



Using the CLI

This chapter provides a general overview of the Cisco Server Switch command line interface (CLI). It describes how to start a CLI session, how to enter commands, and how to view online help. Details about individual commands appear later in this document.

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Setting up the Switch

The first time that you access your Server Switch, you must connect a management station, such as a PC or Linux terminal, to the Serial Console port on your Server Switch. Once you establish this connection, you can configure the management ports on your Server Switch so you can perform configuration tasks with a telnet session, Element Manager, or Chassis Manager.

To configure a Server Switch through the Serial Console port, perform the following steps:

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- Step 1** Connect a PC or terminal to the Serial Console port. For more detailed instructions, refer to the appropriate hardware guide for your Server Switch model.
- Step 2** Open a terminal emulation program (such as HyperTerminal for Windows) and configure session parameters as follows:
- Baud: 9600 b/s
 - Data Bits: 8
 - Parity: None
 - Stop Bits: 1

- Flow control: None

Step 3 Attach both power plugs to the Server Switch chassis to power up the Server Switch. The CLI login prompt appears on the management station terminal.

Starting A CLI Session

The CLI login prompt automatically appears in a terminal window when you connect the serial port of a computer to the Serial Console port. It also appears when you launch a telnet session to an Ethernet Management port. The user account that you use to log in determines your level of access. By default, you can log in as “super,” “admin,” or “guest.” [Table 1-1](#) lists and describes user login privileges.

Table 1-1 Privilege Levels

User Log-in	Privileges
super	The super user has unrestricted privileges. Use this account for initial configuration. This user may view and modify a configuration, as well as administer user accounts and access privileges. This user configures the console and management ports for initial Server Switch setup. This login uses "super" as the default password.
admin	The admin user has general read-write privileges. This user may view and modify the current configuration. However, the admin user can change only its own user information, such as the admin password. This login uses “admin” as the default password.
guest	The guest user has read-only privileges. This user may only view the current configuration. The guest user cannot make any changes during the CLI session. When you first bring up your Server Switch, you must enable this login (see the “username” section on page 2-77). This login uses “guest” as the default password.

In addition to the default user accounts described above, there are administrative *roles* that may be assigned to individual user accounts. Roles allow granular levels of privileges. For example, you can create separate Fibre Channel, Ethernet, or InfiniBand administrators, who only need access to specific subsystems. The Server Switch combines multiple roles with read and read-write access for flexible control.



Note

If a user does not have access to particular functionality, that functionality will not appear in the CLI, on-line help, or any GUI management windows.

The unrestricted (super) administrator assigns these roles. [Table 1-2](#) lists and describes these access levels.

Table 1-2 Access Levels

Role	Description
ib-ro	InfiniBand read-only access.
ib-rw	InfiniBand read-write access.
ip-ethernet-ro	Ethernet read-only access.

Table 1-2 Access Levels (continued)

Role	Description
ip-ethernet-rw	Ethernet read-write access.
fc-ro	Fibre Channel read-only access.
fc-rw	Fibre Channel read-write access.
unrestricted-rw	Read-write access to all network configuration commands.

To configure accounts, refer to this command: [username](#), page 2-77.

Logging In

At the CLI prompt, enter the appropriate user name and password to log in as the super user.

```

Login: super
Password: xxxxxx
SFS-7000P>

```

You are now logged in as an administrator and can view and configure the CLI configuration.



Note

Server Switches support up to three concurrent CLI sessions.

Entering CLI Modes

The CLI uses the following three command modes:

- User Execute mode
- Privileged Execute mode
- Global Configuration mode



Note

Global Configuration mode includes a number of submodes.

The commands that you can execute depend upon the current command mode and your user login. You may enter a question mark (?) at the CLI prompt to list the commands available to the current user identity in the current mode.

Using User Execute Mode

All CLI sessions begin in *User Execute* mode. This mode provides commands for viewing some of the system configuration and some user information. Guest users may only work in User Exec mode. From User Exec mode, authorized users can access Privileged Execute mode.

Using Privileged Execute Mode

When you enter the **enable** command in User Execute mode, you enter *Privileged Execute* mode. From Privileged Exec mode, you can view the entire system configuration and all user information. From this mode, you can perform certain high-level administrative tasks, such as saving the current configuration and setting the system clock. You can also access Global Configuration mode. You must enter Privileged Execute mode before you can enter configuration modes. Only administrative and unrestricted users may enter Privileged Exec mode.

```
# telnet SFS-7000P
Login: super
Password: xxxxx
SFS-7000P> enable
SFS-7000P#
```

Mode changes are reflected in changes to the CLI prompt. When you transition from User Exec mode to Privileged Exec mode, the prompt changes from SFS-7000P> to SFS-7000P#.

Using Global Configuration Mode

You enter *Global Configuration* mode from Privileged Exec mode. Global Configuration (“config”) mode configures system-level attributes, such as SNMP, SNMP agents, and networks. To enter config mode, enter the **configure terminal** command in Privileged Exec mode.

```
SFS-7000P# configure terminal
SFS-7000P(config)#
```

When you transition from Privileged Execute to Global Configuration mode, the prompt changes from SFS-7000P# to SFS-7000P(config)#.

To configure particular elements of the Server Switch, you must enter a configuration submode specific to that element. All Ethernet, Fibre Channel, and InfiniBand configuration occurs in submodes. In submodes, you can assign IP addresses to interface gateway ports, set connection speeds, set connection types, and so on.

To enter the Ethernet Interface Configuration (config-if-ether) submode from Global Configuration mode, enter the **interface** command, specify the interface type, and specify the port(s) to configure.

```
SFS-7000P(config)# interface ethernet 4/1-4/4
SFS-7000P(config-if-ether-4/1-4/4)#
```

The commands that you enter in a configuration submode apply to the specified cards and ports. The Ethernet Management port, however, does not require you to specify a port number because there is only one active Ethernet Management port during a system session.

```
SFS-7000P(config)# interface mgmt-ethernet
SFS-7000P(config-if-mgmt-ethernet)#
```

Exiting CLI Modes

Most commands are mode-dependent. For example, you can only configure clock settings in Global Configuration mode. To configure the system, you will have to enter and exit CLI modes. The **exit** command returns you to the previous mode.

```
SFS-90(config-if-fc-5/1)# exit
SFS-90(config)# exit
```

SFS-90#



Note

If you enter the **exit** command in User Exec mode or Privileged Exec mode, your telnet session ends.

You may also enter the exit command with the **all** keyword to return to User Exec mode in one step.

```
SFS-90(config-if-fc-5/1)# exit all
SFS-90>
```

To return to User Exec mode from Privileged Exec mode, enter the **disable** command.

```
SFS-90# disable
SFS-90>
```

Quick Help

You can enter the question mark (?) at the CLI prompt to display one of three types of user information.

- Step 1** Enter a question mark (?) at the CLI prompt at any time to display the commands that you can execute. Only the commands appropriate to the current mode and user login appear.

```
SFS-7000P> ?
Exec Commands:
broadcast      - Write message to all users logged in
enable         - Turn on privileged commands
exit           - Exit current mode
help           - Show command help
history        - Show command history
login          - Login as a different user
logout         - Logout of this system
ping           - Send echo messages
show           - Show running system information
terminal       - Set terminal line parameters
who            - Display users currently logged in
write          - Write text to another user
```

- Step 2** Enter part of a command string and end it with a question mark (?) to display options that you can use to complete the string.

```
SFS-7000P> b?
broadcast
```

- Step 3** Enter a command (or enough of a command for the CLI to uniquely identify it), then a space and a question mark (?) to display available arguments to follow the command.

```
SFS-7000P> broadcast ?
String          - Message to broadcast. Enclose multi-word strings within
                  double-quotes.
```

```
SFS-7000P> broadcast
```

After the CLI displays the help information, the Server Switch prints the command string up to the question mark on the input line and waits for you to complete the string. You do not have to retype the string.

Command Abbreviation

To facilitate command entry, you do not need to enter CLI commands in their entirety. You may enter just enough of each command or argument to make it uniquely identifiable.

When enough characters have been entered to uniquely identify a command or keyword in a command string, you may leave it as-is, enter a space, and then add additional keywords or arguments, or you can press the **Tab** key to complete the commands or keywords to improve readability.

```
SFS-7000P(config)# fc ?
  srp                - Configure FC SRP
  srp-global         - Configure FC SRP-global parameters
SFS-7000P(config)# fc srp- ?
  enable            - Enable FC SRP
  gateway-portmask-pol - Configure FC SRP-global gateway-portmask-policy
  itl               - Configure FC SRP-global ITL
  lun-policy        - Configure FC SRP-global lun-policy
  target-portmask-poli - Configure FC SRP-global target portmask policy
SFS-7000P(config)# fc srp- gate ?
  restricted        - Configure FC SRP gateway-portmask-policy restricted
SFS-7000P(config)# fc srp- gate res ?
<cr>
SFS-7000P(config)# fc srp- gate res
```

In the preceding example, **srp-** is short for **srp-global**, **gate** is short for **gateway-portmask-policy**, and **res** is short for **restricted**.

Editing the CLI

Command-line editing lets you modify a command line command that you have just entered or a command line that you entered previously in the CLI session. The CLI supports a variety of ways to move about and edit the currently displayed command line. [Table 1-3](#) lists and describes these options.

Table 1-3 Key Stroke Shortcuts

Key Strokes	Description
Ctrl-a	Moves the cursor to the beginning of the line.
Ctrl-b	Moves the cursor left (back) one character.
Ctrl-d	Deletes the current character.
Ctrl-e	Moves the cursor to the end of the line.
Ctrl-f	Moves the cursor to the right (forward) one character.
Ctrl-k	Deletes text from cursor to the end of the line.
Ctrl-l	Refreshes the input line.
Ctrl-n	Displays the next command in the history queue.
Ctrl-p	Displays the previous command in the history queue.
Ctrl-q	Returns to User Exec mode. Note If a command is currently entered on the command line, execute the command before returning to User Execute mode.
Ctrl-t	Transposes the current and previous characters.
Ctrl-u	Deletes all text to the left of the cursor.

Table 1-3 Key Stroke Shortcuts (continued)

Key Strokes	Description
Ctrl-w	Deletes the text of a word up to cursor.
Ctrl-z	Returns you to Privileged Exec mode.
Esc-b	Moves the cursor left (back) one word.
Esc-c	Converts characters, from the cursor to the end of the word, to upper case.
Esc-d	Deletes characters from the cursor through remainder of the word.
Esc-f	Moves the cursor right (forward) one word.
Esc-l	Converts characters, from the cursor to the end of the word, to lower case.
down-arrow	Displays the next command in the history queue.
up-arrow	Displays the previous command in the history queue.
left-arrow	Moves the cursor left (back) one character.
right-arrow	Moves the cursor right (forward) one character.

Exiting the CLI Session

To exit the CLI session, return to User Exec mode or Privileged Exec mode, and enter the **logout** command or the **exit** command. The CLI session ends.

```
SFS-90(config-if-fc-5/1)# exit all
SFS-90> logout
Login:
```



Note

If you use Telnet or SSH to run a remote CLI session, the connection closes when you log out. Conversely, when you terminate a telnet or SSH session, you log out of the Server Switch.

Specifying Cards and Ports

To configure one or more ports on one or more cards, you must specify those ports that you want to configure when you enter the appropriate configuration submenu.

Many CLI commands allow you to enter

- A slot#/port# pair.
- A range of pairs.
- A list of pairs.
- The **all** keyword.

Slot#/Port# Pairs

A slot#/port# pair (sometimes referred to as the card#/port# pair) is a slash-separated (/) pair of numbers. The first number indicates the slot in which the interface card resides, and the second number represents a port on that card. Refer to your hardware documentation to identify slot numbers and port numbers.

**Note**

Hardware platforms with no removable cards, such as the BladeCenter Topspin IB Server Switch Module or Topspin 120/Cisco SFS 7000, the slot number defaults to 1.

Ranges

A range is a dash-separated (-) set of two slot#/port# pairs. A range may span multiple cards of the same interface type. Card and port numbers in a range must both appear in ascending order. That is, specify the lower card and port number in the first slot#/port# pair and the higher card and port number in the second slot#/port# pair.

**Note**

Do not insert spaces between elements in the range.

The range 3/2-4/3 indicates all the ports starting with card 3, port 2, up to and including card 4, port 3. (This example assumes that cards 3 and 4 are of the same interface type.)

Lists

A list is a comma-separated (,) series of slot#/port# pairs and/or ranges. Sequencing of pairs in the list is not important. You may specify pairs in any order you wish, however, the data returned is displayed in numerical sequence with the lowest slot#/port# pair first. Do not insert spaces between elements in the list. For example, 3/1,3/3,4/3 indicates ports 1 and 3 on interface card 3 and port 3 on interface card 4. (This example assumes that cards 3 and 4 are of the same interface type.) You can include ranges in lists.

3/1,4/1-4/4,5/1

The preceding example assumes that cards 3, 4, and 5 are of the same interface type.

The “all” Keyword

The **all** keyword indicates all the ports of all the cards of a specific type of interface. That is, all Ethernet, Fibre Channel, or InfiniBand interface cards. The subsequent prompt will appear as though you entered the ports as a list.

Using the Documentation

The command descriptions in this book provide quick access to the information about each command. This book divides each command description into subsections so you can go directly to the desired information.

Synopsis

The Synopsis subsection provides a brief, high-level description of the command.

Syntax

The Syntax subsection provides the command syntax. The following conventions apply:

- Text in **bold** font represents text that you enter exactly as it appears.
- Text in *italicized* font represents variables that you replace with actual values when you enter it at the command line.
- Square brackets ([,]) enclose optional syntax. Do not enter square brackets in the CLI.
- Braces ({,}) enclose required syntax choices. Do not enter braces in the CLI.
- The pipe character (|) delineates between selections in syntax. That is, if command X requires argument Y *or* argument Z, but not both at the same time, the syntax will appear as follows:

X {Y|Z}

A table that describes all syntax argument follows the syntax line(s).



Note

Input strings such as device names and descriptions must be contiguous without any intervening spaces or blanks. In the event you wish to enter a multi-word string, enclose the string within double-quotes (“;”), otherwise the CLI parses each word as a separate argument, which results in a syntax violation.

Platform Availability

The platform subsection indicates the platform or platforms (Topspin 90/Cisco SFS 3001, Topspin 120/Cisco SFS 7000, Topspin 270/Cisco SFS 7008, Topspin 360/Cisco SFS 3012, or Topspin IB Server Switch Module) on which you may execute the command.

Command Modes

The Command Modes subsection indicates the command mode or submode that you must enter in order to execute the command.

Privilege Level

The Privilege Level subsection indicates the user permissions that are required to execute the command. For example, there are commands that only an unrestricted read-write user (e.g., super) can execute that a user with general read-write permissions (admin) cannot.

Usage Guidelines

The Usage Guidelines subsection supplies additional information and details to help you use the command to its full potential.

Examples

The examples subsection shows actual command entry and CLI output.

```
SFS-7000P# show interface gateway 5
=====Gateway Information=====
      gateway : 5
      name    : 5/0
      type    : fc-gateway
      desc    : 5/0 (320)
      last-change : none
      mtu     : 0
      admin-status : up
      oper-status : up
SFS-7000P#
```

Defaults

The Defaults subsection lists command default behavior or values.

Related Commands

The Related Commands subsection provides hypertext links to related CLI commands.