



## Before You Begin

---

This chapter prepares you to configure switches from the CLI. It also lists the information that you need before you begin, and it describes the CLI command modes.

This chapter includes the following sections:

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## About the Switch Prompt



### Note

Refer to the *Cisco MDS 9020 Fabric Switch Hardware Installation Guide* for installation and connection instructions.

When the switch is powered on successfully, you see the default switch prompt (`switch#`), as shown in [Example 2-1](#).

### Example 2-1 Output When Switch Boots Up

```
INIT: Switching to runlevel: 6
Stopping sshd:[ OK ]
Stopping xinetd: [ OK ]
Saving random seed: [ OK ]
Shutting down kernel logger: [ OK ]
Shutting down system logger: [ OK ]
Starting killall: [ OK ]
Sending all processes the TERM signal...
Sending all processes the KILL signal...
Unmounting loopback filesystems: umount: /dev/loop0: not mounted

Unmounting loopback filesystems (retry):
Unmounting file systems:
Please stand by while rebooting the system...
Restarting system.

U-Boot 0.2.0 Revision 1.3.0.08 (Mar 8 2005 - 10:21:12)

Kernel Source Revision 2.4.18_mvl30-amazon-0034

CPU: MPC8245 Revision 1.4 at 249.999 MHz: 16 kB I-Cache 16 kB D-Cache
Board: Amazon-8245
I2C: ready
DRAM: 256 MB
FLASH: 1 MB
Env: default
In: serial
Out: serial
Err: serial
Net: DP83815

NAND device: Manufacture ID: 0x98, Chip ID: 0x79 (Toshiba NAND 128MiB 3,3V)
Creating 2 MTD partitions on "NAND 128MiB 3,3V":
Partition 0: 0x00000000-0x05000000 : "Amazon Image Partition"
Partition 1: 0x05000000-0x08000000 : "Amazon Config Partition"
Mounting partition '0' offset 0x0 size 80MB
### YAFFS booting: kernel=kernel.1 root=ramdisk.1 args="ramdisk=38056"
### YAFFS loading 'kernel.1' to 0x1000000
### YAFFS loading 'ramdisk.1' to 0x1100000
helper entry, hp @ 0x0x1000000, data @ 0x0x100025c, magic num 0x27051956
## Booting image at 01000000 ...
Image Name: Linux-2.4.18_mvl30-amazon
Image Type: PowerPC Linux Kernel Image (gzip compressed)
Data Size: 638540 Bytes = 623.6 kB
Load Address: 00000000
Entry Point: 00000000
Verifying Checksum ... OK
Uncompressing Kernel Image ... OK
## Loading RAMDisk Image at 01100000 ...
```

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```

Image Name:      Amazon RAMDisk
Image Type:      PowerPC Linux RAMDisk Image (gzip compressed)
Data Size:       12874182 Bytes = 12.3 MB
Load Address:    00000000
Entry Point:     00000000
Verifying Checksum ... OK
Loading Ramdisk to 0f258000, end 0fe9f1c6 ... OK
Memory BAT mapping: BAT2=256Mb, BAT3=0Mb, residual: 0Mb
Linux version 2.4.18_mv130-amazon (builds@gotham) (gcc version 3.2.1 20020930
(MontaVista)) #1 Tue F
eb 8 12:50:15 CST 2005
Amazon platform
On node 0 totalpages: 65536
zone(0): 65536 pages.
zone(1): 0 pages.
zone(2): 0 pages.
Kernel command line:  ramdisk=38056
OpenPIC Version 1.2 (1 CPUs and 26 IRQ sources) at fc040000
time_init: decremter frequency = 25.011598 MHz
Calibrating delay loop... 166.29 BogoMIPS
Memory: 243920k available (1100k kernel code, 376k data, 60k init, 0k highmem)
Dentry-cache hash table entries: 32768 (order: 6, 262144 bytes)
Inode-cache hash table entries: 16384 (order: 5, 131072 bytes)
Mount-cache hash table entries: 4096 (order: 3, 32768 bytes)
Buffer-cache hash table entries: 16384 (order: 4, 65536 bytes)
Page-cache hash table entries: 65536 (order: 6, 262144 bytes)
POSIX conformance testing by UNIFIX
PCI: Probing PCI hardware
Linux NET4.0 for Linux 2.4
Based upon Swansea University Computer Society NET3.039
Initializing RT netlink socket
Starting kswapd
Disabling the Out Of Memory Killer
i2c-core.o: i2c core module version 2.6.2 (20011118)
i2c-dev.o: i2c /dev entries driver module version 2.6.2 (20011118)
i2c-proc.o version 2.6.2 (20011118)
pty: 256 Unix98 ptys configured
adm1021.o version 2.6.2 (20011118)
adm9240.o version 2.6.2 (20011118)
eeprom.o version 2.6.2 (20011118)
dsl339.o version 2.6.2 (20011118)
mic74.o version 2.6.2 (20011118)
Serial driver version 5.05c (2001-07-08) with MANY_PORTS SHARE_IRQ SERIAL_PCI enabled
ttyS00 at 0xfc004500 (irq = 137) is a 16550A
Generic RTC Driver v1.07
block: 128 slots per queue, batch=32
RAMDISK driver initialized: 16 RAM disks of 38056K size 1024 blocksize
loop: loaded (max 8 devices)
natsemi.c:v1.07 1/9/2001  Written by Donald Becker <becker@scyld.com>
  http://www.scyld.com/network/natsemi.html
  (unofficial 2.4.x kernel port, version 1.07+LK1.0.14, Nov 27, 2001  Jeff Garzik, Tjeerd
Mulder)
eth0: NatSemi DP8381[56] at 0xd1000000, 00:c0:dd:07:12:9f, IRQ 16.
Amazon Boot Flash: Probing for AMD compatible flash...
Amazon Boot Flash: Found 1 x 1MiB AMD AM29LV800BB at 0x0
Creating 1 MTD partitions on "Amazon Boot Flash":
0x00000000-0x00100000 : "BootFlash"
NAND device: Manufacture ID: 0x98, Chip ID: 0x79 (Toshiba NAND 128MiB 3,3V)
Creating 2 MTD partitions on "NAND 128MiB 3,3V":
0x00000000-0x05000000 : "Amazon Image Partition"
0x05000000-0x08000000 : "Amazon Config Partition"
MPC10x I2C - interrupt vector 129
NET4: Linux TCP/IP 1.0 for NET4.0
IP Protocols: ICMP, UDP, TCP, IGMP

```

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```

IP: routing cache hash table of 2048 buckets, 16Kbytes
TCP: Hash tables configured (established 16384 bind 32768)
NET4: Unix domain sockets 1.0/SMP for Linux NET4.0.
RAMDISK: Compressed image found at block 0
Freeing initrd memory: 12572k freed
VFS: Mounted root (ext2 filesystem).
Freeing unused kernel memory: 60k init
INIT:version 2.78 bootinWelcome to Red Hat Linux
Mounting proc filesystem: [ OK ]
Configuring kernel parameters: [ OK ]
Setting hostname switch: [ OK ]
Finding module dependencies: [ OK ]
mke2fs 1.23, 15-Aug-2001 for EXT2 FS 0.5b, 95/08/09
Filesystem label=
OS type: Linux
Block size=1024 (log=0)
Fragment size=1024 (log=0)
9520 inodes, 38056 blocks
1902 blocks (5.00%) reserved for the super user
First data block=1
5 block groups
8192 blocks per group, 8192 fragments per group
1904 inodes per group
Superblock backups stored on blocks:
    8193, 24577

Writing inode tables: 0/51/52/53/54/5done
Writing superblocks and filesystem accounting information: done

This filesystem will be automatically checked every 33 mounts or
180 days, whichever comes first. Use tune2fs -c or -i to override.
Mounting local filesystems: [ OK ]
Running logRotate...
Enabling swap space: [ OK ]
INIT: Entering runlevel: 3
Initializing random number generator: [ OK ]
Starting system logger: [ OK ]
Starting kernel logger: [ OK ]
Starting xinetd: [ OK ]
Starting fcswitch: [ OK ]

switch login: admin
Password:

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---- Basic System Configuration Dialog ----

This setup utility will guide you through the basic configuration of
the system. Setup configures only enough connectivity for management
of the system.

*Note: setup is mainly used for configuring the system initially,
when no configuration is present. So setup always assumes system
defaults and not the current system configuration values.

Press Enter if you want to skip any dialog. Use ctrl-c at anytime
to skip all remaining dialogs.

```

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```

Would you like to enter the basic configuration dialog (yes/no): y

Create another login account (yes/no) [n]: n

Configure read-only SNMP community string (yes/no) [n]: y

    SNMP community string: public

Configure read-write SNMP community string (yes/no) [n]: y

    SNMP community string: private

Enter the switch name: rtp-9020-top

Continue with Out-of-band (mgmt0) management configuration? (yes/no) [y]: y

    Mgmt0 IP address: 172.18.172.160

    Mgmt0 IP netmask: 255.255.255.0

Configure the default gateway? (yes/no) [y]: y

IP address of the default gateway: 172.18.172.1

Enable the telnet service? (yes/no) [y]: y

Enable SSH service? (yes/no) [n]: y

Configure ntp server? (yes/no) [n]: n

Configure default switchport interface state (shut/noshut) [shut]:

Configure default zone policy (permit/deny) [deny]:

The following configuration will be applied:
snmp-server community public ro
snmp-server community private rw
switchname rtp-9020-top
interface mgmt0
    ip address 172.18.172.160 255.255.255.0
ip default-gateway 172.18.172.1
telnet server enable
ssh server enable
system default switchport shutdown
no zone default-zone permit

Would you like to edit the configuration? (yes/no) [n]:

Use this configuration and save it? (yes/no) [y]:

[#####] 100%

```

You can perform embedded CLI operations, access command histories, and use command parsing functions at this prompt. The switch gathers the command string upon detecting an **Enter** (CR) and accepts commands from a terminal.

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## Default Switch Roles

The following roles are available in all switches:

- Network operator—Has permission to view the configuration.
- Network administrator—Has permission to perform all functions.

When you execute a command, perform command completion, or obtain context sensitive help, the switch software allows the operation to progress if you have the correct permission as specified in the description of the command. (See [Chapter 9, “Configuring Switch Security.”](#))

## About the CLI Command Modes

Switches in the Cisco MDS 9020 Fabric Switch have two main command modes: user EXEC mode and configuration mode. The commands available to you depend on the mode you are in. To obtain a list of available commands in either mode, type a question mark (?) at the system prompt.

[Table 2-1](#) lists and describes the two commonly used modes, how to enter the modes, and the resulting system prompts. The system prompt helps you to identify which mode you are in and which commands are available to you.

**Table 2-1** Frequently Used Switch Command Modes

Mode	Description of Use	How to Access	Prompt
EXEC	Enables you to temporarily change terminal settings, perform basic tests, and display system information.  <b>Note</b> Changes made in this mode are generally not saved across system resets.	At the switch prompt, enter the required EXEC mode command.	switch#
Configuration mode	Enables you to configure features that affect the system as a whole.  <b>Note</b> Changes made in this mode are saved across system resets if you save your configuration. See the <a href="#">“Saving a Configuration”</a> section on page 2-14.	From EXEC mode, enter the <b>config terminal</b> command.	switch(config)#

You can abbreviate commands and keywords by entering just enough characters to make the command unique from other commands. For example, you can abbreviate the **config terminal** command to **conf t**.



**Note**

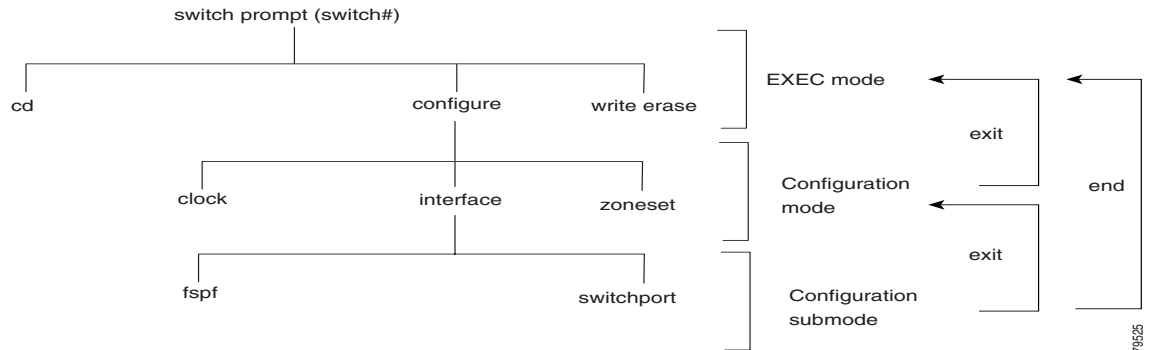
Do not enter percent (%), pound (#), ellipsis (...), vertical bar (|), less than or great than (<>), brackets ([ ]), semicolon (;), period (.), comma (,), or braces ( { } ) in command lines. These characters have special meaning in Cisco MDS 9000 FabricWare text strings.

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## CLI Command Hierarchy

The CLI commands are organized hierarchically, with commands that perform similar functions grouped under the same level. For example, all commands that display information about the system, configuration, or hardware are grouped under the **show** command, and all commands that allow you to configure the switch are grouped under the **config terminal** command. Figure 2-1 illustrates a portion of the **config terminal** command hierarchy.

**Figure 2-1 CLI Command Hierarchy Example**



To execute a command, you enter the command by starting at the top level of the hierarchy. For example, to configure a Fibre Channel interface, use the **config terminal** command. When you are in configuration mode, enter the **interface** command. When you are in the interface submode, you can query the available commands there.

The following example shows how to query the available commands in the interface submode:

```

switch# config t
Enter configuration commands, one per line.
switch(config)# interface fc1/1
switch(config-if)# ?
do EXEC command
end Exit from configure mode
exit Exit from this submode
fspf Configure fspf
help Press '?' key to display available commands
no Negate a command or set its defaults
shutdown Enable/disable an interface
switchport Configure switchport parameters
  
```

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## EXEC Mode Options

When you start a session on the switch, you begin in EXEC mode. Based on the role or group to which you belong, you have access to limited commands or to all commands. (See the “[Role-Based Authorization](#)” section on page 9-5.) From EXEC mode, you can enter configuration mode. Most of the EXEC commands are one-time commands, such as **show** commands, which display the current configuration status. Here is a list of EXEC mode commands:

```
switch# ?
  cd                Change current directory
  clear             Reset functions
  clock             Manage the system clock
  config            Enter configuration mode
  copy              Copy from one file to another
  delete            Delete a file
  dir               List files in a directory
  exit              Exit from the EXEC
  help              Press '?' key to display available commands
  install           Upgrade software
  move              Move files
  ping              Send echo messages
  reload            Reboot the entire box
  run-script        Run shell scripts
  setup             Run the basic SETUP command facility
  show              Show running system information
  sleep             Sleep for the specified number of seconds
  system            System management commands
  terminal           Set terminal line parameters
  write             Write current configuration
  zone              Execute zone server commands
  zoneset           Execute zoneset commands
```

## Configuration Mode

In configuration mode, you can make changes to the existing configuration. When you save the configuration, these commands are preserved across switch reboots. When you are in configuration mode, you can enter interface configuration mode, zone configuration mode, and a variety of protocol-specific modes. Configuration mode is the starting point for all configuration commands. When you are in configuration mode, the switch expects configuration commands from the user.

The following example shows output from the **config terminal** command:

```
switch# config terminal
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)#
```



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## Configuration Mode Commands and Submodes

Here is a list of configuration mode commands:

```
switch# config t
Enter configuration commands, one per line. End with CNTL/Z.
switch(config)# ?
  clock          Configure time-of-day clock
  do             EXEC command
  end            Exit from configure mode
  exit          Exit from configure mode
  fcalias       Fcalias configuration commands
  fcdomain      Enter the fcdomain configuration mode
  fctimer       Configure fibre channel timers
  help         Press '?' key to display available commands
  interface     Select an interface to configure
  ip            Configure IP features
  logging       Modify message logging facilities
  no            Negate a command or set its defaults
  ntp           NTP Configuration
  snmp-server   Configure snmp server
  ssh           Configure SSH parameters
  switchname    Configure system's network name
  telnet        Enable telnet
  username      Configure user information.
  zone          Zone configuration commands
  zoneset       Zoneset configuration commands
```

Configuration mode, also known as terminal configuration mode, has several submodes. Each of these submodes places you deeper in the prompt hierarchy. When you type **exit**, the switch backs out one level and returns you to the previous level. When you type **end**, the switch backs out to the user EXEC level.

You can execute an EXEC mode command from a configuration mode or submode prompt. You can enter this command from any submode within the configuration mode. When in configuration mode (or in any submode), enter the **do** command along with the required EXEC mode command. The entered command is executed at the EXEC level, and the prompt resumes its current mode level.

```
switch(config)# do terminal session-timeout 0
switch(config)#
```

In this example, **terminal session-timeout** is an EXEC mode command—you are entering an EXEC mode command using the configuration mode **do** command.

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The **do** command applies to all EXEC mode commands other than the **end** and **exit** commands. You can also use the help (?) and command completion (**Tab**) features for EXEC commands when entering a **do** command along with the EXEC command.

Table 2-2 lists some useful command keys that can be used in both EXEC and configuration modes:

**Table 2-2 Useful Command Key Description**

Command	Description
<b>Ctrl-P</b>	Up history.
<b>Ctrl-N</b>	Down history.
<b>Ctrl-R</b>	Refreshes the current line and reprints it.
<b>Alt-P</b>	History search backwards.  <b>Note</b> The difference between <b>Tab</b> completion and <b>Alt-P</b> or <b>Alt-N</b> is that <b>Tab</b> completes the current word while <b>Alt-P</b> and <b>Alt-N</b> completes a previously entered command.
<b>Alt-N</b>	History search forwards.
<b>Ctrl-L</b>	Clear screen.

## CLI Command Navigation

To redisplay a command that you previously entered, press the **Up Arrow** key. You can continue to press the **Up Arrow** key to see more previously entered commands. Similarly, you can press the **Down Arrow**, **Right Arrow**, **Left Arrow**, and **Delete** keys to navigate through the command history and to modify an existing command string.

## Getting Help

In any command mode, you can get a list of available commands by entering a question mark (?).

```
switch# ?
```

To obtain a list of commands that begin with a particular character sequence, type in those characters followed immediately by the question mark (?). Do not include a space.

```
switch# co?
configure copy
```

To list keywords or arguments, enter a question mark in place of a keyword or argument. Include a space before the question mark. This form of help is called command syntax help because it reminds you which keywords or arguments are applicable based on the commands, keywords, and arguments you have already entered.

```
switch# config ?
terminal Configure the system from the terminal
```



### Tip

If you are having trouble entering a command, check the system prompt and enter the question mark (?) for a list of available commands. You might be in the wrong command mode or using incorrect syntax.

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## Command Completion

In any command mode, you can begin a particular command sequence and immediately press the **Tab** key to complete the rest of the command.

```
switch(config)# sh<Tab>
switch(config)# show in<tab>
switch(config)# show interface
```

This form of help is called command completion because it completes a word for you. If several options are available for the typed letters, all options that match those letters are presented:

```
switch(config)# fc<Tab><Tab>
fcalias fcdomain fctimer
switch(config)# fcd<Tab>
switch(config)# fcdomain
```

## File System Completion

You can use the **Tab** key to complete schemes, servers, and file names that are available in the file system, as shown in this example.

```
switch# dir b<Tab>
switch# dir bootflash:
          962      May  2 19:42:32 2005  running-config
          26       May  1 20:16:45 2005  startup-config
```

```
Usage for bootflash://
15360      bytes used
2667520    bytes free
2682880    bytes total
```

## The no and Default Forms of Commands

You can enter the **no** form of any command to perform the following actions:

- Undo a wrongly entered command.

If you enter the **zone member** command, you can undo the results as shown in the following example:

```
switch(config)# zone name test
switch(config-zone)# member pwnn 12:12:12:12:12:12:12:12
switch(config-zone)# no member pwnn 12:12:12:12:12:12:12:12
WARNING: Zone is empty. Deleting zone test. Exit the submode.
switch(config-zone)#
```

- Delete a created facility.

If you want to delete a zone that you created, enter the **no zone name** command, as shown in the following example:

```
switch(config)# zone name test
switch(config-zone)# exit
switch(config)# no zone name test
switch(config)#
```

You cannot delete a zone facility called test while residing in it. You must first exit the zone submode and return to configuration mode.

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## CLI Command Configuration Options

You can configure the software in one of two ways:

- You can create the configuration for the switch interactively by entering commands at the CLI prompt.
- You can create an ASCII file containing a switch configuration and then load this file on the required system.

## Displaying the Switch Configuration

You can view the ASCII form of the configuration file when required. To view the current configuration tree from the EXEC prompt, enter the **show running-config** command. If the running configuration is different from the startup configuration, enter the **show startup-config** command to view the ASCII version of the current startup configuration that was used to boot the switch if a **copy run start** command was not entered after the reboot. Use the **show startup** command to view the contents of the current startup configuration.

You can also gather specific information on the entire switch configuration by entering the relevant **show** commands. Configurations are displayed based on a specified feature, interface, or module. Available **show** commands for each feature are briefly described in this section and listed at the end of each chapter.

Examples 2-2 to 2-5 display **show** command examples.

### **Example 2-2** *Displays Details on the Specified Interface*

```
switch# show interface fc1/1
fc1/1 is Down (Administratively down)
  Hardware is Fibre Channel, SFP is long wave laser
  Port WWN is 20:00:00:0d:ec:19:cb:0e
  Admin port mode is auto
  Receive data field Size is 2112
  Beacon is turned off
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    0 frames input, 0 bytes
      0 discards, 0 errors
      0 CRC
      0 too long, 0 too short
    0 frames output, 0 bytes
      0 errors
    0 input OLS, 0 LRR, 0 loop inits
    5 output OLS, 0 LRR, 1 loop inits
```

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**Example 2-3 Displays the Software and Hardware Version**

```
switch# show version
Cisco MDS 9000 FabricWare
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and its suppliers. All rights reserved.
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third parties, and used and distributed under license.
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Software
  system:      2.1(2)
  system compile time:  Thu Apr 21 12:48:49 2005

Hardware
  switch uptime is 0 days 11 hours 34 minute(s) 3 second(s)

  Last reset at 41643 usecs after Mon Apr 25 11:01:12 2005
  Reason: PowerUp
```

**Example 2-4 Displays the Running Configuration**

```
switch# show running
ip default-gateway 10.20.83.1
logging level fcdomain 2
logging level fspf 2
logging level fcns 2
logging level fcs 2
logging level port 2
logging level zone 2
logging level auth 2
logging level ipconf 2
logging level module 2
logging level ntp 2
logging level sysmgr 2
interface mgmt0
  ip address 10.20.83.122 255.255.255.0
interface fc1/1
interface fc1/2
interface fc1/3
interface fc1/4
interface fc1/5
interface fc1/6
interface fc1/7
interface fc1/8
interface fc1/9
interface fc1/10
interface fc1/11
interface fc1/12
interface fc1/13
interface fc1/14
interface fc1/15
interface fc1/16
interface fc1/17
interface fc1/18
interface fc1/19
interface fc1/20
```

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**Example 2-5** *Displays the Difference Between the Running and Startup Configuration*

```
switch# show running diff
switchname rtp-9020-top
  ip default-gateway 172.18.172.1
  ssh server enable
  logging level fcdomain 2
  logging level fspf 2
  logging level fcns 2
  logging level fcs 2
  logging level port 2
  logging level zone 2
  logging level auth 2
  logging level ipconf 2
  logging level module 2
  logging level ntp 2
  logging level sysmgr 2
  snmp-server community public ro
  snmp-server community private rw
  interface mgmt0
    ip address 172.18.172.160 255.255.255.0
    no shutdown
  interface fc1/1
+  no shutdown
  interface fc1/2
  interface fc1/3
  interface fc1/4
  interface fc1/5
  interface fc1/6
  interface fc1/7
  interface fc1/8
  interface fc1/9
  interface fc1/10
  interface fc1/11
  interface fc1/12
  interface fc1/13
  interface fc1/14
  interface fc1/15
  interface fc1/16
  interface fc1/17
  interface fc1/18
  interface fc1/19
  interface fc1/20
```

## Saving a Configuration

Use the **copy running-config startup-config** command to save the new configuration into nonvolatile storage. When this command is entered, the running and the startup copies of the configuration are identical.

See the “Copying Files” section on page 3-20.

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## Clearing a Configuration

Use the **write erase** command to clear a startup configuration. When this command is entered, the switch's startup configuration reverts to factory defaults. The running configuration is not affected.



### Caution

The **write erase** command erases the entire startup configuration with the exception of any configuration that affects the loader functionality.

The **write erase boot** command erases the startup configuration and any configuration that affects the loader functionality. The loader functionality configuration includes the boot variables and the mgmt0 IP configuration information (IP address, netmask, and default gateway).

```
switch# write erase boot
```

This command will erase the boot variables and the ip configuration of interface mgmt 0

## Displaying Users

Use the **show users** command to display all users currently accessing the switch.

```
switch# show users
snmp@IB-session2      Mon Apr 25 11:02:07 2005 (Unknown)
snmp@OB-session3      Mon Apr 25 11:02:07 2005 (Unknown)
admin@OB-session11    Wed Apr 27 13:50:49 2005 (10.20.32.70)
```

## Using the ping Command

Use the **ping** command to verify the connectivity of a remote host or server by sending echo messages.

The syntax for this command is **ping host or ip-address**.

```
switch# ping 10.20.83.107
PING 10.20.83.107 (10.20.83.107): 10 data bytes
18 bytes from 10.20.83.107: icmp_seq=0 ttl=64 time=0.5 ms

--- 10.20.83.107 ping statistics ---
1 packets transmitted, 1 packets received, 0% packet loss
round-trip min/avg/max = 0.5/0.5/0.5 ms
```

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## Setting the Terminal Timeout

Use the **terminal session-timeout** command in EXEC mode to configure the automatic logout time for the current terminal session on that switch. When the time limit configured by this command is exceeded, the switch closes that session and exits.

The syntax for this command from is **terminal session-timeout** *minutes*.

The default is 30 minutes. You can set the **terminal session-timeout** value to 0 to disable this feature so the terminal remains active until you choose to exit the switch. This change is not saved in the configuration file.

```
switch# terminal session-timeout 600
```

Specifies the terminal timeout to be 600 minutes for the current session.

## Setting the Terminal Length

Use the **terminal length** command in EXEC mode to set the terminal screen length for the current session. This command is specific to only the console port. Telnet and SSH sessions set the length automatically.

The syntax for this command is **terminal length** *lines*.

```
switch# terminal length 20
```

Sets the screen length for the current session to 20 lines for the current terminal session. The default is 20 lines.

## Displaying Terminal Settings

Use the **show terminal** command to display the terminal settings for the current session:

```
switch# show terminal
```

```
Length: 10 lines  
Session Timeout: 0 minutes
```

## Internal bootflash:

The Cisco MDS 9020 Fabric Switch has two locations within the internal bootflash: file system.

- The volatile: file system provides temporary storage, and it is also the default location for file system commands. Files in temporary storage (volatile:) are erased when the switch reboots.
- The bootflash: (nonvolatile storage) file system provides permanent storage. The files in bootflash: are preserved through reboots and power outages.



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## Using the File System

The switch provides the following useful functions to help you manage software image files and configuration files:

- [Setting the Current File System, page 2-17](#)
- [Listing the Files in a File System, page 2-17](#)
- [Moving Files, page 2-18](#)
- [Copying Files, page 2-18](#)
- [Deleting Files, page 2-18](#)
- [Executing Commands Specified in a Script, page 2-19](#)
- [Setting the Delay Time, page 2-20](#)

## Setting the Current File System

The **cd** command changes the current file system to a specified file system. CLI defaults to the volatile: file system. This command requires a file system name input.



**Tip**

---

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

---

The syntax for this command is **cd** *file system*.

This example changes the current file system to the volatile: file system:

```
switch# cd volatile:
```

## Listing the Files in a File System

The **dir** command displays the contents of the current file system. The syntax for this command is **dir** *filesystem*.

This example shows how to list the files on the volatile: file system:

```
switch# dir bootflash:
 962      May  5 15:26:49 2005  running-config
  26      May  1 20:16:45 2005  startup-config
```

```
Usage for bootflash://
15360      bytes used
2667520    bytes free
2682880    bytes total
```

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## Moving Files

The **move** command removes a file from the source location and places it in the destination location. If a file with the same name already exists in the destination location, that file is overwritten by the moved file.

This example moves the file called `latest_mpc` from the `bootflash:` file system to the `volatile:` file system:

```
switch# move bootflash:latest_mpc volatile:latest_mpc
```

## Copying Files

The **copy** command copies a file. (See the “Copying Files” section on page 3-20.)

This example saves your configuration to the startup configuration:

```
switch# copy running-config startup-config
```

The following example saves a copy of the startup configuration on a remote host:

```
switch# copy startup-config ftp://10.20.102.98/configs/q100-startup
```

## Deleting Files

The **delete** command deletes a specified file. (See the “Deleting Files” section on page 3-21.)

This example shows how to delete a file from the current working directory:

```
switch# delete dns_config.cfg
```

This example deletes the `my-file` file from the `bootflash:` file system:

```
switch# delete bootflash:my-file
```



### Caution

---

If you specify a file system, the **delete** command deletes the file system contents.

---

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## Executing Commands Specified in a Script

The **run-script** command executes the commands specified in a file. To use this command, be sure to create the file and specify commands in the required order.

**Note**

You cannot create the script files at the switch prompt. You can create the script file on an external machine and copy it to the bootflash: file system. This section assumes that the script file resides in the bootflash: file system.

The syntax for this command is **run-script** *file\_name*

The file, testfile, contains the following commands.

```
conf t
interface fc 1/1
no shutdown
end
sh interface fc1/1
```

This file output is in response to the **run-script** command executing the contents in the testfile file:

```
switch# run-script testfile
'conf t'
Enter configuration commands, one per line.
'interface fc1/1'
'no shutdown'
'end'
'sh interface fc1/1'
fc1/1 is Up (Link failure or not connected)
  Hardware is Fibre Channel, SFP is long wave laser
  Port WWN is 20:00:00:0d:ec:19:cb:0e
  Admin port mode is auto
  Port mode is Unknown, FCID is 0x690000
  Speed is Auto
  Receive data field Size is 2112
  Beacon is turned off
  5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
  5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    0 frames input, 0 bytes
      0 discards, 154096 errors
      0 CRC
      0 too long, 0 too short
    0 frames output, 0 bytes
      0 errors
    1 input OLS, 1 LRR, 11 loop inits
    13 output OLS, 4 LRR, 11 loop inits
...
```

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## Setting the Delay Time

The **sleep** command delays an action by a specified number of seconds.

The syntax for this command is **sleep** <*seconds*>

```
switch# sleep 30
```

You will see the switch prompt return after 30 seconds.

This command is useful within scripts. For example, consider a script called test-script with the following contents:

```
clear counters interface all
sleep 5
show interface counters brief
```

When you execute the test-script, the switch software executes the **clear counters interface all** command and then waits for 5 seconds before executing the **show interface counters brief** command.

```
switch# run-script test-script
```