A P P E N D I X C

Command Reference

This appendix discusses all aspects of the command set for the Catalyst 1200 series Switch. A list of top-level commands is provided in Table C-1.

Command Line Processing

The user interface for the admin. port on the switch is a basic command line interpreter similar to that of the UNIX C shell. Command-line editing is provided, including history substitution and aliasing. If you make a mistake while entering a command, use the Delete or Backspace key to erase the mistake and then reenter the command.

History Substitution Buffer

Commands entered during a terminal session are stored in a history substitution buffer. Commands in this buffer can be repeated or edited in a style similar to the UNIX C shell. The buffer stores the last eight commands entered during a terminal session. (See the section "history Command," later in this appendix.)

To repeat a recent command, do the following:

```
!!—repeat the most recent command
!nn—repeat command nn
!aaa—repeat the command beginning with string aaa
!?aaa—repeat the command containing the string aaa
```

To modify and repeat the most recent command, do the following:

```
^aaa^bbb—replace the string aaa with the string bbb in
the most recent command
```

To add a string to the end of a previous command and repeat it, do the following:

```
!!aaa—add string aaa to the end of the most recent command
!nn aaa—add string aaa to the end of command nn
!aaa bbb—add string bbb to the end of the command beginning with string aaa
!?aaa bbb—add string bbb to the end of the command containing the string
aaa
```

Connecting to Catalyst Administration

There are two ways to connect to the admin. interface: the admin. port (EIA/TIA-232) or Telnet. The admin. port allows fixed baud rates. All Telnet sessions are automatically disconnected after remaining idle for 20 minutes. When connecting, "cisco Systems Console" is displayed.

Connection via EIA/TIA-232

A connection via EIA/TIA-232 appears as follows:

```
Cisco Systems Console
Enter password:
Sorry. Try again.
Enter password:
Console>
Console>
Console> quit
```

Connection via Telnet

To use Telnet, you must have set the IP address for the switch. Up to 12 simultaneous Telnet sessions are possible. To access the switch with Telnet, perform the following steps:

Step 1   On the remote host, enter the following command, where *hostname* is the host name or IP address of the switch:

```
% telnet hostname
```

Step 2   Enter the admin. interface password.

Note   The password default is **Return** unless you have set a password using the **set password** command described later in this appendix.

Step 3   When you are finished, enter **quit** to exit the Telnet session. Following is sample output of a Telnet session:

```
% telnet catalyst1
Trying 192.122.173.201 ...
Connected to catalyst1.
Escape character is '^]'.
Cisco Systems Console
Enter password:
Sorry. Try again.
Enter password:
Console>
Console>
Console> quit
Connection closed by foreign host.
```

Top-Level Commands

There are two categories of commands: privileged and normal. (See Table C-1.)

- Privileged commands are available *only* after you invoke the **enable** command. They are used for system configuration and by end users for troubleshooting basic problems. Certain commands are available, and certain displays have extra information in privileged mode. The designation (enable) appears on your screen in sample displays to indicate privileged commands and when the system is in privileged mode.

- Normal commands are available in all cases, and are used by end users for everyday operations.

Table C-1　　　Top-Level Commands

Command	Description	Mode[1]
clear	Clears, use **clear help** for more info	P
configure	Configures the system from a terminal or network	P
copy	Copies code to or from processors	P
disable	Disables privileged mode	P
disconnect	Disconnects from the FDDI ring	P
download	Downloads code to a processor	P
enable	Enables privileged mode	N
help	Shows this message	N
history	Shows the contents of the history substitution buffer	N
ping	Sends echo packets to hosts	N
quit	Exits out of the console	N
reset	Resets the system	P
set	Sets, use **set help** for more info	N
show	Shows use **show help** for more info	N
slip	Attaches or detaches SLIP[2] interfaces	P
test	Tests, use **test help** for more information	P
upload	Uploads code to a processor	P
wait	Waits for n seconds	N
write	Writes system configuration to a terminal or network	P

1. N = normal; P = privileged.
2. SLIP = Serial Line Internet Protocol

Displaying Information about Commands

Use the **?** command to display usage and syntax information about a specific command or to list groups of commands. In normal mode, use the **?** command to display a list of top-level commands, as follows:

```
Console> ?
Commands:
-------------------------------------------------------------------
enable          Enable privileged mode
help            Show this message
history         Show contents of history substitution buffer
ping            Send echo packets to hosts
quit            Exit out of the console
set             Set, use 'set help' for more info
show            Show, use 'show help' for more info
wait            Wait for x seconds
Console>
```

Note   The overall function of the **?** command is the same as the **help** command.

In privileged mode, use the **?** command to display a list of commands, as follows:

```
Console> enable
Enter password:
Console> (enable) ?
Commands:
----------------------------------------------------------------------
clear               Clear, use 'clear help' for more info
configure           Configure system from terminal/network
connect             Connect to FDDI ring
copy                Copy code to/from processors
disable             Disable privileged mode
disconnect          Disconnect from FDDI ring or disconnect user session
download            Download code to a processor
enable              Enable privileged mode
help                Show this message
history             Show contents of history substitution buffer
ping                Send echo packets to hosts
quit                Exit out of the console
reset               Reset the system
set                 Set, use 'set help' for more info
show                Show, use 'show help' for more info
slip                Attach/detach Serial Line IP interface
test                Test, use 'test help' for more info
upload              Upload code to a processor
wait                Wait for x seconds
write               Write system configuration to terminal/network
Console> (enable)
```

Note   In general, you can use the **?** command appended to any command associated with a group of commands: **alias, set, show**, and so forth. Or you can append it to any specific command for a list of usage and syntax information. The overall function of the **?** command is the same as the **help** command. For an example of how the **?** command can be used to display usage and syntax information about a specific command, refer to the **clear alias** command description.

clear Commands

Table C-2 lists the **clear** commands.

Table C-2   clear Commands

Command	Description	Mode[1]
clear alias	Clears aliases of commands	P
clear arp	Clears ARP table entries	P
clear cam	Clears CAM table entries	P
clear config	Clears the configuration and resets the system	P
clear counters	Clears MAC and port counters	P
clear filter	Clears custom filtering configuration	P
clear help	Provides information on the **clear** commands	P
clear ip	Clears aliases of IP addresses	P
clear log	Clears the system error log	P
clear multicast	Clears IP multicast group configuration	P
clear snmp trap	Clears an entry for the SNMP trap receiver table	P
clear trunk	Clears particle information in the trunk or converts trunk link back to bridge ports	P

1. P = privileged.

clear alias

Use the **clear alias** command to clear shorthand versions of commands. Following is a sample display:

```
Console> (enable) clear alias ?
Usage: clear alias all
       clear alias <name>
Console> (enable) clear alias arpDelete
Command alias deleted.
Console> (enable)
```

See also **set alias** and **show alias**.

clear arp

Use the **clear arp** command to clear ARP tables. To delete an ARP entry, use the command **clear arp** *ip_address*, where *ip_address* is the address in the ARP table you want to delete. Following is a sample display:

```
Console> (enable)  ?
Usage:  all
        <ip_address>
        (ip_address is ip alias or IP address in dot notation: a.b.c.d)
Console> (enable) show arp
Aging time = 1200 sec

default          at 00:40:0b:a0:99:89  on port 1
172.20.21.108    at 00:a0:24:01:53:e4  on port 1
172.20.21.110    at 08:00:20:72:a9:ef  on port 1
172.20.21.232    at 08:00:20:1a:72:bd  on port 1
172.20.21.107    at 08:00:20:22:ce:84  on port 1
172.20.21.106    at 00:40:0b:0c:60:3f  on port 1
172.20.21.100    at 08:00:20:72:4c:83  on port 1
Console> (enable)  clear arp 172.20.21.108
ARP entry deleted.
Console> (enable)
```

See also **set arp** and **show arp**.

clear cam

Use the **clear cam** command to clear CAM table entries. Following is a sample display:

```
Console> (enable) clear cam
Usage: clear cam <dynamic|static|permanent|all> [vlan]
       clear cam <mac_addr> [vlan]
       (vlan = 1..1000,
        mac_addr should be of the form aa-bb-cc-dd-ee-ff)
Console> (enable)
```

See also **set cam** and **show cam**.

clear config

Use the **clear config** command to clear the configuration information stored in nonvolatile random access memory (NVRAM). The **clear config** command also resets the system. Following is a sample display:

```
Console> (enable) clear config
This command will reset the system after clearing configuration in NVRAM.
This command will disconnect your telnet session.
Do you want to continue (y/n) [n]? y
Connection closed by foreign host.
%
```

clear counters

Use the **clear counters** command to clear MAC and port counters. Following is a sample display:

```
Console> (enable) clear counters
MAC and Port counters cleared.
Console> (enable)
```

clear filter

Use the **clear filter** command to clear custom filtering parameters on a port that were previously set using the **set filter** command. Following is a sample display:

```
Console> (enable) clear filter
commands:
----------------------------------------------------------------------
clear filter all           Clear all filters
clear filter broadcast     Clear broadcast filter
clear filter complex       Clear complex filter
clear filter help          Show this message
clear filter macaddress    Clear MAC address filter
clear filter protocol      Clear protocol type filter
clear filter test          Clear tests for complex filter
clear filter vendor        Clear Vendor ID filter
Console> (enable)
Usage: clear filter all <ports>
       (Port number must be in the range 1..10)
Console> (enable) clear filter all 9
All filters on port 9 cleared.
Console> (enable) clear filter broadcast
Usage: clear filter broadcast <ports>
       (Port number must be in the range 1..10)
Console> (enable) clear filter complex
Usage: clear filter complex <ports>
       (Port number must be in the range 1..10)
Console> (enable) clear filter macaddress
Usage: clear filter macaddress <ports> all
       clear filter macaddress <ports> <mac_addr>/all
       (Port number must be in the range 1..10,
        mac_addr should be in the form aa-bb-cc-dd-ee-ff)
Console> (enable) clear filter macaddress 3 00-40-0b-fe-00-21
MAC Address filter on port 3 cleared.
Console> (enable) clear filter protocol
Usage: clear filter protocol <ports> all
       clear filter protocol <ports> <protocol_type>/all
       (Port number must be in the range 1..10)
Console> (enable) clear filter test
Usage: clear filter test <ports> all
       clear filter test <ports> <test_number>
       (Port number must be in the range 1..10)
```

```
Console> (enable) clear filter vendor
Usage: clear filter vendor <ports> all
       clear filter vendor <ports> <vendor_id>/all
       (Port number must be in the range 1..10)
Console> (enable)
```

See also **set filter** and **show filter**.

clear help

Use the **clear help** command to display the following information in privileged mode:

```
Console> (enable) clear help
Clear commands:
----------------------------------------------------------------------
clear alias          Clear aliases of commands
clear arp            Clear ARP table entries
clear cam            Clear CAM table entries
clear config         Clear configuration and reset system
clear counters       Clear MAC and Port counters
clear filter         Clear custom filter,use 'clear filter help' for more info
clear help           Show this message
clear ip             Clear IP, use 'clear ip help' for more info
clear log            Clear the system error log
clear mac            Clear mac, use 'clear mac help' for more info
clear multicast      Clear multicast, use 'clear multicast help' for more info
clear snmp           Clear SNMP, use 'clear snmp help' for more info
clear trunk          Clear trunk port
Console> (enable)
```

See also **set help** and **show help**.

clear ip

Use the **clear ip** command to clear IP information. Use the **clear ip alias** command to clear aliases of IP addresses. Use the **clear ip route** command to clear the IP route table entries. Use the **clear ip helper** to clear the helper IP address from a particular VLAN. It is only available in privileged mode. Following is a sample display:

```
Console> (enable) clear ip help
Commands:
-------------------------------------------------------------------
clear ip alias       Clear aliases of IP Addresses
clear ip help        Show this message
clear ip helper      Clear helper IP Address
clear ip route       Clear IP route table entries
Console> (enable) clear ip alias
Usage: clear ip alias all
       clear ip alias <name>
Console> (enable) clear ip alias mars
IP alias deleted.
Console> (enable) clear ip alias all
All IP aliases deleted.
Console> (enable) clear ip helper
Usage: clear ip helper <vlan> [helper_vlans]
       (vlan = 1..1000,
        an example of vlans is 1,100-105,865)
Console> (enable)
Console> (enable) clear ip helper 865 198.133.219.40
IP helper address cleared.
Console> (enable) clear ip route
Usage: clear ip route all
       clear ip route <destination> <gateway>
       (destination and gateway are ip alias or IP address in
        dot notation: a.b.c.d)
Console> (enable) clear ip route default elvis
Route deleted.
Console> (enable)
```

See also **set ip alias** and **show ip**.

clear log

Use the **clear log** command to clear the system error log. Following is a sample display:

```
Console> (enable) clear log
System error log cleared.
Console> (enable)
```

See also **show log**.

clear multicast

Use the **clear multicast** command to clear an IP multicast group or all IP multicast groups. Following is a sample display:

```
Console> (enable) clear multicast group
Usage: clear multicast group <ip_address|all>
       (ip_address is ip alias or IP address in dot notation: a.b.c.d)
Console> (enable) clear multicast group 224.2.0.1
IP multicast group 224.2.1 cleared.
Console> (enable)
```

See also **set multicast group** and **show multicast**.

clear snmp help

Use the **clear snmp trap help** command to display the **clear snmp** commands. Following is a sample display:

```
Console> (enable) clear snmp help
Clear snmp commands
----------------------------------------------------------------------
clear snmp help       Show this message
clear snmp trap       Clear SNMP trap receiver address
Console> (enable)
```

clear snmp trap

Use the **clear snmp** command to clear an entry from the SNMP trap receiver table. Following is a sample display:

```
Console> (enable) clear snmp trap
Usage: clear snmp trap all
       clear snmp trap <rcvr_address>
       (rcvr_address is ip alias or IP address in dot notation:a.b.c.d)
Console> (enable) clear snmp trap 192.122.173.82
SNMP trap receiver deleted.
Console> (enable)
```

See also **set snmp help** and **show snmp**.

clear trunk

Use the **clear trunk** command to clear partial information in the trunk port table or convert trunk link back to bridge ports. This command disables transitencapsulation if the mode is on. If VLANs are specified, only those VLANs are cleared from the trunk port table. When all VLANs in the trunk port are cleared, the port automatically converts back to a regular bridge port. Following is a sample display:

```
Console> (enable) clear trunk help
Usage: clear trunk [vlans]
       (An example of vlans is 1,3,865-869)
Console> (enable) clear trunk
Port 1 no longer a trunk port
```

See also **set trunk** and **show trunk**.

configure Command

Use the **configure network** command to download a configuration batch file (designated by filename) from a TFTP server (designated by the server) and then execute the commands in the file. Following is a sample display of the **configure** command:

```
Console> (enable) configure ?
Usage: configure network
       configure terminal
       configure <host> <file>
Console> (enable) configure cres new.cfg
```

If the server is not specified, the default is the first entry in the SNMP trap receiver table.

The **configure terminal** command prompts you to use the **set** commands to configure the system. Following is a sample display:

```
Console> (enable) configure terminal
This function provided by set commands. Use 'set help' for more info.
Console> (enable)
```

Configuration files are simply multiple Catalyst commands collected in a file. Each Catalyst command is entered on one line. The file should be delimited by begin and end statements and may have comments (identified by a pound sign [#]) as the first character on the line; however, comments must be on lines by themselves. Some commands prompt you for input or confirmation. With input commands, responses should follow the command on the next line(s) to ensure proper operation.

Note   Some confirmations prompted for in a Telnet session are not in EIA/TIA-232 connection sessions.

Configuration files should consist only of ASCII text, and should not be larger than 4,608 bytes (4.5 KB).

Following is a sample configuration:

```
show time
set ip alias conc7 198.103.219.207
set ip alias montreux 198.103.219.40
set ip alias cres 192.102.174.42
set prompt catalyst5>
set password
#empty string old password

pingpong
pingpong
end
#
```

Following is a sample admin. session:

```
Usage: configure network
       configure terminal
       configure <host> <file>
Console> (enable) configure 192.122.174.42 catalyst5.cfg

Configure using catalyst5.cfg from 192.122.174.42 (y/n) [n]? y
>> show time
Wed Mar 30 1994, 17:42:50
>> set ip alias conc7 198.133.219.207
IP alias added.
>> set ip alias montreux 198.133.219.40
IP alias added.
>> set ip alias cres 192.122.174.42
IP alias added.
>> set prompt catalyst5>
>> set password
Enter old password:
Enter new password: pingpong
Retype new password: pingpong
Password changed.
catalyst5> (enable)
```

When you enter the **configure network** command, you are prompted for the host server, then for the configuration filename.

copy Command

Use the **copy** command to copy data movement processor (DMP) or network management processor (NMP) image files between the network host and Flash memory using the TFTP protocol. Following is a sample display:

```
Console> (enable) copy
Usage: copy tftp <nmp|dmp>
       copy <nmp|dmp> tftp
Console> (enable) copy nmp tftp
IP address or name of host? happy
Name of file to copy to? nmpflash.31
Upload NMP image to nmpflash.31 on happy (y/n) [n]? y
Done.
Console> (enable) copy tftp nmp
IP address or name of host? happy
```

```
Name of file to copy from? nmpflash.31
This command will disconnect your telnet session.
Download NMP image nmpflash.31 from happy (y/n) [n]? y
Connection closed by foreign host.
%
```

disable

Use the **disable** command to turn off enable mode, as follows:

```
Console> (enable) disable
Console>
```

See also the "enable Command " section.

disconnect Command

Use the **disconnect** command to temporarily disconnect the FDDI port from the FDDI ring
temporarily without disconnecting the FDDI cables. The default is connect. Following is a
sample display:

```
Console> (enable) disconnect
Usage: disconnect <fddi|admin|host>
Console> (enable) disconnect fddi
This command will disconnect the switch from the FDDI ring.
Do you want to continue (y/n) [n]? y
Disconnected from FDDI ring.
Console> (enable) disconnect 198.134.214.4
Telnet session 198.134.214.4 disconnected.
Console> (enable)
```

See also "copy Command" section.

download Command

Use the **download** command to download code to the network management processor (the default) or the data movement processor. Following is a sample display:

```
Console> (enable) download
Usage: download serial [nmp|dmp]
       download <host> <file> [nmp|dmp]
       (nmp=network management processor, dmp=data movement processor,
        serial downloads via the administration RS-232 port,
        host is ip alias or IP address: a.b.c.d for a network download)
Console> (enable) download happy nmpflash.31 nmp
This command will disconnect your telnet session.
Download NMP image nmpflash.31 from happy (y/n) [n]? y
Connection closed by foreign host.
%
```

Caution If the SUM port is also connected to the TFTP server while you are downloading an image file, you must disconnect the SUM port to avoid creating a loop condition.

enable Command

Use the **enable** command to turn on privileged mode. Certain commands are available, and certain displays have extra information in privileged mode.

Note The designation (enable) indicates both privileged commands and that the system is in privileged mode.

Following is a sample display:

```
Console> enable
Enter password:
Console> (enable)
```

See also the "clear Commands" section.

help Command

Use the **help** command to display the following information in normal mode:

```
Console> help
Commands:
----------------------------------------------------------------------
enable              Enable privileged mode
help                Show this message
history             Show contents of history substitution buffer
ping                Send echo packets to hosts
quit                Exit out of the console
set                 Set, use 'set help' for more info
show                Show, use 'show help' for more info
wait                Wait for x seconds
```

Use the **help** command to display the following information in privileged mode:

```
Console> (enable) help
Commands:
----------------------------------------------------------------------
clear               Clear, use 'clear help' for more info
configure           Configure system from terminal/network
connect             Connect to FDDI ring
copy                Copy code to/from processors
disable             Disable privileged mode
disconnect          Disconnect from FDDI ring or disconnect user session
download            Download code to a processor
enable              Enable privileged mode
help                Show this message
history             Show contents of history substitution buffer
ping                Send echo packets to hosts
quit                Exit out of the console
reset               Reset the system
set                 Set, use 'set help' for more info
show                Show, use 'show help' for more info
slip                Attach/detach Serial Line IP interface
test                Test, use 'test help' for more info
tmulti              Multicast Test
smulti              sh multicast stats
testmulti           test multi stuff
upload              Upload code to a processor
wait                Wait for x seconds
write               Write system configuration to terminal/network
```

history Command

Use the **history** command to display the contents of the history substitution buffer, as follows:

```
Console> (enable) history
       1 enable
       2 set prompt Console>
       3 set interface ?
       4 show netstatt
       5 show netstat
       6 show interface
       7 exnable
       8 enable
       9 enable ?
      10 ?
      11 history
      12 enable
      13 help
      14 show macstatus ?
      15 enable
      16 ?
      17 enable
      18 history
Console> (enable)
```

ping Command

Use the **ping** command to send Internet Control Message Protocol (ICMP) echo packets to another node on the network. Following is a sample display:

```
Console> ping ?
Usage: ping <host>
       ping -s <host> [packet_size] [packet_count]
       (host is ip alias or IP address in dot notation:
       a.b.c.d)
Console> ping elvis
Console> 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>
```

Following are options of the **ping** command:

- **-s**—sends 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.

Note Enter **Ctrl-C** to stop pinging.

- *packet size* and *packet count*—Specifies a packet size and the number of packets to send. Packet sizes range 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.

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 did not find a corresponding entry in the route table.

Note If you assigned an IP alias to a host address (see "**set ip alias**" later in this appendix), you can specify this alias in the **ping** command instead of in the IP address.

---

quit Command

Use the **quit** command to quit the current admin. interface session, as follows:

```
Console> quit
Connection closed by foreign host.
```

reset Command

Use the **reset** command to reset the system. This command is available only in privileged mode.Following is a sample display:

```
Console> (enable) reset
This command will reset the system and disconnect your telnet session.
Do you want to continue (y/n) [n]? y
Connection closed by foreign host.
```

set Commands

Table C-3 lists the **set** commands.

Table C-3   set Commands

Command	Description	Mode[1]
set alias	Sets an alias for a command	P
set arp	Sets an ARP table entry	P
set bridge help	Shows the set bridge help screen	
set bridge ipx	Sets the default mode for translating IPX packets when bridging between two different network types	
set bridge vlan	Groups ports into bridge VLANs	
set cam	Sets a CAM table entry	P
set cdp disable	Sets CDP configuration[2]	P
set cdp enable	Sets the Cisco MTU Discovery Protocol variables	
set cdp help	Shows the cdp help screen	

Command	Description	Mode[1]
set cdp interval	Sets the number of seconds between CDP messages.	
set enablepass	Sets the privileged password	P
set fddi alarm	Sets the LER[3] alarm value	P
set fddi cam	Sets FDDI CAM mode	P
set fddi cutoff	Sets the LER-Cutoff value	
set fddi help	Shows the fddi help screen	P
set fddi tlmin	Sets the port tl_min	P
set fddi tnotify	Sets the system SMT T-Notify	P
set fddi treq	Sets MAC T-Request	P
set fddi userdata	Sets System SMT user data	P
set filter	Sets custom filtering	P
set help	Uses **set help** for **set** command information	P
set interface	Sets the network interface configuration	P
set ip alias	Sets an alias for an IP address	P
set ip forwarding	Sets the router IP forwarding enable/disable	P
set ip fragmentation	Sets the bridge IP fragmentation enable/disable	P
set ip help	Shows the IP help screen	P
set ip helper	Sets the IP helper address	P
set ip redirect	Sets the ICMP redirect message enable/disable	P
set ip rip	Sets the router RIP [4]enable/disable	P
set ip route	Sets the IP route table entry	P
set ip unreachable	Sets the ICMP unreachable message enable/disable	P
set ip vlan	Sets the IP VLAN	P
set length	Sets terminal display line, 0 to disable	P
set mac	Sets the MAC address	P

Command	Description	Mode[1]
set multicast agingtime	Sets the multicast IGMP agingtime	P
set multicast disable	Sets the multicast IGMP disable	P
set multicast enable	Sets the multicast IGMP enable	P
set multicast group	Sets the multicast group	P
set multicast help	Shows the multicast help screen	P
set multicast router	Sets the multicast router on port	P
set password	Sets the console password	P
set port disable	Disables a port	P
set port enable	Enables a port	P
set port help	Shows the port help screen	P
set port name	Sets the port name	P
set prompt	Sets a prompt you designate	P
set snmp community	Sets a SNMP community string	P
set snmp help	Show the SNMP help screen	P
set snmp rmon	Sets an SNMP RMON enable/disable	P
set snmp trap	Sets a SNMP trap receiver address	P
set span	Sets switch port analyzer	P
set spantree disable	Disables a spanning tree	P
set spantree enable	Enables a spanning tree	P
set spantree fwddelay	Sets the spanning tree forward delay	P
set spantree hello	Sets the spanning tree hello time	P
set spantree help	Shows the spanning tree help screen	P
set spantree maxage	Sets the spanning tree maximum aging time	P
set spantree portcost	Sets the spanning tree port cost	P
set spantree portpri	Sets the spanning tree port priority	P
set spantree priority	Sets the spanning tree priority	P
set system baud	Sets the admin. port baud rate	P

Command	Description	Mode[1]
set system contact	Sets the system contact	P
set system help	Shows the system help screen	P
set system location	Sets the system location	P
set system modem	Sets the system modem control (enable/disable)	P
set system name	Sets the system name	P
set time	Sets the time	P
set trunk	Configures ports to perform as links	P

1. P = privileged.
2. CDP = Cisco Discovery Protocol
3. LER = Link Error Rate
4. RIP = Routing Information Protocol

set alias

Use the **set alias** command to add shorthand versions of command invocations. The maximum number of aliases that can be defined is 20. The aliases listed in Table C-4 are predefined. Following is a sample display:

```
Console> (enable) set alias help
Usage: set alias <name> <command> [parameter] [parameter] ...
Console> (enable) set alias set sysloc set system location
Failed to add command alias.
set is a reserved word.
Console> (enable) set alias sysloc set system location
Command alias added.
Console> (enable) sysloc san francisco
System location set.
```

Table C-4   alias Commands

Alias	Command Invocation
di	**display**
exit	**quit**
logout	**quit**
netdownload	**download**
resetclr	**clear config**

Following is a sample display:

```
Console> (enable) set alias arpDelete
Command alias added.
Console> (enable)
```

See also **clear alias** and **show alias**.

set arp

Use the **set arp** command to add ARP table entries. To add an ARP entry, use the command **set arp** *ip_address hardware_address*, where *ip_address* is the IP address to add, and *hardware_address* is the hardware address associated with the IP address. Following is a sample display:

```
Console> (enable) set arp 198.133.219.232 00:40:0b:40:bc
Arp entry added
Console> (enable)
```

See also **clear arp** and **show arp**.

set bridge help

Use the **set bridge help** command to show the following display in privileged mode:

```
Console> (enable) set bridge help
Set bridge commands:
----------------------------------------------------------------------
set bridge help              Show this message
set bridge ipx               Set default IPX translation
set bridge vlan              Set bridge Virtual LAN
```

set bridge ipx

As a normal function, the Catalyst 1200 series switch can forward Internetwork Packet Exchange (IPX) packets received on FDDI ports to Ethernet ports, or it can forward IPX packets received on Ethernet ports to FDDI ports. To do this, the switch must be configured for specific IPX protocol translations. By default, the following IPX protocol translations are configured:

- FDDI SNAP to Ethernet 802.3 RAW

- FDDI 802.2 to Ethernet 802.3

- Ethernet 802.3 RAW to FDDI SNAP

You can customize these settings if your environment requires it. Following is a sample display:

```
Console> (enable) set bridge help
Set bridge commands:
----------------------------------------------------------------------
set bridge help              Show this message
set bridge ipx               Set default IPX translation
set bridge vlan              Set bridge Virtual LAN
Console> (enable) set bridge ipx
Usage: set bridge ipx snaptoether <8023|SNAP|EII|8023RAW>
       set bridge ipx 8022toether <8023|SNAP|EII|8023RAW>
       set bridge ipx 8023rawtofddi <8022|SNAP|FDDIRAW>
Console> (enable) set bridge ipx snaptoether 8023RAW
snaptoether translation set
Console> (enable)
```

set bridge vlan

Use the **set bridge vlan** command to group ports into a bridge VLAN. This command is only available in privileged mode. The default setting is all ports (FDDI port 1 and Ethernet ports 3 through 10) in bridge VLAN 1. Following is a sample display:

```
Console> (enable) set bridge vlan
Usage: set bridge vlan <vlan> <ports>
       (vlan = 1..1000,
        an example of ports is 1,3-5,9)
Console> (enable) set bridge vlan 10 1,3,9
Bridge-Vlan   Ports
-----------   --------------------
10            1,3,9

Console> (enable)
```

set cam

Use the **set cam** command to add CAM table entries in the switch. CAM allows you to assign addresses to particular ports in the switch. Following is a sample display:

```
Console> (enable) set cam
Usage:
set cam agingtime <vlan> <agingtime>
set cam dynamic [fddi] <mac_addr> <destport> [vlan]
set cam <static|permanent> [fddi] <mac_addr> <srcports> <destports>
(agingtime = 0..1000000 seconds, 0 to disable agingtime,
 mac_addr should be of the form aa-bb-cc-dd-ee-ff)
Console> (enable) set cam agingtime 1 200
Vlan 1 CAM aging time set to 200 seconds.
Console> (enable) set cam dynamic 00-11-22-22-11-00 7 1
CAM entry added.
Console> (enable) set cam static 00-11-22-33-44-55 3 6 1
CAM entry added.
```

See also **clear cam** and **show cam**.

set cdp disable

Use the **set cdp disable** command to disable the Cisco MTU Discovery protocol.See the section "Maximum Transmission Unit (MTU) Discovery" in the chapter "Feature Configuration" for a detailed explanation. Following is a sample display:

```
Console> (enable) set cdp disable
Usage: set cdp disable all
       set cdp disable <ports...>
       (An example of ports is 1,3-5,10)
Console> (enable) set cdp disable all
CDP disabled for all ports.
```

See also **show cdp**.

set cdp enable

Use the set cdp enable command to set the Cisco MTU Discovery protocol variables. See the section "Maximum Transmission Unit (MTU) Discovery" in the chapter "Feature Configuration" for a detailed explanation. The default CDP variables are message interval every 30 seconds, enabled. Following is a sample display:

```
Console> (enable) set cdp enable
Usage: set cdp enable all
       set cdp enable <ports...>
       (An example of ports is 1,3-5,10)
Console> (enable) set cdp enable all
CDP enabled for all ports.
Console> (enable)
```

See also **show cdp**.

set cdp help

Use the **set cdp help** command to show the following message in privileged mode.
Following is a sample display follows:

```
Console> (enable) set cdp help
Set cdp commands:
----------------------------------------------------------------------
set cdp disable          Disable CDP messages on ports
set cdp enable           Enable CDP messages on ports
set cdp help             Show this message
set cdp interval         Set CDP message interval
Console> (enable)
```

set cdp interval

Use the set cdp interval command to set the number of seconds between CDP messages.
The interval can be specified by port. Following is a sample display:

```
Console> (enable) set cdp interval
Usage: set cdp interval all <interval>
       set cdp interval <ports> <interval>
       (interval = 5..900 seconds,
        an example of ports is 1,3-5,10)
Console> (enable) set cdp interval 1 300
CDP message interval set to 300 seconds for ports 1.
Console> (enable)
```

set enablepass

Use the **set enablepass** command to change the privileged level password on the user
interface. Following is a sample display:

```
Console> (enable) set enablepass
Enter old password:
Enter new password:
Retype new password:
Password changed.
Console> (enable)
```

> **Note**   You can enter a zero-length password by pressing **Return** at the enter new password prompt.

---

set fddi alarm

Use the **set fddi alarm** command to set the LER-Alarm value. This value defines the link error rate (LER) at which a link connection exceeds a preset alarm threshold and is used in the link error rate threshold test. The default setting of 8 (10^{-8}) link errors per second is sufficient for most networks. Following is a sample display:

```
Console> (enable) set fddi alarm
Usage: set fddi alarm <port_num> <value>
       (port_num = 1..2, value = 4..15)
Console> (enable) set fddi alarm 1 10
Port Ler-Alarm set.
Console> (enable)
```

set fddi cam

Use the **set fddi cam** command to set the hardware CAM for filtering or forwarding. The default is enabled. Following is a sample display:

```
Console> (enable) set fddi cam
Usage: set fddicam [filter|forward]
Console> (enable) set fddi cam forward
This command will put the FDDI CAM in forwarding mode and reset the system.
Do you want to continue (y/n) [n] y?
FDDI cam forwarding enabled.
Console> (enable) set fddi cam filter
This command will put the FDDI cam in filtering mode and reset the system.
Do you want to continue (y/n) [n]? y
FDDI cam filtering enabled.
```

set fddi cutoff

Use the **set fddi cutoff** command to set the LER-Cutoff value. This value determines the link error rate (LER) at which a connection will be flagged as faulty. This value is used in the link error rate threshold test. The default setting of 7 (10^{-7}) is sufficient for most networks. Following is a sample display:

```
Console> (enable) set fddi alarm
Usage: set fddi alarm <port_num> <value>
       (port_num = 1..2, value = 4..15)
Console> (enable) set fddi alarm 1 10
Port Ler-Alarm set.
Console> (enable) set fddi cutoff
Usage: set fddi cutoff <port_num> <value>
       (port_num = 1..2, value = 4..15)
Console> (enable) set fddi cutoff 1 10
Port Ler-Cutoff set.
Console> (enable)
```

set fddi help

Use the **set fddi help** command to show the following message in privileged mode. Following is a sample display follows:

```
Console> (enable) set fddi help
Set fddi commands:
--------------------------------------------------------------------
set fddi alarm            Set port ler-alarm
set fddi cam              Set FDDI CAM mode
set fddi cutoff           Set port ler-cutoff
set fddi help             Show this message
set fddi tlmin            Set port tl_min
set fddi tnotify          Set system SMT T-Notify
set fddi treq             Set MAC T-Request
set fddi userdata         Set system SMT User Data
Console> (enable)
```

set fddi tlmin

Use the **set fddi tlmin** command to change the TL_MIN timer value for an FDDI port. The TL_MIN parameter sets the minimum time to transmit a Physical Layer Protocol (PHY) line state before advancing to the next physical connection management (PCM) state. This setting affects the station and switch interoperability and might hinder the implementation of FDDI repeaters. By default, the TL_MIN parameter is set to 40 microseconds. Following is a sample display:

```
Console> (enable) set fddi tlmin
Usage: set fddi tlmin <port_num> <time>
(time = 40..1340006 usec)
Console> (enable) set fddi tlmin 1 40
Port 1 tl_min set to 40 usecs.
CAT2> (enable)
Console> (enable)
```

set fddi tnotify

Use the **set fddi tnotify** command to change the TNotify timer value for an FDDI ring. The TNotify parameter sets the interval (in seconds) between neighbor notification frames. These frames are sent out to notify neighboring devices of FDDI module MAC addresses. The default setting (30 seconds) is usually sufficient. Following is a sample display:

```
Console> (enable) set fddi tnotify
Usage: set fddi tnotify <time>
(time = 2..30 seconds)
Console> (enable) set fddi tnotify 16
System SMT T-Notify set.
Console> (enable)
```

set fddi treq

Use the **set fddi treq** command to change the TReq value for an FDDI ring.The TRequest parameter specifies the FDDI switch value for the Token Ring Timer (TRT) for negotiating the TRT with other stations. The TRT is used to control ring scheduling during normal operation and to detect and recover from serious ring error situations. When the TRT value expires, the station uses the TRequest value to negotiate with other stations for the lowest value. The default setting of 165,000 microseconds is sufficient for most networks.

Following is a sample display:

```
Console> (enable) set fddi treq
Usage: set fddi treq <time>
(time = 2502..16500 usec)
Console> (enable) set fddi treq 165000
MAC T-Request set.
Console> (enable)
```

set fddi userdata

Use the **set fddi userdata** command to configure the user data string in the SMT MIB. It is
only available in privileged mode. The default value is WorkGroup Stack. The user data
string is useful for identifying the FDDI module or Catalyst 1200 series switch when using
a management tool to configure and maintain an internetwork or when accessing the FDDI
module remotely. The user data string can be a term identifying the function of the network
node or the users connected to the network node. Following is a sample display:

```
Console> (enable) set fddi userdata
Usage: set fddi userdata [userdata_string]
Console> (enable) set fddi userdata Fred's Switch
System SMT User Data set.
Console> (enable)
```

set filter

Use the **set filter** command to selectively receive frames based on criteria other than source
address, for example, frame contents, vendor code, or protocol type. Custom filtering
operates after the frame is received (after a CAM reject/receive decision). It does not
override the forwarding information in the CAM. See the section "Access Lists With
Broadcast Suppression" in the chapter "Feature Configuration" for detailed configuration
examples.

Note The **set filter** command is used to filter packets received at the port. It also does not
filter packets transmitted from the port.

The filtering types are as follows:

- MAC layer address

- Vendor code

- Protocol type

- User defined access lists

- Broadcast and multicast packets

The **set filter** command sets the custom port filter variables used to allow access list filtering.

Following is a sample display:

```
Console> (enable) set filter help
Commands:
----------------------------------------------------------------------
set filter macaddress        Set MAC address filter
set filter vendor            Set Vendor ID filter
set filter protocol          Set protocol type filter
set filter test              Set tests for complex filter
set filter complex           Set complex filter
set filter broadcast         Set broadcast packets per second
```

The variables are as follows:

- **macaddress**, *port _number mac _address* **permit | deny**

- **vendor**, *port_number vendor_id* **permit | deny**

- **protocol**, *port _number protocol_type* **permit | deny**

- **test** *port_number test_number offset value mask*

- **complex** *port_number expression*

- **broadcast** *port_number packets_per_second*

Following is a sample display:

```
Console> (enable) set filter macaddress
Usage: set filter macaddress <ports> <mac_address> [permit|deny]
Console> (enable) set filter macaddress 3 00:40:0b:00:00:0c deny
Mac address filter added on port 3.
Console> (enable)
Console> (enable) set filter vendor
Usage: set filter vendor <ports> <vendor_id> [permit|deny]
Console> (enable) set filter vendor 3 00:40:0b deny
Vendor filter added on port 3.
Console> (enable)
Console> (enable) set filter protocol
Usage: set filter protocol <ports> <protocol_type> [permit|deny]
Console> (enable) set filter protocol 3 0800 deny
Protocol filter added on port 3.
Console> (enable)
Console> (enable) set filter test
Usage: set filter test <ports> <test_number> <offset> <value> <mask>
Console> (enable) set filter test 3 1 0x18 0x0000c07a 0x0000ffff
Tests for complex filter added on port 3
Console> (enable) set filter test 3 2 0x1c 0x00050000 0xffff0000
Tests for complex filter added on port 3
Console> (enable) set filter test 3 3 0x0c 0x81370000 0xffff0000
Tests for complex filter added on port 3
Console> (enable)
Console> (enable) set filter complex
Usage: set filter complex <ports> <expression>
     (expression consists of <test_number>s together with parenthesis and
       the logical operators: '&'(and), '|'(or), '!'(not))
Console> (enable) set filter complex 3 !((1&2)|3)
Complex filter added for port 3
Console> (enable)
Console> (enable) set filter broadcast
Usage: set filter broadcast <ports> <packets_per_second>
Console> (enable) set filter broadcast ?
Broadcast filter must be in the range 0..150000
Console> (enable) set filter broadcast 3 100
Broadcast packets limited to 100 packets/second on port 3.
Console> (enable) clear filter broadcast 3
Broadcast filter on port 3 cleared
Broadcast packets unlimited on port 3
Console> (enable)
```

See also **clear filter** and **show filter**.

set help

Use the **set help** command to display all **set** commands and brief descriptions of their usage. Following is a sample display:

```
Console> (enable) set help
Commands:
----------------------------------------------------------------------
set alias        Set alias for command
set arp          Set ARP table entry
set bridge       Set bridge, use 'set bridge help' for more info
set cam          Set CAM table entry
set cdp          Set cdp, use 'set cdp help' for more info
set enablepass   Set the privilege password
set fddi         Set FDDI, use 'set fddi help' for more info
set filter       Set custom filter, use 'set filter help' for more info
set help         Show this message
set interface    Set network interface configuration
set ip           Set IP, use 'set ip help' for more info
set length       Set number of lines in display, 0 to disable 'more'
set mac          Set MAC, use 'set mac help' for more info
set multicast    Set multicast, use 'set multicast help' for more info
set password     Set the console password
set port         Set port, use 'set port help' for more info
set prompt       Set prompt
set snmp         set SNMP, use 'set snmp help' for more info
set span         Set switch port analyzer
set spantree     Set spantree, use 'set spantree help' for more info
set system       Set system, use 'set system help' for more info
set time         Set time
set trunk        Set FDDI port to be trunk port
Console> (enable)
```

set interface

Use the **set interface** command to configure network interfaces by assigning network addresses, subnet masks, broadcast addresses, and destination addresses for FDDI, Ethernet, and SLIP interfaces. You can also use the **set interface** command to bring the interface up or down.

Following are the interface types:

- sc0 (SUM port)—Assign the Catalyst 1200 series switch IP address to this interface type.

- sl0—Use this interface type when configuring an SLIP connection on the switch.

Note   After SLIP is enabled on the admin. port, an EIA/TIA-232 terminal cannot access the Catalyst Switch through this port.

- lo0—Use this interface type to configure an internal loopback for the switch.

- 1, 3 through 10—Use the port number to assign an IP address to a specific port. Port 1 is the FDDI port. Ports 3 through 10 are Ethernet ports. See the section "Virtual Network Services (VNS)" in the chapter "Feature Configuration" for a detailed IP address assignment description.

Note   Multiple route groups require different IP addresses.

The interface defaults are:

- ip_address—0.0.0.0

- netmask—255.0.0.0

- broadcast—0.0.0.0

Following is a sample display:

```
Console> (enable) set interface
Usage: set interface <if_name|if_number> <ip_address> <net_mask> [broadcast_address]
       set interface <if_name> <slip_address> <dest_address>
       set interface <if_name|if_number> <up|down>
Console> (enable) set interface 4 192.200.0.44 255.255.255.0 192.200.0.255
Interface sc0 IP address, netmask and broadcast address set.
Console> (enable) set interface sl0 192.200.10.45 192.200.10.103
Interface sl0 IP address and netmask set
Console> (enable) set interface 5 up
Interface sc0 administratively up.
Console> (enable)
```

Changing the interface port setting to down has the following effects:

- All stations connected to that port through Telnet or ping sessions lose their connection

- Bridging and routing data originated by the station connected to the port are affected

- IP-routed traffic is blocked to the entire route group

See also **show interface**.

set ip alias

Use the **set ip alias** command to add aliases for IP addresses. An IP alias is a name you can assign to represent an IP address. You can define up to 50 aliases.

To set an IP alias, use **set ip alias** *name ip_address*, where *name* is the alias and *ip_address* is the IP address for which you are defining an alias. Following is a sample display:

```
Console> (enable) set ip alias
Usage: set ip alias <name> <ip_address>
Console> (enable) set ip alias bedrock 192.133.174.234
IP alias added.
Console> (enable)
```

See also **clear ip** and **show ip**.

set ip forwarding

Use the **set ip forwarding** command to enable or disable IP forwarding. The default is enabled. Following is a sample display:

```
Console> (enable) set ip forwarding
Usage: set ip forwarding <enable|disable>
Console> (enable) set ip forwarding enable
Routegroup IP forwarding enabled.
Console> (enable)
```

set ip fragmentation

Use the **set ip fragmentation** command to enable or disable IP fragmentation on the switch. Following is a sample display:

```
Console> (enable) set ip fragmentation ?
Usage: set ipfrag <enable|disable>
Console> (enable) set ip fragmentation enable
Bridge IP fragmentation enabled.
Console> (enable) set ip fragmentation disable
Bridge IP fragmentation disabled.
Console> (enable)
```

set ip help

Use the **set ip help** command to show the help information in privileged mode. Following is a sample display:

```
Console> (enable) set ip help
Commands:
-------------------------------------------------------------------
set ip alias          Set alias for IP Address
set ip forwarding     Set router IP forwarding enable/disable
set ip fragmentation  Set bridge IP fragmentation enable/disable
set ip help           Show this message
set ip helper         set IP helper address
set ip redirect       Set ICMP redirect message enable/disable
set ip rip            Set router RIP enable/disable
```

```
set ip route          Set router IP route table entry
set ip unreachable    Set ICMP unreachable message enable/disable
set ip vlan           Set IP Virtual LAN
```

See also **clear ip**.

set ip helper

Use the **set ip helper** command to set the helper IP address for a particular VLAN.
Following is a sample display:

```
Console> (enable) set ip helper
Usage: set ip helper <vlan> <helper_vlans>
       (vlan = 1..1000,
        an example of vlans is 1,100-105,865)
Console> (enable) set ip helper 1 2
IP Helper VLANs set for VLAN 1
Console> (enable) set ip helper 1 8
IP Helper VLANs set for VLAN 1
Console> (enable)
```

The values for this command are as follows:

- *vlan*—The number of the IP VLAN where the clients reside.

- *helper_vlans*—The number of the IP VLAN where the server resides.

set ip redirect

Use the **set ip redirect** command to enable or disable ICMP redirect messages for the entire
Catalyst 1200 series switch. The default is ICMP redirect messages enabled. Following is
a sample display:

```
Console> (enable) set ip redirect
Usage: set ip redirect <enable|disable>
Console> (enable) set ip redirect enable
ICMP redirect messages enabled.
Console> (enable)
```

set ip rip

Use the **set ip rip** command to enable or disable the IP RIP protocol for the entire Catalyst 1200 series switch. The default is RIP enabled. Following is a sample display:

```
Console> (enable) set ip rip
Usage: set ip rip <enable|disable>
Console> (enable) set ip rip enable
Router RIP enabled.
Console> (enable)
```

set ip route

Use the **set ip route** command to add route table entries. The default metric value is 1. Following is a sample display:

```
Console> (enable) set ip route
Usage: set ip route <destination> <gateway> [metric]
       (destination and gateway are ip alias or IP address in
        dot notation: a.b.c.d)
Console> (enable) set ip route 0.0.0.0 192.122.173.42 1
Route added.
Console> (enable)
```

set ip unreachable

Use the **set ip unreachable** command to enable or disable the ICMP unreachable message for the entire Catalyst 1200 series switch. The default is ICMP unreachable messages enabled. Following is a sample display:

```
Console> (enable) set ip unreachable
Usage: set ip unreachable <enable|disable>
Console> (enable) set ip unreachable enable
ICMP unreachable messages enabled
Console> (enable)
```

set ip vlan

Use the **set ip vlan** command to group ports for IP routing protocols. All IP traffic is bridged within a VLAN and routed between VLANs. The VLAN ranges from 1 to 1000. The default is to have all ports in IP VLAN 1 for IP traffic. Following is a sample display:

```
Console> (enable) set ip vlan
Usage: set ip vlan <vlan> [ports] [<ip_address> <net_mask> [broadcast]]
       (vlan = 1..1000,
        an example of ports is 1,3-5,9)
Console> (enable) set ip vlan 1 3,7
IP-Vlan  Ports       IP-Address      Netmask         Broadcast       Helper-VLANs
----  ------------ --------------- --------------- --------------- ------------
1    1,3-5,7     192.122.174.102 255.255.255.0   192.122.174.255 2
Console> (enable) set ip vlan 1 10 198.219.135.123 255.255.255.0
1,3-5,7,10:  flags=863<UP,BROADCAST,RUNNING>
        inet 198.219.135.123 netmask 255.255.255.0 broadcast 198.219.135.255
IP-Vlan  Ports       IP-Address      Netmask         Broadcast       Helper-VLANs
----  ------------ --------------- --------------- --------------- ------------
1    1,3-5,7,10  198.219.135.123 255.255.255.0   198.219.135.255 2
Console> (enable)
```

set length

Use the **set length** command to set the maximum number of lines you want displayed on the terminal screen so that information does not scroll off the screen. A partial display ends with the following prompt:

```
--More--
```

At the prompt, press **Ctrl-C** to terminate the display, press the **space bar** to display the next full screen, or press the **Return** key to display the next line. Setting the value to 0 disables this feature. The default value is 100.

Following is a sample display:

```
Console> (enable) set length
Usage: set length <num>
          (Display length must be in the range 5..512)
Console> (enable) set length ?
Display length must be in the range 5..512
Console> (enable) set length 10
Display length set to 10.
Console> (enable) show system
Name                Model     Serial-Num Hw    Fw    DmpSw NmpSw
------------------- --------- ---------- ----- ----- ----- ------
system1             WS-C1201  000000001  1.0   1.0   3.1   3.1

Ps-Type Ps-Status   Fan-Status Minor-Alarm Major-Alarm Temp-Alarm
------- ----------- ---------- ----------- ----------- ----------
80w     ok          ok         off         off         off

--More--^C
```

set multicast agingtime

Use the **set multicast agingtime** command to set the IGMP aging time. The default IGMP aging is 180 seconds. Setting the value to 0 disables aging. Following is a sample display:

```
Console> (enable) set multicast agingtime
Usage: set multicast agingtime <agingtime>
        (agingtime = 0..1000000 seconds, 0 to disable aging)
Console> (enable) set multicast agingtime 2200
IGMP aging time set to 2200 seconds.
Console>
```

set multicast disable

Use the **set multicast disable** command to disable IGMP conditional filtering. The default is IGMP conditional filtering disabled. Following is a sample display:

```
Console> (enable) set multicast disable
Multicast IGMP conditional filtering disabled.
Console> (enable)
```

set multicast enable

Use the **set multicast enable** command to enable IGMP conditional filtering. Following is a sample display:

```
Console> (enable) set multicast enable
Multicast IGMP conditional filtering enabled.
Console> (enable)
```

set multicast group

Use the **set multicast group** command to configure multicast groups. The default is no multicast groups configured. Following is a sample display:

```
Console> (enable) set multicast group
Usage: set multicast group <ip_address> <ports>
       (An example of ports is 1,3-5,9,
        ip_address is ip alias or dotted decimal, e.g. a.b.c.d)
Console> (enable) set multicast group 224.2.0.1 1,3,5,6
Multicast group 224.2.0.1 set.
Console> (enable)
```

set multicast help

Use the **set multicast help** command to show the following display in privileged mode:

```
Console> (enable) set multicast help
Commands:
----------------------------------------------------------------------
set multicast agingtime    Set multicast IGMP agingtime
set multicast disable      Set multicast IGMP disable
set multicast enable       Set multicast IGMP enable
set multicast group        Set multicast group
set multicast help         Show this message
set multicast router       Set multicast router on port
Console> (enable)
```

See also **clear multicast** and **show multicast**.

set multicast router

Use the **set multicast route** command to configure which ports have IP multicast routers. The default value for all ports is dynamic. Following is a sample display:

```
Console> (enable) set multicast router
Usage: set multicast router <port_num> <router|norouter|dynamic>
       (Port num = 1..10)
Console> (enable) set multicast router 9 dynamic.
Multicast router information set.
Console> (enable)
```

set password

Use the **set password** command to change the password on the admin. interface. The default is **Return**, no password configured. You must be in privileged mode to modify the password. A sample display follows:

```
Console> (enable) set password
Enter old password:
Enter new password:
Retype new password:
Password changed.
Console> (enable)
```

Note   The password you enter does not echo on the screen.

---

set port disable

Use the **set port disable** command to disable a port. The default is enabled. Following is a sample display of a console port session:

```
Console> (enable) set port disable
Usage: set port disable <port_num>
Console> (enable) set port disable 10
Port 10 disabled.
Console> (enable)
```

Following is a sample display of a Telnet session:

```
Console> (enable) set port disable 10
This command may disconnect your telnet session.
Do you want to continue (y/n) [n]? y
Port 10 disabled.
Console> (enable) set port disable 2
This command may disconnect your telnet session.
Do you want to continue (y/n) [n]? y
<telnet session hangs>
```

set port enable

Use the **set port enable** command to enable or disable a port. The default is enabled.
Following is a sample display:

```
Console> (enable) set port enable
Usage: set port enable <port_num>
Console> (enable) set port enable 3
Port 3 enabled.
Console> (enable)
```

set port help

Use the **set port help** command to display the following:

```
Console> (enable) set port help
Commands:
----------------------------------------------------------------------
set port disable    Disable a port
set port duplex     Set port transmission type (full/half duplex)
set port enable     Enable a port
set port help       Show this message
set port name       Set port name
Console> (enable)
```

set port name

Use the **set port name** command to configure a name for a port. The default configuration has no port name configured for any port. If the name string is not specified, the port name is cleared. Following is a sample display:

```
Console> (enable) set port name
Usage: set port name <port_num> [name_string]
Console> (enable) set port name 1 Fred Grover
Port 1 name set.
Console> (enable)
```

set prompt

Use the **set prompt** command to change the administration interface prompt. Following is a sample display:

```
Console> (enable) set prompt ?
Usage: set prompt <prompt_string>
Console> (enable) set prompt Catalyst
Catalyst (enable)
```

set snmp community

Use the **set snmp community** command to set one of the four SNMP community strings. The default is a read-only community of "public," a read-write community of "private," and a read-write-all community of "secret." Following is a sample display:

```
Console> (enable) set snmp community
Usage: set snmp community <access_type> [community_string]
       (access_type = read-only|read-write|read-write-all)
Console> (enable) set snmp community read-write hocuspocus
SNMP read-write community string set.
Console> (enable) set snmp community read-only
SNMP read-only community string cleared.
Console> (enable)
```

set snmp help

Use the **set snmp help** command to display the following:

```
Console> (enable) set snmp help
Commands:
----------------------------------------------------------------------
set snmp community  Set SNMP community string
set snmp help       Show this message
set snmp rmon       Set SNMP RMON enable/disable
set snmp trap       Set SNMP trap receiver address
Console> (enable)
```

See also **clear snmp** and **show snmp**.

set snmp rmon

Use the **set snmp rmon** command to enable or disable SNMP RMON support. The default is RMON enabled and RMON *default_groups* disabled. If the *default_groups* are enabled, the system starts collecting the statistics. Following is a sample display:

```
Console> (enable) set snmp rmon
Usage: set snmp rmon [default_groups] <enable|disable>
Console> (enable) set snmp rmon enable
SNMP RMON support enabled.
Console> (enable) set snmp rmon disable
SNMP RMON support disabled.
Console> (enable) set snmp rmon default_groups enable
This command will restart the system for RMON Default Groups
re-configuration.
Do you want to continue? (y/n) [n]? n
Console> (enable)
```

set snmp trap

Use the **set snmp trap** command to enable, disable, or add an entry in the SNMP trap receiver table. Following is a sample display:

```
cat2-lnf> (enable) set snmp trap
Usage: set snmp trap <enable|disable> [all|chassis|bridge|auth]
       set snmp trap <rcvr_address> <rcvr_community>
Console> (enable) set snmp trap enable auth
SNMP authentication traps enabled.
Console> (enable) set snmp trap 192.122.173.42 public
SNMP trap receiver added.
Console> (enable)
```

set span

Use the **set span** command to allow individual port monitoring using SPAN. The variables are as follows:

- *source_port*— The port number to be monitored.

- *destination_port*—The port number where the mirrored port data is to be redirected.

- [**rx**|**tx**|**both**]—Receive, transmit, or both.

- **enable**|**disable**—The default is disabled.

Following is a sample display:

```
Console> (enable) set span
Usage: set span [<source_port> <destination_port> [rx|tx|both]]
[enable|disable]
Console> (enable) set span 5 6 tx
Enabled monitoring of port 5 transmit traffic by port 6
Console> (enable) set span disable
Disabled monitoring of port 5 transmit traffic by port 6
Console> (enable)
```

See also **show span**.

set spantree disable

Use the **set spantree disable** command to disable the spanning tree algorithm for a bridge VLAN. The default configuration has all spanning tree disabled. If the VLAN parameter is not specified, the default is VLAN 1. Following is a sample display:

```
Console> (enable) set spantree disable help
Usage: set spantree disable [vlans]
       (vlan = 1..1000,
        an example of vlans is 1,100-105,865)
Console> (enable) set spantree disable
VLAN 1 bridge spanning tree disabled.
Console> (enable)
```

set spantree enable

Use the **set spantree enable** command to enable the spanning tree algorithm for a bridge VLAN. The default configuration has all spanning tree disabled. If the VLAN parameter is not specified, the default is VLAN 1. Following is a sample display:

```
Console> (enable) set spantree enable ?
Usage: set spantree enable [vlans]
       (vlan = 1..1000,
        an example of vlans is 1,100-105,865)
Console> (enable) set spantree enable 1000
VLAN 1000 bridge spanning tree enabled.
Console> (enable)
```

set spantree fwddelay

Before a port is allowed to forward packets, it passes through three states: listening, learning, and forwarding. Use the **set spantree fwddelay** command to set the number of seconds that the bridge waits in each state before forwarding packets on a specific VLAN when a topology change has occurred. The default configuration has bridge forward delay set to 15 seconds for all VLANs. If the VLAN parameter is not specified, the default is VLAN 1.

Following is a sample display:

```
Console> (enable) set spantree fwddelay
Usage: set spantree fwddelay <delay> [vlans]
       (delay = 4..30 seconds, vlan = 1..1000,
        an example of vlans is 1,100-105,865)
Console> (enable) set spantree fwddelay 16 1000
VLAN 1000 bridge forward delay set to 16 seconds.
Console> (enable)
```

set spantree hello

Use the **set spantree hello** command to set the number of seconds that the switch waits before sending hello bridge protocol data units (BPDUs) for a bridge VLAN. The default configuration has hello time set to 2 seconds. If the VLAN parameter is not specified, the default is VLAN 1. Following is a sample display:

```
Console> (enable) set spantree hello
Usage: set spantree hello <hellotime> [vlans]
       (hellotime = 1..10 seconds, vlan = 1..1000,
        an example of vlans is 1,100-105,865)
Console> (enable) set spantree hello 2 1000
VLAN 1000 bridge hello time set to 2 seconds.
Console> (enable)
```

set spantree help

Use the **set spantree help** command to show the following display:

```
Console> (enable) set spantree
Commands:
----------------------------------------------------------------------
set spantree disable   Disable spanning tree
set spantree enable    Enable spanning tree
set spantree fwddelay  Set spantree forward delay
set spantree hello     Set spantree hello time
set spantree help      Show this message
set spantree maxage    Set spantree max aging time
set spantree portcost  Set spantree port cost
set spantree portpri   Set spantree port priority
set spantree priority  Set spantree priority
Console> (enable)
```

set spantree maxage

Use the **set spantree maxage** command to set the number of seconds that the bridge waits
to receive a hello frame before it declares itself as root. The default configuration is 20
seconds. If the VLAN parameter is not specified, the default is VLAN 1. Following is a
sample display:

```
Console> (enable) set spantree maxage
Usage: set spantree maxage <agingtime> [vlans]
        (agingtime = 6..40 seconds, vlan = 1..1000,
         an example of vlans is 1,100-105,865)
Console> (enable) set spantree maxage 20 1000
VLAN 1000 bridge max aging time set to 20 seconds.
Console> (enable)
```

set spantree portcost

Use the **set spantree portcost** command to set the bridge pathcost for a port. The default
configuration is fddi port cost = 10, 100Mbps Ethernet port cost = 10, and 10BaseT
Ethernet port cost = 100. Following is a sample display:

```
Console> (enable) set spantree portcost
Usage: set spantree portcost <ports> <cost>
        (port = 1..10, cost = 0..65535
         an example of ports is 1,3-5,10)
Console> (enable)
Console> (enable) set spantree portcost 1 10
Port 1 bridge pathcost set to 10.
Console> (enable)
```

set spantree portpri

Use the **set spantree portpri** command to set the bridge priority for a port in Spanning Tree Algorithm. Setting the port priority on a trunk port affects all VLAN ports that are enabled to use the trunk port. The default configuration has all ports with bridge priority set to 128. Following is a sample display:

```
Console> (enable) set spantree portpri
Usage: set spantree portpri <ports> <value>
       (port = 1..10, priority = 0..255
        an example of ports is 1,3-5,10)
Console> (enable) set spantree portpri 1 128
Port 1 bridge port priority set to 128.
Console> (enable)
```

set spantree priority

Use the **set spantree priority** command to set the bridge priority for a bridge VLAN. The default configuration has priority set to 32,768. If the VLAN parameter is not specified, the default is VLAN 1. Following is a sample display:

```
Console> (enable) set spantree priority
Usage: set spantree priority <bridge_priority> [vlans]
       (bridge_priority = 0..65535, vlan = 1..1000,
        an example of vlans is 1,100-105,865)
Console> (enable) set spantree priority 4096
VLAN 1 bridge priority set to 4096.
Console> (enable)
```

set system baud

Use the **set system baud** command to set the console port baud rate. The default value is 9,600 baud. Following is a sample display:

```
Console> (enable) set system baud
Usage: set system baud <rate>
       (rate = 600|1200|2400|4800|9600|19200|38400)
Console> (enable) set system baud 19200
System console port baud rate set.
Console> (enable)
```

set system contact

Use the **set system contact** command to set the system contact string. The default configuration has no system contact configured. If no *contact_string* is specified, the system contact is cleared. Following is a sample display:

```
Console> (enable) set system contact help
Usage: set system contact [contact_string]
Console> (enable) set system contact Luis x5529
System contact set.
Console> (enable)
```

set system help

Use the **set system help** command to show the following information in privileged mode:

```
Console> (enable) set system help
Commands:
-------------------------------------------------------------------
set system baud      Set system console port baud rate
set system contact   Set system contact
set system help      Show this message
set system location  Set system location
set system modem     Set system modem control (enable/disable)
set system name      Set system name
Console> (enable)
```

set system location

Use the **set system location** command to set the system location string. The default is no name configured. If no *location_string* is specified, the system location is cleared. Following is a sample display:

```
Console> (enable) set system location help
Usage: set system location [location_string]
Console> (enable) set system location Closet 230 4/F
System location set.
Console> (enable)
```

set system modem

Use the **set system modem** command to enable or disable modem control lines on the console port. The default configuration has modem control lines disabled. Following is a sample display:

```
Console> (enable) set system modem
Usage: set system modem <enable|disable>
Console> (enable) set system modem enable
Modem control lines enabled on console port.
Console> (enable) set system modem disable
Modem control lines disabled on console port.
Console> (enable)
```

set system name

Use the **set system name** command to configure a name for the system. The default configuration has no system name configured. If no *name_string* is specified, the system name is cleared. Following is a sample display:

```
Console> (enable) set system name help
Usage: set system name [name_string]
Console> (enable) set system name Support Group
System name set.
Console> (enable)
```

set time

User the **set time** command to change the time of day in the system clock. Following is a sample display:

```
Console> (enable) set time
Usage: set time [day_of_week] [mm/dd/yy] [hh:mm:ss]
Console> set time tue 5/10/94 13:25:55
Tue May 10 1994, 13:25:55
Console> (enable)
```

See also **show time**.

set trunk

Use the **set trunk** command to configure an FDDI port to be at trunk link. By default, the FDDI port is not a trunk port. Subsequent calls to the **set trunk** command on a port that is already a trunk link adds, but does not replace, VLANs to the port.

If the transit encapsulation mode is selected, all VLANs supported through 802.10 encapsulation are cleared and the trunk port is removed from any IP VLAN or bridge VLAN. The default is FDDI port in translational bridging mode, in other words, the transit encapsulation is disabled. Following is a sample display:

```
Console> (enable) set trunk
Usage: set trunk <vlans>
       set trunk transitencapsulation
        (An example of vlans is 1,100-105,865)
Console> (enable) set trunk 1-5,102
Trunk Port 1 created.
Port  VLANs allowed
1     1
Console> (enable)
Console> (enable) set trunk 1000
Trunk Port 1 modified.
Port   VLANs allowed
1      1-10,102,1000
Console> (enable) set trunk transitencapsulation
All VLANs supported via 802.10 encapsulation will be cleared.
The trunk port is removed from any IP Vlan/bridge Vlan.
Do you wish to continue [yes/no] [n]? y
Transit encapsulation mode enabled.
Console> (enable)
```

See also **clear trunk** and **show trunk**.

show Commands

Table C-5 lists the **show** commands.

Table C-5   show Commands

Command	Description	Mode[1]
show alias	Displays aliases of commands	N
show arp	Displays the ARP table	N
show bridge	Displays bridge information	N
show cam	Displays the CAM table	N
show cdp	Displays CDP[2] configuration	N
show filter	Displays custom filtering configuration	N
show help	Displays this help message	N
show interface	Displays network interfaces	N
show ip	Shows IP information	N
show log	Displays the system error log	P
show mac	Displays MAC information	N
show macdbg	Displays MAC debug information	P
show macreg	Displays MAC registers	P
show macstatus	Displays MAC status	P
show mbuf	Displays mbuf and malloc information[3]	P
show multicast	Displays IP multicasting configuration	N
show netstat	Displays network statistics	N
show port	Displays port information	N
show portreg	Displays port registers	P
show snmp	Displays SNMP information	P
show span	Displays switched port analyzer information	N
show spantree	Shows spanning tree information	N

Command	Description	Mode[1]
show system	Shows system information	N
show test	Displays the results of a diagnostic test	N
show time	Displays the time of day	N
show trunk	Shows trunk port information	N
show users	Show the users who are logged on	N
show version	Shows version information	P

1. N = normal, P = privileged.
2. CDP = Cisco Discovery Protocol
3. mbuf = memory fuffer, malloc = memory allocation.

show alias

Use the **show alias** command to display the shorthand versions of admin. interface commands. The first five aliases are predefined. Following is a sample display:

```
Console> show alias
di            display
exit          quit
logout        quit
netdownload   download
resetclr      clear config
arpdelete
Console>
```

See also **clear alias** and **set alias**.

show arp

Use the **show arp** command to display the ARP table entries that have been defined using the **set arp** command. Following is a sample display:

```
Console> (enable) show arp
Aging time = 1200 sec

default          at 00:40:0b:a0:99:89  on port 1
192.27.2.108     at 00:a0:24:01:53:e4  on port 1
192.27.2.110     at 08:00:20:72:a9:ef  on port 1
192.27.2.232     at 08:00:20:1a:72:bd  on port 1
192.27.2.107     at 08:00:20:22:ce:84  on port 1
192.27.2.106     at 00:40:0b:0c:60:3f  on port 1
192.27.2.100     at 08:00:20:72:4c:83  on port 1
10.0.0.3         at 00:40:0b:50:07:ff  on port 1
192.27.2.167     at 00:40:0b:50:93:ff  on port 1
192.27.2.103     at 00:00:00:00:02:31  on port 1
192.27.2.231     at 00:00:0c:ff:d8:1d  on port 1
Console> (enable)
```

See also **clear arp** and **set arp**.

show bridge

Use the **show bridge** command to display bridge information that was set using the **set bridge** command. The **show bridge optimization** command displays bridge optimization values. Following is a sample display:

```
Console> (enable) show bridge
IP fragmentation enabled
Default IPX translations:
    FDDI SNAP to Ethernet 802.3 RAW
    FDDI 802.2 to Ethernet 802.3
    Ethernet 802.3 Raw to FDDI SNAP

VLAN      Ports       Spannning Tree
-----     ------      --------------
1         1, 3-9      enabled
```

Following is a description of the display fields of the **show bridge** command:

- IP fragmentation enabled—The current configuration of the **set ip fragmentation** command.

- Default IPX translations:—The current configuration of the **set ip alias** command.

- Group—The bridge group number assigned to the ports.

- Ports—The ports assigned to the bridge group.

- Spanning tree enabled—The current configuration of the **set spantree enable** command.

- Designated Root—The unique bridge identifier of the bridge assumed to be the root.

- Designated Root Priority—The bridge identification priority field for the root bridge.

- Designated Root Cost—The cost of the path to the root from this bridge.

- Designated Root Port—The port identifier of the port that offers the lowest cost to the root bridge.

- Root Max Age—The age of a stored configuration message on the root bridge at which the stored configuration message is judged to be too old and is discarded.

- Root Hello Time—The elapsed time between the configuration messages generated by a bridge that assumes itself to be the root.

- Root Forward Delay—The time spent by a port in the listening and learning states.

- Bridge ID—The unique identifier of the bridge.

- Bridge ID Priority—A two-octet value that allows the network administrator to influence the choice of the root bridge and the designated bridge. This is the most significant portion of the bridge identifier.

- Bridge Max Age—The time value advertised by this bridge for deciding whether to discard spanning-tree frames based on message age.

- Bridge Hello Time—The time value advertised by this bridge for deciding the period between transmission of spanning-tree hello messages.

- Bridge Forward Delay—The time value advertised by this bridge for deciding the time delay that a port must spend in the listening and learning states.

- Port *n* field (where *n* is the port number 1 through 10). Following are the fields associated with each port field:

  — State—This can be any one the following five states: blocking, learning, listening, forwarding, or disabled.

  — Path Cost—A comparison between the contribution of the path through this port, when the port is the root port, and the total cost of the path to the root for this bridge.

  — Port Priority—A portion of the port identifier that can be updated by management action and is the most significant portion of the port identifier for that port.

show cam

Use the **show cam all** command to display the CAM table. Following is a sample display:

```
Console> (enable) show cam all 1
FDDI cam filtering enabled
VLAN 1: Aging time = 300 sec
VLAN 2: Aging time = 300 sec

VLAN Destination          Source    Destination     Protocol
Num. MAC Address          Port      Port            Type
---- -----------------    ------    --------------  ---------------
   0 00:40:0b:a0:a6:f0    any --->  1,3-5,7,10      ROUTE GROUP
   0 00:40:0b:a0:a6:f1    any --->  6,8,9           ROUTE GROUP
   0 00:40:0b:a0:a6:f9
                          1   --->  0               STATIC
                          3   --->  0               STATIC
                          4   --->  0               STATIC
                          5   --->  0               STATIC
                          6   --->  0               STATIC
                          7   --->  0               STATIC
                          8   --->  0               STATIC
                          9   --->  0               STATIC
                          10  --->  0               STATIC
   0 01:00:0c:cc:cc:cc
                          1   --->  0               CDP
                          3   --->  0               CDP
                          4   --->  0               CDP
                          5   --->  0               CDP
                          6   --->  0               CDP
                          7   --->  0               CDP
                          8   --->  0               CDP
```

```
                                9  --->   0                    CDP
                               10  --->   0                    CDP
         1 01:80:c2:00:00:00
                                1  --->   0                    STATIC
                                3  --->   0                    STATIC
                                4  --->   0                    STATIC
                                5  --->   0                    STATIC
                                6  --->   0                    STATIC
                                7  --->   0                    STATIC
                                8  --->   0                    STATIC
                                9  --->   0                    STATIC
                               10  --->   0                    STATIC
    Matching CAM entries = 5
```

Following are descriptions of the display fields of the **show cam** command:

- Destination MAC Address—The destination MAC address in the packets to be bridged.

- Source Port—The switch port on which a bridged packet is received.

- Destination Port—The port to which the bridged packet is sent. The destination ports are given numerical designators as follows: 0 for an internal destination (packets destined for the switch SNMP agent, the spanning-tree agent, and so forth), 1 for FDDI ports, and 3 through 10 for Ethernet LAN ports.

- Protocol Type—The type of protocol for the source and destination ports.

Following is a sample display of the **show cam** *mac_address* command:

```
Console> (enable) sh cam 00-11-22-22-11-00 7 1
VLAN Destination          Source     Destination      Protocol
Num. MAC Address          Port       Port             Type
---- -----------------    ------     ---------------  ---------------
   1 00:11:22:22:11:00    any --->   7
Matching CAM entries = 1
```

In the command **show cam static** [**fddi**] *mac_addr srcport destports*, FDDI indicates that the MAC address in the next parameter is in FDDI format instead of in canonical (Ethernet) format. The field Destination Port can be a list of one or more port numbers, separated by commas, spaces, or tabs.

See also **clear cam** and **set cam**.

show cdp

Use the **show cdp** command to display CDP information. Following is a sample display:

```
Console> show cdp
Usage: show cdp neighbors [port_num] [detail]
       show cdp port [port_num]
       (port_num = 1..10)
console> show cdp neighbors
Port Device-ID              Port-ID           Platform             Capability
---- ---------------------- ----------------- -------------------- -----------
3    000100808(Catalyst7)   8                 WS-C1201             R S
8    000100808(Catalyst7)   3                 WS-C1201             R S
console> show cdp neighbors 3 detail
Device-ID: 000100808(Catalyst7)
Device Addresses:
  IP Address: 210.1.1.1
Holdtime: 171 sec
Capabilities: ROUTER SWITCH
Version:
  WS-C1201 Software, Version DmpSW: 3.142 NmpSW: 3.146
  Copyright (c) 1994,1995 by Cisco Systems, Inc.
  DMP S/W compiled on Dec 13 1994 09:15:19
  NMP S/W compiled on Dec 20 1994 17:48:26

  System Bootstrap Version: 1.0

  Hardware Version: 3.118  Model: WS-C1201  Serial #: 000100808
  1 FDDI interface
  8 10BaseT interfaces

  Uptime is 0 day, 15 hours, 50 minutes
Platform: WS-C1201
Port-ID (Port on Device): 8
Port (Our Port): 3
console> show cdp port
Port  CDP Status  Message-Interval
----  ----------  ----------------
1     disable     30
3     enable      30
4     disable     30
5     disable     30
6     disable     30
7     disable     30
8     enable      30
```

```
9      disable    30
10     disable    30
Console> show cdp port 3
Port  CDP Status  Message-Interval
----  ----------  ----------------
3     enable      30
Console>
```

See also **set cdp disable**.

show filter

Use the **show filter** command to display custom filtering information. Following is a sample display:

```
Console> show filter
Usage: show filter <port_number>
Console> (enable) show filter 3
MAC Address         Type
-----------------   ------
00:40:0b:00:00:0a   deny
08:00:20:00:00:0b   deny


Vendor-ID           Type
---------           ------
00:40:0b            deny


Protocol            Type
---------           ------
0x0800              deny


Test  Offset  Value       Mask
----  ------  ----------  ----------
1     0x18    0x0000c07a  0x0000ffff
2     0x1c    0x00050000  0xffff0000
3     0x0c    0x81370000  0xffff0000


Complex Expression
--------------------------------------------------
!((1&2)|3)


Broadcast Throttle
-----------------------
100 packets/second
```

show help

Use the **show help** command to describe each **show** command. Following is a sample display in normal mode:

```
Console> show help
Commands:
-----------------------------------------------------------------------
show alias          Show aliases for commands
show arp            Show ARP table
show bridge         Show bridge information
show cam            Show CAM table
show cdp            Show Cisco Discovery Protocol information
show fddi           Show FDDI Information
show filter         Show custom filtering information
show help           Show this message
show interface      Show network interfaces
show ip             Show IP information
show mac            Show MAC information
show multicast      Show IP multicast information
show netstat        Show network statistics
show port           Show port information
show snmp           Show SNMP information
show span           Show switch port analyzer information
show spantree       Show spantree information
show system         Show system information
show time           Show time of day
show trunk          Show trunk port information
show users          Show users logged in
show version        Show version information
Console>
```

Following is a sample display in privileged mode:

```
Console> (enable) show help
Commands:
----------------------------------------------------------------------
show alias          Show aliases for commands
show arp            Show ARP table
show bridge         Show bridge information
show cam            Show CAM table
show cdp            Show Cisco Discovery Protocol information
show config         Show system configuration
show fddi           Show FDDI Information
show filter         Show custom filtering information
show help           Show this message
show interface      Show network interfaces
show ip             Show IP information
show log            Show system error log
show mac            Show MAC information
show macdbg         Show MAC debug information
show macreg         Show MAC registers
show macstatus      Show history of MAC status register
show mbuf           Show mbuf and malloc stats
show multicast      Show IP multicast information
show netstat        Show network statistics
show port           Show port information
show portreg        Show port registers
show snmp           Show SNMP information
show span           Show switch port analyzer information
show spantree       Show spantree information
show sprom          Show Serial EEPROM
show system         Show system information
show test           Show results of diagnostic tests
show time           Show time of day
show trunk          Show trunk port information
show users          Show users logged in
show version        Show version information
Console> (enable)
```

See also **clear help** and **set help**.

show interface

Use the **show interface** command to display each network interface and the interface status. Following is a sample display:

```
Console> (enable) show interface
sl0:  flags=10<DOWN,POINTOPOINT>
         inet 0.0.0.0 netmask 0.0.0.0 broadcast 0.0.0.0
sc0:  flags=863<UP,BROADCAST,RUNNING>
         inet 192.122.174.223 netmask 255.255.255.0 broadcast 192.122.174.255
1,3-10:  flags=863<UP,BROADCAST,RUNNING>
         inet 198.133.219.223 netmask 255.255.255.0 broadcast 198.133.219.255
lo0:  flags=808<DOWN,LOOPBACK>
         inet 0.0.0.0 netmask 0.0.0.0 broadcast 0.0.0.0
Console> (enable)
```

See also **set interface**.

show ip

Use the **show ip** command to display the IP Information. Use the **show ip alias** command to show aliases of the IP addresses. Use the **show ip route** command to show route table entries and the total number of route table entries. Use the **show ip vlan** command to show IP routing information. Following is a sample display:

```
Console> (enable) show ip
Commands:
-------------------------------------------------------------------
show ip alias           Show aliases for IP Addresses
show ip route           Show IP route table
show ip vlan            Show IP Virtual LAN information
Console> (enable) show ip alias
elvis       192.122.174.11
mercury     192.122.174.234
neptune     198.211.203.44
venus       198.211.203.73
Console> (enable) show ip route
Total Route table entries: 3

DESTINATION     GATEWAY         FLAG      METRIC   AGE      INTERFACE
-------------   -------------   ----      ------   ---      --------
0.0.0.0         198.219.135.40  UG        1        0        1,3,7,9
198.219.135.0   198.219.135.123 U         0                 01,3,7,9
176.201.0.0     176.201.39.10   U         0                 04-6,8,10
```

```
Console> (enable) show ip route 198.219.133.40
DESTINATION     GATEWAY          FLAGS      METRIC    AGE      INTERFACE
-----------     -------------    -----      ------    ---      ---------
0.0.0.0         198.219.135.40   UG         1         0        1,3,7,9

Console> (enable) show ip vlan
Forwarding  Fragmentation  Redirect  RIP       Unreachable
----------  -------------  --------  --------  -----------
enabled     enabled        enabled   enabled   enabled

IP-Vlan  Ports       IP-Address       Netmask         Broadcast        Helper-VLANs
----  ------------  ---------------  ---------------  ---------------  ------------
1    1,3-5,7,10   198.219.135.123  255.255.255.0    198.219.135.255  2
2    6,8,9        193.122.174.102  255.255.255.0    193.122.174.255
Console> (enable)
```

See also **clear ip** and **set ip help**.

show log

Use the **show log** command to display the system error log. Following is a sample display:

```
Console> (enable) show log

Network Management Processor (NMP) Log:
  Reset count:                 37
  Re-boot History:             Nov 07 1994 16:48:15, Nov 07 1994 16:39:31
                               Nov 01 1994 15:05:17, Nov 01 1994 14:36:07
                               Nov 01 1994 14:34:06, Nov 01 1994 14:32:26
                               Nov 01 1994 14:24:38, Nov 01 1994 14:22:36
                               Nov 01 1994 14:10:07, Nov 01 1994 14:06:20
  Bootrom Checksum Failures:  0   UART Failures:            0
  Flash Checksum Failures:    0   Flash Program Failures:   0
  DRAM Failures:              0
  Exceptions:                 313
    Last Exception occurred on Nov 01 1994 13:06:47 (NMP V3.120) ...
    pc: 01104544, status: 2000, vector: B008
    sp+00: 2000 0110 4544 B008 0EEE A64D FFFF FFFF
    sp+10: 3F20 00D0 013F CE8C FFFF FF0B 4E75 4E75
    sp+20: 3F20 00D4 3F20 00D4 3F20 00D4 3F20 00D2
    sp+30: 0110 FF0B 000F F07C FFFF FF0B 726F 6D20
    sp+40: 0000 0C04 0000 0000 8010 0000 0000 0000
    sp+50: 0000 2000 0125 2704 013F CE8C 0000 0004
    sp+60: 013D 6596 013D 68B6 013F CEB8 0110 26D8
```

```
            sp+70: 0000 0004 013D 6596 0000 000D 0000 0008
            sp+80: 0000 0000 013F CED4 0110 225A 0000 0000
            sp+90: 0000 0000 0000 0000 0000 0000 0000 0000
            sp+A0: 013F CEE8 0110 27C6 0000 000D 0000 0000
            sp+B0: 0000 000D 013F CEF8 0111 CAFC 0000 0001
            sp+C0: 0000 0000 013F CEF4 0111 C0AE 0111 C0AE
            sp+D0: 0111 C0AE 0111 C0AE 0111 C0AE 0111 C0AE
            sp+E0: 0111 C0AE 0111 C0AE 0111 C0AE 0111 C0AE
            sp+F0: 0111 C0AE 0111 C0AE 0111 C0AE 0111 C0AE
            D0: 00000009, D1: 00000001, D2: 00000004, D3: 013D6536
            D4: 00000020, D5: 00000000, D6: 00000000, D7: 00000000
            A0: 01256BF0, A1: 0124CD08, A2: 00000000, A3: 00000000
            A4: 00000000, A5: 00000000, A6: 205B6E5D, sp: 013FCE34

      Data Movement Processor (DMP) Log:
        Flash Checksum Failures:      0    Flash Program Failures:    0
        DRAM Failures:                0    SRAM Failures:             0
        Exceptions:                   0
      Console> (enable)
```

See also **clear log**.

show mac

Use the **show mac** command to display parameters for the MAC layer Network
Management Protocol (NMP) software contents for each port switch. Following is a sample
display:

```
Console> show mac help
Commands:
-----------------------------------------------------------------------
show mac              Show MAC information
Console> show mac
MAC SMT-Address          Curr-Path      TReq     TNeg     TMax     TVX
--- -----------------   ---------   --------  --------  -------  -------
1   00-40-0b-80-e0-78   primary      165000     10000   167772     2621

MAC Upstream-Nbr        Downstream-Nbr      Old-Upstream-Nbr   Old-Downstream-Nbr
--- -----------------   -----------------   ----------------   ------------------
1   00-40-0b-40-00-68   00-40-0b-40-00-80   00-40-0b-40-10-63  00-40-0b-40-80-44
```

```
MAC    Rcv-Smt     Xmit-Smt    Rcv-llc    Xmit-llc   Tvx-Exp-Ct   RingOp-Ct
---  -----------  ---------  ---------  ----------  ----------   ---------
1        274          14        180         465           5           5

MAC    Rcv-Frms    Xmit-Frms  Rcv-Multi  Xmit-Multi  Rcv-Broad   Xmit-Broad
---  -----------  ---------  ---------  ----------  ----------  ----------
1      1748680       20904      20473          20       14099         736
3            0     1380230          0        4319           0       12010
4            0     1380231          0        4319           0       12010
5            0     1380232          0        4319           0       12010
6            0     1380232          0        4319           0       12010
7        15784     1395152          0        4319         296       11714
8            0     1380236          0        4319           0       12010
9         2289     1379656         12        4307           2       12008
10           0     1380238          0        4319           0       12010

MAC  Dely-Exced  MTU-Exceed  In-Discard  Lrn-Discrd  In-Lost   Out-Lost
---  ----------  ----------  ----------  ----------  --------- ---------
1            0          55           0           0          0          0
3            0           0           0           0          0          0
4            0           0           0           0          0          0
5            0           0           0           0          0          0
6            0           0           0           0          0          0
7            0           0           0           0          0          0
8            0           0           0           0          0          0
9            0           0           0           0          0          0
10           0           0           0           0          0          0

Last-Time-Cleared
-------------------------
Wed Jun 02 1993, 18:28:46
```

Following are descriptions of the display fields of the **show mac** command:

- MAC—Indicates which MAC is being referenced by the data in the other fields.

- SMT-Address—Displays the 48-bit MAC address in canonical format (for example 00:40:0b:a0:03:cf).

- Curr-Path—Indicates the current path handled by the MAC, and takes one of the following values:

  — Primary—The MAC is on the primary path.

  — Isolated—The MAC is not on any path but is isolated.

  — Unknown—The switch cannot determine the path.

- TReq—Shows the time (in microseconds) that the MAC requests as the average token rotation time. You can configure this parameter with the admin. interface **set treq** command.

- TNeg—Contains the TReq value agreed on by all MACs in the ring.

- TMax—Holds the maximum time (in microseconds) that the MAC sends out as a TReq value.

- TVX—Contains the time (in microseconds) of the MAC valid transmission timer.

- Upstream-Nbr—Contains the address of the most recently known upstream neighbor to the MAC.

- Downstream-Nbr—Contains the address of the most recently known downstream neighbor to the MAC, the next MAC to receive frames from this MAC.

- Old-Upstream-Nbr—Contains the MAC address of the previous upstream neighbor.

- Old-Downstream-Nbr—Contains the MAC address of the previous downstream neighbor.

- Rcv-Smt—Shows the total number of SMT frames received by the MAC.

- Xmit-Smt—Shows the total number of SMT frames transmitted by the MAC.

- Rcv-llc—Shows the total number of Logical Link Control (LLC) frames received by the MAC.

- Xmit-llc—Shows the total number of LLC frames transmitted by the MAC.

- Tvx-Exp-Ct—Displays the number of valid transmission timer (TVX) expirations counted by the MAC.

- RingOp-Ct—Shows the number of times that the ring has encountered a break and has restarted.

- Rcv-Frms—Shows the total number of frames received by the MAC.

- Xmit-Frms—Shows the total number of frames transmitted by the MAC.

- Rcv-Multi—Shows the total number of multicast frames received by the MAC.

- Xmit-Multi—Shows the total number of multicast frames transmitted by the MAC.

- Rcv-Broad—Shows the total number of broadcast frames received by the MAC.

- Xmit-Broad—Shows the total number of broadcast frames transmitted by the MAC.

- Dely-Exced—Shows the number of frames discarded by this port because of excessive transmission delay through the bridge.

- MTU-Exceed—Shows the number of frames discarded by this port because the maximum frame size or MTU has been exceeded.

- In-Discard—Shows the number of valid frames received by this port that were discarded (filtered) by the forwarding process.

- Lrn-Discard—Shows the number of forwarding database entries that have been or would have been learned but have been discarded because of lack of space.

- Last-Time-Cleared—Displays the date and time that the MAC counters were last cleared.

- In-Lost—Displays the number of received frames dropped by the MAC because of hardware limitations.

- Out-Lost—Displays the number of transmit frames dropped by the MAC because of hardware limitations.

show macdbg

Use the **show macdbg** command to display the MAC debug hardware counter information. Following is a sample display:

```
Console> (enable) show macdbg

MAC  Rcv-Frms   Xmit-Frms   Error-Frms   Lost-Frms   Total-Frms Bfr-Full
---  --------   ----------  ----------   ----------  ---------- --------
1           0           0            0            0       16064        0

MAC TMax-Cap  TVX-Cap FS-Cap Avl-Path Rq-Path DA-Test DA-Flg Frm-Mac-Flg
--- --------  -------- ------ -------- ------- ------- ------ -----------
1     167769     5202      0        1       7  none    false   false
Console> (enable)
```

Following are descriptions of the display fields of the **show macdbg** command:

- MAC—Displays the MAC number.

- Rcv-Frms—Displays the receive frames at the MAC.

- Xmit-Frms—Displays the transmit frames at the MAC.

- Error-Frms—Displays the error frames at the MAC.

- Lost Frms—Displays the lost frames at the MAC.

- Total-Frms—Displays the total frames at the MAC.

- Bfr-Frms—Displays the buffer frames at the MAC.

- TMax-Cap—The target token rotation number (TTRT) TMax capability displays the maximum time value this MAC can support.

- TVX-Cap—The timer valid transmission (TVX) capability displays the maximum time value this MAC can support.

- FS-Cap—The frame status (F5) capability displays the optional frame status functions supported.

- Avl-Path—Displays the available (Avl) paths.

- Rq-Path—Displays the requested (Rq) paths.

- DA-Test—Displays the status of the duplicate address (DA) tests as pass or fail.

- DA-Flg—Displays the status of the DA flag as true or false.

- Frm-Mac-Flg—Displays MAC frame error flag condition setting as true or false.

show macreg

Use the **show macreg** command to display the MAC registers. Following is a sample display:

```
Console> (enable) show macreg ?
Usage: show macreg [hex_register]
Console> show macreg 1
MAC register 0x1 = 0x1
Console> (enable)
```

show macstatus

Use the **show macstatus** command to display the FDDI MAC status register history. Following is a sample display:

```
Console> (enable) show macstatus
 index     ST1U     ST1L     ST2U     ST2L
 -----    ------   ------   ------   ------
  193     000000   0x0001   000000   0x8000
  192     0x0022   0x0001   000000   000000
  191     000000   0x0001   000000   0x8000
  190     000000   0x0001   000000   000000
  189     000000   0x0001   000000   0x8000
  188     0x0022   0x0001   000000   000000
  187     000000   0x0001   000000   0x8000
  186     0x0022   0x0001   000000   000000
  185     000000   0x0001   000000   0x8000
  184     0x0022   0x0001   000000   000000
  183     000000   0x0001   000000   0x8000
  182     000000   0x0001   000000   000000
  181     000000   0x0001   000000   0x8000
  180     000000   0x0001   000000   000000
  179     000000   0x0001   000000   0x8000
  178     0x0022   0x0001   000000   000000
  177     000000   0x0001   000000   0x8000
  176     0x0022   0x0001   000000   000000
  175     0x0022   0x0001   000000   0x8010
  174     000000   0x0001   000000   0x8000
```

Following are descriptions of the display fields of the **show macstatus** command:

- Index—Displays the time index of the last 20 MAC status register history.

- ST1U—Displays the upper-level address of status register one.

- ST1L—Displays the lower-level address of status register one.

- ST2U—Displays the upper-level address status register two.

- ST2L—Displays the lower-level address status register two.

show mbuf

Use the **show mbuf** command to display mbuf and malloc statistics. Following is a sample display:

```
Console> (enable) show mbuf
MBSTATS:
        mbufs          1856    clusters        40
        free mbufs     1816    clfree          38
MALLOC STATS (64 byte chunks):
        chunks         19588   free chunks     15090   nulls   0
Frame Buffer STATS
        IP free 40      FREEQ 0x12185bc
        NoTxBufs 0      NoTxQ 0
frame# 1 usecount 0 func 1064bc8 owner 0 next 55555555
frame# 2 usecount 0 func 1064bc8 owner 0 next e000800
frame# 3 usecount 0 func 1064bc8 owner 0 next e001000
frame# 4 usecount 0 func 1064bc8 owner 0 next e001800
frame# 5 usecount 0 func 1064bc8 owner 0 next e002000
frame# 6 usecount 0 func 1064bc8 owner 0 next e002800
frame# 7 usecount 0 func 1064bc8 owner 0 next e003000
frame# 8 usecount 0 func 1064bc8 owner 0 next e003800
frame# 9 usecount 0 func 1064bc8 owner 0 next e004000
frame# 10 usecount 0 func 1064bc8 owner 0 next e004800
frame# 11 usecount 0 func 1064bc8 owner 0 next e005000
frame# 12 usecount 0 func 1064bc8 owner 0 next e005800
frame# 13 usecount 0 func 1064bc8 owner 0 next e006000
frame# 14 usecount 0 func 1064bc8 owner 0 next e006800
frame# 15 usecount 0 func 1064bc8 owner 0 next e007000
frame# 16 usecount 0 func 1064bc8 owner 0 next e007800
frame# 17 usecount 0 func 1064bc8 owner 0 next e008000
frame# 18 usecount 0 func 1064bc8 owner 0 next e008800
frame# 19 usecount 0 func 1064bc8 owner 0 next e009000
```

```
frame# 20 usecount 0 func 1064bc8 owner 0 next e009800
frame# 21 usecount 0 func 1064bc8 owner 0 next e00a000
frame# 22 usecount 0 func 1064bc8 owner 0 next e00a800
frame# 23 usecount 0 func 1064bc8 owner 0 next e00b000
frame# 24 usecount 0 func 1064bc8 owner 0 next e00b800
frame# 25 usecount 0 func 1064bc8 owner 0 next e00c000
frame# 26 usecount 0 func 1064bc8 owner 0 next e00c800
frame# 27 usecount 0 func 1064bc8 owner 0 next e00d000
frame# 28 usecount 0 func 1064bc8 owner 0 next e00d800
frame# 29 usecount 0 func 1064bc8 owner 0 next e00e000
frame# 30 usecount 0 func 1064bc8 owner 0 next e00e800
frame# 31 usecount 0 func 1064bc8 owner 0 next e00f000
frame# 32 usecount 0 func 1064bc8 owner 0 next e00f800
frame# 33 usecount 0 func 1064bc8 owner 0 next e010000
frame# 34 usecount 0 func 1064bc8 owner 0 next e010800
frame# 35 usecount 0 func 1064bc8 owner 0 next e011000
frame# 36 usecount 0 func 1064bc8 owner 0 next e011800
frame# 37 usecount 0 func 1064bc8 owner 0 next e012000
frame# 38 usecount 0 func 1064bc8 owner 0 next e012800
frame# 39 usecount 0 func 1064bc8 owner 81009cf8 next e013000
frame# 40 usecount 0 func 1064bc8 owner 81009cf8 next e013800
        SPANTREE free 30        FREEQ 0xae014e80
        MAX SMT free 4  FREEQ 0x121ae60
IPC QUEUE STATS
        TXFIFO RD ab WR ab QUEUE 0x9002018
        TXFREE RD ab WR ab QUEUE 0x9003020
        RXFIFO RD e WR e QUEUE 0x9000808
        RXFREE RD e WR e QUEUE 0x9001810
        TXCNTL RD 1d5 WR 1d5 QUEUE 0x9005830
        RXCNTL RD 1a6 WR 1a6 QUEUE 0x9003828
Console> (enable)
```

Following are descriptions of the display fields of the **show mbuf** command:

- MBSTATS—Displays the memory buffer status.

- MALLOC STATS—Displays the memory allocation status.

- Fram Buffer STATS—Displays the frame buffer status.

- IPC QUEUE STATS—Displays the Inter Processor Communications queue status.

show multicast

Use the **show multicast** command to display IP multicast information. Following is a sample display:

```
Console> show multicast
IGMP     IGMP Aging Time
-------  ---------------
enabled  180 sec

Multicast Router:
Port 1    router  static
Port 2    -       dynamic
Port 3    router  dynamic
Port 4    -       dynamic
Port 5    -       dynamic
Port 6    -       dynamic
Port 7    -       dynamic
Port 8    -       dynamic
Port 9    -       dynamic
Port 10   -       dynamic

Multicast Group:
Group Address    Ports
---------------  ---------------
224.2.0.1        3,6,7,9
224.2.2.2        6,8
Console>
```

See also **set multicast group**.

show netstat

Use the **show netstat** command to display the TCP/IP protocol stack statistics and the state of the network connections that are active on the system. Following is a sample display:

```
Console> show netstat ?
Usage: netstat [tcp|udp|ip|icmp|igmp|routes|stats|interfaces]
Console> show netstat
Active Internet connections (including servers)
Proto Recv-Q Send-Q  Local Address          Foreign Address       (state)
tcp        0    128  198.133.219.223.23      192.122.173.42.1034
ESTABLISHED
tcp        0      0  *.23                    *.*                   LISTEN
udp        0      0  *.520                   *.*
udp        0      0  *.161                   *.*
Console>
```

show port

Use the **show port** command to display port information. Following is a sample display:

```
Console> (enable) show port
Port  Name                 Status     Curr-Path  Conn-State Type Neigh Media
----  -------------------- ---------- ---------- ---------- ---- ----- --------
1A                         disabled   isolated   disabled   A    M     fiber
2B                         disabled   isolated   disabled   B    U     fiber

Port  Ler-Cond  Ler-Est  Ler-Alrm  Ler-Cutoff     Lem-Ct  Lem-Rej-Ct   tl-min
----  --------  -------  --------  ----------  ----------  ----------   -------
1A    false          10        10          10           0           0        40
2B    false           9         8           7           0           0        40

Port  Duplex
----  ------
1A    full
2B    full

Port Name                 Status     Align-Err   FCS-Err   Xmit-Err    Rcv-Err
---- -------------------- ---------- --------- ---------- ---------- ----------
3                         notconnect         0         0          0          0
4                         notconnect         0         0          0          0
5                         notconnect         0         0          0          0
6                         notconnect         0         0          0          0
7                         notconnect         0         0          0          0
8                         notconnect         0         0          0          0
```

```
9                         notconnect       0           0           0            0
10                        notconnect       0           0           0            0

Port  Single-Col  Multi-Coll   Late-Coll  Excess-Col  Carrier-Sense   Giants
----  ----------  ----------   ---------- ----------  ----------   ----------
3              0           0            0           0            0            0
4              0           0            0           0            0            0
5              0           0            0           0            0            0
6              0           0            0           0            0            0
7              0           0            0           0            0            0
8              0           0            0           0            0            0
9              0           0            0           0            0            0
10             0           0            0           0            0            0

Port  Duplex
----  ------
3     half
4     half
5     half
6     half
7     half
8     half
9     half
10    half

Last-Time-Cleared
--------------------------
Sun Oct 29 1995, 16:37:58
Console> (enable)
```

The **show port** command screen has two sections: one for the CDDI/FDDI ports and one for the Ethernet ports. Following are descriptions of the display fields of the **show port** command:

- Port—Displays the port number (1/A or 2/B for CDDI/FDDI, and 3 through 10 for Ethernet).

- Name—Contains the name of the designated port, and displays only if you have given the port a name using the **set portname** command.

- Status—Shows the port status as one of the following:

  — Ok—The port is connected. The link status LED is green.

  — Minor—A signal is detected, but the port is not connected. The link status LED is orange.

  — Monitor—The port is configured as destination port using the **set span** command.

  — Other—The port is not connected.

- Curr-Path—Shows the connection state of the port as follows:

  — Isolated—The port is not connected.

  — Primary—The port is inserted in the primary path.

  — Concatenated—The port is inserted in both the primary and secondary paths in a concatenated wrap configuration.

  — Thru—The port is inserted in both the primary and secondary paths in a thru configuration.

- Conn-State—Displays the connection state of the port as follows:

  — Disabled—The port has no line module or was disabled by the user.

  — Connecting—The port is attempting to connect or is disconnected.

  — Standby—The connection is withheld or is the inactive port of a dual homing switch.

  — Active—The port has made connection.

  — Other—The switch is unable to determine the connection state.

- Type—Specifies the type of port as one of the following values:

  — A—A port

  — B—B port

  — U—Undetermined

- Neigh—Indicates the type of port attached to this port (called the neighbor port). The neighbor port can be one of the following types:

  — A—A port

  — B—B port

  — S—Slave port

  — M—Master port

  — U—Undetermined port

- Media—Indicates the media capabilities of the indicated port as follows:

  — mlt-3—The port uses MLT-3 (CDDI) media.

  — fiber—The port uses FDDI fiber-optic cable.

  — none—This port cannot be used because it is missing a line module card (an internal plug-in circuit board).

- Ler-Cond—Shows the link error rate indicator field as either true (an error condition exists on the link) or false (no error conditions exist on the link).

- Ler-Est—Refers to the long-term estimated error rate for the link. The value displayed in this field is the exponent of 10–n. For example, if the indicated value is 11, the estimated error rate is 10–11; thus, the higher the value of the exponent, the lower the number and the better the link error rate. Values range from 10–4 to 10–12.

- Ler-Alrm—Contains the error rate for the link that generates an alarm. The default is 10–8. The value displayed in this field is the exponent of 10^{-n}.

- Ler-Cutoff—Contains the error rate for the link that disables the port. The default is 10^{-7}. The value displayed in this field is the exponent of 10^{-n}.

- Lem-Ct—Holds the link error monitor count, which is the number of recorded link errors received. This count is used to estimate the link error rate (Ler-Est). The link error monitor helps measure link performance and isolate faulty links that pass initial tests.

- Lem-Rej-Ct—Contains the link error monitor rejected count, which is the number of times a link was disabled because the link error rate reached the cutoff threshold.

- Port—Displays the 10BaseT ports numbered 3 through 10.

- Name—Contains the name of the designated port. A name is displayed only if you assigned a name using the **set portname** command.

- Status—Indicates the relative condition of the port as one of the following:

    — Ok—The port has connection. The link status LED is green.

    — Other—The port is not connected.

    — Disable—The port is disabled.

- Align-Err—Shows the number of frames received on this port that are not an integral number of octets in length and do not pass the frame checksum (FCS) check.

- FCS-Err—Shows the number of frames received on this port that are an integral number of octets in length, but do not pass the FCS check.

- Xmit-Err—Shows the number of frames for which transmission failed on this port because of an internal MAC-sublayer transmit error.

- Rcv-Err—Shows the number of frames for which reception failed on this port because of an internal MAC-sublayer receive error.

- Single-Col—Shows the number of frames successfully transmitted on this port for which transmission is inhibited by one collision.

- Multi-Coll—Shows the number of frames successfully transmitted on this port for which transmission is inhibited by more than one collision.

- Late-Coll—Shows the number of times a collision is detected on this port later than 512 bit times into the transmission of a packet.

- Excess-Col—Shows the number of frames for which transmission on this port failed because of excessive collisions.

- Carrier-Sense—Shows the number of times the carrier-sense condition was lost or never asserted when attempting to transmit a packet on this port.

- Giants—Shows the number of frames received on this port that exceeded the maximum permitted frame size.

- Last-Time-Cleared—Displays the date and time that the port counters were last cleared.

See also **set port help**.

show portreg

Use the **show portreg** command to display port register information. Following is a sample display:

```
Console> (enable) show portreg ?
Usage: show portreg <port_number> [hex_register]
Console> (enable) show portreg 2
Port 2 register 0x0 = 0x0
Console> (enable)
```

show snmp

Use the **show snmp** command to display SNMP and IP information. Following is a sample display in normal mode:

```
Console> show snmp
Traps Enabled: Port,Chassis,Bridge
RMON:          Enabled

Community-Access     Community-String
----------------     --------------------
read-only            xx

Trap-Rec-Address     Trap-Rec-Community
----------------     ------------------
192.120.20.123        public
-----------          -----------------------


Console>
```

Following is a sample display in privileged mode:

```
cat2-lnf> (enable) show snmp
Traps Enabled: Port,Chassis,Bridge
RMON:          Enabled

Community-Access     Community-String
----------------     -------------------
read-only            xx
read-write           xx
read-write-all       secret

Trap-Rec-Address     Trap-Rec-Community
----------------     ------------------
172.20.32.123        public

Console> (enable)
```

Following are the descriptions of the display fields of the **show snmp** command:

- Community-Access—Lists the access modes for the SNMP MIB.

- Community-String—Shows the authentication string that all SNMP messages must contain for the type of MIB access requested.

- Trap-Rec-Address—Contains the address of a network manager to whom trap messages are sent.

- Trap-Rec-Community—Contains the community string for the trap message.

- Auth Traps —Indicates whether authentication trap messages are enabled or disabled.

- RMON—Indicates whether RMON is enabled or disabled.

show span

Use the **show span** command to display port monitoring information. Following is a sample display:

```
Console> show span
Source Port   Destination Port  Direction         Status
-----------   ----------------  ----------------- -------
2             7                 transmit/receive  enabled
Console>
```

See also **set span**.

show spantree

Use the **show spantree** command to display spanning tree information for a VLAN. If the **vlan** parameter is not specified, the default is VLAN1. Following is a sample display:

```
Console> show spantree ?
Usage: show spantree [vlan]
      (vlan = 1..1000)
Console> show spantree
VLAN 1
Spanning tree enabled

Designated Root              00:40:0b:a0:a6:f1
Designated Root Priority     32768
Designated Root Cost         0
Designated Root Port         0
Root Max Age 20 sec    Hello Time 2 sec   Forward Delay 15 sec
Bridge ID                    00:40:0b:a0:a6:f1
Bridge ID Priority           32768
Bridge ID Priority           32768
Bridge Max Age 20 sec  Hello Time 2 sec   Forward Delay 15 sec

Port  1   State disabled         Path Cost  10    Port priority 128
Port  3   State not-connected    Path Cost 100    Port priority 128
Port  4   State not-connected    Path Cost 100    Port priority 128
Console>
```

Following are descriptions of the display fields of the **show spantree** command:

- Spanning tree enabled—The current configuration of the **set spantree enable** command.

- Designated Root—The unique bridge identifier of the bridge assumed to be the current root bridge.

- Designated Root Priority—The bridge identification priority field for the root bridge.

- Designated Root Cost—The cost of the path to the root from this bridge.

- Designated Root Port—The port identifier of the port that offers the lowest cost to the root bridge.

- Root Max Age—The age of a stored configuration message on the root bridge at which the stored configuration message is judged to be too old and is discarded.

- Root Hello Time—The elapsed time between the configuration messages generated by a bridge that assumes itself to be the root.

- Root Forward Delay—The time spent by a port in the listening and learning states.

- Bridge ID—The unique identifier of the bridge.

- Bridge ID Priority—A two-octet value that allows the network administrator to influence the choice of the root bridge and the designated bridge. This is the most significant portion of the bridge identifier.

- Bridge Max Age—The time value advertised by this bridge for deciding whether to discard spanning-tree frames based on message age.

- Bridge Hello Time—The time value advertised by this bridge for deciding the period between transmission of spanning-tree hello messages.

- Bridge Forward Delay—The time value advertised by this bridge for deciding the time delay that a port must spend in the listening and learning states.

- Port *n* field (where *n* is port number 1 through 10). Following are the fields associated with each port field:

  — State—This can be any one the following five states: blocking, learning, listening, forwarding, or disabled.

  — Path Cost—A comparison between the contribution of the path through this port, when the port is the root port, and the total cost of the path to the root for this bridge.

  — Port Priority—A portion of the port identifier that can be updated by management action and is the most significant portion of the port identifier for that port.

show system

Use the **show system** command to display system information. Following is a sample display:

```
Console> show sys
Name                  Model    Serial-Num Hw    Fw    DmpSw NmpSw
-------------------- -------- ---------- ----- ----- ----- ------
                      WS-C1201 062003666   3.3   1.1   4.107  4.107

Ps-Type Ps-Stat Fan-Stat Minor-Alarm Major-Alarm Temp-Alarm Stat
------- ------- -------- ----------- ----------- ---------- -----
80w     ok      ok       off         off         off        ok

Uptime d,h:m:s Modem   Baud  MAC-Address-Range
------------- ------- ----- -------------------------------------
3,19:31:34     disable 9600  00-40-0b-a0-a6-f0 - 00-40-0b-a0-a6-f9

SMT User-Data                       T-Notify CF-St   ECM-St    Bypass
---------------------------------- -------- -------- --------- -------
WorkGroup Stack                     30       isolated out       absent

System Contact          System Location
----------------------  -----------------------

Console>
```

Following are descriptions of the display fields of the **show system** command:

- Name—The switch name, which displays only if you have named the switch using the admin. interface **set name** command.

- Model—The model designation of the switch.

- Serial-Num—The serial number of the switch.

- Hw and Fw—The hardware and firmware revision levels in the switch.

- DmpSw—The software revision level of the DMP.

- NmpSw—The software revision level of the NMP.

- Ps-Type—The rating of the power supply in watts.

- Ps-Status—The current status of the power supply as follows:

  — Ok—No faults or power supply alarms have been detected.

  — Major—Occurs when –5V, +12V, or –12V is bad. The field displays Major, followed by a hexadecimal translation of the power supply test result bit map, as shown in Table C-6.

  — Other—Indicates that the switch is unable to determine the power supply state.

Table C-6   Power Supply Test Results

Bit Location	Test
0	–5V
1	+12V
2	–12V

- Fan-Status—The current status of the chassis fans.

- Minor-Alarm, Major-Alarm, Temp-Alarm—The monitor conditions in the switch. The field displays either on or off.

  — Minor-Alarm—Occurs if either of the following fail:

    Fan

    Temperature

  — Major-Alarm—Occurs if any of the following components fail:

    NVRAM

    Serial electrically erasable programmable read-only memory (EEPROM)

    FDDI physical sublayer (PHY)

    Random-access memory (RAM)

    Read-only memory (ROM)

    DMP Flash memory

    NMP Flash memory

    MAC

    Queue static random-access memory (SRAM)

    Frame buffer

    Power

  — Temp-Alarm—Occurs when the ambient temperature of the switch exceeds 95 F (35 C).

- Uptime d,h:m:s—Days, hours, minutes, and seconds since the last restart of the switch.

- Baud—The current baud rate setting for the admin. port. You can configure this parameter with the **set baud** command.

- MAC-Address-Range—The MAC address range assigned to the ports on the switch.

- Status—The current alarm status of the switch, which can be one of the following:

    — Ok—No alarms or other problems have been detected in the switch.

    — Minor—Occurs when tests detect a minor alarm in the switch.

    — Major—Occurs when tests detect a major alarm in the switch.

    — Other—Occurs when the switch cannot determine its status.

- SMT User-Data—A text field in the SMT MIB containing information entered by the user.

- T-Notify—Specifies how often SMT initiates neighbor notification broadcasts; defined by the **set tnotify** command. T-Notify takes the form of an integer value from 2 to 30 seconds.

- CF-St—Displays the configuration control element state (part of configuration management). Configuration management describes the internal configuration of ports and MACs within the switch.

    Following are the CF-St field configuration states:

    — Isolated—Ports 1/A and 2/B are isolated from the paths.

    — Wrap_S—Port 2/B is configured as a slave (S) port and is connected to the primary path.

    — Wrap_A—Port 1/A is connected to the ring, and port 2/B is isolated.

    — Wrap-B—Port 2/B is connected to the ring, and port 1/A is isolated.

    — Thru—Ports 1/A and 2/B are connected to the primary and secondary path.

    — Other—Occurs if the switch cannot determine the configuration control element state.

- ECM-St—Shows the current state of the entity coordination management (ECM) for the switch. ECM controls the bypass switch of the physical medium dependent (PMD) layer and signals the physical connection management (PCM) when the media is available. It also coordinates the trace function and initiates a path test after a trace to localize the suspected fault. ECM-St may appear as one of the following values:

    — Out—Occurs when waiting for a connect request.

    — In—Shows the normal state for a completed connection.

- — Trace—Determines the location of a stuck beacon condition.

- — Leave—Allows sufficient time to break existing connections.

- — Path-Test—This state is reached after leaving the trace state.

- — Insert—Allows for the switching time of the bypass.

- — Check—Confirms that both the primary and secondary bypass switches have switched.

- — Deinsert—Allows enough time for the bypass switch to deinsert.

- — Other—Shows if the switch cannot determine the ECM state.

- Bypass—Tells you whether or not an optical bypass switch is connected to the switch (present or absent). If you install or remove an optical bypass switch, reset the switch.

- System Contact—Displays the name of the person managing the system.

- System Location—Shows a description of where the system is located.

show test

Use the **show test** command to display the results of the diagnostics tests. Following is a sample display:

```
Console> (enable) show test

Network Management Processor (NMP) Status: (. = Pass, F = Fail, U =
Unknown)
  ROM:  .   RAM:  .   DUART: .   Flash-EEPROM: .   Ser-EEPROM: .   NVRAM: .
  FAN1: .    FAN2: .    Temperature: .
  PS (-12V): .        PS(+12V): .

  Switch Memory Status:
    RAM: .    Cache-SRAM: .

  FDDI Status:
    Port A Access:    .   Port B Access:    .
    Port A Loopback: .   Port B Loopback: .
    MAC Access:       .   MAC Buffer R/W:  .   CAM:      .
    MAC Internal LB: .   MAC External LB: .   LoadGen: .

  Ethernet Port Status:    3    4    5    6    7    8    9    10    12
```

```
        --------------------------------------------------------------------
          Accessibility          .     .     .     .     .     .     .     .     .
          CAM Access             .     .     .     .     .     .     .     .     .
          Loopback               .     .     .     .     .     .     .     .     .

        Data Movement Processor (DMP) Status: (. = Pass, F = Fail, U = Unknown)
          Flash-EEPROM: .   RAM: .   SRAM: .   COMM: .

          Switch Memory Status:
            RAM: .     Cache-SRAM: .

          FDDI Status:
            MAC Access:              .    MAC Buffer R/W:          .
            MAC Internal LB:         .    MAC External LB:         .    LoadGen: .
            BIGA Access:             .    BIGA->MAC Buffer R/W:    .
            BIGA->MAC TxDMA:         .    BIGA<-MAC RxDMA:         .
            BIGA<->MAC Internal LB: .     BIGA<->MAC External LB: .    LoadGen: .

          Ethernet Port Status:    3     4     5     6     7     8     9     10

        --------------------------------------------------------------------
          Accessibility          .     .     .     .     .     .     .     .
          CAM Access             .     .     .     .     .     .     .     .
          Loopback               .     .     .     .     .     .     .     .
        Console> (enable)
```

show time

Use the **show time** command to display the current time of day on in the system's clock.
Following is a sample display:

```
Console> show time
Wed Jun 1 1994, 15:11:51
Console>
```

See also **set time**.

show trunk

Use the **show trunk** command to display trunk link information. If the transitencapsulation mode is on, then this command indicates "None (transit encapsulation)" under the "VLANs allowed" heading. Following is a sample display:

```
Console> show trunk
Port   VLANs allowed
----   -------------------------------------------------------
1      1-2,13-14,16,18-19,21,23-24
Console> (enable) set trunk transitencapsulation
All VLANs supported via 802.10 encapsulation will be cleared.
The trunk port is removed from any IP Vlan/bridge Vlan.
Do you wish to continue [yes/no] [n]? y
Transit encapsulation mode set.
Console> (enable)show trunk
Port   VLANs allowed
----   -------------------------------------------------------
1      None(transit encapsulation)
Console>
```

See also **clear trunk** and **set trunk**

show users

Use the **show users** command to display the admin. port status and list active Telnet sessions with the IP address or IP alias of the originating host. Following is a sample display:

```
Console> show users
Admin Port
----------
active

Telnet Sessions
---------------
mercury
199.132.34.7
Console>
```

show version

Use the **show version** command to display the Catalyst Switch hardware and software version numbers. Following is a sample display:

```
Console> show version
WS-C1201 Software, Version DmpSW: 4.107 NmpSW: 4.107
Copyright (c) 1994,1995 by Cisco Systems
DMP S/W compiled on Oct 11 1995 22:20:25
NMP S/W compiled on Oct 12 1995 18:25:53

System Bootstrap Version: 1.1

Hardware Version: 3.3  Model: WS-C1201  Serial #: 062003666
1 FDDI interface
8 10BaseT interfaces

4096K bytes of DRAM memory.
1024K bytes of NMP FLASH memory.
32K bytes of non-volatile configuration memory.

Uptime is 3 days, 19 hours, 35 minutes
Console>
```

slip Command

Use the **slip** command to attach or detach a SLIP interface, as follows:

```
Console> (enable) slip
Usage: slip <attach|detach>
Console> slip attach
Console> (enable)
```

test Command

Table C-7 lists the available **test** commands in privileged mode.

Table C-7   test Commands

Command	Description	Mode[1]
test help	Displays **test** command information	P
test online	Runs a diagnostic test on the system	P
test snmp	Tests the SNMP, use **test help snmp** for more information	P

1. P = privileged.

test help

Use the **test help** command to display the following information:

```
Console> (enable) test help
Commands:
-------------------------------------------------------------------
test help          Show this message
test online        Run diagnostics tests on the system
test trap          Send trap message to trap receivers
```

test online

Use the **test online** command to run diagnostics tests on the system, as follows:

```
Console> (enable) test online
 NMP Diagnostics Version 1.2, Dated Feb 20 1994 10:12:39
 Model C1201, Board Serial# 1234, H/W Rev 2.1
 Copyright (C) Cisco Systems Inc. 1993, 1994
On-line Diagnostics Completed Successfully ...
Console> (enable)
```

test snmp

Use the **test snmp** command to send an SNMP trap message to the trap receivers. The following is a sample display:

```
Console> (enable) test snmp
Commands:
------------------------------------------------------------------------
-
test snmp help           Show this message
test snmp trap           Send trap message to SNMP trap receivers
Console> (enable) test snmp trap
Usage: test snmp trap <trap_number> [specific_number]
Console> (enable) test snmp trap 0
SNMP trap message sent.
Console> (enable)
```

upload Command

Use the **upload** command to upload the Flash memory image file from the catalyst to a network host to create a backup file. The file must be created in advance and saved in the *tftpboot* directory.

Following is a sample display:

```
Console> (enable) upload
Usage: upload <host> <file> <nmp|dmp>
       (nmp=network management processor, dmp=data movement processor,
        host is ip alias or IP address: a.b.c.d)
Console> (enable) upload happy nmpxx.bin nmp
Upload NMP image to nmpxx.bin on happy (y/n) [n]? y
/
Done.
Console> (enable)
```

wait Command

Use the **wait** command to pause the console output for the number of seconds indicated. Following is a sample display:

```
Console> wait ?
Usage: wait <seconds>
Console> wait 2
```

write Command

Use the **write** command to write the Catalyst 1200 series switch configuration either to an existing file in a network host *tftpboot* directory or to the terminal screen display.

Use the ASCII configuration file uploaded by the **write terminal** command to configure the same switch or **edit** to configure another Catalyst Switch. (See the section "configure Command," earlier in this appendix.) The uploaded file is the same output as the file generated by the **write terminal** command, with the following exceptions:

- The configuration file should end with a single line containing the word "end" followed by a carriage return.

- Passwords are saved in the configuration file as clear text and do not echo on the screen.

- A blank line should follow the **set password** and **set enablepass** commands, assuming no password is to be configured.

- A blank line should follow each occurrence of the following command line:

  — **set port** *port* **disable**

  The blank line is needed to display the confirmation prompt with the no default. When these commands are called from a Telnet session, they are not executed because they may disconnect the Telnet session. It is recommended that you execute the **configure** command from the EIA/TIA-232 connection, not from a Telnet session.

- A **set attach** command type change made from a configuration file is set, but the switch must be reset for the attachment type change to be implemented.

The **write terminal** command functions the same as the **copy** command. Refer to the "copy Command" section for information about this command.

Following is a sample display:

```
Console> (enable) write
Usage: write network
       write terminal
       write <host> <file>
Console> (enable) write network
IP address or name of host? happy
Name of configuration file to write? catalyst5.cfg
Upload configuration to catalyst5.cfg on happy (y/n) [y]? y
/
Done.
Console> (enable)
```