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CHAPTER 1

Using the Command-Line Interface

This chapter describes the command-line interface (CLI) and CLI command modes. It includes the following sections:

- [Accessing the Command Line Interface, page 1-1](#)
- [Using the CLI, page 1-2](#)
- [Using Commands, page 1-6](#)
- [Using CLI Variables, page 1-9](#)
- [Using Command Aliases, page 1-10](#)
- [Defining Command Aliases, page 1-10](#)
- [Command Scripts, page 1-11](#)

Accessing the Command Line Interface

You can connect to the switch using a terminal plugged into the console port. See [Console Settings, page 1-3](#) for information on how to set console port parameters.

You can also connect to the switch with Telnet or SSH. The switch supports up to eight simultaneous Telnet and SSH connections. To connect with Telnet or SSH, you need to know the hostname or IP address of the switch.

To make a Telnet connection to the switch, perform these steps:

	Command	Purpose
Step 1	<code>telnet {hostname ip_addr}</code>	Makes a Telnet connection from your host to the switch that you want to access.
Step 2	Login: <code>admin</code> Password: <code>password</code>	Initiates authentication. Note If no password has been configured, press Return .
Step 3	switch# <code>exit</code>	Exits the session when finished.

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Alternatively, to make an SSH connection to the switch, use the following command:

Command	Purpose
<code>ssh {hostname ip_addr}</code>	Makes an SSH connection from your host to the switch that you want to access.

Using the CLI

The section includes the following topics:

- [Using CLI Command Modes, page 1-2](#)
- [CLI Command Hierarchy, page 1-3](#)
- [EXEC Mode Commands, page 1-3](#)
- [Configuration Mode Commands, page 1-5](#)

Using CLI Command Modes

Switches in the Cisco Nexus 5000 Series 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 1-1](#) lists and describes the two commonly used modes, how to enter the modes, and the resulting system prompts. The system prompt helps you identify which mode you are in and the commands that are available to you in that mode.

Table 1-1 Frequently Used Switch Command Modes

Mode	Description	How to Access	Prompt
EXEC	Enables you to temporarily change terminal settings, perform basic tests, and display system information. Note 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. Note Changes made in this mode are saved across system resets if you save your configuration.	From EXEC mode, enter the configure terminal command.	switch(config)#

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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 **configure terminal** command to **conf t**.

Changing Command Modes

Configuration mode, also known as terminal configuration mode, has several submodes. Each of these submodes places you further down in the prompt hierarchy. When you type **exit**, the switch backs out of the current level and returns you to the previous level. When you type **end**, the switch backs out to the user EXEC level. You can also press **Ctrl-Z** in configuration mode as an alternative to typing **end**.

Listing the Commands Used with Each Command Mode

You can display the commands available in any command mode by typing a question mark (?) at the switch prompt.

CLI Command Hierarchy

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 **configure terminal** command.

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

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

```
switch# configure terminal
switch(config)# interface fc 3/1
switch(config-if)# ?
  channel-group  add to/remove from a san-port-channel
  description    Enter description of maximum 80 characters
  exit           Exit from command interpreter
  fcdomain       Configure fcdomain parameters
  fspf           Configure FSPF parameters
  no             Negate a command or set its defaults
  out-of-service Put an interface out of service.
  shutdown       Enable/disable an interface
  switchport     Configure switchport parameters
```

EXEC Mode Commands

When you start a session on the switch, you begin in EXEC mode. 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.

The following commands are available in EXEC mode:

```
switch# ?
  callhome      callhome commands
  cd            Change current directory
  clear         Reset functions
  cli          CLI commands
```

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clock	Manage the system clock
configure	Enter configuration mode
copy	Copy from one file to another
debug	Debugging functions
debug-filter	Enable filtering for debugging functions
delete	delete a file
dir	list files in a directory
discover	discover information
end	Exit configuration mode
ethalyzer	Configure cisco fabric analyzer
exit	Exit from command interpreter
fcping	Ping an N-Port
fctrace	Trace the route for an N-Port.
file	File management commands
find	Find a file below the current directory
format	Format disks
gunzip	Uncompresses LZ77 coded files
gzip	Compresses file using LZ77 coding
install	upgrade software
ip	Configure IP features
license	Enter the license configuration mode
logit	Add syslog message
mkdir	Create new directory
move	Move files
no	Negate a command or set its defaults
ntp	Execute NTP commands
ping	Test network reachability
purge	Deletes unused data
pwd	View current directory
reload	Reboot the entire box
replace	Discard the entire configuration and load the entire configuration in <filename>
rmdir	delete a directory
run-script	Run shell scripts
san-port-channel	Port-Channel related commands
send	Send message to open sessions
session	Configure session preferences
setup	Run the basic SETUP command facility
show	Show running system information
sleep	Sleep for the specified number of seconds
ssh	SSH to another system
syslog	Execute a logging command
system	System management commands
tac-pac	save tac information to a specific location
tail	Display the last part of a file
telnet	Telnet to another system
terminal	Set terminal line parameters
terminate	Terminates a config session
test	test command
traceroute	Traceroute to destination
undebug	Disable Debugging functions (See also debug)
unmount	unmount compact flash disk or usb drive
update	Update license
write	Write current configuration
xml	xml agent
zone	Execute Zone Server commands
zoneset	Execute zoneset commands

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Configuration Mode Commands

Configuration mode allows you to make changes to the existing configuration. When you save the configuration, these commands are saved across switch reboots. Once 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.

The following commands are available in configuration mode:

```
switch# configure terminal
switch(config)# ?
aaa                Configure aaa functions
arp                ARP
banner            Configure banner message
boot              Configure boot variables
callhome          Enter the callhome configuration mode
cdp               CDP Configuration parameters
cfs               CFS configuration commands
class-map         Configure class-map
cli               Configure CLI aliases
clock             Configure time-of-day clock
device-alias      Device-alias configuration commands
diagnostic        Diagnostic commands
end               Exit configuration mode
exit              Exit from command interpreter
fabric            Switch fabric information
fabric-binding    Fabric Binding configuration
fc                FCoE/FC feature
fcalias           Fcalias configuration commands
fcdomain          Enter the fcdomain configuration mode
fcdroplateness    configure switch or network latency
fcflow            Configure fcflow
fcid-allocation   Add/remove company id(or OUIs) from auto area list
fcinterop         Interop commands
fcns              name server configuration
fcroute           Configure FC routes
fcs               Configure Fabric Config Server
fcsp              Config commands for FC-SP
fctimer           configure fibre channel timers
fdmi              config commands for FDMI
feature           Command to enable/disable features
fspf              Configure fspf
hostname          Configure system's host name
hw-module         Enable/Disable OBFL information
in-order-guarantee set in-order delivery guarantee
interface         Configure interfaces
ip                Configure IP features
ipv6              Configure IPv6 features
line              Configure a terminal line
lldp              Configure global LLDP parameters
logging           Modify message logging facilities
mac               MAC configuration commands
mac-address-table MAC Address Table
monitor           Ethernet SPAN
no                Negate a command or set its defaults
npiv              Nx port Id Virtualization (NPIV) feature enable
npv               Config commands for FC N_port Virtualizer
ntp               NTP Configuration
pm                packet manager
policy-map        Configure policy-map
port-channel      Add to/remove from a port-channel
port-security     Configure Port Security
port-track        Configure Switch port track config
```

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privilege	Command privilege parameters
prompt	Define default prompt
radius-server	Configure RADIUS related parameters
resequence	Resequence a list with sequence numbers
rib	Configure RIB parameters
rlir	config commands for RLIR
rmon	Remote Monitoring
role	Configure roles
rscn	config commands for RSCN
scsi-target	scsi-target configuration
show	Show running system information
snmp-server	Configure snmp server
spanning-tree	Spanning Tree Subsystem
ssh	Configure SSH parameters
svi	svi configuration commands
switchname	Configure system's host name
system	system config command
system	Configure system
tacacs+	Enable tacacs+
telnet	Enable telnet
track	Object tracking configuration commands
trunk	Configure Switch wide trunk protocol
username	Configure user information.
vlan	Vlan commands
vrf	Configure VRF parameters
vsan	Enter the vsan configuration mode
wnn	Set secondary base MAC addr and range for additional WNNs
xml	xml agent
zone	Zone configuration commands
zoneset	Zoneset configuration commands

Using Commands

You can configure the CLI to function in two ways: configure it interactively by entering commands at the CLI prompt or create an ASCII file containing switch configuration information (use the CLI to edit and activate the file).

Listing Commands and Syntax

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

```
switch# ?
```

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

```
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# # configure ?
<CR>
terminal Configure the system from terminal input
```

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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.

Entering Command Sequences

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

```
switch (config)# ro<Tab>
switch (config)# role <Tab>
switch (config)# role name
```

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 displayed.

Undoing or Reverting to Default Values or Conditions

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

- Undo an incorrectly entered command.

If you enter the **zone member** command, you can undo the results:

```
switch(config)# zone name test vsan 1
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:

```
switch(config)# zone name test vsan 1
switch(config-zone)# exit
switch(config)# no zone name test vsan 1
switch(config)#
```

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

- Revert to the default value.

If you enter the **zone merge-control restrict vsan** command, you can undo the results:

```
switch(config)# zone merge-control restrict vsan 10
switch(config)# no zone merge-control restrict vsan 10
switch(config)#
```

Using Keyboard Shortcuts

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 command is executed at the EXEC level, and the prompt resumes its current mode level.

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```
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.

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 1-2 lists some useful command keys that can be used in both EXEC and configuration modes.

Table 1-2 Useful Command Keys

Command	Description
Ctrl-P	Up history
Ctrl-N	Down history
Ctrl-X-H	List history
Alt-P	History search backwards Note The difference between Tab completion and Alt-P or Alt-N is that pressing Tab completes the current word, while Alt-P and Alt-N completes a previously entered command.
Alt-N	History search forwards
Ctrl-G	Exit
Ctrl-Z	End
Ctrl-L	Clear session

Table 1-3 describes the commonly used configuration submodes.

Table 1-3 Common Configuration Submodes

Submode Name	From Configuration Mode, Enter:	Submode Prompt
Call home	callhome	switch(config-callhome)#
FCS Registration	fcs register	switch(config-fcs-register)#
	From FCS registration submode: platform name name vsan vsan-id	switch(config-fcs-register-attr)#
Fibre Channel alias	fcalias name name vsan vsan-id	switch(config-fcalias)#
FSPF	fspf config vsan vsan-id	switch(config-(fspf-config))#
Interface configuration	interface type slot/port	switch(config-if)#
Line console	line console	switch(config-console)
Virtual terminal line	line vty	switch(config-line)#
Role	role name	switch(config-role)#
VLAN	vlan	switch(config-vlan)#
VSAN database	vsan database	switch(config-vsan-db)#

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Table 1-3 Common Configuration Submodes (continued)

Submode Name	From Configuration Mode, Enter:	Submode Prompt
Zone	<code>zone name string vsan vsan-id</code>	switch(config-zone)#
Zone set	<code>zoneset name name vsan vsan-id</code>	switch(config-zoneset)#

Using CLI Variables

The Cisco Nexus 5000 Series CLI parser supports the definition and use of variables in CLI commands. CLI variables can be used as follows:

- Entered directly on the command line.
- Passed to the child script initiated using the **run-script** command.

The variables defined in the parent shell are available for use in the child **run-script** command process (see the “Executing Commands Specified in a Script” section on page 1-11).

- Passed as command line arguments to the **run-script** command (see the “Executing Commands Specified in a Script” section on page 1-11).

CLI variables have the following characteristics:

- You cannot reference a variable through another variable using nested references.
- You can define persistent variables that are available across switch reloads.
- You can reference only one predefined system variable, which is the **TIMESTAMP** variable.

User-Defined Persistent CLI Variables

You can define CLI session variables to persist only for the duration of your CLI session using the **cli var name** command in EXEC mode. CLI session variables are useful for scripts that you execute periodically.

The following example shows how to create a user-defined CLI session variable:

```
switch# cli var name testinterface fc 1/1
```

You can reference a variable using the syntax **\$(variable)**. The following example shows how to reference a user-defined CLI session variable:

```
switch# show interface $(testinterface)
fc2/1 is up
Hardware is Fibre Channel, SFP is short wave laser w/o OFC (SN)
Port WWN is 20:01:00:0d:ec:0e:1d:00
Admin port mode is auto, trunk mode is on
snmp traps are enabled
Port mode is F, FCID is 0x01000b
Port vsan is 1
Speed is 2 Gbps
Transmit B2B Credit is 7
Receive B2B Credit is 16
Receive data field Size is 2112
Beacon is turned off
5 minutes input rate 256 bits/sec, 32 bytes/sec, 1 frames/sec
5 minutes output rate 256 bits/sec, 32 bytes/sec, 1 frames/sec
232692 frames input, 7447280 bytes
```

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```

0 discards, 0 errors
0 CRC, 0 unknown class
0 too long, 0 too short
232691 frames output, 7448692 bytes
0 discards, 0 errors
0 input OLS, 0 LRR, 0 NOS, 0 loop inits
1 output OLS, 1 LRR, 0 NOS, 1 loop inits
16 receive B2B credit remaining
7 transmit B2B credit remaining

```

Use the **show cli variables** command to display user-defined CLI session variables. The following example displays user-defined CLI session variables:

```

switch# show cli variables
VSH Variable List
-----
TIMESTAMP="2005-10-24-21.29.33"
testinterface="fc 1/1"

```

Use the **cli no var name** command to remove user-defined CLI session variables. The following example removes a user-defined CLI session variable:

```

switch# cli no var name testinterface

```

Using Command Aliases

Command alias support has the following characteristics:

- Command aliases are global for all user sessions.
- Command aliases are saved across reboots.
- Commands being aliased must be typed in full without abbreviation.
- Command alias translation always takes precedence over any keyword in any configuration mode or submode.
- Command alias support is only available on the supervisor module, not the switching modules.
- Command alias configuration takes effect for other user sessions immediately.
- You cannot override the default command alias **alias**, which aliases the **show cli alias** command.
- Nesting of command aliases is permitted to a maximum depth of 1. One command alias can refer to another command alias that must refer to a valid command, not to another command alias.
- A command alias always replaces the first command keyword on the command line.
- You can define command aliases for commands in any configuration submode or the EXEC mode.

Defining Command Aliases

You can define command aliases using the **cli alias name** command in configuration mode.

This following example shows how to define command aliases:

```

switch# configure terminal
switch(config)# cli alias name eth interface ethernet
switch(config)# cli alias name shintbr show interface brief
switch(config)# cli alias name shfcintup shintbr | include up | include fc

```

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You can display the command aliases defined on the switch using the **alias** default command alias.

The following example shows how to display the command aliases defined on the switch:

```
switch# alias
CLI alias commands
=====
alias      :show cli alias
gigint    :interface gigabitethernet
shintbr    :show interface brief
shfcintup :shintbr | include up | include fc
```

Command Scripts

This section includes the following topics:

- [Executing Commands Specified in a Script, page 1-11](#)
- [Using CLI Variables in Scripts, page 1-12](#)
- [Setting the Delay Time, page 1-13](#)

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 file at the switch prompt. You can create the script file on an external machine and copy it to the bootflash: directory. This section assumes that the script file resides in the bootflash: directory.

The syntax for this command is **run-script** *filename*.

This example displays the CLI commands specified in a test file that resides in the bootflash: directory.

```
switch# show file bootflash:testfile
configure terminal
interface fc 3/1
no shutdown
end
show interface fc 3/1
```

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

```
switch# run-script bootflash:testfile
'configure terminal'
Enter configuration commands, one per line. End with CNTL/Z.
'interface fc 3/1'
'no shutdown'
'end'
'show interface fc 3/1'
fc3/1 is trunking
  Hardware is Fibre Channel, SFP is short wave laser w/o OFC (SN)
  Port WWN is 20:81:00:0d:ec:6b:cd:c0
  Peer port WWN is 20:01:00:0d:ec:0d:d0:00
  Admin port mode is auto, trunk mode is on
  snmp link state traps are enabled
  Port mode is TE
```

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```

Port vsan is 1
Speed is 2 Gbps
Transmit B2B Credit is 255
Receive B2B Credit is 16
Receive data field Size is 2112
Beacon is turned off
Trunk vsans (admin allowed and active) (1)
Trunk vsans (up) (1)
Trunk vsans (isolated) ()
Trunk vsans (initializing) ()
5 minutes input rate 96 bits/sec, 12 bytes/sec, 0 frames/sec
5 minutes output rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
77423 frames input, 6708868 bytes
    0 discards, 0 errors
    0 CRC, 0 unknown class
    0 too long, 0 too short
77302 frames output, 4184976 bytes
    0 discards, 0 errors
1 input OLS, 2 LRR, 0 NOS, 0 loop inits
1 output OLS, 0 LRR, 1 NOS, 0 loop inits
16 receive B2B credit remaining
255 transmit B2B credit remaining

```

Using CLI Variables in Scripts

You can use CLI variables defined by the **cli var** command (see the “Using CLI Variables” section on page 1-9) or passed as arguments in the **run-script** command.

The following example shows how to use CLI session variables in a script file used by the **run-script** command:

```

switch# cli var name testinterface fc 1/1
switch# show file bootflash:test1.vsh
show interface $(testvar)
switch# run-script bootflash:test1.vsh
`show interface $(testvar)`
fc2/1 is down (SFP not present)
Hardware is Fibre Channel
Port WWN is 20:01:00:05:30:00:8e:1e
Admin port mode is auto, trunk mode is on
Port vsan is 1
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
1 frames input, 128 bytes
0 discards, 0 errors
0 CRC, 0 unknown class
0 too long, 0 too short
1 frames output, 128 bytes
0 discards, 0 errors
0 input OLS, 0 LRR, 0 NOS, 0 loop inits
0 output OLS, 0 LRR, 0 NOS, 0 loop inits
0 receive B2B credit remaining
0 transmit B2B credit remaining

```

The following example shows how you can pass CLI session variable as arguments to a child **run-script** command process:

```

switch# show file bootflash:test1.vsh
show interface $(var1) $(var2)

```

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```
switch# run bootflash:test2.vsh var1="fc2/1" var2="brief"
`show interface $(var1) $(var2)`
-----
Interface  Vsan    Admin  Admin  Status      SFP    Oper  Oper  Port
          Mode    Trunk                                     Mode  Speed Channel
          Mode                                     (Gbps)
-----
fc2/1 1 auto on sfpAbsent -- -- -- \
```

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, if you create a command script called test-script.

```
switch# show file bootflash:test-script
discover scsi-target remote
sleep 10
show scsi-target disk
switch# run-script bootflash:test-script
```

When you execute the test-script command script, the switch software executes the **discover scsi-target remote** command, and then waits for 10 seconds before executing the **show scsi-target disk** command.

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