Working with Files

This chapter contains the following sections:

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. The 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 of Your Current Location

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

Before you begin

Log in to the CLI in any command mode.

Procedure

	Command or Action	Purpose
Step 1	switch# **pwd**	Displays the present working directory.

Changing Your Directory

You can change your location in the CLI from one directory or file system to another.

The 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

Log in to the CLI in any command mode.

Procedure

	Command or Action	**Purpose**
Step 1	switch# **pwd**	Displays the directory name of your current CLI location.

Step 2	switch# **cd directory name**
	
	• switch# **cd bootflash:**
	
	  Changes your CLI location to the root directory on the bootflash: file system.
	
	• switch# **cd bootflash:mydir**
	
	  Changes your CLI location to the mydir directory that resides in the bootflash: file system.
	
	• switch# **cd mystorage**
	
	  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.
		Changes your CLI location to the root directory on the bootflash: file system.

Example

This example shows how to change the directory:

```
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

You can use this procedure to list the files in a file system.

Before you begin

Log in to the CLI in any command mode.

Procedure

	Command or Action	Purpose
Step 1	switch# **dir** [*directory* | *filename*]	Displays the contents of a directory or file.

Example

This example shows how to list files within a file system:

```
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

Log in to the CLI in EXEC mode.

Procedure

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

Example

This example shows how to identify available file systems:

```
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 filename in a command.

Procedure

	Command or Action	**Purpose**
Step 1	switch# **show file** *filesystem name: partial filename* <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 filenames 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.
Step 2	switch# **show file bootflash:c** <Tab>	Completes the filename for you

Example

This example shows how to complete a partial filename:

```
switch# 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-----
MIICXgIBAAKBgQDSq93BrlHcg3bX1jXDMY5c9+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

- Log in to the CLI through a Telnet or Secure Shell (SSH) connection.

- Know that 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.

- Know that your device has connectivity to the destination. Use the **ping** command to be sure.

- Know that the source configuration file is in the correct directory on the remote server.

- Know that the permissions on the source file are set correctly. Permissions on the file should be set to world-read.

Procedure

	Command or Action	**Purpose**
Step 1	switch# **copy** [*source filesystem:*] *filename* [*destination filesystem*:] *filename* • switch# **copy system:running-config** *system* **run.cfg** Saves a copy of the running configuration to a remote switch. • switch# **copy bootflash:** *system_image* **bootflash:**//*sup-standby/system_image* Copies a file from bootflash in the active supervisor module to bootflash in the standby supervisor module. • switch# **copy system:running-config bootflash:***config* Copies a running configuration to the bootflash: file system.	Copies a file from the specified source location to the specified destination location.

Command or Action	Purpose
• switch# **copy scp:**[//[*username@*]*server*][/*path*]/*filename* 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). • switch# **copy sftp:**[//[*username@*]*server*][/*path*]/*filename*/// Copies a source or destination URL for an SSH FTP (SFTP) network server. • switch# **copy system:running-config** *bootflash:my-config* Places a back up copy of the running configuration on the bootflash: file system (ASCII file). • switch# **copy bootflash:** *filename* **bootflash:***directory*/*filename* Copies the specified file from the root directory of the bootflash: file system to the specified directory. • switch# **copy** *filename directory*/*filename* Copies a file within the current file system. • switch# **copy tftp:**[//*server*[:*port*]][/*path*]/*filename* Copies the source file to the running configuration on the switch, and configures the switch as the file is parsed line by line.	

Example

```
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@10.1.7.2/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**

Step 1	switch# **mkdir** *directory name*
	
	  • **mkdir** {**bootflash:** | **debug:** | **volatile:**}
	
	    Specifies the directory name you choose:
	
	      • bootflash:
	
	      • debug:
	
	      • volatile:
	
	  • switch# **mkdir bootflash:***directory name*
	
	    Creates a directory that you name in the bootflash: directory.
		Creates a directory at the current directory level.

Example

This example shows how to create a directory:

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

Removing an Existing Directory

This command is valid only on Flash file systems.

Before you begin

- Make sure that you are logged in to the CLI.
- The directory you want to remove is empty.

Procedure

	Command or Action	**Purpose**
Step 1	switch# **rmdir** [**filesystem:**[//**module**/]]*directory* • switch# **rmdir** *directory*	Removes a directory. The directory name is case sensitive.

Command or Action	Purpose
Removes the specified directory at the current directory level. • switch# **rmdir** {**bootflash:** | **debug:** | **volatile:**} *directory* Removes a directory from the file system.	

Example

This example shows how to remove a directory:

```
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 is not completed if there is not enough space in the destination directory.

Before you begin

Log in to the CLI.

Procedure

	Command or Action	Purpose
Step 1	switch# **move** {*source path and filename*} {*destination path and filename*} • switch# **move** *filename path*/*filename* Moves the file from one directory to another in the current file system.	Moves the file from one directory to another in the same file system (bootflash:).

Example

This example shows how to move the file from one directory to another directory:

```
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, know that the software erases the file.

- If you attempt to delete the configuration file or image specified by the CONFIG_FILE or BOOTLDR environment variable, know that the system prompts you to confirm the deletion.

- If you attempt to delete the last valid system image specified in the BOOT environment variable, know that the system prompts you to confirm the deletion.

Procedure

	Command or Action	**Purpose**

Step 1	switch# **delete** [**bootflash:** | **debug:** | **log:** | **volatile:**] *filename* or *directory name*
	
	 • switch# **delete** *filename*
	
	   Deletes the named file from the current working directory.
	
	 • switch# **delete bootflash:***directory name*
	
	   Deletes the named directory and its contents.
		Deletes a specified file or directory.

Example

This example shows how to delete files and directories:

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

Compressing Files

Before you begin

Log in to the CLI.

Procedure

	Command or Action	Purpose
Step 1	switch# **show** *command* > [*path*] *filename*	Directs the **show** command output to a file.
Step 2	switch# **dir**	Displays the contents of the current directory, including the new file created in the first step.
Step 3	switch# **gzip** [*path*] *filename*	Compresses the specified file
Step 4	switch# **dir**	Displays the contents of the specified directory, including the newly compressed file. Shows the difference in the file size of the newly compressed file.

Example

This example shows how to compress a 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

Log in to the CLI.

Procedure

	Command or Action	Purpose
Step 1	switch# **gunzip** [*path*] *filename*	Uncompresses the specified file.
		The filename is case sensitive.
Step 2	switch# **dir**	Displays the contents of a directory, including the newly uncompressed file.

Example

This example shows how to uncompress a 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
Step 1	switch# **show running-config** > [*path* | *filename*] • switch# **show running-config** > **volatile:***filename*	Directs the output of the **show running-config** command to a path and filename.

	Command or Action	Purpose
	Directs the output of the command, **show running-config**, to the specified filename on the volatile file system. • switch# **show running-config > bootflash:***filename* Directs the output of the command, **show running-config**, to the specified file in bootflash. • switch# **show running-config > tftp:**//*ipaddress*/*filename* Directs the output of the command, **show running-config**, to the specified file on a TFTP server. • switch# **show interface >** *filename* Directs the output of the command, **show interface**, to the specified file at the same directory level, for example, in bootflash.	

Example

These examples show how to direct a command output to a file:

```
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

You can verify the integrity of an image before loading it. This command can be used for both the system and kickstart images.

Procedure

	Command or Action	Purpose
Step 1	switch# **copy** *source path* and *file* **system:running-config**	Copies the source file to the running configuration on the switch, and configures the switch as the file is parsed line by line.
Step 2	switch# **show version image** [**bootflash:** | **modflash:** |**volatile:**]	Validates the specified image.

Command or Action	Purpose
	bootflash—specifies bootflash as the directory name.
	volatile—Specifies volatile as the directory name.
	modflash—Specifies modflash as the directory name.

Example

This example shows how to verify an image before loading it:

```
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 that 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
Step 1	switch# **copy running-config bootflash:** {*filename*}	Reverts to a snapshot copy of a previously saved running configuration (binary file).
Step 2	switch# **copy bootflash:** {*filename*} **startup-config**	Reverts to a configuration copy that was previously saved in the bootflash: file system (ASCII file).

Example

This example shows how to recover the previous configuration:

```
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

Log in to the CLI.

Procedure

	Command or Action	**Purpose**
Step 1	switch# **show file** [**bootflash:** | **debug**: | **volatile:**] *filename*	Displays the contents of the specified file.

Example

This example shows how to display the file contents:

```
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

Log in to the CLI.

Procedure

	Command or Action	**Purpose**
Step 1	switch# **pwd**	Displays the present working directory.

	Command or Action	Purpose
Step 2	switch# **dir**	Displays the contents of the directory.

Example

This example shows how to display contents of a 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 the file integrity.

Procedure

	Command or Action	Purpose
Step 1	switch# **show file** *filename* [**cksum** | **md5sum**]	Provides the checksum or MD5 checksum of the file for comparison with the original file.
Step 2	switch# **show file** {**bootflash:** | **volatile:** | **debug:**} *filename* [**cksum** | **md5sum**]	Provides the Message-Digest Algorithm 5 (MD5) checksum of the file. MD5 is an electronic fingerprint for the file.

Example

These examples show how to display checksums:

```
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

Log in to the CLI in EXEC mode.

Procedure

	Command or Action	**Purpose**
Step 1	switch# **tail** {*path*}[*filename*] {*Number of lines*}	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.

Example

This example shows how to display the requested number of last lines from a specified file:

```
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	4.0(4)SV1(1)	This feature was introduced.