

IOS (Internetwork Operating System)—Cisco's operating system for routers and switches

CLI (Command Line Interface)—Text based interface for configuring Cisco devices through the console port, telnet, or ssh

CLI Modes—Prompts are for a switch called "SW"

MODE	PROMPT	USE
User EXEC	SW>	
Enable (Privileged EXEC)	SW#	More powerful commands. Obtained by typing "enable" from user exec
Configuration	SW (config) #	General Configuration commands. Obtained by typing "configure terminal" at the privileged exec prompt
Line Configuration	SW (config-line) #	Usually the console line. Entered by typing the name of the line when in configuration mode, e.g. "line console 0"
Interface Configuration	SW (config-if) #	Configure that networking interface. Entered by typing the name of the interface, e.g. "interface fa0/0"
VLAN	SW (vlan) #	Configure the vlan, perhaps by naming it. Entered by, for example, "vlan 5"

Moving Between CLI Modes—The Prompt tells you what mode you were already in.

CHANGE TO MODE	COMMAND(S)	
Enabled (Privileged Exec)	SW> <b>enable</b> SW#	
Configuration	SW# <b>configure terminal</b> Enter configuration commands, one per line. End with CNTL/Z. SW (config) #	
Line Configuration	SW (config) # <b>line console 0</b> SW (config-line) #	
Interface Configuration	SW (config) # <b>interface GigabitEthernet 0/1</b> SW (config-if) #	
VLAN	SW (config) # <b>vlan 10</b> SW (config-vlan) #	
Exiting / Reversing Out	SW (config-if) # <b>exit</b> SW (config) # <b>exit</b> SW# <b>exit</b> SW> <b>exit</b>	<i>The last exit drops your connection</i>
All the Way Back to Enabled (Privileged Exec) at once	SW (config-if) # <b>end</b> SW#	<i>Ctrl-Z would have accomplished the same thing</i>
Dropping Privileges	SW# <b>disable</b> SW>	<i>On console, you can just type "exit," but if you're in through ssh, "exit" would also drop the connection; "disable" won't.</i>
Drop the Connection	SW# <b>quit</b>	<i>Again, a couple of exits would do the same.</i>

The console port is physically wired with a console cable (RJ-45) or a mini-b USB (Universal Serial Bus) connector to a computer running terminal emulation software. By default, the console port operates at 9600 baud with no hardware flow control, using 8-bit ASCII, no parity bits, and 1 stop bit.

Telnet—on by default, but needs a few config items set before usable (see chap. 8)

SSH (Secure SHell)—preferable to telnet because it encrypts all traffic, including passwords.

## 2 9 6 0 S W I T C H

2960-X Catalyst Switch—full-featured low-cost wiring closet access switch

Port Numbering—on 2960-X switches, the gigabit ports are called Gi 1/0/1 and Gi 1/0/2 instead of Gi 0/0 and Gi 0/1.

### Switch Storage

STORAGE LOCATION	USE
RAM (Random Access Memory)	The running (active) configuration
Flash Memory	The IOS (operating system) file
ROM (Read Only Memory)	Bootstrap image for startup
NVRAM (Non-Volatile RAM)	Startup configuration file

## E X E C C O M M A N D S

These commands take action rather than configuring the device

PURPOSE	COMMAND(S)
Reboot the Switch	SW# <b>reload</b>
View Current Configuration	SW# <b>show running-config</b>
View the Startup Configuration	SW# <b>show startup-config</b>
Save the Current Config to Startup	SW# <b>copy running-config startup-config</b>
Apply the Startup Config to Current Configuration	SW# <b>copy startup-config running-config</b> <i>This is a merge. Only things explicitly mentioned in the startup-config are changed.</i>
Erase the Startup Config (3 ways—Choose One)	SW# <b>erase startup-config</b> SW# <b>write erase</b> SW# <b>erase nvram:</b>
Turn off any Verbose Debugging (2 ways—Choose One)	SW# <b>no debug all</b> SW# <b>undebug all</b>