



Checking Port Status and Connectivity

This chapter describes how to check switch port status and connectivity on the Catalyst 6000 family switches.



Note

For complete syntax and usage information for the commands used in this chapter, refer to the *Catalyst 6000 Family Command Reference* publication.

This chapter consists of these sections:

- Checking Module Status, page 13-1
- Checking Port Status, page 13-2
- Checking Port Capabilities, page 13-4
- Using Telnet, page 13-4
- Monitoring User Sessions, page 13-5
- Using Ping, page 13-6
- Using IP Traceroute, page 13-7

Checking Module Status

The Catalyst 6000 family switches are multimodule systems. You can see what modules are installed, as well as the MAC address ranges and version numbers for each module, using the **show module** [*mod_num*] command. Specify a particular module number to see detailed information on that module.



Note

For detailed information on the output of the **show module** command, refer to the *Catalyst 6000 Family Command Reference* publication.

This example shows how to check module status. The output shows that there is one supervisor engine and four additional modules installed in the chassis:

```

Console> (enable) show module
Mod Slot Ports Module-Type           Model           Status
-----
1  1    2    1000BaseX Supervisor      WS-X6K-SUP1-2GE  ok
2  2   24    100BaseFX MM Ethernet     WS-X6224-100FX-MT ok
3  3    8    1000BaseX Ethernet       WS-X6408-GBIC   ok
4  4   48    10/100BaseTX (Telco)     WS-X6248-TEL    ok
5  5   48    10/100BaseTX (RJ-45)    WS-X6248-RJ-45  ok

Mod Module-Name           Serial-Num
-----
1                          SAD03040546
2                          SAD03110020
3                          SAD03070194
4                          SAD03140787
5                          SAD03181291

Mod MAC-Address (es)      Hw    Fw    Sw
-----
1  00-50-f0-a8-26-b2 to 00-50-f0-a8-26-b3 1.4    5.1(1)  5.2(1) CSX
   00-50-f0-a8-26-b0 to 00-50-f0-a8-26-b1
   00-50-3e-8d-64-00 to 00-50-3e-8d-67-ff
2  00-50-54-6c-e9-a8 to 00-50-54-6c-e9-bf 1.3    4.2(0.24)V 5.2(1) CSX
3  00-50-54-6c-93-6c to 00-50-54-6c-93-73 1.4    4.2(0.24)V 5.2(1) CSX
4  00-50-54-bf-59-64 to 00-50-54-bf-59-93 0.103  4.2(0.24)V 5.2(1) CSX
5  00-50-f0-ac-30-54 to 00-50-f0-ac-30-83 1.0    4.2(0.24)V 5.2(1) CSX

Mod Sub-Type              Sub-Model      Sub-Serial  Sub-Hw
-----
1  L2 Switching Engine I  WS-F6020      SAD03040312 1.0
Console> (enable)

```

This example shows how to check module status on a specific module:

```

Console> (enable) show module 4
Mod Slot Ports Module-Type           Model           Status
-----
4  4    48    10/100BaseTX (Telco)     WS-X6248-TEL    ok

Mod Module-Name           Serial-Num
-----
4                          SAD03140787

Mod MAC-Address (es)      Hw    Fw    Sw
-----
4  00-50-54-bf-59-64 to 00-50-54-bf-59-93 0.103  4.2(0.24)V 5.2(1) CSX Console> Console>
(enable)

```

Checking Port Status

You can see summary or detailed information on the switch ports using the **show port** [*mod_num*[/*port_num*]] command. To see summary information on all of the ports on the switch, enter the **show port** command with no arguments. Specify a particular module number to see information on the ports on that module only. Enter both the module number and the port number to see detailed information about the specified port.

To apply configuration commands to a particular port, you must specify the appropriate logical module. For more information, see the “Checking Module Status” section on page 13-1.

**Note**

For detailed information on the output of the **show port** command, refer to the *Catalyst 6000 Family Command Reference* publication.

This example shows how to see information on the ports on a specific module only:

```

Console> (enable) show port 1
Port Name                Status      Vlan      Duplex Speed Type
-----
1/1                      connected  1         full   1000 1000BaseSX
1/2                      notconnect 1         full   1000 1000BaseSX

Port Security Secure-Src-Addr Last-Src-Addr Shutdown Trap IfIndex
-----
1/1 disabled
1/2 disabled

Port Broadcast-Limit Broadcast-Drop
-----
1/1 - 0
1/2 - 0

Port Send FlowControl Receive FlowControl RxPause TxPause
      admin oper      admin oper
-----
1/1 desired off      off off      0 0
1/2 desired off      off off      0 0

Port Status Channel Admin Ch Neighbor Neighbor
      Mode Group Id Device Port
-----
1/1 connected auto 65 0
1/2 notconnect auto 65 0

Port Align-Err FCS-Err Xmit-Err Rcv-Err UnderSize
-----
1/1 0 0 0 0 0
1/2 0 0 0 0 0

Port Single-Col Multi-Coll Late-Coll Excess-Col Carri-Sen Runts Giants
-----
1/1 0 0 0 0 0 0 0
1/2 0 0 0 0 0 0 0

Last-Time-Cleared
-----
Tue Jun 8 1999, 10:01:35
Console> (enable)

```

This example shows how to see information on an individual port:

```

Console> (enable) show port 1/1
Port Name                Status      Vlan      Duplex Speed Type
-----
1/1                      connected  1         full   1000 1000BaseSX

Port Security Secure-Src-Addr Last-Src-Addr Shutdown Trap IfIndex
-----
1/1 disabled

Port Broadcast-Limit Broadcast-Drop
-----
1/1 - 0

```

```

Port    Send FlowControl    Receive FlowControl    RxPause    TxPause
      admin    oper    admin    oper
-----
1/1    desired  off     off     off     0       0

Port    Status    Channel    Admin Ch    Neighbor    Neighbor
      Mode    Mode    Group Id    Device    Port
-----
1/1    connected auto     65    0

Port    Align-Err    FCS-Err    Xmit-Err    Rcv-Err    UnderSize
-----
1/1          0          0          0          0          0

Port    Single-Col    Multi-Coll    Late-Coll    Excess-Col    Carri-Sen    Runts    Giants
-----
1/1          0          0          0          0          0          0          0

Last-Time-Cleared
-----
Tue Jun 8 1999, 10:01:35
Console> (enable)

```

Checking Port Capabilities

You can display the capabilities of any port in a switch using the **show port capabilities** `[[mod_num][/port_num]]` command.

This example shows you how to display the port capabilities for switch ports:

```

Console> (enable) show port capabilities 1/1
Model                WS-X6K-SUP1-2GE
Port                 1/1
Type                 1000BaseSX
Speed                1000
Duplex               full
Trunk encap type     802.1Q, ISL
Trunk mode           on, off, desirable, auto, nonegotiate
Channel              yes
Broadcast suppression percentage (0-100)
Flow control         receive- (off, on, desired) , send- (off, on, desired)
Security             yes
Membership           static
Portfast             yes
QOS                  rx- (1q4t) , tx- (2q2t)
Rewrite              no
UDLD                 Capable
Console> (enable)

```

Using Telnet

You can access the switch command-line interface (CLI) using Telnet. In addition, you can use Telnet from the switch to access other devices in the network. Up to eight simultaneous Telnet sessions are possible.

To Telnet to another device on the network from the switch, perform this task in privileged mode:

Task	Command
Open a Telnet session with a remote host.	telnet <i>host</i> [<i>port</i>]

This example shows how to Telnet from the switch to a remote host:

```

Console> (enable) telnet labsparc
Trying 172.16.10.3...
Connected to labsparc.
Escape character is '^]'.

UNIX(r) System V Release 4.0 (labsparc)

login:

```

Monitoring User Sessions

You can display the currently active user sessions on the switch using the **show users** command. The command output displays all active console port and Telnet sessions on the switch.

To display the active user sessions on the switch, perform this task in privileged mode:

Task	Command
Display the currently active user sessions on the switch.	show users [<i>noalias</i>]

This example shows the output of the **show users** command when local authentication is enabled for console and Telnet sessions (the asterisk [*] indicates the current session):

```

Console> (enable) show users
  Session  User              Location
  -----
  console
  telnet           sam-pc.bigcorp.com
  * telnet         jake-mac.bigcorp.com
Console> (enable)

```

This example shows the output of the **show users** command when TACACS+ authentication is enabled for console and Telnet sessions:

```

Console> (enable) show users
  Session  User              Location
  -----
  console  sam
  telnet   jake              jake-mac.bigcorp.com
  telnet   tim              tim-nt.bigcorp.com
  * telnet suzy              suzy-pc.bigcorp.com
Console> (enable)

```

This example shows how to display information about user sessions using the **noalias** keyword to display the IP addresses of connected hosts:

```
Console> (enable) show users noalias
  Session  User           Location
  -----  -
  console
  telnet           10.10.10.12
  * telnet         10.10.20.46
Console> (enable)
```

To disconnect an active user session, perform this task in privileged mode:

Task	Command
Disconnect an active user session on the switch.	disconnect { console <i>ip_addr</i> }

This example shows how to disconnect an active console port session and an active Telnet session:

```
Console> (enable) show users
  Session  User           Location
  -----  -
  console  sam
  telnet   jake           jake-mac.bigcorp.com
  telnet   tim           tim-nt.bigcorp.com
  * telnet  suzy          suzy-pc.bigcorp.com
Console> (enable) disconnect console
Console session disconnected.
Console> (enable) disconnect tim-nt.bigcorp.com
Telnet session from tim-nt.bigcorp.com disconnected. (1)
Console> (enable) show users
  Session  User           Location
  -----  -
  telnet   jake           jake-mac.bigcorp.com
  * telnet  suzy          suzy-pc.bigcorp.com
Console> (enable)
```

Using Ping

These sections describe how to use IP ping:

- Understanding How Ping Works, page 13-6
- Executing Ping, page 13-7

Understanding How Ping Works

You can use IP ping to test connectivity to remote hosts. If you attempt to ping a host in a different IP subnetwork, you must define a static route to the network or have a router configured to route between those subnets.

To stop a ping in progress, press **Ctrl-C**.

Ping will return one of the following responses:

- Normal response—The normal response (*hostname* is alive) occurs in 1 to 10 seconds, depending on network traffic.
- Destination does not respond—If the host does not respond, a no answer message is returned.
- Unknown host—If the host does not exist, an unknown host message is returned.
- Destination unreachable—If the default gateway cannot reach the specified network, a destination unreachable message is returned.
- Network or host unreachable—If there is no entry in the route table for the host or network, a network or host unreachable message is returned.

Executing Ping

To ping another device on the network from the switch, perform one of these tasks in privileged mode:

Task	Command
• Ping a remote host.	ping <i>host</i>
• Ping a remote host using ping options.	ping -s <i>host</i> [<i>packet_size</i>] [<i>packet_count</i>]

This example shows how to ping a remote host:

```
Console> (enable) ping labsparc
labsparc is alive
Console> (enable) ping 172.16.10.3
172.16.10.3 is alive
Console> (enable)
```

This example shows how to ping a remote host using the ping options:

```
Console> (enable) ping -s 172.16.10.3 1000 8
PING 172.20.52.3: 1000 data bytes
1008 bytes from 172.16.10.3: icmp_seq=0. time=6 ms
1008 bytes from 172.16.10.3: icmp_seq=1. time=5 ms
1008 bytes from 172.16.10.3: icmp_seq=2. time=6 ms
1008 bytes from 172.16.10.3: icmp_seq=3. time=6 ms
1008 bytes from 172.16.10.3: icmp_seq=4. time=6 ms
1008 bytes from 172.16.10.3: icmp_seq=5. time=5 ms
1008 bytes from 172.16.10.3: icmp_seq=6. time=6 ms
1008 bytes from 172.16.10.3: icmp_seq=7. time=5 ms

----172.16.10.3 PING Statistics----
8 packets transmitted, 8 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 5/5/6
Console> (enable)
```

Using IP Traceroute

These sections describe how to use IP traceroute:

- Understanding How IP Traceroute Works, page 13-8
- Executing IP Traceroute, page 13-8

Understanding How IP Traceroute Works

You can use IP traceroute to identify the path that packets take through the network on a hop-by-hop basis. The command output displays all network layer (Layer 3) devices, such as routers, that the traffic passes through on the way to the destination.

Switches can participate as the source or destination of the **traceroute** command but will not appear as a hop in the **traceroute** command output.

The **traceroute** command uses the Time To Live (TTL) field in the IP header to cause routers and servers to generate specific return messages. Traceroute starts by sending a User Datagram Protocol (UDP) datagram to the destination host with the TTL field set to 1. If a router finds a TTL value of 1 or 0, it drops the datagram and sends back an Internet Control Message Protocol (ICMP) time-exceeded message to the sender. The traceroute facility determines the address of the first hop by examining the source address field of the ICMP time-exceeded message.

To identify the next hop, traceroute sends a UDP packet with a TTL value of 2. The first router decrements the TTL field by 1 and sends the datagram to the next router. The second router sees a TTL value of 1, discards the datagram, and returns the time-exceeded message to the source. This process continues until the TTL is incremented to a value large enough for the datagram to reach the destination host (or until the maximum TTL is reached).

To determine when a datagram reaches its destination, traceroute sets the UDP destination port in the datagram to a very large value which the destination host is unlikely to be using. When a host receives a datagram with an unrecognized port number, it sends an ICMP port unreachable error to the source. This message indicates to the traceroute facility that it has reached the destination.

Executing IP Traceroute

To trace the path that packets take through the network, perform this task in privileged mode:

Task	Command
Execute IP traceroute to trace the path packets take through the network.	traceroute [-n] [-w <i>wait_time</i>] [-i <i>initial_ttl</i>] [-m <i>max_ttl</i>] [-p <i>dest_port</i>] [-q <i>nqueries</i>] [-t <i>tos</i>] <i>host</i> [<i>data_size</i>]

This example shows the basic usage of the **traceroute** command:

```
Console> (enable) traceroute 10.1.1.100
traceroute to 10.1.1.100 (10.1.1.100), 30 hops max, 40 byte packets
 1 10.1.1.1 (10.1.1.1) 1 ms 2 ms 1 ms
 2 10.1.1.100 (10.1.1.100) 2 ms 2 ms 2 ms
Console> (enable)
```

This example shows how to perform a **traceroute** with six queries to each hop with packets of 1400 bytes each:

```
Console> (enable) traceroute -q 6 10.1.1.100 1400
traceroute to 10.1.1.100 (10.1.1.100), 30 hops max, 1440 byte packets
 1 10.1.1.1 (10.1.1.1) 2 ms 2 ms 2 ms 1 ms 2 ms 2 ms
 2 10.1.1.100 (10.1.1.100) 2 ms 4 ms 3 ms 3 ms 3 ms 3 ms
Console> (enable)
```