For a TX Matrix router, restart the software process for a specific T640 router that is connected to the TX Matrix router. For a TX Matrix Plus router, restart the software process 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.

license-service— (EX Series switches only) (Optional) Restart the feature license management process.

link-management— (TX Matrix and TX Matrix Plus routers and EX Series switches only) (Optional) Restart the Link Management Protocol (LMP) process, which establishes and maintains LMP control channels.

lldpd-service— (EX Series switches only) (Optional) Restart the Link Layer Discovery Protocol (LLDP) process.

local— (MX Series routers only) (Optional) Restart the software process for the local Virtual Chassis member.

local-policy-decision-function— (Optional) Restart 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.

mac-validation— (Optional) Restart the Media Access Control (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*— (MX Series routers only) (Optional) Restart the software process for a specific member of the Virtual Chassis configuration. Replace ***member-id*** with a value of 0 or 1.

mib-process— (Optional) Restart the Management Information Base (MIB) version II process, which provides the router's MIB II agent.

mobile-ip— (Optional) Restart the Mobile IP process, which configures Junos OS Mobile IP features.

moundd-service— (EX Series switches and MX Series routers only) (Optional) Restart the service for NFS mount requests.

mpls-traceroute— (Optional) Restart the MPLS Periodic Traceroute process.

mspd— (Optional) Restart the Multiservice process.

multicast-snooping— (EX Series switches and MX Series routers only) (Optional) Restart 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) Restart the DNS Server process, which is used by a router or a switch to resolve hostnames into addresses.

network-access-service— (QFX Series only) (Optional) Restart the network access process, which provides the router's Challenge Handshake Authentication Protocol (CHAP) authentication service.

nfsd-service— (Optional) Restart the Remote NFS Server process, which provides remote file access for applications that need NFS-based transport.

packet-triggered-subscribers— (Optional) Restart 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) Restart the Peer Selection Service process.

pgcp-service— (Optional) Restart the pgcpd service process running on the Routing Engine. This option does not restart pgcpd processes running on mobile station PICs. To restart pgcpd processes running on mobile station PICs, use the **services pgcp gateway** option.

pgm— (Optional) Restart the process that implements the Pragmatic General Multicast (PGM) protocol for assisting in the reliable delivery of multicast packets.

pic-services-logging— (Optional) Restart 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.

pki-service—(Optional) Restart the PKI Service process.

ppp—(Optional) Restart the Point-to-Point Protocol (PPP) process, which is the encapsulation protocol process for transporting IP traffic across point-to-point links.

ppp-service—(Optional) Restart the Universal edge PPP process, which is the encapsulation protocol process for transporting IP traffic across universal edge routers.

pppoe—(Optional) Restart 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.

protected-system-domain-service—(Optional) Restart the Protected System Domain (PSD) process.

redundancy-interface-process—(Optional) Restart the ASP redundancy process.

remote-operations—(Optional) Restart the remote operations process, which provides the ping and traceroute MIBs.

root-system-domain-service—(Optional) Restart the Root System Domain (RSD) service.

routing—(ACX Series routers, QFX Series, EX Series switches, and MX Series routers only) (Optional) Restart the routing protocol process.

routing <logical-system *logical-system-name*>—(Optional) Restart the routing protocol process, which controls the routing protocols that run on the router or switch and maintains the routing tables. Optionally, restart the routing protocol process for the specified logical system only.

sampling—(Optional) Restart the sampling process, which performs packet sampling based on particular input interfaces and various fields in the packet header.

sbc-configuration-process—(Optional) Restart the session border controller (SBC) process of the border signaling gateway (BSG).

scc—(TX Matrix routers only) (Optional) Restart the software process on the TX Matrix router (or switch-card chassis).

sdk-service—(Optional) Restart 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—(QFX Series, EX Series switches, and MX Series routers only) (Optional) Restart the secure Neighbor Discovery Protocol (NDP) process, which provides support for protecting NDP messages.

sfc *number*—(TX Matrix Plus routers only) (Optional) Restart the software process on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

service-deployment—(Optional) Restart the service deployment process, which enables Junos OS to work with the Session and Resource Control (SRC) software.

services—(Optional) Restart a service.

services pgcp gateway gateway-name—(Optional) Restart the pgcpd process for a specific border gateway function (BGF) running on an MS-PIC. This option does not restart the pgcpd process running on the Routing Engine. To restart the pgcpd process on the Routing Engine, use the **pgcp-service** option.

sflow-service—(EX Series switches only) (Optional) Restart the flow sampling (sFlow technology) process.

snmp—(Optional) Restart 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.

soft—(Optional) Reread and reactivate the configuration without completely restarting the software processes. For example, BGP peers stay up and the routing table stays constant. Omitting this option results in a graceful restart of the software process.

static-subscribers—(Optional) Restart the static subscribers process, which associates subscribers with statically configured interfaces and provides dynamic service activation and activation for these subscribers.

statistics-service—(Optional) Restart the process that manages the Packet Forwarding Engine statistics.

subscriber-management—(Optional) Restart the Subscriber Management process.

subscriber-management-helper—(Optional) Restart the Subscriber Management Helper process.

tunnel-oamd—(Optional) Restart 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.

usb-control—(MX Series routers) (Optional) Restart the USB control process.

vrrp—(ACX Series routers, EX Series switches, and MX Series routers only) (Optional) Restart 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.

web-management—(QFX Series, EX Series switches, and MX Series routers only) (Optional) Restart the Web management process.

Required Privilege Level reset

Related Documentation • *Overview of Junos OS CLI Operational Mode Commands*

List of Sample Output [restart interfaces on page 134](#)

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

Sample Output

restart interfaces

```
user@host> restart interfaces
interfaces process terminated
interfaces process restarted
```

set chassis display message

List of Syntax	Syntax on page 135 Syntax (TX Matrix Router) on page 135 Syntax (TX Matrix Plus Router) on page 135
Syntax	set chassis display message " <i>message</i> " <permanent>
Syntax (TX Matrix Router)	set chassis display message " <i>message</i> " (<i>lcc number</i> <i>scc</i>) <permanent>
Syntax (TX Matrix Plus Router)	set chassis display message " <i>message</i> " (<i>fpc-slot slot-number</i> <i>lcc number</i> <i>sfc number</i>) <permanent>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <i>sfc</i> option for TX Matrix Plus router introduced in Junos OS Release 9.6.
Description	Display or stop a text message on the craft interface display, which is on the front of the router, or on the LCD panel display on the switch. The craft interface alternates the display of text messages with standard craft interface messages three times, switching between messages every 60 seconds.



NOTE: On T Series routers, when this command is executed with the **permanent** option, the display of the text message alternates with that of the standard craft interface message continuously every 60 seconds.

By default, on both the router and the switch, the text message is displayed for 5 minutes. The craft interface display has four 20-character lines. The LCD panel display has two 16-character lines, and text messages appear only on the second line.

Options **"message"**—Message to display. On the craft interface display, if the message is longer than 20 characters, it wraps onto the next line. If a word does not fit on one line, the entire word moves down to the next line. Any portion of the message that does not fit on the display is truncated. An empty pair of quotation marks (" ") deletes the text message from the craft interface display. On the LCD panel display, the message is limited to 16 characters.

fpc-slot slot-number—(TX Matrix Plus routers and EX4200 and QFX Series only) On the router or switch, display the text message on the craft interface for a specific Flexible PIC Concentrator (FPC). Replace **slot-number** with a value from 0 through 31. On the switch, display the text message for a specific member of a Virtual Chassis, where **fpc-slot slot-number** corresponds to the member ID. Replace **slot-number** with a value from 0 through 9. On the QFX Series, the **slot-number** is always 0. On a TX Matrix Plus router with 3D SIBs replace **slot-number** with a value from 0 through 63.

lcc number—(TX Matrix router and TX Matrix Plus router only) (Optional) Line-card chassis number.

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

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

permanent—(Optional) Display a text message on the craft interface display or LCD panel display permanently.

scc—(TX Matrix routers only) Display the text message on the craft interface display of the TX Matrix router (switch-card chassis).

sfc number—(TX Matrix Plus routers only) Display the text message on the craft interface display of the TX Matrix Plus router (or switch-fabric chassis).

Required Privilege Level clear

Related Documentation

- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\) on page 17](#)
- [clear chassis display message on page 69](#)
- [show chassis craft-interface](#)

List of Sample Output [set chassis display message \(Creating\) on page 136](#)
[set chassis display message \(Deleting\) on page 137](#)

Output Fields See [show chassis craft-interface](#) for an explanation of output fields.

Sample Output

set chassis display message (Creating)

The following example shows how to set the display message and verify the result:

```
user@host> set chassis display message "NOC contact Dusty (888) 555-1234"
message sent

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0  1  2  3  4  5  6  7
-----
Green  ..  *..  *  *.
```



```

Red      .....
LCD screen:
+-----+
|NOC contact Dusty |
|(888) 555-1234    |
+-----+

```

set chassis display message (Deleting)

The following example shows how to delete the display message and verify that the message is removed:

```

user@host> set chassis display message ""
message sent

```

```

user@host> show chassis craft-interface
Red alarm:      LED off, relay off
Yellow alarm:   LED off, relay off
Host OK LED:    On
Host fail LED:  Off
FPCs           0 1 2 3 4 5 6 7
-----
Green  ..  *..  *  *.
Red    .....
LCD screen:
+-----+
|host      |
|Up: 0+17:05:47|
|          |
|Temperature OK|
+-----+

```

set date

Syntax	<code>set date (date-time ntp <key authentication-key number> <servers> <source-address source-address>)</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. key option introduced in Junos OS Release 12.1R2
Description	Set the date and time.
Options	<p>date-time—Date and time. Enter this string inside quotation marks.</p> <p>ntp—Use a Network Time Protocol (NTP) server to synchronize the current date and time setting on the router or switch.</p> <p>key authentication-key number—(Optional) Specify a key number to authenticate the NTP server used to synchronize the date and time. You must specify the same key number used to authenticate the server configured at the <code>[edit system ntp authentication-key number]</code> hierarchy level.</p> <p>servers—(Optional) Specify the IP address of one or more NTP servers.</p> <p>source-address source-address—Specify the source address that the router or switch uses to contact the remote NTP server.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• <i>Setting the Date and Time</i>
List of Sample Output	set date on page 138
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

set date

```
user@host> set date ntp
21 Apr 17:22:02 ntpdate[3867]: step time server 172.17.27.46 offset 8.759252 sec
```

show chassis fan

List of Syntax	Syntax on page 139 Syntax (ACX4000 Series Router) on page 139 Syntax (MX Series Router) on page 139 Syntax (T Series Routers) on page 139 Syntax (MX104, MX2010, and MX2020 3D Universal Edge Router) on page 139 Syntax (QFX Series) on page 139 Syntax (OCX Series) on page 139 Syntax (TX Matrix Router) on page 139 Syntax (TX Matrix Plus Router) on page 139
Syntax	show chassis fan
Syntax (ACX4000 Series Router)	show chassis fan
Syntax (MX Series Router)	show chassis fan <all-members> <local> <member <i>member-id</i> >
Syntax (T Series Routers)	show chassis fan
Syntax (MX104, MX2010, and MX2020 3D Universal Edge Router)	show chassis fan <satellite [<i>slot-id slot-id</i> <i>device-alias alias-name</i>]>
Syntax (QFX Series)	show chassis fan <interconnect-device <i>name</i> >
Syntax (OCX Series)	show chassis fan
Syntax (TX Matrix Router)	show chassis fan <lcc <i>number</i> <i>scc</i> >
Syntax (TX Matrix Plus Router)	show chassis fan <lcc <i>number</i> <i>sfc number</i> >
Release Information	<p>Command introduced in Junos OS Release 10.0 on MX Series 3D Universal Edge Routers, M120 routers, and M320 routers, T320 routers, T640 routers, T1600 routers, TX Matrix Routers, and TX Matrix Plus routers.</p> <p>Command introduced in Junos OS Release 11.1 for the QFX Series.</p> <p>Command introduced in Junos OS Release 11.4 for EX Series switches.</p> <p>Command introduced in Junos OS Release 12.3 for PTX5000 Packet Transport Routers.</p> <p>Command introduced in Junos OS Release 12.1 for T4000 routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.</p> <p>Command introduced in Junos OS Release 12.3 for ACX Series Routers.</p>

Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.
Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
satellite option introduced in Junos OS Release 14.2R3.

Description (T Series routers, TX Matrix routers, TX Matrix Plus routers, M120 routers, M320 routers, MX104 routers, MX2010 routers, MX2020 routers, MX Series 3D Universal Edge Routers, QFX3008-I Interconnect devices, QFX Series, OCX Series, EX Series switches, and PTX Series Packet Transport Routers only) Show information about the fan tray and fans.

Options **all-members**—(MX Series routers only) (Optional) Display information about the fan tray and fans for all members of the Virtual Chassis configuration.

local—(MX Series routers only) (Optional) Display information about the fan tray and fans for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display information about the fan tray and fans for the specified member of the Virtual Chassis configuration. For an MX Series Virtual Chassis, replace *member-id* variable with a value 0 or 1.

interconnect-device *name*—(QFX3000-G QFabric systems only) (Optional) Display information about the fan tray and fans for the specified QFX3008-I Interconnect device.

lcc *number*—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display information about the fan tray and fans for the specified T640 router (line-card chassis) that is connected to a TX Matrix router. On a TX Matrix Plus router, display information about the fan tray and fans for the specified router (line-card chassis) that is connected to a TX Matrix Plus router.

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

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

satellite [*slot-id slot-id* | *device-alias alias-name*]—(Junos Fusion only) (Optional) Display information about the fan tray and fans for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.

scc—(TX Matrix routers only) (Optional) Display information about the fan tray and fans for the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Display information about the fan tray and fans for the TX Matrix Plus router (switch-fabric chassis). Replace *number* variable with 0.

Required Privilege Level view

List of Sample Output

[show chassis fan on page 142](#)
[show chassis fan \(QFabric Systems\) on page 142](#)
[show chassis fan \(EX Series Switches\) on page 144](#)
[show chassis fan \(T320 Router\) on page 144](#)
[show chassis fan \(T640 Router\) on page 144](#)
[show chassis fan \(T1600 Router\) on page 145](#)
[show chassis fan \(T4000 Core Router\) on page 145](#)
[show chassis fan \(TX Matrix Router\) on page 146](#)
[show chassis fan \(TX Matrix Plus Router\) on page 146](#)
[show chassis fan \(TX Matrix Plus Router with 3D SIBs\) on page 148](#)
[show chassis fan \(PTX5000 Packet Transport Router\) on page 150](#)
[show chassis fan \(MX104 Router\) on page 150](#)
[show chassis fan \(MX2010 Router\) on page 150](#)
[show chassis fan \(MX2020 Router\) on page 151](#)
[show chassis fan \(ACX4000 Router\) on page 151](#)
[show chassis fan \(QFX5100 Switch and OCX Series\) on page 151](#)

Output Fields Table 8 on page 141 lists the output fields for the **show chassis fan** command. Output fields are listed in the approximate order in which they appear.

Table 8: show chassis fan Output Fields

Field Name	Field Description
Item	Fan item identifier.
Status	Status of the fan: <ul style="list-style-type: none"> • OK—Fan is running properly and within the normal range. • Check—Fan is in Check state because of some fault or alarm condition.
RPM	(T Series routers, TX Matrix routers, TX Matrix Plus routers, MX Series 3D Universal Edge Routers, QFX3108 Interconnect devices, and EX Series switches only) Fan speed in revolutions per minute (RPM).
% RPM	(MX2010 routers, MX2020 routers, and PTX Series Packet Transport Routers only) Percentage of the fan speed being used.

Table 8: show chassis fan Output Fields (*continued*)

Field Name	Field Description
Measurement	<p>(T Series routers, TX Matrix routers, TX Matrix Plus routers, MX Series 3D Universal Edge Routers, QFX3108 Interconnect devices, and EX Series switches only) Fan speed status based on different chassis cooling requirements:</p> <ul style="list-style-type: none"> • Spinning at high speed • Spinning at intermediate speed • Spinning at normal speed • Spinning at low speed (except EX Series switches) <p>(MX2010 routers, MX2020 routers, and PTX Series Packet Transport Routers only) Fan speed in revolutions per minute (RPM) for each fan in the fan tray.</p>

Sample Output

show chassis fan

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Top Tray Fan 1	OK	3790	Spinning at normal speed
Top Tray Fan 2	OK	3769	Spinning at normal speed
Top Tray Fan 3	OK	3769	Spinning at normal speed
Top Tray Fan 4	OK	3790	Spinning at normal speed
Top Tray Fan 5	OK	3790	Spinning at normal speed
Top Tray Fan 6	OK	3769	Spinning at normal speed
Top Tray Fan 7	OK	3790	Spinning at normal speed
Top Tray Fan 8	OK	3769	Spinning at normal speed
Top Tray Fan 9	OK	3769	Spinning at normal speed
Top Tray Fan 10	OK	3790	Spinning at normal speed
Top Tray Fan 11	OK	3790	Spinning at normal speed
Top Tray Fan 12	OK	3769	Spinning at normal speed
Bottom Tray Fan 1	OK	2880	Spinning at normal speed
Bottom Tray Fan 2	OK	2912	Spinning at normal speed
Bottom Tray Fan 3	OK	2928	Spinning at normal speed
Bottom Tray Fan 4	OK	2896	Spinning at normal speed
Bottom Tray Fan 5	OK	2896	Spinning at normal speed
Bottom Tray Fan 6	OK	2928	Spinning at normal speed

show chassis fan (QFabric Systems)

```
user@host> show chassis fan interconnect-device interconnect1
```

Item	Status	RPM	Measurement
TFT 0 Fan 0	OK	2849	Spinning at normal speed
TFT 0 Fan 1	OK	2821	Spinning at normal speed
TFT 0 Fan 2	OK	2735	Spinning at normal speed
TFT 0 Fan 3	OK	2815	Spinning at normal speed
TFT 0 Fan 4	OK	2828	Spinning at normal speed
TFT 0 Fan 5	OK	2863	Spinning at normal speed
BFT 1 Fan 0	OK	2941	Spinning at normal speed
BFT 1 Fan 1	OK	3008	Spinning at normal speed
BFT 1 Fan 2	OK	3073	Spinning at normal speed
BFT 1 Fan 3	OK	2925	Spinning at normal speed

BFT 1 Fan 4	OK	2863	Spinning at normal speed
BFT 1 Fan 5	OK	2933	Spinning at normal speed
SFT 0 Fan 0 Rotor 0	OK	15472	Spinning at normal speed
SFT 0 Fan 0 Rotor 1	OK	14477	Spinning at normal speed
SFT 0 Fan 1 Rotor 0	OK	15561	Spinning at normal speed
SFT 0 Fan 1 Rotor 1	OK	14210	Spinning at normal speed
SFT 0 Fan 2 Rotor 0	OK	16167	Spinning at normal speed
SFT 0 Fan 2 Rotor 1	OK	14248	Spinning at normal speed
SFT 0 Fan 3 Rotor 0	OK	16463	Spinning at normal speed
SFT 0 Fan 3 Rotor 1	OK	14099	Spinning at normal speed
SFT 1 Fan 0 Rotor 0	OK	15083	Spinning at normal speed
SFT 1 Fan 0 Rotor 1	OK	13533	Spinning at normal speed
SFT 1 Fan 1 Rotor 0	OK	16071	Spinning at normal speed
SFT 1 Fan 1 Rotor 1	OK	14400	Spinning at normal speed
SFT 1 Fan 2 Rotor 0	OK	15517	Spinning at normal speed
SFT 1 Fan 2 Rotor 1	OK	14210	Spinning at normal speed
SFT 1 Fan 3 Rotor 0	OK	16413	Spinning at normal speed
SFT 1 Fan 3 Rotor 1	OK	14400	Spinning at normal speed
SFT 2 Fan 0 Rotor 0	OK	15297	Spinning at normal speed
SFT 2 Fan 0 Rotor 1	OK	14634	Spinning at normal speed
SFT 2 Fan 1 Rotor 0	OK	15561	Spinning at normal speed
SFT 2 Fan 1 Rotor 1	OK	14285	Spinning at normal speed
SFT 2 Fan 2 Rotor 0	OK	15835	Spinning at normal speed
SFT 2 Fan 2 Rotor 1	OK	14400	Spinning at normal speed
SFT 2 Fan 3 Rotor 0	OK	15789	Spinning at normal speed
SFT 2 Fan 3 Rotor 1	OK	14323	Spinning at normal speed
SFT 3 Fan 0 Rotor 0	OK	16314	Spinning at normal speed
SFT 3 Fan 0 Rotor 1	OK	14876	Spinning at normal speed
SFT 3 Fan 1 Rotor 0	OK	15835	Spinning at normal speed
SFT 3 Fan 1 Rotor 1	OK	14323	Spinning at normal speed
SFT 3 Fan 2 Rotor 0	OK	16265	Spinning at normal speed
SFT 3 Fan 2 Rotor 1	OK	14594	Spinning at normal speed
SFT 3 Fan 3 Rotor 0	OK	16071	Spinning at normal speed
SFT 3 Fan 3 Rotor 1	OK	14323	Spinning at normal speed
SFT 4 Fan 0 Rotor 0	OK	15652	Spinning at normal speed
SFT 4 Fan 0 Rotor 1	OK	14438	Spinning at normal speed
SFT 4 Fan 1 Rotor 0	OK	16167	Spinning at normal speed
SFT 4 Fan 1 Rotor 1	OK	14555	Spinning at normal speed
SFT 4 Fan 2 Rotor 0	OK	16023	Spinning at normal speed
SFT 4 Fan 2 Rotor 1	OK	14361	Spinning at normal speed
SFT 4 Fan 3 Rotor 0	OK	16216	Spinning at normal speed
SFT 4 Fan 3 Rotor 1	OK	14438	Spinning at normal speed
SFT 5 Fan 0 Rotor 0	OK	15297	Spinning at normal speed
SFT 5 Fan 0 Rotor 1	OK	14173	Spinning at normal speed
SFT 5 Fan 1 Rotor 0	OK	15472	Spinning at normal speed
SFT 5 Fan 1 Rotor 1	OK	13846	Spinning at normal speed
SFT 5 Fan 2 Rotor 0	OK	15340	Spinning at normal speed
SFT 5 Fan 2 Rotor 1	OK	13917	Spinning at normal speed
SFT 5 Fan 3 Rotor 0	OK	15835	Spinning at normal speed
SFT 5 Fan 3 Rotor 1	OK	13917	Spinning at normal speed
SFT 6 Fan 0 Rotor 0	OK	15743	Spinning at normal speed
SFT 6 Fan 0 Rotor 1	OK	14594	Spinning at normal speed
SFT 6 Fan 1 Rotor 0	OK	16167	Spinning at normal speed
SFT 6 Fan 1 Rotor 1	OK	14634	Spinning at normal speed
SFT 6 Fan 2 Rotor 0	OK	16167	Spinning at normal speed
SFT 6 Fan 2 Rotor 1	OK	14516	Spinning at normal speed
SFT 6 Fan 3 Rotor 0	OK	16666	Spinning at normal speed
SFT 6 Fan 3 Rotor 1	OK	14438	Spinning at normal speed
SFT 7 Fan 0 Rotor 0	OK	15517	Spinning at normal speed
SFT 7 Fan 0 Rotor 1	OK	14438	Spinning at normal speed
SFT 7 Fan 1 Rotor 0	OK	15517	Spinning at normal speed

SFT 7 Fan 1 Rotor 1	OK	14361	Spinning at normal speed
SFT 7 Fan 2 Rotor 0	OK	16167	Spinning at normal speed
SFT 7 Fan 2 Rotor 1	OK	14555	Spinning at normal speed
SFT 7 Fan 3 Rotor 0	OK	15697	Spinning at normal speed
SFT 7 Fan 3 Rotor 1	OK	14361	Spinning at normal speed

show chassis fan (EX Series Switches)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Fan 1	OK	3477	Spinning at normal speed
Fan 2	OK	3477	Spinning at normal speed
Fan 3	OK	3479	Spinning at normal speed
Fan 4	OK	3508	Spinning at normal speed
Fan 5	OK	3517	Spinning at normal speed
Fan 6	OK	3531	Spinning at normal speed
Fan 7	OK	3439	Spinning at normal speed
Fan 8	OK	3424	Spinning at normal speed
Fan 9	OK	3413	Spinning at normal speed
Fan 10	OK	3439	Spinning at normal speed
Fan 11	OK	3446	Spinning at normal speed
Fan 12	OK	3432	Spinning at normal speed

show chassis fan (T320 Router)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	2850	Spinning at normal speed
Top Left Middle fan	OK	2820	Spinning at normal speed
Top Left Rear fan	OK	2970	Spinning at normal speed
Top Right Front fan	OK	2790	Spinning at normal speed
Top Right Middle fan	OK	2640	Spinning at normal speed
Top Right Rear fan	OK	2790	Spinning at normal speed
Bottom Left Front fan	OK	2520	Spinning at normal speed
Bottom Left Middle fan	OK	2610	Spinning at normal speed
Bottom Left Rear fan	OK	2550	Spinning at normal speed
Bottom Right Front fan	OK	2610	Spinning at normal speed
Bottom Right Middle fan	OK	2880	Spinning at normal speed
Bottom Right Rear fan	OK	2790	Spinning at normal speed
Rear Tray Top fan	OK	2130	Spinning at normal speed
Rear Tray Second fan	OK	2190	Spinning at normal speed
Rear Tray Middle fan	OK	2250	Spinning at normal speed
Rear Tray Fourth fan	OK	2220	Spinning at normal speed
Rear Tray Bottom fan	OK	2280	Spinning at normal speed

show chassis fan (T640 Router)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3420	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3450	Spinning at normal speed
Bottom Left Front fan	OK	3390	Spinning at normal speed
Bottom Left Middle fan	OK	3420	Spinning at normal speed
Bottom Left Rear fan	OK	3390	Spinning at normal speed
Bottom Right Front fan	OK	3390	Spinning at normal speed

Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3390	Spinning at normal speed
Rear Tray Top fan	OK	5220	Spinning at normal speed
Rear Tray Second fan	OK	5220	Spinning at normal speed
Rear Tray Third fan	OK	5220	Spinning at normal speed
Rear Tray Fourth fan	OK	5220	Spinning at normal speed
Rear Tray Fifth fan	OK	5220	Spinning at normal speed
Rear Tray Sixth fan	OK	5220	Spinning at normal speed
Rear Tray Seventh fan	OK	5220	Spinning at normal speed
Rear Tray Bottom fan	OK	5220	Spinning at normal speed

show chassis fan (T1600 Router)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3420	Spinning at normal speed
Top Left Rear fan	OK	3450	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3390	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3420	Spinning at normal speed
Bottom Left Rear fan	OK	3390	Spinning at normal speed
Bottom Right Front fan	OK	3390	Spinning at normal speed
Bottom Right Middle fan	OK	3420	Spinning at normal speed
Bottom Right Rear fan	OK	3390	Spinning at normal speed
Rear Tray Top fan	OK	5190	Spinning at normal speed
Rear Tray Second fan	OK	5190	Spinning at normal speed
Rear Tray Third fan	OK	5190	Spinning at normal speed
Rear Tray Fourth fan	OK	5190	Spinning at normal speed
Rear Tray Fifth fan	OK	5190	Spinning at normal speed
Rear Tray Sixth fan	OK	5190	Spinning at normal speed
Rear Tray Seventh fan	OK	5190	Spinning at normal speed
Rear Tray Bottom fan	OK	5190	Spinning at normal speed

show chassis fan (T4000 Core Router)

```
user@host> show chassis fan
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	5190	Spinning at high speed
Top Left Middle fan	OK	5220	Spinning at high speed
Top Left Rear fan	OK	5190	Spinning at high speed
Top Right Front fan	OK	5160	Spinning at high speed
Top Right Middle fan	OK	5190	Spinning at high speed
Top Right Rear fan	OK	5160	Spinning at high speed
Bottom Left Front fan	OK	6030	Spinning at high speed
Bottom Left Middle fan	OK	6090	Spinning at high speed
Bottom Left Rear fan	OK	6090	Spinning at high speed
Bottom Right Front fan	OK	6030	Spinning at high speed
Bottom Right Middle fan	OK	6060	Spinning at high speed
Bottom Right Rear fan	OK	6060	Spinning at high speed
Rear Tray Top fan	OK	10000	Spinning at high speed
Rear Tray Second fan	OK	10000	Spinning at high speed
Rear Tray Third fan	OK	10000	Spinning at high speed
Rear Tray Fourth fan	OK	10000	Spinning at high speed
Rear Tray Fifth fan	OK	10000	Spinning at high speed
Rear Tray Sixth fan	OK	10000	Spinning at high speed

Rear Tray Seventh fan	OK	10000	Spinning at high speed
Rear Tray Bottom fan	OK	10000	Spinning at high speed

show chassis fan (TX Matrix Router)

```
user@host> show chassis fan
scc-re0:
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3390	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3390	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3390	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3450	Spinning at normal speed
Bottom Left Rear fan	OK	3420	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3420	Spinning at normal speed
Bottom Right Rear fan	OK	3420	Spinning at normal speed
Rear Tray Top fan	OK	3420	Spinning at normal speed
Rear Tray Second fan	OK	5190	Spinning at normal speed
Rear Tray Third fan	OK	5190	Spinning at normal speed
Rear Tray Fourth fan	OK	5190	Spinning at normal speed
Rear Tray Fifth fan	OK	3420	Spinning at normal speed
Rear Tray Sixth fan	OK	3420	Spinning at normal speed
Rear Tray Seventh fan	OK	3420	Spinning at normal speed
Rear Tray Bottom fan	OK	3420	Spinning at normal speed

```
1cc2-re0:
```

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3420	Spinning at normal speed
Top Left Rear fan	OK	3450	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3450	Spinning at normal speed
Top Right Rear fan	OK	3360	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3480	Spinning at normal speed
Bottom Left Rear fan	OK	3420	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3420	Spinning at normal speed
Rear Tray Top fan	OK	3420	Spinning at normal speed
Rear Tray Second fan	OK	3420	Spinning at normal speed
Rear Tray Third fan	OK	3420	Spinning at normal speed
Rear Tray Fourth fan	OK	3420	Spinning at normal speed
Rear Tray Fifth fan	OK	3420	Spinning at normal speed
Rear Tray Sixth fan	OK	3420	Spinning at normal speed
Rear Tray Seventh fan	OK	3420	Spinning at normal speed
Rear Tray Bottom fan	OK	3420	Spinning at normal speed

show chassis fan (TX Matrix Plus Router)

```
user@host> show chassis fan
sfc0-re0:
```

Item	Status	RPM	Measurement
Fan Tray 0 Fan 1	OK	4350	Spinning at normal speed

Fan Tray 0 Fan 2	OK	4380	Spinning at normal speed
Fan Tray 0 Fan 3	OK	4410	Spinning at normal speed
Fan Tray 0 Fan 4	OK	4380	Spinning at normal speed
Fan Tray 0 Fan 5	OK	4350	Spinning at normal speed
Fan Tray 0 Fan 6	OK	4380	Spinning at normal speed
Fan Tray 1 Fan 1	OK	4410	Spinning at normal speed
Fan Tray 1 Fan 2	OK	4380	Spinning at normal speed
Fan Tray 1 Fan 3	OK	4410	Spinning at normal speed
Fan Tray 1 Fan 4	OK	4380	Spinning at normal speed
Fan Tray 1 Fan 5	OK	4410	Spinning at normal speed
Fan Tray 1 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 2 Fan 1	OK	4380	Spinning at normal speed
Fan Tray 2 Fan 2	OK	4380	Spinning at normal speed
Fan Tray 2 Fan 3	OK	4380	Spinning at normal speed
Fan Tray 2 Fan 4	OK	4410	Spinning at normal speed
Fan Tray 2 Fan 5	OK	4380	Spinning at normal speed
Fan Tray 2 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 2 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 2 Fan 8	OK	4380	Spinning at normal speed
Fan Tray 2 Fan 9	OK	4380	Spinning at normal speed
Fan Tray 3 Fan 1	OK	4350	Spinning at normal speed
Fan Tray 3 Fan 2	OK	4380	Spinning at normal speed
Fan Tray 3 Fan 3	OK	4410	Spinning at normal speed
Fan Tray 3 Fan 4	OK	4440	Spinning at normal speed
Fan Tray 3 Fan 5	OK	4380	Spinning at normal speed
Fan Tray 3 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 3 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 3 Fan 8	OK	4380	Spinning at normal speed
Fan Tray 3 Fan 9	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 1	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 2	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 3	OK	4380	Spinning at normal speed
Fan Tray 4 Fan 4	OK	4380	Spinning at normal speed
Fan Tray 4 Fan 5	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 8	OK	4410	Spinning at normal speed
Fan Tray 4 Fan 9	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 1	OK	4350	Spinning at normal speed
Fan Tray 5 Fan 2	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 3	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 4	OK	4350	Spinning at normal speed
Fan Tray 5 Fan 5	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 6	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 7	OK	4410	Spinning at normal speed
Fan Tray 5 Fan 8	OK	4380	Spinning at normal speed
Fan Tray 5 Fan 9	OK	4410	Spinning at normal speed

1cc0-re0:

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3420	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3450	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3420	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3420	Spinning at normal speed
Bottom Left Rear fan	OK	3390	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed

Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3390	Spinning at normal speed
Rear Tray Top fan	OK	7050	Spinning at normal speed
Rear Tray Second fan	OK	7050	Spinning at normal speed
Rear Tray Third fan	OK	7050	Spinning at normal speed
Rear Tray Fourth fan	OK	7050	Spinning at normal speed
Rear Tray Fifth fan	OK	7050	Spinning at normal speed
Rear Tray Sixth fan	OK	7050	Spinning at normal speed
Rear Tray Seventh fan	OK	7050	Spinning at normal speed
Rear Tray Bottom fan	OK	7050	Spinning at normal speed

show chassis fan (TX Matrix Plus Router with 3D SIBs)

```
user@host> show chassis fan
sfc0-re0:
```

Item	Status	RPM	Measurement
Fan Tray 0 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 2	OK	4860	Spinning at normal speed
Fan Tray 0 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 4	OK	4800	Spinning at normal speed
Fan Tray 0 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 0 Fan 6	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 1	OK	4800	Spinning at normal speed
Fan Tray 1 Fan 2	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 3	OK	4800	Spinning at normal speed
Fan Tray 1 Fan 4	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 5	OK	4770	Spinning at normal speed
Fan Tray 1 Fan 6	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 1	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 2	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 6	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 7	OK	4800	Spinning at normal speed
Fan Tray 2 Fan 8	OK	4830	Spinning at normal speed
Fan Tray 2 Fan 9	OK	4800	Spinning at normal speed
Fan Tray 3 Fan 1	OK	4860	Spinning at normal speed
Fan Tray 3 Fan 2	OK	4860	Spinning at normal speed
Fan Tray 3 Fan 3	OK	4800	Spinning at normal speed
Fan Tray 3 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 6	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 7	OK	4830	Spinning at normal speed
Fan Tray 3 Fan 8	OK	4800	Spinning at normal speed
Fan Tray 3 Fan 9	OK	4800	Spinning at normal speed
Fan Tray 4 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 2	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 4	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 5	OK	4830	Spinning at normal speed
Fan Tray 4 Fan 6	OK	4860	Spinning at normal speed
Fan Tray 4 Fan 7	OK	4800	Spinning at normal speed
Fan Tray 4 Fan 8	OK	4860	Spinning at normal speed
Fan Tray 4 Fan 9	OK	4770	Spinning at normal speed
Fan Tray 5 Fan 1	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 2	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 3	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 4	OK	4800	Spinning at normal speed
Fan Tray 5 Fan 5	OK	4800	Spinning at normal speed

Fan Tray 5 Fan 6	OK	4800	Spinning at normal speed
Fan Tray 5 Fan 7	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 8	OK	4830	Spinning at normal speed
Fan Tray 5 Fan 9	Check	2010	

1cc0-re0:

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3390	Spinning at normal speed
Top Left Rear fan	OK	3390	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3450	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3390	Spinning at normal speed
Bottom Left Rear fan	OK	3420	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3420	Spinning at normal speed
Rear Tray fan 1 (Top)	OK	7740	Spinning at normal speed
Rear Tray fan 2	OK	7740	Spinning at normal speed
Rear Tray fan 3	OK	7740	Spinning at normal speed
Rear Tray fan 4	OK	7740	Spinning at normal speed
Rear Tray fan 5	OK	7740	Spinning at normal speed
Rear Tray fan 6	OK	7740	Spinning at normal speed
Rear Tray fan 7	OK	7740	Spinning at normal speed
Rear Tray fan 8	OK	7740	Spinning at normal speed
Rear Tray fan 9	OK	7740	Spinning at normal speed
Rear Tray fan 10	OK	7740	Spinning at normal speed
Rear Tray fan 11	OK	7740	Spinning at normal speed
Rear Tray fan 12	OK	7740	Spinning at normal speed
Rear Tray fan 13	OK	7740	Spinning at normal speed
Rear Tray fan 14	OK	7740	Spinning at normal speed
Rear Tray fan 15	OK	7740	Spinning at normal speed
Rear Tray fan 16 (Bottom)	OK	7740	Spinning at normal speed

1cc2-re0:

Item	Status	RPM	Measurement
Top Left Front fan	OK	3420	Spinning at normal speed
Top Left Middle fan	OK	3390	Spinning at normal speed
Top Left Rear fan	OK	3420	Spinning at normal speed
Top Right Front fan	OK	3420	Spinning at normal speed
Top Right Middle fan	OK	3420	Spinning at normal speed
Top Right Rear fan	OK	3450	Spinning at normal speed
Bottom Left Front fan	OK	3420	Spinning at normal speed
Bottom Left Middle fan	OK	3390	Spinning at normal speed
Bottom Left Rear fan	OK	3420	Spinning at normal speed
Bottom Right Front fan	OK	3420	Spinning at normal speed
Bottom Right Middle fan	OK	3390	Spinning at normal speed
Bottom Right Rear fan	OK	3420	Spinning at normal speed
Rear Tray fan 1 (Top)	OK	7740	Spinning at normal speed
Rear Tray fan 2	OK	7740	Spinning at normal speed
Rear Tray fan 3	OK	7740	Spinning at normal speed
Rear Tray fan 4	OK	7740	Spinning at normal speed
Rear Tray fan 5	OK	7740	Spinning at normal speed
Rear Tray fan 6	OK	7740	Spinning at normal speed
Rear Tray fan 7	OK	7740	Spinning at normal speed
Rear Tray fan 8	OK	7740	Spinning at normal speed
Rear Tray fan 9	OK	7740	Spinning at normal speed

Rear Tray fan 10	OK	7740	Spinning at normal speed
Rear Tray fan 11	OK	7740	Spinning at normal speed
Rear Tray fan 12	OK	7740	Spinning at normal speed
Rear Tray fan 13	OK	7740	Spinning at normal speed
Rear Tray fan 14	OK	7740	Spinning at normal speed
Rear Tray fan 15	OK	7740	Spinning at normal speed
Rear Tray fan 16 (Bottom)	OK	7740	Spinning at normal speed

show chassis fan (PTX5000 Packet Transport Router)

```
user@host> show chassis fan
user@host> show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 1	OK	29%	2700 RPM
Fan Tray 0 Fan 2	OK	29%	2700 RPM
Fan Tray 0 Fan 3	OK	29%	2742 RPM
Fan Tray 0 Fan 4	OK	29%	2700 RPM
Fan Tray 0 Fan 5	OK	30%	2828 RPM
Fan Tray 0 Fan 6	OK	30%	2828 RPM
Fan Tray 0 Fan 7	OK	29%	2700 RPM
Fan Tray 0 Fan 8	OK	30%	2785 RPM
Fan Tray 0 Fan 9	OK	30%	2828 RPM
Fan Tray 0 Fan 10	OK	30%	2828 RPM
Fan Tray 0 Fan 11	OK	30%	2785 RPM
Fan Tray 0 Fan 12	OK	30%	2828 RPM
Fan Tray 0 Fan 13	OK	31%	2871 RPM
Fan Tray 0 Fan 14	OK	30%	2828 RPM
Fan Tray 1 Fan 1	OK	42%	3033 RPM
Fan Tray 1 Fan 2	OK	42%	3066 RPM
Fan Tray 1 Fan 3	OK	43%	3099 RPM
Fan Tray 1 Fan 4	OK	43%	3166 RPM
Fan Tray 1 Fan 5	OK	45%	3266 RPM
Fan Tray 1 Fan 6	OK	43%	3133 RPM
Fan Tray 2 Fan 1	OK	29%	2099 RPM
Fan Tray 2 Fan 2	OK	30%	2199 RPM
Fan Tray 2 Fan 3	OK	30%	2166 RPM
Fan Tray 2 Fan 4	OK	33%	2399 RPM
Fan Tray 2 Fan 5	OK	29%	2133 RPM
Fan Tray 2 Fan 6	OK	32%	2366 RPM

show chassis fan (MX104 Router)

```
user@host > show chassis fan
```

Item	Status	RPM	Measurement
Fan 1	OK	5640	Spinning at normal speed
Fan 2	OK	5640	Spinning at normal speed
Fan 3	OK	5760	Spinning at normal speed
Fan 4	OK	5640	Spinning at normal speed
Fan 5	OK	5640	Spinning at normal speed

show chassis fan (MX2010 Router)

```
user@host > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 1	OK	37%	3360 RPM
Fan Tray 0 Fan 2	OK	38%	3480 RPM
Fan Tray 0 Fan 3	OK	37%	3360 RPM
Fan Tray 0 Fan 4	OK	37%	3360 RPM
Fan Tray 0 Fan 5	OK	38%	3480 RPM
Fan Tray 0 Fan 6	OK	37%	3360 RPM
Fan Tray 1 Fan 1	OK	38%	3480 RPM
Fan Tray 1 Fan 2	OK	40%	3600 RPM

Fan Tray 1 Fan 3	OK	38%	3480 RPM
Fan Tray 1 Fan 4	OK	38%	3480 RPM
Fan Tray 1 Fan 5	OK	38%	3480 RPM
Fan Tray 1 Fan 6	OK	38%	3480 RPM
Fan Tray 2 Fan 1	OK	38%	3480 RPM
Fan Tray 2 Fan 2	OK	41%	3720 RPM
Fan Tray 2 Fan 3	OK	38%	3480 RPM
Fan Tray 2 Fan 4	OK	38%	3480 RPM
Fan Tray 2 Fan 5	OK	38%	3480 RPM
Fan Tray 2 Fan 6	OK	38%	3480 RPM
Fan Tray 3 Fan 1	OK	38%	3480 RPM
Fan Tray 3 Fan 2	OK	40%	3600 RPM
Fan Tray 3 Fan 3	OK	40%	3600 RPM
Fan Tray 3 Fan 4	OK	40%	3600 RPM
Fan Tray 3 Fan 5	OK	40%	3600 RPM
Fan Tray 3 Fan 6	OK	38%	3480 RPM

show chassis fan (MX2020 Router)

```
user@host > show chassis fan
```

Item	Status	% RPM	Measurement
Fan Tray 0 Fan 1	OK	37%	3360 RPM
Fan Tray 0 Fan 2	OK	37%	3360 RPM
Fan Tray 0 Fan 3	OK	36%	3240 RPM
Fan Tray 0 Fan 4	OK	37%	3360 RPM
Fan Tray 0 Fan 5	OK	37%	3360 RPM
Fan Tray 0 Fan 6	OK	37%	3360 RPM
Fan Tray 1 Fan 1	OK	37%	3360 RPM
Fan Tray 1 Fan 2	OK	37%	3360 RPM
Fan Tray 1 Fan 3	OK	37%	3360 RPM
Fan Tray 1 Fan 4	OK	37%	3360 RPM
Fan Tray 1 Fan 5	OK	37%	3360 RPM
Fan Tray 1 Fan 6	OK	36%	3240 RPM
Fan Tray 2 Fan 1	OK	37%	3360 RPM
Fan Tray 2 Fan 2	OK	37%	3360 RPM
Fan Tray 2 Fan 3	OK	37%	3360 RPM
Fan Tray 2 Fan 4	OK	37%	3360 RPM
Fan Tray 2 Fan 5	OK	37%	3360 RPM
Fan Tray 2 Fan 6	OK	38%	3480 RPM
Fan Tray 3 Fan 1	OK	38%	3480 RPM
Fan Tray 3 Fan 2	OK	38%	3480 RPM
Fan Tray 3 Fan 3	OK	38%	3480 RPM
Fan Tray 3 Fan 4	OK	37%	3360 RPM
Fan Tray 3 Fan 5	OK	37%	3360 RPM
Fan Tray 3 Fan 6	OK	37%	3360 RPM

show chassis fan (ACX4000 Router)

```
user@host > show chassis fan
```

Item	Status	RPM	Measurement
Fan 1	OK	4140	Spinning at normal speed
Fan 2	OK	4200	Spinning at normal speed

show chassis fan (QFX5100 Switch and OCX Series)

```
user@switch > show chassis fan
```

Item	Status	RPM	Measurement
FPC 0 Tray 0 Fan 0	OK	6428	Spinning at normal speed
FPC 0 Tray 0 Fan 1	OK	5515	Spinning at normal speed
FPC 0 Tray 1 Fan 0	OK	6360	Spinning at normal speed
FPC 0 Tray 1 Fan 1	OK	5532	Spinning at normal speed

show chassis firmware

List of Syntax	Syntax on page 153 Syntax (TX Matrix Routers) on page 153 Syntax (TX Matrix Plus Routers) on page 153 Syntax (MX Series Routers) on page 153 Syntax (MX104, MX2010, and MX2020 3D Universal Edge Routers) on page 153 Syntax (QFX Series) on page 153 Syntax (OCX Series) on page 153 Syntax (ACX Series Universal Access Routers) on page 153 Syntax (EX Series Switches) on page 153
Syntax	show chassis firmware
Syntax (TX Matrix Routers)	show chassis firmware <lcc <i>number</i> scc>
Syntax (TX Matrix Plus Routers)	show chassis firmware <lcc <i>number</i> sfc <i>number</i> >
Syntax (MX Series Routers)	show chassis firmware <all-members> <local> <member <i>member-id</i> >
Syntax (MX104, MX2010, and MX2020 3D Universal Edge Routers)	show chassis firmware <satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]>
Syntax (QFX Series)	show chassis firmware interconnect-device <i>name</i> node-device <i>name</i>
Syntax (OCX Series)	show chassis firmware
Syntax (ACX Series Universal Access Routers)	show chassis firmware
Syntax (EX Series Switches)	show chassis firmware <detail> <satellite [slot-id <i>slot-id</i> device-alias <i>alias-name</i>]>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.4 for EX Series switches. sfc option introduced for the TX Matrix Plus router in Junos OS Release 9.6. Command introduced for EX8200 switches in Junos OS Release 10.2 for EX Series switches. Command introduced in Junos OS Release 11.1 for QFX Series. Command introduced in Junos OS Release 12.2 for ACX Series Universal Access Routers.

Command introduced in Junos OS Release 12.3 for MX2010 3D Universal Edge Routers.
Command introduced in Junos OS Release 12.3 for MX2020 3D Universal Edge Routers.
Command introduced in Junos OS Release 12.3 for ACX4000 Universal Access Routers.
Command introduced in Junos OS Release 13.2 for MX104 3D Universal Edge Routers.
Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.
satellite option introduced in Junos OS Release 14.2R3.

Description On routers and switches, display the version levels of the firmware running on the System Control Board (SCB), Switching and Forwarding Module (SFM), System and Switch Board (SSB), Forwarding Engine Board (FEB), Flexible PIC Concentrators (FPCs), and Routing Engines. On a TX Matrix Plus router, display the version levels of the firmware running on the FPCs and the Switch Processor Mezzanine Board (SPMBs).

On EX2200, EX3200, EX4200, QFX Series, and OCX Series switches, display the version levels of the firmware running on the switch. On an EX8208 switch, display the version levels of the firmware running on the Switch Fabric and Routing Engine (SRE) modules and on the line cards (shown as FPCs). On an EX8216 switch, display the version levels of the firmware running on the Routing Engine (RE) modules and on the line cards (shown as FPCs).

Options **none**—Display the version levels of the firmware running. For an EX4200 switch that is a member of a Virtual Chassis, display version levels for all members. For a TX Matrix router, display version levels for the firmware on the TX Matrix router and on all the T640 routers connected to the TX Matrix router. For a TX Matrix Plus router, display version levels for the firmware on the TX Matrix Plus router and on all the routers connected to the TX Matrix Plus router.

all-members—(MX Series routers only) (Optional) Display the version levels of the firmware running for all members of the Virtual Chassis configuration.

interconnect-device *name*—(QFabric systems) (Optional) Display the version levels of the firmware running on the Interconnect device.

lcc *number*—(TX Matrix and TX Matrix Plus routers only) (Optional) On a TX Matrix router, display version levels for the firmware on a specified T640 router (line-card chassis) that is connected to the TX Matrix router. On a TX Matrix Plus router, display the version levels for the firmware on a specified router (line-card chassis) that is connected to the TX Matrix Plus router.

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

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

local—(MX Series routers only) (Optional) Display the version levels of the firmware running for the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display the version levels of the firmware running for the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

node-device—(QFabric systems only) (Optional) Display the version levels of the firmware running on the Node device.

satellite [*slot-id slot-id* | *device-alias alias-name*]—(Junos Fusion only) (Optional) Display version levels of the firmware running for the specified satellite device or devices in a Junos Fusion, or for all satellite devices if no satellite devices are specified.

scc—(TX Matrix router only) (Optional) Display version levels for the firmware on the TX Matrix router (switch-card chassis).

sfc *number*—(TX Matrix Plus router only) (Optional) Display version levels for the firmware on the TX Matrix Plus router (or switch-fabric chassis). Replace *number* with 0.

detail—(EX3200, EX3300, EX4200, and EX4500 standalone and Virtual Chassis member switches only) (Optional) Display version levels of the firmware running on the switch for its programmable hardware components.

Required Privilege Level

view

List of Sample Output

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[show chassis firmware \(M20 Router\) on page 156](#)
[show chassis firmware \(M40 Router\) on page 157](#)
[show chassis firmware \(M120 Router\) on page 157](#)
[show chassis firmware \(M160 Router\) on page 157](#)
[show chassis firmware \(MX104 Router\) on page 157](#)
[show chassis firmware \(MX240 Router\) on page 157](#)
[show chassis firmware \(MX480 Router\) on page 158](#)
[show chassis firmware \(MX960 Router\) on page 158](#)
[show chassis firmware \(MX2010 Router\) on page 158](#)
[show chassis firmware \(MX2020 Router\) on page 158](#)
[show chassis firmware \(MX240, MX480, MX960 Router with Application Services Modular Line Card\) on page 159](#)
[show chassis firmware \(EX4200 Switch\) on page 159](#)
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[show chassis firmware \(EX9200 Switch\) on page 160](#)
[show chassis firmware lcc \(TX Matrix Router\) on page 160](#)
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[show chassis firmware \(QFX Series and OCX Series\) on page 163](#)
[show chassis firmware \(PTX1000 Packet Transport Routers\) on page 163](#)
[show chassis firmware interconnect-device \(QFabric System\) on page 163](#)

[show chassis firmware \(ACX2000 Universal Access Router\) on page 163](#)

[show chassis firmware detail \(EX3300 Switch\) on page 163](#)

[show chassis firmware \(MX Routers with Media Services Blade \[MSB\]\) on page 163](#)

Output Fields Table 9 on page 156 lists the output fields for the **show chassis firmware** command. Output fields are listed in the approximate order in which they appear.

Table 9: show chassis firmware Output Fields

Field Name	Field Description
Part	(MX Series, MX2010, and MX2020 routers) Chassis part name.
Type	(MX Series, MX2010, and MX2020 routers) Type of firmware: On routers: ROM or O/S . On switches: uboot or loader .
Version	(MX Series, MX2010, and MX2020 routers) Version of firmware running on the chassis part.
FPC	(<i>detail</i> option only) Number of FPC. For a standalone switch, the value is 0. For a Virtual Chassis configuration, value in the range of 0-9; refers to the member ID assigned to the switch.
AFEB	(MX104 routers) Version of the compact Forwarding Engine Board.
Boot	(<i>detail</i> option only) Version of the SYSPLD.
PoE	(<i>detail</i> option only) Version of the PoE firmware.
PFE-<number>	(<i>detail</i> option only) Version of the PFE used in the switch.
PHY-	(<i>detail</i> option only) Version of the physical layer device (PHY) used in the switch.
microcode	(<i>detail</i> option only) Microcode of the physical layer devices (PHY) used in the switch.
uboot	(<i>detail</i> option only) Version of the u-boot used in the switch.
loader	(<i>detail</i> option only) Version of the loader used in the switch.

Sample Output

show chassis firmware (M10 Router)

```

user@host> show chassis firmware
Part          Type          Version
Forwarding engine board  ROM          Juniper ROM Monitor Version 4.1b2
                                O/S          Version 4.1I1 by usera on 2000-04-24 11:27

```

show chassis firmware (M20 Router)

```

user@host> show chassis firmware

```

Part	Type	Version
System switch board	ROM	Juniper ROM Monitor Version 3.4b26
	O/S	Version 3.4I16 by userc on 2000-02-29 2
FPC 1	ROM	Juniper ROM Monitor Version 3.0b1
	O/S	Version 3.4I4 by userc on 2000-02-25 21
FPC 2	ROM	Juniper ROM Monitor Version 3.0b1
	O/S	Version 3.4I4 by userc on 2000-02-25 21

show chassis firmware (M40 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
System control board	ROM	Juniper ROM Monitor Version 2.0i126Copyri
	O/S	Version 2.0i1 by root on Thu Jul 23 00:51
FPC 5	ROM	Juniper ROM Monitor Version 2.0i49Copyrig
	O/S	Version 2.0i1 by root on Thu Jul 23 00:59

show chassis firmware (M120 Router)

```
user@host> show chassis firmware
```

FPC 2	ROM	Juniper ROM Monitor Version 8.0b29
	O/S	Version 8.2B1 by userb on 2006-10-18 16:2
FPC 3	ROM	Juniper ROM Monitor Version 8.0b29
	O/S	Version 8.2B1 by userb on 2006-10-18 16:2
FPC 4	ROM	Juniper ROM Monitor Version 8.0b29
	O/S	Version 8.2B1 by userb on 2006-10-18 16:2
FEB 3	ROM	Juniper ROM Monitor Version 8.0b29
	O/S	Version 8.2B1 by userb on 2006-10-18 16:1
FEB 4	ROM	Juniper ROM Monitor Version 8.0b29
	O/S	Version 8.2B1 by userb on 2006-10-18 16:1

show chassis firmware (M160 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
SFM 0	ROM	Juniper ROM Monitor Version 4.0b2
	O/S	Version 4.0I1 by usera on 2000-02-29 11:50
SFM 1	ROM	Juniper ROM Monitor Version 4.0b2
	O/S	Version 4.0I1 by usera on 2000-02-29 11:50
FPC 0	ROM	Juniper ROM Monitor Version 4.0b2
	O/S	Version 4.0I1 by usera on 2000-02-29 11:56
FPC 1	ROM	Juniper ROM Monitor Version 4.0b2
	O/S	Version 4.0I1 by usera on 2000-02-29 11:56
FPC 2	ROM	Juniper ROM Monitor Version 4.0b3
	O/S	Version 4.0I1 by usera on 2000-02-29 11:56

show chassis firmware (MX104 Router)

```
user@host > show chassis firmware
```

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 13.1b24
	O/S	Version 13.2-20130514.1 by userb on 2013-
FPC 1	ROM	Juniper ROM Monitor Version 13.1b24
	O/S	Version 13.2-20130514.1 by userb on 2013-
FPC 2	ROM	Juniper ROM Monitor Version 13.1b24
	O/S	Version 13.2-20130514.1 by userb on 2013-
AFEB	ROM	Juniper ROM Monitor Version 13.1b24
	O/S	Version 13.2-20130514.1 by userb on 2013-

show chassis firmware (MX240 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 8.3b1
	O/S	Version 9.0-20080103.0 by userb on 2008-0
FPC 2	ROM	Juniper ROM Monitor Version 8.3b1
	O/S	Version 9.0-20080103.0 by userb on 2008-0

show chassis firmware (MX480 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 8.3b1
	O/S	Version 9.0-20070916.3 by userb on 2007-0

show chassis firmware (MX960 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 8.0b8
	O/S	Version 8.2I59 by user3 on 2006-10-31 19:22
FPC 7	ROM	Juniper ROM Monitor Version 8.2b1
	O/S	Version 8.2-20061026.1 by userb on 2006-1

show chassis firmware (MX2010 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 12.3b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 1	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 2	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 3	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 4	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 5	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 6	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 7	ROM	Juniper ROM Monitor Version 10.1b3
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 8	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
FPC 9	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
SPMB 0	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20121220.0 by userb on 2012-
SPMB 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20121220.0 by userb on 2012-

show chassis firmware (MX2020 Router)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 0	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 1	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 2	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 3	ROM	Juniper ROM Monitor Version 10.0b39

	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 4	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 5	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 6	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 7	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 8	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 9	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 10	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 11	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 12	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 13	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 14	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 15	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 16	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 17	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 18	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
FPC 19	ROM	Juniper ROM Monitor Version 10.0b39
	O/S	Version 12.3-20130415.0 by userb on 2013-
SPMB 0	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20130415.0 by userb on 2013-
SPMB 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.3-20130415.0 by userb on 2013-

show chassis firmware (MX240, MX480, MX960 Router with Application Services Modular Line Card)

```
user@host> show chassis firmware
```

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 12.1b1
	O/S	Version 12.2I21 by user1 on 2012-06-19 17:

show chassis firmware (EX4200 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 0	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1
FPC 1	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1
FPC 2	uboot	U-Boot 1.1.6 (Feb 6 2008 - 11:27:42)
	loader	FreeBSD/PowerPC U-Boot bootstrap loader 2.1

show chassis firmware (EX8200 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 0	U-Boot loader	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 3	U-Boot loader	U-Boot 1.1.6 (Dec 4 2009 - 13:17:34) 3.1.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 5	U-Boot loader	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
FPC 7	U-Boot loader	U-Boot 1.1.6 (Feb 6 2009 - 05:31:46) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
Routing Engine 0	U-Boot loader	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2
Routing Engine 1	U-Boot loader	U-Boot 1.1.6 (Mar 25 2009 - 06:13:12) 2.4.0 FreeBSD/PowerPC U-Boot bootstrap loader 2.2

show chassis firmware (EX9200 Switch)

```
user@switch> show chassis firmware
```

Part	Type	Version
FPC 2	ROM	Juniper ROM Monitor Version 11.4b2
	O/S	Version 14.1I20140312_0741 by userd o
FPC 3	ROM	Juniper ROM Monitor Version 10.4b1
	O/S	Version 14.1I20140312_0741 by userd o

show chassis firmware lcc (TX Matrix Router)

```
user@host> show chassis firmware lcc 0
lcc0-re0:
```

Part	Type	Version
FPC 1	ROM	Juniper ROM Monitor Version 6.4b18
	O/S	Version 7.0-20040804.0 by userb on 2004-0
FPC 2	ROM	Juniper ROM Monitor Version 6.4b20
	O/S	Version 7.0-20040804.0 by userb on 2004-0
SPMB 0	ROM	Juniper ROM Monitor Version 6.4b18
	O/S	Version 7.0-20040804.0 by userb on 2004-0

show chassis firmware scc (TX Matrix Router)

```
user@host> show chassis firmware scc
scc-re0:
```

Part	Type	Version
SPMB 0	ROM	Juniper ROM Monitor Version 6.4b18
	O/S	Version 7.0-20040804.0 by userb on 2004-0

show chassis firmware (TX Matrix Plus Router)

```
user@host> show chassis firmware
sfc0-re0:
```

Part	Type	Version
Global FPC 4		
Global FPC 6		
Global FPC 7		
Global FPC 12		
Global FPC 14		
Global FPC 15		
Global FPC 20		
Global FPC 21		


```

Global FPC 22
Global FPC 23
Global FPC 24
Global FPC 25
Global FPC 26
Global FPC 28
Global FPC 29
Global FPC 31
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0

```

lcc0-re1:

```

-----
Part          Type      Version
FPC 4          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 6          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 7          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0

```

lcc1-re1:

```

-----
Part          Type      Version
FPC 4          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 6          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 7          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0

```

lcc2-re1:

```

-----
Part          Type      Version
FPC 4          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 5          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 6          ROM      Juniper ROM Monitor Version 9.0b2
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
FPC 7          ROM      Juniper ROM Monitor Version 7.5b4
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 0          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0
SPMB 1          ROM      Juniper ROM Monitor Version 9.5b1
                  O/S      Version 9.6-20090507.0 by userb on 2009-0

```

lcc3-re1:

```

-----
Part          Type      Version
FPC 0          ROM      Juniper ROM Monitor Version 9.0b2

```

	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 1	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 2	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 4	ROM	Juniper ROM Monitor Version 7.5b4
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 5	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

show chassis firmware lcc (TX Matrix Plus Router)

```
user@host> show chassis firmware lcc 0
lcc0-re1:
```

Part	Type	Version
FPC 4	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 6	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
FPC 7	ROM	Juniper ROM Monitor Version 9.0b2
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

show chassis firmware sfc (TX Matrix Plus Router)

```
user@host> show chassis firmware sfc 0
sfc0-re0:
```

Part	Type	Version
Global FPC 4		
Global FPC 6		
Global FPC 7		
Global FPC 12		
Global FPC 14		
Global FPC 15		
Global FPC 20		
Global FPC 21		
Global FPC 22		
Global FPC 23		
Global FPC 24		
Global FPC 25		
Global FPC 26		
Global FPC 28		
Global FPC 29		
Global FPC 31		
SPMB 0	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0
SPMB 1	ROM	Juniper ROM Monitor Version 9.5b1
	O/S	Version 9.6-20090507.0 by userb on 2009-0

show chassis firmware (QFX Series and OCX Series)

```

user@switch> show chassis firmware
Part                Type      Version
FPC 0
Routing Engine 0    U-Boot    U-Boot 1.1.6 (Sep 15 2010 - 02:11:11) 1.0.5
                    loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1

```

show chassis firmware (PTX1000 Packet Transport Routers)

```

user@host> show chassis firmware
Part                Type      Version
FPC 0
                    U-Boot    ***
                    loader    FreeBSD/i386 bootstrap loader 1.2
                    BIOS      V0018.2U
                    EC FPGA   2.0
                    MAIN_CPLD  1.f
                    MEZZ_CPLD  1.f
                    RE FPGA    2.3

```

show chassis firmware interconnect-device (QFabric System)

```

user@switch> show chassis firmware interconnect-device interconnect1
Part                Type      Version
Routing Engine 0    U-Boot    U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
                    loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1
Routing Engine 1    U-Boot    U-Boot 1.1.6 (May 10 2011 - 04:52:59) 1.1.1
                    loader    FreeBSD/MIPS U-Boot bootstrap loader 0.1

```

show chassis firmware (ACX2000 Universal Access Router)

```

user@switch> show chassis firmware
Part                Type      Version
FPC                 O/S      Version 12.2I13 by user2 on 2012-05-29 06:
FEB                 O/S      Version 12.2I13 by user2 on 2012-05-29 06:

```

show chassis firmware detail (EX3300 Switch)

```

user@switch> show chassis firmware detail
FPC 0
  Boot SYSPLD        3
  PoE firmware       4.1.6
  PFE-0              3
  PFE-1              3
  PHY
    microcode        0x514
  Boot Firmware
    uboot             U-Boot 1.1.6 (Aug 21 2011 - 01:45:26) 1.0.0
    loader            FreeBSD/arm U-Boot loader 1.0

```

show chassis firmware (MX Routers with Media Services Blade [MSB])

```

user@switch> show chassis firmware
Part                Type      Version
FPC 1
                    ROM      Juniper ROM Monitor Version 12.1b1
                    O/S      Version 12.2I21 by user1 on 2012-06-19 17:

```

show chassis lcd

List of Syntax	show chassis lcd (EX Series) on page 164 show chassis lcd (QFX Series) on page 164 show chassis lcd (OCX Series) on page 164
show chassis lcd (EX Series)	<pre>show chassis lcd <fpc-slot <i>fpc-slot-number</i>> <menu <(all-members local member <i>member-id</i>)>></pre>
show chassis lcd (QFX Series)	<pre>show chassis lcd <fpc-slot <i>fpc-slot-number</i>> <interconnect-device <i>device-id</i>> <node-device <i>device-id</i>></pre>
show chassis lcd (OCX Series)	<pre>show chassis lcd <fpc-slot <i>fpc-slot-number</i>></pre>
Release Information	<p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>menu option introduced in Junos OS Release 10.2 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 13.1 for QFabric systems.</p> <p>Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.</p>
Description	<p>Display the information that appears on the LCD panel of EX3200, EX3300, EX4200, EX4500, EX6200, and EX8200 switches, XRE200 External Routing Engines, QFX Series standalone switches, OCX Series switches, and Interconnect devices and Node devices within a QFabric system. Display the status of the currently selected port parameter of the Status LED for each network port on the device.</p>
Options	<p>none—Display the information that appears on the LCD panel (for any EX Series member switch in a Virtual Chassis or for XRE200 External Routing Engines, display the information for all Virtual Chassis members). Display the status of the currently selected port parameter of the Status LED for each network port.</p> <p>fpc-slot <<i>fpc-slot-number</i>>—(Optional) Display the information as follows:</p> <ul style="list-style-type: none"> (EX3200, EX3300, EX4200, and EX4500 switches, QFX Series, or OCX Series) Display the information that appears on the LCD panel for either an FPC slot with no <i>fpc-slot-number</i> value specified or for the FPC slot specified by fpc-slot 0. fpc-slot refers to the switch itself and 0 is the only valid value for <i>fpc-slot-number</i>. Output for these options is the same as for the none option. <p>Also display the status of the currently selected port parameter of the Status LED for each network port.</p> <ul style="list-style-type: none"> (EX Series Virtual Chassis member switches or XRE200 External Routing Engines) If no <i>fpc-slot-number</i> value is specified, display the information that appears on the LCD panel for all members of the Virtual Chassis. Output for this option is the same as for the none option. If the <i>fpc-slot-number</i> value is specified (it equals the <i>member-id</i> value), display the information for the specified member.

Also display the status of the currently selected port parameter of the Status LED for each network port.

- (EX6200 or EX8200 switches)—Display the information that appears on the LCD panel for the line card in the line-card slot specified by the *fpc-slot-number* value.

Also display the status of the currently selected port parameter of the Status LED for each network port.

interconnect-device *device-id*—(QFabric systems only) (Optional) Display the front panel contents and LED status of all the ports on the Interconnect device.

menu—(Optional) Display the names of the menus and menu options that are currently enabled on the LCD panel.

menu all-members—(EX Series Virtual Chassis member switches or XRE200 External Routing Engines) (Optional) Display the names of the menus and menu options that are currently enabled on the LCD panel for all Virtual Chassis members.

menu local—(EX Series Virtual Chassis member switches or XRE200 External Routing Engines) (Optional) Display the names of the menus and menu options that are currently enabled on the LCD panel for the Virtual Chassis member from which you issued the command.

menu member *member-id*—(EX Series Virtual Chassis member switches or XRE200 External Routing Engines) (Optional) Display the names of the menus and menu options that are currently enabled on the LCD panel for the specified Virtual Chassis member.

node-device *device-id*—(QFabric systems only) (Optional) Display the front panel contents and LED status of all the ports on the Node device.

Required Privilege Level

view

Related Documentation

- [LCD Panel in EX3200 Switches](#)
- [LCD Panel in EX4200 Switches](#)
- [LCD Panel in EX4500 Switches](#)
- [LCD Panel in an EX8200 Switch](#)
- [LCD Panel in an XRE200 External Routing Engine](#)
- [Configuring the LCD Panel on EX Series Switches \(CLI Procedure\) on page 17](#)
- [set chassis display message on page 135](#)

List of Sample Output

[show chassis lcd \(Two-Member EX4200 Virtual Chassis\) on page 167](#)
[show chassis lcd fpc-slot 1 \(EX4200 Virtual Chassis\) on page 168](#)
[show chassis lcd \(EX8200 Switch\) on page 168](#)
[show chassis lcd fpc-slot 2 \(EX8200 Switch\) on page 170](#)
[show chassis lcd menu \(EX4200 Switch\) on page 170](#)

[show chassis lcd menu \(EX8200 Switch\) on page 171](#)
[show chassis lcd \(QFX3500 Switches\) on page 171](#)
[show chassis lcd \(XRE200 External Routing Engine in EX8200 Virtual Chassis\) on page 171](#)
[show chassis lcd interconnect-device \(QFabric Systems\) on page 174](#)
[show chassis lcd node-device \(QFabric Systems\) on page 176](#)

Output Fields Table 10 on page 166 lists the output fields for the **show chassis lcd** command. Output fields are listed in the approximate order in which they appear.

Table 10: show chassis lcd Output Fields

Field Name	Field Description
membernumber (XRE200 External Routing Engine)	Member ID of the device whose content is being displayed.
Front panel contents for slot Front panel contents (EX6200, EX8200 switch, XRE200 External Routing Engine, and QFX Series)	<p>FPC slot number of the switch whose content is being displayed. The number is always 0, except for EX4200 switches in a Virtual Chassis, where it is the member ID value.</p> <p>On EX6200 switches, EX8200 switches, and XRE200 External Routing Engines, no slot number is displayed.</p> <p>On XRE200 External Routing Engines, this field appears under the member number field for each member device in the EX8200 Virtual Chassis.</p>
LCD screen	<p>The first line displays the hostname (for Virtual Chassis members, displays the member ID, the current role, and hostname; for EX8200 switches, displays RE and the hostname). The second line displays the currently selected port parameter of the Status LED and the alarms counter. The Status LED port parameters are:</p> <ul style="list-style-type: none"> • ADM—Administrative • SPD—Speed • DPX—Duplex • POE—Power over Ethernet (EX3200 and EX4200 switches only)
LEDs status	Current state of the Alarms, System, and Master LEDs (chassis status LEDs).
Interface	Names of the interfaces on the switch.
LED (ADM/SPD/DPX/POE)	<p>State of the currently selected port parameter of the Status LED for the interface. The Status LED port parameters are:</p> <p>NOTE: The XRE200 External Routing Engine always displays the NA parameter. The QFX Series products do not have any of the port parameters listed below.</p> <ul style="list-style-type: none"> • ADM—Administrative • SPD—Speed • DPX—Duplex • NA—Not applicable. • POE—Power over Ethernet
fpcx	On standalone EX Series and QFX Series switches, always 0 . On EX Series Virtual Chassis member switches, member ID of the Virtual Chassis member whose LCD menu is displayed.

Sample Output

show chassis lcd (Two-Member EX4200 Virtual Chassis)

```

user@switch> show chassis lcd
Front panel contents for slot: 0
-----
LCD screen:
  00:BK switch1
  LED:SPD ALARM 00
LEDs status:
  Alarms LED: Off
  System LED: Green
  Master LED: Off
Interface      LED(ADM/SPD/DPX/POE)
-----
ge-0/0/0       Off
ge-0/0/1       Off
ge-0/0/2       Off
ge-0/0/3       Off
ge-0/0/4       Off
ge-0/0/5       Off
ge-0/0/6       Off
ge-0/0/7       Off
ge-0/0/8       Off
ge-0/0/9       Off
ge-0/0/10      Off
ge-0/0/11      Off
ge-0/0/12      Off
ge-0/0/13      Off
ge-0/0/14      Off
ge-0/0/15      Off
ge-0/0/16      Off
ge-0/0/17      Off
ge-0/0/18      Off
ge-0/0/19      Off
ge-0/0/20      Off
ge-0/0/21      Off
ge-0/0/22      Off
ge-0/0/23      Off
Front panel contents for slot: 1
-----
LCD screen:
  01:RE switch2
  LED:SPD ALARM 01
LEDs status:
  Alarms LED: Yellow
  System LED: Green
  Master LED: Green
Interface      LED(ADM/SPD/DPX/POE)
-----
ge-1/0/0       Off
ge-1/0/1       Off
ge-1/0/2       Off
ge-1/0/3       Off
ge-1/0/4       Off
ge-1/0/5       Off
ge-1/0/6       Off
ge-1/0/7       Off
ge-1/0/8       Off
ge-1/0/9       Off

```

ge-1/0/10	Off
ge-1/0/11	Off
ge-1/0/12	Off
ge-1/0/13	Off
ge-1/0/14	Off
ge-1/0/15	Off
ge-1/0/16	Off
ge-1/0/17	Off
ge-1/0/18	Off
ge-1/0/19	Off
ge-1/0/20	Off
ge-1/0/21	Off
ge-1/0/22	Off
ge-1/0/23	Off

The output for the **show chassis lcd fpc-slot** command is the same as the output for the **show chassis lcd** command.

show chassis lcd fpc-slot 1 (EX4200 Virtual Chassis)

```
user@switch> show chassis lcd fpc-slot 1
Front panel contents for slot: 1
-----
LCD screen:
  01:RE switch2
  LED:SPD ALARM 01
LEDs status:
  Alarms LED: Yellow
  System LED: Green
  Master LED: Green
Interface      LED (ADM/SPD/DPX/POE)
-----
ge-1/0/0      Off
ge-1/0/1      Off
ge-1/0/2      Off
ge-1/0/3      Off
ge-1/0/4      Off
ge-1/0/5      Off
ge-1/0/6      Off
ge-1/0/7      Off
ge-1/0/8      Off
ge-1/0/9      Off
ge-1/0/10     Off
ge-1/0/11     Off
ge-1/0/12     Off
ge-1/0/13     Off
ge-1/0/14     Off
ge-1/0/15     Off
ge-1/0/16     Off
ge-1/0/17     Off
ge-1/0/18     Off
ge-1/0/19     Off
ge-1/0/20     Off
ge-1/0/21     Off
ge-1/0/22     Off
ge-1/0/23     Off
```

show chassis lcd (EX8200 Switch)

```
user@switch> show chassis lcd
```


Front panel contents:

LCD screen:

RE st-8200-r

LED:ADM ALARM 01

LEDs status:

Alarms LED: Yellow

System LED: Yellow

Master LED: Green

Interface LED(ADM/SPD/DPX)

ge-0/0/0	Off
ge-0/0/1	Off
ge-0/0/2	Off
ge-0/0/3	Off
ge-0/0/4	Off
ge-0/0/5	Off
ge-0/0/6	Off
ge-0/0/7	Off
ge-0/0/8	Off
ge-0/0/9	Off
ge-0/0/10	Off
ge-0/0/11	Off
ge-0/0/12	Off
ge-0/0/13	Off
ge-0/0/14	Off
ge-0/0/15	Off
ge-0/0/16	Off
ge-0/0/17	Off
ge-0/0/18	Off
ge-0/0/19	Off
ge-0/0/20	Off
ge-0/0/21	Off
ge-0/0/22	Off
ge-0/0/23	Off
ge-0/0/24	Off
ge-0/0/25	Off
ge-0/0/26	Off
ge-0/0/27	Off
ge-0/0/28	Off
ge-0/0/29	Off
ge-0/0/30	Off
ge-0/0/31	Off
ge-0/0/32	Off
ge-0/0/33	Off
ge-0/0/34	Off
ge-0/0/35	Off
ge-0/0/36	Off
ge-0/0/37	Off
ge-0/0/38	Off
ge-0/0/39	Off
ge-0/0/40	Off
ge-0/0/41	Off
ge-0/0/42	Off
ge-0/0/43	Off
ge-0/0/44	Off
ge-0/0/45	Off
ge-0/0/46	Off
ge-0/0/47	Off
xe-2/0/0	Off
xe-2/0/1	Off

xe-2/0/2	Off
xe-2/0/3	Off
xe-2/0/4	Off
xe-2/0/5	Off
xe-2/0/6	Off
xe-2/0/7	Off
xe-3/0/0	Off
xe-3/0/1	Off
xe-3/0/2	Off
xe-3/0/3	Off
xe-3/0/4	Off
xe-3/0/5	Off
xe-3/0/6	Off
xe-3/0/7	Off
xe-5/0/0	Off
xe-5/0/1	Off
xe-5/0/2	Off
xe-5/0/3	Off
xe-5/0/4	Off
xe-5/0/5	Off
xe-5/0/6	On
xe-5/0/7	On
xe-7/0/5	Off

show chassis lcd fpc-slot 2 (EX8200 Switch)

show chassis lcd fpc-slot 2

Interface	LED (ADM/SPD/DPX)
xe-2/0/0	Off
xe-2/0/1	Off
xe-2/0/2	Off
xe-2/0/3	Off
xe-2/0/4	Off
xe-2/0/5	Off
xe-2/0/6	Off
xe-2/0/7	Off

show chassis lcd menu (EX4200 Switch)

```
user@switch> show chassis lcd menu
fpc0:
```

```
-----
status-menu
status-menu vcp-status
status-menu power-status
status-menu environ-menu
status-menu show-version
maintenance-menu
maintenance-menu halt-menu
maintenance-menu system-reboot
maintenance-menu rescue-config
maintenance-menu vc-uplink-config
maintenance-menu factory-default
```

On an EX4200 switch in a Virtual Chassis, the output for the **show chassis lcd menu** **all-members** command is the same as the output for the **show chassis lcd menu** command.

show chassis lcd menu (EX8200 Switch)

```

user@switch> show chassis lcd menu
status-menu
status-menu sf-status1-menu
status-menu sf-status2-menu
status-menu psu-status1-menu
status-menu psu-status2-menu
status-menu environ-menu
status-menu show-version
maintenance-menu
maintenance-menu halt-menu
maintenance-menu system-reboot
maintenance-menu rescue-config
maintenance-menu factory-default

```

show chassis lcd (QFX3500 Switches)

```

user@switch> show chassis lcd
Front panel contents for slot: 0
-----
LCD screen:
00:RE switch
ALARM 01
LEDs status:
Status/Beacon LED: Yellow Blinking
Interface STATUS LED ACTIVITY LED
-----
fte-0/1/0 Off Off

```

show chassis lcd (XRE200 External Routing Engine in EX8200 Virtual Chassis)

```

user@external-routing-engine> show chassis lcd
member0:
-----
Front panel contents:
-----
LCD screen:
  RE ex8200-member0
  LED:ADM ALARM 04
LEDs status:
  Alarms LED: Red
  System LED: Yellow
  Master LED: Green

member1:
-----

member8:
-----
Front panel contents:
-----
LCD screen:
  BACKUP

member9:
-----
Front panel contents:
-----
LCD screen:
  09:RE xre200-member9

```

LED: NA ALARM 01
Interface LED(ADM/SPD/DPX/POE)

Interface	LED(ADM/SPD/DPX/POE)
ge-0/0/0	On
ge-0/0/1	On
ge-0/0/2	On
ge-0/0/3	On
ge-0/0/4	Off
ge-0/0/5	Off
ge-0/0/6	Off
ge-0/0/7	Off
ge-0/0/8	Off
ge-0/0/9	Off
ge-0/0/10	On
ge-0/0/11	Off
ge-0/0/12	Off
ge-0/0/13	Off
ge-0/0/14	Off
ge-0/0/15	Off
ge-0/0/16	Off
ge-0/0/17	Off
ge-0/0/18	Off
ge-0/0/19	Off
ge-0/0/20	Off
ge-0/0/21	Off
ge-0/0/22	Off
ge-0/0/23	Off
ge-0/0/24	Off
ge-0/0/25	Off
ge-0/0/26	Off
ge-0/0/27	Off
ge-0/0/28	Off
ge-0/0/29	Off
ge-0/0/30	Off
ge-0/0/31	Off
ge-0/0/32	Off
ge-0/0/33	Off
ge-0/0/34	Off
ge-0/0/35	Off
ge-0/0/36	Off
ge-0/0/37	Off
ge-0/0/38	Off
ge-0/0/39	Off
ge-0/0/40	On
ge-0/0/41	On
ge-0/0/42	On
ge-0/0/43	On
ge-0/0/44	On
ge-0/0/45	On
ge-0/0/46	On
ge-0/0/47	On
ge-16/0/0	On
ge-16/0/1	Off
ge-16/0/2	On
ge-16/0/3	Off
ge-16/0/4	On
ge-16/0/5	Off
ge-16/0/6	On
ge-16/0/7	Off
ge-16/0/8	Off
ge-16/0/9	Off

ge-16/0/10	Off
ge-16/0/11	Off
ge-16/0/12	Off
ge-16/0/13	On
ge-16/0/14	Off
ge-16/0/15	On
ge-16/0/16	Off
ge-16/0/17	On
ge-16/0/18	On
ge-16/0/19	On
ge-16/0/20	On
ge-16/0/21	Off
ge-16/0/22	On
ge-16/0/23	Off
ge-16/0/24	Off
ge-16/0/25	Off
ge-16/0/26	On
ge-16/0/27	Off
ge-16/0/28	Off
ge-16/0/29	Off
ge-16/0/30	On
ge-16/0/31	Off
ge-16/0/32	On
ge-16/0/33	On
ge-16/0/34	On
ge-16/0/35	Off
ge-16/0/36	On
ge-16/0/37	Off
ge-16/0/38	Off
ge-16/0/39	Off
ge-16/0/40	Off
ge-16/0/41	Off
ge-16/0/42	On
ge-16/0/43	Off
ge-16/0/44	Off
ge-16/0/45	Off
ge-16/0/46	Off
ge-16/0/47	Off
xe-19/0/0	Off
xe-19/0/1	On
xe-19/0/2	On
xe-19/0/3	On
xe-19/0/4	On
xe-19/0/5	On
ge-22/0/0	Off
ge-22/0/1	Off
ge-22/0/2	On
ge-22/0/3	Off
ge-22/0/4	On
ge-22/0/5	On
ge-22/0/6	On
ge-22/0/7	On
ge-22/0/8	Off
ge-22/0/9	Off
ge-22/0/10	Off
ge-22/0/11	Off
ge-22/0/12	Off
ge-22/0/13	Off
ge-22/0/14	Off
ge-22/0/15	Off
ge-22/0/16	On

```

ge-22/0/17    Off
ge-22/0/18    On
ge-22/0/19    Off
ge-22/0/20    On
ge-22/0/21    Off
ge-22/0/22    On
ge-22/0/23    Off
ge-22/0/24    On
ge-22/0/25    Off
ge-22/0/26    Off
ge-22/0/27    Off
ge-22/0/28    Off
ge-22/0/29    Off
ge-22/0/30    Off
ge-22/0/31    Off
ge-22/0/32    On
ge-22/0/33    Off
ge-22/0/34    On
ge-22/0/35    Off
ge-22/0/36    Off
ge-22/0/37    Off
ge-22/0/38    Off
ge-22/0/39    Off
ge-22/0/40    Off
ge-22/0/41    Off
ge-22/0/42    Off
ge-22/0/43    Off
ge-22/0/44    Off
ge-22/0/45    Off
ge-22/0/46    Off
ge-22/0/47    Off

```

show chassis lcd interconnect-device (QFabric Systems)

```

show chassis lcd interconnect-device IC-F1012
      Front Panel Module Information
      -----
      LCD screen:
      IC-F1012      3 Alarms active

LEDs status:
  Status LED: Green
  Power LED : Green
  Major Alarm LED: off
  Minor Alarm LED: Yellow
  Fan 0 LED : Green
  Fan 1 LED : Green
  Fan 2 LED : Green
  Fan 3 LED : Green
  Fan 4 LED : Green
  Fan 5 LED : Green
  Fan 6 LED : Green
  Fan 7 LED : Green
  Fan 8 LED : Green
  Fan 9 LED : Green
  PEM 0 LED : Green
  PEM 1 LED : Green
  PEM 2 LED : Green
  PEM 3 LED : off
  PEM 4 LED : off
  PEM 5 LED : off

```

LED info for: CB - 0

LEDs status:

Status LED: Green

Mastership LED: Green

Interface	STATUS LED	LINK/ACTIVITY LED
IC-F1012:pme0 :	Green	N/A
IC-F1012:pme1 :	Green	N/A
IC-F1012:pme2 :	off	N/A
IC-F1012:pme3 :	off	N/A

LED info for: CB - 1

LEDs status:

Status LED: Green

Mastership LED: Amber

Interface	STATUS LED	LINK/ACTIVITY LED
IC-F1012:pme0 :	Green	N/A
IC-F1012:pme1 :	Green	N/A
IC-F1012:pme2 :	off	N/A
IC-F1012:pme3 :	off	N/A

LED info for: FC 0 FPC - 0

LEDs status:

Status LED: Green

Interface	STATUS LED	LINK/ACTIVITY LED
IC-F1012:fte-0/0/0	Green	N/A
IC-F1012:fte-0/0/1	Green	N/A
IC-F1012:fte-0/0/2	Green	N/A
IC-F1012:fte-0/0/3	Green	N/A
IC-F1012:fte-0/0/4	Green	N/A

LED info for: FC 1 FPC - 1

LEDs status:

Status LED: Green

Interface	STATUS LED	LINK/ACTIVITY LED
IC-F1012:fte-1/0/0	Green	N/A
IC-F1012:fte-1/0/1	Green	N/A
IC-F1012:fte-1/0/2	Green	N/A
IC-F1012:fte-1/0/3	Green	N/A
IC-F1012:fte-1/0/4	Green	N/A

LED info for: RC 0 FPC - 8

LEDs status:

Status LED: Green

LED info for: RC 1 FPC - 9

LEDs status:

Status LED: Green

```

LED info for: RC 2 FPC - 10
-----
LEDs status:
  Status LED: Green

LED info for: RC 3 FPC - 11
-----
LEDs status:
  Status LED: Green

LED info for: RC 4 FPC - 12
-----
LEDs status:
  Status LED: Green

LED info for: RC 5 FPC - 13
-----
LEDs status:
  Status LED: Green

LED info for: RC 6 FPC - 14
-----
LEDs status:
  Status LED: Green

LED info for: RC 7 FPC - 15
-----
LEDs status:
  Status LED: Green

```

show chassis lcd node-device (QFabric Systems)

```

show chassis lcd node-device P3774-C
  Front panel contents for: P3774-C
  -----
  LCD screen:
  P3774-C

LEDs status:
  Status/Beacon LED: Yellow Blinking

```

Interface	STATUS LED	LINK/ACTIVITY LED
P3774-C:xe-0/0/6	Green	Green
P3774-C:xe-0/0/7	Green	Green
P3774-C:ge-0/0/10	Green	Green
P3774-C:ge-0/0/11	Green	Green Blinking
P3774-C:ge-0/0/12	Green	Off
P3774-C:ge-0/0/13	Green	Green Blinking
P3774-C:ge-0/0/20	Green	Green
P3774-C:ge-0/0/21	Green	Green
P3774-C:ge-0/0/22	Green	Green Blinking
P3774-C:ge-0/0/23	Green	Off
P3774-C:ge-0/0/30	Green	Green
P3774-C:ge-0/0/31	Green	Green
P3774-C:ge-0/0/32	Green	Green Blinking
P3774-C:ge-0/0/33	Green	Green Blinking
P3774-C:fte-0/1/0	Green	Green
P3774-C:fte-0/1/1	Green	Green Blinking
P3774-C:fte-0/1/2	Green	Green Blinking
P3774-C:fte-0/1/3	Green	Green

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**—(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 179](#)
[show configuration policy-options on page 180](#)

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 [userc]"; ## 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 181

Sample Output

show host

```
user@host> show host snark
snark.boojum.net has address 192.168.1.254

user@host> show host 192.168.1.254
Name: snark.boojum.net
Address: 192.168.1.254
Aliases:
```

show ntp associations

Syntax	<code>show ntp associations</code> <code><no-resolve></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 Network Time Protocol (NTP) peers and their state.
Options	none —Display NTP peers and their state. no-resolve —(Optional) Suppress symbolic addressing.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> show ntp status on page 184
List of Sample Output	show ntp associations on page 183
Output Fields	Table 11 on page 182 describes the output fields for the show ntp associations command. Output fields are listed in the approximate order in which they appear.

Table 11: show ntp associations Output Fields

Field Name	Field Description
remote	Address or name of the remote NTP peer.
refid	Reference identifier of the remote peer. If the reference identifier is not known, this field shows a value of 0.0.0.0 .
st	Stratum of the remote peer.
t	Type of peer: b (broadcast), l (local), m (multicast), or u (unicast).
when	When the last packet from the peer was received.
poll	Polling interval, in seconds.
reach	Reachability register, in octal.
delay	Current estimated delay of the peer, in milliseconds.
offset	Current estimated offset of the peer, in milliseconds.
disp	Current estimated dispersion of the peer, in milliseconds.

Table 11: show ntp associations Output Fields (*continued*)

Field Name	Field Description
<i>peer-name</i>	<p>Peer name and status of the peer in the clock selection process:</p> <ul style="list-style-type: none"> • space—Discarded because of a high stratum value or failed sanity checks. • x—Designated "falseticker" by the intersection algorithm. • .—Culled from the end of the candidate list. • — —Discarded by the clustering algorithm. • +—Included in the final selection set. • #—Selected for synchronization, but the distance exceeds the maximum. • *—Selected for synchronization. • o—Selected for synchronization, but the packets-per-second (pps) signal is in use.

Sample Output

show ntp associations

```

user@host> show ntp associations
  remote      refid          st t when poll reach  delay  offset  disp
=====
*ex.junipe host1.univ.edu 2 u   43   64  377    1.86   0.319   0.08

```

show ntp status

Syntax	<code>show ntp status</code> <code><no-resolve></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 the values of internal variables returned by Network Time Protocol (NTP) peers.
Options	none —Display the values of internal variables returned by NTP peers. no-resolve —(Optional) Suppress symbolic addressing.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> show ntp associations on page 182
List of Sample Output	show ntp status on page 185
Output Fields	Table 12 on page 184 describes the output fields for the show ntp status command. Output fields are listed in the approximate order in which they appear.

Table 12: show ntp status Output Fields

Field Name	Field Description
status	System status word, a code representing the status items listed.
leap_none	Indicates a normal synchronized state with no leap seconds imminent. Other options could be leap_add_sec , leap_del_sec , or leap_alarm , indicating a leap second will be added, deleted, or a leap second requirement is upcoming.
sync_ntp	Indicates the current synchronization source, in this case, an NTP server. Other options include sync_alarm and sync_unspec , both indicating that the router has not been synched.
x events	Indicates the number of events that have occurred since that last code change. An event is often the receipt of an NTP polling message.
event_peer/strat_chg	Describes the most recent event, in this case, the stratum of the peer server changed.
version	A detailed description of the version of NTP being used.
processor	Indicates the current hardware platform and version of the processor.
system	Detailed description of the name and version of the operating system in use.
leap	The number of leap seconds in use.

Table 12: show ntp status Output Fields (*continued*)

Field Name	Field Description
stratum	The stratum of the peer server. Anything greater than 1 is a secondary reference source, and the number roughly represents the number of hops away from the stratum 1 server.. Stratum 1 is a primary reference, such as an atomic clock.
precision	The precision of the peer clock, how precisely the frequency and time can be maintained with this particular timekeeping system.
rootdelay	The total roundtrip delay to the primary reference source, in seconds.
rootdispersion	The maximum error relative to the primary reference source, in seconds.
peer	An identification number of the peer in use.
refid	Reference identifier of the remote peer. If the reference identifier is not known, this field shows a value of 0.0.0.0.
reftime	The local time, in timestamp format, when the local clock was last updated. If the local clock has never been synchronized, the value is zero.
poll	The NTP broadcast message polling interval, in seconds.
clock	The current time on the local router clock.
state	The current mode of NTP operation, where 1 is symmetric active, 2 is symmetric passive, 3 is client, 4 is server, and 5 is broadcast.
offset	Current estimated offset of the peer, in milliseconds. Indicates the time difference between the reference clock and the local clock.
frequency	The frequency of the clock.
jitter	Indicates the magnitude of jitter, in milliseconds, between several time queries.
stability	A measure of how well this clock can maintain a constant frequency.

Sample Output

show ntp status

```

user@host> show ntp status
assID=0 status=0544 leap_none, sync_local_proto, 4 events, event_peer/strat_chg,
version="ntpd 4.2.2p1@1.1570-o Tue May 19 13:57:55 UTC 2009 (1)",
processor="x86_64", system="Linux/2.6.18-164.el5", leap=00, stratum=4,
precision=-10, rootdelay=0.000, rootdispersion=11.974, peer=59475,
refid=LOCAL(0),
reftime=d495c32c.0e71eaf2 Mon, Jan 7 2013 13:57:00.056, poll=10,
clock=d495c32c.cebd43bd Mon, Jan 7 2013 13:57:00.807, state=4,
offset=0.000, frequency=0.000, jitter=0.977, noise=0.977,
stability=0.000, tai=0

```


show system firmware

Syntax	show system firmware <compatibility>
Release Information	Command introduced in Junos OS Release 7.4. Command introduced in Junos OS Release 9.4 for EX Series switches. Command introduced in Junos OS Release 15.1X53-D30 for QFX Series switches.
Description	(J Series routers, EX8200 switches, and QFX 10008 switches only) Display firmware information.



NOTE: On SRX100, SRX210, SRX240, and SRX 650 devices, the **show system firmware** command now displays all the installed firmware versions, even if the installed firmware versions are earlier than the currently installed firmware version.

Options	compatibility —(Optional) Display firmware compatibility information.
Required Privilege Level	view
List of Sample Output	show system firmware on page 188 show system firmware compatibility on page 188 show system firmware (QFX 10008 Switch) on page 188
Output Fields	Table 13 on page 187 lists the output fields for the show system firmware command. Output fields are listed in the approximate order in which they appear.

Table 13: show system firmware Output Fields

Field Name	Field Description
Part	Physical part on the router or switch affected by the firmware.
Type	Type of firmware on the router or switch.
Tag	Location of the firmware on the interface.
Current version	Firmware version on the affected router or switch parts.
Available version	New versions of firmware for upgrading or downgrading.
Status	Firmware condition on the router or switch.
Action	Whether you can upgrade or downgrade, or if no action is available (none).

Sample Output

show system firmware

```
user@host> show system firmware
```

Part	Type	Tag	Current version	Available version	Status
FPC 0	ROM Monitor	0	0	6.4.10	OK
Routing Engine 0	RE BIOS	0	0		OK

show system firmware compatibility

```
user@host> show system firmware compatibility
```

Part	Type	Tag	Current version	Available version	Action
FPC 0	ROM Monitor	0	0	6.4.10	None
Routing Engine 0	RE BIOS	0	0		None

show system firmware (QFX 10008 Switch)

```
user@host> show system firmware
```

Part	Type	Status
CB 0	FPGA	OK
FPC 0	U-Boot	OK
CTRL	FPGA	PROGRAMMING
PORT	FPGA	PROGRAMMING
FPM	FPGA	OK
FTC 0	FPGA	OK
FTC 1	FPGA	OK
SIB 0	FPGA	OK
SIB 1	FPGA	OK
SIB 2	FPGA	OK
SIB 3	FPGA	OK
SIB 4	FPGA	OK
SIB 5	FPGA	OK

show system reboot

List of Syntax	Syntax on page 189 Syntax (EX Series Switches) on page 189 Syntax (TX Matrix Router) on page 189 Syntax (TX Matrix Plus Router) on page 189 Syntax (MX Series Router) on page 189 Syntax (QFX Series and OCX Series) on page 189
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	<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	Display pending system reboots or halts.
Options	<p>none—Display pending reboots or halts on the active Routing Engine.</p> <p>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 router, display</p>

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 191](#)
- [show system reboot all-lcc \(TX Matrix Router\) on page 191](#)
- [show system reboot sfc \(TX Matrix Plus Router\) on page 191](#)
- [show system reboot \(QFX3500 Switch\) on page 191](#)

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 software

List of Syntax	Syntax on page 192 Syntax (EX Series Switches) on page 192 Syntax (TX Matrix Router) on page 192 Syntax (TX Matrix Plus Router) on page 192 Syntax (QFX Series) on page 192
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

- [Routing Matrix with a TX Matrix Plus Router Solutions Page](#)

List of Sample Output

[show system software on page 194](#)
[show system software \(TX Matrix Plus Router\) on page 194](#)
[show system software \(QFX Series\) on page 198](#)

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-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]

...

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-aac1:

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 storage

List of Syntax	Syntax on page 200 Syntax (EX Series Switches) on page 200 Syntax (MX Series Router) on page 200 Syntax (QFX Series) on page 200 Syntax (SRX Series) on page 200 Syntax (TX Matrix Router) on page 200 Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs) on page 200
Syntax	show system storage <detail> <invoke-on (all-routing-engines other-routing-engine)>
Syntax (EX Series Switches)	show system storage <detail> <all-members> <local> <member <i>member-id</i> > <invoke-on (all-routing-engines other-routing-engine)>
Syntax (MX Series Router)	show system storage <detail> <all-members> <local> <member <i>member-id</i> > <invoke-on (all-routing-engines other-routing-engine)>
Syntax (QFX Series)	show system storage <detail> <infrastructure <i>name</i> > <interconnect-device <i>name</i> > <node-group <i>name</i> > <invoke-on (all-routing-engines other-routing-engine)>
Syntax (SRX Series)	show system storage <detail> <partitions> <invoke-on (all-routing-engines other-routing-engine)>
Syntax (TX Matrix Router)	show system storage <detail> <all-chassis all-lcc lcc <i>number</i> scc> <invoke-on (all-routing-engines other-routing-engine)>
Syntax (TX Matrix Plus Router and TX Matrix Plus Router with 3D SIBs)	show system storage <detail> <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > <invoke-on (all-routing-engines other-routing-engine)>
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.
 Option **invoke-on (all-routing-engines | other-routing-engine)** introduced in Junos OS Release 14.1
 Command introduced in Junos OS Release 14.1X53-D20 for the OCX Series.

- Description** Display statistics about the amount of free disk space in the router's or switch's file systems.
- Options**
- none**—Display standard information about the amount of free disk space in the router's or switch's file systems.
 - detail**—(Optional) Display detailed output.
 - 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.
 - 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.
 - all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display system storage statistics 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 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.
 - all-members**—(EX4200 switches and MX Series routers only) (Optional) Display system storage statistics for all members of the Virtual Chassis configuration.
 - infrastructure name**—(QFabric systems only) (Optional) Display system storage statistics for the fabric control Routing Engines or fabric manager Routing Engines.
 - interconnect-device name**—(QFabric systems only) (Optional) Display system storage statistics for the Interconnect device.
 - 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.

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 203](#)
- [show system storage \(TX Matrix Plus Router\) on page 203](#)
- [show system storage \(QFX3500 Switch\) on page 205](#)
- [show system storage invoke-on all-routing-engines on page 206](#)
- [show system storage invoke-on other-routing-engine on page 207](#)

Output Fields Table 14 on page 203 describes the output fields for the **show system storage** command. Output fields are listed in the approximate order in which they appear.

Table 14: 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
rel:

```

```

-----
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 208 Syntax (TX Matrix Router) on page 208 Syntax (TX Matrix Plus Router) on page 208 Syntax (MX Series Router) on page 208
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 211](#)
[show system switchover \(Backup Routing Engine - Not Ready\) on page 211](#)
[show system switchover \(MX Virtual Chassis\) on page 211](#)
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Master Ready on page 212](#)
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Master Not Ready on page 212](#)
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Backup Ready on page 212](#)
[show system switchover \(Routing Matrix and Routing Matrix Plus\) - Backup Not Ready on page 213](#)
[show system switchover all-icc \(Routing Matrix and Routing Matrix Plus\) on page 213](#)

Output Fields [Table 15 on page 210](#) describes the output fields for the **show system switchover** command. Output fields are listed in the approximate order in which they appear.

Table 15: 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.
Configuration database	State of the configuration database: <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.

Table 15: show system switchover Output Fields (*continued*)

Field Name	Field Description
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	<p>Switchover status (output of master switch check command):</p> <ul style="list-style-type: none"> • Ready—Message for system being switchover ready. • error: Command aborted. Not ready for mastership switch, try after xxx secs.

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 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
```

```
error: Command aborted. Not ready for mastership switch, try after 174 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 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 Ready

lcc2-re0:

Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
Switchover 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 Ready

lcc2-re1:

Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
error: Command aborted. Not ready for mastership switch, try after 228 secs.

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 Ready

lcc0-re0:

Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Ready

lcc2-re1:

```
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover 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
error: Command aborted. Not ready for mastership switch, try after 223 secs.

lcc0-re0:
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover Ready

lcc2-re1:
-----
Graceful switchover: On
Configuration database: Ready
Kernel database: Ready
Switchover 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
lcc2-re0:
-----
Multichassis replication: On
Configuration database: Ready
Kernel database: Ready
Peer state: Steady State
```

show system uptime

List of Syntax	Syntax on page 214 Syntax (EX Series Switches) on page 214 Syntax (QFX Series) on page 214 Syntax (TX Matrix Router) on page 214 Syntax (TX Matrix Plus Router) on page 214 Syntax (MX Series Router) on page 214
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.
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 217](#)
- [show system uptime all-lcc \(TX Matrix Router\) on page 217](#)
- [show system uptime all-lcc \(TX Matrix Plus Router\) on page 217](#)
- [show system uptime \(EX Series\) on page 218](#)
- [show system uptime \(QFX Series\) on page 218](#)

Output Fields Table 16 on page 216 describes the output fields for the **show system uptime** command. Output fields are listed in the approximate order in which they appear.

Table 16: 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.
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 users

List of Syntax	Syntax on page 219 Syntax (TX Matrix Router) on page 219 Syntax (TX Matrix Plus Router) on page 219 Syntax (MX Series Router) on page 219
Syntax	show system users <no-resolve>
Syntax (TX Matrix Router)	show system users <all-chassis all-lcc lccnumber scc> <no-resolve>
Syntax (TX Matrix Plus Router)	show system users <detail> <all-chassis all-lcc lcc number sfc number> <no-resolve>
Syntax (MX Series Router)	show system users <all-members> <local> <member member-id> <no-resolve>
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	List information about the users who are currently logged in to the router or switch.



NOTE: The **show system users** command lists the information about administrative users that are logged in to a router or switch using the CLI, J-Web, or an SSH client. The output does not list information about web users or automated users that are logged in from a remote client application using Junos XML APIs, such as NETCONF.

- Options** **none**—List information about the users who are currently logged in to the router or switch.
- all-chassis**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) Show users currently logged in to all the routers in the chassis.
- all-lcc**—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show users currently logged in to all T640 routers (or line-card chassis) connected to the TX Matrix router. On a TX Matrix Plus router, show users currently logged in to all connected T1600 or T4000 LCCs.

all-members—(MX Series routers only) (Optional) Display users currently logged in to all members of the Virtual Chassis configuration.

lcc *number*—(TX Matrix routers and TX Matrix Plus routers only) (Optional) On a TX Matrix router, show users currently logged in to a specific T640 router that is connected to the TX Matrix router. On a TX Matrix Plus router, show users currently logged in to 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) Display users currently logged in to the local Virtual Chassis member.

member *member-id*—(MX Series routers only) (Optional) Display users currently logged in to the specified member of the Virtual Chassis configuration. Replace *member-id* with a value of 0 or 1.

no-resolve—(Optional) Do not attempt to resolve IP addresses to hostnames.

scc—(TX Matrix routers only) (Optional) Show users currently logged in to the TX Matrix router (or switch-card chassis).

sfc *number*—(TX Matrix Plus routers only) (Optional) Show users currently logged in to the TX Matrix Plus router. Replace *number* with 0.

Additional Information By default, when you issue the **show system users** 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 users on page 221](#)
[show system users lcc no-resolve \(TX Matrix, TX Matrix Plus Router\) on page 221](#)
[show system users \(TX Matrix Plus Router\) on page 221](#)

[show system users \(QFX Series\) on page 222](#)

[show system users no-resolve \(QFX Series\) on page 222](#)

Output Fields [Table 17 on page 221](#) describes the output fields for the **show system users** command. Output fields are listed in the approximate order in which they appear.

Table 17: show system users Output Fields

Field Name	Field Description
<i>time and up</i>	Current time, in the local time zone, and how long the router or switch has been operational.
<i>users</i>	Number of users logged in to the router or switch.
<i>load averages</i>	Load averages for the last 1 minute, 5 minutes, and 15 minutes.
<i>USER</i>	Username.
<i>TTY</i>	Terminal through which the user is logged in.
<i>FROM</i>	System from which the user has logged in. A hyphen indicates that the user is logged in through the console.
<i>LOGIN@</i>	Time when the user logged in.
<i>IDLE</i>	How long the user has been idle.
<i>WHAT</i>	Processes that the user is running.

Sample Output

show system users

```
user@host> show system users
7:30PM up 4 days, 2:26, 2 users, load averages: 0.07, 0.02, 0.01
USER    TTY FROM          LOGIN@  IDLE WHAT
root    d0  -              Fri05PM 4days -csh (csh)
blue    p0  leve15.compan.net 7:30PM  - cli
```

show system users lcc no-resolve (TX Matrix, TX Matrix Plus Router)

```
user@host> show system users lcc 2 no-resolve
```

```
lcc2-re0:
-----
10:34AM PDT up 1 day, 7:11, 5 users, load averages: 0.03, 0.01, 0.00
USER    TTY FROM          LOGIN@  IDLE WHAT
root    d0  -              3:21AM  7:12 /bin/csh
user1    p0  scc-re0        10:15AM  - telnet hostA
user1    p1  scc-re0        10:16AM  - telnet hostA
user1    p2  scc-re0        10:19AM  - telnet hostA
user1    p3  scc-re0        10:24AM  - telnet hostA
```

show system users (TX Matrix Plus Router)

```
user@host> show system users
```

sfc0-re0:

```

-----
1:41AM up 26 mins, 3 users, load averages: 0.08, 0.04, 0.03
USER    TTY    FROM                                LOGIN@  IDLE WHAT
user2    p0      10.209.208.123                     1:18AM   21 cli
user2    p1      172.17.29.207                      1:37AM    2 cli
user2    p2      172.17.28.19                      1:40AM    - cli

```

lcc0-re0:

```

-----
1:41AM up 26 mins, 0 users, load averages: 0.00, 0.00, 0.03

```

lcc1-re0:

```

-----
1:41AM up 26 mins, 0 users, load averages: 0.00, 0.02, 0.03

```

lcc2-re0:

```

-----
1:41AM up 26 mins, 0 users, load averages: 0.16, 0.06, 0.02

```

lcc3-re0:

```

-----
1:41AM up 26 mins, 0 users, load averages: 0.12, 0.04, 0.04

```

user3@aj> show system users

sfc0-re0:

```

-----
1:42AM up 28 mins, 4 users, load averages: 0.02, 0.03, 0.02
USER    TTY    FROM                                LOGIN@  IDLE WHAT
user    p0      device1.example.com               1:18AM   22 cli
user    p1      device2.example.com               1:37AM    - cli
user    p2      device3.example.com               1:40AM    - cli
user    p3      device4.example.com               1:42AM    - -csh (csh)

```

lcc0-re0:

```

-----
1:42AM up 28 mins, 0 users, load averages: 0.02, 0.01, 0.03

```

lcc1-re0:

```

-----
1:42AM up 28 mins, 0 users, load averages: 0.07, 0.04, 0.03

```

lcc2-re0:

```

-----
1:42AM up 27 mins, 0 users, load averages: 0.07, 0.06, 0.02

```

lcc3-re0:

```

-----
1:42AM up 28 mins, 0 users, load averages: 0.05, 0.04, 0.04

```

show system users (QFX Series)

user@switch> show system users

```

USER    TTY    FROM                                LOGIN@  IDLE WHAT
tlewis   p0      192.168.18.117                     2:54AM   39 -cli (cli)
tlewis   p1      192.168.18.117                     3:01AM    - -cli (cli)
tcheng   p2      192.168.17.197                     3:08AM   11 -cli (cli)

```

show system users no-resolve (QFX Series)

user@switch> show system users no-resolve

USER	TTY	FROM	LOGIN@	IDLE	WHAT
tlewis	p0	192.168.18.117	2:54AM	39	-cli (cli)
tlewis	p1	192.168.18.117	3:01AM	-	-cli (cli)
tcheng	p2	192.168.17.197	3:08AM	11	-cli (cli)

show system virtual-memory

List of Syntax	Syntax on page 224 Syntax (EX Series) on page 224 Syntax (TX Matrix Router) on page 224 Syntax (TX Matrix Plus Router) on page 224 Syntax (MX Series Router) on page 224 Syntax (QFX Series) on page 224
Syntax	show system virtual-memory
Syntax (EX Series)	show system virtual-memory <all-members> <local> <member <i>member-id</i> >
Syntax (TX Matrix Router)	show system virtual-memory <all-chassis all-lcc lcc <i>number</i> scc>
Syntax (TX Matrix Plus Router)	show system virtual-memory <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> >
Syntax (MX Series Router)	show system virtual-memory <all-members> <local> <member <i>member-id</i> >
Syntax (QFX Series)	show system virtual-memory <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 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.
Options	none —Display kernel dynamic memory usage information. all-chassis —(TX Matrix routers and TX Matrix Plus routers only) (Optional) Display kernel dynamic memory usage information for all chassis. 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	<ul style="list-style-type: none">• Routing Matrix with a TX Matrix Plus Router Solutions Page
List of Sample Output	show system virtual-memory on page 228 show system virtual-memory scc (TX Matrix Router) on page 232 show system virtual-memory sfc (TX Matrix Plus Router) on page 233 show system virtual-memory display xml on page 236 show system virtual-memory (QFX Series) on page 259
Output Fields	Table 18 on page 227 lists the output fields for the <code>show system virtual-memory</code> command. Output fields are listed in the approximate order in which they appear.

Table 18: 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 18: 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
16,32,64,128,256,512,2048,4096,8192,16384,32768,65536,131072
  ip6ndp    0    0K      -          4   64
  in6ifmulti  1    1K      -          1   64
  in6grentry  1    1K      -          1   64
  iflogical  20    5K      -         29  2048
  iffamily   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
rtsmsg 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					
synccache	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.device.net/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>

<memstat-size>16,32,64,128,512,1024,4096,8192,16384,32768,65536,131072</memstat-size>

<memstat-name>temp</memstat-name>
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<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>in6grenty</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>
<high-use>--</high-use>
<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-req>5</memstat-req>
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<memstat-name>inifmulti</memstat-name>
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<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>
<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>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
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<memstat-name>ifdevice</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>16</memstat-size>
<memstat-name>ifstat</memstat-name>
<inuse>40</inuse>
<memuse>22</memuse>
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<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>
```

```

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  <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>
  <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>
  <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>
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<memstat-size>128</memstat-size>
<memstat-name>lr</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
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<memstat-name>pic</memstat-name>
<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>
<high-use>--</high-use>
<memstat-req>162</memstat-req>
<memstat-size>16,32,128,256,16384</memstat-size>
<memstat-name>gencfg</memstat-name>
<inuse>224</inuse>
<memuse>56</memuse>
<high-use>--</high-use>
<memstat-req>540</memstat-req>
<memstat-size>16,32,64,256,512,32768,65536</memstat-size>
<memstat-name>jsr</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>16</memstat-size>
<memstat-name>idl</memstat-name>
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<memuse>0</memuse>
<high-use>--</high-use>
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<memstat-name>rtsmsg</memstat-name>
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<inuse>249</inuse>
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<memstat-req>249</memstat-req>
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<memstat-name>mtx_pool</memstat-name>
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<memuse>8</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64,128</memstat-size>
<memstat-name>DEVFS3</memstat-name>
<inuse>109</inuse>
<memuse>12</memuse>

```



```

<high-use>--</high-use>
<memstat-req>117</memstat-req>
<memstat-size>256</memstat-size>
<memstat-name>DEVFS1</memstat-name>
<inuse>102</inuse>
<memuse>23</memuse>
<high-use>--</high-use>
<memstat-req>109</memstat-req>
<memstat-size>2048</memstat-size>
<memstat-name>pgrp</memstat-name>
<inuse>12</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>21</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>session</memstat-name>
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<memuse>1</memuse>
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<memstat-name>proc</memstat-name>
<inuse>2</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
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<memstat-size>16384</memstat-size>
<memstat-name>subproc</memstat-name>
<inuse>244</inuse>
<memuse>496</memuse>
<high-use>--</high-use>
<memstat-req>1522</memstat-req>
<memstat-size>2048,131072</memstat-size>
<memstat-name>cred</memstat-name>
<inuse>30</inuse>
<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>11409</memstat-req>
<memstat-size>256</memstat-size>
<memstat-name>plimit</memstat-name>
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<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>133</memstat-req>
<memstat-size>2048</memstat-size>
<memstat-name>uidinfo</memstat-name>
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<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>6</memstat-req>
<memstat-size>32,512</memstat-size>
<memstat-name>sysctlpid</memstat-name>
<inuse>1117</inuse>
<memuse>34</memuse>
<high-use>--</high-use>
<memstat-req>1117</memstat-req>
<memstat-size>16,32,64</memstat-size>
<memstat-name>sysctltmp</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>

```

```

<memstat-req>743</memstat-req>
<memstat-size>16,32,64,1024</memstat-size>
<memstat-name>umtx</memstat-name>
<inuse>144</inuse>
<memuse>9</memuse>
<high-use>--</high-use>
<memstat-req>144</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>SWAP</memstat-name>
<inuse>2</inuse>
<memuse>209</memuse>
<high-use>--</high-use>
<memstat-req>2</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>bus</memstat-name>
<inuse>496</inuse>
<memuse>55</memuse>
<high-use>--</high-use>
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<memstat-size>16,32,64,128,32768</memstat-size>
<memstat-name>bus-sc</memstat-name>
<inuse>23</inuse>
<memuse>33</memuse>
<high-use>--</high-use>
<memstat-req>335</memstat-req>

<memstat-size>16,32,64,512,1024,2048,8192,16384,65536,131072</memstat-size>
<memstat-name>devstat</memstat-name>
<inuse>10</inuse>
<memuse>21</memuse>
<high-use>--</high-use>
<memstat-req>10</memstat-req>
<memstat-size>16,131072</memstat-size>
<memstat-name>eventhandler</memstat-name>
<inuse>35</inuse>
<memuse>2</memuse>
<high-use>--</high-use>
<memstat-req>36</memstat-req>
<memstat-size>32,128</memstat-size>
<memstat-name>kobj</memstat-name>
<inuse>93</inuse>
<memuse>186</memuse>
<high-use>--</high-use>
<memstat-req>111</memstat-req>
<memstat-size>65536</memstat-size>
<memstat-name>DEVFS</memstat-name>
<inuse>8</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>9</memstat-req>
<memstat-size>16,64</memstat-size>
<memstat-name>rman</memstat-name>
<inuse>71</inuse>
<memuse>5</memuse>
<high-use>--</high-use>
<memstat-req>433</memstat-req>
<memstat-size>16,32,64</memstat-size>
<memstat-name>sbuf</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>

```

```

<memstat-req>522</memstat-req>
<memstat-size>16,32,32768,131072</memstat-size>
<memstat-name>NULLFS hash</memstat-name>
<inuse>1</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>taskqueue</memstat-name>
<inuse>5</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>5</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>turnstiles</memstat-name>
<inuse>145</inuse>
<memuse>10</memuse>
<high-use>--</high-use>
<memstat-req>145</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>Unitno</memstat-name>
<inuse>8</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>44</memstat-req>
<memstat-size>16,64</memstat-size>
<memstat-name>iocltops</memstat-name>
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<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>27622</memstat-req>
<memstat-size>16,64,8192,16384,131072</memstat-size>
<memstat-name>iov</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>18578</memstat-req>
<memstat-size>16,64,128,256,512,1024,2048,131072</memstat-size>
<memstat-name>msg</memstat-name>
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<memuse>25</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>32768,131072</memstat-size>
<memstat-name>sem</memstat-name>
<inuse>4</inuse>
<memuse>7</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>16384,32768,131072</memstat-size>
<memstat-name>shm</memstat-name>
<inuse>9</inuse>
<memuse>20</memuse>
<high-use>--</high-use>
<memstat-req>14</memstat-req>
<memstat-size>32768</memstat-size>
<memstat-name>ttys</memstat-name>
<inuse>321</inuse>
<memuse>61</memuse>
<high-use>--</high-use>
<memstat-req>528</memstat-req>

```

```
<memstat-size>512,32768</memstat-size>
<memstat-name>ptys</memstat-name>
<inuse>1</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>128</memstat-size>
<memstat-name>mbuf_tag</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
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<memstat-req>23383</memstat-req>
<memstat-size>16</memstat-size>
<memstat-name>soname</memstat-name>
<inuse>115</inuse>
<memuse>12</memuse>
<high-use>--</high-use>
<memstat-req>24712</memstat-req>
<memstat-size>16,32,64,256</memstat-size>
<memstat-name>pcb</memstat-name>
<inuse>216</inuse>
<memuse>33</memuse>
<high-use>--</high-use>
<memstat-req>484</memstat-req>

<memstat-size>16,32,64,128,1024,2048,4096,16384,32768,65536</memstat-size>
<memstat-name>BIO buffer</memstat-name>
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<high-use>--</high-use>
<memstat-req>405</memstat-req>
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<memstat-name>vfscache</memstat-name>
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<memstat-req>1</memstat-req>
<memstat-size>65536</memstat-size>
<memstat-name>cluster_save buffer</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>2</memstat-req>
<memstat-size>32,64</memstat-size>
<memstat-name>VFS hash</memstat-name>
<inuse>1</inuse>
<memuse>128</memuse>
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<memstat-name>vnodes</memstat-name>
<inuse>1</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>512</memstat-size>
<memstat-name>mount</memstat-name>
<inuse>290</inuse>
<memuse>23</memuse>
<high-use>--</high-use>
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```

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<memstat-size>16,32,64,128,256,4096,32768</memstat-size>
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<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>498</memstat-req>
<memstat-size>16384</memstat-size>
<memstat-name>pfs_nodes</memstat-name>
<inuse>25</inuse>
<memuse>3</memuse>
<high-use>--</high-use>
<memstat-req>25</memstat-req>
<memstat-size>128</memstat-size>
<memstat-name>pfs_vncache</memstat-name>
<inuse>27</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>53</memstat-req>
<memstat-size>32</memstat-size>
<memstat-name>STP</memstat-name>
<inuse>1</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
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<memstat-name>GEOM</memstat-name>
<inuse>146</inuse>
<memuse>11</memuse>
<high-use>--</high-use>
<memstat-req>1042</memstat-req>

<memstat-size>16,32,64,128,256,512,2048,16384,32768,131072</memstat-size>
<memstat-name>syncache</memstat-name>
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<zone-size>460</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
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<zone-name>PIPE:</zone-name>
<zone-size>404</zone-size>
<count-limit>0</count-limit>
<used>27</used>
<free>9</free>
<zone-req>717</zone-req>
<zone-name>KNOTE:</zone-name>
<zone-size>72</zone-size>
<count-limit>0</count-limit>
<used>42</used>

```

```
<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>
<zone-req>105</zone-req>
<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://xml.device.net/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>rtnextthop</memstat-name>
<inuse>127</inuse>
<memuse>18</memuse>
<high-use>--</high-use>
<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>
<memstat-size>256</memstat-size>
<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>
<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>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>65536</memstat-size>
<memstat-name>ifdevice</memstat-name>
<inuse>4</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>16</memstat-size>
<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>
<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>
<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>
<memstat-name>pic</memstat-name>
<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>
<high-use>--</high-use>
<memstat-req>162</memstat-req>
<memstat-size>16,32,128,256,16384</memstat-size>
<memstat-name>gencfg</memstat-name>
<inuse>224</inuse>
<memuse>56</memuse>
<high-use>--</high-use>
<memstat-req>540</memstat-req>
<memstat-size>16,32,64,256,512,32768,65536</memstat-size>
<memstat-name>jsr</memstat-name>
<inuse>2</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>4</memstat-req>
<memstat-size>16</memstat-size>
<memstat-name>idl</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>
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<memstat-size>16,32,64,128,256,4096,16384,32768,131072</memstat-size>

<memstat-name>rtsmsg</memstat-name>
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<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>2</memstat-req>
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<inuse>249</inuse>
<memuse>16</memuse>
<high-use>--</high-use>
<memstat-req>249</memstat-req>
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<memstat-name>mtx_pool</memstat-name>
```

```

<inuse>1</inuse>
<memuse>8</memuse>
<high-use>--</high-use>
<memstat-req>1</memstat-req>
<memstat-size>64,128</memstat-size>
<memstat-name>DEVFS3</memstat-name>
<inuse>109</inuse>
<memuse>12</memuse>
<high-use>--</high-use>
<memstat-req>117</memstat-req>
<memstat-size>256</memstat-size>
<memstat-name>DEVFS1</memstat-name>
<inuse>102</inuse>
<memuse>23</memuse>
<high-use>--</high-use>
<memstat-req>109</memstat-req>
<memstat-size>2048</memstat-size>
<memstat-name>pgrp</memstat-name>
<inuse>12</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>21</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>session</memstat-name>
<inuse>8</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>15</memstat-req>
<memstat-size>512</memstat-size>
<memstat-name>proc</memstat-name>
<inuse>2</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>2</memstat-req>
<memstat-size>16384</memstat-size>
<memstat-name>subproc</memstat-name>
<inuse>244</inuse>
<memuse>496</memuse>
<high-use>--</high-use>
<memstat-req>1522</memstat-req>
<memstat-size>2048,131072</memstat-size>
<memstat-name>cred</memstat-name>
<inuse>30</inuse>
<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>11409</memstat-req>
<memstat-size>256</memstat-size>
<memstat-name>plimit</memstat-name>
<inuse>17</inuse>
<memuse>4</memuse>
<high-use>--</high-use>
<memstat-req>133</memstat-req>
<memstat-size>2048</memstat-size>
<memstat-name>uidinfo</memstat-name>
<inuse>3</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>6</memstat-req>
<memstat-size>32,512</memstat-size>
<memstat-name>sysctluid</memstat-name>
<inuse>1117</inuse>

```

```

<memuse>34</memuse>
<high-use>--</high-use>
<memstat-req>1117</memstat-req>
<memstat-size>16,32,64</memstat-size>
<memstat-name>sysctltmp</memstat-name>
<inuse>0</inuse>
<memuse>0</memuse>
<high-use>--</high-use>
<memstat-req>743</memstat-req>
<memstat-size>16,32,64,1024</memstat-size>
<memstat-name>umtx</memstat-name>
<inuse>144</inuse>
<memuse>9</memuse>
<high-use>--</high-use>
<memstat-req>144</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>SWAP</memstat-name>
<inuse>2</inuse>
<memuse>209</memuse>
<high-use>--</high-use>
<memstat-req>2</memstat-req>
<memstat-size>64</memstat-size>
<memstat-name>bus</memstat-name>
<inuse>496</inuse>
<memuse>55</memuse>
<high-use>--</high-use>
<memstat-req>1196</memstat-req>
<memstat-size>16,32,64,128,32768</memstat-size>
<memstat-name>bus-sc</memstat-name>
<inuse>23</inuse>
<memuse>33</memuse>
<high-use>--</high-use>
<memstat-req>335</memstat-req>

<memstat-size>16,32,64,512,1024,2048,8192,16384,65536,131072</memstat-size>
<memstat-name>devstat</memstat-name>
<inuse>10</inuse>
<memuse>21</memuse>
<high-use>--</high-use>
<memstat-req>10</memstat-req>
<memstat-size>16,131072</memstat-size>
<memstat-name>eventhandler</memstat-name>
<inuse>35</inuse>
<memuse>2</memuse>
<high-use>--</high-use>
<memstat-req>36</memstat-req>
<memstat-size>32,128</memstat-size>
<memstat-name>kobj</memstat-name>
<inuse>93</inuse>
<memuse>186</memuse>
<high-use>--</high-use>
<memstat-req>111</memstat-req>
<memstat-size>65536</memstat-size>
<memstat-name>DEVFS</memstat-name>
<inuse>8</inuse>
<memuse>1</memuse>
<high-use>--</high-use>
<memstat-req>9</memstat-req>
<memstat-size>16,64</memstat-size>
<memstat-name>rman</memstat-name>
<inuse>71</inuse>

```



```

<memuse>5</memuse>
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<count-limit>0</count-limit>
<used>422</used>
<free>20</free>
<zone-req>1950</zone-req>
<zone-name>256:</zone-name>
<zone-size>256</zone-size>
<count-limit>0</count-limit>
<used>204</used>
<free>36</free>
<zone-req>1225</zone-req>
<zone-name>288:</zone-name>
<zone-size>288</zone-size>
<count-limit>0</count-limit>
<used>2</used>
<free>24</free>
```

```
<zone-req>10</zone-req>
<zone-name>512:</zone-name>
<zone-size>512</zone-size>
<count-limit>0</count-limit>
<used>49</used>
<free>7</free>
<zone-req>911</zone-req>
<zone-name>1024:</zone-name>
<zone-size>1024</zone-size>
<count-limit>0</count-limit>
<used>213</used>
<free>11</free>
<zone-req>1076</zone-req>
<zone-name>2048:</zone-name>
<zone-size>2048</zone-size>
<count-limit>0</count-limit>
<used>199</used>
<free>113</free>
<zone-req>640</zone-req>
<zone-name>4096:</zone-name>
<zone-size>4096</zone-size>
<count-limit>0</count-limit>
<used>144</used>
<free>7</free>
<zone-req>2249</zone-req>
<zone-name>Files:</zone-name>
<zone-size>72</zone-size>
<count-limit>0</count-limit>
<used>665</used>
<free>77</free>
<zone-req>16457</zone-req>
<zone-name>MAC labels:</zone-name>
<zone-size>20</zone-size>
<count-limit>0</count-limit>
<used>3998</used>
<free>227</free>
<zone-req>21947</zone-req>
<zone-name>PROC:</zone-name>
<zone-size>544</zone-size>
<count-limit>0</count-limit>
<used>116</used>
<free>10</free>
<zone-req>1394</zone-req>
<zone-name>THREAD:</zone-name>
<zone-size>416</zone-size>
<count-limit>0</count-limit>
<used>127</used>
<free>17</free>
<zone-req>131</zone-req>
<zone-name>KSEGRP:</zone-name>
<zone-size>88</zone-size>
<count-limit>0</count-limit>
<used>127</used>
<free>73</free>
<zone-req>131</zone-req>
<zone-name>UPCALL:</zone-name>
<zone-size>44</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
```

```
<zone-name>SLEEPQUEUE:</zone-name>
<zone-size>32</zone-size>
<count-limit>0</count-limit>
<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>
<free>13</free>
<zone-req>1335</zone-req>
<zone-name>mbuf_packet:</zone-name>
<zone-size>256</zone-size>
<count-limit>180000</count-limit>
<used>256</used>
<free>128</free>
<zone-req>49791</zone-req>
<zone-name>mbuf:</zone-name>
<zone-size>256</zone-size>
<count-limit>180000</count-limit>
<used>50</used>
<free>466</free>
<zone-req>105183</zone-req>
<zone-name>mbuf_cluster:</zone-name>
<zone-size>2048</zone-size>
<count-limit>25190</count-limit>
<used>387</used>
<free>165</free>
<zone-req>5976</zone-req>
<zone-name>mbuf_jumbo_pagesize:</zone-name>
<zone-size>4096</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>mbuf_jumbo_9k:</zone-name>
<zone-size>9216</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>mbuf_jumbo_16k:</zone-name>
<zone-size>16384</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>ACL UMA zone:</zone-name>
<zone-size>388</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>g_bio:</zone-name>
<zone-size>132</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>174</free>
<zone-req>69750</zone-req>
<zone-name>ata_request:</zone-name>
```

```

<zone-size>200</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>57</free>
<zone-req>5030</zone-req>
<zone-name>ata_composite:</zone-name>
<zone-size>192</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>GENCFG:</zone-name>
<zone-size>72</zone-size>
<count-limit>1000004</count-limit>
<used>57</used>
<free>102</free>
<zone-req>57</zone-req>
<zone-name>VNODE:</zone-name>
<zone-size>292</zone-size>
<count-limit>0</count-limit>
<used>2718</used>
<free>25</free>
<zone-req>2922</zone-req>
<zone-name>VNODEPOLL:</zone-name>
<zone-size>72</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>S VFS Cache:</zone-name>
<zone-size>68</zone-size>
<count-limit>0</count-limit>
<used>2500</used>
<free>76</free>
<zone-req>3824</zone-req>
<zone-name>L VFS Cache:</zone-name>
<zone-size>291</zone-size>
<count-limit>0</count-limit>
<used>51</used>
<free>14</free>
<zone-req>63</zone-req>
<zone-name>NAMEI:</zone-name>
<zone-size>1024</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>8</free>
<zone-req>53330</zone-req>
<zone-name>NFSMOUNT:</zone-name>
<zone-size>480</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>NFSNODE:</zone-name>
<zone-size>460</zone-size>
<count-limit>0</count-limit>
<used>0</used>
<free>0</free>
<zone-req>0</zone-req>
<zone-name>PIPE:</zone-name>
<zone-size>404</zone-size>

```

```
<count-limit>0</count-limit>
<used>27</used>
<free>9</free>
<zone-req>717</zone-req>
<zone-name>KNOTE:</zone-name>
<zone-size>72</zone-size>
<count-limit>0</count-limit>
<used>42</used>
<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>
<zone-req>105</zone-req>
<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-deamon>0</pages-freed-by-deamon>
<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>
</system-virtual-memory-information>
<cli>
  <banner></banner>
</cli>
</rpc-reply>

```


show task replication

Syntax	show task replication
Release Information	<p>Command introduced in Junos OS Release 8.5.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 13.2X51-D20 for QFX Series switches.</p> <p>Support for logical systems introduced in Junos OS Release 13.3</p>
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.
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 282 show task replication (Issued on the Backup Routing Engine) on page 283
Output Fields	Table 19 on page 282 lists the output fields for the show task replication command. Output fields are listed in the approximate order in which they appear.

Table 19: 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 .
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
```

show version

List of Syntax	Syntax on page 284 Syntax (EX Series Switches) on page 284 Syntax (TX Matrix Router) on page 284 Syntax (TX Matrix Plus Router) on page 284 Syntax (MX Series Router) on page 284 Syntax (QFX Series) on page 284
Syntax	show version <brief detail>
Syntax (EX Series Switches)	show version <all-members> <brief detail> <local> <member <i>member-id</i> >
Syntax (TX Matrix Router)	show version <brief detail> <all-chassis all-lcc lcc <i>number</i> scc>
Syntax (TX Matrix Plus Router)	show version <all-chassis all-lcc lcc <i>number</i> sfc <i>number</i> > <brief detail>
Syntax (MX Series Router)	show version <brief detail> <all-members> <local> <member <i>member-id</i> >
Syntax (QFX Series)	show version <brief detail> <component <i>component-name</i> all>
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 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 287](#)
[show version on page 287](#)
[show version \(TX Matrix Plus Router\) on page 288](#)
[show version \(TX Matrix Plus Router with 3D SIBs\) on page 290](#)
[show version \(MX Series Router\) on page 294](#)
[show version \(QFX3500 Switch\) on page 294](#)
[show version \(QFabric System\) on page 294](#)
[show version component all \(QFabric System\) on page 295](#)

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 ACL 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 ACL 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 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]

```

```
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 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]
```

```
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 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]
```

```
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 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]

```

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 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]

```

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 fpc

Syntax	<code>show version fpc</code> <code><slot-number></code>
Release Information	Command introduced in Junos OS Release 11.4 for EX Series switches.
Description	Display the version of Junos OS for EX Series switches loaded on the line cards in an EX8200 switch.
Options	<p>none—List the version of Junos OS for EX Series switches loaded on the line cards in the EX8200 switch.</p> <p><slot-number>—(Optional) Display the version of Junos OS for EX Series switches loaded on the line card slot specified by the slot-number value.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • show version on page 284
List of Sample Output	show version fpc on page 297 show version fpc 5 on page 297

Sample Output

show version fpc

```

user@switch> show version fpc
fpc 0 :
JUNOS 11.4I JUNOS 11.4I #0: 2011-12-07 11:33:18 UTC      usera@testhost1.ex.net:
/usera/customera_0612/obj-powerpc/bsd/kernels/EX8200-LC/kernel powerpc
fpc 4 :
JUNOS 11.4I JUNOS 11.4I #0: 2011-12-07 11:33:18 UTC      usera@testhost1.ex.net:
/usera/customera_0612/obj-powerpc/bsd/kernels/EX8200-LC/kernel powerpc
fpc 5 :
JUNOS 11.4I JUNOS 11.4I #0: 2011-12-07 11:33:18 UTC      usera@testhost1.ex.net:
/usera/customera_0612/obj-powerpc/bsd/kernels/EX8200-LC/kernel powerpc
fpc 7 :
JUNOS 11.4I JUNOS 11.4I #0: 2011-12-07 11:33:18 UTC      usera@testhost1.ex.net:
/usera/customera_0612/obj-powerpc/bsd/kernels/EX8200-LC/kernel powerpc

```

show version fpc 5

```

user@switch> show version fpc 5
fpc 5 :
JUNOS 11.4I JUNOS 11.4I #0: 2011-12-07 11:33:18 UTC      usera@testhost1.ex.net:
/usera/customera_0612/obj-powerpc/bsd/kernels/EX8200-LC/kernel powerpc

```


PART 4

Troubleshooting

- [Troubleshooting Procedures on page 301](#)

Troubleshooting Procedures

- Troubleshooting Loss of the Root Password on page 301

Troubleshooting Loss of the Root Password

Problem **Description:** If you forget the root password for a switch, use the password recovery procedure to reset the root password.



NOTE: You need physical access to the switch to recover the root password.

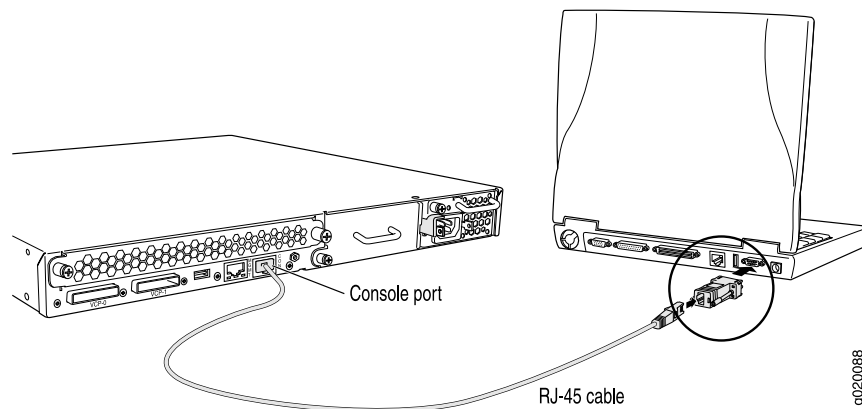


TIP: For a video on recovering the root password for routers, see *Recovering the Root Password*. The procedure is similar for switches.

Solution To recover the root password:

1. Power off your switch by unplugging the power cord or turning off the power at the wall switch.
2. Insert one end of the Ethernet cable into the serial port on the management device and connect the other end to the console port on the back of the switch. See [Figure 3 on page 302](#).

Figure 3: Connecting to the Console Port on the EX Series Switch



3. On the management device, start your asynchronous terminal emulation application (such as Microsoft Windows Hyperterminal) and select the appropriate COM port to use (for example, COM1).
4. Configure the port settings as follows:
 - Bits per second: 9600
 - Data bits: 8
 - Parity: None
 - Stop bits: 1
 - Flow control: None
5. Power on your switch by plugging in the power cord or turning on the power at the wall switch.



NOTE: On EX2300 and EX3400 switches after step 5, use the following procedure:

In the main menu that appears, select **[M]ore options > Recovery mode - [C]LI**.

A series of messages describe consistency checks, mounting of filesystems, and initialization and checkout of management services. Then the CLI prompt appears.

Proceed to Step 9 in this procedure.

6. When the following prompt appears, press the Spacebar to access the switch's bootstrap loader command prompt:

Hit **[Enter]** to boot immediately, or space bar for command prompt.
Booting **[kernel]** in 1 second...



NOTE: If the switch is in unattended mode for U-Boot, access to the bootstrap loader command prompt is blocked. If the root password is lost, you must reset the switch to the factory default configuration using the LCD panel. For more information, see *Reverting to the Default Factory Configuration for the EX Series Switch*.

7. At the following prompt, type **boot -s** to start up the system in single-user mode:
loader> boot -s
8. At the following prompt, type **recovery** to start the root password recovery procedure:
Enter full path name of shell or 'recovery' for root password recovery or RETURN for /bin/sh: recovery

A series of messages describe consistency checks, mounting of filesystems, and initialization and checkout of management services. Then the CLI prompt appears.
9. Enter configuration mode in the CLI:
user@switch> configure
10. Set the root password. For example:
user@switch# set system root-authentication plain-text-password
11. At the following prompt, enter the new root password. For example, juniper1:
user@switch# juniper1
 Retype new password:
12. At the second prompt, reenter the new root password.
13. If you are finished configuring the network, commit the configuration.
root@switch# commit
 commit complete
14. Exit configuration mode in the CLI.
root@switch# exit
15. Exit operational mode in the CLI.
root@switch> exit
16. At the prompt, enter **y** to reboot the switch.
Reboot the system? [y/n] y

Related Documentation

- [Connecting and Configuring an EX Series Switch \(CLI Procedure\) on page 9](#)
- [Connecting and Configuring an EX Series Switch \(J-Web Procedure\) on page 12](#)
- For information about configuring an encrypted root password, configuring SSH keys to authenticate root logins, and configuring special requirements for plain-text passwords, see *Configuring the Root Password*.

