File System Commands on Cisco IOS XR Software

This chapter describes the Cisco IOS XR software commands used to manage file systems on your router.

Note The commands in this module should not be used to access or modify any Cisco IOS XR software or configuration files. Use only the documented commands for installing and configuring the router. Modifying, deleting, or moving configuration or software package files using the manual commands described in this module is not required and can result in router downtime, loss of service, and a corrupted database.

cd

To change the present working directory, use the **cd** command in EXEC mode.

cd *filesystem*:

Syntax Description

filesystem :	(Optional) Location of the new present working directory. Include the file system alias for the *filesystem* argument, followed by a colon and optionally, the name of a directory.

Command Default

The default file directory is disk0:/usr.

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The present working directory is the directory used when EXEC commands that have an optional *filesystem* argument are entered without that argument. Use the **cd** command to define the present working directory. For example, when the **dir** command is entered without specifying the *filesystem* argument, the files in the present working directory are displayed.

Use the **pwd** command to display the present working directory.

Use the **show filesystem** command to display the available storage devices.

Enter the **cd** command without an argument to return the present working directory to disk0:/usr.

Task ID

Task ID	Operations
filesystem	read

Examples

The following example shows how to change the present working directory to the root directory on the hard disk. In this example, the **pwd** command confirms that the present working directory has changed to the root directory on the hard disk.

```
RP/0/0/CPU0:router# cd harddisk:
RP/0/0/CPU0:router# pwd

harddisk:
```

The following example shows how to change the present working directory to the default file directory by specifying the **cd** command without a location. In this example, the **pwd** command confirms that the present working directory has changed to the default file directory.

```
RP/0/0/CPU0:router# cd
RP/0/0/CPU0:router# pwd

disk0:/usr
```

Related Commands

Command	Description
dir	Displays the contents of a file system.
pwd	Displays the current working directory of the **cd** command.
show filesystem	Displays the layout and contents of a file system.

cfs check

To perform a check of the Configuration File System (CFS), use the **cfs check** command in EXEC or administration EXEC mode.

cfs check

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **cfs check** command to check the sanity of the configuration file system and attempt to recover from internal inconsistencies; one or more rollback points may be lost depending on the severity of the state of the file system.

Note While this command runs, redundancy of the designated secure domain router shelf controller (DSDRSC) is disabled.

Task ID

Task ID	Operations
root-lr	read, write

Examples

The following example shows how to perform a CFS check:

```
RP/0/0/CPU0:router# cfs check

Creating any missing directories in Configuration File system...OK
Initializing Configuration Version Manager...OK
Syncing commit database with running configuration...OK
Re-initializing cache files...OK
Updating Commit Database.  Please wait...[OK]
```

clear-classic-config

To clear or truncate the Cisco IOS software running configuration stored in NVRAM, use the **clear-classic-config** command in EXEC mode.

clear-classic-config

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **clear-classic-config** command to clear space on the NVRAM, if the Cisco IOS software configuration is no longer needed or to boot the Cisco IOS software with no configuration.

Task ID

Task ID	Operations
config-services	execute

Examples

The following example shows how to clear the Cisco IOS software running configuration stored in NVRAM:

```
RP/0/0/CPU0:router# clear-classic-config
```

copy

To copy a file from a source (such as a network server) to a destination (such as a flash disk), use the **copy** command in EXEC or administration EXEC mode.

copy *source* {**location** *node-id destination* **location** {*node-id*| **all**}| **running-config[atomic]**}

Syntax Description

source	Filename including the directory path or network location of the file. The possible sources are: *directory-path* —Directory path of the file from which the file is copied. **access-list** { **ipv4** | **ipv6** }—Copies an access list (EXEC mode only). **bootflash:** —Copies from the bootflash: file system. **compactflash:** —Copies from the compactflash: file system. **compactflasha:** —Copies from the compactflasha: file system partition. **disk0:** —Copies from disk0: file system. **disk0a:** —Copies from disk0a: file system partition. **disk1:** —Copies from disk1: file system. **disk1a:** —Copies from disk1a: file system partition. **flash:** —Copies from the flash: file system. The **flash:** keyword is an alias for bootflash:. **ftp:** —Copies from an FTP network server. The syntax is **ftp:**[[[//*username* [:*password*]@]*location*]/*directory*]/*filename.* **harddisk:** —Copies from the hard disk drive file system (if present). **harddiska:** —Copies from the hard disk partition a. **harddiskb:** —Copies from the hard disk partition b. **nvram:** —Copies from the NVRAM file system. **prefix-list** {**ipv4** | **ipv6**}—Copies from a prefix list (EXEC mode only). **rcp:** —Copies from a remote copy protocol (rcp) network server. The syntax is **rcp:**[[[//*username*@]*location*]/*directory*]/*filename.* **running-config** —Copies from the current system configuration. **tftp:** —Copies from a TFTP network server. The syntax is **tftp:**[[//*location*]/*directory*]/*filename* **xml-schema** —Copies the XML schema files as a tar ball file (.tar.gz) [EXEC mode only].
destination	Filename including the directory path or network location of the file.
location *node-id*	Specifies a node. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation.
location all	Copies to all nodes.

running-config	Applies the source configuration file to the running configuration of the system.
atomic	(Optional) Applies the changes to the running configuration only if there are no errors

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Releases	Modifications
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	Support was added to copy XML schema files.
Release 3.6.0	The following file systems were added: **disk0a:** , **disk1a:** , and **compactflasha:** .
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Source and destination can each be a configuration file, a text file, or a file system. Enter source and destination URL information, usernames, and passwords and issue the **copy** command. The networking device prompts for any missing information.

The exact format of the *source* and *destination* arguments vary according to the file or directory location. Enter the device or network location for the file system type.

Filenames can include the following characters:

! # $ % & ' + 0 1 2 3 4 5 6 7 8 9 ; @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ ] ^ _ a b c d e f g h i j k l m n o p q r s t u v w x y z { } ~

The following characters can be used with the stated limitations:

- ` needs backslash before this character
- – cannot be the first character

- . cannot be the last character
- = cannot be the filename without other characters

The following characters cannot be used in filenames:

" ( ) * , / : < > ? \ |

To copy a file from a source on the router to a destination on the router, specify a source **location** *node-id* and a destination **location** *node-id* . To copy the file to all nodes, use the **location all** keywords.

In the alias syntax for the **ftp:** , **rcp:** , and **tftp:** keywords, the location is either an IP address or a hostname. The filename is specified relative to the directory used for file transfers.

When no alias is specified, the networking device looks for a file in the current directory. To view the current directory, enter the **pwd** command.

Note During processing of the **copy** command, you might see the "C" character. For all files being copied, "C" indicates that the copy process is taking place. The entire copying process might take several minutes and differs from protocol to protocol and from network to network.

Table 1: Network Protocols Supported by Cisco IOS XR Software , page 10 describes the network protocols supported by Cisco IOS XR software.

Table 1: Network Protocols Supported by Cisco IOS XR Software

Prefix	Name	Description
tftp:	Trivial File Transfer Protocol	*TFTP* is a simplified version of FTP that allows files to be transferred from one computer to another over a network, usually without the use of client authentication (for example, username and password).
ftp:	File Transfer Protocol	*FTP* is an application protocol, part of the TCP/IP protocol stack, and is used for transferring files between network nodes. FTP requires a username and password.
rcp:	Remote Copy Protocol	The rcp protocol allows users to copy files to and from a file system residing on a remote host or server on the network. The rcp protocol uses TCP to ensure the reliable delivery of data. The rcp protocol downloads require a username.

Additional usage guidelines are in the following sections.

Invalid Combinations of Source and Destination

Some combinations of source and destination are invalid. Specifically, you cannot copy the following:

- From a running configuration to a running configuration
- From a network device to a network device (for example, **copy ftp: rcp:**)

Using TFTP

TFTP is a simplified version of FTP that allows files to be transferred from one computer to another over a network, usually without the use of client authentication (for example, username and password).

The syntax is as follows:

copy tftp://*hostname* /*ipaddress*/*directory-path pie name target-device* [**location** {*node-id* | **all**}]

Example:

```
RP/0/0/CPU0:router# copy tftp://1.1.1.1/images/software.pie disk1:
```

Note Some Cisco IOS XR images may be larger than 32 MB, and the TFTP services provided by some vendors may not support a file this large. If you do not have access to a TFTP server that supports files larger than 32 MB, download the software image using FTP or rcp as described in the following sections.

Using FTP

FTP servers require a username and password for each client request. Cisco IOS XR software sends the first valid username in the following list:

1. The username and password specified in the **copy** command, if a username is specified.

   The syntax is as follows:

   copy ftp:// *username* : *password* @ *hostname or ipaddress*/*directory-path*/*pie-name target-device* [**location** {*node-id* | **all**}]

   Example:

   ```
   RP/0/0/CPU0:router# copy ftp://john:secret@10.1.1.1/images/software.pie disk1:
   ```

2. An “anonymous” username and password. The anonymous password is “root@ip address,” where “ip address” is the IP address of the local networking device.
3. A password “username@iosname.domain” formed by the networking device. The variable “username” is the username associated with the current session, “iosname” is the configured hostname, and “domain” is the domain of the networking device.

The username and password must be associated with an account on the FTP server. If you are writing to the network server, the FTP server must be properly configured to accept the FTP write request from the user on the networking device.

If the network server has a directory structure, the configuration file or image is written to or copied from the directory associated with the username on the network server. For example, if the system image resides in the home directory of a user on the network server, specify the name of that user as the remote username.

Refer to the documentation for your FTP server for more details.

Using rcp

The rcp protocol requires a username upon each request. When you copy a configuration file or image between the networking device and an rcp server, the Cisco IOS XR software sends the first valid username in the following list:

1. The remote username specified in the **copy** command, if one is specified.
2. The username set by the **rcp client username** command, if the command is configured.
3. The networking device hostname.

For the rcp copy request to process successfully, an account must be defined on the network server for the remote username. If the network administrator of the destination server did not establish an account for the remote username, this command does not run successfully. If the network server has a directory structure, the configuration file or image is written to or copied from the directory associated with the remote username on the network server. For example, if the system image resides in the home directory of a user on the network server, specify the name of that user as the remote username.

If you are writing to the network server, the rcp server must be properly configured to accept the rcp write request from the user on the networking device. For UNIX systems, add an entry to the .rhosts file for the remote user on the rcp server. Suppose the networking device contains the following configuration lines:

```
hostname Rtr1
ip rcp remote-username User0
```

If the IP address of the networking device translates to company.com, then the .rhosts file for User0 on the rcp server should contain the following line:

```
company.com Rtr1
```

See the documentation for your rcp server for more details.

If you are using a personal computer as a file server, the computer must support remote shell (rsh) protocol.

Using xml-schema

Use the **xml-schema** keyword to obtain the most up-to-date XML schemas (.xsd files) from the router. Using this keyword is useful to prevent the use of outdated schemas in the event that router software updates include schema updates. The tar ball file includes all active schema files. It does not include schemas that are activated by specific package installation envelopes (PIEs) if those PIEs are not installed and activated on the router.

Copying to the Running Configuration

When you use the **copy** command to copy a configuration file to the **running-config** destination, the configuration in the file is applied to the running configuration of the system. This is a configuration operation. By default, the copy is carried out in a best-effort manner. This means that if some configuration lines from the file cannot be applied, the remaining configuration is still integrated into the system. In this case, a partial configuration is committed. When the **atomic** keyword is used, partial configurations are not committed. This means that even if one error occurs in the parsing or committing phase, no changes are made to the system. To view any errors when applying the configuration, use the **show configuration failed** command.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example shows how to copy a file from a FTP server to disk1:

```
RP/0/0/CPU0:router#
copy ftp://john:secret@10.1.1.1/images/comp-c12k-full.pie disk1:
```

The following example shows how to copy a file from an rcp server to disk1:

```
RP/0/0/CPU0:router#
copy rcp://john@10.1.1.1/images/comp-c12k-full.pie disk1:
```

The following example shows how to copy a file from a TFTP server to disk1:

```
RP/0/0/CPU0:router#
copy tftp://10.1.1.1/images/comp-c12k-full.pie disk1:
```

Related Commands

Command	Description
cd, page 3	Changes the default directory or file system.
dir, page 16	Displays the contents of a file system.
show configuration failed (config)	Displays information about a configuration that failed during the last commit.

delete

To delete files, use the **delete** command in EXEC or administration EXEC mode.

delete [/**noprompt**] [/**ena**] *filesystem*: *filename* **location** {*node-id*| **all**}

Syntax Description

/noprompt	(Optional) Causes no prompt for confirmation before deleting the specified files.
/ena	(Optional) Deletes all files from and below the current working directory.
filesystem :	(Optional) Location of the file to be deleted. Include the file system alias for the *filesystem* argument, followed by a colon, and, optionally, the name of a directory.
filename	Filename of the file to be deleted.
location {*node-id* | **all**}	Deletes a file from a designated node. The *node-id* argument is entered in the *rack*/*slot*/*module* notation. The **all** keyword specifies to delete the file from all nodes.

Command Default

A filename must be specified. If a filename is entered without a file system or directory path, the present working directory is used.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	The following file systems were added: **disk0a:** , **disk1a:** , and **compactflasha:** .
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When a file is deleted, it is removed from the system and cannot be restored (undeleted).

Use the **dir** command to display the list of files on a storage device.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example shows how to delete a file:

```
RP/0/0/CPU0:router# delete rbtest

Delete disk1:/rbtest[confirm]y
```

Related Commands

Command	Description
cd	Changes the default directory or file system.
dir	Displays the contents of a file system.
squeeze	Permanently deletes flash files by squeezing a flash file system.
undelete	Recovers a file marked “deleted” on a flash file system.

dir

To display a list of files on a file system or in a specific directory, use the **dir** command in EXEC or administration EXEC mode.

dir [**/all**| **/ena**| **/recurse**] [*filesystem*:] [*filename*] **location** {*node-id*| **all**}

Syntax Description

/all	(Optional) Lists deleted files, undeleted files, and files with errors.
/ena	(Optional) Recognizes subdirectories.
/recurse	(Optional) Recursively lists subdirectories.
filesystem **:**	(Optional) Name of the directory containing the files to be displayed. Include the file system alias for the *filesystem* argument, followed by a colon, and, optionally, the name of a directory.
filename	(Optional) Name of the files to display. The files can be of any type. You can use wildcards in the filename. A wildcard character (*) matches all patterns. Strings following a wildcard are ignored.
location {*node-id* | **all**}	(Optional) Specifies the node from which to display a list of files. The *node-id* argument is entered in the *rack*/*slot*/*module* notation. The **all** keyword specifies to display files on all nodes.

Command Default

When the **dir** command is entered without keywords or arguments, the contents of the present working directory are displayed.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	The following file systems were added: **disk0a:** , **disk1a:** , and **compactflasha:** .
Release 3.7.0	No modification.

Release	Modification
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

If you enter the **dir** command without specifying a directory, the contents of the present working directory are displayed. The **all** keyword displays all files, including deleted files. The size associated with the directory name is the total size for all files in that directory.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example shows how to display the contents of a directory:

```
RP/0/0/CPU0:router# dir harddisk:/log

Directory of harddisk:/log

5527        drwx  4096        Thu Aug 28 11:21:48 2008  boot_28_Aug_2008_11_21_49
5533        drwx  4096        Thu Aug 28 11:38:54 2008  boot_28_Aug_2008_11_38_54
5538        drwx  4096        Fri Sep  5 13:28:54 2008  boot_05_Sep_2008_13_28_54
5543        drwx  4096        Mon Sep  8 08:55:52 2008  boot_08_Sep_2008_06_59_08
--More--
```

Related Commands

Command	Description
cd	Changes the default directory or file system.
pwd	Displays the current working directory of the **cd** command.
show filesystem	Displays the layout and contents of a file system.

erase nvram:

To erase the NVRAM file system, use the **erase nvram:** command in EXEC mode.

erase nvram: [format][location {*node-id*| **all**}]

Syntax Description

format	(Optional) Formats the entire NVRAM.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Caution Using the **erase nvram:** command permanently removes the files.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example shows how to erase the NVRAM file system:

```
RP/0/0/CPU0:router# erase nvram:
Erase operation will destroy IOS/ENA files in "nvram:":.  Continue? [confirm] y
```

Related Commands

Command	Description
delete	Deletes a file from a flash memory device.

erase nvram-raw:

To format the NVRAM raw data partition with a ‘0’ value, use the **erase nvram-raw:** command in EXEC or administration EXEC mode.

erase nvram-raw: [**location** {*node-id*| **all**}]

Syntax Description

location{*node-id* | **all**}	(Optional) Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation. Use the **all** keyword to indicate all nodes.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.6.0	This command was introduced.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The NVRAM is divided into two partitions. The first partition, consisting of 1 megabyte (MB), is used by the existing NVRAM file-system partition. The second partition, consisting of 1 MB, is a raw data partition and is used by the Kernel Dumper to store reboot historical logs, critical crash information, syslog, and Kernel Dumper traces. The **erase nvram-raw:** command formats the raw data partition of the NVRAM.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example shows how to erase the raw data partition of the NVRAM file system:

```
RP/0/0/CPU0:router# erase nvram-raw:
```

Related Commands

Command	Description
delete	Deletes a file from a flash memory device.

format

To format a file system, use the **format** command in EXEC or administration EXEC mode.

format *filesystem***:** [**partition**| **unpartition**] [**filesystem** *filesystem-type*] [*monlib-filename*] **location** {*node-id*| **all**} [**spare** *spare-number*] **[force] [recover]**

Syntax Description

filesystem:	Name of the file system to format, followed by a colon. Possible values are **bootflash:**, **disk0:**, **disk0a:**, **disk1:**, **disk1a:**, **harddisk:**, **harddiska:**, **harddiskb:** , **compactflash:**, and **compactflasha:** .
partition	(Optional) Creates a partition on a filesystem. This option is not available when the **bootflash:** filesystem is specified.
unpartition	(Optional) Specifies to remove the partitioning on the specified filesystem.
filesystem *filesystem-type*	Specifies the filesystem type used to format the specified device. Options include fat16, fat32 and qnx4, depending in the device being formatted.
monlib-filename	(Optional) Name of the ROM monitor library (monlib) file to use for formatting the file system. The default monlib file is the one bundled with the system software. **Note** The monlib is used by ROMMON for accessing the file system on the media. This option is available on the bootflash: only.
location {*node-id* | **all**}	(Optional) Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation. Use the **all** keyword to indicate all nodes.
spare *spare-number*	(Optional) Reserves spare sectors as specified by the *spare-number* argument when formatting flash memory. Valid values are from 0 to 16. **Note** This option is available on the bootflash: only.
force	(Optional) Forces a monlib update, without verifying the monlib version on the device.
recover	(Optional) Recovers any sector read errors on a flash disk.

Command Default

The default monlib file is the one included with the Cisco IOS XR software.

spare-number : 0

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	The following file systems were added: **disk0a:** , **disk1a:** , and **compactflasha:** .
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.8.2	• The ability to format a standby bootdisk was introduced. • The **unpartition** keyword was supported. • The ability to specify the file system type was supported.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Before you can use a new flash memory card, you must format it.

Caution Formatting a storage device deletes all data on that device.

Use the online help (**?**) function to display the file systems available to be formatted on the router and the formatting options available for a file system.

You cannot format an active boot disk. However, you can format the standby boot disk. Verify that the boot disk you want to format is on the standby RP, then use the **format** command.

Disk0: and disk1: can be partitioned into two partitions each: disk0: and disk0a:, disk1: and disk1a:. The harddisk: can be partitioned into three partitions: harddisk:, harddiska:, and harddiskb:. The primary partitions are used to store critical data. The secondary partitions are used to store noncritical data.

Table 2: Size of Disk Partitions in Relation to Size of Disk, page 24 shows the size of the partitions if you partition disk0: , disk1: or the compactflash:,:

Table 2: Size of Disk Partitions in Relation to Size of Disk

Size of Disk	Primary Partition Percentage	Secondary Partition Percentage
less than 900 MB	Partitioning not supported	Partitioning not supported
900 MB to 1.5 GB	80%	20%
1.5 GB to 3 GB	60%	40%
more than 3 GB	50%	50%

The size of the three hard disk partitions are as follows:

- Primary partition (harddisk:)—30%
- Secondary partition (harddiska:)—60%
- Third partition (harddiskb:)—10%

Task ID

Task ID	Operations
root-lr (EXEC)	execute
root-system (administration EXEC)	execute

Examples

The following example shows how to format disk1:

```
RP/0/0/CPU0:router# format disk1:
```

The following example shows how to format disk1: with instructions to recover any sectors on the device that have read errors:

```
RP/0/0/CPU0:router# format disk1: recover

This format operation will try to recover sectors with read error
This operation may take a while. Continue? [confirm]
Format will destroy all data on "disk1:". Continue? [confirm]
```

Note When the console returns to the EXEC prompt, the new flash disk has been formatted and is ready for use.

The following example shows how to format a standby bootdisk.

```
RP/0/0/CPU0:router# format disk0: unpartition filesystem fat32 location 0/1/cpu0
Thu May 28 10:22:08.770 UTC

This operation will destroy all data on "disk0:" and partition device. Continue? [confirm]

Warning: "disk0:" - partition is boot device on standby node - format operation on this
device will restart the node and package will be re-synchronized.
```

```
Force the format operation on "disk0:"  Continue? [confirm]

Info: "disk0:" - node is restarting to complete format operation.
RP/0/1/CPU0:May 28 10:22:12.148 : mediasvr[67]: %MEDIA-MEDIASVR-6-BOOT_DEVICE_FORMAT_REQUESTED
 : Media storage boot device /disk0: was requested to format. Node will reload and device
will be formatted while next boot.

router con0/RP1/CPU0 is in standby

I'm sby/non-dlrsc
I'm sby/non-dlrsc
writing 'MEDIA_FORMAT=disk0:,fat32,partition' to nvram
rebooting

Initializing DDR SDRAM...found 4096 MB
Initializing ECC on bank 0
Initializing ECC on bank 1
Initializing ECC on bank 2

Initializing DDR SDRAM...found 4096 MB
Initializing ECC on bank 0
Initializing ECC on bank 1
Initializing ECC on bank 2
Initializing ECC on bank 3
Turning off data cache, using DDR for first time

Initializing NVRAM...
Testing a portion of DDR SDRAM ...done
Reading ID EEPROMs ...
Initializing SQUID ...
Initializing PCI ...

PCI0 device[1]: Vendor ID 0x10ee
PCI0 device[1]: Device ID 0x300e
PCI1 device[1]: Device ID 0x1100
PCI1 device[1]: Vendor ID 0x1013
PCI1 device[2]: Device ID 0x680
PCI1 device[2]: Vendor ID 0x1095
PCI1 device[3]: Device ID 0x5618
PCI1 device[3]: Vendor ID 0x14e4
Configuring MPPs ...
Configuring PCMCIA slots ...

System Bootstrap, Version 1.52(20081016:231824) [CRS-1 ROMMON],
Copyright (c) 1994-2008 by Cisco Systems, Inc.

Acquiring backplane mastership ........failed

Board type is 0x100002 (1048578)

Switch 0 initialized
Switch 0 Port fe0: link up (100Mb Full Duplex Copper)
Switch 0 Port fe1: link up (100Mb Full Duplex Copper)
Backplane FE port Up... Enabling
Enabling watchdog
G4(7457-NonSMP-MV64360 Rev 4) platform with 4096 MB of main memory

..
..
Acquiring backplane mastership....failed.
Unable to access backplane ... invoking READ EEPROM protocol

Enabling only inter-RP port... successful

Sending backplane ID EEPROM read request
 using Control Plane Ethernet.
DEBUG : Driving up signal strength for Intel LXT971
Our MAC address is 0249.4450.0008
Interface link changed state to UP.

Sending ID EEPROM read request.
HIT CTRL-C to abort
```

```
ID EEPROM read request successful.
Reconfiguring switches with default config ...
Chassis type: 484

    CARD_RACK_NUMBER: 0
    CARD_SLOT_NUMBER: 1
        CPU_INSTANCE: 1
  RACK_SERIAL_NUMBER: TBA10490038
MBI Validation starts ... using Control Plane Ethernet.
DEBUG : Driving up signal strength for Intel LXT971
Our MAC address is 0011.93ef.f4da
Interface link changed state to UP.
Interface link state up.

MBI validation sending request.
HIT CTRL-C to abort

MBI validation sending request.
HIT CTRL-C to abort

mbi_val_process_packet: received response.
RACK_NUM = 0, RACK_TYPE=0
Local image to boot : bootflash:disk0/hfr-os-mbi-3.9.0.08I/mbihfr-rp.vm
boot: booting from bootflash:disk0/hfr-os-mbi-3.9.0.08I/mbihfr-rp.vm
..
................................................................................
##################################################
tracelogger: starting tracing in background ring mode
tracelogger running with args: -startring -F 1 -F 2
             Restricted Rights Legend

Use, duplication, or disclosure by the Government is
subject to restrictions as set forth in subparagraph
(c) of the Commercial Computer Software - Restricted
Rights clause at FAR sec. 52.227-19 and subparagraph
(c) (1) (ii) of the Rights in Technical Data and Computer
Software clause at DFARS sec. 252.227-7013.

           cisco Systems, Inc.
           170 West Tasman Drive
           San Jose, California 95134-1706

Cisco IOS XR Software for the Cisco XR HFR, Version 3.9.0.08I
Copyright (c) 2009 by Cisco Systems, Inc.
writing 'MEDIA_FORMAT=' to nvram
Format requested 'disk0:' / partition option 'FAT32'
ostype=4
cp: Can't open source file.  ()
Media storage device /disk0: was formatted due to request. Check fsck log at
/dev/disk0:/chkfs_failure.log
May 27 21:55:45.578 : Install (Node Preparation): Install device root is /disk0/
May 27 21:55:45.585 : Install (Node Preparation): Trying device disk0:
May 27 21:55:46.951 : Install (Node Preparation): Checking size of device disk0:
May 27 21:55:46.964 : Install (Node Preparation):    OK
May 27 21:55:46.984 : Install (Node Preparation): Checking free space on disk0:
May 27 21:55:46.996 : Install (Node Preparation):    OK
May 27 21:55:46.998 : Install (Node Preparation): Checking free space on MBI device bootflash:
May 27 21:55:47.001 : Install (Node Preparation):    OK
May 27 21:55:47.003 : Install (Node Preparation): Starting package and meta-data sync
May 27 21:55:47.014 : Install (Node Preparation): Cleaning packages not in sync list
May 27 21:55:47.017 : Install (Node Preparation):    Please wait...
May 27 21:55:47.020 : Install (Node Preparation):    Complete
May 27 21:55:47.033 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/flash-util-0.0.175
May 27 21:55:47.036 : Install (Node Preparation):    Please wait...
May 27 21:55:49.124 : Install (Node Preparation):    Completed syncing:
/disk0/flash-util-0.0.175
May 27 21:55:49.128 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/infra-mediasvr-0.0.174
May 27 21:55:49.131 : Install (Node Preparation):    Please wait...
May 27 21:55:51.609 : Install (Node Preparation):    Completed syncing:
/disk0/infra-mediasvr-0.0.174
May 27 21:55:51.612 : Install (Node Preparation): Syncing package/meta-data contents:
```

```
/disk0/hfr-os-mbi-3.9.0.08I
May 27 21:55:51.615 : Install (Node Preparation):    Please wait...
May 27 21:57:19.559 : Install (Node Preparation):    Completed syncing:
/disk0/hfr-os-mbi-3.9.0.08I
May 27 21:57:19.562 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/hfr-base-3.9.0.08I
May 27 21:57:19.565 : Install (Node Preparation):    Please wait...
May 27 22:08:34.656 : Install (Node Preparation):    Completed syncing:
/disk0/hfr-base-3.9.0.08I
May 27 22:08:34.664 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/hfr-admin-3.9.0.08I
May 27 22:08:34.667 : Install (Node Preparation):    Please wait...
May 27 22:11:27.134 : Install (Node Preparation):    Completed syncing:
/disk0/hfr-admin-3.9.0.08I
May 27 22:11:27.137 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/hfr-fwdg-3.9.0.08I
May 27 22:11:27.140 : Install (Node Preparation):    Please wait...
May 27 22:14:02.809 : Install (Node Preparation):    Completed syncing:
/disk0/hfr-fwdg-3.9.0.08I
May 27 22:14:02.812 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/hfr-lc-3.9.0.08I
May 27 22:14:02.815 : Install (Node Preparation):    Please wait...
May 27 22:17:04.512 : Install (Node Preparation):    Completed syncing:
/disk0/hfr-lc-3.9.0.08I
May 27 22:17:04.515 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/hfr-rout-3.9.0.08I
May 27 22:17:04.518 : Install (Node Preparation):    Please wait...
May 27 22:20:18.976 : Install (Node Preparation):    Completed syncing:
/disk0/hfr-rout-3.9.0.08I
May 27 22:20:18.979 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/instdb/ldpath
May 27 22:20:18.982 : Install (Node Preparation):    Please wait...
May 27 22:20:19.143 : Install (Node Preparation):   Completed syncing: /disk0/instdb/ldpath
May 27 22:20:19.152 : Install (Node Preparation): Syncing package/meta-data contents:
/disk0/instdb/ldpath.committed
May 27 22:20:19.156 : Install (Node Preparation):    Please wait...
May 27 22:20:19.392 : Install (Node Preparation):    Completed syncing:
/disk0/instdb/ldpath.committed
May 27 22:20:19.395 : Install (Node Preparation): Completed sync of all packages and
meta-data.
May 27 22:20:19.398 : Install (Node Preparation): Starting MBI sync
May 27 22:20:19.400 : Install (Node Preparation):    Please wait...
May 27 22:20:37.631 : Install (Node Preparation): Completed sync of MBIs
Media storage device /harddisk: is formatted as FAT32 when software expects it to be formatted
 as QNX4. Please use device file system upgrade procedure to fix.

router con0/1/CPU0 is in standby
```

The following example shows how to format a disk with the FAT32 file system:

```
RP/0/0/CPU0:router# format disk1: partition filesystem fat32 force
Thu May 28 22:00:48.821 UTC

This operation will destroy all data on "disk1:" and partition device. Continue? [confirm]
RP/0/RP0/CPU0:May 28 22:00:53.520 : syslog_dev[83]: mkdosfs:
RP/0/RP0/CPU0:May 28 22:00:53.520 : syslog_dev[83]: mkdosfs: Format complete: FAT16 (4096-byte
 clusters), 100180 kB available.
RP/0/RP0/CPU0:May 28 22:00:55.640 : syslog_dev[83]: mkdosfs:
RP/0/RP0/CPU0:May 28 22:00:55.640 : syslog_dev[83]: mkdosfs: Format complete: FAT32 (4096-byte
 clusters), 898800 kB available.

Device partition disk1: is now formated and is available for use.

RP/0/0/CPU0:router# show media

Thu May 28 22:00:57.958 UTC

Media Information for 0/RP0/CPU0.
                  Image   Current
  Mountpoint      FsType  FsType      State       DrvrPid  Mirror  Flags
==========================================================================
  /disk0:         FAT16   FAT16  Mounted          0032796
```

```
/disk0a:         FAT16   (?)    Not Present
/disk1:          FAT16   FAT32  Mounted          0032801  Enabled Formatted
/disk1a:         FAT16   FAT16  Mounted          0032801          Formatted
/harddisk:       QNX4    FAT32  Mounted          0057384
/harddiska:      QNX4    (?)    Not Present
/harddiskb:      FAT32   (?)    Not Present
```

Related Commands

Command	Description
fsck	Checks a file system for a damage and repairs any problems.

fsck

To check a file system for damage, use the **fsck** command in EXEC or administration EXEC mode.

fsck *filesystem***:** [**location** *node-id*]

Syntax Description

filesystem:	Name of the file system to check, followed by a colon. Possible values are **disk0:** , **disk0a:** , **disk1:** , **disk1a:** , **harddisk:** , **harddiska:** , **harddiskb:** , **compactflash:** , **compactflasha:** .
location *node-id*	(Optional) Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	The following file systems were added: **disk0a:** , **disk1a:** , and **compactflasha:** . The command checks the file system, but does not repair the file system.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example shows how to check the file system on flash disk0: for damage:

```
RP/0/0/CPU0:router# fsck disk0:

Phase 1 - Read and compare FATs
Phase 2 - Check cluster chains
Phase 3 - Check directories
Phase 4 - Check for lost files

157280 kb used, 843344 kb free, 2541 files, 190 directories
Filesystem is clean.
```

Related Commands

Command	Description
show filesystem	Displays the layout and contents of a file system.

mkdir

To create a new directory on a file system, use the **mkdir** command in EXEC or administration EXEC mode.

mkdir *filesystem***:**[**location** {*node-id*| **all**}]

Syntax Description

filesystem:	File system on which to create a new directory.
location{*node-id* | **all**}	(Optional) Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation. Use the **all** keyword to indicate all nodes.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	The following file systems were added: **disk0a:** , **disk1a:** , and **compactflasha:** .
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

After you issue the **mkdir** command, Cisco IOS XR software prompts you to specify the name of the directory to be created. When specifying the name of the new directory, include the directory path where you want the new directory to reside. If you do not specify a directory path, the new directory is created in the /usr directory of the file system specified for the *filesystem:* argument.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example shows how to create a directory named newdir. The **dir** command is used to verify that the directory has been added.

```
RP/0/0/CPU0:router# mkdir harddisk:

Create directory filename []?newdir
Created dir harddisk:/newdir
RP/0/RP0/CPU0:router# dir harddisk:

  Directory of harddisk:

  11193       drwx  4096        Fri Feb 13 06:45:05 2009  newdir
  37146       drwx  4096        Sun Dec 14 15:30:48 2008  malloc_dump
  43030       drwx  4096        Wed Dec 24 11:20:52 2008  tracebacks
  43035       drwx  4096        Thu Jan  8 18:59:18 2009  sau
  51026       drwx  4096        Sat Dec 27 02:52:46 2008  tempA
  51027       drwx  4096        Sat Dec 27 02:04:10 2008  dir.not.del
  -430307552  -rwx  342         Fri Jan 16 10:47:38 2009  running-config
  -430305504  -rwx  39790       Mon Jan 26 23:45:56 2009  cf.dat

  39929724928 bytes total (39883231232 bytes free)
```

Related Commands

Command	Description
dir	Displays the contents of a file system.
rmdir	Removes an existing directory in a flash file system.

pwd

To display the present working directory, use the **pwd** command in EXEC mode.

pwd

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **pwd** command to show what directory or file system is specified as the default by the **cd** command.

Task ID

Task ID	Operations
filesystem	read

Examples

The following example shows how to display the present working directory:

```
RP/0/0/CPU0:router# pwd
```

```
disk0:/usr
```

Related Commands

Command	Description
cd	Changes the default directory or file system.
dir	Displays the contents of a file system.

rmdir

To remove an existing directory, use the **rmdir** command in EXEC or administration EXEC mode.

rmdir *filesystem***: location** {*node-id*| **all**}

Syntax Description

filesystem	Name of the file system from which to delete a directory, followed by a colon.
location {*node-id* | **all**}	Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation. Use the **all** keyword to indicate all nodes.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	The following file systems were added: **disk0a:** , **disk1a:** , and **compactflasha:** .
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **rmdir** command to remove directories (for example, to free up disk space) from a file system. After you issue the **rmdir** command, the Cisco IOS XR software prompts you to specify the name of the directory to be deleted.

When a directory contains files, you must remove the files before deleting the directory. Use the **delete** command to remove files.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example shows how to delete a subdirectory from the hard disk. The **dir** command is used to verify that the directory has been deleted.

```
RP/0/0/CPU0:router# rmdir harddisk:

Remove directory filename []?newdir
Delete harddisk:/newdir[confirm]y
RP/0/0/CPU0:router# dir harddisk:

  Directory of harddisk:

  37146       drwx  4096        Sun Dec 14 15:30:48 2008  malloc_dump
  43030       drwx  4096        Wed Dec 24 11:20:52 2008  tracebacks
  43035       drwx  4096        Thu Jan  8 18:59:18 2009  sau
  51026       drwx  4096        Sat Dec 27 02:52:46 2008  tempA
  51027       drwx  4096        Sat Dec 27 02:04:10 2008  dir.not.del
  -430307552  -rwx  342         Fri Jan 16 10:47:38 2009  running-config
  -430305504  -rwx  39790       Mon Jan 26 23:45:56 2009  cf.dat

  39929724928 bytes total (39883235328 bytes free)
```

Related Commands

Command	Description
delete	Deletes a file from a flash memory device.
dir	Displays the contents of a file system.
mkdir	Creates a new directory on a flash file system.

show filesystem

To display the layout and contents of file systems, use the **show filesystem** command in EXEC or administration EXEC mode.

show filesystem *filesystem*:[**firmware**| **stats**| **verbose** *level*] [**location** {*node-id*| **all**}]

Syntax Description

filesystem:	Name of the file system for which to display information, followed by a colon. Possible values are: **disk0:**, **disk1:**, **harddisk:**, **compactflash:**.
firmware	(Optional) Displays the firmware level.
stats	(Optional) Displays device statistics.
verbose *level*	(Optional) Changes the device driver verbose level.
location {*node-id* | **all**}	(Optional) Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation. Use the **all** keyword to indicate all nodes.

Command Default

The file system for the active RP is displayed.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	The following file systems were added: **disk0a:** , **disk1a:** , and **compactflasha:** .
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **show filesystem** command to learn the alias names (prefixes) of the file systems supported by your networking device.

Task ID

Task ID	Operations
basic-services	read

Examples

The following example shows sample output from the **show filesystem** command:

```
RP/0/0/CPU0:router# show filesystem

File Systems:

       Size(b)     Free(b)         Type  Flags  Prefixes
             -           -      network     rw  qsm/dev/fs/tftp: tftp:
             -           -      network     rw  qsm/dev/fs/rcp: rcp:
             -           -      network     rw  qsm/dev/fs/ftp: ftp:
   39929724928 39852978176     harddisk     rw  harddisk:
    1024606208   863584256   flash-disk     rw  disk0:
       2092032     2059264        nvram     rw  nvram:
      62390272    62381260        flash     rw  bootflash:
```

The following example shows sample output from the **show filesystem** command using the optional **location** *node-id* keyword and argument:

```
RP/0/0/CPU0:router# show filesystem location 0/rp0/cpu0

File Systems:

       Size(b)     Free(b)         Type  Flags  Prefixes
             -           -      network     rw  qsm/dev/fs/tftp: tftp:
             -           -      network     rw  qsm/dev/fs/rcp: rcp:
             -           -      network     rw  qsm/dev/fs/ftp: ftp:
   39929724928 39883235328     harddisk     rw  harddisk:
       2092032     2019328        nvram     rw  nvram:
    1024606208   847888384   flash-disk     rw  disk0:
      62390272    62153616        flash     rw  bootflash:
```

Table 3: show filesystem Field Descriptions

Field	Description
Size(b)	Amount of memory in the file system, in bytes.
Free(b)	Amount of free memory in the file system, in bytes.
Type	Type of file system.
Flags	Permissions for file system.

Field	Description
Prefixes	Alias for the file system.

show media

To display the current state of the disk storage media, use the **show media** command in EXEC or administration EXEC mode.

show media location {*node-id*| **all**}

Syntax Description

location{*node-id* | **all**}	(Optional) Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation. Use the **all** keyword to indicate all nodes.

Command Default

The disk storage media for the active RP is displayed.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.6.0	This command was introduced.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the command to view the status of the storage media on your system.

Task ID

Task ID	Operations
filesystem	read

Examples

The following sample output displays the disk storage media for the active RP:

```
RP/0/0/CPU0:router# show media

Media Information for 0/RP0/CPU0.
```

```
    Mountpoint       FsType      State       DrvrPid  Mirror  Flags
  ========================================================================
    /disk0:          FAT16  Mounted          0024598  Enabled
    /disk0a:         FAT16  Not Present
    /disk1:          FAT16  Mounted          0024599
    /disk1a:         FAT16  Not Present
    /harddisk:       FAT32  Mounted          0143421
    /harddiska:      FAT32  Not Present
    /harddiskb:      FAT32  Not Present
```

The following sample output displays the disk storage media on all nodes:

```
RP/0/0/CPU0:router# show media location all

Media Information for 0/4/CPU0.
    Mountpoint       FsType      State       DrvrPid  Mirror  Flags
  ========================================================================
    /disk0:          FAT16  Mounted          0024598  Enabled
    /disk0a:         FAT16  Not Present
    /disk1:          FAT16  Not Present
    /disk1a:         FAT16  Not Present
    /harddisk:       FAT32  Mounted          0061493
    /harddiska:      FAT32  Not Present
    /harddiskb:      FAT32  Not Present

Media Information for 0/4/CPU1.
    Mountpoint       FsType      State       DrvrPid  Mirror  Flags
  ========================================================================
    /disk0:          FAT16  Mounted          0024598  Enabled
    /disk0a:         FAT16  Not Present
    /disk1:          FAT16  Not Present
    /disk1a:         FAT16  Not Present
    /harddisk:       FAT32  Mounted          0036919
    /harddiska:      FAT32  Not Present
    /harddiskb:      FAT32  Not Present

Media Information for 0/RP0/CPU0.
    Mountpoint       FsType      State       DrvrPid  Mirror  Flags
  ========================================================================
    /disk0:          FAT16  Mounted          0024598  Enabled
    /disk0a:         FAT16  Not Present
    /disk1:          FAT16  Mounted          0024599
    /disk1a:         FAT16  Not Present
    /harddisk:       FAT32  Mounted          0143421
    /harddiska:      FAT32  Not Present
    /harddiskb:      FAT32  Not Present

Media Information for 0/RP1/CPU0.
    Mountpoint       FsType      State       DrvrPid  Mirror  Flags
  ========================================================================
    /disk0:          FAT16  Mounted          0024598  Enabled
    /disk0a:         FAT16  Not Present
    /disk1:          FAT16  Mounted          0024599
    /disk1a:         FAT16  Not Present
    /harddisk:       FAT32  Mounted          0131133
    /harddiska:      FAT32  Not Present
    /harddiskb:      FAT32  Not Present
```

describes the significant fields shown in the display.

Table 4: show media Field Descriptions

Field	Description
Mountpoint	File system name.
FsType	File system type.

Field	Description
State	State of the storage media.
DrvrPid	Process ID of the media driver.
Mirror	Indicates if disk mirroring is enabled or not.
Flags	Where disk mirroring is enabled, indicates whether the partition has been repaired, formatted, or the driver has been restarted.

Related Commands

Command	Description
mirror	Configures disk mirroring on a node.
mirror pause	Temporarily pauses disk mirroring on a node.

squeeze

To permanently erase files tagged as “deleted” or “error” on a flash file system, use the **squeeze** command in EXEC mode.

squeeze *filesystem*:

Syntax Description

filesystem:	Name of the file system.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When flash memory is full, you might need to rearrange the files so that the space used by the files marked “deleted” can be reclaimed. (This “squeeze” process is required for linear flash memory cards to make sectors contiguous; the free memory must be in a “block” to be usable.)

When you enter the command, the router copies all valid files to the beginning of flash memory and erases all files marked “deleted.” After the squeeze process is completed, you can write to the reclaimed flash memory space.

Caution After performing the squeeze process you cannot recover deleted files using the **undelete** command.

In addition to removing deleted files, the command removes any files that the system has marked as "error." An error file is created when a file write fails (for example, the device is full). To remove error files, you must use the command.

Rewriting flash memory space during the squeeze operation may take several minutes.

Task ID

Task ID	Operations
basic-services	execute

Examples

The following example shows how to permanently erase files tagged as "deleted" or "error" on the bootflash file system:

```
RP/0/0/CPU0:router# squeeze bootflash:

All deleted files will be removed. Continue? [confirm] y
Squeeze operation may take a while. Continue? [confirm] y

Squeeze under progress 30
Squeeze of bootflash: complete
```

Related Commands

Command	Description
delete	Deletes a file from a flash memory device.
dir	Displays the contents of a file system.
undelete	Recovers a file marked "deleted" on a flash file system.

undelete

To recover a file marked "deleted" on a flash file system, use the **undelete** command in EXEC mode.

undelete *index filesystem*:

Syntax Description

index	Number that indexes the file in the **dir** command output.
filesystem:	File system containing the file to undelete, followed by a colon.

Command Default

The default file system is the one specified by the **cd** command.

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

For flash file systems, when you delete a file, Cisco IOS XR software simply marks the file as deleted, but it does not erase the file. The command allows you to recover a deleted file on a specified flash memory device. You must undelete a file by its index, because you could have multiple deleted files with the same name. For example, the "deleted" list could contain multiple configuration files with the name router-config. You undelete by index to indicate which of the many router-config files from the list to undelete. Use the **dir** command to learn the index number of the file you want to undelete.

You cannot undelete a file if a valid (undeleted) file with the same name exists. Instead, you first delete the existing file and then undelete the file you want. For example, if you had an undeleted version of the

router-config file and you wanted to use a previous, deleted version instead, you could not simply undelete the previous version by index. You would first delete the existing router-config file and then undelete the previous router-config file by index. You can delete and undelete a file up to 15 times.

On flash file systems, if you try to recover the configuration file pointed to by the CONFIG_FILE environment variable, the system prompts you to confirm recovery of the file. This prompt reminds you that the CONFIG_FILE environment variable points to an undeleted file. To permanently delete all files marked "deleted" on a flash memory device, use the **squeeze** command.

Task ID

Task ID	Operations
filesystem	execute

Examples

The following example recovers the deleted file whose index number is 1 on the bootflash file system:

```
RP/0/0/CPU0:router# undelete 1 bootflash:
```

Related Commands

Command	Description
cd	Changes the default directory or file system.
delete	Deletes a file from a flash memory device.
dir	Displays the contents of a file system.
pwd	Displays the current working directory of the **cd** command.
squeeze	Permanently deletes flash files by squeezing a flash file system.

unmount

To render a media device safe to be removed, use the **unmount** command in EXEC or administration EXEC mode.

unmount *filesystem***:** [**location** *node-id*] **[undo]**

Syntax Description

filesystem:	File system to unmount, followed by a colon. Possible values are **disk0:** , **disk1:** , **harddisk:** , **compactflash:** .
location *node-id*	(Optional) Specifies a node. The *node-id* argument is expressed in the *rack*/*slot*/*module* notation.
undo	(Optional) Remounts the device if it is not removed and reinserted.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.6.0	This command was introduced.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the command before removing the media device. The command unmounts all partitions and ensures that no further access is made to the device. Use the **undo** option to remount the device if it is not removed and reinserted.

Task ID

Task ID	Operations
root-lr (EXEC)	execute
root-system (administration EXEC)	execute

Examples

The following example unmounts the disk0: file system so that it can be safely removed:

```
RP/0/0/CPU0:router# unmount disk0:
```

Related Commands

Command	Description
cd	Changes the default directory or file system.
delete	Deletes a file from a flash memory device.
dir	Displays the contents of a file system.
pwd	Displays the current setting of the **cd** command.
squeeze	Permanently deletes flash files by squeezing a flash file system.