

File System Commands

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, on page 2
- cfs check, on page 3
- copy, on page 4
- delete, on page 9
- dir, on page 10
- mkdir, on page 12
- pwd, on page 13
- rmdir, on page 14
- show filesystem, on page 15
- show media, on page 17

cd

To change the current working directory, use **cd** command in EXEC mode. cd filesystem: Syntax Description (Optional) Location of the new working directory. Include the file system alias for the *filesystem* filesystem : argument, followed by a colon and optionally, the name of a directory. The default file directory is disk0:/usr. **Command Default** EXEC mode. **Command Modes Command History** Release Modification Release 6.1.2 This command was introduced. The current working directory is the directory used when EXEC commands that have an optional argument **Usage Guidelines** are entered without that argument. Use cd command to define the working directory. For example, when the dir command is entered without specifying the *filesystem* argument, the files in the current working directory are displayed. Use cd command without an argument to set the working directory back to the default directory, disk0:/usr. The following example shows how to change the current working directory to the root directory on the hard disk. In this example, the **pwd** command confirms that the working directory has changed to the root directory on the hard disk. RP/0/RSP0/CPU0:router# cd harddisk: RP/0/RSP0/CPU0:router# pwd harddisk: The following example shows how to change the current working directory to the default file directory by specifying the cd command without a location. In this example, the pwd command confirms that the working directory has changed to the default file directory. RP/0/RSP0/CPU0:router# cd RP/0/RSP0/CPU0:router# pwd

disk0:/usr

cfs check

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

	cfs check					
Syntax Description	This command has no keywords or arguments.					
Command Default	No default behavior or values.					
Command Modes	EXEC mode					
	Admin EXEC mode					
Command History	Release	Modification				
	Release 6.1.2	This command was introduced.				
Usage Guidelines		o check the sanity of the configuration file system and attempt to recover from internal or more rollback points may be lost depending on the severity of the state of the file				
Note	While this command	runs, redundancy of the designated shelf controller (DSC) is disabled.				
	The following examp	ble shows how to perform a CFS check:				
	RP/0/RSP0/CPU0:router# cfs check					
	Initializing Confi Syncing commit dat Re-initializing ca	ing directories in Configuration File systemOK iguration Version ManagerOK tabase with running configurationOK ache filesOK atabase. Please wait[OK]				

сору

To copy a file from a source (such as a network server) to a destination (such as a flash disk), use **copy** command in EXEC or Admin 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 <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> 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 error					
Command Default	No default behavi	No default behavior or values				
Command Modes	EXEC mode.					
	Admin EXEC mo	de.				
Command History	Release	Modification				
	Release 6.1.2	This command was introduced.				
Usage Guidelines		ation can each be a configuration file, a text file, or a file system. Enter source and destination , usernames, and passwords and issue the copy command. The networking device prompts of formation.				
	The exact format of the <i>source</i> and <i>destination</i> arguments vary according to the file or directory location. Enter the device or network location for the file system type.					
	Filenames can inc	clude 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 []^_abc defghijklmnopqrstuvwxyz { } ~					
	The following characters can be used with the stated limitations:					
	• ` needs backs	slash before this character				
	• – cannot be the first character					
	• . cannot be the last character					
	\bullet = cannot be the filename without other characters					
	The following characters cannot be used in filenames:					
	"()*,/:<>?\					
	The maximum length allowed for a filename is 254 characters including the path. If a filename longer 254 characters is specified, the filename is truncated to 254 characters.					
	To copy a file from a source on the router to a destination on the router, specify a source location <i>node</i> and a destination location <i>node-id</i> . 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 hostnan The filename is specified relative to the directory used for file transfers.					
		specified, the networking device looks for a file in the current directory. To view the current e pwd command.				
Note		g of the copy command, you might see the "C" character. For all files being copied, "C"				

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

Prefix	refix Name Description					
tftp: Trivial File Transfer Protocol		<i>TFTP</i> 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	<i>FTP</i> 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/RSP0/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/RSP0/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

Task ID

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

Operations

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.

filesystem execute
The following example shows how to copy a file from a FTP server to disk1:
RP/0/RSP0/CPU0:router#
<pre>copy ftp://john:secret@10.1.1.1/images/comp-asr9k-full.pie disk1:</pre>
The following example shows how to copy a file from an rcp server to disk1:
RP/0/RSP0/CPU0:router#
<pre>copy rcp://john@10.1.1.1/images/comp-asr9k-full.pie disk1:</pre>
The following example shows how to copy a file from a TFTP server to disk1:
RP/0/RSP0/CPU0:router#
copy tftp://10.1.1.1/images/comp-asr9k-full.pie disk1:

Task ID

delete

To delete files, use **delete** command in the appropriate 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 <i>filesystem</i> argument, followed by a colon, and, optionally, the name of a directory.					
	filename	Filename of the file to be deleted.					
	harddisk	Deletes the harddisk					
	location {node-id all}	{ <i>node-id</i> all } Deletes a file from a designated node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. The all keyword specifies to delete the file from all nodes.					
Command Default	A filename must be spec working directory is use	cified. If a filename is entered without a file system or directory path, the present d.					
Command Modes	EXEC mode.						
	Admin EXEC mode.						
Command History	Release	Modification					
	Release 6.1.2	This command was introduced.					
Usage Guidelines	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.						
	The following example shows how to delete a file:						
	RP/0/RSP0/CPU0:router# delete rbtest						
	Delete disk1:/rbtest[confirm] y						

dir

To display a list of files on a file system or in a specific directory, use the **dir** command in EXEC mode Admin 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 <i>filesystem</i> argument, followed by a colon, and, optionally, the name of a directory.						
	<i>filename</i> (Optional) Name of the files to display. The files can be of any type. You can wildcards in the filename. A wildcard character (*) matches all patterns. Strin following a wildcard are ignored.							
	location {node-id all}	location { <i>node-id</i> all } (Optional) Specifies the node from which to display a list of files. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation. The all keyword specifies to display files on all nodes.						
Command Default	When dir command is e are displayed.	ntered without keywords or arguments, the contents of the present working directory						
Command Modes	EXEC mode.	EXEC mode.						
	Admin EXEC mode.							
Command History	Release	Modification						
	Release 6.1.2	This command was introduced.						
Usage Guidelines	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. The following example shows how to display the contents of a directory:							
	RP/0/RSP0/CPU0:router# dir harddisk:/log							
	Directory of harddisk:/log							
	5527 drwx 409 5533 drwx 409 5538 drwx 409 5543 drwx 409	P6 Thu Aug 28 11:38:54 2008 boot_28 Aug 2008 11 38 54 P6 Fri Sep 5 13:28:54 2008 boot_05 Sep 2008 13 28 54						

I

--More--

mkdir

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

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

Syntax Description	<i>filesystem:</i> File system on which to create a new directory.							
	location {node-id all}	on { <i>node-id</i> all } (Optional) Specifies the node where the file system is located. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Use the all keyword to indicate all nodes.						
Command Default	No default behavior or values							
Command Modes	EXEC							
	Admin EXEC.							
Command History	Release	Release Modification						
	Release 6.1.2	This command was introduced.						
Usage Guidelines	 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 <i>filesystem:</i> argument. The following example shows how to create a directory named newdir. The dir command is used to verify that the directory has been added. 							
Usage Guidelines	to be created. When sponew directory to reside. of the file system speci The following example	becifying the name of the new directory, include the directory path where you want the file of the new directory path, the new directory is created in the /usr directory if fied for the <i>filesystem:</i> argument.						
Usage Guidelines	to be created. When sponew directory to reside. of the file system speci The following example	becifying the name of the new directory, include the directory path where you want the If you do not specify a directory path, the new directory is created in the /usr director ified for the <i>filesystem:</i> argument. e shows how to create a directory named newdir. The dir command is used to y has been added.						
Usage Guidelines	to be created. When spenew directory to reside, of the file system speci The following example verify that the directory	<pre>becifying the name of the new directory, include the directory path where you want t be. If you do not specify a directory path, the new directory is created in the /usr director ified for the <i>filesystem:</i> argument. e shows how to create a directory named newdir. The dir command is used to y has been added. ter# mkdir harddisk: llename []?newdir sk:/newdir</pre>						
Usage Guidelines	to be created. When spinew directory to reside. of the file system species The following example verify that the directory RP/0/RSP0/CPU0:route Create directory file Created dir harddis	<pre>becifying the name of the new directory, include the directory path where you want t be. If you do not specify a directory path, the new directory is created in the /usr director ified for the <i>filesystem:</i> argument. e shows how to create a directory named newdir. The dir command is used to y has been added. cer# mkdir harddisk: llename []?newdir sk:/newdir er# dir harddisk:</pre>						
Usage Guidelines	to be created. When spinew directory to reside. of the file system special The following example verify that the directory RP/0/RSP0/CPU0:route Create directory file Created dir harddis RP/0/RP0/CPU0:route Directory of hard 11193 drwx 37146 drwx 43030 drwx 43035 drwx 51026 drwx 51027 drwx -430307552 -rwx	<pre>becifying the name of the new directory, include the directory path where you want the file of the new directory path, the new directory is created in the /usr director ified for the filesystem: argument.</pre> e shows how to create a directory named newdir. The dir command is used to y has been added. ter# mkdir harddisk: ter# mkdir harddisk: ter# dir harddisk: ddisk:						

pwd

I

-	To display the present	t working directory, use the pwd command in			
	EXEC mode	· · · · · · · · · · · · · · · · · · ·			
	EXEC mode				
	pwd				
Syntax Description	This command has no	b keywords or arguments.			
Command Default	No default behavior o	or values.			
Command Modes	EXEC				
Command History	Release	Modification			
	Release 6.1.2	This command was introduced.			
Usage Guidelines	Use the pwd comman	nd to show what directory or file system is specified as the default by the cd command.			
	The following example shows how to display the present working directory:				
	RP/0/RSP0/CPU0:rou	ter# pwd			
	disk0:/usr				

I

rmdir

To remove an existing directory, use the **rmdir** command in the appropriate 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	all) Specifies the node where the file system is located. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> 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 6.1.2	This command was introduced.						
Usage Guidelines	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.							
	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/RSP0/CPU0:router# rmdir harddisk:							
	Remove directory filename []? newdir Delete harddisk:/newdir[confirm] y RP/0/RSP0/CPU0:router# dir harddisk:							
	Directory of hard	lisk:						
	43030 drwx 43035 drwx	4096 Sat Dec 27 02:52:46 2008 tempA 4096 Sat Dec 27 02:04:10 2008 dir.not.del 342 Fri Jan 16 10:47:38 2009 running-config						
	39929724928 bytes total (39883235328 bytes free)							

show filesystem

To display the layout and contents of file systems, use the show filesystem command in 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: .						
	firmware	(Optional) Displays the firmware level.							
	stats	stats (Optional) Displays device statistics.							
	verbose level	(Optional) Changes the device driver verbose level.							
	location {node-id al	· · •	(Optional) Specifies the node where the file system is located. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Use the all keyword to indicate all nodes.						
Command Default	The file system for th	e active RI	P is displayed.						
Command Modes	EXEC mode								
Command History	Release	м	odification						
	Release 6.1.2	T	his command v	vas intro	duced.				
Usage Guidelines	Use the show filesystem command to learn the alias names (prefixes) of the file systems supported by your networking device.								
	The following example shows sample output from the show filesystem command:								
	RP/0/RSP0/CPU0:router# show filesystem								
	File Systems:								
	Size(b) _ _	Free (b) - -	Type network network	Flags rw rw	Prefixes qsm/dev/fs/tftp: tftp: qsm/dev/fs/rcp: rcp:				
	- 39929724928 398 1024606208 8	- 52978176 63584256	network harddisk flash-disk	rw rw rw	<pre>qsm/dev/fs/ftp: ftp: harddisk: disk0:</pre>				
	2092032 62390272	2059264 62381260	nvram flash	rw rw	nvram: bootflash:				

RP/0/RSP0/CPU0:router# show filesystem location 0/rp0/cpu0

File Systems:

Size(b)	Free(b)	Туре	Flags	Prefixes
-	-	network	rw	<pre>qsm/dev/fs/tftp: tftp:</pre>
-	-	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 2: 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.
Туре	Type of file system.
Flags	Permissions for file system.
Prefixes	Alias for the file system.

File System Commands

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**}

Used

Percent

Syntax Description	location { <i>node-id</i> all } (Optional) Specifies the node where the file system is located. The <i>node-id</i> argume is expressed in the <i>rack/slot/module</i> notation. Use the all keyword to indicate a nodes.						
Command Default	The disk storage media for the active RP is displayed.						
Command Modes	Administration EXEC						
	EXEC						
Command History	Release Modification						
	Release 6.1.2	This command was introduced.					
Usage Guidelines	Use the show media command to view the status of the storage media on your system. The following example displays the output of the show media command:.						
	sysadmin-vm:0_RP0 #show media Thu Nov 30 14:57:14.002 WET Media Information for local node.						
	Partition	Size	Used	 Percent	Avail		
	rootfs:	2.7G	1.5G	59%	1.1G		
	apphost:	1.9G	61M	4%	1.7G		
	/dev/sde	870M	401M		409M		
	harddisk:	2.4G	966M 67M		1.3G		
	log: config:	459M 159M	2.5M	16% 2%	359M 144M		
	disk0:	1.3G	108M	2 ° 9%	1.1G		
	<pre>rootfs: = root file system (read-only) log: = system log files (read-only) config: = configuration storage (read-only) Table 3: show media Field Descriptions</pre>						
	Field			Descript	Description		
Partition				Partition	Partition on the disk.		
	Size			Size of t	Size of the partition.		

Partition size used.

Percentage used.

Field	Description		
Avail	Available free partition space.		