



## Working with Files

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## Information About Files

The Cisco Nexus 1000V file system provides a single interface to all the file systems that the Cisco Nexus 1000V switch uses, including:

- Flash memory file systems
- Network file systems (TFTP and FTP)
- Any other endpoint for reading or writing data (such as the running configuration)

# Navigating the File System

This section describes how to navigate the file system and includes the following topics:

- Specifying File Systems
- Identifying the Directory You are Working From
- Changing Your Directory
- Listing the Files in a File System
- Identifying Available File Systems for Copying Files
- Using Tab Completion

## Specifying File Systems

The syntax for specifying a file system is `<file system name>:[//server/]`. The following table describes file system syntax.

File System Name	Server	Description
bootflash	sup-active sup-local sup-1 module-1	Internal memory located on the active supervisor used for storing system images, configuration files, and other miscellaneous files. Cisco Nexus 1000V CLI defaults to the bootflash: file system
	sup-standby sup-remote sup-2 module-2	Internal memory located on the standby supervisor used for storing system images, configuration files, and other miscellaneous files.
volatile	—	Volatile random-access memory (VRAM) located on a supervisor module used for temporary or pending changes.

## Identifying the Directory You are Working From

You can display the directory name of your current CLI location.

### Before You Begin

Before beginning this procedure, you must be logged in to the CLI in any command mode.

**Procedure**

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>pwd</b>	Displays the present working directory.

```
switch# pwd
bootflash:
```

## Changing Your Directory

You can change your location in the CLI, from one directory or file system to another. Cisco Nexus 1000V CLI defaults to the bootflash: file system.

**Note**

Any file saved in the volatile: file system is erased when the switch reboots.

**Before You Begin**

Before beginning this procedure, you must be logged in to the CLI in any command mode.

**Procedure**

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>pwd</b>	Displays the directory name of your current CLI location.
<b>Step 2</b>	switch# <b>cd directory name</b> <ul style="list-style-type: none"> <li>• switch# <b>cd bootflash:</b> Changes your CLI location to the root directory on the bootflash: file system.</li> <li>• switch# <b>cd bootflash:mydir</b> Changes your CLI location to the mydir directory that resides in the bootflash: file system.</li> <li>• switch# <b>cd mystorage</b> Changes your CLI location to the mystorage directory that resides within the current directory.  If the current directory is bootflash: mydir, this command changes the current directory to bootflash: mydir/mystorage.</li> </ul>	Changes your CLI location to the root directory on the bootflash: file system.

```

switch# pwd
volatile:
switch# cd bootflash:

switch# pwd
volatile:
switch# cd bootflash:mydir
switch# pwd
volatile:
switch# cd mystorage

```

## Listing the Files in a File System

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>dir</b> [ <i>directory</i>   <i>filename</i> ]	Displays the contents of a directory or file.

```

switch# dir lost+found/
49241 Jul 01 09:30:00 2008 diagclient_log.2613
12861 Jul 01 09:29:34 2008 diagmgr_log.2580
 31 Jul 01 09:28:47 2008 dmesg
1811 Jul 01 09:28:58 2008 example_test.2633
 89 Jul 01 09:28:58 2008 libdiag.2633
42136 Jul 01 16:34:34 2008 messages
 65 Jul 01 09:29:00 2008 otm.log
 741 Jul 01 09:29:07 2008 sal.log
 87 Jul 01 09:28:50 2008 startupdebug

```

```

Usage for log://sup-local
51408896 bytes used
158306304 bytes free
209715200 bytes total
switch#

```

## Identifying Available File Systems for Copying Files

### Before You Begin

Before beginning this procedure, you must be logged in to the CLI in EXEC mode.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>copy ?</b>	Displays the source file systems available to the copy command.
<b>Step 2</b>	switch# <b>copy filename ?</b>	Displays the destination file systems available to the copy command for a specific file.

```

switch# copy ?
bootflash: Select source filesystem
core: Select source filesystem
debug: Select source filesystem
ftp: Select source filesystem
licenses Backup license files
log: Select source filesystem
nvram: Select source filesystem
running-config Copy running configuration to destination
scp: Select source filesystem
sftp: Select source filesystem
startup-config Copy startup configuration to destination
system: Select source filesystem
tftp: Select source filesystem
volatile: Select source filesystem

```

## Using Tab Completion

You can have the CLI complete a partial file name in a command.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# show file <i>filesystem</i> <i>name: partial filename</i> <Tab>	Completes the filename when you type a partial filename and then press Tab and if the characters you typed are unique to a single file.  If not, the CLI lists a selection of file names that match the characters that you typed.  You can then retype enough characters to make the file name unique; and CLI completes the filename for you.
<b>Step 2</b>	switch# show file bootflash:c <Tab>	Completes the file name for you

```

n1000v# show file bootflash: nexus-1000v-
bootflash:nexus-1000v-dplug-mzg.4.0.4.SV1.0.42.bin
bootflash:nexus-1000v-mzg.4.0.4.SV1.0.42.bin
bootflash:nexus-1000v-kickstart-mzg.4.0.4.SV1.0.42.bin
n1000v# show file bootflash:c<Tab>
-----BEGIN RSA PRIVATE KEY-----
MIICXgIBAAKBgQDSq93Br1Hcg3bX1jXDMY5c9+yZSST3VhuQBqogvCPDGeLecA+j
...
...
n1000v#

```

## Copying and Backing Up Files

You can copy a file, such as a configuration file, to save it or reuse it at another location. If your internal file systems are corrupted, you could potentially lose your configuration. Save and back up your configuration files periodically. Also, before installing or migrating to a new software configuration, back up the existing configuration files.

**Note**

Use the **dir** command to ensure that enough space is available in the destination file system. If enough space is not available, use the **delete** command to remove unneeded files.

**Before You Begin**

Before beginning this procedure, you must be of the following:

- You are logged in to the CLI through a Telnet, or SSH connection.
- Your device has a route to the destination if you are copying to a remote location. Your device and the remote destination must be in the same subnetwork if you do not have a router or default gateway to route traffic between subnets.
- Your device has connectivity to the destination. Use the **ping** command to be sure.
- The source configuration file is in the correct directory on the remote server.
- The permissions on the source file are set correctly. Permissions on the file should be set to world-read.

**Procedure**

	Command or Action	Purpose
<b>Step 1</b>	<pre>switch# copy [source filesystem:] filename [destination filesystem:] filename</pre> <ul style="list-style-type: none"> <li>• switch# <b>copy system:running-config system run.cfg</b> Saves a copy of the running configuration to a remote switch.</li> <li>• switch# <b>copy bootflash: system_image bootflash://sup-standby/system_image</b> Copies a file from bootflash in the active supervisor module to bootflash in the standby supervisor module.</li> <li>• switch# <b>copy system:running-config bootflash:config</b> Copies a running configuration to the bootflash: file system.</li> <li>• switch# <b>copy scp://[username@]server[/path]/filename</b> Copies a source or destination URL for a network server that supports Secure Shell (SSH) and accepts copies of files using the secure copy protocol (scp).</li> <li>• switch# <b>copy sftp://[username@]server[/path]/filename///</b> Copies a source or destination URL for an SSH FTP (SFTP) network server</li> <li>• switch# <b>copy system:running-config bootflash:my-config</b> Places a back up copy of the running configuration on the bootflash: file system (ASCII file).</li> <li>• switch# <b>copy bootflash: filename bootflash:directory/filename</b> Copies the specified file from the root directory of the bootflash: file system to the specified directory.</li> <li>• switch# <b>copy filename directory/filename</b> Copies a file within the current file system.</li> </ul>	Copies a file from the specified source location to the specified destination location.

	Command or Action	Purpose
	<ul style="list-style-type: none"> <li>switch# <b>copy tftp</b>:<i>[/server[:port]][/path]/filename</i> Copies the source file to the running configuration on the switch, and configures the switch as the file is parsed line by line.</li> </ul>	

```
switch# copy system:running-config tftp://10.10.1.1/home/configs/switch3-run.cfg
switch# copy bootflash:system_image bootflash://sup-2/system_image
switch# copy system:running-config bootflash:my-config
switch# copy scp://user@10.1.1.7.2/system-image bootflash:system-image
switch# copy sftp://172.16.10.100/myscript.txt volatile:myscript.txt
switch# copy system:running-config bootflash:my-config
switch# copy bootflash:samplefile bootflash:mystorage/samplefile

switch# copy samplefile mystorage/samplefile
switch# copy tftp://10.10.1.1/home/configs/switch3-run.cfg system:running-config
```

## Creating a Directory

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<pre>switch# mkdir <i>directory name</i></pre> <ul style="list-style-type: none"> <li>• <b>mkdir</b> {<b>bootflash:</b>   <b>debug:</b>   <b>volatile:</b>} Specifies the directory name you choose: <ul style="list-style-type: none"> <li>◦ bootflash:</li> <li>◦ debug:</li> <li>◦ volatile:</li> </ul> </li> <li>• switch# <b>mkdir bootflash:</b><i>directory name</i> Creates a directory that you name in the bootflash: directory.</li> </ul>	Creates a directory at the current directory level.

```
switch# mkdir test
switch# mkdir bootflash:test
```

## Removing an Existing Directory

This command is valid only on Flash file systems.

### Before You Begin

Before beginning this procedure, be sure of the following:

- You are logged in to the CLI.
- The directory you want to remove is empty.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>rmdir</b> [ <b>filesystem</b> :[// <b>module</b> /]] <i>directory</i> <ul style="list-style-type: none"> <li>• switch# <b>rmdir</b> <i>directory</i> Removes the specified directory at the current directory level.</li> <li>• switch# <b>rmdir</b> {<b>bootflash</b>:   <b>debug</b>:   <b>volatile</b>:} <i>directory</i> Removes a directory from the file system.</li> </ul>	Removes a directory.  The directory name is case sensitive.

```
switch# rmdir test
switch# rmdir bootflash:test
```

## Moving Files



### Caution

If a file with the same name already exists in the destination directory, that file is overwritten by the moved file.

The move will not complete if there is not enough space in the destination directory.

### Before You Begin

Before beginning this procedure, you must be logged in to the CLI.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>move</b> { <i>source path and filename</i> } { <i>destination path and filename</i> } <ul style="list-style-type: none"> <li>• switch# <b>move</b> <i>filename path/filename</i> Moves the file from one directory to another in the current file system.</li> </ul>	Moves the file from one directory to another in the same file system (bootflash:).

```
switch# move bootflash:samplefile bootflash:mystorage/samplefile
switch# move samplefile mystorage/samplefile
```



# Deleting Files or Directories

You can delete files or directories on a Flash Memory device.



## Caution

When deleting, if you specify a directory name instead of a file name, the entire directory and its contents are deleted.

## Before You Begin

You must understand the following information:

- When you delete a file, the software erases the file.
- If you attempt to delete the configuration file or image specified by the CONFIG\_FILE or BOOTLDR environment variable, the system prompts you to confirm the deletion.
- If you attempt to delete the last valid system image specified in the BOOT environment variable, the system prompts you to confirm the deletion.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>delete</b> [ <b>bootflash:</b>   <b>debug:</b>   <b>log:</b>   <b>volatile:</b> ] <i>filename</i> or <i>directory name</i> <ul style="list-style-type: none"> <li>• switch# <b>delete</b> <i>filename</i> Deletes the named file from the current working directory.</li> <li>• switch# <b>delete</b> <b>bootflash:</b><i>directory name</i> Deletes the named directory and its contents.</li> </ul>	Deletes a specified file or directory.

```
switch# delete bootflash:dns_config.cfg
switch# delete dns_config.cfg
```

# Compressing Files

## Before You Begin

Before beginning this procedure, you must be logged in to the CLI.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>show</b> <i>command</i> > [ <i>path</i> ] <i>filename</i>	Directs the <b>show</b> command output to a file.

	Command or Action	Purpose
<b>Step 2</b>	switch# <b>dir</b>	Displays the contents of the current directory, including the new file created in the first step.
<b>Step 3</b>	switch# <b>gzip</b> <i>[path] filename</i>	Compresses the specified file
<b>Step 4</b>	switch# <b>dir</b>	Displays the contents of the specified directory, including the newly-compressed file. Shows the difference in the file size of the newly-compressed file.

```

switch# show system internal l2fm event-history errors >errorsfile
switch# dir
 2687      Jul 01 18:17:20 2008  errorsfile
16384     Jun 30 05:17:51 2008  lost+found/
 4096     Jun 30 05:18:29 2008  routing-sw/
   49     Jul 01 17:09:18 2008  sample_test.txt
1322843   Jun 30 05:17:56 2008  nexus-1000v-dplug-mzg.4.0.4.SV1.0.42.bin
21629952  Jun 30 05:18:02 2008  nexus-1000v-kickstart-mzg.4.0.4.SV1.0.42.bin
39289400  Jun 30 05:18:14 2008  nexus-1000v-mzg.4.0.4.SV1.0.42.bin

Usage for bootflash://
 258408448 bytes used
2939531264 bytes free
3197939712 bytes total
switch# gzip bootflash:errorsfile
switch# dir
 1681     Jun 30 05:21:08 2008  cisco_svs_certificate.pem
   703     Jul 01 18:17:20 2008  errorsfile.gz
16384     Jun 30 05:17:51 2008  lost+found/
 4096     Jun 30 05:18:29 2008  routing-sw/
   49     Jul 01 17:09:18 2008  sample_test.txt
1322843   Jun 30 05:17:56 2008  nexus-1000v-dplug-mzg.4.0.4.SV1.0.42.bin
21629952  Jun 30 05:18:02 2008  nexus-1000v-kickstart-mzg.4.0.4.SV1.0.42.bin
39289400  Jun 30 05:18:14 2008  nexus-1000v-mzg.4.0.0.S1.0.34.bin

Usage for bootflash://
 258408448 bytes used
2939531264 bytes free
3197939712 bytes total
switch#

```

## Uncompressing Files

You can uncompress (unzip) a specified file that is compressed using LZ77 coding.

### Before You Begin

Before beginning this procedure, you must be logged in to the CLI.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>gunzip</b> <i>[path] filename</i>	Uncompresses the specified file. The filename is case sensitive .

	Command or Action	Purpose
<b>Step 2</b>	switch# <b>dir</b>	Displays the contents of a directory, including the newly uncompressed file.

```
switch# gunzip bootflash:errorsfile.gz
switch# dir bootflash:
 2687      Jul 01 18:17:20 2008  errorsfile
16384     Jun 30 05:17:51 2008  lost+found/
 4096     Jun 30 05:18:29 2008  routing-sw/
  49      Jul 01 17:09:18 2008  sample_test.txt
1322843   Jun 30 05:17:56 2008  nexus-1000v-dplug-mzg.4.0.0.SV1.0.42.bin
21629952  Jun 30 05:18:02 2008  nexus-1000v-kickstart-mzg.4.0.4.SV1.0.42.bin
39289400  Jun 30 05:18:14 2008  nexus-1000v-mzg.4.0.0.SV1.0424.bin

Usage for bootflash://sup-local
 258408448 bytes used
 2939531264 bytes free
 3197939712 bytes total
DCOS-112-R5#
```

## Directing Command Output to a File

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>show running-config &gt; [path   filename]</b>  <ul style="list-style-type: none"> <li>• switch# <b>show running-config &gt; volatile:filename</b> Directs the output of the command, <b>show running-config</b>, to the specified filename on the volatile file system.</li> <li>• switch# <b>show running-config &gt; bootflash:filename</b> Directs the output of the command, <b>show running-config</b>, to the specified file in bootflash.</li> <li>• switch# <b>show running-config &gt; tftp:// ipaddress/filename</b> Directs the output of the command, <b>show running-config</b>, to the specified file on a TFTP server.</li> <li>• switch# <b>show interface &gt; filename</b> Directs the output of the command, <b>show interface</b>, to the specified file at the same directory level, for example, in bootflash.</li> </ul>	Directs the output of the command, <b>show running-config</b> , to a path and filename.

```
switch# show running-config > volatile:switch1-run.cfg
switch# show running-config > bootflash:switch2-run.cfg
switch# show running-config > tftp://10.10.1.1/home/configs/switch3-run.cfg
switch# show interface > samplefile
```

## Verifying a Configuration File before Loading

Use the following commands to verify the integrity of a system or kickstart image before loading it.

Command	Description
<code>copy source path and file system:running-config</code>	Copies the source file to the running configuration on the switch, and configures the switch as the file is parsed line by line.
<code>show version image [bootflash:   modflash:  volatile:]</code>	Validates the specified image. bootflash:—specifies bootflash as the directory name. volatile:—Specifies volatile as the directory name. modflash:—Specifies modflash as the directory name.

```
switch# copy tftp://10.10.1.1/home/configs/switch3-run.cfg system:running-config
switch# show version image bootflash:isan.bin
image name: nexus-1000v-mz.4.0.4.SV1.1.bin
bios:      version unavailable
system:    version 4.0(4)SV1(1)
compiled:  4/2/2009 23:00:00 [04/23/2009 09:55:29]
```

## Rolling Back to a Previous Configuration

You can recover your configuration from a previously saved version.



### Note

Each time you use a **copy running-config startup-config** command, a binary file is created and the ASCII file is updated. A valid binary configuration file reduces the overall boot time significantly. A binary file cannot be uploaded, but its contents can be used to overwrite the existing startup configuration. The **write erase** command clears the binary file.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<code>switch# copy running-config bootflash: {filename}</code>	Reverts to a snapshot copy of a previously saved running configuration (binary file).
<b>Step 2</b>	<code>switch# copy bootflash: {filename} startup-config</code>	Reverts to a configuration copy that was previously saved in the bootflash: file system (ASCII file).

```
switch# copy running-config bootflash:June03-Running
switch# copy bootflash:my-config startup-config
```

# Displaying Files

This section describes how to display information about files and includes the following procedures:

- Displaying File Contents
- Displaying Directory Contents
- Displaying File Checksums
- Displaying the Last Lines in a File

## Displaying File Contents

### Before You Begin

Before beginning this procedure, you must be logged in to the CLI.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>show file</b> [bootflash:   debug:   volatile:] <i>filename</i>	Displays the contents of the specified file.

```
switch# show file bootflash:sample_test.txt
config t
Int veth1/1
no shut
end
show int veth1/1

switch#
```

## Displaying Directory Contents

You can display the contents of a directory or file system.

### Before You Begin

Before beginning this procedure, you must be logged in to the CLI.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>pwd</b>	Displays the present working directory.
<b>Step 2</b>	switch# <b>dir</b>	Displays the contents of the directory.

```

switch# pwd
bootflash:
switch# dir

Usage for volatile://
      0 bytes used
 20971520 bytes free
 20971520 bytes total
switch#

```

## Displaying File Checksums

You can display checksums for checking file integrity.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>show file</b> <i>filename</i> [ <b>cksum</b>   <b>md5sum</b> ] <b>show file</b> { <b>bootflash:</b>   <b>volatile:</b>   <b>debug:</b> } <i>filename</i> [ <b>cksum</b>   <b>md5sum</b> ]	Provides the checksum or MD5 checksum of the file for comparison with the original file.  Provides the Message-Digest Algorithm 5 (MD5) checksum of the file. MD5 is an electronic fingerprint for the file.

```

switch# show file bootflash:cisco_svs_certificate.pem cksum
266988670
switch# show file bootflash:cisco_svs_certificate.pem md5sum
d3013f73aea3fda329f7ea5851ae81ff

```

## Displaying the Last Lines in a File

### Before You Begin

Before beginning this procedure, you must be logged in to the CLI in EXEC mode.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>tail</b> { <i>path</i> }[ <i>filename</i> ] { <i>Number of lines</i> }	Displays the requested number of lines from the end of the specified file.  The range for the number of lines is from 0 to 80.

```

switch# tail bootflash:errorsfile 5

20) Event:E_DEBUG, length:34, at 171590 usecs after Tue Jul  1 09:29:05 2008
    [102] main(326): stateless restart

```

## Feature History for File Management

Feature Name	Releases	Feature Information
File Management	Release 5.2(1)IC1(1.1)	This feature was introduced.

