



# Cisco 7304 Router Platform-Specific Commands

## Feature History

| Release    | Modification  |
|------------|---|
| 12.1(9)EX  | The Cisco 7304 router was introduced.   |
| 12.2(14)SZ | The <b>show c7300 pxf</b> keyword was altered to <b>show pxf</b> . The <b>c7300</b> keyword was removed when used before the <b>pxf</b> keyword (the <b>show c7300</b> command could still be entered, but the <b>show c7300 pxf</b> command could not be entered). |
| 12.2(18)S  | The commands and functionality documented in this document were introduced in Cisco IOS Release 12.2 S.   |
| 12.2(20)S  | The <b>show c7300 pxf</b> keyword sequence was altered to <b>show pxf</b> for all commands that previously used the <b>show c7300 pxf</b> sequence. The <b>show c7300</b> command was still usable, however, not with the <b>pxf</b> keyword.                       |
| 12.2(20)S4 | The <b>show c7300 slot</b> command was introduced.  |

This document describes various platform-specific commands that support Cisco 7304 routers. It includes the following sections:

- [Feature Overview, page 1](#)
- [Supported Platforms, page 3](#)
- [Supported Standards, MIBs, and RFCs, page 4](#)
- [Configuration Tasks, page 4](#)
- [Configuration Examples, page 9](#)
- [Command Reference, page 11](#)

## Feature Overview

The Cisco 7304 router is a four-slot modular chassis with a symmetrical backplane that can support double-wide line cards. Line cards, modular services cards (MSCs), and the Cisco 7304 PCI port adapter carrier card (7300-PA-CC) can be installed in slots 2 through 5 of a Cisco 7304 router. A processor must populate the bottom slot (slot 0 and slot 1) and a redundant processor can be installed in slots 2 and 3. Line cards, MSCs, and PA-CC jacket cards cannot be installed in slots 0 and 1.

This document describes various basic commands and some unique commands that can be used with the Cisco 7304 router.

### CLI-Controlled OIR

You can remove line cards, MSCs, SPAs, and PCI port adapter carrier cards (individual port adapters in the PCI port adapter carrier cards do not support OIR) from the Cisco 7304 router without disrupting data flow by using the **hw-module slot slot-number stop | start** command. The **hw-module slot slot-number stop** command stops traffic, turns on the green OIR LED, shuts down traffic to all interfaces in the specified router slot, and deactivates the hardware in the specified slot.

The **hw-module slot slot-number start** command restarts the line card, MSC, SPA, or PCI port adapter carrier card and shuts off the OIR LED, putting the hardware back online.

Use the **hw-module slot slot-number start** command if you have issued the **hw-module slot slot-number stop** command but do not remove the OIR-supported hardware and want to reactivate the hardware. If you remove the hardware, then reinsert it, the hardware restarts without this command.

### Flash Disk Slot Commands

The Cisco 7304 router contains an internal Flash Disk called bootdisk:. The bootdisk: is a name for a Flash Disk and is equivalent to the bootflash: device on other systems. Many software commands reference the Flash Disk slot by internal name, and bootdisk: is another option. [Table 1](#) shows some of the more commonly used commands that specify a Flash Disk slot.

**Table 1** Flash Disk Commands

| Command  | Description  |
|--|--|
| <code>cd [disk0:   bootdisk:] directory-name</code>  | <p>Changes current directory and allows you to change between directories on a Flash Disk.</p> <ul style="list-style-type: none"> <li><i>directory-name</i>—The directory to which you want to move.</li> </ul>  |
| <code>copy [disk0:   bootdisk:] source-filename [disk0:   bootdisk:] destination-filename</code> | <p>Copies from one file to another. Copies a file located on a source file system and places it with either the same filename or a different filename on the destination file system.</p> <ul style="list-style-type: none"> <li><i>source-filename</i>—Name of file to be copied.</li> <li><i>destination-filename</i>—Name of file after it is copied to the destination file system.</li> </ul> <p>Along with <b>disk0:</b> and <b>bootdisk:</b>, the source and destination file system arguments include, but are not limited to:</p> <ul style="list-style-type: none"> <li><b>nvram:</b>—Onboard nonvolatile random-access memory.</li> <li><b>running-config</b>—Running system configuration file.</li> <li><b>startup-config</b>—Startup system configuration file.</li> <li><b>tftp:</b>—A TFTP server to which you have access.</li> </ul> |

**Table 1** *Flash Disk Commands (continued)*

|   |   |
|---|---|
| <code>delete [disk0:   bootdisk:] filename</code> | Deletes a file. <ul style="list-style-type: none"> <li><code>filename</code>—Name of the file to be deleted.</li> </ul>                               |
| <code>dir [/all   disk0:   bootdisk:]</code>      | Lists files on a file system. <ul style="list-style-type: none"> <li><code>/all</code>—Lists all files on all file systems in your system.</li> </ul> |

For other File System commands that contain the **bootdisk:** keyword, see [Cisco IOS File System Commands](#). For more information about the Flash Disk, see the [Using the Flash Disk](#) publication.

#### Platform-Specific show Commands

The following platform-specific **show** commands are available on the Cisco 7304 router:

- **show c7300**
- **show c7300 accounting**
- **show c7300 interfaces**

#### PXF Processors

For a list of features that are supported in the PXF processing path, see the [Cisco 7304 Router Troubleshooting and Configuration Notes](#) document.

## Related Documents

- [Cisco 7304 Router Installation and Configuration Guide](#)
- [Cisco 7304 Router Line Card Hardware Configuration Guidelines](#)
- [Cisco 7304 Quick Start Guide](#)
- [Cisco 7304 Router Troubleshooting and Configuration Notes](#)
- [Cisco IOS File System Commands](#)
- [Cisco 7304 Network Services Engine Installation and Configuration](#)
- [OC3 Packet Over SONET Line Card Installation and Configuration](#)
- [OC48 Packet Over SONET Line Card Installation and Configuration](#)
- [Regulatory Compliance and Safety Information for Cisco 7304 Internet Routers](#)

## Supported Platforms

- Cisco 7304 router

#### Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

# Supported Standards, MIBs, and RFCs

## Standards

No new or modified standards are supported by this feature.

## MIBs

No new or modified MIBs are supported by this feature.

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:

<http://tools.cisco.com/ITDIT/MIBS/servlet/index>

If Cisco MIB Locator does not support the MIB information that you need, you can also obtain a list of supported MIBs and download MIBs from the Cisco MIBs page at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to [cco-locksmith@cisco.com](mailto:cco-locksmith@cisco.com). An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

<http://www.cisco.com/register>

## RFCs

No new or modified RFCs are supported by this feature.

# Configuration Tasks

See the following sections for configuration tasks for Cisco 7304 routers. Each task in the list is identified as either required or optional.

- [Preparing for Online Hardware Removal](#) (optional)
- [Configuring the ROM Monitor](#) (optional)

# Preparing for Online Hardware Removal

Use the following commands in privileged EXEC mode to prepare for online removal of hardware that supports online removal on a Cisco 7304 router:



## Note

SPAs require a different set of commands for online insertion and removal. For online removal of SPAs, the **hw-module subslot** commands should be entered. For additional information on the SPA OIR process, see the “Preparing for Online Insertion and Removal of Cards on the Cisco 7304 Router” section of the *Cisco 7304 Router Modular Services Card and Shared Port Adapter Software Configuration Guide*.

|               | Command   | Purpose  |
|---------------|---|--|
| <b>Step 1</b> | Router# <b>hw-module slot slot-number stop</b>  | <p>Prepares for online removal of hardware.</p> <ul style="list-style-type: none"> <li>• <i>slot-number</i>—Specifies the slot location of the hardware.</li> <li>• <b>stop</b>—Stops traffic, shuts down all interfaces, and deactivates the hardware.</li> </ul>   |
| <b>Step 2</b> | Router# <b>hw-module slot slot-number start</b> | <p>(Optional) Reenables deactivated hardware. Use this command if you have issued the <b>hw-module slot slot-number stop</b> command but did not remove the hardware and want to reactivate it. If you remove the hardware, then reinsert it, the hardware restarts without this command.</p> <ul style="list-style-type: none"> <li>• <i>slot-number</i>—Specifies the slot location of the hardware.</li> <li>• <b>start</b>—Restarts the hardware and shuts off the OIR LED, putting the hardware back online.</li> </ul> |

## Configuring the ROM Monitor

Use the following commands to view and configure the ROM monitor, beginning in privileged EXEC mode:

| Command  | Purpose   |
|--|---|
| <p><b>Step 1</b></p> <pre>Router# upgrade rom-monitor {rom1   rom2} file device:file-id ROM 2 upgrade in progress Erasing (this may take a while)... Programming... CC Do you want to verify this image (may take a few minutes)? [yes/no]: Y y Verifying ROM 2   Reading from ROM 2....Done   Comparing with the source file...Passed  Set this ROMMON image as the default (will take effect on next reload/reset)? Y done! Will take effect on next reload/reset.</pre> | <p>Programs the ROM monitor.</p> <ul style="list-style-type: none"> <li>• <b>rom1</b>—Upgradable ROM monitor 1.</li> <li>• <b>rom2</b>—Upgradable ROM monitor 2.</li> <li>• <b>file device:file-id</b>—Specifies a device and filename pair to be used to program the ROM monitor, for example, <b>bootdisk:c7300_rommon_file.srec</b>.</li> </ul> <p>Available devices are:</p> <ul style="list-style-type: none"> <li>– <b>bootdisk:</b></li> <li>– <b>disk0:</b></li> <li>– <b>ftp:</b></li> <li>– <b>rcp:</b></li> <li>– <b>tftp:</b></li> </ul> <p><b>Note</b> After configuring the <b>upgrade rom-monitor</b> command, you are prompted to set the selected ROM image as the default. If you select <b>yes</b>, you do not need to configure Step 2 below.</p> |
| <p><b>Step 2</b></p> <pre>Router# upgrade rom-monitor {rom0   rom1   rom2} default done! Will take effect on next reload/reset.</pre>  | <p>(Optional) Configures the specified ROM monitor image as the default.</p> <ul style="list-style-type: none"> <li>• <b>rom0</b>—One-time programmable, always there “golden” ROMmon.</li> <li>• <b>rom1</b>—Upgradable ROM monitor 1.</li> <li>• <b>rom2</b>—Upgradable ROM monitor 2.</li> </ul>   |

## Verifying the ROM Monitor Configuration

Use the **show version** command to verify the configuration of the ROM monitor. The **show version** command displays the ROM version and which ROM monitor is currently configured as the default ROM:

```
Router# show version
.
.
.
ROM: System Bootstrap, Version 12.1(20010827:230108) [cisco-rommon_1_0 104], DE
Currently running ROMMON from ROM 0
.
.
.
```

## Enabling the PXF Processors



**Note** To use PXF processing, you must have IP CEF switching enabled.



**Note** The PXF processors must not be disabled except for short periods for debugging purposes.

PXF switching on the Cisco 7304 router is enabled by default. If it is disabled, use the following commands in global configuration mode to re-enable PXF switching:

|        | Command                       | Purpose  |
|--------|-------------------------------|--|
| Step 1 | Router(config)# <b>ip cef</b> | Enables IP CEF switching on the Route Processor, if it is not currently enabled. |
| Step 2 | Router(config)# <b>ip pxf</b> | Enables IP switching in PXF.   |

## Verifying the PXF Processors

PXF is enabled by default on the Cisco 7304 router. The output of the **show running-config** command indicates that PXF is disabled by displaying “no ip pxf” in the output. If you do not see “no ip pxf,” PXF is enabled.

```
Router# show running-config
Building configuration...

Current configuration : 1227 bytes
!
version 12.1
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router
!
boot system flash disk0:c7300-js-mz.121-9.EX1
enable password password1
!
ip subnet-zero
ip cef
!
no ip pxf
!
!
```

## Troubleshooting Tips

### Cisco 7304 Online Troubleshooting

The primary source of troubleshooting information for the Cisco 7304 router is an online and interactive module in the Troubleshooting Assistant.

Go to the [Cisco 7304 Troubleshooting Assistant](#) module to troubleshoot problems with your Cisco 7304 router.

### CLI-Based Preparation for OIR



#### Note

All of the information in this section also applies to MSCs and the PCI port adapter carrier cards. Line cards are used throughout this portion of the text for illustrative purposes. It should also be noted that SPAs use the **hw-module subslot** command for online insertion and removal. For additional information on the SPA OIR process, see the “Preparing for Online Insertion and Removal of Cards on the Cisco 7304 Router” section of the *Cisco 7304 Router Modular Services Card and Shared Port Adapter Software Configuration Guide*.

When a line card is in the process of being activated because you have entered the **hw-module slot slot-number start** command, any additional configuration of the **hw-module slot slot-number start** command is ignored and the following message is displayed:

```
Line card activation is in progress. Please retry the command later
```

If a line card is in the process of being deactivated because you have entered the **hw-module slot slot-number stop** command and you enter the **hw-module slot slot-number start** command the following message is displayed:

```
Line card deactivation is in progress. Please retry the command later
```

If a line card is already active, the **hw-module slot slot-number start** command is ignored and the following message is displayed:

```
Command cannot be executed. Line card status is active
```

If a line card is already deactivated, the **hw-module slot slot-number slot stop** command is ignored and the following message is displayed:

```
Command cannot be executed. Line card status is deactivated
```

### ROM Monitor Program

You cannot program ROM 0. If you attempt to program ROM 0 using the **upgrade rom-monitor default** command, the following error message is displayed:

```
%Error: This operation on ROM 0 (Golden ROM) is not supported
```

## Monitoring and Maintaining Cisco 7304 Routers

Use the following commands to monitor and maintain the Cisco 7304 router:

| Command  | Purpose   |
|--|---|
| Router# <code>show c7300</code>  | Displays the types of hardware installed in your system.  |
| Router# <code>show c7300 errorlog {slot slot-number   all}</code>                                | Displays information about hardware and backplane errors. <ul style="list-style-type: none"> <li><code>slot-number</code>—Displays errors on a piece of a hardware in the specified slot.</li> <li><code>all</code>—Displays errors for all line card slots.</li> </ul>   |
| Router# <code>show pxf accounting</code><br>or<br>Router# <code>show c7300 pxf accounting</code> | Displays the number of packets entering or exiting the PXF processors. Displays a count of packets dropped by the PXF processors.   |
| Router# <code>show pxf interfaces</code><br>or<br>Router# <code>show c7300 pxf interfaces</code> | Displays the status of various interfaces known to the PXF processors.  |
| Router# <code>show diag [slot-number   chassis]</code>   | Displays specific diagnostic information about each line card and other components in your system. <ul style="list-style-type: none"> <li>(Optional) <code>slot-number</code>—Displays diagnostic information about a particular line card.</li> <li>(Optional) <code>chassis</code>—Displays diagnostic information about the backplane, power supplies, and fan modules.</li> </ul> |
| Router# <code>show environment</code>  | Displays reports of the current environmental system status.  |
| Router# <code>show version</code>  | Displays the configuration of the system hardware, the number of each interface type installed, the Cisco IOS software version, the names and sources of configuration files, and the boot images. Displays the configuration of the ROM monitor.   |

## Configuration Examples

This section provides the following configuration examples:

- [Configuring the ROM Monitor Example](#)
- [Enabling the PXF Processors Example](#)
- [Preparing for Online Hardware Removal Example](#)

### Configuring the ROM Monitor Example

The following example configures ROM2 with the ROM\_1\_0.srec file:

```

Router# upgrade rom-monitor rom2 file bootdisk:ROM_1_0.srec
ROM 2 upgrade in progress
Erasing (this may take a while)...
Programming...
CC
Do you want to verify this image (may take a few minutes)? [yes/no]: y
Verifying ROM 2
  Reading from ROM 2....Done
  Comparing with the source file...Passed

Set this ROMMON image as the default (will take effect on next reload/reset)? [ y

```

## Enabling the PXF Processors Example



### Note

The following example enables the PXF processors. The PXF processors must not be disabled except for short periods for debugging purposes.

The PXF processors on the Cisco 7304 router are enabled by default. The following example enables PXF processors that have been disabled on a system on which IP CEF has also been disabled:

```

ip cef
ip pxf

```

## Preparing for Online Hardware Removal Example

The following example stops traffic, shuts down all interfaces, and deactivates the hardware in slot 4 in preparation for an online removal:

```
hw-module slot 4 stop
```

After you issue this command, the green OIR LED will go on and you can safely remove the hardware from the chassis.

If you decide not to remove a piece of hardware after issuing the **hw-module slot slot-number stop** command, issue the **hw-module slot slot-number start** command to restart the hardware. The following example restarts the hardware in slot 4:

```
hw-module slot 4 start
```



### Note

SPAs require a different set of commands for online insertion and removal. For online removal of SPAs, the **hw-module subslot** commands should be entered. For additional information on the SPA OIR process, see the “Preparing for Online Insertion and Removal of Cards on the Cisco 7304 Router” section of the *Cisco 7304 Router Modular Services Card and Shared Port Adapter Software Configuration Guide*.

# Command Reference

This section documents the new and modified commands discussed in this document. All other commands used with this platform are documented in the Cisco IOS Release 12.1 command reference publications.

- [hw-module slot \(7300\)](#)
- [ip pxf](#)
- [show c7300](#)
- [show c7300 errorlog](#)
- [show c7300 pxf accounting](#)
- [show c7300 pxf interfaces](#)
- [show c7300 slot](#)
- [show diag](#)
- [show pxf accounting](#)
- [show pxf interfaces](#)
- [upgrade rom-monitor default](#)
- [upgrade rom-monitor file](#)

## hw-module slot (7300)

To prepare a line card, MSC, or PCI port adapter carrier card for online removal, use the **hw-module slot** command in privileged EXEC mode.

**hw-module slot** *slot-number* {**stop** | **start**}

| Syntax Description |                    |   |
|--------------------|--------------------|---|
|                    | <i>slot-number</i> | Specifies the slot number of the line card, MSC, or PCI port adapter carrier card.  |
|                    | <b>stop</b>        | Stops traffic, turns on the OIR LED, shuts down all interfaces, and deactivates the line card, MSC, or PCI port adapter carrier card. |
|                    | <b>start</b>       | Restarts the line card and shuts off the OIR LED, putting the hardware back online.   |

**Defaults** No default behavior or values.

**Command Modes** Privileged EXEC

| Command History | Release   | Modification  |
|-----------------|-----------|---|
|                 | 12.1(9)EX | This command was enabled on the Cisco 7304 router.                                  |
|                 | 12.2(18)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S. |

**Usage Guidelines** Use the **hw-module slot** *slot-number* **stop** command to stop traffic, turn on the green OIR LED, and shut down all interfaces to remove a line card, MSC, or PCI port adapter carrier card from the Cisco 7304 router without disrupting data flow. You should not remove hardware while traffic is still running.

The **stop** keyword stops traffic through interfaces and deactivates the hardware. When the OIR LED turns green, the hardware has been deactivated and can be physically removed.

The **hw-module slot** *slot-number* **start** command restarts the line card, MSC, or PCI port adapter carrier card and shuts off the OIR LED, putting the card back online.

Use the **hw-module slot** *slot-number* **start** command if you issue the **hw-module slot** *slot-number* **stop** command, did not remove the hardware, and now want to reactivate it. If you remove and then reinsert the hardware, the hardware restarts without this command.

This command cannot be used for online removal of SPAs. For online removal of SPAs, use the **hw-module subslot** command.

You can also use this command to restore a line card, MSC, or PCI port adapter carrier card that has been deactivated due to some failure.



**Note**

Line cards, MSCs, and PCI port adapter carrier cards are automatically initialized after being inserted or after a system bootup. You do not need to issue the **hw-module slot** *slot-number* **start** command.

**Examples**

The following example shows how to deactivate the line card, MSC, or PCI port adapter carrier card in slot 2. After entering this command and the green OIR LED turns on, you can remove the hardware and insert a new piece of hardware:

```
hw-module slot 2 stop
```

The following example shows how to reactivate a line card, MSC, or PCI port adapter carrier card in slot 2. You only need to enter this command if you enter the **hw-module slot slot-number stop** command but do not remove the hardware and instead want to restart the hardware.

```
hw-module slot 2 start
```

**Related Commands**

| Command                                | Description  |
|--|--|
| <b>hw-module subslot</b>               | Prepares a SPA for online removal.   |
| <a href="#">show c7300</a>             | Displays the types of cards (NSE and line cards) installed in a Cisco 7304 router. |
| <a href="#">show diag</a>              | Displays hardware information for any slot or the chassis.                         |
| <a href="#">show c7300 errorlog</a>    | Displays error information on a Cisco 7304 series router.                          |
| <a href="#">show platform errorlog</a> |  |

# ip pxf

To manually enable the PXF processors, use the **ip pxf** command in global configuration mode. To manually disable the PXF processors, use the **no** form of this command.

**ip pxf**

**no ip pxf**

**Syntax Description** This command has no arguments or keywords.

**Defaults** The PXF processors are enabled by default.

**Command Modes** Global configuration

## Command History

| Release   | Modification  |
|-----------|---|
| 12.1(9)EX | This command was introduced.  |
| 12.2(18)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S. |

## Usage Guidelines

The PXF processors are enabled by default. If they are ever disabled, you must enable them to take advantage of IP packet switching and feature acceleration. The PXF processors should never be disabled except for very short durations for debugging purposes.



### Note

You must also have IP CEF switching turned on for accelerated IP packet switching.

## Examples

The following example enables the PXF processors:

```
ip pxf
```

## Related Commands

| Command                                   | Description  |
|---|--|
| <a href="#">show c7300 pxf accounting</a> | Displays the number of packets entering or exiting the PXF processors. |
| <a href="#">show pxf accounting</a>       |  |
| <a href="#">show c7300 pxf interfaces</a> | Displays the status of various interfaces known to the PXF processors. |
| <a href="#">show pxf interfaces</a>       |  |

## show c7300

To display the types of hardware (processors, line cards, jacket cards, etc.) installed in a Cisco 7304 router running pre-Cisco IOS Release 12.2(25)S software, use the **show c7300** command in privileged EXEC mode.

**show c7300**

### Syntax Description

This command has no arguments or keywords.

### Defaults

No default behavior or values.

### Command Modes

Privileged EXEC

### Command History

| Release   | Modification  |
|-----------|---|
| 12.1(9)EX | This command was introduced.  |
| 12.2(18)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S. |

### Usage Guidelines

This command displays the types of hardware (processors, jacket cards, and line cards) installed in a Cisco 7304 router. This command output also displays if your system is in compliance with hardware configuration guidelines. Empty slots are not displayed in the **show c7300** command output.

### Examples

The following example displays information about the Cisco 7304 router:

```
Router# show c7300
Slot      Card Type           Status           Insertion time
----      -
0,1       NSE-100             Active           05:17:22 ago
2         40C3-POS            Active           00:40:04 ago
```

System is compliant with hardware configuration guidelines.

```
Network IO Interrupt Throttling:
throttle count=2, timer count=2
active=0, configured=1
netint usec=3999, netint mask usec=200
```

### Related Commands

| Command                             | Description  |
|-------------------------------------|--|
| <a href="#">show c7300 errorlog</a> | Displays error information on a Cisco 7304 router.         |
| <a href="#">show diag</a>           | Displays hardware information for any slot or the chassis. |

| Command                       | Description   |
|-------------------------------|---|
| <a href="#">show platform</a> | Replaced this command in Cisco IOS Release 12.2(25)S. Displays the types of hardware in the router.   |
| <a href="#">show version</a>  | Displays the configuration of the system hardware, the number of each interface type installed, the Cisco IOS software version, the names and sources of configuration files, and the boot images. Displays the configuration of the ROM monitor. |

# show c7300 errorlog

To display error information on a Cisco 7304 router running pre-Cisco IOS Release 12.2(25)S software, use the **show c7300 errorlog** command in privileged EXEC mode.

**show c7300 errorlog** [*slot slot-number* | **all**]

## Syntax Description

|                    |   |
|--------------------|---|
| <b>slot</b>        | Displays error information for the hardware in a slot.                    |
| <i>slot-number</i> | Specifies the slot location of the hardware to display error information. |
| <b>all</b>         | Displays error information for all hardware in all slots.                 |

## Defaults

No default behavior or values.

## Command Modes

Privileged EXEC

## Command History

| Release   | Modification  |
|-----------|---|
| 12.1(9)EX | This command was introduced.  |
| 12.2(18)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S. |

## Usage Guidelines

Each line card in a Cisco 7304 router has a serial channel connecting to the processor. There are two serial channel controllers on each serial channel, one for the line card side and one for the processor side. Each serial channel has four serial links labeled as SL0, SL1, SL2 and SL3. This command displays a set of error counters for each serial link.

Use this command to display board-level errors. If you are investigating controller or interface errors, use the **show controller** and **show interface** commands.

## Examples

The following example displays error information about a line card in slot 2 on a Cisco 7304 router:

```
Router# show c7300 errorlog slot 2
Backplane serial channel controller (Santa Ana):
LC 2, LC Santa Ana, channel A, error counters:
      SL0  SL1  SL2  SL3
Reframe:      [ 0  0  0  0 ]
Overrun:      [ 0  0  0  0 ]
Underrun:     [ 0  0  0  0 ]
OOB:          [ 0  0  0  0 ]
Disparity:    [ 0  0  0  0 ]
Missing_Ctrl_Code: [ 0  0  0  0 ]
Chip access errors: [ 0  0  0  0 ]

LC 2, NSE Santa Ana 0, channel A, error counters:
      SL0  SL1  SL2  SL3
Reframe:      [ 0  0  0  0 ]
Overrun:      [ 0  0  0  0 ]
```

```

Underrun:      [ 0 0 0 0 ]
OOB:           [ 0 0 0 0 ]
Disparity:     [ 0 0 0 0 ]
Missing_Ctrl_Code: [ 0 0 0 0 ]
Chip access errors: [ 0 0 0 0 ]

```

The following example displays error information about all hardware in all of the slots on a Cisco 7304 router:

```

Router# show c7300 errorlog slot all
Backplane serial channel controller (Santa Ana):
LC 2, LC Santa Ana, channel A, error counters:
      SL0  SL1  SL2  SL3
Reframe:      [ 0 0 0 0 ]
Overrun:      [ 0 0 0 0 ]
Underrun:     [ 0 0 0 0 ]
OOB:          [ 0 0 0 0 ]
Disparity:    [ 0 0 0 0 ]
Missing_Ctrl_Code: [ 0 0 0 0 ]
Chip access errors: [ 0 0 0 0 ]

LC 2, NSE Santa Ana 0, channel A, error counters:
      SL0  SL1  SL2  SL3
Reframe:      [ 0 0 0 0 ]
Overrun:      [ 0 0 0 0 ]
Underrun:     [ 0 0 0 0 ]
OOB:          [ 0 0 0 0 ]
Disparity:    [ 0 0 0 0 ]
Missing_Ctrl_Code: [ 0 0 0 0 ]
Chip access errors: [ 0 0 0 0 ]

Backplane serial channel controller (Santa Ana):
LC 3, LC Santa Ana, channel A, error counters:
      SL0  SL1  SL2  SL3
Reframe:      [ 0 0 0 0 ]
Overrun:      [ 0 0 0 0 ]
Underrun:     [ 0 0 0 0 ]
OOB:          [ 0 0 0 0 ]
Disparity:    [ 0 0 0 0 ]
Missing_Ctrl_Code: [ 0 0 0 0 ]
Chip access errors: [ 0 0 0 0 ]

LC 3, NSE Santa Ana 0, channel A, error counters:
      SL0  SL1  SL2  SL3
Reframe:      [ 0 0 0 0 ]
Overrun:      [ 0 0 0 0 ]
Underrun:     [ 0 0 0 0 ]
OOB:          [ 0 0 0 0 ]
Disparity:    [ 0 0 0 0 ]
Missing_Ctrl_Code: [ 0 0 0 0 ]
Chip access errors: [ 0 0 0 0 ]

```

Table 2 describes the significant fields shown in the display.

**Table 2** *show c7300 errorlog Field Descriptions*

| Field               | Description  |
|---------------------|--|
| Reframe             | A data frame on a serial link does not align to the designated framing boundary. |
| Overrun:            | Packets are stored in a FIFO buffer when the serial link is overloaded.          |
| Underrun:           | A serial link looks for packets in an empty FIFO buffer.                         |
| OOB:                | Out of band error. An undefined serial link control character is received.       |
| Disparity:          | A running disparity error occurs on the link.                                    |
| Missing_Ctrl_Code:  | Missing Control Code. An incorrect number of control codes are received.         |
| Chip access errors: | Access to the serial channel device fails.                                       |

#### Related Commands

| Command                                | Description   |
|--|---|
| <a href="#">show c7300</a>             | Displays the types of hardware currently installed in a Cisco 7304 router.  |
| <a href="#">show diag</a>              | Displays hardware information for any slot or the chassis.  |
| <a href="#">show platform errorlog</a> | Replaced this command in Cisco IOS Release 12.2(25)S. Displays error information.   |
| <a href="#">show version</a>           | Displays the configuration of the system hardware, the number of each interface type installed, the Cisco IOS software version, the names and sources of configuration files, and the boot images. Displays the configuration of the ROM monitor. |

# show c7300 pxf accounting

To display the number and types of packets entering or exiting the PXF processors, use the **show c7300 pxf accounting** command in privileged EXEC mode.

**show c7300 pxf accounting**

**Syntax Description** This command has no arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** Privileged EXEC

| Command History | Release    | Modification  |
|-----------------|------------|---|
|                 | 12.1(9)EX  | This command was introduced.  |
|                 | 12.2(14)SZ | This command was modified to <b>show pxf accounting</b> for the Cisco 7304 router. All IOS releases prior to 12.2(14)SZ that support the Cisco 7304 still require that <b>show c7300 pxf accounting</b> be entered to gather PXF accounting output. |
|                 | 12.2(18)S  | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S.   |
|                 | 12.2(20)S  | The <b>c7300</b> keyword was removed. Entering <b>show pxf accounting</b> could get the information previously gathered by entering the <b>show c7300 pxf accounting</b> command.   |

**Usage Guidelines** Use the **show c7300 pxf accounting** command to display the number of packets entering and exiting the PXF processors.

The **c7300** keyword was removed from this command in Cisco IOS Release 12.2(20)S. The **show pxf accounting** command can be used in post-Cisco IOS Release 12.2(20)S releases to gather information previously gathered by entered the **show c7300 pxf accounting** command.

**Examples** The following example displays output of the **show c7300 pxf accounting** command:

```
Router# show c7300 pxf accounting

PXF Utilization:14 %
PXF Packet Counters:
  Ingress from GE :           0      Egress to GE :           8
  Ingress from LCs:    24783520    Egress to LCs:    18387770
  Ingress from RP :           10      Egress to RP :           2
  Priority queue :           12      Default queue:    18387787
Drop Packet Counters:
  ACL input deny Drop:           6395752
```

Table 3 describes the significant fields shown in the display.

**Table 3** *show c7300 pxf accounting Field Descriptions*

| Field                 | Description  |
|-----------------------|--|
| Ingress from GE:      | Packets coming into the PXF processors from the Gigabit Ethernet ports.  |
| Egress to GE:         | Packets going to the Gigabit Ethernet ports from the PXF processors.     |
| Ingress from LCs      | Packets coming in to the PXF processors from line card ports.            |
| Ingress from RP       | Packets coming in to the PXF processors from the Route Processor.        |
| Drop Packet Counters: | Packets dropped by the PXF processors.                                   |
| ACL input deny Drop:  | Packets dropped because of the implicit deny all at the end of all ACLs. |

#### Related Commands

| Command                                   | Description  |
|---|--|
| <a href="#">ip pxf</a>                    | Manually enables the PXF processor.  |
| <a href="#">show pxf accounting</a>       | Replaced this command in Cisco IOS Release 12.2(20)S. Displays the number and types of packets entering or exiting the PXF processors. |
| <a href="#">show c7300 pxf interfaces</a> | Displays the status of various interfaces known to the PXF processors.   |

## show c7300 pxf interfaces

To display the status of various interfaces known to the PXF processors for pre-Cisco IOS Release 12.2(20)S software releases, use the **show c7300 pxf interfaces** command in privileged EXEC mode.

```
show c7300 pxf interfaces {interface-index | all}
```

| Syntax Description | interface-index | A number that represents an interface known to the PXF processors. Valid values are 0 to 32767. |
|--------------------|-----------------|---|
|                    | all             | Specifies all PXF interfaces.   |

**Defaults** No default behaviors or values.

**Command Modes** Privileged EXEC

| Command History | Release    | Modification  |
|-----------------|------------|---|
|                 | 12.1(9)EX  | This command was introduced.  |
|                 | 12.2(14)SZ | This command was modified to <b>show pxf interfaces</b> for the Cisco 7304 router. All IOS releases prior to 12.2(14)SZ that support the Cisco 7304 still require that <b>show c7300 pxf interfaces</b> be entered to gather PXF interface information. |
|                 | 12.2(18)S  | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S.   |
|                 | 12.2(20)S  | The <b>c7300</b> keyword was removed. Entering <b>show pxf interfaces</b> obtains the information previously gathered by entering the <b>show c7300 pxf interfaces</b> command.   |

**Usage Guidelines** This command was removed in Cisco IOS Release 12.2(20)S. To gather information previously gathered using the **show c7300 pxf interfaces** command, enter the **show pxf interfaces** command.

Use the **show c7300 pxf interfaces** command to view information about interfaces known to the PXF processors.

**Examples** The following example displays information about PXF interface 1:

```
Router# show c7300 pxf interfaces 1

PXF-If: 00001 Gi0/0 (Up, Punting to RP - no ip route-cache)
Features: in=iACL [0x11], out=None [0x0]
```

The following example displays information about all PXF interfaces:

```
Router# show c7300 pxf interfaces all
```

```

PXF-If: 00001 Gi0/0      (Up, Punting to RP - no ip route-cache)
      Features: in=iACL [0x11], out=None [0x0]

PXF-If: 00002 Gi0/1      (Down, Punting to RP - no ip route-cache)
      Features: in=None [0x1], out=None [0x0]

PXF-If: 00007 In Use, Reserved

PXF-If: 00024 PO2/0      (Up, Punting to RP - no ip route-cache)
      Features: in=None [0x1], out=None [0x0]

PXF-If: 00025 PO2/1      (Down, Punting to RP - no ip route-cache)
      Features: in=None [0x1], out=None [0x0]

PXF-If: 00026 PO2/2      (Down, Punting to RP - no ip route-cache)
      Features: in=None [0x1], out=None [0x0]

PXF-If: 00027 PO2/3      (Down, Punting to RP - no ip route-cache)
      Features: in=None [0x1], out=None [0x0]

```

Table 4 describes the significant fields shown in the display.

**Table 4** show c7300 pxf interfaces Field Descriptions

| Field               | Description  |
|---------------------|--|
| PXF-IF:             | Internal PXF interface number. This is a unique number assigned by PXF.              |
| Gi 0/0 or P02/3     | Type of interface.   |
| Features:           | Ingress and egress features on the PXF interface.                                    |
| in=                 | Ingress features.  |
| iACL                | Input Access Control Lists is configured on this interface.                          |
| [0x11]              | Hex value of features flag for input features on this interface.                     |
| out=                | Egress features.   |
| [0x0]               | Hex value of feature flag for output features on this interface.                     |
| (Up, Punting to RP) | Interface status. Interface is up and packets are being sent to the Route Processor. |

Table 4 show c7300 pxf interfaces Field Descriptions (continued)

| Field                 | Description   |
|-----------------------|---|
| (Down, Punting to RP) | Interface status. Interface is down and packets are being sent to the Route Processor.  |
| - no ip route-cache   | Reason packets are being sent to the Route Processor. In this display, packets are being sent to the Route Processor because the user has entered the <b>no ip route-cache</b> command and CEF is not enabled on the interface. Entering the following commands causes packets to be sent to the Route Processor: <ul style="list-style-type: none"> <li>• <b>no ip cef</b></li> <li>• <b>no ip routing</b></li> <li>• <b>no ip route-cache</b></li> </ul> Other reasons may be displayed: <ul style="list-style-type: none"> <li>• lineproto down—The line is down.</li> <li>• unsupported feature—Packets from a feature that is not supported by PXF.</li> </ul> |

## Related Commands

| Command                                   | Description  |
|---|--|
| <a href="#">ip pxf</a>                    | Manually enables the PXF processors.   |
| <a href="#">show c7300 pxf accounting</a> | Displays the number of packets entering or exiting the PXF processors.   |
| <a href="#">show pxf interfaces</a>       | Replaced this command in Cisco IOS Release 12.2(20)S. Displays the status of various interfaces known to the PXF processors. |

# show c7300 slot

To display various output useful for technical support purposes, enter the **show c7300 slot** command in privileged EXEC mode.

```
show c7300 [slot {slot-number | all}]
```

| Syntax Description |                    |  |
|--------------------|--------------------|--|
|                    | <i>slot-number</i> | Displays various information for the hardware in a particular slot. This information is useful for technical support purposes only.              |
|                    | <b>all</b>         | Displays various information for all of the hardware in all of the router slots. This information is useful for technical support purposes only. |

**Defaults** No default behavior or values.

**Command Modes** Privileged EXEC

| Command History | Release    | Modification                 |
|-----------------|------------|------------------------------|
|                 | 12.2(20)S4 | This command was introduced. |

**Usage Guidelines** This command should not be used. The output gathered from this command is useful for technical support purposes only.

**Examples** The following example displays information about the hardware in slot 4 of Cisco 7304 router:

```
Router# show c7300 slot 4
Slot 4 Details
  Card Name: OC12-POS
  Card Present: Yes
  Slot Card Type: 0x377
  Saved Slot Card Type (Persistent after the OIR): 0x377
  Slot State (4): Activated
  Slot Previous State (4): Activated
  Slot Return (Transient) State (3): Analyzing
  Current Event to the OIR FSM: Idle (0)
  Current External Event to the OIR FSM: Idle (0)
  Slot Flags (0x100000):
    FPGA Checked
  Slot Ready: Yes
  Slot Retry Count: 0
  Slot Structure Address: 0x446FAED0
  Slot Sync Data Address : 0x446FB318
Slot 4 Line Card Plugin Details
  Line Card Type: OC12-POS (0x377)
  Number of Ports: 1
  Line Card Plugin Address: 0x45E123C0
  Line Card Compatible S/W Version: 0.0 (0x0)
  Line Card H/W Version: 02.03 (0x203)
```

■ **show c7300 slot**

```

Line Card FPGA Version: 00.20 (0x14)
Minimum Line Card H/W Version required by the S/W: 00.00 (0x0)
Minimum Line Card FPGA Version required by the S/W: 00.01 (0x1)
Slot 4 Line Card Devices:
Line Card Common Devices
  Device#0: EEPROM
    Plugin Address 0x433BB830, C2W Control Structure Address 0x433C1138
    Card Bus (4): Address 0x50, Frequency 0x13, Slot 4
  Device#1: CPLD
    Plugin Address 0x433BF9E0, C2W Control Structure Address 0x433C1198
    Card Bus (4): Address 0x30, Frequency 0x13, Slot 4
  Device#2: FPGA Flash
    Plugin Address 0x433BFC30, C2W Control Structure Address 0x433C11F8
    Card Bus (4): Address 0x30, Frequency 0x13, Slot 4
(Output removed for readability)

```

**Related Commands**

| Command                            | Description   |
|------------------------------------|---|
| <a href="#">show platform slot</a> | Replaced this command. Displays various output useful for technical support purposes. |

# show diag

To display all hardware and diagnostic information for a piece of hardware in a router slot, use the **show diag** command in privileged EXEC mode.

**show diag** [*slot-number* | **chassis**]

| Syntax Description |            |   |
|--------------------|------------|---|
| <i>slot-number</i> | (Optional) | Displays diagnostic information about the hardware in a particular router slot.       |
| <b>chassis</b>     | (Optional) | Displays diagnostic information about the backplane, power supplies, and fan modules. |

**Defaults** No default behavior or values.

**Command Modes** Privileged EXEC

| Command History | Release   | Modification  |
|-----------------|-----------|---|
|                 | 11.1 CA   | This command was introduced.  |
|                 | 11.2      | This command was introduced in Release 11.2.  |
|                 | 11.2 P    | This command was modified to show information for PA-12E/2FE, PA-E3, and PA-T3 port adapters.                                 |
|                 | 11.2 GS   | This command was made available on Cisco 12000 series Gigabit Switch Routers (GSRs).  |
|                 | 11.3 XA   | This command was integrated into Cisco IOS Release 11.3 XA.   |
|                 | 12.0(5)XQ | This command was enhanced and made available on Cisco 1750 routers.   |
|                 | 12.0(7)T  | This command was integrated into Cisco IOS Release 12.0 T.  |
|                 | 12.1(9)EX | The <i>slot-number</i> argument and <b>chassis</b> keyword were added. This command was made available on Cisco 7304 routers. |
|                 | 12.2(18)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S.   |

**Usage Guidelines** Use this command to determine the type of hardware installed in your router. This command applies to hardware in Cisco Universal Access Servers; Cisco 1750, Cisco 7200, and Cisco 7500 series routers; and Cisco 12000 series GSRs, as well as the Cisco 7304 router.

Use the *slot-number* attribute to display diagnostic information related to hardware in a specified slot. Use the **chassis** keyword to display diagnostic information related to the Cisco 7304 chassis.

**Examples**

The following example displays diagnostic information about the NSE-100 in slot 0 of a Cisco 7304 router:

```
Router# show diag 0

Slot 0/1:
  NSE Card state: Primary
  Insertion time: 04:06:04 ago
C7300 NSE Mainboard EEPROM:
  Hardware Revision       : 2.3
  PCB Serial Number      : CAB0528JP19
  Part Number            : 73-5198-02
  Board Revision         : A0
  Fab Version            : 02
  RMA Test History       : 00
  RMA Number             : 0-0-0-0
  RMA History            : 00
  Deviation Number       : 0-0
  Product Number         : 7300-NSE-100
  Top Assy. Part Number  : 68-1002-02
  Manufacturing Test Data : 00 00 00 00 00 00 00 00
  Field Diagnostics Data : 00 00 00 00 00 00 00 00
  Calibration Data       : Minimum: 0 dBmV, Maximum: 0 dBmV
    Calibration values :
  EEPROM format version 4
  EEPROM contents (hex):
    0x00: 04 FF 40 02 8B 41 02 03 C1 8B 43 41 42 30 35 32
    0x10: 38 4A 50 31 39 82 49 14 4E 02 42 41 30 02 02 03
    0x20: 00 81 00 00 00 00 04 00 80 00 00 00 00 CB 94 37
    0x30: 33 30 30 2D 4E 53 45 2D 31 30 30 20 20 20 20 20
    0x40: 20 20 20 87 44 03 EA 02 C4 08 00 00 00 00 00 00
    0x50: 00 00 C5 08 00 00 00 00 00 00 00 00 00 C8 09 00 00
    0x60: 00 00 00 00 00 00 00 00 C7 7C F6 44 3F 30 F6 44 3F
    0x70: 30 F6 44 3F 30 00 00 00 00 07 08 64 32 28 37 26
    0x80: 09 C4 5A 32 28 32 DD 0C E4 5A 2D 23 43 24 13 88
    0x90: 64 32 28 65 BA 2E E0 AA 82 64 F4 24 00 00 00 00
    0xA0: 00 00 00 EF 1C FF FF FF FF FF FF FF FF FF FF FF
    0xB0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xC0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xD0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xE0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xF0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

C7300 NSE Daughterboard EEPROM:
  Hardware Revision       : 2.1
  PCB Serial Number      : CAB0526JD53
  Part Number            : 73-5673-03
  Board Revision         : A0
  Fab Version            : 03
  RMA Test History       : 00
  RMA Number             : 0-0-0-0
  RMA History            : 00
  Deviation Number       : 0-0
  Product Number         : 7300-NSE-100
  Top Assy. Part Number  : 68-1002-02
  Manufacturing Test Data : 00 00 00 00 00 00 00 00
  Field Diagnostics Data : 00 00 00 00 00 00 00 00
  Calibration Data       : Minimum: 0 dBmV, Maximum: 0 dBmV
    Calibration values :
  EEPROM format version 4
  EEPROM contents (hex):
    0x00: 04 FF 40 02 8C 41 02 01 C1 8B 43 41 42 30 35 32
    0x10: 36 4A 44 35 33 82 49 16 29 03 42 41 30 02 03 03
```

```

0x20: 00 81 00 00 00 00 04 00 80 00 00 00 00 CB 94 37
0x30: 33 30 30 2D 4E 53 45 2D 31 30 30 20 20 20 20 20
0x40: 20 20 20 87 44 03 EA 02 C4 08 00 00 00 00 00 00
0x50: 00 00 C5 08 00 00 00 00 00 00 00 00 C8 09 00 00
0x60: 00 00 00 00 00 00 00 00 C7 7C F6 44 3F 30 00 00 00
0x70: 00 00 00 00 00 00 00 00 00 00 06 72 64 1E 1C 37 26
0x80: 07 08 64 32 28 37 26 00 00 00 00 00 00 00 00 00
0x90: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0xA0: 00 00 00 FB BA FF FF FF FF FF FF FF FF FF FF FF
0xB0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xC0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xD0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xE0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xF0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```

```

ROMMON Last Error Info:
count: 19, reason: reset
pc: 0x40283DDC, error address: 0x00000000
Stack Trace:
FP: 0x00000000, PC: 0x00000000
FP: 0x00000000, PC: 0x00000000
FP: 0x00000000, PC: 0x00000000
FP: 0x00000000, PC: 0x00000000
FP: 0x00000000, PC: 0x00000000
FP: 0x00000000, PC: 0x00000000
FP: 0x00000000, PC: 0x00000000
FP: 0x00000000, PC: 0x00000000

```

```

TLB entries : 43
Virt Address range      Phy Address range      Attributes
0x10000000:0x101FFFFFF  0x010000000:0x0101FFFFFF  CacheMode=2, RW, Valid
0x10800000:0x1081FFFF  0x010000000:0x01001FFFF  CacheMode=0, RW, Valid
0x10900000:0x1091FFFF  0x010000000:0x01001FFFF  CacheMode=7, RW, Valid
0x30000000:0x3001FFFF  0x070000000:0x07001FFFF  CacheMode=2, RW, Valid
0x70000000:0x71FFFFFF  0x030000000:0x031FFFFFF  CacheMode=2, RW, Valid
0x78000000:0x79FFFFFF  0x038000000:0x039FFFFFF  CacheMode=2, RW, Valid
0x7A000000:0x7BFFFFFF  0x03A000000:0x03BFFFFFF  CacheMode=2, RW, Valid
.
.
.

```

```

IBC0/0 is up, line protocol is up
Hardware is Mistral IBC
MTU 0 bytes, BW 1000000 Kbit, DLY 0 usec,
  reliability 255/255, txload 1/255, rxload 0/255
Encapsulation UNKNOWN, loopback not set
Full-duplex mode, link type is force-up, media type is unknown 0
output flow-control is unsupported, input flow-control is unsupported
Last input never, output 03:10:27, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue :0/128 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  24 packets output, 1800 bytes, 0 underruns
  0 output errors, 0 collisions, 1 interface resets
  0 output buffer failures, 0 output buffers swapped out
Interface IBC0/0(idb 0x41D50788)

```

## show diag

```

Hardware is Mistral IBC
revision=3, idb=0x41D50788, ds=0x41D52D10, rx_pak=0x41D503F8
0 ibl_crc_errors, 0 pg_crc_errors
0 haz_ill_len, 0 haz_ill_off, 0 padded pkts
rxr=0x071A41C0, rxr_inband_shadow=0x41D52E04
rx_tail=0, rx_head=0, rx_count=0
rx_inputs=0, rx_cumbytes=0
txr=0x071A6200, txr_shadow=0x41D55E30
tx_tail=48, tx_head=48, tx_count=0
PUNT REASONS:
MISTRAL REGISTERS
  soft_reset_cfg=0x10000
INTERRUPTS:
  int_mask_hi=0x0000006A, int_mask_lo=0x47001098
  int_source_status_hi=0x00000000, int_source_status_lo=0x00001000
  interrupt_status_0_hi=0x00000000, interrupt_status_0_lo=0x00000000
.
.
.
map[40]=0x4 map[41]=0x4 map[42]=0x4 map[43]=0x4
map[44]=0x4 map[45]=0x4 map[46]=0x4 map[47]=0x4
map[48]=0x4 map[49]=0x4
TIMERS:
  watchdog_timer : init_cnt=0x0010, cnt=0x000F, enable=1
  general_timer_0: init_cnt=0x000C8, cnt=0x000C7, cfg=0
MISC GLOBAL REGISTERS:
  global_cfg=0x20, mis_init_sts=0xF, tm_init_size_cfg=0x8000
  sysad_timeout_cfg=0x80
  dimm_parm_cfg_hi=0x00000526, dimm_parm_cfg_lo=0x42040F5A
STATISTICS REGISTERS:
  rq_pktcnt_0=0x0000, rq_pktcnt_1=0x0000, rq_pktcnt_2=0x0000
  rq_pgcnt_0=0x0000, rq_pgcnt_1=0x0000, rq_pgcnt_2=0x0000
  ibl_prefetchpkt_cnt=0x00, ibl_copybackpkt_cnt=0x00
  ibl_freepage_cnt=0x40, obl_copybackpkt_cnt=0x0000
  tq_packet_cnt=0x0000, tq_page_cnt=0x0000, tx_packet_cnt=0x0000
  tx_page_cnt=0x0000, tm_fpage_cnt=0x7F7B
FAST SWITCHING ASSISTANT HARDWARE REGISTERS:
  send_router_cfg=0x0000, send_bridge_cfg=0x0000, ibl_cfg=0xF
  obl_sem_req=0x0, obl_sem_sts=0x0
INBAND DMA REGISTERS:
  inband_rxdma: sts=0x00, base=0x71A41C0, rxdscp_cnt=0
  inband_txdma: sts=0x00, base=0x71A6380, txdsdp_cnt=0
  dma_buffer_size_inband=0x3
BUFFER ALLOCATION, WRR and STATUS REGISTERS:
  lbic_pkt_type[0]=0x88 lbic_pkt_type[1]=0x88 lbic_pkt_type[2]=0x88 lbic_pkt_typ8
  lbic_pkt_type[4]=0x88 lbic_pkt_type[5]=0x88 lbic_pkt_type[6]=0x88 lbic_pkt_typ8
  idx_dirac_rx_offset=0x88
Van allen registers:
000:cp_reset0_def          001F
001:cp_reset1_def          0000
002:cp_reset2_def          0000
003:rsync_ff_fl_ctrl_thres_def  0195
004:cp_jtag_id_lo_def      F049
005:cp_jtag_id_hi_def      3012
.
.
.
Error Interrupt Registers
  088:so_status_def          0002
Error Counter Registers
Self-Test Errors
  32-byte words received from Sculptor
  093:si_32byte_wrd_cnt_def  0000
  32-byte words received from Link interface

```

```

097:lk_32byte_wrd_cnt_def          0000
Gigabit Ethernet Transmit
0e0:ttot                          00000000
Gigabit Ethernet Receive
0f6:rtot                          00000000

```

The following example displays diagnostic information about the line card in slot 2 of a Cisco 7304 router:

Router# **show diag 2**

Slot 2:

```

OC3 POS Multi Mode Line Card, 4 ports
Line Card state:Active
Insertion time:04:00:31 ago
Bandwidth points:64
EEPROM contents at hardware discovery:
Hardware Revision      :4.0
Unknown Field (type 0046):00 00
PCB Serial Number     :CAB0533K208
Part Number           :73-6044-04
Board Revision        :A0
Fab Version           :02
RMA Test History      :00
RMA Number            :0-0-0-0
RMA History           :00
Deviation Number      :0-0
Product Number        :7300-40C3POS-MM
Top Assy. Part Number :68-1163-04
Manufacturing Test Data :00 00 00 00 00 00 00 00
Field Diagnostics Data :00 00 00 00 00 00 00 00
Calibration Data      :Minimum:0 dBmV, Maximum:0 dBmV
    Calibration values :
EEPROM format version 4
EEPROM contents (hex):
0x00:04 FF 40 02 93 41 04 00 46 00 00 C1 8B 43 41 42
0x10:30 35 33 33 4B 32 30 38 82 49 17 9C 04 42 41 30
0x20:02 02 03 00 81 00 00 00 00 04 00 80 00 00 00 00
0x30:CB 94 37 33 30 30 2D 34 4F 43 33 50 4F 53 2D 4D
0x40:4D 20 20 20 20 20 87 44 04 8B 04 C4 08 00 00 00
0x50:00 00 00 00 00 C5 08 00 00 00 00 00 00 00 00 C8
0x60:09 00 00 00 00 00 00 00 00 00 C7 7C F6 44 3F 30
0x70:00 00 00 00 00 00 00 00 00 00 00 00 05 DC 64 28
0x80:1E 37 26 07 08 64 32 28 37 26 09 C4 64 32 28 32
0x90:DD 0C E4 64 32 28 43 24 2E E0 AA 82 64 F4 24 00
0xA0:00 00 00 00 00 00 F2 E0 FF FF FF FF FF FF FF FF
0xB0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xC0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xD0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xE0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0xF0:FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```

Backplane serial channel controller (Santa Ana):

LC 2, LC Santa Ana, channel A, error counters:

|                     | SL0 | SL1 | SL2 | SL3 |
|---------------------|-----|-----|-----|-----|
| Reframe:            | [ 0 | 0   | 0   | 0 ] |
| Overrun:            | [ 0 | 0   | 0   | 0 ] |
| Underrun:           | [ 0 | 0   | 0   | 0 ] |
| OOB:                | [ 0 | 0   | 0   | 0 ] |
| Disparity:          | [ 0 | 0   | 0   | 0 ] |
| Missing_Ctrl_Code:  | [ 0 | 0   | 0   | 0 ] |
| Chip access errors: | [ 0 | 0   | 0   | 0 ] |

LC 2, NSE Santa Ana 0, channel A, error counters:

| SL0 | SL1 | SL2 | SL3 |
|-----|-----|-----|-----|
|     |     |     |     |

```

Reframe:          [ 0 0 0 0 ]
Overrun:          [ 0 0 0 0 ]
Underrun:         [ 0 0 0 0 ]
OOB:              [ 0 0 0 0 ]
Disparity:        [ 0 0 0 0 ]
Missing_Ctrl_Code: [ 0 0 0 0 ]
Chip access errors:[ 0 0 0 0 ]

```

The following example displays diagnostic information for the Cisco 7304 chassis:

```

Router# show diag chassis
C7300 Midplane EEPROM:
  Hardware Revision      : 2.0
  Chassis MAC Address    : 00b0.64ff.9d00
  MAC Address block size : 256
  Number of Slots       : 4
  Chassis Serial Number  : SCA05310083
  PCB Serial Number     : SAA05290347
  Part Number           : 73-5916-02
  Board Revision        : A0
  Fab Version           : 02
  RMA Test History      : 00
  RMA Number            : 0-0-0-0
  RMA History           : 00
  Deviation Number      : 0-0
  Product Number        : CISCO7304
  Top Assy. Part Number : 68-1152-02
  Manufacturing Test Data : 00 00 00 00 00 00 00 00
  Field Diagnostics Data : 00 00 00 00 00 00 00 00
  Calibration Data      : Minimum: 0 dBmV, Maximum: 0 dBmV
    Calibration values :
  EEPROM format version 4
  EEPROM contents (hex):
    0x00: 04 FF 40 02 A1 41 02 00 C3 06 00 B0 64 FF 9D 00
    0x10: 43 01 00 01 04 C2 8B 53 43 41 30 35 33 31 30 30
    0x20: 38 33 C1 8B 53 41 41 30 35 32 39 30 33 34 37 82
    0x30: 49 17 1C 02 42 41 30 02 02 03 00 81 00 00 00 00
    0x40: 04 00 80 00 00 00 00 CB 94 43 49 53 43 4F 37 33
    0x50: 30 34 20 20 20 20 20 20 20 20 20 20 20 20 87 44 04
    0x60: 80 02 C4 08 00 00 00 00 00 00 00 00 00 C5 08 00 00
    0x70: 00 00 00 00 00 00 C8 09 00 00 00 00 00 00 00 00
    0x80: 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0x90: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xA0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xB0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xC0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xD0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xE0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
    0xF0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

Bay A power supply (AC power supply) EEPROM:
  Hardware Revision      : 2.0
  PCB Serial Number     : CAB01520450
  Part Number           : 73-0000-02
  Board Revision        : A0
  Fab Version           : 00
  RMA Test History      : 00
  RMA Number            : 0-0-0-0
  RMA History           : 00
  Deviation Number      : 0-0
  Product Number        : 7300-PWR-AC
  Top Assy. Part Number : 34-1750-01
  Manufacturing Test Data : 00 00 00 00 00 00 00 00

```

```

Field Diagnostics Data : 00 00 00 00 00 00 00 00
Calibration Data      : Minimum: 0 dBmV, Maximum: 0 dBmV
    Calibration values :
EEPROM format version 4
EEPROM contents (hex):
  0x00: 04 FF 40 02 E5 41 02 00 C1 8B 43 41 42 30 31 35
  0x10: 32 30 34 35 30 82 49 00 00 02 42 41 30 02 00 03
  0x20: 00 81 00 00 00 00 04 00 80 00 00 00 00 CB 94 37
  0x30: 33 30 30 2D 50 57 52 2D 41 43 20 20 20 20 20 20
  0x40: 20 20 20 87 22 06 D6 01 C4 08 00 00 00 00 00 00
  0x50: 00 00 C5 08 00 00 00 00 00 00 00 00 C8 09 00 00
  0x60: 00 00 00 00 00 00 00 FF FF FF FF FF FF FF FF
  0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0x80: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0x90: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xA0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xB0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xC0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xD0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xE0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xF0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```

```

Bay B fan module EEPROM:
Hardware Revision      : 2.0
PCB Serial Number     : CAB01520450
Part Number           : 73-0000-02
Board Revision        : A0
Fab Version           : 00
RMA Test History      : 00
RMA Number            : 0-0-0-0
RMA History           : 00
Deviation Number      : 0-0
Product Number        : 7300-FANMODULE
Top Assy. Part Number : 33-0359-01
Manufacturing Test Data : 00 00 00 00 00 00 00 00
Field Diagnostics Data : 00 00 00 00 00 00 00 00
Calibration Data      : Minimum: 0 dBmV, Maximum: 0 dBmV
    Calibration values :
EEPROM format version 4
EEPROM contents (hex):
  0x00: 04 FF 40 02 E7 41 02 00 C1 8B 43 41 42 30 31 35
  0x10: 32 30 34 35 30 82 49 00 00 02 42 41 30 02 00 03
  0x20: 00 81 00 00 00 00 04 00 80 00 00 00 00 CB 94 37
  0x30: 33 30 30 2D 46 41 4E 4D 4F 44 55 4C 45 20 20 20
  0x40: 20 20 20 87 21 01 67 01 C4 08 00 00 00 00 00 00
  0x50: 00 00 C5 08 00 00 00 00 00 00 00 00 C8 09 00 00
  0x60: 00 00 00 00 00 00 00 FF FF FF FF FF FF FF FF
  0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0x80: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0x90: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xA0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xB0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xC0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xD0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xE0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
  0xF0: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```

■ show diag

| Related Commands | Command                                | Description  |
|------------------|--|--|
|                  | <a href="#">show c7300</a>             | Displays the types of cards (NSE and line cards) installed in a Cisco 7304 router. |
|                  | <a href="#">show platform</a>          |  |
|                  | <a href="#">show c7300 errorlog</a>    | Displays error information on a Cisco 7304 router.                                 |
|                  | <a href="#">show platform errorlog</a> |  |

# show pxf accounting

To display the number and types of packets entering or exiting the PXF processors on Cisco IOS Release 12.2(20)S or later, use the **show pxf accounting** command in privileged EXEC mode.

## show pxf accounting

**Syntax Description** This command has no arguments or keywords.

**Defaults** No default behavior or values.

**Command Modes** Privileged EXEC

| Command History | Release   | Modification   |
|-----------------|-----------|--|
|                 | 12.2(20)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S. If you are using the Cisco 7304 router on a previous release, <b>show c7300 pxf accounting</b> can be entered to gather the information now obtained using the <b>show pxf accounting</b> command. |

**Usage Guidelines** The **show c7300 pxf accounting** command can be entered on other platforms using Cisco IOS releases prior to Cisco IOS Release 12.2(20)S to gather the information now gathered using the **show pxf accounting** command.

Use the **show pxf accounting** command to display the number of packets entering and exiting the PXF processors.

**Examples** The following example displays output of the **show pxf accounting** command:

```
Router# show pxf accounting

PXF Utilization:14 %
PXF Packet Counters:
  Ingress from GE :           0      Egress to GE :           8
  Ingress from LCs: 24783520      Egress to LCs: 18387770
  Ingress from RP :           10      Egress to RP :           2
  Priority queue  :           12      Default queue: 18387787
Drop Packet Counters:
  ACL input deny Drop:          6395752
```

Table 5 describes the significant fields shown in the display.

**Table 5** *show pxf accounting Field Descriptions*

| Field                 | Description  |
|-----------------------|--|
| Ingress from GE:      | Packets coming into the PXF processors from the Gigabit Ethernet ports.  |
| Egress to GE:         | Packets going to the Gigabit Ethernet ports from the PXF processors.     |
| Ingress from LCs      | Packets coming in to the PXF processors from line card ports.            |
| Ingress from RP       | Packets coming in to the PXF processors from the Route Processor.        |
| Drop Packet Counters: | Packets dropped by the PXF processors.                                   |
| ACL input deny Drop:  | Packets dropped because of the implicit deny all at the end of all ACLs. |

#### Related Commands

| Command                                   | Description   |
|---|---|
| <a href="#">ip pxf</a>                    | Manually enables the PXF processor.   |
| <a href="#">show c7300 pxf accounting</a> | Replaced by this command in Cisco IOS Release 12.2(20)S. Displays the number and types of packets entering or exiting the PXF processors. |
| <a href="#">show pxf interfaces</a>       | Displays the status of various interfaces known to the PXF processors.  |

# show pxf interfaces

To display the status of various interfaces known to the PXF processors in Cisco IOS Release 12.2(20)S or later, use the **show pxf interfaces** command in privileged EXEC mode.

**show pxf interfaces** {*interface-index* | **all**}

| Syntax Description |                        |   |
|--------------------|------------------------|---|
|                    | <i>interface-index</i> | A number that represents an interface known to the PXF processors. Valid values are 0 to 32767. |
|                    | <b>all</b>             | Specifies all PXF interfaces.   |

**Defaults** No default behaviors or values.

**Command Modes** Privileged EXEC

| Command History | Release   | Modification   |
|-----------------|-----------|--|
|                 | 12.2(20)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S. If you are using the Cisco 7304 router on a previous release, <b>show c7300 pxf interfaces</b> can be entered to gather the information gathered by entering this command. |

**Usage Guidelines** In releases prior to Cisco IOS Release 12.2(20)S, the **show c7300 pxf interfaces** command can be entered on the Cisco 7304 router to gather information now obtained by entering the **show pxf interfaces** command.

Use the **show pxf interfaces** command to view information about interfaces known to the PXF processors.

## Examples

The following example displays information about PXF interface 1:

```
Router# show pxf interfaces 1
PXF-If: 00001 Gi0/0 (Up, Punting to RP - no ip route-cache)
Features: in=iACL [0x11], out=None [0x0]
```

The following example displays information about all PXF interfaces:

```
Router# show pxf interfaces all
PXF-If: 00001 Gi0/0 (Up, Punting to RP - no ip route-cache)
Features: in=iACL [0x11], out=None [0x0]
PXF-If: 00002 Gi0/1 (Down, Punting to RP - no ip route-cache)
Features: in=None [0x1], out=None [0x0]
PXF-If: 00007 In Use, Reserved
```

```

PXF-If: 00024 PO2/0      (Up, Punting to RP - no ip route-cache)
Features: in=None [0x1], out=None [0x0]

PXF-If: 00025 PO2/1      (Down, Punting to RP - no ip route-cache)
Features: in=None [0x1], out=None [0x0]

PXF-If: 00026 PO2/2      (Down, Punting to RP - no ip route-cache)
Features: in=None [0x1], out=None [0x0]

PXF-If: 00027 PO2/3      (Down, Punting to RP - no ip route-cache)
Features: in=None [0x1], out=None [0x0]

```

Table 6 describes the significant fields shown in the display.

**Table 6** show pxf interfaces Field Descriptions

| Field                 | Description   |
|-----------------------|---|
| PXF-If:               | Internal PXF interface number. This is a unique number assigned by PXF.   |
| Gi 0/0 or P02/3       | Type of interface.  |
| Features:             | Ingress and egress features on the PXF interface.   |
| in=                   | Ingress features.   |
| iACL                  | Input Access Control Lists are configured on this interface.  |
| [0x11]                | Hex value of feature flag for input features on this interface.   |
| out=                  | Egress features.  |
| [0x0]                 | Hex value of feature flag for output features on this interface.  |
| (Up, Punting to RP)   | Interface status. Interface is up and packets are being sent to the Route Processor.  |
| (Down, Punting to RP) | Interface status. Interface is down and packets are being sent to the Route Processor.  |
| - no ip route-cache   | Reason packets are being sent to the Route Processor. In this display, packets are being sent to the Route Processor because the user has entered the <b>no ip route-cache</b> command and CEF is not enabled on the interface. Entering the following commands causes packets to be sent to the Route Processor: <ul style="list-style-type: none"> <li>• <b>no ip cef</b></li> <li>• <b>no ip routing</b></li> <li>• <b>no ip route-cache</b></li> </ul> Other reasons may be displayed: <ul style="list-style-type: none"> <li>• lineproto down—The line is down.</li> <li>• unsupported feature—Packets from a feature that is not supported by PXF.</li> </ul> |

| Related Commands | Command                                   | Description   |
|------------------|---|---|
|                  | <a href="#">ip pxf</a>                    | Manually enables the PXF processors.  |
|                  | <a href="#">show c7300 pxf interfaces</a> | Replaced by this command in Cisco IOS Release 12.2(20)S. Displays the status of various interfaces known to the PXF processors. |
|                  | <a href="#">show pxf accounting</a>       | Displays the number of packets entering or exiting the PXF processors.  |

# upgrade rom-monitor default

To configure a particular ROM monitor image as the default ROMmon image, use the **upgrade rom-monitor default** command in privileged EXEC mode.

**upgrade rom-monitor {rom0 | rom1 | rom2} default**

| Syntax Description | rom0   | rom1                      | rom2                      |
|--------------------|--|---------------------------|---------------------------|
|                    | One-time programmable, always-there “golden” ROMmon. | Upgradable ROM monitor 1. | Upgradable ROM monitor 2. |

**Defaults** ROM 0, the one-time programmable, always there “golden” ROMmon is the default ROM monitor.

**Command Modes** Privileged EXEC

| Command History | Release   | Modification  |
|-----------------|-----------|---|
|                 | 12.1(9)EX | This command was introduced.  |
|                 | 12.2(18)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S. |

**Usage Guidelines** Use this command to set a ROMmon image as the default ROMmon image. If this command is not configured, the system uses ROM 0 as the default ROMmon image.

There are three ROMmon images. ROM 0 is a one-time programmable, always-there ROMmon image, referred to as the “golden” ROMmon. ROM 1 and ROM 2 are upgradeable ROMmon images. At bootup, the system uses the golden ROMmon by default. If either ROM 1 or ROM 2 are configured, the system still begins bootup with the golden ROMmon, then switches to the configured ROMmon. If a new configured ROMmon image fails to boot up Cisco IOS, the router marks this ROMmon image as invalid and reverts to the golden image for the next Cisco IOS bootup.

After downloading a new ROMmon image to the writeable ROMmon, you must reload Cisco IOS for the new ROMmon to take effect. The first time a new ROMmon image is loaded, you must allow the system to boot up Cisco IOS before doing any resets or power cycling. If the ROMmon loading process is interrupted, the system interprets this as a bootup failure of the new ROMmon image and reverts the ROMmon back to the golden ROMmon image in ROM 0.

**Examples** The following example configures ROM 2 as the default ROMmon image:

```
Router# upgrade rom-monitor rom2 default
done!
Will take effect on next reload/reset
```

**Related Commands**

| <b>Command</b>                           | <b>Description</b>   |
|--|--|
| <a href="#">show c7300</a>               | Displays the types of hardware installed in a Cisco 7304 router. |
| <a href="#">show platform</a>            |  |
| <a href="#">show diag</a>                | Displays hardware information for any slot or the chassis.       |
| <a href="#">upgrade rom-monitor file</a> | Upgrades the ROM monitor.  |

# upgrade rom-monitor file

To upgrade the ROM monitor, use the **upgrade rom-monitor file** command in privileged EXEC mode.

```
upgrade rom-monitor {rom0 | rom1 | rom2} file device:file-id
```

| Syntax Description |                |   |
|--------------------|----------------|---|
|                    | <b>rom0</b>    | One-time programmable, always there “golden” ROMmon.  |
|                    | <b>rom1</b>    | Upgradable ROM monitor 1.   |
|                    | <b>rom2</b>    | Upgradable ROM monitor 2.   |
|                    | <b>file</b>    | File to download as ROM monitor 1 or 2.   |
|                    | <i>device:</i> | Location of file to download as ROM monitor 1 or 2. Available devices are: bootdisk:, disk0:, ftp:, rcpx:, and tftp:. |
|                    | <i>file-id</i> | Name of file to download as ROM monitor 1 or 2.   |

**Defaults** No default behaviors or values.

**Command Modes** Privileged EXEC

| Command History | Release   | Modification  |
|-----------------|-----------|---|
|                 | 12.1(9)EX | This command was introduced.  |
|                 | 12.2(18)S | This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2 S. |

**Usage Guidelines** You can use the **upgrade rom-monitor file** command to download a new ROMmon image instead of having to replace the processor to obtain a new image.



**Note**

Images are marked as invalid if the first bootup is not completed. Do not reset the router when it is doing an initial bootup.

There are three ROMmon images. ROM 0 is a one-time programmable, always-there ROMmon image, referred to as the “golden” ROMmon. ROM 1 and ROM 2 are upgradable ROMmon images. At bootup, the system uses the golden ROMmon by default. If either ROM 1 or ROM 2 are configured, the system still begins bootup with the golden ROMmon, then switches to the configured ROMmon. If a new configured ROMmon image fails to boot up Cisco IOS, the router marks this ROMmon image as invalid and reverts to the golden image for the next Cisco IOS bootup.

After downloading a new ROMmon image to the writeable ROMmon, you must reload Cisco IOS for the new ROMmon to take effect. The first time a new ROMmon image is loaded, you must allow the system to boot up Cisco IOS before doing any resets or power cycling. If the ROMmon loading process is interrupted, the system interprets this as a bootup failure of the new ROMmon image and reverts the ROMmon back to the golden ROMmon image in ROM 0.

**Examples**

The following example configures the system to install a file called “rommonfile” as ROM 1 from the bootdisk:

```
Router# upgrade rom-monitor rom1 file bootdisk:rommonfile
ROM 1 upgrade in progress
Erasing (this may take a while)...
Programming...
CC
Do you want to verify this image (may take a few minutes)? [yes/no]: y
Verifying ROM 1
  Reading from ROM 1...Done
  Comparing with the source file...Passed

Set this ROMMON image as the default (will take effect on next reload/reset)? [ y
```

**Related Commands**

| Command                                     | Description  |
|---|--|
| <a href="#">show c7300</a>                  | Displays the types of hardware installed in a Cisco 7304 router.       |
| <a href="#">show platform</a>               |  |
| <a href="#">show diag</a>                   | Displays hardware information for any slot or the chassis.             |
| <a href="#">upgrade rom-monitor default</a> | Configures a particular ROM monitor image as the default ROMmon image. |

