CHAPTER 7

Command Reference

This chapter describes each command in the Catalyst 5000 series switch command line interface and the ATM module. Use these commands to configure and maintain the Catalyst 5000 series switch. Commands valid in both the switch and ATM environments are listed alphabetically, with a Switch or ATM extension todistinguish between the two. Table 7-1 lists command aliases that have been defined for ease of use. Like regular commands, aliases are not case sensitive. Unlike regular commands, however, some aliases cannot be abbreviated.

Table 7-1 Command Aliases

Alias	Command
?	help
batch	configure
di	show
earl	cam
exit	quit
logout	quit

Switch Command Line Interface

The command line interface (CLI) for the Catalyst 5000 series switch is a basic command line interpreter similar to that of the UNIX C Shell. Command line editing is provided, including history substitution and the creation of aliases. Refer to the "Command Line Interfaces" portion of this document for more information.

ATM Module Command Reference

You access the ATM module by creating a session with it. To open a session with the ATM module, use the **session** *mod_num* command from the Console> prompt. After you enter this command, the switch responds with the **Enter Password** prompt. Enter **atm** as the default password. At this point, you are at the **ATM#>** prompt, and you have direct access to only the ATM module that you have established a session with.

Once you are connected to the ATM module, a subset of the Internetwork Operating System (IOS) commands normally available for Cisco routers is available for configuring it. Some of these commands have been slightly modified to accommodate the differences specific to the ATM module in the Catalyst 5000 series switch.

The IOS commands for the Catalyst 5000 series switch ATM module are divided into the following categories:

- ATM Module Command Line Interface

  These commands allow you to enter and exit the various Cisco Internetwork Operating System (Cisco IOS) configuration command modes. It provides a description of the **help** command and help features, lists the command editing keys and functions, and details the command history feature.

  You can abbreviate the syntax of Cisco IOS configuration commands. The ATM module recognizes a command when you enter enough characters of the command to uniquely identify it.

  For user interface task information and examples, see the "Command Line Interfaces" chapter.

- Configuration Commands

  These commands allow you to configure Flash memory on the ATM module.

- ATM Commands

  These commands allow you to configure an ATM interface. For ATM configuration information and examples, refer to the chapter entitled "Configuring ATM LAN Emulation Module Software."

- LAN Emulation Commands

  These commands are used to configure a LAN client on the ATM interface for LAN emulation (LANE). For ATM LANE configuration information and examples, refer to the chapter entitled "Configuring ATM LAN Emulation Module Software."

  Because some LANE commands are used often and others are used very rarely, the command descriptions in this chapter identify the commands you are most likely to use. Look under "Usage Guidelines" for the indicator *This command is ordinarily used*.

Table 7-2 lists all the commands in the Catalyst 5000 series switch, including ATM commands. In the following table, each command is identified, defined, and the command mode and command types are specified. Switch commands are identified as "Switch" commands in the "Type" column, where as, ATM module commands are identified as Cisco Internetwork Operating System (Cisco IOS) configuration commands followed by the type of ATM command it is.

Table 7-2 Catalyst 5000 Series Commands

Command	Description	Type[1]	Mode[2]
atm-vc-per-vp	Sets the map number of VCIs to support per VCI.	IOS/ATM	IC
atm sig close	Disconnects the SVC.	IOS/ATM	EXEC
clear alias	Clears the shorthand name (alias) of a command.	Switch	P
clear arp	Clears ARP table entries.	Switch	P
clear cam	Clears CAM table entries.	Switch	P
clear config	Clears configuration and resets the system.	Switch	P
clear counters	Clears MAC and Port counters.	Switch	P
clear help	Shows the **clear** command menu.	Switch	P
clear ip alias	Clears aliases of IP Addresses.	Switch	P
clear ip route	Clears IP routing table entries.	Switch	P
clear log	Clears the system error log.	Switch	P

Command	Description	Type[1]	Mode[2]
clear snmp trap	Clears SNMP trap receiver address.	Switch	P
clear spantree portvlanpri	Clears spanning tree port VLAN priority.	Switch	P
clear trunk	Clears trunks.	Switch	P
clear vlan	Deletes a VLAN from a management domain.	Switch	P
clear vtp	Deletes VLAN trunk protocol (VTP) statistics.	Switch	P
configure	Downloads a configuration file from the network and executes each command in the file.	Switch	P
disable–Switch Command	Returns the console interface to normal mode.	Switch	P
disconnect	Closes an active console port or Telnet session.	Switch	P
download	Copies a software image from a specified host to the designated module's flash memory.	Switch	P
download serial	Copies software images to the supervisor card or Flash memory through a serial port.	Switch	P
enable–Switch Command	Activates privileged mode.	Switch	N
enable	Enters privileged EXEC mode.	IOS/ATM	EXEC
end	Exits configuration mode.	IOS/ATM	GC
exit	Exits any command mode or closes an active terminal session and terminates the EXEC	IOS/ATM	All ATM
full-help	Retrieves help for the full-set of user-level commands.	IOS/ATM	All ATM
help–Switch Command	Lists the top-level commands available in the current mode	Switch	N, P
help	Displays a brief description of the help commands.	IOS/ATM	All ATM
history–Switch Command	Shows the contents of the history substitution buffer.	Switch	N
history	Enables the command history function.	IOS/ATM	Line
lane client	Activates a LANE client on the specified subinterface.	IOS/LAN	IC
lane client-atm-address	Specifies an ATM address.	IOS/LAN	IC
lane config-atm-address	Specifies a given configuration server's ATM address.	IOS/LAN	IC
lane le-arp	Adds a static entry to the LE ARP table.	IOS/LAN	IC
lane register	Registers a LANE client.	IOS/LAN	IC
ping	Sends ICMP echo request packets to another node on the network.	Switch	N
quit	Exits the administration interface session.	Switch	N
reload	Reloads the operating system.	IOS/Config	EXEC
reset	Sets the system to its default values or configures the system as an individual module.	Switch	P
session	Connects the command line interface to a session on a module (such as an ATM module).	Switch	P
set alias	Creates a shorthand name (alias) for a command.	Switch	P
set arp	Sets an ARP table entry.	Switch	P
set bradge apart	Enables or disables the default translation on FDDI.	Switch	P
set bradge fddicheck	Rejects the learning of MAC addresses that it previously learned.	Switch	P

Command	Description	Type[1]	Mode[2]
set bridge help	Lists the set bridge commands.	Switch	P
set bridge ipx 8022toether	Sets the default mode for translating IPX frames from FDDI 802.2 to Ethernet.	Switch	P
set bridge ipx 8023rawtofddi	Sets the default protocol for translating IPX frames from Ethernet 802.3 RAW to FDDI.	Switch	P
set bridge ipx 8022toether	Sets the default protocol for translating IPX FDDI SNAP frames to Ethernet frames.	Switch	P
set cam	Sets a CAM table entry.	Switch	P
set cdp disable	Deactivates Cisco Discovery Protocol information.	Switch	P
set cdp enable	Sets Cisco Discovery Protocol information.	Switch	P
set cdp interval	Sets the number of seconds between Cisco Discovery Protocol messages.	Switch	P
set enablepass	Sets the privileged password.	Switch	P
set fddi alarm	Sets the LER-alarm value.	Switch	P
set fddi cutoff	Sets the LER-cutoff value.	Switch	P
set fddi help	Lists the set fddi commands.	Switch	P
set fddi tlmin	Sets the TL_MIN value for an FDDI port.	Switch	P
set fddi tnotify	Sets the T_Notify timer value for an FDDI port.	Switch	P
set fddi treq	Sets the TRequest value for an FDDI MAC.	Switch	P
set fddi userdata	Sets the user-data string in the SMT MIB of an FDDI module.	Switch	P
set help	Shows the set command menu.	Switch	N
set interface	Sets a network interface configuration.	Switch	P
set ip alias	Sets an alias for an IP Address.	Switch	P
set ip fragmentation	Enables or disables the fragmentation of IP packets bridged between FDDI and Ethernet networks.	Switch	P
set ip help	Lists the set ip commands.	Switch	P
set ip redirect	Enables or disables ICMP redirect messages for the switch.	Switch	
set ip route	Adds IP addresses or aliases to the IP routing table.	Switch	P
set ip unreachable	Enables or disables ICMP unreachable messages for the switch.	Switch	P
set length	Sets the number of lines in the terminal display screen.	Switch	N
set logout	Sets the number of minutes before an automatic logout.	Switch	P
set module disable	Disables a module.	Switch	P
set module enable	Enables a module.	Switch	P
set module help	Shows the set module command menu.	Switch	P
set module name	Sets module name.	Switch	P
set password	Sets the console password.	Switch	P
set port disable	Disables a port.	Switch	P
set port duplex	Sets port transmission type (full/half duplex).	Switch	P
set port enable	Enables a port.	Switch	P
set port help	Shows the set port command menu.	Switch	P

Command	Description	Type[1]	Mode[2]
set port level	Sets a port's priority level (normal/high).	Switch	P
set port name	Sets a port's name.	Switch	P
set port speed	Sets a port's speed.	Switch	P
set port trap	Sets the port up/down trap (enable/disable).	Switch	P
set prompt	Sets the command line interface prompt.	Switch	P
set snmp community	Sets SNMP community string.	Switch	P
set snmp help	Shows the set snmp command menu.	Switch	P
set snmp rmon	Sets the SNMP remote monitoring (RMON) support (enable/disable).	Switch	P
set snmp trap	Sets the SNMP trap receiver address.	Switch	P
set span	Sets the switched port analyzer.	Switch	P
set spantree disable	Disables spanning tree.	Switch	P
set spantree enable	Enables spanning tree.	Switch	P
set spantree fwddelay	Sets spantree forward delay.	Switch	P
set spantree hello	Sets spantree hello time.	Switch	P
set spantree help	Shows the set spantree command menu.	Switch	P
set spantree maxage	Sets spantree maximum aging time.	Switch	P
set spantree portcost	Sets spantree port cost.	Switch	P
set spantree portfast	Sets the spanning tree port fast start (enable/disable).	Switch	P
set spantree portpri	Sets spanning tree port priority.	Switch	P
set spantree portvlanpri	Sets the spanning tree trunk port VLAN priority.	Switch	P
set spantree priority	Sets spantree priority.	Switch	P
set system baud	Sets the console port baud rate.	Switch	P
set system contact	Sets the system contact.	Switch	P
set system help	Shows the set system command menu.	Switch	P
set system location	Sets the system location.	Switch	P
set system modem	Sets modem control (enable/disable).	Switch	P
set system name	Sets the system name.	Switch	P
set time	Sets the system time.	Switch	P
set trunk	Sets ports to be trunks.	Switch	P
set vlan	Sets virtual LANs on ports.	Switch	P
set vtp	Sets virtual trunk information.	Switch	P
show alias	Shows aliases for commands.	Switch	N
show arp	Shows the ARP table.	Switch	N
show atm interface atm	Displays ATM-specific information about an interface.	IOS/ATM	EXEC
show atm traffic	Displays the current, global ATM traffic information.	IOS/ATM	EXEC
show atm vc	Displays all ATM virtual circuits.	IOS/ATM	EXEC
show bridge	Displays bridge information	Switch	P
show cam	Shows the CAM table	Switch	N

Command	Description	Type[1]	Mode[2]
show cdp	Shows Cisco Discovery Protocol information	Switch	N
show config	Shows the system configuration	Switch	P
show fddi	Displays the settings of the FDDI/CDDI modules	Switch	N
show fddicam	Displays the CAM table for the FDDI/CDDI modules.	Switch	N
show flash	Lists flash code information.	Switch	P
show help	Lists and describes the available show commands.	Switch	N
show history	Lists the commands in the current EXEC session.	IOS/ATM	EXEC
show interface	Shows network interfaces.	Switch	N
show ip alias	Shows aliases for IP Addresses.	Switch	N
show ip help	Lists the show ip commands.	Switch	N
show ip route	Displays the IP routing table entries.	Switch	N
show lane	Displays global and per-VCC LANE information.	IOS/LAN	EXEC
show lane client	Displays global and per-VCC LANE information.	IOS/LAN	EXEC
show lane le-arp	Displays the LANE ARP table.	IOS/LAN	EXEC
show log	Displays the system error log.	Switch	P
show mac	Shows MAC information.	Switch	N
show module	Shows module information.	Switch	N
show netstat	Shows network statistics.	Switch	N
show port	Shows port information.	Switch	N
show snmp	Shows SNMP information.	Switch	N
show span	Shows switch port analyzer port monitoring information.	Switch	N
show spantree	Shows spantree information.	Switch	N
show sscop	Displays SSCOP details for all ATM interfaces.	IOS/ATM	EXEC
show system	Shows system information	Switch	N
show test	Shows results of diagnostic tests	Switch	N
show time	Shows the current time	Switch	N
show trunk	Shows trunk information	Switch	N
show users	Shows active Admin sessions	Switch	N
show version–Switch Command	Shows version information	Switch	N
show version	Displays the configuration of the system hardware, software version, and sources of configuration files and boot images.	IOS/Config	EXEC
show vlan	Shows virtual LAN information.	Switch	N
show vtp	Shows VLAN trunk protocol (VTP) information.	Switch	N
show vtp help	Displays available Virtual Trunk Protocol commands.	Switch	N
slip	Attaches or detaches SLIP from the console port.	Switch	P
sscop-cc-timer	Changes the connection control timer.	IOS/ATM	IC
sscop keepalive-timer	Changes the keepalivetimer.	IOS/ATM	IC
sscop max-cc	Changes the retry count of connection control.	IOS/ATM	IC
sscop poll-timer	Changes the poll timer.	IOS/ATM	IC

Command	Description	Type[1]	Mode[2]
sscop rcv-window	Changes the receiver window.	IOS/ATM	IC
sscop send-window	Changes the transmitter window.	IOS/ATM	IC
telnet	Starts a telnet connection to a remote host.	Switch	P
test help	Shows the **test** command menu.	Switch	P
terminal	Sets the number of lines displayed.	IOS/ATM	EXEC
test snmp trap	Sends trap message to SNMP trap receivers.	Switch	P
upload	Uploads a code image to a network host.	Switch	P
wait	Pauses for a specified number of seconds.	Switch	N
write	Uploads the current configuration to a host or displays it on the terminal.	Switch	P
write erase	Erases the configuration information in nonvolatile memory.	IOS/Config	EXEC
write memory	Restarts the Catalyst 5000 series switch; use it with the reload command.	IOS/Config	EXEC
write terminal	Compares the information in running memory to the information stored in NVRAM; use it with the show configuration command.	IOS/Config	EXEC

1. Mode – indicates whether the command is a switch command or an ATM-specific command. ATM commands include Interface, Configuration, ATM and LAN Emulation commands.
2. Type – indicates whether a switch command is “Normal” or “Privileged” and whether an ATM command is an interface configuration, privileged, EXEC, global configuration, all ATM or line command.

atm vc-per-vp

Use the **atm vc-per-vp** interface configuration command to set the maximum number of VCIs to support per VPI. The **no** form of this command restores the default value.

atm vc-per-vp *number*
no atm vc-per-vp

Syntax Description

number	Maximum number of VCIs to support per VPI. Valid values are 32, 64, 128, 256, 512 or 1024.

Default

1024

Command Type

IOS ATM command.

Command Mode

Interface configuration.

Usage Guidelines

This command controls the memory allocation in the Catalyst 5000 series switch for the VCI table. It defines the maximum number of VCIs to support per VPI; it does not designate the VCI numbers.

An invalid VCI causes a warning message to be displayed.

Example

In the following example, the maximum number of VCIs to support per VPI is set to 512:

```
ATM(config-if)#atm vc-per-vp 512
```

atmsig close

Use the **atmsig close** EXEC command to disconnect an SVC.

atmsig close atm 0 *vcd*

Syntax Description

vcd Virtual circuit descriptor of the SVC to close.

Command Type

IOS ATM command.

Command Mode

EXEC.

Usage Guidelines

You must execute this command if you want to close a particular SVC. Since VCs are numbered per interface, you must specify 0 as the ATM interface number.

Example

The following example closes SVC 2 on ATM interface 0:

```
ATM# atmsig close atm0 2
```

clear alias

Use the **clear alias** command to clear the shorthand versions of commands.

clear alias all
clear alias *name*

Syntax Description

all	Identifies every alternate identifier previously created.
name	Identifies the alternate identifier of the command.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to erase the alias called arpdel:

```
Console> (enable) clear alias arpdel
Command alias deleted.
Console> (enable) clear alias all
Command alias table cleared.
Console> (enable)
```

Related Commands

session
show alias

clear arp

Use the **clear arp** command to delete a specific entry or all entries from the Address Resolution Protocol (ARP) table.

clear arp all
clear arp *ip_address*

Syntax Description

all	Specifies every IP address in the ARP table.
ip_address	IP address in the ARP table to be cleared.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to remove IP address 198.133.219.209 from the ARP table and then remove all entries from the ARP table:

```
Console> (enable) clear arp 198.133.219.209
ARP entry deleted.
Console> (enable) clear arp all
ARP table cleared.
Console> (enable)
```

Related Commands

set arp
show arp

clear cam

Use the **clear cam** command to delete a specific entry or all entries from the Address Recognition Protocol table (identified as the Content Addressable Memory, or CAM table).

clear cam *mac_addr* **[** *vlan* **]**
clear cam {dynamic | static | permanent} [*vlan* **]**

Syntax Description

vlan	The number of the VLAN.
mac_addr	Identifies one or more MAC addresses.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to remove MAC address 00-40-0b-a0-03-fa from the CAM table:

```
Console> (enable) clear cam
Usage: Console> (enable) clear cam 00-40-0b-a0-03-fa
CAM table entry cleared.
```

The following example shows how to clear dynamic entries from the CAM table:

```
Console> (enable) clear cam dynamic
Dynamic CAM entries cleared.
Console> (enable)
```

Related Commands

set bridge help
show cam

clear config

Use the **clear config** command to clear the system or module configuration information stored in NVRAM.

clear config all
clear config *mod_num*

Syntax Description

all	Specifies all modules and system information, including the IP address.
mod_num	The number of the module.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to delete the configuration information stored in NVRAM on module 2:

```
Console> (enable) clear config 2
This command will clear module 2 configuration.
Do you want to continue (y/n) [n]? y
.............................
Module 2 configuration cleared.
Console> (enable) clear config 1
This command will clear module 1 configuration.
Do you want to continue (y/n) [n]? y
......
Module 1 configuration cleared.
host%

Console> (enable) clear config all
This command will clear all configuration in NVRAM.
Do you want to continue (y/n) [n]? y
.......................................
Connection closed by foreign host
host%
```

clear counters

Use the **clear counters** command to clear MAC and port counters.

clear counters

Syntax Description

This command has no keywords or arguments.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

This command does not clear counters for the ATM module.

Example

The following example shows how to reset MAC and port counters to zero:

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

clear help

Use the **clear help** command to list the **clear** commands with brief descriptions of their functions.

clear help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list all of the **clear** commands:

```
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 help          Show this message
clear ip            Clear IP, use 'clear ip help' for more info
clear log           Clear the system error log
clear snmp          Clear SNMP trap receiver address
clear spantree      Clear spantree port vlan priority
clear trunk         Clear trunk ports
clear vlan          Clear a VLAN
clear vtp           Clear VTP statistics
Console> (enable)
```

Related Commands

set help
show fddi

clear ip alias

Use the **clear ip alias** command to clear IP aliases that were set using the **set ip alias** command.

clear ip alias all
clear ip alias *name*

Syntax Description

all	Specifies all previously set aliases of IP addresses.
name	Identifies a specific alias of an IP address.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to delete a previously defined IP alias named simba:

```
Console> (enable) clear ip alias simba
IP alias deleted.
```

Related Commands

set ip alias
show ip alias

clear ip route

Use the **clear ip route** command to delete all IP routing table entries.

clear ip route all
clear ip route *destination gateway*

Syntax Description

all	Specifies every entry in the IP routing table.
destination	The IP address of the host or network.
gateway	The IP address or alias of the gateway router.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to delete the table entry for destination 134.12.3.0, elvis gateway:

```
Console> (enable) clear ip route
Usage: clear ip route all
       clear ip route <destination> <gateway>
Console> (enable) clear ip route 134.12.3.0 elvis
Route deleted.
Console> (enable) clear ip route all
All routes deleted.
Console> (enable)
```

Related Commands

set ip route
show ip route

clear log

Use the **clear log** command to delete all entries in the system error log.

clear log [*mod_num* **]**

Syntax Description

mod_num The number of the module.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to clear the system error log:

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

Related Command

show log

clear snmp trap

Use the **clear snmp trap** command to clear an entry from the SNMP trap receiver table.

clear snmp trap all
clear snmp trap *rcvr_address*

Syntax Description

all	Specifies every entry in the SNMP trap receiver table.
rcvr_address	IP alias or IP address of the trap receiver (the SNMP management station).

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to clear the trap for IP address 192.122.173.82:

```
Console> (enable) clear snmp trap 192.122.173.82
SNMP trap receiver deleted.
Console> (enable)
```

Related Commands

set snmp trap
show snmp
test snmp trap

clear spantree portvlanpri

Use the **clear spantree portvlanpri** command to reset the spanning tree port VLAN priority.

clear spantree portvlanpri *mod_num*/*port_num vlans*

Syntax Description

mod_num The number of the module.

port_num The number of the port.

vlans Identifies one or more VLANs.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows

```
Console> (enable) clear spantree portvlanpri ?
Usage: clear spantree portvlanpri <mod_num/port_num> <vlans>
Console> (enable) clear spantree portvlanpri 1/2 23-40
Port 1/2 vlans 3,6-20,23-1000 using portpri 32
Port 1/2 vlans 1-2,4-5,21-22 using portpri 30
```

Related Commands

set spantree portvlanpri
show spantree

clear trunk

Use the **clear trunk** command to reset trunk ports to bridge ports or to clear partial information in the trunk table.

clear trunk *mod_num/port_num* [*vlans*]

Syntax Description

mod_num The number of the module.

port_num The number of the port.

vlans (Optional) Identifies one or more VLANs.

Default

If VLANs are specified, they are removed from the list of allowed VLANs on the trunk. If you do not specify a VLAN range, the mode is set to **auto** for Dynamic Interswitch Link (DISL) trunk ports and **off** for other trunk ports. Refer to the **set trunk** command for more information about **auto** and **off** modes.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

If VLANs are specified, only the specified VLANs are cleared from the trunk port table. Default VLANs cannot be cleared on the trunk.

Example

The following example shows how to clear the trunk for module 1, port 2:

```
Console> (enable) clear trunk ?
Usage: clear trunk <mod/ports...> [vlans...]
       (An example of mod/ports is 1/1,2/1-12,3/1-2,4/1-12)
       (vlans = 1..1000
       An example of vlans is 2-10,1000)
Console> (enable) clear trunk 1/2 2-4
Vlan(s) 2-4 cleared from port 1/2.
Console> (enable) clear trunk 1/2
Port 1/2 mode set to auto.
Console> (enable)
```

Related Commands

set trunk
show trunk

clear vlan

Use the **clear vlan** command to delete an existing VLAN from a management domain.

clear vlan *vlan_num*

Syntax Description

vlan_num Identifies a VLAN.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

Use a VLAN number within the range of 2 through 1,000.

Example

The following example shows how to clear an existing VLAN from a management domain.

```
Console> (enable) clear vlan ?
Usage: clear vlan <vlan_num>
(vlan)num should be in the range of 2..1000)
Console> (enable) clear vlan 4
This command will de-activate all ports on vlan 4
in the entire management domain
Do you want to continue(y/n) [n]? y
VTP: VLAN 4 deletion successful
```

Related Commands

set vlan
show vlan

clear vtp

Use the **clear vtp** command statistics to clear the VTP statistics.

clear vtp statistics

Syntax Description

statistics Specifies the statistics of the specified VTP.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

The term VTP represents Virtual Trunk Protocol.

Example

```
Console> (enable) clear vtp ?
Usage: Clear vtp statistics
Console> (enable) clear vtp statistics
vtp statistics cleared.
Console> (enable)
```

Related Commands

set vtp
set vtp domain
set vtp statistics
show vtp
show vtp domain
show vtp help
show vtp statistics

configure

Use the **configure** command to download a configuration file from the network and execute each command in that file.

configure network
configure *host file*

Syntax Description

network	Causes interactive prompting for the host and the file.
host	The IP address or IP alias of the host.
file	The name of the file.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

Refer to the "Creating a Configuration File" appendix for information about constructing a configuration file to be downloaded using the **configure** command.

Example

Following is a sample file called *system5.cfg* in the *tftpboot* directory:

```
begin
show time
set ip alias conc7 198.133.219.207
set ip alias montreux 198.133.119.42
set ip alias cres 192.122.174.42
set prompt system5>
set password
#empty string old password

pingpong
pingpong
end
#
```

Each line contains a command, except lines that begin with ! or #.

The following example shows how to download the configuration file called *system5.cfg* from the 192.122.174.42 host:

```
Console> (enable) configure 192.122.174.42 system5.cfg
Configure using system5.cfg from cres (y/n) [n]? y
/
Done.  Finished Network Download.  (446 bytes)
>> show time
Wed Feb 22 1995, 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 system5>
>> set password
Enter old password:
Enter new password: pingpong
Retype new password: pingpong
Password changed.
system5> (enable)
```

Related Command

show config

disable–Switch Command

Use the **disable** command to return the console interface to normal mode.

disable

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to return the console to normal mode:

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

Related Command

enable–Switch Command

disable–ATM Command

Use the **disable** EXEC command to exit privileged EXEC mode and return to user EXEC mode. After executing this command, the > prompt appears.

disable [*level*]

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM module interface command.

Command Mode

EXEC.

Usage Guideline

Use this command with the **level** option to reduce the privilege level. If a level is not specified, it defaults to the user EXEC mode, which is level **1**.

Example

In the following example, entering the **disable** command causes the system to exit privileged EXEC mode and return to user EXEC mode as indicated by the angle bracket (>):

```
ATM# disable
ATM>
```

Related Command

enable–ATM Command

disconnect

Use the **disconnect** command to close an active console port or Telnet session.

disconnect console
disconnect *ip_addr*

Syntax Description

console	The active console port.
ip_addr	The IP address or IP alias.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

If multiple sessions from the same IP address exist, the **disconnect** command will check if the current process is also from the same IP address. If it is not, all Telnet sessions from the specified IP address are disconnected. If it is, all sessions, other than the current session, are disconnected. The system prompts whether to disconnect the current Telnet session. You can answer **n** and remain connected, or answer **y** and be disconnected.

Example

The following example shows how to close a Telnet session with a host with IP address 198.134.214.4:

```
Console> (enable) disconnect 198.134.214.4
Telnet session from 198.134.214.4 disconnected. (1)
Console> (enable) disconnect console
Console session disconnected.
```

Related Command

telnet

download

Use the **download** command to copy a software image from a specified host to a designated module's Flash memory.

download *host file [module_num]*

Syntax Description

host	The name or IP address of host.
file	The name of file to be downloaded.
module_num	(Optional) Number of the module.

Default

If a module number is not specified, the default is module 1.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

The Catalyst 5000 series switch supports two ways to download new code to the processors: TFTP network download through any network port, and kermit serial download through the EIA/TIA-232 Console port. Only the first applies to the ATM module. The ATM module has processors that will require field upgrades.

This command downloads code to the module's Flash memory. Catalyst 5000 software will reject an image if it is not a valid image for the module.

When downloading to the ATM module, the supervisor module acts as a TFTP gateway forwarding TFTP packets to the ATM module through an inband interprocessor communication (IPC) method.

Example

The following example shows how to download the *c5000_spv11.bin* file from the mercury host:

```
Console> (enable) download mercury c5000_spv11.bin
Download image c5000_spv11.bin from mercury to module 1FLASH (y/n) [n]? y
\
Done.  Finished Network Download.  (100604 bytes)
host%

intelquery: id=0x89898989 code=0xa2a2a2a2
FLASH on Synergy:

Type            Address             Location
Intel 28F008    20000000            NMP (P3) 4MB SIM
```

```
erase(b=14, c=1): block(s): 14 Erase done
Programming Flash:  Flash Programming Complete
erase(b=2, c=4): block(s): 2 3 4 5 Erase done
Programming Flash:  Flash Programming Complete
System must be reset to run new image
```

The following example shows how to download the *fddi_1113.cpi* code from the mercury host:

```
Console> (enable) download mercury fddi_1113.cbi 4
This command will reset Module 4.
Download image fddi_1113.cbi from mercury to Module 4 FLASH (y/n) [n]? y
|
Finished network download.  (1064876 bytes)
.....................................................................n
Console> (enable)
```

The following example shows how to download the `acpflash_1111.bbi` code from the mercury host:

```
Console> (enable) download mercury acpflash_1111.bbi 3
This command will reset Module 3.
Download image acpflash_1111.bbi from mercury to Module 3 FLASH (y/n) [n]? y
/
Done.  Finished network download.  (1964012 bytes)
Console> (enable)
```

Related Commands

reset
show flash
show version
upload

download serial

Use the **download serial** command to copy software images to the supervisor card or Flash memory through a serial port.

download serial

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

This command uses Kermit protocol through the serial EIA/TIA-232 console port. The **download serial** command is not allowed from a Telnet session.

Caution After starting the serial download using Kermit, do not attempt to abort the serial download by typing Ctrl-C. This command will interrupt the download process and leave the switch in an undesirable state. However, if this occurs, reboot the switch.

Example

In the following example, a tty port is connected to the command line interface port on the Catalyst 5000 series switch. Following is a sample session showing a connection to a remote terminal from a Sun workstation and the use of the **serial download** command to copy a software image to the supervisor card:

```
[At local Sun workstation]
host% kermit
C-Kermit 5A(172) ALPHA, 30 Jun 91, SUNOS 4.0 (BSD)
Type ? or 'help' for help
C-Kermit>set line /dev/ttyb
C-Kermit>c
Connecting to /dev/ttyb, speed 9600.
The escape character is ^ (ASCII 28).
Type the escape character followed by C to get back,
or followed by ? to see other options.

Console> enable
Enter Password:
Console> (enable) set system baud 19200
^\C
[Back at local sun workstation]
```

```
C-Kermit>set speed 19200
/dev/ttyb, 19200 bps
C-Kermit>c
Connecting to /dev/ttyb, speed 19200.
The escape character is ^ (ASCII 28).
Type the escape character followed by C to get back,
or followed by ? to see other options.

Console> (enable) download serial
Download Supervisor image via console port (y/n) [n]? y

Concentrator Boot ROM (Ver 1.00)

Waiting for DOWNLOAD!!
Return to your local Machine by typing its escape sequence
Issue Kermit send command from there[ Send 'Filename']

^\C
[Back at Local System]
C-Kermit>send c5000_xx.bin
                          SF
c5000_xx.bin => C5000_XX.BIN, Size: 1233266

X to cancel file,  CR to resend current packet
Z to cancel group, A for status report
E to send Error packet, Ctrl-C to quit immediately: .......................
.........................................................................

...... [OK]
ZB
C-Kermit> quit
host%
```

Related Commands

set baud
set line
set speed

editing

Use the **editing** line configuration command to enable enhanced editing mode. To disable the enhanced editing mode, use the **no** form of this command.

editing
no editing

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM module interface command.

Default

Enabled

Command Mode

Line configuration

Usage Guidelines

Table 7-3 provides a description of the keys used to enter and edit commands. Ctrl indicates the Control key. It must be pressed simultaneously with its associated letter key. Esc indicates the Escape key. It must be pressed first, followed by its associated letter key. Keys are not case sensitive.

Table 7-3 Editing Keys and Functions

Keys	Function
Tab	Completes a partial command name entry. When you enter a unique set of characters and press the Tab key, the system completes the command name. If you enter a set of characters that could indicate more than one command, the system beeps to indicate an error. Enter a question mark (?) immediately following the partial command (no space). The system provides a list of commands that begin with that string.
Delete or Backspace	Erases the character to the left of the cursor.
Return	At the command line, pressing the Return key processes a command. At the "---More---" prompt on a terminal screen, pressing the Return key scrolls down a line.
Spacebar	Allows you to see more output on the terminal screen. Press the Spacebar when you see "---More---" on the screen to display the next screen.
Left Arrow[1]	Moves the cursor one character to the left. When you enter a command that extends beyond a single line, you can press the Left Arrow key repeatedly to scroll back toward the system prompt and verify the beginning of the command entry.
Right Arrow[1]	Moves the cursor one character to the right.
Up Arrow[1] or Ctrl-P	Recalls commands in the history buffer, beginning with the most recent command. Repeat the key sequence to recall successively older commands.

Keys	Function
Down Arrow[1] or Ctrl-N	Return to more recent commands in the history buffer after recalling commands with the Up Arrow or Ctrl-P. Repeat the key sequence to recall successively more recent commands.
Ctrl-A	Moves the cursor to the beginning of the line.
Ctrl-B	Moves the cursor back one character.
Ctrl-D	Deletes the character at the cursor.
Ctrl-E	Moves the cursor to the end of the command line.
Ctrl-F	Moves the cursor forward one character.
Ctrl-K	Deletes all characters from the cursor to the end of the command line.
Ctrl-L or Ctrl-R	Redisplays the system prompt and command line.
Ctrl-T	Transposes the character to the left of the cursor with the character located at the cursor.
Ctrl-U or Ctrl-X	Deletes all characters from the cursor back to the beginning of the command line.
Ctrl-V or Esc Q	Inserts a code to indicate to the system that the keystroke immediately following should be treated as a command entry, *not* as an editing key.
Ctrl-W	Deletes the word to the left of the cursor.
Ctrl-Y	Recalls the most recent entry in the delete buffer. The delete buffer contains the last ten items you have deleted or cut. Ctrl-Y can be used in conjunction with Esc Y.
Ctrl-Z	Ends configuration mode and returns you to the EXEC prompt.
Esc B	Moves the cursor back one word.
Esc C	Capitalizes from the cursor to the end of the word.
Esc D	Deletes from the cursor to the end of the word.
Esc F	Moves the cursor forward one word.
Esc L	Changes to lowercase from the cursor to the end of the word.
Esc U	Capitalizes from the cursor to the end of the word.
Esc Y	Recalls the next buffer entry. The buffer contains the last ten items you have deleted. Press Ctrl-Y first to recall the most recent entry. Then press Esc Y up to nine times to recall the remaining entries in the buffer. If you bypass an entry, continue to press Esc Y to cycle back to it.

1. The arrow keys function only with ANSI-compatible terminals.

Example

In the following example, enhanced editing mode is disabled on virtual terminal line 3:

```
ATM#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ATM(config)#line vty 3
ATM(config-line)#no editing
ATM(config-line)#
```

enable–Switch Command

Use the **enable** command to activate privileged mode. In privileged mode, certain commands are available, and certain displays have extra information.

enable

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guideline

The designation (enable) indicates that the system is in privileged mode and that privileged commands can be entered.

Example

The following example shows how to enter privileged mode:

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

Related Command

disable–Switch Command

enable–ATM Command

Use the enable EXEC command to enter privileged EXEC mode.

enable

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM module interface command.

Command Mode

EXEC.

Usage Guidelines

Because many of the privileged commands set operating parameters, privileged access should be password-protected to prevent unauthorized use. If the system administrator has set a password with the enable password global configuration command, you are prompted to enter it before being allowed access to privileged EXEC mode. The password is case sensitive. The factory default password on the ATM module is **atm**.

Example

In the following example, the user enters the enable command and is prompted to enter a password. The password is not displayed on the screen. After entering the password, the system enters privileged command mode as indicated by the pound sign (#).

```
ATM> enable
Password:
ATM#
```

Related Command

disable–ATM Command

end

Use the **end** global configuration command to exit configuration mode.

end

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM module Interface command.

Command Mode

Global configuration.

Usage Guideline

You can also press Ctrl-Z to exit configuration mode.

Example

In the following example, the switch name is changed to george using the hostname global configuration command. Entering the **end** command causes the system to exit configuration mode and return to EXEC mode.

```
ATM (config)# write memory
Remote host [0.0.0.0]? 131.108.1.111
Name of configuration file to write [Catalyst-confg]?
Write file Catalyst-confg on host 131.108.1.111? [confirm]
#
Writing Router-confg !! [OK]
ATM (config)#
write terminal
ATM(config)# hostname george
ATM(config)# end
ATM#
```

exit

Use the **exit** command at the system prompt to exit any command mode or close an active terminal session and terminate the EXEC.

exit

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM module interface command.

Command Mode

Available in all command modes

Usage Guidelines

When you enter the **exit** command at the EXEC level, the EXEC mode is ended. Use the **exit** command at the configuration level to return to privileged EXEC mode. Use the **exit** command in interface and line command modes to return to global configuration mode. Use the **exit** command in subinterface configuration mode to return to interface configuration mode. You can also press Ctrl-Z from any configuration mode to return to privileged EXEC mode.

Example

The following example shows how to exit an active session.

```
ATM> exit
```

full-help

Use the **full-help** command to get help for the full set of user-level commands.

full-help

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM module Interface command.

Default

Disabled.

Command Mode

Available in all ATM command modes.

Usage Guidelines

The full-help command enables (or disables) an unprivileged user to see all of the help messages available. It is used with the show ? command.

Example

The following example is output for show ? with the **full-help** command disabled:

```
ATM>show ?
  atm        ATM information
  clock[1]     Display the system clock
  history    Display the session command history
  hosts[1]     IP domain-name, lookup style, nameservers, and host table
  lane       LAN Emulation information
  sessions   Information about Telnet connections
  terminal   Display terminal configuration parameters
  users      Display information about terminal lines
  version    System hardware and software status
```

1. Although this command appears, it is currently not supported in this software release.

Related Command

help–ATM Command

help–Switch Command

Use the **help** command to list the top-level commands available in the current mode.

help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal and privileged.

Usage Guidelines

- In normal mode, the **help** command provides a list of the top-level commands available in normal mode. In privileged mode, this command provides a list of the top-level commands available in privileged mode.
- Note that there is an additional **help** command immediately following that is ATM-specific.

Examples

The following example shows how to list the top-level commands available in normal mode:

```
Console> (enable) help
Commands:
------------------------------------------------------------------------
clear               Clear, use 'clear help' for more info
configure           Configure system from terminal/network
disable             Disable privileged mode
disconnect          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 from the Admin session
reset               Reset system or module
session             Tunnel to ATM module
set                 Set, use 'set help' for more info
show                Show, use 'show help' for more info
slip                Attach/detach Serial Line IP interface
telnet              Telnet to a remote host
test                Test, use 'test help' for more info
upload              Upload code from a processor
wait                Wait for x seconds
write               Write system configuration to terminal/network
Console> (enable)
```

The following example shows how to list the top-level commands available in privileged mode:

```
Console> (enable) help
Commands:
------------------------------------------------------------------------
clear               Clear, use 'clear help' for more info
configure           Configure system from terminal/network
disable             Disable privileged mode
disconnect          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 from the Admin session
reset               Reset system or module
session             Tunnel to ATM module
set                 Set, use 'set help' for more info
show                Show, use 'show help' for more info
slip                Attach/detach Serial Line IP interface
telnet              Telnet to a remote host
test                Test, use 'test help' for more info
upload              Upload code from a processor
wait                Wait for x seconds
write               Write system configuration to terminal/network
Console> (enable)
```

help–ATM Command

Use the **help** command to display a brief description of the help system.

help

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM module interface command.

Command Mode

Available in all ATM command modes.

Usage Guidelines

The help command provides a brief description of the context-sensitive help system.

- To list all commands available for a particular command mode, enter a question mark (?) at the system prompt.
- To obtain a list of commands that begin with a particular character string, enter the abbreviated command entry immediately followed by a question mark (?). This form of help is called word help, because it lists only the keywords or arguments that begin with the abbreviation you entered.
- To list a command´s associated keywords or arguments, enter a question mark (?) in place of a keyword or argument on the command line. This form of help is called command syntax help, because it lists the keywords or arguments that apply based on the command, keywords, and arguments you have already entered.

Examples

Enter the help command for a brief description of the help system:

```
ATM# help
Help may be requested at any point in a command by entering
a question mark '?'. If nothing matches, the help list will
be empty and you must backup until entering a '?' shows the
available options.
Two styles of help are provided:
1. Full help is available when you are ready to enter a
   command argument (e.g. 'show ?') and describes each possible
   argument.
2. Partial help is provided when an abbreviated argument is entered
   and you want to know what arguments match the input
   (e.g. 'show pr?'.)
```

The following example shows how to use word help to display all the privileged EXEC commands that begin with the letters ¨co¨:

```
ATM# co?
configure  connect  copy
```

Related Command

full-help

history–Switch Command

The **history** command shows the contents of the history substitution buffer. Refer to the "Command Line Interfaces" chapter for details about the history substitution buffer.

history

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guideline

The history buffer size is fixed at 20 commands.

Example

In the following example, the **history** command lists the contents of the history substitution buffer:

```
Console> history
       1 help
       2 history
Console> !2
Console> history
       1 help
       2 history
       3 history
```

history–ATM Command

Use the **history** line configuration command to enable the command history function, or to change the command history buffer size for a particular line. To disable the command history feature, use the **no** form of this command.

history [size *number-of-lines***]**
no history [size *number-of-lines***]**

Syntax Description

size *number-of-lines*	(Optional) Specifies the number of command lines that the system will record in its history buffer. The range is 0 to 256.

Default

10 lines

Command Type

IOS ATM module interface command.

Command Mode

Line configuration.

Usage Guidelines

The **history** command, without the **size** keyword and the *number-of-lines* argument, enables the history function with the last buffer size specified or with the default of 10 lines, if there was not a prior setting.

The **no history** command, without the **size** keyword and the *number-of lines* argument, disables the history feature but remembers the buffer size if it was something other than the default. The **no history size** command resets the buffer size to 10.

The command history feature provides a record of EXEC commands you have entered. This feature is particularly useful for recalling long or complex commands or entries, including access lists.

Table 7-4 lists the keys and functions you can use to recall commands from the command history buffer.

Table 7-4 History Keys

Key	Function
Up Arrow or Ctrl-P [1]	Recalls commands in the history buffer in a backward sequence, beginning with the most recent command. Repeat the key sequence to recall successively older commands.
Down Arrow or Ctrl-N[1]	Returns to more recent commands in the history buffer after recalling commands with the Up Arrow or Ctrl-P . Repeat the key sequence to recall successively more recent commands.

1. The arrow keys function only with ANSI-compatible terminals such as VT100s.

Example

In the following example, virtual terminal line 4 is configured with a history buffer size of 35 lines:

```
ATM#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
ATM(config)#line vty 4
ATM(config-line)#history size 35
ATM(config-line)#
```

Related Command

show history

lane client

Use the **lane client** interface configuration command to activate a LANE client on the specified subinterface. To remove a previously activated LANE client on the subinterface, use the **no** form of this command.

lane client ethernet *vlan#* [*elan-name*]
no lane client [**ethernet *vlan#*** [*elan-name*]]

Syntax Description

ethernet	Identifies the type of emulated LAN attached to this subinterface.
elan-name	(Optional) Name of the emulated LAN. This argument is optional because the client obtains its emulated LAN name from the configuration server. Maximum length is 32 characters.
vlan#	Identifies the number of the vlan that corresponds to the specified emulated LAN.

Default

None

Command Type

IOS LAN emulation command.

Command Mode

Interface configuration

Usage Guidelines

This command is ordinarily used.

If a **lane client** command has already been entered on the subinterface for a different emulated LAN, then the client initiates termination procedures for that emulated LAN and joins the new emulated LAN.

If you do not provide an *elan-name* value, the client contacts the server to find which emulated LAN to join. If you do provide an emulated LAN name, the client consults the configuration server to ensure that no conflicting bindings exist.

Example

In the following example, the LANE client is activated for a VLAN 3 called *eng*:

```
ATM(config-if)# lane client ethernet vlan 3 eng
```

Related Command

lane client-atm-address

lane client-atm-address

Use the **lane client-atm-address** interface configuration command to specify an ATM address, and thus override the automatic ATM address assignment, for the LANE client on the specified subinterface. To remove the ATM address previously specified for the LANE client on the specified subinterface and thus revert to the automatic address assignment, use the **no** form of this command.

lane client-atm-address *atm-address-template*
no client-atm-address [*atm-address-template*]

Syntax Description

atm-address-template	ATM address or a template in which wildcard characters are replaced by any nibble or group of nibbles of the prefix bytes, the ESI bytes, or the selector byte of the automatically assigned ATM address.

Default

Automatic ATM address assignment.

Command Type

IOS LAN emulation command.

Command Mode

Interface configuration.

Usage Guidelines

Use of this command on a selected subinterface, but with a different ATM address than was used previously, replaces the LANE client's ATM address.

ATM Addresses. A LANE ATM address has the same syntax as an NSAP (but it is not a network-level address):

- A 13-byte prefix that includes the following fields defined by the ATM Forum: AFI (Authority and Format Identifier) field (1 byte), DCC (Data Country Code) or ICD (International Code Designator) field (2 bytes), DFI field (Domain Specific Part Format Identifier) (1 byte), Administrative Authority field (3 bytes), Reserved field (2 bytes), Routing Domain field (2 bytes), and Area field (2 bytes).
- A 6-byte end-system identifier (ESI)
- A 1-byte selector field

Address Templates. LANE ATM address templates can use two types of wildcards: an asterisk (*) to match any single character, and an ellipsis (...) to match any number of leading or trailing characters. The values of the characters replaced by widlcards come from the automatically assigned ATM address.

In LANE, a *prefix template* explicitly matches the ATM address prefix but uses wildcards for the ESI and selector fields. An *ESI template* explicitly matches the ESI field but uses wildcards for the prefix and selector.

In Cisco's implementation of LANE, the prefix corresponds to the switch, the ESI corresponds to the ATM interface, and the Selector field corresponds to the specific subinterface of the interface.

For a discussion of Cisco's method of automatically assigning ATM addresses, refer to the "Configuring LAN Emulation" chapter in the *Router Products Configuration Guide*.

Examples

The following example uses an ESI template to specify the part of the ATM address corresponding to the interface; the remaining parts of the ATM address come from automatic assignment:

```
ATM(config-if)# lane client-atm-address...0800.200C.1001.**
```

The following example uses a prefix template to specify the part of the ATM address corresponding to the switch; the remaining parts of the ATM address come from automatic assignment:

```
ATM(config-if)# lane client-atm-address 47.000014155551212f.00.00...
```

Related Command

lane client

lane config-atm-address

Use the **lane config-atm-address** interface configuration command to specify a given configuration server's ATM address. To remove an assigned ATM address, use the **no** form of this command**.**

lane config-atm-address *atm-address-template*
no lane config-atm-address [*atm-address-template*]

Syntax Description

atm-address-template	ATM address or a template in which wildcard characters are replaced by any nibble or group of nibbles of the prefix bytes, the ESI bytes, or the selector byte of the automatically assigned ATM address.

Default

No specific ATM address or method is set.

Command Type

IOS LAN emulation command.

Command Mode

Interface configuration

Usage Guidelines

This command causes the LANE client on the subinterface to use the specified ATM address (rather than the ATM address provided by the ILMI) to locate the configuration server.

ATM Addresses. A LANE ATM address has the same syntax as an NSAP (but it is not a network-level address):

- A 13-byte prefix that includes the following fields defined by the ATM Forum: AFI (Authority and Format Identifier) field (1 byte), DCC (Data Country Code) or ICD (International Code Designator) field (2 bytes), DFI field (Domain Specific Part Format Identifier) (1 byte), Administrative Authority field (3 bytes), Reserved field (2 bytes), Routing Domain field (2 bytes), and Area field (2 bytes).
- A 6-byte end-system identifier (ESI)
- A 1-byte selector field

Address Templates. LANE ATM address templates can use two types of wildcards: an asterisk (*) to match any single character, and an ellipsis (...) to match any number of leading or trailing characters. The values of the characters replaced by wildcards come from the automatically assigned ATM address.

In LANE, a *prefix template* explicitly matches the ATM address prefix but uses wildcards for the ESI and selector fields. An *ESI template* explicitly matches the ESI field but uses wildcards for the prefix and selector.

In Cisco's implementation of LANE, the prefix corresponds to the switch, the ESI corresponds to the ATM interface, and the Selector field corresponds to the specific subinterface of the interface.

For a discussion of Cisco's method of automatically assigning ATM addresses, refer to the "Configuring ATM LAN Emulation Module Software" chapter.

Example

The following example specifies the LANE configuration server's ATM address:

```
ATM(config-subif)#lane config-atm-address 39.000000000000014155551211.0800200c1001.00
```

lane le-arp

Use the **lane le-arp** interface configuration command to add a static entry to the LE ARP table of the LANE client configured on the specified subinterface. To remove a static entry from the LE ARP table of the LANE client on the specified subinterface, use the **no** form of this command.

lane le-arp *mac-address atm-address*
no lane le-arp *mac-address atm-address*

Syntax Description

mac-address	MAC address to bind to the specified ATM address.
atm-address	ATM address.

Default

No static address bindings are provided.

Command Type

IOS LAN emulation command.

Command Mode

Interface configuration

Usage Guidelines

This command only adds or removes a static entry binding a MAC address to an ATM address. It does not add or remove dynamic entries. Removing the static entry for a specified ATM address from an LE ARP table does not release Data Direct VCCs established to that ATM address. However, clearing a static entry clears any fast-cache entries that were created from the MAC address-to-ATM address binding.

Static LE ARP entries are not aged and are not removed automatically.

To remove dynamic entries from the LE ARP table of the LANE client on the specified subinterface, use the **clear lane le-arp** command.

Example

The following command adds a static entry to the LE ARP table:

```
ATM(config-if)# lane le-arp 0800.aa00.0101 47.000014155551212f.00.00.0800.200C.1001.01
```

lane register

Use the **lane register** interface configuration command to register a LANE client that is connected by PVC to the LANE server on the specified subinterface. To remove a prior entry, use the **no** form of this command.

lane register *vcd mac-address atm-address*
no lane register *vcd* [*mac-address atm-address*]

Syntax Description

vcd	Virtual channel descriptor of the Server Direct PVC through which the LANE client is connected to the LANE server.
mac-address	MAC address of the LANE client.
atm-address	ATM address of the LANE client.

Defaults

No PVC is defined. No MAC address and ATM address are provided.

Command Type

IOS LAN emulation command.

Command Mode

Interface configuration

Usage Guidelines

Ordinarily, SVCs are used instead of PVCs for communications within emulated LANs, and registration occurs dynamically via the LANE protocol. This command is used only when PVCs are used.

When PVCs are used instead of SVCs for Server Direct circuits between the LANE server and LANE clients, use this command on the LANE server to identify the MAC address and the ATM address of the LANE client at the other end of a virtual circuit. If the client at the other end has a different ATM address, it is not allowed to join the emulated LAN. This can function as a security check.

Use the **lane pvc** command on a LANE client and the **lane register** command on a LANE server to enable use of PVCs, instead of SVCs alone, for LANE. The *vcd* value in the **lane register** command must match the *vcd* value in a **lane pvc** command and in an **atm pvc** command.

If you use PVCs for the Control Direct VCCs, you must also use PVCs for the Control Distribute VCCs. If you use PVCs for the Multicast Send VCCs, you must also use PVCs for the Multicast Forward VCCs

Related Command

lane pvc

ping

Use the **ping** command to send Internet Control Message Protocol (ICMP) echo request packets to another node on the network.

ping *host*
ping -s *host [packet_size] [packet_count]*

Syntax Description

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

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guidelines

Press **Ctrl-C** to stop pinging.

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

- Normal response—The normal response occurs in one to ten seconds, depending on network traffic.
- Destination does not respond—If the host does not respond, a no answer message appears in ten seconds.
- Destination unreachable—The gateway given in the route table for this destination indicates that the destination is unreachable.
- Network or host unreachable—The switch found no corresponding entry in the route table.

Example

The following example shows how to ping a host with IP alias elvis a single time, then ping it once per second until you press **Ctrl-C** to stop pinging:

```
Console> ping elvis
elvis is alive
Console> ping -s elvis
ping elvis: 56 data bytes
64 bytes from elvis: icmp_seq=0. time=11 ms
64 bytes from elvis: icmp_seq=1. time=8 ms
64 bytes from elvis: icmp_seq=2. time=8 ms
64 bytes from elvis: icmp_seq=3. time=7 ms
64 bytes from elvis: icmp_seq=4. time=11 ms
64 bytes from elvis: icmp_seq=5. time=7 ms
64 bytes from elvis: icmp_seq=6. time=7 ms
^C

----elvis PING Statistics----
7 packets transmitted, 7 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 7/8/11
Console>
```

Related Commands

set interface
set ip route
show interface
show ip route

quit

Use the **quit** command to exit a command line interface session.

quit

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guidelines

The **exit** and **logout** commands perform the same function as the **quit** command.

Example

The following example shows how to close a connection with the command line interface:

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

Related Commands

exit
logout

reload

Use the **reload** EXEC command to reload the operating system.

reload

Syntax Description

This command has no arguments or keywords.

Command Type

IOS Configuration command.

Command Mode

EXEC.

Usage Guidelines

The **reload** command halts the ATM module. If the ATM module is set to restart on error, it robots itself. Use the **reload** command after configuration information is entered into a file and saved to the startup configuration.

You cannot reload from a virtual terminal if the system is not set up for automatic booting. This prevents the system from dropping to the ROM monitor and thereby taking the system out of the remote user's control.

If you modify your configuration file, the system prompts you to save the configuration. During a save operation, the system asks you if you want to proceed with the save if the CONFIG_FILE environment variable points to a startup configuration file that no longer exists. If you say "yes" in this situation, the system goes to **setup** mode upon reload.

Example

The following example illustrates how to enter the **reload** command at the privileged EXEC prompt:

```
ATM>reload
```

reset

Use the **reset** command to restart the system or an individual line card.

reset system
reset *mod_num*

Syntax Description

system	Resets the system to its default values.
mod_num	The number of the module.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

If no module number or module 1 is specified, the command resets the entire system.

Example

The following example shows how to reset module 4:

```
Console> (enable) reset 4
This command will reset module 4.
Do you want to continue (y/n) [n]? y
Run time configuration and nvram configuration on ATM card 4 differs.
Do you wish to perform "write memory" (y/n) [n]? y
Resetting module 4...
Console> (enable)
```

session

Use the **session** command to access the ATM commands, which allow you to configure the ATM module.

session
session *mod_num*

Syntax Description

mod_num The number of the module.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal and privileged.

Usage Guidelines

After you enter this command, the system responds with the Enter Password: prompt. Enter **atm** as the password. This password can be changed; however, there is no need to change this password because the switch is already protected by an access password and a password for entering privileged command mode.

To end the session with the ATM module, enter the **exit**, **quit**, or **logout** command.

Example

The following example shows how to access the ATM commands:

```
Console> session
Usage: session <mod_num>
Console> session 4
End ATM session with exit, quit or logout.
ATM> enable
Enter Password:
ATM-# exit
Console> (enable)
```

set alias

Use the **set alias** command to define shorthand versions of commands.

set alias *name command* [*parameter*] [*parameter*]

Syntax Description

name	The alias being created.
command	The command for which the alias is being created.
parameter	(Optional) Parameters that apply to the command for which an alias is being created. See the specific command for information about parameters that apply.

Default

No aliases configured.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

The name *all* cannot be defined as an alias.

Example

The following example shows how to set **arpdel** as the alias for the **clear arp** command:

```
Console> (enable) set alias arpdel clear arp
Command alias added.
Console> (enable)
```

Related Commands

clear alias
show alias

set arp

The **set arp** command adds entries into the Address Resolution Protocol (ARP) table and sets the ARP aging time for the table.

set arp agingtime *agingtime*
set arp *ip_addr hw_addr*

Syntax Description

agingtime	The number of seconds (from 1 to 1000000) that entries will remain in the ARP table before being deleted. Setting this value to 0 disables aging.
ip_addr	The IP address or IP alias of the physical unit.
hw_addr	The MAC address of the physical unit.

Default

No ARP table entries exist, and ARP aging is set to 1200 seconds.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the aging time for the ARP table to 1800 seconds and add an entry for a physical unit with IP address 198.133.219.232 and a MAC address of 00-00-0c-40-0f-bc to the ARP table:

```
Console> (enable) set arp agingtime 1800
ARP aging time set to 1800 seconds.
Console> (enable) set arp 198.133.219.232 00-00-0c-40-0f-bc
ARP entry added.
Console> (enable)
```

Related Commands

clear arp
show arp

set bridge apart

Use the **set bridge apar**t command to enable or disable the default translation on FDDI.

set bridge apart enable | disable

Syntax Description

enable	Activates the default translation on FDDI.
disable	Deactivates the default translation on FDDI.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to disable **set bridge apart**.

```
Console> (enable) set bridge apart disable
APaRT disabled
Console> (enable)
```

Related Command

set briadge fddicheck

set bridge fddicheck

Use the **set bridge fddicheck** command to reject the learning of MAC addresses that it previously learned from an Ethernet interface the default translation on FDDI.

set bridge fddicheck enable | disable

Syntax Description

enable	Activates FDDI to learn new addresses.
disable	Deactivates FDDI to learn new addresses.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

This command requires information from the CAM. Therefore, disbaling APART, will also automatically ddisable fddicheck. To enable fddicheck, first enable APART.

Example

The following example shows how to enable the **set bridge fddickeck** command.

```
Console> (enable) set bridge fddicheck enable
FDDICHECK enabled
Console> (enable)
```

Related Command

set briadge apart

set bridge help

Use the **set bridge help** command to list the **set bridge** commands with brief descriptions of their functions.

set bridge help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list all of the **set bridge** commands:

```
Console> (enable) set bridge help
Commands:
------------------------------------------------------------------------
set bridge apart        Dis/Enable default translation on FDDI
set bridge help        Show 'set bridge' command menu
set bridge ipx         Set default IPX translation
set bridge fddicheck   Dis/Enable FDDI to learn new addresses
Console> (enable)
```

set bridge ipx 8022toether

Use the **set bridge ipx 8022toether** command to set the default mode for translating IPX packets from FDDI 802.2 to Ethernet. This default translation is used only until the real protocol types are learned.

set bridge ipx 8022toether {**8023** | **SNAP** | **EII** | **8023RAW**}

Syntax Description

8023	Specifies Ethernet 802.3 as the default protocol.
SNAP	Specifies Ethernet SNAP as the default protocol.
EII	Specifies Ethernet II as the default protocol.
8023RAW	Specifies Ethernet 802.3 RAW as the default protocol.

Default

The default value for the **set bridge ipx 8022toether** command is 8023 (Ethernet 802.3).

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the default protocol to SNAP for translating IPX packets between FDDI 802.2 and Ethernet networks:

```
Console> (enable) set bridge ipx 8022toether snap
Module 4 8022toether translation set.
Console> (enable)
```

set bridge ipx 8023rawtofddi

Use the **set bridge ipx 8023rawtofddi** command to set the default protocol for translating IPX packets from Ethernet 802.3 to FDDI. This default translation is used only until the real protocol types are learned.

set bridge ipx 8023rawtofddi {**8022** | **SNAP** | **FDDIRAW**}

Syntax Description

8022	Specifies FDDI 802.2 as the default protocol.
SNAP	Specifies FDDI SNAP as the default protocol.
FDDIRAW	Specifies FDDI RAW as the default protocol.

Default

The default value for the **set bridge ipx 8023rawtofddi** command is SNAP (FDDI SNAP).

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the default mode to SNAP for translating IPX packets between Ethernet 802.2 RAW and FDDI networks:

```
Console> (enable) set bridge ipx 8023rawtofddi snap
Module 4 8023rawtofddi translation set.
Console> (enable)
```

set bridge ipx snaptoether

Use the **set bridge ipx snaptoether** command to set the default protocol for translating IPX FDDI SNAP frames to Ethernet frames. This default translation is used for all broadcast IPX SNAP frames and for any unlearned Ethernet MAC addresses.

set bridge ipx snaptoether {**8023** | **SNAP** | **EII** | **8023RAW**}

Syntax Description

8023	Specifies Ethernet 802.3 as the default frame type.
SNAP	Specifies Ethernet SNAP as the default frame type
EII	Specifies Ethernet II as the default frame type.
8023RAW	Specifies Ethernet 802.3 RAW as the default frame type.

Default

The default value for **set bridge ipx snaptoether** command is 8023RAW (Ethernet 802.3 RAW).

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the default protocol for translating IPX FDDI SNAP packets to Ethernet SNAP.

```
Console> (enable) set bridge ipx snaptoether snap
Module 4 snaptoether translation set
Console> (enable)
```

set cam

Use the **set cam** command to add entries into the Content Addressable Memory (CAM) table and to set the aging time for the table. The default configuration has a local MAC address(es), spanning-tree address (01-80-c2-00-00-00), and CDP multicast address for destination port 1/3 (the NMP).

Note Although this command refers to the CAM table, the table is an EARL table.

set cam agingtime *vlan agingtime*
set cam {**dynamic** | **static** | **permanent**} *unicast_mac mod/ports* [*vlan*]
set cam {**dynamic** | **static** | **permanent**} *multicast_mac mod/ports* [*vlan*]

Syntax Description

vlan	The number of the virtual LAN. When setting aging time and when setting CAM entries to dynamic, static, or permanent for a trunk port, the VLAN number is required. Otherwise, the VLAN number is optional.
agingtime	(Optional) The number of seconds (0-1000000) that entries will remain in the table before being deleted.
dynamic	Specifies that entries are subject to aging.
static	Specifies that entries are not subject to aging. Static (nonpermanent) entries will remain in the EARL table until the system is reset.
permanent	Specifies that static (permanent) entries will be stored in NVRAM until they are removed by the **clear cam** or **clear config** command.
unicast_mac	The MAC address of the destination host used for a unicast.
mod	The number of the module.
ports	The numbers of the ports.
multicast_mac	The MAC address of the destination host used for a multicast.

Default

The default aging time for all configured VLANs is 300 seconds. Setting aging time to 0 disables aging.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

If the given MAC address is a multicast (x*n*-xx-xx-xx-xx-xx where *n* is xxx1 [that is, the least significant bit of the most significant byte is set to 1]) or broadcast address (ff-ff-ff-ff-ff-ff) and multiple ports are specified, the ports must all be in the same VLAN. If the given address is a unicast address and multiple ports are specified, the ports must be in different VLANs.

Example

The following example shows how to set the CAM table aging time to 300 seconds; how to add a unicast entry to the table for module 2, port 9; and how to add a permanent multicast entry to the table for module 1, port 1, and module 2, ports 1, 3, and 8 through 12.

```
Console> (enable) set cam
Usage: set cam agingtime <vlan> <agingtime>
       set cam <dynamic|static|permanent> <unicast_mac> <mod/port> [vlan]
       set cam <static|permanent> <multicast_mac> <mod/ports..> [vlan]
       (agingtime = 0..1000000 seconds, 0 to disable
        vlan = 1..1000
        Ports of a multicast group must be of the same VLAN.
        Must specify vlan if port(s) are trunk ports.)
Console> (enable) set cam agingtime 1 300
Vlan 1 CAM aging time set to 300 seconds.
Console> (enable) Console

Console> (enable) set cam agingtime 1 300
CAM table aging time set.
Console> (enable) set cam static 00-00-0c-a0-03-fa 2/9
Static unicast entry added to CAM table.
Console> (enable) set cam permanent 01-40-0b-a0-03-fa 1/1,2/1,2/3,2/8-12
Permanent multicast entry added to CAM table.
Console> (enable)
```

Related Commands

clear cam
show cam

set cdp disable

Use the **set cdp disable** command to disable the Cisco Discovery Protocol (CDP) information display on specified ports. If enable or disable is not specified, the current setting remains active.

set cdp disable *mod_num/port_num*
*s***et cdp disable all**

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
all	Disable Cisco Discovery Protocol (CDP) information on all ports.

Default

The default system configuration has CDP enabled with a message interval of 60 seconds for every port.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

When enabling or disabling CDP and the message interval is not specified, the existing message interval is used.

The ATM module does not support CDP.

Example

The following example shows how to disable the CDP message display for port 1 on module 2:

```
Console> (enable) set cdp 2/1 disable
Port 2/1 CDP disabled.
Console> (enable)
```

Related Commands

set cdp enable
set cdp interval

set cdp enable

Use the **set cdp enable** command to enable the Cisco Discovery Protocol (CDP) information display. If enable or disable is not specified, the current setting remains active.

set cdp enable *mod_num/port_num*
*s***et cdp enable all**

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
all	Enable Cisco Discovery Protocol (CDP) information on all ports.

Default

The default system configuration has CDP enabled with a message interval of 60 seconds for every port.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

When enabling or disabling CDP and the message interval is not specified, the existing message interval is used.

Example

The following example shows how to enable the CDP message display for port 1 on module 2:

```
Console> (enable) set cdp 2/1 enable
Port 2/1 CDP enabled.
Console> (enable)
```

Related Commands

set cdp disable
set cdp interval

set cdp interval

Use the **set cdp interval** command to set the message interval for Cisco Discovery Protocol (CDP) on each port.

set cdp interval *mod_num/port_num interval*
set cdp interval all

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
interval	The number of seconds (5-900) the system waits before sending a message.
all	Set the message interval for Cisco Discovery Protocol (CDP) information on all ports.

Default

The default system configuration has CDP enabled with a message interval of 30 seconds for every port.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

You can set the message interval within the range of 5 to 900 seconds.

Example

The following example shows how to set the CDP message interval for port 10 on module 2 to 60 seconds:

```
Console> (enable) set cdp interval
Usage: set cdp interval all <interval>
       set cdp interval <mod/ports...> <interval>
      (interval = 5..900 seconds.)
Console> (enable) set cdp interval 2/10 60
CDP message interval set to 60 seconds for port 2/10.
Console> (enable)
```

Related Commands

set cdp disable
set cdp enable

set enablepass

The **set enablepass** command changes the password for the privileged level on the command line interface.

set enablepass

Syntax Description

This command has no arguments or keywords.

Default

The default configuration does not have enable password configured.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

The command prompts you for the old password. If the password is valid, you are then prompted to enter a new password twice. A zero-length password is allowed.

Example

The following example shows how to establish a new password:

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

Related Commands

enable–Switch Command
set password

set fddi alarm

Use the **set fddi alarm** command to change the LER-alarm value for an FDDI port. The value defines the link error rate (LER) at which a link connection exceeds a preset alarm threshold. This value is used in the link-error-rate threshold test.

set fddi alarm *mod_num/port_num value*

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
value	The exponential value for the LER-Alarm parameter (that is, 10^{-value} link errors per second). Valid values are between 7 and 15.

Default

The default value for LER-Alarm is 8 (10^{-8}) milliseconds.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

Set the LER-alarm value for a FDDI port within the range of 7 to 15 microseconds.

Example

The following example shows how to change the LER-Alarm value to 11 for port 1 on module 4:

```
Console> (enable) set fddi alarm
Usage: set fddi alarm <mod_num/port_num> <value>
       (value = 7..15)
Console> (enable) set fddi alarm 4/1 11
Port 4/1 alarm value set to 11.
Console> (enable)
```

Related Commands

set fddicheck
set fddi cutoff
set fddi help
set fddi timin
set fddi tnotify
set fddi treq
set fddi userdata

set fddi cutoff

Use the **set fddi cutoff** command to change the LER-cutoff value for an FDDI port. 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.

set fddi cutoff *mod_num/port_num value*

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
value	The exponential value for the LER-Cutoff parameter (that is, 10^{-value} link errors per second). Valid values are between 7 and 15.

Default

The default value for LER-Cutoff is 7 (10^{-7} seconds).

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to change the LER-cutoff value to 10^{-10} seconds for port 1 on module 4:

```
Console> (enable) set fddi cutoff
Usage: set fddi cutoff <mod_num/port_num> <value>
       (value = 7..15)
Console> (enable) set fddi cutoff 4/1 10
Port 4/1 cutoff value set to 10.
Console> (enable)
```

Related Commands

set fddi alarm
set fddi help
set fddi timin
set fddi tnotify
set fddi treq
set fddi userdata

set fddi help

Use the **set fddi help** command to list the **set fddi** commands with brief descriptions of their functions.

set fddi help

Syntax Description

This command has no arguments or keywords.

Command Type

Switch command.

Default

This command has no default setting.

Command Mode

Privileged.

Example

The following example shows how to list the **set fddi** commands:

```
Console> (enable) set fddi help
Commands:
------------------------------------------------------------------------
set fddi alarm       Set port LER-Alarm
set fddi cutoff      Set port LER-Cutoff
set fddi help        Show this message
set fddi tlmin       Set port tl_min
set fddi tnotify     Set module SMT T-Notify
set fddi treq        Set MAC T-Request
set fddi userdata    Set module SMT User Data
Console> (enable)
```

Related Commands

set fddi alarm
set fddi cutoff
set fddi timin
set fddi tnotify
set fddi treq
set fddi userdata

set fddi tlmin

Use the **set fddi tlmin** command to change the TL_MIN 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.

set fddi tlmin *mod_num/port_num usecs*

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
usecs	The number of microseconds for the TL_MIN parameter.

Default

The default value for TL_MIN is 40 microseconds.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to change the TL_MIN value to 80 microseconds for port 1 on module 4:

```
Console> (enable) set fddi tlmin 4/1 80
Port 4/1 tlmin set to 80.
```

Related Commands

set fddi alarm
set fddi cutoff
set fddi help
set fddi tnotify
set fddi treq
set fddi userdata

set fddi tnotify

Use the **set fddi tnotify** command to change the TNotify timer value for a FDDI port.

set fddi tnotify *mod_num time*

Syntax Description

mod_num	The number of the module.
time	The number of seconds for the TNotify timer. Valid times are from 2 to 30 seconds.

Default

The default value for the TNotify timer is 30 seconds.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

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. Usually, the default setting is sufficient.

Example

The following example shows how to change the TNotify timer value to 16 seconds for module 4:

```
Console> (enable) set fddi tnotify 4 16
Port 4/1 tnotify set to 16.
Console> (enable)
```

Related Commands

set fddi alarm
set fddi cutoff
set fddi help
set fddi timin
set fddi treq
set fddi userdata

set fddi treq

Use the **set fddi treq** command to change the TRequest value for a FDDI MAC.

set fddi treq *mod_num time*

Syntax Description

mod_num	The number of the module.
time	The number of seconds for the TRequest value. Valid times are from 2502 to 165000 usecs.

Default

The default value for the TRequest is 165000 usecs.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

The TRequest parameter specifies the FDDI station's desired 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. Whenever the TRT value expires, the station uses the TRequest value to negotiate with other stations for the lowest value. The default setting of 165000 microseconds is sufficient for most networks.

Example

The following example shows how to change the TRequest value to 3500 usecs for module 4:

```
Console> (enable) set fddi treq 4 3500
Mac 4/1 T-request set to 3500 usec.
Console> (enable)
```

Related Commands

set fddi alarm
set fddi cutoff
set fddi help
set fddi timin
set fddi tnotify
set fddi userdata

set fddi userdata

Use the **set fddi userdata** command to configure the user-data string in the SMT MIB of an FDDI module.

set fddi userdata *mod_num userdata_string*

Syntax Description

mod_num The number of the module.

userdata_string A character string that identifies the node in a meaningful way.

Default

The default value for the FDDI user data string is "Catalyst 5000."

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

The user data string is useful for identifying the FDDI module or Catalyst 5000 series switch when using a management tool to configure and maintain an internetwork or when accessing the FDDI module remotely. The user data string might be a term identifying the function of the network node or the users connected to the network node.

Example

The following example shows how to change the user data string to "Engineering" for module 4:

```
Console> (enable) set fddi userdata 4 Engineering
Module 4 userdata set to Engineering.
Console> (enable)
```

Related Commands

set fddi alarm
set fddi cutoff
set fddi help
set fddi timin
set fddi tnotify
set fddi treq

set help

Use the **set help** command to list the **set** commands with brief descriptions of their functions.

set help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal and privileged.

Usage Guidelines

In normal mode, the **set help** command lists the **set** commands available in normal mode. In Privileged. mode, the **set help** command lists the **set** commands available in privileged mode.

Example

The following example shows how to list the **set** commands available in normal mode:

```
Console> set help
Commands:
--------------------------------------------------------------------------------
set help            Show this message
set length          Set number of lines in display (0 to disable 'more')
Console>
```

The following example shows how to list the **set** commands available in privileged mode:

```
Console> (enable) set help
Set commands:
------------------------------------------------------------------------
set alias           Set alias for command
set arp             Set ARP table entry
set bridge          Set bridge, use 'set bridge' for more info
set cam             Set CAM table entry
set cdp             Set cdp, use 'set cdp help' for more info
set enablepass      Set privilege mode password
set fddi            Set FDDI, use 'set fddi' 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 logout          Set number of minutes before automatic logout
set module          Set module, use 'set module help' for more info
set password        Set 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 trunk ports
set vlan            Set Virtual LAN information
set vtp             Set Virtual Trunk Information
Console> (enable)
```

set interface

Use the **set interface** command to configure network interfaces.

set interface sc0/sl0 {up | down}
set interface sc0 [vlan *vlan_num* **] [** *ip_address* **[** *netmask* **[** *broadcast* **]]]**
set interface sl0 *slip_address dest_address*

Syntax Description

sc0	Indicates in-band interface.
sl0	Indicates SLIP interface.
up	Brings the interface into operation.
down	Brings the interface out of operation.
vlan_num	Identifies the number of the VLAN on which to store the IP address.
ip_address	IP address.
netmask	(Optional) The subnet mask.
broadcast	(Optional) The broadcast mask.
slip_address	IP address of the console port.
dest_address	IP address of the host to which the console port will be connected.

Default

The default configuration is sc0 and sl0 with IP address, netmask, and broadcast set as 0.0.0.0. The destination address for sl0 is also 0.0.0.0.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

The **set interface** command can be used to assign network addresses, subnet masks for the Catalyst interfaces administratively and destination addresses for SLIP interfaces. It can also be used administratively to bring the interfaces up or down administratively. There are two configurable network interfaces to a Catalyst 5000 series switch: in-band (sc0) and SLIP (sl0). Once you assign an IP address to sc0, the Catalyst 5000 becomes accessible through Ethernet and FDDI interfaces.

Example

The following example shows how to set the following elements from the console port:

- interface sc0
- interface sl0

It also shows how to administratively bring down interface sc0 using a console terminal:

```
Console> (enable) set interface sc0 192.200.11.44 255.255.255.0
Interface sc0 IP address and netmask set.
Console> (enable) set interface sl0 192.200.10.45 192.200.10.103
Interface sl0 SLIP and destination address set.
Console> (enable) set interface sc0 down.
Interface sc0 administratively down.
Console> (enable)
```

The following example shows how to set the IP address for sc0 through a Telnet session:

```
Console> (enable) set interface sc0 192.200.11.40
This command may disconnect active telnet sessions.
Do you want to continue (y/n) [n]? y
Interface sc0 IP address set.
<lost connection, hangs until timeout or until sc0 is back to its original IP address
again>
```

The following example shows how to take the interface out of operation through a Telnet session:

```
Console> (enable) set interface sc0 down
This command will inactivate telnet sessions.
Do you want to continue (y/n) [n]? y
Interface sc0 administratively down.
```

The following example shows how to identify the VLAN on which to store the IP address:

```
Console> (enable) set interface sc0 5
Interface sc0 vlan set.
Console> (enable)
Console> (enable) set interface sc0 200
Vlan is not active, user needs to set vlan 200 active
Interface sc0 vlan set.
Console> (enable)
```

The interface hangs until timeout or until sc0 is up again.

Related Command

show interface

set ip alias

Use the **set ip alias** command to add aliases of IP addresses.

set ip alias *name ip_addr*

Syntax Description

name	The name of the alias being defined.
ip_addr	The IP address of the alias being defined.

Default

The default configuration has one IP alias (0.0.0.0) configured as the default.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to define an IP alias of mercury for IP address 192.122.174.234:

```
Console> (enable) set ip alias mercury 192.122.174.234
IP alias added.
Console> (enable)
```

Related Commands

clear ip alias
show ip alias

set ip fragmentation

Use the **set ip fragmentation** command to enable or disable the fragmentation for IP packets bridged between FDDI and Ethernet networks. Note that FDDI and Ethernet networks have different maximum transmission units (MTUs).

set ip fragmentation {**enable** | **disable**}

Syntax Description

enable	Allows fragmentation for IP packets bridged between FDDI and Ethernet networks, which have different MTUs.
disable	Disallows fragmentation for IP packets bridged between networks with different MTUs. Packets are dropped.

Default

The default value is IP fragmentation enabled.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to disable IP fragmentation:

```
Console> (enable) set ip fragmentation disable
IP fragmentation disabled for module 4
Console> (enable)
```

Related Commands

show ip route
show bridge

set ip help

Use the **set ip help** command to list the **set ip** commands.

set ip help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list the **set ip** commands:

```
Console> (enable) set ip help
Set ip commands:
------------------------------------------------------------------------
set ip alias               Set alias for IP Address
set ip fragmentation       Set IP fragmentation enable/disable
set ip help                Show this message
set ip redirect            Set ICMP redirect enable/disable
set ip route               Set IP routing table entry
set ip unreachable         Set ICMP unreachable messages
Console> (enable)
```

Related Commands

set ip alias
set ip redirect
set ip route

set ip redirect

Use the **set ip redirect** command to enable or disable ICMP redirect messages for the Catalyst 5000 series switch.

set ip redirect {**enable** | **disable**}

Syntax Description

enable Activates ICMP redirect messages to sender.

disable Deactivates ICMP redirect messages to sender.

Default

The default configuration has ICMP redirect enabled.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to deactivate the redirection of ICMP messages:

```
Console> (enable) set ip redirect disable
ICMP redirect messages disabled.
Console> (enable)
```

Related Commands

show ip route
show netstat

set ip route

The **set ip route** command adds IP addresses or aliases to the IP routing table.

set ip route destination *gateway* [*metric*]

Syntax Description

destination	The IP address or IP alias of the network or specific host.
gateway	The IP address or IP alias of the router.
metric	(Optional) Indicates whether the destination network is local or remote. Use 0 for local and 1 for remote.

Default

The default configuration routes the local network through the sc0 interface with metric 0 as soon as sc0 is configured.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the default route to 192.122.173.42:

```
Console> (enable) set ip route default 192.122.173.42
Route added.
Console> (enable)
```

Related Commands

clear ip route
show snmp
show ip route

set ip unreachable

Use the **set ip unreachable** command to enable or disable Internet Control Message Protocol (ICMP) unreachable messages for the switch.

set ip unreachable {**enable** | **disable**}

Syntax Description

enable	Allows IP unreachable messages to be returned to the Internet source host.
disable	Disallows IP unreachable messages to be returned to the Internet source host.

Default

The default is ICMP unreachable messages enabled.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

When enabled, the switch returns an ICMP unreachable message to the Internet source host whenever it receives an IP datagram that it cannot deliver. When disabled, the switch does not notify the Internet source host when it receives an IP datagram that it cannot deliver.

For example, a switch has the ICMP unreachable message function enabled and IP fragmentation disabled. If a FDDI packet is received and needs to be transmitted to an Ethernet port, the switch will not be able to fragment the packet; the switch will drop the packet and return an IP unreachable message to the Internet source host.

Example

The following example shows how to disable ICMP unreachable messages:

```
Console> (enable) set ip unreachable disable
ICMP unreachable message disabled for module 4
Console> (enable)
```

Related Commands

show ip unreachable
show ip route

set length

Use the **set length** command to configure the number of lines in the terminal display screen.

set length *number*	(in normal mode)
set length *number* [**default**]	(in privileged mode only)

Syntax Description

number	Number of lines to display on the screen (0-512).
default	Sets the number of lines in the terminal display screen for the current administration session and all other sessions.

Default

The default value is 24 lines upon starting a session. When the value is changed in a session, it applies only to that administration session. When you use the **clear config** command, the number of lines in the terminal display screen is reset to the factory default of 100.

Command Type

Switch command.

Command Mode

Normal and privileged.

Usage Guidelines

Output from a single command that overflows a single display screen is followed by the "`--More--`" prompt. At the "`--More--`" prompt, you can type **Ctrl-C**, **q**, or **Q** to quit, press the **Spacebar** to display additional screen of output, or press **Return** to display one more line of output. Setting the screen length to 0 turns off the scrolling feature and causes the entire output to be displayed at once. Unless a default value is specified, a value that is changed in an administration session only applies to the current session.

Example

The following example shows how to use normal mode to set the screen length to 30 lines:

```
Console> set length
Usage: set length <screenlength>
       (screenlength = 5..512, 0 to disable 'more' feature)
Console> set length 24
Screen length for this session set to 24.
Console>
```

The following example shows how to use privileged mode to set the screen length to 24 lines for the current administration session and all other sessions:

```
Console> (enable) set length
Usage: set length <screenlength> [default]
       (screenlength = 5..512, 0 to disable 'more' feature)
Console> (enable) set length 24 default
Screen length default for new sessions set to 24.
Console> (enable)
```

set logout

Use the **set logout** command to set the number of minutes until the system automatically disconnects an idle session.

set logout *timeout*

Syntax Description

timeout	The number of minutes until the system automatically disconnects an idle session.

Default

The default value is 20 minutes.

Command Type

Switch command.

Usage Guidelines

You can specify a timeout period from 0 to 10,000 minutes. Setting the value to 0 disables the automatic disconnection of idle sessions.

Command Mode

Privileged.

Example

```
Console> (enable) set logout
Usage: set logout <timeout>
       timeout = 0..10000 minutes; 0 disables automatic logout
Console> (enable) set logout 20
Sessions will be automatically logged out after 20 minutes of idle time.
Console> (enable) set logout 0
Sessions will not be automatically logged out.
Console> (enable)
```

set module disable

Use the **set module disable** command to disable a module.

set module disable *mod_num*

Syntax Description

mod_num	The number of the module. You can specify a series of modules by entering a comma between each module number (for example 2,3,5). You can specify a range of modules by entering a dash between module numbers (for example, 2-5).

Default

The default configuration has all modules enabled.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

Avoid disabling a module through a Telnet session because your Telnet session may be established on the module being disabled. In such case, the Telnet session will hang. The supervisor module cannot be disabled.

Example

The following example shows how to disable module 3 through the console port:

```
Console> (enable) set module disable 3
Module 3 disabled.
Console> (enable)
```

The following example shows how to disable module 2 through a Telnet session:

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

Related Commands

set module enable
show module

set module enable

Use the **set module enable** command to enable a module.

set module enable *module_num*

Syntax Description

module_num The number of the module.

Default

The default setting has all modules enabled.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

If an individual port on a module was previously disabled, enabling the module does not enable the disabled port.

Example

The following example shows how to enable module 2:

```
Console> (enable) set module enable 2
Module 2 enabled.
Console> (enable)
```

Related Commands

set module disable
show module

set module help

Use the **set module help** command to list the **set module** commands.

set module help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list the **set module** commands:

```
Console> (enable) set module help
Commands:
--------------------------------------------------------------------------------
set module disable  Disable a module
set module enable   Enable a module
set module help     Show this message
set module name     Set module name
Console> (enable)
```

set module name

Use the **set module name** command to set the name for a module.

set module name *module_num* [*module_name*]

Syntax Description

module _num The number of the module.

module_name (Optional) The name being created for the module.

Default

The default configuration has no module names configured for any modules.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

If the module name is not specified, it is cleared.

Example

The following example shows how to set the name for module 1 to supervisor:

```
Console> (enable) set module name 1 Supervisor
Module name set.
Console> (enable)
```

Related Command

show module

set password

Use the **set password** command to change the initial level password on the command line interface.

set password

Syntax Description

This command has no arguments or keywords.

Default

The default configuration has no password configured.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

The command prompts you for the old password followed by the new password. If the old password is valid, the command then prompts you to enter a new password twice. A zero length password is allowed. Old and new passwords typed are not echoed.

Example

The following example shows how to set an initial password:

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

Related Command

set enablepass

set port disable

Use the **set port disable** command to disable a port.

set port disable *mod_num/port_num*

Syntax Description

mod _num The number of the module.

port_num The number of the port.

Default

The default system configuration has all ports enabled.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to take port 10 on module 5 out of service:

```
Console> (enable) set port disable 5/10
Port 5/10 disabled.
Console> (enable)
```

Related Commands

set port enable
show port

set port duplex

Use the **set port duplex** command to configure the transmission type of an Ethernet or Fast Ethernet interface.

set port duplex *mod num/port num* {**full** | **half** | **auto**}

Syntax Description

mod num	The number of the module.
port num	The number of the port.
full	Indicates full duplex.
half	Indicates half duplex.
auto	Indicates the port is in autosensing mode, and has not yet determined the port duplex.

Default

The default configuration for 10 Mbps and 100 Mbps modules has all Ethernet ports set to half duplex. The default configuration for 10/100 Mbps Fast Ethernet modules has all ports set to auto.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

- Ethernet and Fast Ethernet interfaces can be configured to either full duplex or half duplex. When a port is in autosensing mode, enabled by the **set port speed** command, both its speed and duplex are determined by autosensing. The following type of error messages is therefore generated if you attempt to set the transmission type of autosensing Fast Ethernet ports to half or full duplex mode:

```
cat4-lnf> (enable) set port duplex 2/1 full (1 port - failed)
Port 2/1 is in auto-sensing mode.
```

- The set port duplex command is not valid on the 48-port module.

Example

The following example shows how to set port 1 on module 2 to full duplex:

```
Console> (enable) set port duplex 2/1 full
Port 2/1 set to full-duplex.
Console> (enable)
```

Related Command

show port

set port enable

Use the **set port enable** command to enable or disable a port.

set port enable *mod_num/port_num*

Syntax Description

mod_num The number of the module.

port_num The number of the port.

Default

All ports enabled.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to enable port 3 on module 2:

```
Console> (enable) set port enable 2/3
Port 2/3 enabled.
Console> (enable)
```

Related Commands

set port disable
show port

set port help

Use the **set port help** command to list the **set port** commands.

set port help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list the **set port** commands:

```
Console> (enable) set port help
Set port 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 level           Set port priority level (normal/high)
set port name            Set port name
set port speed           Set port transmission speed (10/100 Mbps)
set port trap            Set port up/down trap (enable/disable)
Console> (enable)
```

Related Commands

set port disable
set port duplex
set port level
set port enable
set port name
set port speed
set port trap
show port

set port level

Use the **set port level** command to set the priority level of the port on the switching bus.

set port level *mod_num/port_num* {**normal** | **high**}

Syntax Description

mod_num	The number of the module.
port_num	The number of the port on the module.
normal	Indicates that packets traveling through ports set at normal priority are served after packets traveling through ports set at high priority.
high	Indicates that packets traveling through the specified port are served first.

Default

The default configuration has all ports at normal priority level.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the priority level for port 2 on module 1 to high:

```
Console> (enable) set port level 1/2 high
Port 1/2 port level set to high.
Console> (enable)
```

Related Commands

set port disable
set port duplex
set port enable
set port help
set port name
set port speed
set port trap
show port

set port name

Use the **set port name** command to configure a name for a port.

set port name *mod_num/port_num* [*name_string*]

Syntax Description

mod_num The number of the module

port_num The number of the port.

name_string (Optional) A description of the port.

Default

The default configuration has no port name configured for any port.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

If the name string is not specified, the port name is cleared.

Example

The following example shows how to set port 1 on module 4 to Fred Grover:

```
Console> (enable) set port name 4/1 Fred Grover
Port 4/1 name set.
Console> (enable)
```

Related Commands

set port disable
set port duplex
set port enable
set port help
set port level
set port speed
set port trap
show port

set port speed

Use the **set port speed** command to configure the speed of a Fast Ethernet interface.

set port speed *mod num/port num* {**10** | **100** | **auto**}

Syntax Description

mod num	The number of the module.
port num	The number of the port.
10	Set the port speed to 10 Mbps.
100	Set the port speed to 100 Mbps.
auto	Set the port speed to autosensing mode.

Default

The default configuration has all 10/100 Mbps Fast Ethernet Switching Module ports set to auto.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

Fast Ethernet interfaces on the 10/100 Mbps Fast Ethernet Switching module can be configured to either 10 Mbps or 100 Mbps. They can also be set to auto-sensing mode, allowing them to sense and distinguish between 10 Mbps and 100 Mbps port transmission speeds and full-duplex or half-duplex port transmission types at a remote port connection. Set at auto-sensing mode, the interfaces automatically configure themselves to operate at the proper speed and transmission type.

Example

The following Example show how to set port 1 on module 2 to auto-sensing mode, configured to either 10 Mbps or 100 Mbps:

```
Console> (enable) set port speed
Usage: set port speed <mod_num/port_num> <10|100|auto>
Console> (enable) set port speed 2/1 auto
Port 2/1 speed set to auto-sensing mode.
Console> (enable) set port speed 2/2 10
Port 2/2 speed set to 10 Mbps.
Console> (enable) set port speed 2/3 100
Port 2/3 speed set to 100 Mbps.
```

Related Commands

set port disable
set port duplex
set port enable
set port help
set port level
set port name
set port trap
show port

set port trap

Use the **set port trap** command to enable or disable the standard SNMP link trap operation (up or down) for a port.

set port trap *mod_num/port_num* **enable** | **disable**

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
enable	Activates the SNMP link trap.
disable	Deactivates the SNMP link trap.

Default

The default configuration has all port traps disabled.

Command Type

Switch command.

Command Mode

Privileged.

Example

```
Console> (enable) set port trap
Usage: set port trap <mod_num/port_num> <enable|disable>
Console> (enable) set port trap 1/2 enable
Port 1/2 up/down trap enabled.
Console> (enable)
```

Related Commands

set port disable
set port duplex
set port enable
set port help
set port level
set port name
show port

set prompt

Use the **set prompt** command to change the prompt for the command line interface.

set prompt *prompt_string*

Syntax Description

prompt_string The text that is to appear in place of the default prompt “Console>”.

Default

The default configuration has the prompt “Console>”.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the prompt to “system100>”:

```
Console> (enable) set prompt system100>
system100> (enable)
```

set snmp community

Use the **set snmp community** command to set one of the three SNMP community strings.

set snmp community *access_type* [*community_string*]

Syntax Description

access_type	Identifies the type of access available to the SNMP community. Specify **read-only**, **read-write**, or **read-write all**.
community_string	(Optional) Identifies the name of the SNMP community.

Default

The following communities with preestablished access types have been set as defaults:

- public: read-only
- private: read-write
- secret: read-write-all

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the SNMP community called hocuspocus to read-write access type:

```
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)
```

Related Command

show snmp

set snmp help

Use the **set snmp help** command to list the **set snmp** commands.

set snmp help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list the **set snmp** commands:

```
Console> (enable) set snmp help
Set snmp commands:
------------------------------------------------------------------------
set snmp community       Set SNMP community string
set snmp help            Show this message
set snmp rmon            Set SNMP RMON
set snmp trap            Set SNMP trap information
Console> (enable)
```

set snmp rmon

Use the **set snmp rmon** command to enable or disable SNMP remote monitoring (RMON) support.

set snmp rmon **enable** | **disable**

Syntax Description

enable	Activates SNMP remote monitoring support.
disable	Deactivates SNMP remote monitoring support.

Default

The default for remote monitoring support is enabled.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

The following configurations and implementations are supported:

- Remote monitoring statistics are collected on a segment basis instead of a repeater port basis for the Catalyst 5000 Series Group Switching Ethernet Module (10BaseT 48 port).
- The remote monitoring feature deinstalls all of the domains for all of the interfaces on an Ethernet module that has been removed from the system.
- RMON is only enabled for Ethernet ports.
- Supported RMON groups enabled are Ethernets, history, alarm, and events as specified in RFC 1757.
- Use of this command requires a separate software license.

Example

The following example shows how to enable and disable remote monitoring support:

```
Console> (enable) set snmp rmon
Usage: set snmp rmon <enable|disable>
Console> (enable) set snmp rmon enable
SNMP RMON support enabled.
Console> (enable) set snmp rmon disable
SNMP RMON support disabled.
```

Related Command

show snmp

set snmp trap

Use the **set snmp trap** command to enable, disable, or add an entry into the SNMP authentication trap receiver table, or to enable or disable other specific types of traps on the system.

set snmp trap enable | disable [**all** | **module** | **chassis** | **bridge** | **repeater** | **auth** | **vtp**]
set snmp trap *rcvr_address rcvr_community*

Syntax Description

enable	Activates SNMP authentication trap.
disable	Deactivates SNMP authentication trap.
all	Indicates all types of traps.
module	Indicates the *moduleUp* and *moduleDown* traps from the CISCO-STACK-MIB.
chassis	Indicates the *chassisAlarmOn* and *chassisAlarmOff* traps from the CISCO-STACK-MIB
bridge	Indicates the *newRoot* and *topologyChange* traps from RFC 1493 (the BRIDGE-MIB).
repeater	Indicates the *rptrHealth*,*rptrGroupChange*, and *rptrResetEvent* traps from RFC 1516 (the SNMP-REPEATER-MIB).
auth	Indicates the *authenticationFailure* trap from RFC 1157.
vtp	Indicates the VTP from the CISCO-VTP-MIB.
rcvr_address	The IP address or IP alias of the trap receiver.
rcvr_community	The community string to use when sending authentication traps.

Default

The default configuration has the SNMP authentication trap disabled.

Command Type

Switch command.

Command Mode

Privileged.

Examples

The following example shows how to enable an entry in the SNMP trap receiver table:

```
Console> (enable) set snmp trap
Usage: set snmp trap <enable|disable> [all|module|chassis|bridge|repeater|auth]
       set snmp trap <rcvr_address> <rcvr_community>
       (rcvr_address is ipalias or IP address, rcvr_community is string)
Console> (enable) set snmp trap enable chassis
SNMP chassis alarm traps enabled.
Console> (enable)
```

The following example shows how to add an entry in the SNMP trap receiver table:

```
Console> (enable) set snmp trap 192.122.173.42 public
SNMP trap receiver added.
Console> (enable)
```

Related Commands

clear snmp trap
show snmp
test snmp trap

set span

Use the **set span** command to set up the port analyzer.

set span enable
set span disable
set span *src_mod*/*src_port dest_mod*/*dest_port* [**rx** | **tx** | **both**]
set span *src_vlan dest_mod*/*dest_port* [**rx** | **tx** | **both**]

Syntax Description

enable	Port monitoring is enabled.
disable	Port monitoring is disabled.
src_mod	The monitored module (source).
src_port	The monitored port (source).
dest_mod	The monitoring module (destination).
dest_port	The monitoring port (destination).
src_vlan	The monitored VLAN (source).
rx	Information received at the destination is monitored.
tx	Information transmitted from the source is monitored.
both	Both information that is transmitted from the source and received at the destination is monitored.

Default

The default configuration has port monitoring disabled, port 1/1 as the monitoring port (destination), VLAN 1 as the monitored VLAN (source), and both transmit and receive packets monitored. If the parameter rx, tx, or both is not specified, the default is **both**.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

After the port analyzer is enabled and the defaults set up, subsequent commands replace source ports, VLANs, and destination ports.

Use either a dedicated remote monitor probe or a Sniffer analyzer to monitor ports.

The following SPAN configurations and implementations are supported:

- You can configure a trunk port as a source or destination port. If the destination port is a trunk port, all outgoing packets through the SPAN carry an ISL header.
- The SPAN feature operates on a port basis on the Catalyst 5000 Fast Ethernet Module (10/100 TX or 100BaseFX port). Source and destination ports cannot be in the same repeater segment.
- When a switch port is configured as a destination SPAN port, it is no longer a normal switch port; only monitored traffic through the SPAN port is displayed.
- When SPAN is enabled, if you disable a source or destination port, the SPAN functionality stops operating until both the source and destination ports are again enabled.
- You can configure a disabled port to be a source or destination port, but the SPAN function does not take effect until both source and destination ports are enabled.
- When SPAN is enabled for monitoring a VLAN, if you move a switched port into or out of the monitored VLAN, the number of monitored ports changes.
- FDDI ports can be source ports; however, FDDI packets and ATM cells are not forwarded to the destination ports. FDDI and ATM cells are translated to Ethernet and forwarded to the destination port.
- Source and destination ports cannot be the same port.
- Source and destination ports must be of the same VLAN type.
- ATM and FDDI ports cannot be configured as destination ports.
- A trunk port cannot be one of the monitored ports if the SPAN is enabled to monitor VLAN traffic.

Example

```
----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8
Console> (enable) set span
Usage: set span enable
       set span disable
       set span <src_mod/src_port> <dest_mod/dest_port> [rx|tx|both]
       set span <src_vlan> <dest_mod/dest_port> [rx|tx|both]
Console> (enable) set span 2/3 2/4 tx
Enabled monitoring of ports 2/3 transmit traffic by ports 2/4.
Console> (enable) set span enable
span enabled.
Console> (enable)
```

Related Commands

clear config all
show span

set spantree disable

Use the **set spantree disable** command to disable the spanning-tree algorithm for a VLAN.

set spantree disable [*vlan*]

Syntax Description

vlan	(Optional) The number of the VLAN. If the VLAN number is not specified, the default, VLAN 1, is used.

Default

The default configuration has all spanning trees enabled.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to disable the spanning-tree algorithm for VLAN 1:

```
Console> (enable) set spantree disable 1
VLAN 1 bridge spanning tree disabled.
Console> (enable)
```

Related Commands

set spantree enable
show spantree

set spantree enable

Use the **set spantree enable** command to enable the spanning-tree algorithm for a VLAN.

set spantree enable [*vlan*]

Syntax Description

vlan	(Optional) The number of the VLAN. If a VLAN number is not specified, the default,VLAN 1, is used.

Default

The default configuration has all spanning trees enabled.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to activate the spanning-tree algorithm for VLAN 1:

```
Console> (enable) set spantree enable 1
VLAN 1 bridge spanning tree enabled.
Console> (enable)
```

Related Commands

show spantree
set spantree disable

set spantree fwddelay

Use the **set spantree fwddelay** command to set the bridge forward delay for a VLAN.

set spantree fwddelay *delay* [*vlan*]

Syntax Description

delay	The number of seconds (4-30) for the bridge forward delay.
vlan	(Optional) The number of the VLAN. If a VLAN number is not specified, VLAN 1 is assumed.

Default

The default configuration has fwddelay set to 15 seconds for all VLANs.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the bridge forward delay for VLAN 1000 to 16 seconds:

```
Console> (enable) set spantree fwddelay 16 1000
VLAN 1000 bridge forward delay set to 16 seconds.
Console> (enable)
```

Related Command

show spantree

set spantree hello

Use the **set spantree hello** command to set the bridge hello time for a VLAN.

set spantree hello *interval* [*vlan*]

Syntax Description

interval	The number of seconds (1-10) the system waits before sending a multicast message indicating that it is present.
vlan	(Optional) The number of the VLAN. If a VLAN number is not specified, VLAN 1 is assumed.

Default

The default configuration has hello time set to 2 seconds for all VLANs.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the spantree hello time to 2 seconds for VLAN 1000:

```
Console> (enable) set spantree hello 2 1000
VLAN 1000 bridge hello time set to 2.
Console> (enable)
```

Related Command

show spantree

set spantree help

Use the **set spantree help** command to list the available **set spantree** commands.

set spantree help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list the **set spantree** commands:

```
Console> (enable) set spantree ?
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 interval
set spantree help      Show this message
set spantree maxage    Set spantree max aging time
set spantree portcost  Set spantree port cost
set spantree portfast  Set spantree port fast start
set spantree portpri   Set spantree port priority
set spantree priority  Set spantree priority
set spantree portvlanpri  Set spantree port vlan priority
Console> (enable)
```

set spantree maxage

Use the **set spantree maxage** command to set the bridge maximum aging time for a VLAN.

set spantree maxage *agingtime* [*vlan*]

Syntax Description

agingtime	The maximum number of seconds (6-40) that the system retains the information received from other bridges through Spanning-Tree Protocol.
vlan	(Optional) The number of the VLAN. If a VLAN number is not specified, VLAN 1 is assumed.

Default

The default configuration is 20 seconds.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the maximum aging time for VLAN 1000 to 20 seconds:

```
Console> (enable) set spantree maxage 20 1000
VLAN 1000 bridge max aging time set to 20.
Console> (enable)
```

Related Command

show spantree

set spantree portcost

Use the **set spantree portcost** command to set the bridge path cost for a port.

set spantree portcost *mod_num/port_num cost*

Syntax Description

mod_num	The number of the module.
port_num	The number of the port on the module.
cost	A number, from 0 to 65535, that indicates the cost of the path. Zero (0) is a low cost, and 65535 is a high cost.

Default

The default configuration is as follows:

- 100BaseTX Ethernet port cost = 10
- 10BaseT Ethernet port cost = 100
- FDDI port cost = 10
- ATM port cost = 6

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the port cost for port 1 on module 4 to 10:

```
Console> (enable) set spantree portcost 4/1 10
Bridge port 4/1 path cost set to 10.
Console> (enable)
```

Related Command

show spantree

set spantree portfast

Use the **set spantree portfast** command to allow a port that is connected to a single workstation or PC to start faster when it is connected.

set spantree portfast *mod_num/port_num* **enable** | **disable**

Syntax Description

mod_num	The number of the module.
port_num	The number of the port on the module.
enable	Enables the spanning-tree bridge **portfast** for a port.
disable	Disables the spanning-tree bridge **portfast** for a port.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

When you use the **spantree portfast enable** command on a port, when the port is connected it immediately enters into the spanning-tree forwarding state rather than going through the normal spanning-tree states such as listening and learning. Use this command on ports that are connected to a single workstation or PC only; do not use it on ports that are connected to networking devices such as hubs, routers, switches, bridges, or concentrators.

Example

The following example shows how to set the spanning-tree bridge **portfast** for port 2 on module 1.

```
Console> (enable) set spantree portfast
Usage: set spantree portfast <mod_num/port_num> <enable|disable>
Console> (enable) set spantree portfast 1/2 enable

Warning: Spantree port fast start should only be enabled on ports connected to a single
host. Connecting hubs, concentrators, switches, bridges, etc. to a fast start port can
cause temporary spanning tree loops. Use with caution.

Spantree port 1/2 fast start enabled.
Console> (enable) set spantree portfast 1/2 disable
Spantree port 1/2 fast start disabled.
Console> (enable)
```

set spantree portpri

Use the set **spantree portpri** command to set the bridge priority for a port in spanning-tree algorithm.

set spantree portpri *mod_num/port_num priority*

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
priority	A number that represents the cost of a link in a spanning-tree bridge. The priority level is from 0 to 63, with 0 indicating high priority, and 63 indicating low priority.

Default

The default configuration has all ports with bridge priority set to 32. The port priority applies to all emulated LANs on an ATM port.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the priority of port 1 on module 4 to 63:

```
Console> (enable) set spantree portpri 4/1 63
Bridge port 4/1 priority set to 63.
Console> (enable)
```

Related Command

show spantree

set spantree portvlanpri

Use the **set spantree portvlanpri** command to set the port priority for a subset of VLANs in the trunk port.

set spantree portvlanpri *mod_num*/*port_num priority* [*vlans*]

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
priority	A number that represents the cost of a link in a spanning-tree bridge. The priority level is from 0 to 63, with 0 indicating high priority and 63 indicating low priority.
vlans	The identity of the VLANs to use the priority level set by the **set spantree portvlanpri** command.

Default

The default configuration has the port VLAN priority set to 0, with no VLANs using this priority level. Subsequent calls to this command add VLANs to a specified port priority level. Additionally, subsequent calls to this command do not replace VLANs that are set at a specified port priority level.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

Set the port priority within the range of 0 to 63.

Example

```
Console> (enable) set spantree portvlanpri ?
Usage: set spantree portvlanpri <mod_num/port_num> <priority> [vlans]
      (priority = 0..63)
Console> (enable) set spantree portvlanpri 1/2 16 21-40
Port 1/2 vlans 3,6-20,41-1000 using portpri 32
Port 1/2 vlans 1-2,4-5,21-40 using portpri 16
Console> (enable)
```

Related Commands

show spantree
clear spantree portvlanpri

set spantree priority

Use the **set spantree priority** command to set the bridge priority for a VLAN.

set spantree priority *bridge_priority* [*vlan*]

Syntax Description

bridge_priority	A number representing the priority of the bridge. The priority level is from 0 to 65535, with 0 being high priority, and 65535 being low priority.
vlan	(Optional) The number of the VLAN. If a VLAN number is not specified, VLAN 1 is used.

Default

The default configuration has the bridge priority set to 32768.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the bridge priority of VLAN 1 to 4096:

```
Console> (enable) set spantree priority 4096
VLAN 1 bridge priority set to 4096.
Console> (enable)
```

Related Command

show spantree

set system baud

Use the **set system baud** command to set the console port baud rate.

set system baud *rate*

Syntax Description

rate	The baud rate. Valid rates are 600, 1200, 2400, 4800, 9600, 19200, and 38400.

Default

The default value is 9600 baud.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the system baud rate to 19200:

```
Console> (enable) set system baud 19200
System console port baud rate set.
Console> (enable)
```

Related Command

show system

set system contact

Use the **set system contact** command to set the system contact string.

set system contact [*contact_string*]

Syntax Description

contact_string	(Optional) User-definable text, usually containing the name of the person to contact for system administration. If no contact string is specified, the system contact string is cleared.

Default

The default configuration has no system contact configured.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the system contact string to Luis x5529:

```
Console> (enable) set system contact Luis x5529
System contact set.
Console> (enable)
```

Related Command

show system

set system help

Use the **set system help** command to list the **set system** commands.

set system help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list the **set system** commands:

```
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.

set system location [*location_string*]

Syntax Description

location_string	(Optional) A word or phrase that indicates where the system is located. If no location string is specified, the system location is cleared.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the system location string to “Closet 230 4/F”:

```
Console> (enable) set system location Closet 230 4/F
System location set.
Console> (enable)
```

Related Command

show system

set system modem

Use the **set system modem** command to enable or disable modem control lines on the console port.

set system modem {**enable** | **disable**}

Syntax Description

enable	Activates modem control lines on the console port.
disable	Deactivates modem control lines on the console port.

Default

The default configuration has modem control lines disabled.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to disable the modem control lines on the console port:

```
Console> (enable) set system modem disable
Modem control lines disabled on console port.
Console> (enable)
```

Related Command

show system

set system name

Use the **set system name** command to configure a name for the system.

set system name [*name_string*]

Syntax Description

name_string	(Optional) A word or phrase that identifies the system. If no name is specified, the system name is cleared.

Default

The default configuration has no system name configured.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the system name to “Support Group”:

```
Console> (enable) set system name Support Group
System name set.
Console> (enable)
```

Related Command

show system

set time

Use the **set time** command to change the time of day in the system clock.

set time [*day_of_week*] [*mm/dd/yy*] [h*h:mm:ss*]

Syntax Description

day_of_week	(Optional) The day of the week.
mm/dd/yy	(Optional) The month, day, and year.
hh:mm:ss	(Optional) The current time, in 24-hour format.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to set the system clock to Wednesday, May 17, 1995 at 1:25:55 p.m.:

```
Console> (enable) set time wed 5/17/95 13:25:55
Wed Feb 22 1995, 13:25:55
Console> (enable)
```

Related Command

show time

set trunk

Use the **set trunk** command to configure trunk ports.

set trunk *mod_num/port_num* [**on** | **off** | **desirable** | **auto**] [*vlan_range*]

Syntax Description

mod_num	The number of the module.
port_num	The number of the port.
on	This parameter puts the port into permanent ISL trunking mode, and negotiates to convert the link into a trunk port. Moreover, the port becomes a trunk port even if the other end of the link does not agree to the change.
off	This parameter negotiates to convert the link into a nontrunk port. Moreover, the port converts to a nontrunk port even if the other end of the link does not agree to the change. This is the default mode for nondynamic interswitch link (nonDISL) trunks.
desirable	This parameter triggers negotiations to switch the state of the link from a trunk port to a nontrunk port. This option is not allowed on FDDI ports.
auto	This parameter indicates that the port is willing to become a trunk port if another device on that link desires to be a trunk. This option is not allowed on FDDI ports.
vlan_range	The VLANs specified are added to the list of allowed VLANs on the trunk. The VLAN range is 2 to 1000.

Default

All ports are nontrunk ports by default. The default *vlan_range* is 1 to 1005.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

Only Fast Ethernet and FDDI ports can be configured as trunk ports. The **set trunk** command adds VLANs and ports to existing trunk groups; the command does not replace existing VLANs and ports with new VLANs and ports. VLAN numbers must be in the range from 1 to 1005.

When a Catalyst 5000 port that is configured to auto detects a link bit, and it determines that the other end of the link is a trunk port, the Catalyst 5000 automatically converts the port configured to auto into trunking mode. The trunk port reverts to a nontrunk port when its link goes down.

To return a trunk to a normal switched port, use the **clear trunk** command.

Example

The following example shows how to set port 2 on module 1 as a trunk port:

```
Console> (enable) set trunk
Usage: set trunk <mod_num/port_num> [on|off|desirable|auto] [vlan_range]
       (vlans = 1..1000
       An example of vlans is 2-10,1000)
Console> (enable) set trunk 1/2 1-5
Port 1/2 allowed vlans modified to 1-1000.
Console> (enable) set trunk 1/2 on
Port 1/2 mode set to on.
Console> (enable)
```

Related Commands

clear trunk
show trunk

set vlan

Use the **set vlan** command to group ports into a virtual LAN.

set vlan *vlan_num mod/ports ...*
set vlan *vlan_num* [**name** *name*] [**type** *type*] [**mtu** *mtu*] [**said** *said*]
[**state** *state*] [**ring** *ring_number*] [**bridge** *bridge_number*] [**parent** *vlan_num*]
[**stp** *stp_type*] [**translation** *vlan_num*]

Syntax Description

vlan_num	The number of the VLAN.
mod	The number of the module.
ports	The number of the port on the module.
name	The name of the VLAN.
type	The VLAN type (Ethernet, FDDI, Token Ring, FDDI NET, or TR NET).
mtu	The maximum transmission unit (packet size, in bytes) that the VLAN can use.
said	Security association identifier.
state	The VLAN is either **active** or **suspended**.
ring_number	Ring number for token ring vlans.
bridge_number	The identification number of the bridge.
stp_type	1–Source routing transparent, 2–Source routing porting.

Default

The default configuration has all switched Ethernet ports and Ethernet repeater ports in VLAN 1. The default SAID for VLAN 1 is 100001, for VLAN 2 is 10000 2, for VLAN 3 is 100003, and so on. The default **type** is Ethernet. The default **mtu** is 1500 bytes. The default **status** is “active”.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

You cannot set multiple VLANs for ISL ports using this command. The VLAN name can be within the range of 1 to 32 characters in length. The VLAN number must be within the range 1 to 1005.

Example

The following example shows how to set VLAN 1000 to include ports 1 and 2 on module 1, and port 1 on module 2:

```
Console> (enable) set vlan
Usage:
set vlan <vlan_num> <mod/ports...>
set vlan <vlan_num> [name <name>][type <type>][mtu <mtu>][said <said>]
         [state <state>] [ring <ring_number>]
         [bridge <bridge_number>] [parent <vlan_num>]
         [stp <stp_type>] [translation <vlan_num>]
         (An example of mod/ports is 1/1,2/1-12,3/1-2,4/1-12
          type = (ethernet, fddi, token_ring, fddi_net, tr_net)
          name = 1..32 characters, status = (active, suspend)
          vlan_num = 1..1005)
Console> (enable) set vlan 1000 1/1,1/2,2/1
VLAN 1000 created.
VLAN 1 modified.
VLAN 3 modified.
VLAN    Mod/Ports
----    ---------------------------
1000    1/1-2
        2/1
Console> (enable) set vlan 3 name catbox type ethernet mtu 1500 said 3
VLAN 3 Added
Console> (enable)
```

Related Commands

clear vlan
show vlan

set vtp

Use the **set vtp** command to set the management domain name, VLAN trunk protocol mode of operation, advertisement interval, and password values.

set vtp [**domain** *domain_name*][**mode** *mode*][**interval** *interval*][**passwd** *passwd*]

Syntax Description

domain_name	The name that identifies the VLAN management domain (1 to 32 characters in length).
mode	The mode of operation (client, server, or transparent).
interval	The rate at which periodic advertisements are generated (in seconds from 120 to 600).
passwd	The VLAN trunk protocol password (8 to 64 characters).

Default

This default *interval* is 5 minutes.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

The *interval* range is from 120 to 600 seconds. The *password* must be at least eight characters in length.

Example

```
Console (enable) set vtp
Usage:
set vtp [domain <name>][mode <mode>][interval <interval>][passwd <passwd>]
(name: 1-32 characters, mode = (client, server, transparent),
 interval = 120-600 sec, passwd : 0-64 characters)
Console> (enable) set vtp domain catbox mode client interval 160
VTP: domain catbox modified
Console> (enable)
```

Related Commands

clear vtp statistics
show vtp
show vtp domain
show vtp statistics

show alias

Use the **show alias** command to display shorthand versions of command invocations.

show alias [*name*]

Syntax Description

name (Optional) The name of the alias to be displayed.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display all aliases:

```
Console> show alias
arpdelete     clear arp
resetclr      clear config
```

Related Commands

clear alias
session

show arp

Use the **show arp** command to display the Address Recognition Protocol (ARP) table.

show arp [**noalias**]

Syntax Description

noalias (Optional) Indicates not to display the IP alias, only the IP address.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display the ARP table:

```
Console> show arp
ARP Aging time = 1200 sec
strauss-fddi    at 00-40-0b-40-40-8f
198.133.219.209 at 00-40-0b-40-cc-31
198.133.219.40  at 08-00-20-08-f1-ac
Console>
```

Related Commands

clear arp
set arp

show atm interface atm

Use the **show atm interface atm** privileged EXEC command to display ATM-specific information about an interface.

show atm interface atm 0

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM command.

Command Mode

EXEC.

Example

The following is sample output from the **show atm interface atm** command to display statistics on the ATM module:

```
ATM#show atm interface atm 0
ATM interface ATM0:
AAL enabled:  AAL5 , Maximum VCs: 1024, Current VCs: 6
Tx buffers 32, Rx buffers 32, Exception Queue: 32, Raw Queue: 32
VP Filter: 0x0, VCIs per VPI: 1024, Max. Datagram Size:1580
PLIM Type:INVALID, No Framing, TX clocking: LINE
881 input, 880 output, 0 IN fast, 0 OUT fast
New Config. is ACTIVE in -3700 seconds
ATM#
```

Table 7-5 describes the fields shown in the display.

Table 7-5 show atm interface atm Command Field Descriptions

Field	Description
ATM interface	The ATM interface is 0.
AAL enabled	Type of AAL.
Maximum VCs	Maximum number of virtual circuits this interface can support.
Current VCs	Number of active virtual circuits.
Tx buffers, Rx buffers	Number of buffers.
VCIs per VPI	Maximum number of VCIs to support per VPI, as configured by the **atm vc-per-vp** command.
PLIM Type	Physical Layer Interface Module (PLIM) type
input	Number of packets received and process switched.
output	Number of packets sent from process switch.

Field	Description
Config.	ACTIVE or VALID in *n* SECONDS. ACTIVE indicates that the current Catalyst 5000 configuration has been loaded into the Catalyst 5000 and is being used. There is a 5-second inactive period whenever a new configuration is sent to the Catalyst 5000.

show atm traffic

Use the **show atm traffic** privileged EXEC command to display current, global ATM traffic information to and from all ATM networks connected to the ATM module.

show atm traffic

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM command.

Command Mode

Privileged EXEC.

Example

The following is sample output from the **show atm traffic** command:

```
ATM#show atm traffic
949 Input packets
948 Output packets
0 Broadcast packets
0 Packets for non-existent VC
0 OAM cells received
0 OAM cells sent
ATM#
```

Table 7-10 describes the fields shown in the display.

show atm vc

Use the **show atm vc** privileged EXEC command to display all active ATM virtual circuits (PVCs and SVCs) and traffic information.

show atm vc [*vcd*]

Syntax Description

vcd (Optional) Specifies which VC to display information about.

Command Type

IOS ATM command.

Command Mode

Privileged EXEC.

Usage Guidelines

If no VCD is specified, the command displays information for all SVCs. The output is in summary form (one line per VC).

Example

The following is sample output from the **show atm vc** command when no VCD is specified, displaying statistics for all VCs:

```
ATM# show atm vc

ATM#show atm vc
Intfc.      VCD   VPI   VCI    Type   AAL/Encaps    Peak   Avg.   Burst
ATM0        1     0     5      PVC    AAL5-SAAL     0      0      0
ATM0        2     0     16     PVC    AAL5-ILMI     0      0      0
ATM0        9     0     32     SVC    LANE-LEC      0      0      0
ATM0        10    0     33     SVC    LANE-LEC      0      0      0
ATM0        11    0     34     SVC    LANE-LEC      0      0      0
ATM0        12    0     35     SVC    LANE-LEC      0      0      0
ATM#
```

show bridge

Use the **show bridge** command to display bridge information.

show bridge

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to display bridge information:

```
Console> (enable) show bridge
APaRT Enabled
FDDICHECK Enabled
IP fragmentation Enabled
Default IPX translations:
    FDDI SNAP  to Ethernet     8023raw
    FDDI 802.2 to Ethernet     8023raw
    Ethernet 802.3 Raw to FDDI snap
Console> (enable)
```

Related Commands

set bridge help
set bridge ipx 8022toether
set bridge ipx 8023rawtofddi
set bridge ipx snaptoether
set ip fragmentation

show cam

Use the **show cam** command to display the CAM table.

show cam { **dynamic** | **static** | **permanent** | **system**} [*vlan*]
show cam { **dynamic** | **static** | **permanent** } *mod_num/port_num*
show cam *mac_addr* [*vlan*]

Syntax Description

dynamic	Specifies that entries are subject to aging.
static	Specifies that entries are not subject to aging.
permanent	Specifies that static (permanent) entries will be stored in NVRAM until they are removed by the **clear cam** or **clear config** command.
system	Specifies the system.
vlan	(Optional) Number of the VLAN. If a VLAN is not specified, all VLANs are displayed.
mod_num	The number of the module.
port_num	The number of the port.
mac_addr	The MAC address.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guidelines

To view the CAM aging time for a specific VLAN, use the **show cam** *vlan* command; to view aging time for all configured VLANs, use the **show config** command.

Example

The following example shows how to display dynamic CAM entries for VLAN 1:

```
Console> (enable) show cam dynamic 1
VLAN 1 Aging time = 15 sec
VLAN  Destination MAC      Destination Ports or VCs
----  ------------------   -----------------------------------------------------
1     00-40-0b-60-cd-96    1/1
1     00-40-0b-b0-0b-8e    1/1
1     00-40-0b-60-d7-3c    1/1
1     00-00-0c-35-7f-42    1/1

Matching CAM Entries = 4
Console> (enable)
```

Related Commands

clear cam
set bridge help
show config

show cdp

Use the **show cdp** command to display Cisco Discovery Protocol (CDP) information.

show cdp neighbors [*mod_num*] [**detail**]
show cdp neighbors [*mod_num/port_num*] [**detail**]
show cdp port [*mod_num*]
show cdp port [*mod_num/port_num*]

Syntax Description

neighbors	Shows CDP information about all Cisco products connected to the switch.
mod_num	(Optional) The number of the module about which CDP information is to be displayed.
detail	(Optional) Shows descriptive information about neighboring Cisco products.
port_num	(Optional) The number of the port on the module about which CDP information is to be displayed.
port	Show CDP port settings.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Examples

The following example shows how to display CDP information about neighboring systems:

```
Console> (debug-eng) show cdp neighbor
Port Device-ID               Port-ID          Platform              Capability
---- ----------------------- ---------------- --------------------- -----------
4/2  000041770(Workgroup Swi 5                WS-C1201              T
4/4  000102703               2/2              WS-C5000              S
```

The next example shows how to display detailed CDP information:

```
Console> (enable) show cdp neighbor detail
Device-ID: 000041770(Workgroup Switch)
Device Addresses:
  IP Address: 198.133.219.222
Holdtime: 127 sec
Capabilities: TRANSPARENT_BRIDGE
Version:
```

```
  WS-C1201 Software, Version DmpSW: 3.208 NmpSW: 3.208
  Copyright (c) 1994,1995 by Cisco Systems
  DMP S/W compiled on Jan 27 1995 08:52:48
  NMP S/W compiled on Jan 27 1995 08:42:46

  System Bootstrap Version: 1.1

  Hardware Version: 2.0  Model: WS-C1201  Serial #: 000041770
  1 FDDI interface
  8 10BaseT interfaces

  Uptime is 0 day, 5 hours, 22 minutes
Platform: WS-C1201
Port-ID (Port on Device): 5
Port (Our Port): 4/2
---------------------------------------------------------------------------
Device-ID: 000102703
Device Addresses:
  IP Address: 198.133.219.225
Holdtime: 130 sec
Capabilities: SWITCH
Version:
  WS-C5000 Software, Version McpSW: 1.113 NmpSW: 1.1
  Copyright (c) 1995 by Cisco Systems
  MCP S/W compiled on Apr 21 1995, 10:08:16
  NMP S/W compiled on Apr 22 1995, 18:57:03

  System Bootstrap Version: 1.1

  WS-X5009 Hardware Version: 1.402  Model: WS-X5009  Serial #: 000102703

  Module Ports Model     Serial No  Hw     Fw     Sw
  ------ ----- --------- ---------- ------ ------ ------
       1     2 WS-X5009   000102703  1.402  1.113 1.1
       2    24 WS-X5010   000133119  1.302  1.113  0.0

  WS-X5009 Uptime is 0 day, 0 hour, 19 minutes
Platform: WS-C5000
Port-ID (Port on Device): 2/2
Port (Our Port): 4/4
Console> (enable)
```

The following example shows how to display CDP information for a particular port:

```
Console> (enable) show cdp port 2/1
Port  CDP Status  Message-Interval
----  ----------  ----------------
2/1   enabled     60
Console> (enable)
```

Related Commands

set cdp disable
set cdp enable

show config

Use the **show config** command to display the current system configuration.

show config

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows the contents of a configuration file:

```
Console> show config
begin
set password $1$FMFQ$HfZR5DUszVHIRhrz4h6V70
set enablepass $1$FMFQ$HfZR5DUszVHIRhrz4h6V70
set prompt Console>
!
#system
set system baud 9600
set system modem  disable
set system name  Catalyst 5000
set system location  Sunnyvale, CA
set system contact Bob Lewis
!
#snmp
set snmp rmon  enable
set snmp community read-only public
set snmp community read-write private
set snmp community read-write-all secret
set snmp trap  171.69.194.181 public
set snmp trap  disable
!
#vlan/trunk
clear trunk all
!
set vlan 1    1/1-2,2/1-24
!
#trunks
!
#MAC filters
clear filter all
!
#cam
set cam agingtime 0
```

```
!
#spantree
#vlan 1
set spantree enable         1
set spantree fwddelay 20    1
set spantree hello    2     1
set spantree maxage   20    1
set spantree priority 45    1
set spantree portpri  1/1  32
set spantree portcost 1/1  100
set spantree portpri  1/2  32
set spantree portcost 1/2  100
set spantree portpri  2/1  32
set spantree portcost 2/1  100
.
.
.
set spantree portpri  2/24 32
set spantree portcost 2/24 100
!
#vlan trunk/monitor
!
#ip
set interface sc0 192.122.174.220 255.255.255.0 192.122.174.255
set redirect enable
set route 0.0.0.0 192.122.174.102 1
set arp agingtime 1200
!
#cdp
set cdp 1/1  enable  60
set cdp 1/2  enable  60
set cdp 2/1  enable  60
set cdp 2/2  enable  60
set cdp 2/3  enable  60
.
.
.
set cdp 2/24 enable  60
!
#ipalias
set ipalias default 0.0.0.0
set ipalias cres 192.122.173.42
set ipalias calypso 171.69.194.181
!
#alias
!
#port monitoring
set monitor 1 1/1  both
set monitor disable
!
#module 1
set port enable    1/1
set port name      1/1
set port duplex    1/1  half
set port speed     1/1  -1315
set port level     1/1  high
set port enable    1/2
set port name      1/2
set port duplex    1/2  half
set port speed     1/2  504
set port level     1/2  normal
!
```

```
#module 2
set module enable  2
!
set port enable    2/1
set port name      2/1  network
set port duplex    2/1  half
set port level     2/1  normal
set port enable    2/2
set port name      2/2
set port duplex    2/2  half
set port level     2/2  normal
.
.
.
set port enable    2/24
set port name      2/24
set port duplex    2/24 half
set port level     2/24 normal
!
#module 3 empty
!
#module 4 empty
!
#module 5 empty
end
```

Related Commands

clear config
write

show fddi

Use the **show fddi** command to display the setting for the FDDI/CDDI modules.

show fddi

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display the FDDI settings:

```
console>show fddi
Mod  SMT User-Data               T-Notify  TReq
---  --------------------------  --------  -------
2    Engineering                 30        165000
5    abc                         20        150000

Port   Tlmin     Ler-CutOff  Ler-Alarm
-----  --------  ----------  ---------
2/1    40        7           8
2/2    40        7           8
5/1    40        10          11
5/2    40        9           12
console>
```

Related Commands

clear cam
set bridge help
show config

show fddicam

Use the **show fddicam** command to display the FDDI module CAM table.

show fddicam *mod_num* [**fddi**] *mac_addr*

Syntax Description

mod_num The number of the module.

fddi

mac_addr The MAC addresses.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display the FDDI CAM table for module 4:

```
Console> (enable) show fddicam 4
MAC Address        VLAN   Protocol Type
-----------------  ----   -------------
00-40-0b-d0-00-2b     1   FDDI
Total FDDI CAM entries = 1
Console> (enable)
```

Related Commands

clear cam
set bridge help
show config

show flash

Use the **show flash** command to list flash code information, such as file code names, version numbers, and sizes.

show flash

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to list the flash code versions:

```
Console> (enable) show flash ?
Usage: show flash
Console> (enable) show flash
File            Version            Size (bytes)
--------------  -----------------  -------------
c5009 nmp       2.142(Eng)          789921
      mcp       2.139                25773
      lcp       2.139                24786
      atm/fddi  2.139                22272
      lcp 64k   2.139                35663
Console> (enable)
```

show help

Use the **show help** command to list the available **show** commands.

show help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to list the **show** commands:

```
Console> show help
Show 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 module entries
show fddicam        Show FDDI module CAM table
show flash          Show system flash information
show help           Show this message
show interface      Show network interfaces
show ip             Show IP Information
show mac            Show MAC information
show module         Show module 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 test           Show results of diagnostic tests
show time           Show time of day
show trunk          Show trunk ports
show users          Show active Admin sessions
show version        Show version information
show vlan           Show Virtual LAN information
show vtp            Show VTP Information
Console>
```

show history

Use the **show history** EXEC command to list the commands you have entered in the current EXEC session.

show history

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM module Interface command.

Command Mode

EXEC.

Usage Guidelines

The command history feature provides a record of EXEC commands you have entered. The number of commands the history buffer will record is determined by the **history size** line configuration command or the **terminal history size** EXEC command.

Table 7-6 lists the keys and functions you can use to recall commands from the command history buffer.

Table 7-6 History Keys

Key	Function
Up Arrow or Ctrl-P [1]	Recalls commands in the history buffer in a backward sequence, beginning with the most recent command. Repeat the key sequence to recall successively older commands.
Down Arrow or Ctrl-N [1.]	Returns to more recent commands in the history buffer after recalling commands with Ctrl-P or the Up Arrow. Repeat the key sequence to recall successively more recent commands.

1. The arrow keys function only with ANSI-compatible terminals such as VT100's.

Example

The following is sample output from the **show history** command, which lists the commands the user has entered in EXEC mode for this session:

```
ATM# show history
help
  where
  show hosts
  show history
ATM#
```

show interface

Use the **show interface** command to display network interfaces.

show interface

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display sl0 and sc0:

```
Console> show interface
sl0: flags=51<UP,POINTOPOINT,RUNNING>
        slip 0.0.0.0 dest 0.0.0.0
sc0: flags=63<UP,BROADCAST,RUNNING>
        vlan 1 inet 172.20.25.130 netmask 255.255.0.0 broadcast 172.20.255.255
Console>
```

Related Command

set interface

show ip alias

The **show ip alias** command shows aliases of IP addresses.

show ip alias [*name*]

Syntax Description

name (Optional) The name of the host.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display all IP aliases:

```
Console> (enable) show ip alias
elvis        192.122.174.11
mercury      192.122.174.234
neptune      198.211.203.44
```

show ip help

Use the **show ip help** command to list the **show ip** commands.

show ip help

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to list the **show ip** commands:

```
Console> (enable) show ip help
Show ip commands:
------------------------------------------------------------------------
show ip alias       Show aliases for IP Addresses
show ip route       Show IP routing table
Console> (enable)
```

Related Commands

show ip alias
show ip route

show ip route

Use the **show ip route** command to display IP routing table entries.

show ip route [**noalias**]

Syntax Description

noalias (Optional) Indicates not to display the IP alias, only the IP address.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guideline

If the **noalias** keyword is specified, IP aliases are not displayed; IP addresses only are displayed.

Example

The following example shows how to display the established routes:

```
Console> (enable) show ip route
Fragmentation   Redirect   Unreachable
-------------   --------   -----------
disabled        enabled    disabled

Destination     Gateway         Flags   Use         Interface
--------------- --------------- ------  ----------  ---------
172.20.0.0      172.20.22.181   U               0  sc0
default         default         UH              0  sl0
Console> (enable)
```

Related Commands

clear ip route
set ip route
set ip fragmentation
set ip redirect
set ip unreachable

show lane

Use the **show lane** EXEC command to display global and per-VCC LANE information for all the LANE components configured on an interface or any of its subinterfaces, on a specified subinterface, or on an emulated LAN.

show lane [**interface atm 0** [**.***subinterface-number*] | **name** *elan-name*] [**brief**]

Syntax Description

interface atm 0	(Optional) ATM interface 0.
.*subinterface-number*	(Optional) Subinterface number.
name *elan-name*	(Optional) Name of emulated LAN. Maximum length is 32 characters.
brief	(Optional) Keyword used to display the global information, but not the per-VCC information.

Command Type

IOS LAN emulation command.

Command Mode

EXEC.

Usage Guideline

Entering the **show lane** command is equivalent to entering the **show lane client** commands.

Example

The following is sample output of the **show lane** command:

```
ATM#show lane
LE Client ATM0.2  ELAN name: blue  Admin: up  State: operational
Client ID: 1
HW Address: 0040.0bf0.0020   Type: ethernet             Max Frame Size: 1516
ATM Address: 39.000000550055005500550055.00400BF00020.02

 VCD  rxFrames  txFrames  Type       ATM Address
 0         0         0  configure 39.000000550055005500550055.00000C0425C2.00
 14        3         4  direct    39.000000550055005500550055.00000C0425C0.01
 15        1         0  distribute39.000000550055005500550055.00000C0425C0.01
 16        0         8  send      39.000000550055005500550055.00000C0425C1.01
 17        14        0  forward   39.000000550055005500550055.00000C0425C1.01
 18        25        28 data      39.000000550055005500550055.00400BF00420.00

ATM#
```

Table 7-7 describes significant fields in the example.

Table 7-7 show lane Command Field Descriptions

Field	Description
LE Client	Identifies the following lines as applying to a LANE client. These lines are also displayed in output from the **show lane client** command.
ATM 0.1	Interface or subinterface this LANE client is on.
ELAN name	Name of the emulated LAN this client is linked to.
State	Status of this LANE client. Possible states include initialState, lecsConnect, configure, join, busConnect, and operational.
HW Address	MAC address, in dotted hexadecimal notation, assigned to this LANE client.
Type	Type of emulated LAN.
Max Frame Size	Maximum frame size on this type of LAN.
ATM Address	ATM address of this LANE client.
VCD	Virtual channel descriptor for each of the VCCs established for this LANE client.
rxFrames	Number of frames received on the VCC.
txFrames	Number of frames transmitted on the VCC.
Type	Type of VCC; same as the SVC and PVC types. Possible VCC types are configure, direct, distribute, send, forward, and data.
ATM Address	ATM address of the LANE component at the other end of the VCC.

show lane client

Use the **show lane client** EXEC command to display global and per-VCC LANE information for all the LANE clients configured on an interface or any of its subinterfaces, on a specified subinterface, or on an emulated LAN.

show lane client [**interface atm 0** [**.***subinterface-number*] | **name** *elan-name*] [**brief**]

Syntax Description

interface atm 0	(Optional) ATM interface 0.
.*subinterface-number*	(Optional) Subinterface number.
name *elan-name*	(Optional) Name of the emulated LAN. Maximum length is 32 characters.
brief	(Optional) Keyword used to display the global information, but not the per-VCC information.

Command Type

IOS LAN emulation command.

Command Mode

EXEC.

Example

The following is sample output from the **show lane client** command:

```
Router# show lane client

LE Client ATM0.2  ELAN name: blue  Admin: up  State: operational
Client ID: 1
HW Address: 0040.0bf0.0020   Type: ethernet             Max Frame Size: 1516
ATM Address: 39.000000550055005500550055.00400BF00020.02

 VCD  rxFrames  txFrames  Type       ATM Address
 0         0         0  configure 39.000000550055005500550055.00000C0425C2.00
 14      3       4 direct   39.000000550055005500550055.00000C0425C0.01  15      1
0  distribute39.000000550055005500550055.00000C0425C0.01
 16        0         8  send      39.000000550055005500550055.00000C0425C1.01
 17        14        0  forward   39.000000550055005500550055.00000C0425C1.01
 18        25        28  data     39.000000550055005500550055.00400BF00420.00

ATM#
```

Table 7-7 describes significant fields in the example.

Table 7-8 show lane client Command Field Descriptions

Field	Description
LE Client	Identifies the following lines as applying to a LANE client. These lines are also displayed in output from the **show lane client** command.
ATM 0.1	Interface or subinterface this LANE client is on.
ELAN name	Name of the emulated LAN this client is linked to.
State	Status of this LANE client. Possible states include initialState, lecsConnect, configure, join, busConnect, and operational.
HW Address	MAC address, in dotted hexadecimal notation, assigned to this LANE client.
Type	Type of emulated LAN.
Max Frame Size	Maximum frame size on this type of LAN.
ATM Address	ATM address of this LANE client.
VCD	Virtual channel descriptor for each of the VCCs established for this LANE client.
rxFrames	Number of frames received on the VCC.
txFrames	Number of frames transmitted on the VCC.
Type	Type of VCC; same as the SVC and PVC types. Possible VCC types are configure, direct, distribute, send, forward, and data.
ATM Address	ATM address of the LANE component at the other end of the VCC.

show lane le-arp

Use the **show lane le-arp** EXEC command to display the LANE ARP table of the LANE client configured on an interface or any of its subinterfaces, on a specified subinterface, or on an emulated LAN.

show lane le-arp [**interface atm 0** [**.***subinterface-number*] | **name** *elan-name*]

Syntax Description

interface atm 0	(Optional) ATM interface 0.
.*subinterface-number*	Subinterface number.
name *elan-name*	(Optional) Specifies the name of the emulated LAN. Maximum length is 32 characters.

Command Type

IOS LAN emulation command.

Command Mode

EXEC.

Example

The following is sample output of the **show lane le-arp** command:

```
ATM# show lane le-arp
Hardware Addr   ATM Address                                  VCD  Interface
0000.0c15.a2b5  39.000000000000000000000000.00000C15A2B5.01  39  ATM 0.1
0000.0c15.f3e5  39.000000000000000000000000.00000C15F3E5.01  25* ATM 0.1
```

Table 7-9 describes significant fields shown in the display.

Table 7-9 show lane le-arp Command Field Descriptions

Field	Description
Hardware Addr	The MAC address, in dotted hexadecimal notation, assigned to the LANE component at the other end of this VCD.
ATM Address	ATM address of the LANE component at the other end of this VCD.
VCD	Virtual circuit descriptor.
Interface	Interface or subinterface used to reach the specified component.

show log

Use the **show log** command to display the system error log.

show log

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to display the error log:

```
Console> (enable) show log
Network Management Processor (NMP) Log:
  Reset count:   1127
  Re-boot History:   May 07 1996 17:24:40 3, May 07 1996 16:56:06 3
                     May 07 1996 13:19:42 3, May 07 1996 13:04:41 3
                     May 07 1996 11:54:48 3, May 07 1996 10:31:26 3
                     May 07 1996 10:25:05 3, May 07 1996 10:22:05 3
                     May 07 1996 10:20:07 3, May 07 1996 09:46:41 3
  Bootrom Checksum Failures:      0   UART Failures:                  0
  Flash Checksum Failures:        1   Flash Program Failures:         0
  Power Supply 1 Failures:       37   Power Supply 2 Failures:       17
  DRAM Failures:                  0
  Exceptions:                   198
    Last Exception occurred on May 07 1996 13:04:20 ...
    Software version = 2.136
    Error Msg:
    PID = 4
    PC: 1005B5B0, Status: 2004, Vector: 2014
    sp+00: 20041005 B5B02014 1005B5AC 00000000
    sp+10: 107FC37F 100972FA 00000005 00000001
    sp+20: 00000005 107FC3AF 10090E08 00000005
    sp+30: 00000001 00000005 00000005 00000000
    sp+40: 1008BACE 00000000 00000004 00000000
    sp+50: 00000004 107FC3BB 10093254 00000005
    D0: 00000000, D1: 00000000, D2: 00000000, D3: 00000000
    D4: 00000000, D5: 00000000, D6: 00000000, D7: 00000000
    A0: 101FB808, A1: 101FB88C, A2: 1008BACE, A3: 00000000
    A4: 00000000, A5: 00000000, A6: 107FC36B, sp: 107FC35B

Module 2 Log:
  Reset Count:   283
  Reset History: Tue May 7 1996, 17:26:41
                 Tue May 7 1996, 16:57:33
                 Tue May 7 1996, 13:21:44
                 Tue May 7 1996, 13:06:04

Console> (enable)
```

Related Command

clear log

show mac

Use the **show mac** command to display MAC counters.

show mac
show mac *mod_num*
show mac *mod_num/port_num*

Syntax Description

mod_num The number of the module. If a number is not specified, all modules are shown.

port_num The number of the port on the module.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display MAC information:

```
Console> (enable) show mac
MAC      Rcv-Frms    Xmit-Frms   Rcv-Multi   Xmit-Multi  Rcv-Broad   Xmit-Broad
-------  ----------  ----------  ----------  ----------  ----------  ----------
1/1               0           0           0           0           0           0
1/2               0           0           0           0           0           0
2/1               0           0           0           0           0           0
2/2               0           0           0           0           0           0
2/3               0           0           0           0           0           0
2/4               0           0           0           0           0           0
2/5               0           0           0           0           0           0
2/6               0           0           0           0           0           0
2/7               0           0           0           0           0           0
2/8               0           0           0           0           0           0
2/9               0           0           0           0           0           0
2/10              0           0           0           0           0           0
2/11              0           0           0           0           0           0
2/12              0           0           0           0           0           0
2/13              0           0           0           0           0           0
2/14              0           0           0           0           0           0
2/15              0           0           0           0           0           0
2/16              0           0           0           0           0           0
2/17              0           0           0           0           0           0
2/18              0           0           0           0           0           0
2/19              0           0           0           0           0           0
```

```
2/20              0           0           0           0           0           0
2/21              0           0           0           0           0           0
2/22         870865       70101       47507       70091       55755           0
2/23              0           0           0           0           0           0
2/24              0           0           0           0           0           0
4/1               0        2933           0        1007           0        1926

MAC      Dely-Exced  MTU-Exced   In-Discard  Lrn-Discrd  In-Lost     Out-Lost
-------  ----------  ----------  ----------  ----------  ----------  ----------
1/1               0           0           0           0           0           0
1/2               0           0           0           0           0           0
2/1               0           0           0           0           0           0
2/2               0           0           0           0           0           0
2/3               0           0           0           0           0           0
2/4               0           0           0           0           0           0
2/5               0           0           0           0           0           0
2/6               0           0           0           0           0           0
2/7               0           0           0           0           0           0
2/8               0           0           0           0           0           0
2/9               0           0           0           0           0           0
2/10              0           0           0           0           0           0
2/11              0           0           0           0           0           0
2/12              0           0           0           0           0           0
2/13              0           0           0           0           0           0
2/14              0           0           0           0           0           0
2/15              0           0           0           0           0           0
2/16              0           0           0           0           0           0
2/17              0           0           0           0           0           0
2/18              0           0           0           0           0           0
2/19              0           0           0           0           0           0
2/20              0           0           0           0           0           0
2/21              0           0           0           0           0           0
2/22              0           0           0           0           0           0
2/23              0           0           0           0           0           0
2/24              0           0           0           0           0           0
4/1               0           0           0           0           0           0

MAC  SMT-Address        Curr-Path   TReq      TNeg      TMax      TVX
---  -----------------  ----------  --------  --------  --------  --------
4/1  00:02:d0:0b:00:d4  isolated        3500      3500    165004      2509

MAC  Upstream-Nbr       Downstream-Nbr     Old-Upstream-Nbr   Old-Downstream-Nbr
---  -----------------  -----------------  -----------------  ------------------
4/1  00:00:1f:00:00:00  00:00:1f:00:00:00  00:00:1f:00:00:00  00:00:1f:00:00:00

MAC  Rcv-Smt     Xmit-Smt    Rcv-llc     Xmit-llc    Tvx-Exp-Ct  RingOp-Ct
---  ----------  ----------  ----------  ----------  ----------  ----------
4/1           0        1930           0        1003           0           4

Last-Time-Cleared
-------------------------
Sun Aug 27 1995, 13:57:58
Console> (enable)
```

Related Command

clear counters

show module

Use the **show module** command to display module status and information.

show module

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display module status and information:

```
Console> show module
Mod Module-Name         Ports Module-Type            Model    Serial-Num Status
--- ------------------- ----- ---------------------  -------- ---------  -------
1    Supervisor           2    100BaseTX Supervisor  WS-X5009 002650014  ok
2    Management          24    10BaseT Ethernet      WS-X5010 002475046  ok
4    Marketing           48    4 Segment 10BaseT Eth WS-X5020 002135955  ok

Mod MAC-Address(es)                           Hw     Fw     Sw
--- ----------------------------------------  ------ ------ ----------------
1   00-40-0b-ac-80-00 thru 00-40-0b-ac-83-ff  1.6    1.4    2.113(Eng)
2   00-40-0b-4c-92-58 thru 00-40-0b-4c-92-6f  1.0    1.4    2.106
4   00-40-0b-14-00-20 thru 00-40-0b-14-00-23  0.1    1.4369 2.106

Mod SMT User-Data               T-Notify CF-St    ECM-St    Bypass
--- --------------------------- -------- -------- --------- -------
4   Catalyst-5000               16       c-Wrap-B in        absent
Console>
```

Related Commands

set fddi userdata
set fddi tnotify
set module disable
set module enable
set module help
set module name

show netstat

Use the **show netstat** command to display statistics for the various protocols in the TCP/IP protocol stack. This command is also used to display the state of network connections currently active on the system.

show netstat [**stats | tcp | udp | ip | icmp | interfaces | routes**]

Syntax Description

stats	(Optional) Shows TCP, UDP, IP, and ICMP statistics.
tcp	(Optional) Shows TCP statistics.
udp	(Optional) Shows UDP statistics.
ip	(Optional) Shows IP statistics.
icmp	(Optional) Shows ICMP statistics.
interfaces	(Optional) Shows interface statistics.
routes	(Optional) Shows the IP routing table.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Examples

The following example shows how to display default (TCP and UDP) statistics:

```
Console> show netstat
Active Internet connections (including servers)
Proto Recv-Q Send-Q  Local Address          Foreign Address        (State)
tcp        0    128  192.122.174.221.23     192.122.174.40.1064    ESTABLISHED
tcp        0      0  *.23                   *.*                    LISTEN
udp        0      0  *.161                  *.*
Console>
```

The following example shows how to display TCP statistics:

```
Console> (enable) show netstat tcp
tcp:
        619 packets sent
                586 data packets (33863 bytes)
                16 data packets (2133 bytes) retransmitted
                17 ack-only packets (11 delayed)
                0 URG only packets
                0 window probe packets
                0 window update packets
                0 control packets
        806 packets received
                595 acks (for 34475 bytes)
                5 duplicate acks
                0 acks for unsent data
                329 packets (1082 bytes) received in-sequence
                0 completely duplicate packets (0 bytes)
                1 packet with some dup. data (1 byte duped)
                3 out-of-order packets (0 bytes)
                0 packets (0 bytes) of data after window
                0 window probes
                3 window update packets
                0 packets received after close
                0 discarded for bad checksums
                0 discarded for bad header offset fields
                0 discarded because packet too short
        0 connection requests
        4 connection accepts
        4 connections established (including accepts)
        3 connections closed (including 0 drops)
        0 embryonic connections dropped
        577 segments updated rtt (of 592 attempts)
        13 retransmit timeouts
                0 connections dropped by rexmit timeout
        0 persist timeouts
        0 keepalive timeouts
                0 keepalive probes sent
                0 connections dropped by keepalive
Console> (enable)
```

The following example shows how to display UDP statistics:

```
Console> show netstat udp
udp:
        0 incomplete headers
        0 bad data length fields
        0 bad checksums
        0 socket overflows
        1116 no such ports
Console>
```

The following example shows how to display IP statistics:

```
Console> show netstat ip
ip:
        957 total packets received
        0 bad header checksums
        0 with size smaller than minimum
        0 with data size < data length
        0 with header length < data size
        0 with data length < header length
        0 fragments received
        0 fragments dropped (dup or out of space)
        0 fragments dropped after timeout
        0 packets forwarded
        376 packets not forwardable
        0 redirects sent
Console>
```

The following example shows how to display ICMP statistics:

```
Console> show netstat icmp
icmp:
        Redirect enabled
        0 calls to icmp_error
        0 errors not generated 'cuz old message was icmp
        0 messages with bad code fields
        0 messages < minimum length
        0 bad checksums
        0 messages with bad length
        0 message responses generated
Console>
```

The following example shows how to display the IP routing table:

```
Console> show netstat routes
DESTINATION      GATEWAY         FLAGS    USE            INTERFACE
0.0.0.0          192.122.174.40  UG       13             sc0
192.122.174.0    192.122.174.221 U        457            sc0
Console>
```

The following example shows how to display interface statistics:

```
Console> show netstat interface
Interface            InPackets InErrors OutPackets OutErrors
sl0                          0        0          0         0
sc0                        599        0         74         0
Console>
```

Related Commands

set ip help
set ip route
set interface

show port

Use the **show port** command to display port status and counters.

show port
show port *mod_num*
show port *mod_num/port_num*

Syntax Description

mod_num The number of the module.

port_num The number of the port on the module.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display the status and counters for all ports on module 4:

```
Console> (enable) show port
Port Name                 Status     Vlan       Level   Duplex  Speed Type
---- -------------------- ---------- ---------- ------  ------  ----- --------------
1/1  Fred Flintstone      connected  trunk      normal   half   100 100BaseTX
1/2                       notconnect 1          normal   half   100 100BaseTX
2/1                       notconnect 1          normal   half    10 10BaseT
2/2                       inactive   3          normal   half    10 10BaseT
2/3                       notconnect 2          normal   half    10 10BaseT
2/4                       notconnect 2          normal   half    10 10BaseT
2/5                       notconnect 2          normal   half    10 10BaseT
2/6                       notconnect 2          normal   half    10 10BaseT
2/7                       notconnect 2          normal   half    10 10BaseT
2/8                       notconnect 1          normal   half    10 10BaseT
2/9                       notconnect 1          normal   half    10 10BaseT
2/10                      notconnect 1          normal   half    10 10BaseT
2/11                      notconnect 1          normal   half    10 10BaseT
2/12                      notconnect 1          normal   half    10 10BaseT
2/13                      notconnect 1          normal   half    10 10BaseT
2/14                      notconnect 1          normal   half    10 10BaseT
2/15                      notconnect 1          normal   half    10 10BaseT
2/16                      notconnect 1          normal   half    10 10BaseT
2/17                      notconnect 1          normal   half    10 10BaseT
2/18                      notconnect 1          normal   half    10 10BaseT
2/19                      notconnect 1          normal   half    10 10BaseT
2/20                      notconnect 1          normal   half    10 10BaseT
2/21                      notconnect 1          normal   half    10 10BaseT
2/22                      notconnect 1          normal   half    10 10BaseT
2/23                      notconnect 1          normal   half    10 10BaseT
```

```
2/24                      notconnect 1          normal   half    10 10BaseT
4/1                       notconnect 1          normal   half    10 10BaseT
4/2                       notconnect 1          normal   half    10 10BaseT
4/3                       notconnect 1          normal   half    10 10BaseT
4/4                       notconnect 1          normal   half    10 10BaseT
4/5                       notconnect 1          normal   half    10 10BaseT
4/6                       notconnect 1          normal   half    10 10BaseT
4/7                       notconnect 1          normal   half    10 10BaseT
4/8                       notconnect 1          normal   half    10 10BaseT
4/9                       notconnect 1          normal   half    10 10BaseT
4/10                      notconnect 1          normal   half    10 10BaseT
4/11                      notconnect 1          normal   half    10 10BaseT
4/12                      notconnect 1          normal   half    10 10BaseT
4/13                      notconnect 1          normal   half    10 10BaseT
4/14                      notconnect 1          normal   half    10 10BaseT
4/15                      notconnect 1          normal   half    10 10BaseT
4/16                      notconnect 1          normal   half    10 10BaseT
4/17                      notconnect 1          normal   half    10 10BaseT
4/18                      notconnect 1          normal   half    10 10BaseT
4/19                      notconnect 1          normal   half    10 10BaseT
4/20                      notconnect 1          normal   half    10 10BaseT
4/21                      notconnect 1          normal   half    10 10BaseT
4/22                      notconnect 1          normal   half    10 10BaseT
4/23                      notconnect 1          normal   half    10 10BaseT
4/24                      notconnect 1          normal   half    10 10BaseT
4/25                      inactive   3          normal   half    10 10BaseT
4/26                      inactive   3          normal   half    10 10BaseT
4/27                      inactive   3          normal   half    10 10BaseT
4/28                      inactive   3          normal   half    10 10BaseT
4/29                      inactive   3          normal   half    10 10BaseT
4/30                      inactive   3          normal   half    10 10BaseT
4/31                      inactive   3          normal   half    10 10BaseT
4/32                      inactive   3          normal   half    10 10BaseT
4/33                      inactive   3          normal   half    10 10BaseT
4/34                      inactive   3          normal   half    10 10BaseT
4/35                      inactive   3          normal   half    10 10BaseT
4/36                      inactive   3          normal   half    10 10BaseT
4/37                      notconnect 1          normal   half    10 10BaseT
4/38                      notconnect 1          normal   half    10 10BaseT
4/39                      notconnect 1          normal   half    10 10BaseT
4/40                      notconnect 1          normal   half    10 10BaseT
4/41                      notconnect 1          normal   half    10 10BaseT
4/42                      notconnect 1          normal   half    10 10BaseT
4/43                      notconnect 1          normal   half    10 10BaseT
4/44                      notconnect 1          normal   half    10 10BaseT
4/45                      notconnect 1          normal   half    10 10BaseT
4/46                      notconnect 1          normal   half    10 10BaseT
4/47                      notconnect 1          normal   half    10 10BaseT
4/48                      notconnect 1          normal   half    10 10BaseT

Port Align-Err  FCS-Err    Xmit-Err   Rcv-Err
---- ---------- ---------- ---------- ----------
1/1           0          0          0          0
1/2           0          0          0          0
2/1           0          0          0          0
2/2           0          0          0          0
2/3           0          0          0          0
2/4           0          0          0          0
2/5           0          0          0          0
2/6           0          0          0          0
2/7           0          0          0          0
2/8           0          0          0          0
2/9           0          0          0          0
2/10          0          0          0          0
2/11          0          0          0          0
```

```
2/12          0          0          0          0
2/13          0          0          0          0
2/14          0          0          0          0
2/15          0          0          0          0
2/16          0          0          0          0
2/17          0          0          0          0
2/18          0          0          0          0
2/19          0          0          0          0
2/20          0          0          0          0
2/21          0          0          0          0
2/22          0          0          0          0
2/23          0          0          0          0
2/24          0          0          0          0

Port Single-Col Multi-Coll Late-Coll  Excess-Col Carri-Sens Runts     Giants
---- ---------- ---------- ---------- ---------- ---------- --------- ---------
1/1           0          0          0          0          0         0         -
1/2           0          0          0          0          0         0         -
2/1           0          0          0          0          0         0         0
2/2           0          0          0          0          0         0         0
2/3           0          0          0          0          0         0         0
2/4           0          0          0          0          0         0         0
2/5           0          0          0          0          0         0         0
2/6           0          0          0          0          0         0         0
2/7           0          0          0          0          0         0         0
2/8           0          0          0          0          0         0         0
2/9           0          0          0          0          0         0         0
2/10          0          0          0          0          0         0         0
2/11          0          0          0          0          0         0         0
2/12          0          0          0          0          0         0         0
2/13          0          0          0          0          0         0         0
2/14          0          0          0          0          0         0         0
2/15          0          0          0          0          0         0         0
2/16          0          0          0          0          0         0         0
2/17          0          0          0          0          0         0         0
2/18          0          0          0          0          0         0         0
2/19          0          0          0          0          0         0         0
2/20          0          0          0          0          0         0         0
2/21          0          0          0          0          0         0         0
2/22          0          0          0          0          0         0         0
2/23          0          0          0          0          0         0         0
2/24          0          0          0          0          0         0         0

Port Auto-Parts Giants     Data-Rate  FCS-Err    Runts      Rcv-frms   Src-Addr
                           Mismatch                                     Changes
---- ---------- ---------- ---------- ---------- ---------- ---------- --------
4/1           0          0          0          0          0          0        0
4/2           0          0          0          0          0          0        0
4/3           0          0          0          0          0          0        0
4/4           0          0          0          0          0          0        0
4/5           0          0          0          0          0          0        0
4/6           0          0          0          0          0          0        0
4/7           0          0          0          0          0          0        0
4/8           0          0          0          0          0          0        0
4/9           0          0          0          0          0          0        0
4/10          0          0          0          0          0          0        0
4/11          0          0          0          0          0          0        0
4/12          0          0          0          0          0          0        0
4/13          0          0          0          0          0          0        0
4/14          0          0          0          0          0          0        0
4/15          0          0          0          0          0          0        0
4/16          0          0          0          0          0          0        0
4/17          0          0          0          0          0          0        0
4/18          0          0          0          0          0          0        0
4/19          0          0          0          0          0          0        0
```

```
4/20          0          0          0          0          0          0          0
4/21          0          0          0          0          0          0          0
4/22          0          0          0          0          0          0          0
4/23          0          0          0          0          0          0          0
4/24          0          0          0          0          0          0          0
4/25          0          0          0          0          0          0          0
4/26          0          0          0          0          0          0          0
4/27          0          0          0          0          0          0          0
4/28          0          0          0          0          0          0          0
4/29          0          0          0          0          0          0          0
4/30          0          0          0          0          0          0          0
4/31          0          0          0          0          0          0          0
4/32          0          0          0          0          0          0          0
4/33          0          0          0          0          0          0          0
4/34          0          0          0          0          0          0          0
4/35          0          0          0          0          0          0          0
4/36          0          0          0          0          0          0          0
4/37          0          0          0          0          0          0          0
4/38          0          0          0          0          0          0          0
4/39          0          0          0          0          0          0          0
4/40          0          0          0          0          0          0          0
4/41          0          0          0          0          0          0          0
4/42          0          0          0          0          0          0          0
4/42          0          0          0          0          0          0          0
4/43          0          0          0          0          0          0          0
4/44          0          0          0          0          0          0          0
4/45          0          0          0          0          0          0          0
4/46          0          0          0          0          0          0          0
4/47          0          0          0          0          0          0          0
4/48          0          0          0          0          0          0          0

Port Rcv-Multi  Rcv-Broad  Good-Bytes Align-Err  Short-Evnt Late-Coll Collision
---- ---------- ---------- ---------- ---------- ---------- --------- ---------
4/1           0          0          0          0          0         0         0
4/2           0          0          0          0          0         0         0
4/3           0          0          0          0          0         0         0
4/4           0          0          0          0          0         0         0
4/5           0          0          0          0          0         0         0
4/6           0          0          0          0          0         0         0
4/7           0          0          0          0          0         0         0
4/8           0          0          0          0          0         0         0
4/9           0          0          0          0          0         0         0
4/10          0          0          0          0          0         0         0
4/11          0          0          0          0          0         0         0
4/12          0          0          0          0          0         0         0
4/13          0          0          0          0          0         0         0
4/13          0          0          0          0          0         0         0
4/14          0          0          0          0          0         0         0
4/15          0          0          0          0          0         0         0
4/16          0          0          0          0          0         0         0
4/17          0          0          0          0          0         0         0
4/18          0          0          0          0          0         0         0
4/19          0          0          0          0          0         0         0
4/20          0          0          0          0          0         0         0
4/21          0          0          0          0          0         0         0
4/22          0          0          0          0          0         0         0
4/23          0          0          0          0          0         0         0
4/24          0          0          0          0          0         0         0
4/25          0          0          0          0          0         0         0
4/26          0          0          0          0          0         0         0
4/27          0          0          0          0          0         0         0
4/28          0          0          0          0          0         0         0
4/29          0          0          0          0          0         0         0
4/30          0          0          0          0          0         0         0
4/31          0          0          0          0          0         0         0
```

```
4/32          0          0          0          0          0          0          0
4/33          0          0          0          0          0          0          0
4/34          0          0          0          0          0          0          0
4/35          0          0          0          0          0          0          0
4/36          0          0          0          0          0          0          0
4/37          0          0          0          0          0          0          0
4/38          0          0          0          0          0          0          0
4/39          0          0          0          0          0          0          0
4/40          0          0          0          0          0          0          0
4/41          0          0          0          0          0          0          0
4/42          0          0          0          0          0          0          0
4/43          0          0          0          0          0          0          0
4/44          0          0          0          0          0          0          0
4/45          0          0          0          0          0          0          0
4/46          0          0          0          0          0          0          0
4/47          0          0          0          0          0          0          0
4/48          0          0          0          0          0          0          0

Last-Time-Cleared
--------------------------
Mon May 20 1996, 11:32:28
Console> (enable)
```

Related Commands

clear counters
set port disable
set port enable
set port level
set port name
set vlan

show snmp

Use the **show snmp** command to display the SNMP information.

show snmp [**noalias**]

Syntax Description

noalias (Optional) Indicates not to display the IP alias, only the IP address.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal and privileged.

Usage Guideline

If noalias is specified, IP aliases are not displayed; otherwise IP addressees are shown.

Examples

The following example shows how to display the community strings in normal mode:

```
Console> show snmp
RMON: Enabled
Traps Enabled: Chassis
Port Traps Enabled: None

Community-Access     Community-String
----------------     --------------------
read-only            public

Trap-Rec-Address     Trap-Rec-Community
----------------     --------------------
192.122.173.42       public
Console>
```

The following example shows how to display the community strings in privileged mode:

```
Console> (enable) show snmp
show snmp
RMON: Enabled
Traps Enabled: Chassis
Port Traps Enabled: None

Community-Access     Community-String
----------------     --------------------
read-only            public

Trap-Rec-Address     Trap-Rec-Community
----------------     --------------------
192.122.173.42       public
Console> (enable)
```

Related Commands

set snmp community
set snmp help
set snmp rmon
set snmp trap

show span

Use the **show span command** to display switched port analyzer information.

show span

Syntax Description

This command has no keywords or arguments.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guideline

The Switched Port Analyzer analyzes the traffic through a switch port in the system. It also analyzes the traffic of a particular VLAN through all switch ports in the system.

Example

The following example shows how to display port monitoring information.

```
Console> show span
Source        Destination   Direction         Status
------------  ------------  ----------------  --------
Port 2/3      Port 2/4      transmit          enabled
Console>
```

Related Commands

clear config all
set span

show spantree

Use the **show spantree** command to display spanning-tree information for a VLAN.

show spantree [*vlan*]
show spantree *mod_num/port_num*

Syntax Description

vlan	(Optional) The number of the VLAN. If the VLAN number is not specified, the default is VLAN 1.
mod_num	The number of the module.
port_num	The number of the port on the module.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display the spantree syntax structure and options:

```
Console>  show spantree ?
Usage: show spantree [vlan]
       show spantree <mod_num/port_num>
```

The following example shows how to display the spantree configuration:

```
Console> (enable) show spantree 1
VLAN 1
Spanning tree enabled

Designated Root             00-1f-00-40-0b-90-c9-00
Designated Root Priority    45
Designated Root Cost        0
Designated Root Port        1/0
Root Max Age   20 sec    Hello Time 2  sec   Forward Delay 20 sec

Bridge ID MAC ADDR          00-40-0b-90-c9-00
Bridge ID Priority          45
Bridge Max Age 20 sec    Hello Time 2  sec   Forward Delay 20 sec

Port      Vlan  Port-State     Cost   Priority  Fast-Start
--------  ----  -------------  -----  --------  ----------
1/1       1     forwarding        10        32   disabled
2/3       1     not-connected    100        32   disabled
2/4       1     not-connected    100        32   disabled
2/5       1     not-connected    100        32   disabled
```

```
2/6       1     not-connected    100        32   disabled
2/7       1     not-connected    100        32   disabled
2/8       1     forwarding       100        32   disabled
2/9       1     not-connected    100        32   disabled
2/10      1     not-connected    100        32   disabled
2/11      1     not-connected    100        32   disabled
2/12      1     not-connected    100        32   disabled
2/13      1     Learning         100        32   disabled
2/14      1     not-connected    100        32   disabled
2/15      1     not-connected    100        32   disabled
2/16      1     not-connected    100        32   disabled
2/17      1     not-connected    100        32   disabled
2/18      1     not-connected    100        32   disabled
2/19      1     not-connected    100        32   disabled
2/20      1     not-connected    100        32   disabled
2/21      1     not-connected    100        32   disabled
2/22      1     not-connected    100        32   disabled
2/23      1     not-connected    100        32   disabled
2/24      1     not-connected    100        32   disabled
4/13-24   1     not-connected    100        32   disabled
4/25-36   1     not-connected    100        32   disabled
4/37-48   1     not-connected    100        32   disabled
Console> (enable)
```

The following example shows how to display the spantree configuration for module 1, ports 1 and 2, and module 2, ports 1 through 4:

```
Console> show spantree 1/1-2,2/1-4
Port      Vlan  Port-State     Cost   Priority  Fast-Start
--------  ----  -------------  -----  --------  ----------
1/1       1     forwarding        10        32   disabled
1/1       3     forwarding        10        32   disabled
1/1       44    forwarding        10        32   disabled
1/1       55    forwarding        10        32   disabled
1/1       66    not-connected     10        32   disabled
1/1       77    forwarding        10        32   disabled
1/1       88    not-connected     10        32   disabled
1/1       99    not-connected     10        32   disabled
1/2       1000  inactive          10        32   disabled
2/1       1000  inactive         100        32   disabled
2/2       1000  inactive         100        32   disabled
2/3       1     not-connected    100        32   disabled
2/4       1     not-connected    100        32   disabled
Console>
```

Related Commands

set spantree disable
set spantree enable
set spantree fwddelay
set spantree hello
set spantree maxage
set spantree portcost
set spantree portpri
set spantree priority

show sscop

Use the **show sscop** privileged EXEC command to show Service-Specific Connection Oriented Protocol (SSCOP) details for all ATM interfaces.

show sscop

Syntax Description

This command has no arguments or keywords.

Command Type

IOS ATM command.

Command Mode

Privileged EXEC.

Example

The following is sample output from the **show sscop** command:

```
synergy atm interface# show sscop
SSCOP details for interface 0
   Current State = Data Transfer Ready
   Send Sequence Number: Current = 2,  Maximum = 9
   Send Sequence Number Acked = 3
   Rcv Sequence Number: Lower Edge = 2, Upper Edge = 2, Max = 9
   Poll Sequence Number = 1876, Poll Ack Sequence Number = 2
   Vt(Pd) = 0
   Connection Control:  timer = 1000
   Timer currently Inactive
   Keep Alive Timer = 30000
   Current Retry Count = 0, Maximum Retry Count = 10
      Statistics -
      Pdu's Sent = 0, Pdu's Received = 0, Pdu's Ignored = 0
      Begin = 0/1, Begin Ack = 1/0, Begin Reject = 0/0
      End = 0/0, End Ack = 0/0
      Resync = 0/0, Resync Ack = 0/0
      Sequenced Data = 2/0, Sequenced Poll Data = 0/0
      Poll = 1591/1876, Stat = 0/1591, Unsolicited Stat = 0/0
      Unassured Data = 0/0, Mgmt Data = 0/0, Unknown Pdu's = 0
```

Table 7-10 describes the fields shown in the display. Interpreting this output requires a good understanding of the SSCOP; it is usually displayed by Cisco technicians to help diagnose network problems.

Table 7-10 show sscop Command Field Descriptions

Field	Description
SSCOP details for interface	Interface slot and port.
Current State	SSCOP state for the interface.
Send Sequence Number	Current and maximum send sequence number.
Send Sequence Number Acked	Sequence number of packets already acknowledged.
Rcv Sequence Number	Sequence number of packets received.
Poll Sequence Number	Current poll sequence number.
Poll Ack Sequence Number	Poll sequence number already acknowledged.
Vt(Pd)	Number of Pd frames sent which triggers a sending of a Poll frame.
Connection Control	Timer used for establishing and terminating SSCOP.
Keep Alive Timer	Timer used to send keepalives on an idle link.
Current Retry Count	Current count of the retry counter.
Maximum Retry Count	Maximum value the retry counter can take.
Pdu's Sent	Total number of SSCOP frames sent.
Pdu's Received	Total number of SSCOP frames received.
Pdu's Ignored	Number of invalid SSCOP frames ignored.
Begin	Number of Begin frames sent/received.
Begin Ack	Number of Begin Ack frames sent/received.
Begin Reject	Number of Begin Reject frames sent/received.
End	Number of End frames sent/received.
End Ack	Number of End Ack frames sent/received.
Resync	Number of Resync frames sent/received.
Resync Ack	Number of Resync Ack frames sent/received.
Sequenced Data	Number of Sequenced Data frames sent/received.
Sequenced Poll Data	Number of Sequenced Poll Data frames sent/received.
Poll	Number of Poll frames sent/received.
Stat	Number of Stat frames sent/received.
Unsolicited Stat	Number of Unsolicited Stat frames sent/received.
Unassured Data	Number of Unassured Data frames sent/received.
Mgmt Data	Number of Mgmt Data frames sent/received.
Unknown Pdu's	Number of Unknown SSCOP frames sent/received.

show system

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

show system

Syntax Description

This command has no keywords or arguments.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows the system status and other information:

```
Console> show system
PS1-Status PS2-Status Fan-Status Temp-Alarm Sys-Status Uptime d,h:m:s Logout
---------- ---------- ---------- ---------- ---------- -------------- ---------
ok         none       ok         off        ok         1,01:24:18     none

PS1-Type   PS2-Type   Modem   Baud  Traffic Peak Peak-Time
---------- ---------- ------- ----- ------- ---- ------------------------
WS-C5008   none       disable  9600   0%      0% Thu Mar 7 1996, 21:38:14

System Name              System Location          System Contact
------------------------ ------------------------ ------------------------
Abu-Catalyst-5000 5      Closet 202 1/F           Jeff x2529
```

Related Commands

set system baud
set system contact
set system location
set system modem
set system name

show test

Use the **show test** command to display the results of diagnostic tests.

show test *mod_num*

Syntax Description

mod_num The number of the module. If no number is specified, module 1 is used.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guideline

The Network Management Processor only applies to module 1; therefore only the display for module 1 includes the NMP status. If other modules are specified, the NMP status is not displayed.

Example

The following example shows how to display the test results for all tested modules:

```
Console> (enable) show test help
Usage: show test [mod_num]
Console> (enable) show test
Network Management Processor (NMP) Status: (. = Pass, F = Fail, U = Unknown)
  ROM:  .   RAM:  .   DUART: .   Flash-EEPROM: .   Ser-EEPROM: .   NVRAM: .
  FAN:  .   Temperature: .   MCP Comm: .
  PS (3.3V): .     PS (12V): .        PS (24V): .

8051 Diag Status for Module 1  (. = Pass, F = Fail, N = N/A)
 CPU         : .    Ext Ram 0: .    Ext Ram 1: .    Ext Ram 2: N
 DPRAM       : .    LTL Ram 0: .    LTL Ram 1: N    LTL Ram 2: N
 BootChecksum: .    CBL Ram 0: .    CBL Ram 1: N    CBL Ram 2: N
 Saints      : .    Pkt Bufs : .    Repeaters: N    Sprom    : .

 SAINT/SAGE Status :
  Ports 1  2  3
  --------------
        .  .  .
```

```
 Packet Buffer Status :
  Ports 1  2  3
  --------------
        .  .  .

System Diagnostic Status : (. = Pass, F = Fail, N = N/A)

 Module 1 : MCP

 EARL Status :
        NewLearnTest:         .
        IndexLearnTest:       .
        DontForwardTest:      .
        MonitorTest           .
        DontLearn:            .
        FlushPacket:          .
        ConditionalLearn:     .
        EarlLearnDiscard:     .


 PMD Loopback Status :
  Ports 1  2  3
  --------------
        .  .  .

Console> (enable)


Console> (enable) show test 3
Module 3 : ATM Module Status: (. = Pass, F = Fail)

ATM Control Processor (ACP) Status:
  ROM Chksum:   .   DRAM:         .   FLASH:     .    FLASH Chksum:  .
  DPRAM:        .   NVRAM:        .   TxSAR RAM: .    RxSAR RAM:     .
  PMD SPROM:    .   FRAME BUFFER: .   TxSAR COMM:.    RxSAR COMM:    .
  SAR Loopback: . . . .

RxSAR Status:
  2nd Port RAM: .   FRAME BUFFER: .   VCR DMA:   .    BIGA ACC:      .

TxSAR Status:
  2nd Port RAM: .   FRAME BUFFER: .   VCR DMA:   .    BIGA ACC:      .
  CAM:          . . . .

8051 Diag Status for Module 3  (. = Pass, F = Fail, N = N/A)
 CPU         : .    Ext Ram 0: .    Ext Ram 1: .    Ext Ram 2: N
 DPRAM       : .    LTL Ram 0: .    LTL Ram 1: N    LTL Ram 2: N
 BootChecksum: .    CBL Ram 0: .    CBL Ram 1: N    CBL Ram 2: N
 Saints      : .    Pkt Bufs : .    Repeaters: N    Sprom    : .

 SAINT/SAGE Status :
  Ports 1
  --------
        .

 Packet Buffer Status :
  Ports 1
  --------
        .

System Diagnostic Status : (. = Pass, F = Fail, N = N/A)
 Module 3 : ATM Line Card removed

Console> (enable)
```

```
Console> (enable) show test 4
Module 4 : FDDI Module Status: (. = Pass, F = Fail, U = Unknown)

FDDI Control Processor (FCP) Status:
  ROM:  .   RAM:  .   Flash-EEPROM: .   Dpram: .

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

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

Data Movement Processor (DMP) Status:
  Flash-EEPROM: .   RAM: .  SRAM: . COMM: .

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

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

Bus Interface Status:
  SBIGA Access:          .   SBIGA->SAGE RxDMA:     .  SBIGA<-SAGE TxDMA:.

8051 Diag Status for Module 4  (. = Pass, F = Fail, N = N/A)
 CPU         : .    Ext Ram 0: .    Ext Ram 1: .    Ext Ram 2: N
 DPRAM       : .    LTL Ram 0: .    LTL Ram 1: N    LTL Ram 2: N
 BootChecksum: .    CBL Ram 0: .    CBL Ram 1: N    CBL Ram 2: N
 Saints      : .    Pkt Bufs : .    Repeaters: N    Sprom    : .

 SAINT/SAGE Status :
  Ports 1
  --------
        .

 Packet Buffer Status :
  Ports 1
  --------
        .

System Diagnostic Status : (. = Pass, F = Fail, N = N/A)
 Module 4 :FDDI Line Card
 FDDI Line Card 1 Port

Ports External Loopback Status
Ports 1
  --------
        .
Console> (enable)
```

```
Console> (enable) show test 5

Repeater Port Status:
Ports: 1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
-------------------------------------------------------------------------------
       .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .

Ports: 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
-------------------------------------------------------------------------------
       .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .


8051 Diag Status for Module 3  (. = Pass, F = Fail, N = N/A)
 CPU         : .    Ext Ram 0: .    Ext Ram 1: .    Ext Ram 2: .
 DPRAM       : N    LTL Ram 0: .    LTL Ram 1: N    LTL Ram 2: N
 BootChecksum: .    CBL Ram 0: N    CBL Ram 1: N    CBL Ram 2: N
 Saints      : .    Pkt Bufs : .    Repeaters: .    Sprom    : .

 SAINT/SAGE Status :
  Saints 1  2  3  4
  -----------------
        .  .  .  .

 Packet Buffer Status :
  Saints 1  2  3  4
  -----------------
        .  .  .  .

System Diagnostic Status : (. = Pass, F = Fail, N = N/A)
 Module 3 : LCP
 Repeater Card

 SAINT External Loopback Status :
  SAINTs 1  2  3  4
  -----------------
        .  .  .  .
Console> (enable)
```

show time

Use the **show time** command to display the current time of day in the system clock.

show time

Syntax Description

This command has no keywords or arguments.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display the current time:

```
Console> show time
Wed Feb 22 1995, 18:32:36
Console>
```

Related Command

set time

show trunk

Use the **show trunk** command to display Interswitch Link (ISL) information, including whether a trunk port is in trunking or nontrunking mode, the number of allowed VLANs, and the number of active VLANs.

show trunk

Syntax Description

This command has no arguments or keywords.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display trunk information:

```
Console> show trunk
Port     Mode       Status
-------  ---------  ------------
1/1      on         trunking
1/2      on         not-trunking

Port     Vlans allowed
-------  ------------------------------------------------------------------------
1/1      1-1000
1/2      1-1000

Port     Vlans active
-------  ------------------------------------------------------------------------
1/1      1,3,44,55,77
1/2      1000 (inactive)
Console>
```

Related Commands

clear trunk
set trunk

show users

The **show users** command shows if the console port is active or not and lists all active Telnet sessions with the IP address or IP alias of the originating host.

show users [**noalias**]

Syntax Description

noalias (Optional) Indicates not to display the IP alias; the IP address is displayed.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to display the users of the active Telnet sessions:

```
Console> show users
Console Port
------------
Active

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

Related Command

disconnect

show version–Switch Command

Use the **show version** command to display software and hardware version information.

show version

Syntax Description

This command has no keywords or arguments.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guideline

The show version command is used for switching and supervisor modules only.

Example

The following example shows how to display the software and hardware versions:

```
Console> (enable) show version
WS-C5000 Software, Version McpSW: 2.106 NmpSW: 2.113(Eng)
Copyright (c) 1995,1996 by Cisco Systems
NMP S/W compiled on Mar  5 1996, 17:20:56
MCP S/W compiled on Feb 13 1996, 11:35:40

System Bootstrap Version: 1.4

Hardware Version: 1.6  Model: WS-X5009  Serial #: 002650014

Module Ports Model      Serial #   Hw     Fw     Fw1    Sw
------ ----- ---------- --------- ------ ------ ------ --------------------
1      2     WS-X5009   002650014 1.6    1.4    1.4    2.113(Eng)
2      24    WS-X5010   002475046 1.0    1.4           2.106
4      48    WS-X5020   002135955 0.1    1.4369        2.106

8191K bytes of DRAM memory.
4096K bytes of FLASH memory.
128K bytes of non-volatile configuration memory.

Uptime is 1 day, 4 hours, 12 minutes
Console> (enable)
```

show version–ATM Command

Use the **show version** EXEC command to display the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images.

show version

Syntax Description

This command has no arguments or keywords.

Command Type

IOS LAN Emulation.

Command Mode

EXEC.

Example

The following is sample output from the **show version** command:

```
ATM>show version
Cisco Internetwork Operating System Software
IOS (tm) cisco Software, Version 11.0(3340) [integ 103]
Copyright (c) 1986-1995 by cisco Systems, Inc.
Compiled Tue 29-Aug-95 14:36
Image text-base: 0x40010000, data-base: 0x401843F0

ROM: System Bootstrap, Version 4.4(1023), SOFTWARE

ATM uptime is 42 minutes
System restarted by power-on
Running default software

cisco SYNALC (68360) processor (revision 0x00) with 1059840K/512K bytes of memory.
Processor board serial number 01244583
1 Ethernet/IEEE 802.3 interface.
1 ATM network interface.
127K bytes of non-volatile configuration memory.

Configuration register is 0x1900

ATM>
```

Table 7-11 describes significant fields shown in the display.

Table 7-11 show version Field Descriptions

Field	Description
IOS Software, Version X.X	Always specify the complete version number when reporting a possible software problem.
System Bootstrap, Version	Bootstrap version string.
Current date and time Boot date and time ATM Module uptime is	Current date and time, the date and time the system was last booted, and *uptime*, or the amount of time the system has been up and running.
System restarted by power-on	Also displayed is a log of how the system was last booted, both as a result of normal system startup and of system error. For example, information can be displayed to indicate a bus error that is generally the result of an attempt to access a nonexistent address, as follows: `System restarted by bus error at PC 0xC4CA, address 0x210C0C0`
Running default software	If the software was booted over the network, the Internet address of the boot host is shown. If the software was loaded from onboard ROM, this line reads “running default software.” In addition, the names and sources of the host and network configuration files are shown.
cisco....	The remaining output shows the hardware configuration and any nonstandard software options. The configuration register contents are displayed in hexadecimal notation.

The output of the **show version** EXEC command can also provide certain messages, such as bus error messages. If such error messages appear, report the complete text of this message to your technical support specialist.

show vlan

Use the **show vlan** command to display virtual LAN information.

show vlan [**trunk**]
show vlan *vlan* [**notrunk**]

Syntax Description

trunk	(Optional) Specifies to display trunk ports.
vlan	The number of the VLAN to display.
notrunk	(Optional) Specifies not to display trunk ports.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Usage Guideline

Each Ethernet switch port and Ethernet repeater group belongs to only one VLAN. Trunk, FDDI/CDDI, and ATM ports may be on multiple VLANs.

Example

The following example shows how to display the ports assigned to all VLANs:

```
Console> (enable) show vlan
VLAN Name                        Type  Status    Mod/Ports
---- --------------------------- ----- --------- ----------------
1    default                     enet  active    2/1-24
                                                 3/1-12
                                                 4/13-48
3    vlan3                       enet  active
55   vlan55                      enet  active
66   vlan66                      fddi  active
88   vlan88                      tring active
99   vlan99                      fddi  active
1002 fddi-default                fddi  active
1003 token-ring-default          tring active
1004 fddinet-default             fdnet active
1005 trnet-default               trnet active
```

```
VLAN SAID       MTU   RingNo BridgeNo StpNo Parent Trans1 Trans2
---- ---------- ----- ------ -------- ----- ------ ------ ------
1    100001     1500  0      0        0     0      0      0
3    100003     1500  0      0        0     0      0      0
55   100055     1500  0      0        0     0      0      0
66   100066     4500  5000   0        0     5000   0      0
88   100088     1500  0      0        0     0      0      0
99   100099     1500  0      0        0     0      0      0
1002 101002     4500  0      0        0     0      1      1003
1003 101003     4500  0      0        0     0      1      1002
1004 101004     4500  0      1004     0     0      0      0
1005 101005     4500  0      1005     0     0      0      0
Console>
```

Related Commands

set vlan
set trunk
show trunk

show vtp

Use the **show vtp** command to display Vlan Trunk Protocol (VTP) information.

show vtp
show vtp [**domain**]
show vtp [**statistics**]

Syntax Description

domain Displays VTP domain information.

statistics Displays VTP statistics.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

This example shows how to display Virtual Trunk Protocol information.

```
Console> show vtp
Show vtp commands:
------------------------------------------------------------
show vtp domain                Show VTP domain information
show vtp help                  Show this message
show vtp statistics            Show VTP statistics
```

This example shows how to display Virtual Trunk Protocol information with domain information.

```
Console> show vtp domain
Domain Name                    Domain Index VTP Version Local Mode
------------------------------ ------------ ----------- -----------
catbox                         1            1           client

Last Updater    Vlan-count Max-vlan-storage Config Revision Notifications
--------------- ---------- ---------------- --------------- -------------
172.20.25.130   12         256              0               disabled
```

This example shows how to display Virtual Trunk Protocol information with statistics.

```
Console> show vtp statistics
VTP statistics:
summary advts received          0
subset  advts received          0
request advts received          0
summary advts transmitted       0
subset  advts transmitted       0
request advts transmitted       10
No of config revision errors    0
No of config digest errors      0
```

Related Commands

set vtp
set vtp domain
set vtp statistics
show vtp help

show vtp help

Use the **show vtp** command to display available Virtual Trunk Protocol commands.

show vtp help

Syntax Description

help Displays available Virtual Trunk Protocol commands.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

This example shows how to display Virtual Trunk Protocol commands.

```
Console> show vtp help
Show vtp commands:
------------------------------------------------------------
show vtp domain                Show VTP domain information
show vtp help                  Show this message
show vtp statistics            Show VTP statistics
```

Related Commands

show vtp
show vtp domain
show vtp statistics

slip

Use the **slip** command to attach or detach Serial Line Interface Protocol (SLIP) for the console port.

slip attach | detach

Syntax Description

attach Activates SLIP for the console port.

detach Deactivates SLIP for the console port.

Default

By default, SLIP is not active (detached).

Command Type

Switch command.

Command Mode

Privileged.

Usage Guideline

You can use the **slip** command from a console port session or a Telnet session.

Example

The following example shows how to enable SLIP for a console port during a console port session:

```
Console> (enable) slip attach
Console port now running SLIP.
<console port running SLIP>
```

The following example shows how to disable SLIP for a console port during a Telnet session:

```
Console> (enable) slip attach
Console port now running SLIP.
<console port running SLIP>
Console> (enable) slip detach
SLIP detached on Console port.
<console port back to RS-232 Console>
Console> (enable)
```

Related Command

set interface

sscop cc-timer

Use the **sscop cc-timer** interface configuration command to change the connection control timer. The **no** form of this command restores the default value.

sscop cc-timer *seconds*
no sscop cc-timer

Syntax Description

seconds	Number of seconds between Begin messages.

Default

10 seconds.

Command Type

IOS ATM command.

Command Mode

Interface configuration.

Usage Guideline

The connection control timer determines the time between transmission of BGN, END, or RS PDUs as long as an acknowledgment has not been received.

Example

In the following example, the connection control timer is set to 15 seconds:

```
ATM(config-if)# sscop cc-timer 15
```

Related Command

sscop max-cc

sscop keepalive-timer

Use the **sscop keepalive-timer** interface configuration command to change the keepalive timer. The **no** form of this command restores the default value.

sscop keepalive-timer *seconds*
no sscop keepalive-timer *seconds*

Syntax Description

seconds	Number of seconds the ATM module waits between transmission of POLL PDUs when no SD or SDP PDUs are queued for transmission or are outstanding pending acknowledgments.

Default

30 seconds

Command Type

IOS ATM command.

Command Mode

Interface configuration

Example

In the following example, the keepalive timer is set to 15 seconds:

```
ATM(config-if)# sscop keepalive-timer 15
```

sscop max-cc

Use the **sscop max-cc** interface configuration command to change the retry count of connection control. The **no** form of this command restores the default value.

sscop max-cc *retries*
no sscop max-cc

Syntax Description

retries	Number of times that SSCOP will retry to transmit BGN, END, or RS PDUs as long as an acknowledgment has not been received. Valid range is 1 to 6000.

Default

10 retries.

Command Type

IOS ATM command.

Command Mode

Interface configuration.

Example

In the following example, the retry count of the connection control is set to 20:

```
ATM(config-if)# sscop max-cc 20
```

Related Command

sscop cc-timer

sscop poll-timer

Use the **sscop poll-timer** interface configuration command to change the poll timer. The **no** form of this command restores the default value.

sscop poll-timer *seconds*
no sscop poll-timer

Syntax Description

seconds	Number of seconds the ATM module waits between transmission of POLL PDUs.

Default

10 seconds.

Command Type

IOS ATM command.

Command Mode

Interface configuration.

Usage Guideline

The poll timer controls the maximum time between transmission of POLL PDUs when SD or SDP PDUs are queued for transmission or are outstanding pending acknowledgments.

Example

In the following example, the poll timer is set to 15 seconds:

```
ATM(config-if)# sscop poll-timer 15
```

sscop rcv-window

Use the **sscop rcv-window** interface configuration command to change the receiver window. The **no** form of this command restores the default value.

sscop rcv-window *packets*
no sscop rcv-window

Syntax Description

packets Number of packets the interface can receive before it must send an acknowledgment to the ATM switch. Valid range is 1 to 6000.

Default

7 packets.

Command Type

IOS ATM command.

Command Mode

Interface configuration.

Example

In the following example, the receiver's window is set to 10 packets:

```
ATM(config-if)# sscop rcv-window 10
```

sscop send-window

Use the **sscop send-window** interface configuration command to change the transmitter window. The **no** form of this command restores the default value.

sscop send-window *packets*
no sscop send-window

Syntax Description

packets	Number of packets the interface can send before it must receive an acknowledgment from the ATM switch. Valid range is 1 to 6000.

Default

7 packets.

Command Type

IOS ATM command.

Command Mode

Interface configuration.

Example

In the following example, the transmitter's window is set to 10 packets:

```
ATM(config-if)# sscop send-window 10
```

telnet

Use the **telnet** command to start a telnet connection to a remote host.

telnet *host* [*port*]

Syntax Description

host The remote host to which you connect.

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

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

```
Console> (enable) telnet help
Usage: telnet <host> [port]
       (host is ipalias or IP address in dot notation: a.b.c.d)
Console> (enable) telnet elvis
Trying 192.122.174.11...
Connected to elvis.
Escape character is '^]'.

UNIX(r) System V Release 4.0 (elvis)

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

Console> (enable)
```

Related Command

disconnect

terminal

Use the **terminal** command to set the number of lines displayed.

terminal length *screen-length*
terminal no length

Syntax Description

screen length	(Optional) Specifies the desired number of lines. The default length is 24 lines. A value of 0 disables pausing between screens of output.

Command Type

IOS ATM module interface command.

Command Mode

EXEC.

Example

In the following example, the terminal is set to 0 so that output scrolls on the screen without pausing:

```
ATM>terminal length 0
```

test help

Use the **test help** command to display the **test** commands.

test help

Syntax Description

This command has no keywords or arguments.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to list the **test** commands:

```
Console> (enable) test help
Test commands:
------------------------------------------------------------------------
test help           Show this message
test snmp           Send trap message to SNMP trap receivers
Console> (enable)
```

test snmp trap

Use the **test snmp trap** command to send an SNMP trap message to the trap receivers.

test snmp trap *trap_number* [*specific_number*]

Syntax Description

trap_number	The number of the trap.
specific_number	(Optional) The number of a predefined trap.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to run trap 0:

```
Console> (enable) test snmp trap 0
SNMP trap message sent. (4)
Console> (enable)
```

Related Commands

clear snmp trap
set snmp trap
show snmp
test help

upload

Use the **upload** command to upload a code image to a network host.

upload *host file* [*module_num*]

Syntax Description

host	The IP address or IP alias of the host.
file	The name of the file.
module_num	(Optional) The number of the module. If no number is specified, the default is module 1.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Example

The following example shows how to upload the supervisor image to the *c5009_11.bin* file on the mercury host:

```
Console> (enable) upload mercury c5009_11.bin 3
Upload Module 1 image to c5009_11.bin on mercury (y/n) [n]? y
/
Done.  Finished Network Upload.  (153908 bytes)
Console> (enable)
```

Related Command

download

wait

Use the **wait** command to pause the command line interface to pause for a specified number of seconds. This command might be included in a configuration file.

wait *seconds*

Syntax Description

seconds The number of seconds for the command line interface to wait.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Normal.

Example

The following example shows how to pause the command line interface for five seconds:

```
Console> wait 5
Console>
```

write

Use the **write** command to upload the current configuration to a host or display it on the terminal.

write network
write terminal
write *host file*

Syntax Description

network	Initiates a script that prompts for the IP address or IP alias of the host and the file name to upload.
terminal	Displays the configuration file on the terminal.
host	The IP address or IP alias of the host.
file	The name of the file.

Default

This command has no default setting.

Command Type

Switch command.

Command Mode

Privileged.

Usage Guidelines

- The **write terminal** command is exactly the same as the **show config** command. The **write** *host file* command is a shorthand version of the **write network** command.
- The **write terminal** command is equivalent to the ATM-specific command **write terminal**.
- You cannot use the **write network** command to upload software to the ATM module.
- With the **write network** command, the file must exist on the host, "touch filename."

Examples

The sample session assumes that module 1 is a 2-port supervisor module, module 2 is a 12-port 10/100BaseT switched Ethernet module, module 3 is a 24-port 10BaseT Ethernet module, module 4 is empty, and module 5 is empty. Details of the ATM configuration must be accessed through the special module mode.

The following example shows how to upload the *system5.cfg* file from the mercury host using the **write network** command:

```
Console> (enable) write network
IP address or name of host? mercury
Name of configuration file to write? system5.cfg
Upload configuration to system5.cfg on mercury (y/n) [y]? y
```

```
/
Done.  Finished Network Upload.  (9003 bytes)
Console> (enable)
```

The following example shows how to upload the *system5.cfg* file to the mercury host using the **write hostfile** command as a shorthand method:

```
Console> (enable) write mercury system5.cfg
Upload configuration to system5.cfg on mercury (y/n) [y]? y
/
Done.  Finished Network Upload.  (9003 bytes)
Console> (enable)
```

The following example shows how to use the **write terminal** command to display the configuration file on the terminal:

```
Console> (enable) write terminal
begin
set password $1$FMFQ$HfZR5DUszVHIRhrz4h6V70
set enablepass $1$FMFQ$HfZR5DUszVHIRhrz4h6V70
set prompt Console>
!
#system
set system baud 9600
set system modem  disable
set system name
set system location
set system contact
!
#snmp
set snmp community read-only public
set snmp community read-write private
set snmp community read-write-all secret
set snmp trap  disable
!
#vlan/trunk
set vlan 1    1/1-2,4/1
set vlan 2    2/1-5
!
#trunks
!
#cam
set cam agingtime 1    300
set cam agingtime 2    300
!
#ip
set interface sc0 0.0.0.0 0.0.0.0 0.0.0.0
set interface sl0 0.0.0.0 0.0.0.0
set ip redirect      enable
set ip unreachable   disable
set ip fragmentation enable
set ip alias default         0.0.0.0
set arp agingtime 1200
!
#bridge
set bridge ipx snaptoether   8023raw
set bridge ipx 8022toether   8023
set bridge ipx 8023rawtofddi snap
!
#Command alias
!
```

```
#cdp
set cdp enable   1/1-2,2/1-5,4/1
set cdp interval 1/1  60
set cdp interval 1/2  60
set cdp interval 2/1  60
set cdp interval 2/2  60
set cdp interval 2/3  60
set cdp interval 2/4  60
set cdp interval 2/5  60
set cdp interval 4/1  60
!
#spantree
#vlan 1
set spantree enable         1
set spantree fwddelay 15    1
set spantree hello    2     1
set spantree maxage   20    1
set spantree priority 32768 1
set spantree portpri  1/1  32
set spantree portcost 1/1  10
set spantree portpri  1/2  32
set spantree portcost 1/2  10
set spantree portpri  4/1  32
set spantree portcost 4/1  10
#vlan 2
set spantree enable         2
set spantree fwddelay 15    2
set spantree hello    2     2
set spantree maxage   20    2
set spantree priority 32768 2
set spantree portpri  2/1  32
set spantree portcost 2/1  100
set spantree portpri  2/2  32
set spantree portcost 2/2  100
set spantree portpri  2/3  32
set spantree portcost 2/3  100
set spantree portpri  2/4  32
set spantree portcost 2/4  100
set spantree portpri  2/5  32
set spantree portcost 2/5  100
!
#trunk
!
#module 1
set module name    1
set port enable    1/1
set port name      1/1
set port duplex    1/1  half
set port level     1/1  normal
set port enable    1/2
set port name      1/2
set port duplex    1/2  half
set port level     1/2  normal
!
#module 2
set module name    2
set module enable  2
!
set port enable    2/1
set port name      2/1
set port duplex    2/1  half
set port level     2/1  normal
```

```
set port enable    2/2
set port name      2/2
set port duplex    2/2  half
set port level     2/2  normal
set port enable    2/3
set port name      2/3
set port duplex    2/3  half
set port level     2/3  normal
set port enable    2/4
set port name      2/4
set port duplex    2/4  half
set port level     2/4  normal
set port enable    2/5
set port name      2/5
set port duplex    2/5  half
set port level     2/5  normal
!
#module 3 empty
!
#module 4
set module name    4
set module enable  4
!
set fddi userdata  4 WorkGroup Stack
set fddi tnotify   4 30
set fddi treq      4 5000
set port enable    4/1
set port name      4/1
set port level     4/1  normal
set fddi tlmin     4/1  40
set port enable    4/2
set port name      4/2
set port level     4/2  normal
set fddi tlmin     4/2  40
!
#module 5 empty
end
Console> (enable)
```

Related Command

show config

write erase

Use the **write erase** EXEC command to erase the configuration information in nonvolatile memory. The NVRAM will then be filled with the default configuration.

write erase

Syntax Description

This command has no arguments or keywords.

Command Type

IOS Configuration command.

Command Mode

EXEC.

Example

The following example illustrates how to erase the configuration in nonvolatile memory:

```
ATM# write erase
```

To copy the current configuration information to nonvolatile memory, use the **write memory** EXEC command:

```
ATM# write memory
```

write memory

Use the **write memory** command in conjunction with the reload command to restart the Catalyst 5000 series switch with the configuration information stored in NVRAM.

Syntax Description

This command has no arguments or keywords.

Command Type

IOS Configuration command.

Command Mode

EXEC.

Usage Guidelines

If you issue the **write memory** command from a bootstrap system image, a warning displays that the previous NVRAM configuration will be overwritten and some of the configuration commands will be lost unless you answer no. This warning will not display if NVRAM does not contain a valid configuration or if the previous configuration in NVRAM was generated by a bootstrap system image.

Example

The following example illustrates how to copy the current configuration information to nonvolatile memory:

```
ATM# write memory
### [OK]
```

Related Command

reload

write terminal

Use the **write terminal** command in conjunction with the show configuration command to compare the information in running memory to the information stored in NVRAM.

write terminal

Syntax Description

This command has no arguments or keywords.

Command Type

IOS Configuration command.

Command Mode

EXEC.

Example

The following example illustrates how to display the current configuration information:

ATM# **write terminal**