CHAPTER 9

Confirming the Installation

This chapter describes procedures used to confirm that the hardware and software installation and configuration procedures were successful. The following sections are included:

- Module Status LEDs
- Using the telnet Command
- Using the ping Command
- Using the show system Command
- Using the show configuration Command
- Using the show port Command

Module Status LEDs

This section describes the LEDs used to confirm and troubleshoot operation of the Catalyst 5000 series modules. The LEDs on the supervisor engine module indicate the system power and processor status; LEDs on the switching modules indicate the status of the individual switching module and their interfaces.

The status LEDs on the supervisor engine module and switching modules go on to indicate that the modules are powered up. When on, they do not necessarily mean that the interface ports are functional or enabled. Additionally, although the LEDs for many interface types go on at the initial system startup, they do not indicate an accurate status until the interface is configured.

Module Status LEDs

All status LEDs go on when the module receives power. The color of the LED indicates the actual status of the ports and modules. The following sections contain details about the meanings of each color.

Supervisor Engine Module LEDs

The LEDs on the supervisor engine module indicate the system status; the system includes the fan assembly, power supply(ies), and supervisor engine module. The PS1 and PS2 LEDs on the supervisor engine module go on when the power supply is receiving AC source power and providing DC power to the internal system components. The power supply monitors its own temperature and internal voltages. For a description of the power supply shutdown conditions and threshold status levels, refer to the section "Environmental Monitoring and Reporting" in the chapter "Defining the Catalyst 5000 Series Switch."

The supervisor engine module LEDs are shown in Figure 9-1, Figure 9-2, and Figure 9-3 and described in Table 9-1.





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Figure 9-2 LEDs for Multimode Fiber-Optic Supervisor Engine Module







Warning Avoid exposure to the laser beam.

Module Status LEDs

	Supervisor Lingine Module LEDS	
LED	Description	
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the Status LED is green. If any test fails, the Status LED is red. During system boot or if the module is disabled, the LED is orange. If the redundant power supply is installed but not turned on or receiving AC input, the status LED is red. If the fan module fails, the status is red.	
Fan	Indicates whether or not the fan is operational. If the fan is operational, the fan LED is green. If the fan is not operational, the fan LED is red.	
PS1, left bay	If the power supply in the left bay is operational, the PS1 LED is green. If the power supply in the left bay is not operational, switched off, or not receiving AC input, in the left bay the PS1 LED is red. If the left bay power supply is off or not installed, the PS1 LED is red.	
PS2, right bay	If the power supply in the right bay is operational, the PS2 LED is green. If the power supply in the right bay is not operational, switched off, or not receiving AC input, the PS2 LED is red. If the left bay power supply is off or not installed, the PS2 LED is red.	
100 Mbps	If the port is operating at 100 Mbps, the LED is green.	
Link	If the port is operational, the LED is green. If the link has been disabled by software, the LED is orange. If the link is bad and has been disabled due to a hardware failure, the LED flashes orange. If no signal is detected, the LED is off.	

Table 9-1 Supervisor Engine Module LEDs

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The switch load-meter LEDs provide a visual indication (as an approximate percentage) of the current traffic load over the backplane. (See Figure 9-4.)

Switch Load	Load %
	90-100
	80-89
	70-79
	60-69
	50-59
	40-49
	30-39
	20-29
	10-19
	1-9

Figure 9-4 Switch Load LED

Group Switching Ethernet Module (10BaseT 48 Port) LEDs

The LEDs provide status information for the module and individual 10BaseT Ethernet port connections. The LEDs are shown in Figure 9-5 and described in Table 9-2.



Table 9-2 Group Switching Ethernet Module LED Descriptions

LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
Link	If the port is operational (a signal is detected), the LED is green. If the link has been disabled by software, the LED is orange. If the link is bad and has been disabled due to a hardware failure, the LED flashes orange. If no signal is detected, the LED is off.

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Ethernet Switching Module (10BaseT 24 Port) LEDs

The LEDs provide status information for the module and individual 10BaseT Ethernet port connections. The LEDs are shown in Figure 9-6 and described in Table 9-3.





Table 9-3	Ethernet Switching Module (10BaseT 24 Port) LED Descriptions
-----------	--

LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
Link	If the port is operational (a signal is detected), the LED is green. If the link has been disabled by software, the LED is orange. If the link is bad and has been disabled due to a hardware failure, the LED flashes orange. If no signal is detected, the LED is off.

Ethernet Switching Module (10BaseFL12 Port) LEDs

The LEDs provide status information for the module. The LED is shown in Figure 9-7 and described in Table 9-4.





LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
Link	If the port is operational (a signal is detected), the LED is green. If the link has been disabled by software, the LED is orange. If the link is bad and has been disabled due to a hardware failure, the LED flashes orange. If no signal is detected, the LED is off.

Table 9-4 Ethernet Switching Module (10BaseFL 12 Port) LED Descriptions

10/100 Mbps Fast Ethernet Switching Module (10/100BaseTX 12 Port) LEDs

The LEDs provide status information for the module and individual 10/100 Mbps Fast Ethernet interface connections. The LEDs are shown in Figure 9-9 and described in Table 9-6.

Figure 9-8 10/100 Mbps Fast Ethernet Switching Module (10/100BaseTX 12 Port) LEDs



Table 9-510/100 Mbps Fast Ethernet Switching Module (10/100BaseTX
12 Port) LED Descriptions

LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the Status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
100-Mbps	If the port is operating at 100 Mbps, the LED is green. If the port is operating at 10 Mbps, the LED is off.
Link (bottom LED)	If the port is operational (a signal is detected), the LED is green. If the link has been disabled by software, the LED is orange. If the link is bad and has been disabled due to a hardware failure, the LED flashes orange. If no signal is detected, the LED is off.

Fast Ethernet Switching Module (100BaseTX 12 Port) LEDs

The LEDs provide status information for the module and individual Fast Ethernet interface connections. The LEDs are shown in Figure 9-9 and described in Table 9-6.



Table 9-6 Fast Ethernet Switching Module (100BaseTX 12 Port) LED Descriptions

LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the Status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
Link (bottom LED)	If the port is operational (a signal is detected), the LED is green. If the link has been disabled by software, the LED is orange. If the link is bad and has been disabled due to a hardware failure, the LED flashes orange. If no signal is detected, the LED is off.

Fast Ethernet Switching Module (100BaseFX 12 Port) LEDs

The LEDs on the faceplate of the Fast Ethernet switching module (100BaseFX 12 port), shown in Figure 9-10, are described in Table 9-7.

Figure 9-10 Fast Ethernet Switching Module (100BaseFX 12 Port) LEDs



Table 9-7	Fast Ethernet Switching Module (100BaseFX 12 Port) LED
	Descriptions

LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
Link	If the port is operational (a signal is detected), the LED is green. If the link has been disabled by software, the LED is orange. If the link is bad and has been disabled due to a hardware failure, the LED flashes orange. If no signal is detected, the LED is off.

Module Status LEDs

ATM LAN Emulation Module (UTP) LEDs

The LEDs provide status information for the module and individual ATM port connection. The LEDs are shown in Figure 9-11 and described in Table 9-8.

Figure 9-11 ATM LAN Emulation Module (UTP) LEDs



Table 9-8	ATM LAN Emulation	Module (UTF) LED	Descriptions

LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
RX (Receive)	Whenever a port is receiving a packet, the receive (RX) LED is green for approximately 50 ms ¹ ; otherwise, it is off.
TX (Transmit)	Whenever a port is transmitting a packet, the transmit (TX) LED is green for approximately 50 ms [;] otherwise, it is off.
Link	The link LED displays the link integrity status of a LAN port. The link LED is green if the link integrity is good. The link LED will blink to indicate that a collision is detected on this link.

1. ms = milliseconds.

ATM LAN Emulation Module (Single-Mode and Multimode Fiber) LEDs

The LEDs provide status information for the module and individual port connections. The LEDs are shown in Figure 9-12 and described in Table 9-9.

Figure 9-12 ATM LAN Emulation Module (Single-Mode and Multimode Fiber) LEDs



Table 9-9ATM LAN Emulation Module (Single-Mode and Multimode)LED Descriptions

LED	Description				
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.				
RX (Receive)	Whenever the port is receiving a cell, the receive (RX) LED is green for approximately 50 ms ¹ ; otherwise, it is off.				
TX (Transmit)	Whenever the port is transmitting a cell, the transmit (TX) LED is green for approximately 50 ms; otherwise, it is off.				
Link	The link LED displays the link integrity status of the ATM port. The link LED is green if the link integrity is good. The link LED will blink to indicate that a collision is detected on this link.				

1. ms = milliseconds.

Module Status LEDs

CDDI Module LEDs

The LEDs provide status information for the module and individual CDDI port connections. The LEDs are shown in Figure 9-13 and described in Table 9-10.



Table 9-10 CDDI Module LED Descriptions

LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
RingOp	Indicates whether or not the ring is operational. If the ring is operational, the RingOp LED is green. If the ring is not operational, the RingOp LED is off.
Thru	If the FDDI/CDDI A and B ports are connected to the primary and secondary rings, the Thru LED is green; otherwise, it is off.
Wrap A	If the FDDI/CDDI A port is connected to the ring and the B port is isolated, the Wrap A LED is green; otherwise, it is off.
Wrap B	If the FDDI/CDDI B port is connected to the ring and the A port is isolated, the Wrap B LED is green; otherwise, it is off.

LED	Description
Port A status	If the FDDI/CDDI A port is connected to the ring, the port A LED is green. If the FDDI/CDDI A port receives a signal but fails to connect, or a dual homing condition exists, the port A LED is orange. The LED is turned off if no receive signal is detected.
Port B status	If the FDDI/CDDI B port is connected to the ring, the port B LED is green. If the FDDI/CDDI B port receives a signal but fails to connect, or a dual homing condition exists, the port B LED is orange. The LED is turned off if no receive signal is detected.
In	The optical Bypass switch LED indicates the status of the device connected to the line module. When the LED is on, the Bypass switch is activated and is in Thru mode (the line module is attached to the dual ring).

FDDI Module MMF (Multimode Fiber) LEDs

The LEDs provide status information for the module and individual FDDI port connections. The LEDs are shown in Figure 9-14 and described in Table 9-11.

Figure 9-14 FDDI Module MMF (Multimode Fiber) LEDs



Module Status LEDs

LED	Description The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.					
Status						
RingOp	Indicates whether or not the ring is operational. If the ring is operational, the RingOp LED is green. If the ring is not operational, the RingOp LED is off.					
Thru	If the FDDI/CDDI A and B ports are connected to the primary and secondary rings, the Thru LED is green; otherwise, it is off.					
Wrap A	If the FDDI/CDDI A port is connected to the ring and the B port is isolated, the wrap A LED is green; otherwise, it is off.					
Wrap B	If the FDDI/CDDI B port is connected to the ring and the A port is isolated, the wrap B LED is green; otherwise, it is off.					
Port A status	If the FDDI/CDDI A port is connected to the ring, the port A LED is green. If the FDDI/CDDI A port receives a signal but fails to connect, or a dual homing condition exists, the port A LED is orange. The LED is turned off if no receive signal is detected.					
Port B status	If the FDDI/CDDI B port is connected to the ring, the port B LED is green. If the FDDI/CDDI B port receives a signal but fails to connect, or a dual homing condition exists, the port B LED is orange. The LED is turned off if no receive signal is detected.					
In	The optical Bypass switch LED indicates the status of the device connected to the line module. When the LED is on, the Bypass switch is activated and is in Thru mode (the line module is attached to the dual ring).					

Table 9-11 FDDI Module MMF (Multimode Fiber) LED Descriptions

FDDI Module SMF (Single-Mode Fiber) LEDs

The LEDs provide status information for the module and individual FDDI port connections. The LEDs are shown in Figure 9-15 and described in Table 9-12.





LED	Description
Status	The switch performs a series of self-tests and diagnostic tests. If all the tests pass, the status LED is green. If a test other than an individual port test fails, the status LED is red. During system boot or if the module is disabled, the LED is orange. During self-test diagnostics, the LED is orange. If the module is disabled, the LED is orange.
RingOp	Indicates whether or not the ring is operational. If the ring is operational, the RingOp LED is green. If the ring is not operational, the RingOp LED is off.
Thru	If the FDDI/CDDI A and B ports are connected to the primary and secondary rings, the Thru LED is green; otherwise, it is off.
Wrap A	If the FDDI/CDDI A port is connected to the ring and the B port is isolated, the Wrap A LED is green; otherwise, it is off.
Wrap B	If the FDDI/CDDI B port is connected to the ring and the A port is isolated, the Wrap B LED is green; otherwise, it is off.

Using the telnet Command

LED	Description
Port A status	If the FDDI/CDDI A port is connected to the ring, the port A LED is green. If the FDDI/CDDI A port receives a signal but fails to connect, or a dual homing condition exists, the port A LED is orange. The LED is turned off if no receive signal is detected.
Port B status	If the FDDI/CDDI B port is connected to the ring, the port B LED is green. If the FDDI/CDDI B port receives a signal but fails to connect, or a dual homing condition exists, the port B LED is orange. The LED is turned off if no receive signal is detected.
In	The optical Bypass switch LED indicates the status of the device connected to the line module. When the LED is on, the Bypass switch is activated and is in Thru mode (the line module is attached to the dual ring).

Using the telnet Command

Use the **telnet** command to start a Telnet connection to a remote host:

telnet host [port]

The syntax descriptions for each parameter are as follows

host	The remote host to connect to.
port	A specific port on the remote host to connect to.

An example of the **telnet** command is as folloW:

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```
Password:
Last login: Thu Feb 15 09:25:01 from forster.cisc.rum
Sun Microsystems Inc. SunOS 5.4 Generic July 1994
You have new mail.
% logout
Console> (enable)
```

Using the ping Command

Enter the **ping** command to send Internet Control Message Protocol (ICMP) echo request packets to another node on the network to confirm the connection to that node. Enter **Ctrl-C** to stop "pinging."

ping -s host [packet_size] [packet_count]

The syntax descriptions for each parameter are as follows:

-S	Causes ping to send one datagram per second, printing one line of output for every response received. The ping command does not return any output when no response is received.
host	The IP address or IP alias of the host.
packet_size	(Optional) The number of bytes in a packet, from 1 to 2,000 bytes, with a default of 56 bytes. The actual packet size is eight bytes larger because the switch adds header information.
packet_count	(Optional) The number of packets to send.

Following are sample results of the **ping** command:

- Normal response—The normal response occurs in one to ten seconds, depending on network traffic.
- Destination does not respond—If the host does not respond, a no answer message appears in ten seconds.

- Destination unreachable—The gateway given in the route table for this destination indicates that the destination is unreachable.
- Network or host unreachable—The switch found no corresponding entry in the route table.

In the following **ping** command example, a host with IP alias elvis is pinged a single time, then pinged once per second until **Ctrl-C** is entered to stop **ping**ing:

```
Console> ping elvis
elvis is alive
Console> ping -s elvis
ping elvis: 56 data bytes
64 bytes from elvis: icmp_seq=0. time=11 ms
64 bytes from elvis: icmp_seq=1. time=8 ms
64 bytes from elvis: icmp_seq=2. time=8 ms
64 bytes from elvis: icmp_seq=3. time=7 ms
64 bytes from elvis: icmp_seq=4. time=11 ms
64 bytes from elvis: icmp_seq=5. time=7 ms
64 bytes from elvis: icmp_seq=6. time=7 ms
^C
----elvis PING Statistics----
7 packets transmitted, 7 packets received, 0% packet loss
round-trip (ms) min/avg/max = 7/8/11
Console>
```

Using the show system Command

Enter the **show system** command to display the power supply, fan, temperature alarm, system, and modem status; the number of days, hours, minutes, and seconds since the last system restart; the baud rate; the MAC address range; and the system name, location, and contact.

In the following example, the system status and other information is displayed:

Console> s	show system			
PS-Status	Fan-Status	Temp-Alarm	Sys-Status	Uptime d,h:m:s
ok	ok	off	ok	27,17:05:50

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 Modem
 Baud
 MAC-Address-Range

 disabled
 9600
 00-04-0b-a0-04-1f to 00-04-0b-a0-05-56

 System Name
 System Location
 System Contact

 WBU-Catalyst-5000 5
 Closet 202 1/F
 Luis x5529

 Console>
 Luis x5529

Using the show configuration Command

Enter the show config command to display the current system configuration:

```
Console> show config
begin
set password $1$FMFQ$HfZR5DUszVHIRhrz4h6V70
set enablepass $1$FMFQ$HfZR5DUszVHIRhrz4h6V70
set prompt Console>
#system
set system baud 9600
set system modem disable
set system name Catalyst 5000
set system location Sunnyvale, CA
set system contact Bob Lewis
1
#snmp
set snmp rmon enable
set snmp community read-only public
set snmp community read-write private
set snmp community read-write-all secret
set snmp trap 171.69.194.181 public
set snmp trap disable
1
#vlan/trunk
clear trunk all
1
set vlan 1 1/1-2,2/1-24
Ţ.
#trunks
#MAC filters
clear filter all
!
```

Using the show configuration Command

```
#cam
set cam agingtime 0
1
#spantree
#vlan 1
set spantree enable
                            1
set spantree fwddelay 20
                            1
set spantree hello 2
set spantree maxage 20
                             1
                             1
set spantree priority 45
                            1
set spantree portpri 1/1 32
set spantree portcost 1/1 100
set spantree portpri 1/2 32
set spantree portcost 1/2 100
set spantree portpri 2/1 32
set spantree portcost 2/1 100
set spantree portpri 2/24 32
set spantree portcost 2/24 100
1
#vlan trunk/monitor
1
#ip
set interface sc0 192.122.174.220 255.255.255.0 192.122.174.255
set redirect enable
set route 0.0.0.0 192.122.174.102 1
set arp agingtime 1200
I.
#cdp
set cdp 1/1 enable 60
set cdp 1/2 enable 60
set cdp 2/1 enable 60
set cdp 2/2 enable 60
set cdp 2/3 enable 60
set cdp 2/24 enable 60
#ipalias
set ipalias default 0.0.0.0
set ipalias cres 192.122.173.42
set ipalias calypso 171.69.194.181
```

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! #alias 1 #port monitoring set monitor 1 1/1 both set monitor disable #module 1 set port enable 1/1 1/1 set port name set port duplex 1/1 half set port speed 1/1 -1315 set port level 1/1 high set port enable 1/2 set port name1/2set port duplex1/2 halfset port speed1/2 504set port level1/2 normal 1 #module 2 set module enable 2 ! set port enable 2/1 2/1 network set port name set port duplex2/1heteroryset port duplex2/1halfset port level2/1normalset port enable2/2set port name2/2 set port duplex 2/2 half set port level 2/2 normal set port enable 2/24 2/24 2/24 half set port name set port duplex 2/24 normal set port level 1 #module 3 empty 1 #module 4 empty 1 #module 5 empty end

Using the show port Command

Enter the **show port** command to display the current system configuration:

Console> (enable) show port								
Port	Name		Status	Vlan	Level	Duplex	Speed	Туре
1/1	Management	Port 1	notconnect	1	normal	half	100	100BaseTX
1/2	InterSwitch	nLink (connected	trunk	normal	half	100	100BaseTX
2/1	Dennis	(connected	10	normal	a-half	a-10	10/100BaseTX
2/2	Luis	1	notconnect	10	normal	auto	auto	10/100BaseTX
2/3	Iris	1	notconnect	10	normal	auto	auto	10/100BaseTX
2/4	Nancy	(connected	10	normal	a-half	a-10	10/100BaseTX
2/5	Arthur	1	notconnect	20	normal	auto	auto	10/100BaseTX
2/6	Ron	1	notconnect	20	normal	auto	auto	10/100BaseTX
2/7	Connie	(disabled	20	normal	auto	auto	10/100BaseTX
2/8	Bill	1	notconnect	20	normal	auto	auto	10/100BaseTX
2/9		1	notconnect	20	normal	auto	auto	10/100BaseTX
2/10		1	notconnect	20	normal	auto	auto	10/100BaseTX
2/11		1	notconnect	20	normal	auto	auto	10/100BaseTX
2/12		1	notconnect	20	normal	full	10	10BaseT
Port	Align-Err	FCS-Err	Xmit-Err	Rcv-Err				
					-			
1/1	0	0	C)	0			
1/2	1	0	C)	0			
2/1	0	0	C)	0			
2/2	0	0	C)	0			
2/3	0	0	C)	0			
2/4	30	0	C)	0			
2/5	0	0	C)	0			
2/6	0	0	C)	0			
2/7	0	0	C)	0			
2/8	0	0	C)	0			
2/9	0	0	C)	0			
2/10	0	0	C)	0			
2/11	0	0	C)	0			
2/12	0	0	C)	0			
Port	Single-Col	Multi-Coll	Late-Coll	Excess-Co	l Carri-S	Sens Giar	nts	
								-
1/1	0	0	C)	0	0	(C
1/2	680	418	C)	1	0	-	-
2/1	756	99	C)	0	0	(C
2/2	0	0	C)	0	0	(C
2/3	0	0	C)	0	0	(C

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Using the show port Command

2/4	409	403	0	11	0	1256
2/5	0	0	0	0	0	0
2/6	0	0	0	0	0	0
2/7	0	0	0	0	0	0
2/8	0	0	0	0	0	0
2/9	0	0	0	0	0	0
2/10	0	0	0	0	0	0
2/11	0	0	0	0	0	0
2/12	0	0	0	0	0	0

Last-Time-Cleared

Wed Dec 27 1995, 16:09:47 Console> (enable) Using the show port Command

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