Cisco IOS Commands

This chapter is a command-by-command description of the Cisco IOS commands that have created or changed for the Catalyst 2900 series XL switches. Table 2-1 lists the commands described in this chapter and the command mode from which they are entered.

Table 2-1 Commands Created or Changed for the Catalyst 2900 Series XL

Commands	Description
Exec mode	
clear mac-address-table	Delete all addresses currently in the MAC address table.
show mac-address-table	Display the MAC address table.
show port block	Display the blocking of unicast and multicast filtering for the port.
show port group	Display the ports that have been assigned to groups.
show port monitor	Display the ports that have had port monitoring enabled for them.
show port security	Display the ports that have had port security enabled.
show port storm-control	Display the disposition of broadcast-storm control.
Configuration mode	
mac-address-table aging-time	Set the length of time that a dynamic entry can remain in the address table.
mac-address-table dynamic	Enable address learning on the current interface.
mac-address-table secure	Add entries to the address table that are known to be secure addresses.
mac-address-table static	Add static entries to the address table.
Interface configuration mode	
ip address	Set a primary or secondary IP address of an interface.
duplex	Specify the duplex mode of operation for an interface.
port block	Prevent the flooding of unknown destination MAC addresses and multicast address on this interface.
port group	Place this interface into a port aggregation group
port monitor	Implement port monitoring on this port.
port security	Enable port security on a port.
port storm-control	Broadcast traffic is disabled if too many broadcast packets are seen on this port.
shutdown	Disable an interface.
spantree disable	Disable Spanning-Tree Protocol for the switch.
spantree forwarding-time	Specify the forward delay interval for the switch.
spantree hello-time	Specify the interval between Hello Bridge Protocol Data Units (BPDUs).

Commands	Description
spantree max-age	Change the interval the switch waits to hear BPDUs from the root bridge.
spantree cost	Set a different path cost.
spantree priority	Configure the priority of an individual bridge or the likelihood that it will be selected as the root bridge.
spantree priority	Configure the Spanning-Tree Protocol priority of a port.
spantree protocol	Define the type of Spanning-Tree Protocol.
speed	Specify the speed of an interface.

clear mac-address-table

Use the **clear mac-address-table** EXEC command to delete entries from the MAC address table.

clear mac-address-table [**static** | **dynamic** | **secure**] [**address** *hw-addr*] [**interface** *interface*]

Syntax Description

static	Clear only the static addresses.
dynamic	Clear only the dynamic addresses.
secure	Clear only the secure addresses.
address	Clear all the addresses for an address.
hw-addr	Clear the addresses for this address.
interface	Clear all the addresses for an interface.
interface	Clear the addresses for this interface.

Command Mode

EXEC

Usage Guidelines

This command deletes entries from the global MAC address table. Specific subsets can be deleted by using the optional keywords and values. If more than one optional keyword is used, then all of the conditions in the argument must be true for that entry to be deleted.

Example

The following example shows how to clear the switch MAC address table:

```
Switch# clear mac-address-table
```

Related Commands

show mac-address-table

duplex

Use the **duplex** interface configuration command to specify the duplex mode of operation for an interface. Use the **no** form of this command to return the interface to its default value.

duplex {**full** | **half** | **auto**}
no duplex

Syntax Description

full	Specifies that the interface is in full-duplex mode.
half	Specifies that the interface is in half-duplex mode.
auto	Specifies that the interface should automatically detect whether it should run in full- or half-duplex mode.

Default

The default is **auto**.

Command Mode

Interface configuration

Usage Guidelines

Certain interfaces can be configured to be either full duplex or half duplex. Applicability of this command depends on the device to which the switch is attached. All fixed ports can be configured for either full or half duplex. Setting the fixed ports to **auto** will have the same effect as specifying **half** if the attached device does not autonegotiate the duplex parameter.

Note See the *Catalyst 2900 Series XL Installation and Configuration Guide* for guidelines on setting the switch speed and duplex parameters.

Example

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

```
Switch(config)# interface fastethernet2/1
Switch(config-if)# duplex full
```

Related Commands

speed

ip address

To set a primary or secondary IP address for an interface, use the **ip address** interface configuration command. To remove an IP address or disable IP processing, use the **no** form of this command.

ip address *ip-address mask*
no ip address *ip-address mask*

Syntax Description

ip-address	IP address.
mask	Mask for the associated IP subnet.

Default

No IP address is defined for the interface.

Command Mode

Interface configuration

Usage Guidelines

An interface can have one primary IP address.

Example

The following shows how to configure the IP address for the switch on a subnetted class B network:

```
Switch(config)# interface vlan1
Switch(config-if)# ip address 172.20.128.2 255.255.255.0
```

mac-address-table aging-time

Use the **mac-address-table aging-time** configuration command to set the length of time that a dynamic entry can remain in the MAC address table, from the time the entry was used or last updated. Use the **no** form of this command to return to the default aging-time interval.

mac-address-table aging-time *age*
no mac-address-table aging-time

Syntax Description

age	A number from 10 to 1000000 seconds.

Default

The default is 300 seconds.

Command Mode

Configuration

Usage Guidelines

If hosts do not transmit continuously, increase the aging time to record the dynamic entries for a longer time and thus reduce the possibility of flooding when the hosts transmit again.

Example

The following example sets the aging time to 200 seconds:

```
Switch(config)# mac-address-table aging-time 200
```

Related Commands

clear mac-address-table secure
show mac-address-table
mac-address-table static
mac-address-table dynamic

mac-address-table dynamic

Use the **mac-address-table dynamic** configuration command to add entries to the MAC address table that are subject to aging. Use the **no** form of this command to remove entries from the MAC address table.

mac-address-table dynamic *hw-addr interface*
no mac-address-table dynamic *hw-addr*

Syntax Description

hw-addr	The MAC address that is added to the table.
interface	The interface to which packets destined for *hw-addr* are forwarded.

Command Mode

Configuration

Example

The following example shows how to add a dynamic address to the address table:

```
Switch(config)# mac-address-table dynamic 00c0.00a0.03fa fa0/1
```

Related Commands

clear mac-address-table secure
show mac-address-table
mac-address-table static
mac-address-table aging-time

mac-address-table secure

Use the **mac-address-table secure** configuration command to add entries to the MAC address table that are known to be secure addresses. Use the **no** form of this command to remove entries from the MAC address table.

mac-address-table secure *hw-addr interface*
no mac-address-table secure *hw-addr*

Syntax Description

hw-addr	The MAC address that will be added to the table.
interface	The interface to which packets destined for hw-address will be forwarded.

Command Mode

Configuration

Usage Guidelines

Secure addresses can only be assigned to one port at a time. Therefore, if a secure address table entry for the specified *hw-addr* already exists on another port, it is removed from that port and assigned to the specified *interface*.

Example

The following example shows how to add a secure MAC address to the first port of the system:

```
Switch(config)# mac-address-table secure 00c0.00a0.03fa fa0/1
```

Related Commands

mac-address-table aging-time
show mac-address-table
mac-address-table static
mac-address-table dynamic

mac-address-table static

Use the **mac-address-table static** configuration command to add static entries to the MAC address table. Use the **no** form of this command to remove static entries from the MAC address table.

mac-address-table static *hw-addr in-port out-port-list*
no mac-address-table static *hw-addr*

Syntax Description

hw-addr	The MAC address that will be added to the table.
in-port	The input port from which packets received with a destination address of *hw-addr* will be forwarded to the list of ports in *out-port-list*.
out-port-list	The list of ports to which packets received with a destination address of *hw-addr* on ports in *in-port* will be forwarded.

Command Mode

Configuration

Usage Guidelines

Static addresses are not assigned to a port, but instead to the system. Each static address has an associated forwarding table that contains one entry for each input port in the system. This allows the following algorithm to be used: when a packet is received on the in-port, it is forwarded to each port in the out-port-list. Different input ports can have different output-port lists for each static address. Adding a static address that is already defined as a static address only modifies that port map (out-port-list) for the port specified in the in-port.

Example

The following example adds a static address with port 1 as an input port and port 2 and port 8 as output ports:

```
Switch(config)# mac-address-table static c2f3.220a.12f4 fa0/1 fa0/2 fa0/8
```

Related Commands

mac-address-table aging-time
show mac-address-table
mac-address-table secure
mac-address-table dynamic

port block

Use the **port block** interface configuration command to block the flooding of unknown unicast or multicast packets to a port. Use the **no** form of this command to resume normal forwarding.

port block {**unicast** | **multicast**}
no port block {**unicast** | **multicast**}

Syntax Description

unicast	Do not forward packets with unknown unicast addresses to this port.
multicast	Do not forward packets with unknown multicast addresses to this port.

Default

Flood unknown unicast and multicast packets to all ports.

Command Mode

Interface configuration

Example

The following example shows how to block the forwarding of multicast and unicast packets to a port:

```
Switch(config-if)# port block unicast
Switch(config-if)# port block multicast
```

Related Commands

show port block

port group

Use the **port group** interface configuration command to assign a port to a Fast EtherChannel port group. There can be four groups defined for a switch, and any number of ports can belong to a port group. Use the **no** form of this command to remove the port from the port group.

port group *group-number*
no port group

Syntax Description

group-number Port group to which the port is assigned. This can be from 1 to 4.

Default

Port does not belong to a port group.

Command Mode

Interface configuration

Usage Guidelines

This command cannot be used when Switched Port Analyzer (SPAN) port monitoring or port security is enabled for the port.

Example

The following example shows how to add a port to a port group:

```
Switch(config-if)# port group 1
```

Related Commands

show port group

port monitor

Use the **port monitor** interface configuration command to enable Switched Port Analyzer (SPAN) port monitoring on a port. Use the **no** form of this command to return the interface to its default value.

port monitor [*interface*]
no port monitor [*interface*]

Syntax Description

interface	The module and port number for which SPAN is to be enabled.

Default

Port does not monitor any other ports.

Command Mode

Interface configuration

Usage Guidelines

This command cannot be used when a port is part of a Fast EtherChannel port group or when port security is enabled. Specifying port monitoring without an interface causes all other ports to be monitored.

Example

The following example shows how to enable port monitoring on a port:

```
Switch(config-if)# port monitor
```

Related Commands

show port monitor

port security

Use the **port security** interface configuration command to enable port security on a port. Use the **no** form of this command to return the interface to its default value.

port security [**action** {**shutdown** | **trap**}]
port security [**max-mac-count** *addresses*]
no port security

Syntax Description

action	(Optional) Defines the action to take when an address violation occurs on this port.
shutdown	Disable the port when a security violation occurs.
trap	Generate an SNMP trap when a security violation occurs.
max-mac-count	(Optional) The maximum number of secure addresses that this port can support.
addresses	1 to 132.

Default

Port security is disabled.

Command Mode

Interface configuration

Usage Guidelines

This command cannot be used when a port is part of a Fast EtherChannel port group or when Switched Port Analyzer (SPAN) port monitoring is enabled.

Example

The following example shows how to enable port security on a port. The maximum number of addresses that the port can learn is set to 8.

```
Switch(config-if)# port security action shutdown
Switch(config-if)# port security max-mac-count 8
```

Related Commands

show port security

port storm-control

Use the **port storm-control** interface configuration command to enable broadcast storm control on a port. Use the **no** form of this command to disable storm control on the interface.

port storm-control [**filter**] [**trap**] [**threshold {rising** *rising-number* | **falling** *falling-number*}]
no port storm-control [**filter**] [**trap**] [**threshold** {**rising** *rising-number* **| falling** *falling-number*}]

Syntax Description

filter	Disable the port during a broadcast storm.
threshold	The threshold which signals the beginning or end of a broadcast storm.
rising	The threshold which signals the beginning of a broadcast storm.
rising-number	0 to 4294967295 packets per second.
falling	The threshold which signals the end of a broadcast storm.
falling-number	0 to 4294967295 packets per second.
trap	Generate an SNMP trap when the port crosses the rising or falling threshold.

Default

Broadcast storm control is not enabled.

Command Mode

Interface configuration

Example

The following example shows how to enable broadcast storm control on a port:

```
Switch(config-if)# port storm-control threshold rising 1000 falling 200
```

Related Commands

show port storm-control

show mac-address-table

Use the **show mac-address-table** EXEC command to display the MAC address table.

show mac-address-table [**static** | **dynamic** | **secure**] [**address** *hw-addr*] [**interface** *interface*]

Syntax Description

static	(Optional) Display only the static addresses.
dynamic	(Optional) Display only the dynamic addresses.
secure	(Optional) Display only the secure addresses.
address	(Optional) Display entries for a specific address.
hw-addr	Display addresses for this address.
interface	(Optional) Indicates that only entries for a specific interface is displayed.
interface	Display entries for this interface.

Default

None

Command Mode

EXEC

Usage Guidelines

This command displays the global MAC address table. Specific views can be defined by using the optional keywords and values. If more than one optional keyword is used, then all of the conditions must be true in order for that entry to be displayed.

Example

The following example shows how to display the switch MAC address table:

```
Switch# show mac-address-table
Dynamic Addresses Count:                19
Secure Addresses (User-defined) Count: 0
Static Addresses (User-defined) Count: 0
System Self Addresses Count:           29
Total MAC addresses:                   48
Non-static Address Table:
Destination Address  Address Type  Destination Port
-------------------  ------------  --------------------
0000.0c5c.e176       Dynamic       FastEthernet0/8
0000.2424.96b4       Dynamic       FastEthernet0/8
```

Related Commands

clear mac-address-table

show port block

To display the blocking of unicast or multicast flooding to a port, use the **show port block** EXEC command.

show port block {**unicast** | **multicast**} [*interface*]

Syntax Description

unicast	Show whether ports are blocking unicast packets or not.
multicast	Show whether ports are blocking multicast packets or not.
interface	(Optional) Show whether this port is blocking unicast or multicast packets.

Default

None

Command Mode

EXEC

Usage Guidelines

None

Example

The following example shows how to display port block information for a fixed port:

```
Switch# show port block unicast fa0/8
FastEthernet0/8 is blocked from unknown unicast addresses
```

Related Commands

port block

show port group

To display port groups, use the **show port group** EXEC command.

show port group [*group-number*]

Syntax Description

group-number Port group to which the port is assigned.

Default

None

Command Mode

EXEC

Usage Guidelines

Switched Port Analyzer (SPAN) port monitoring and port security cannot be enabled when a port belongs to a port group.

Example

The following example shows how to display the members of a port group.

```
Switch# show port group 1
Group  Interface
-----  ---------------
    1  FastEthernet0/1
    1  FastEthernet0/4
```

Related Commands

port group

show port monitor

To display the ports for which Switched Port Analyzer (SPAN) port monitoring is enabled, use the **show port monitor** EXEC command.

show port monitor *interface*

Syntax Description

interface	The module and port number enabled for SPAN.

Default

None

Command Mode

EXEC

Usage Guidelines

SPAN port monitoring cannot be enabled when a port belongs to a Fast EtherChannel group or when port security is enabled.

Example

The following example shows how to display the ports that are being monitored by a fixed port:

```
Switch# show port monitor fa0/8
Monitor Port        Port Being Monitored
------------------  --------------------
FastEthernet0/8     FastEthernet0/1
FastEthernet0/8     FastEthernet0/2
FastEthernet0/8     FastEthernet0/3
FastEthernet0/8     FastEthernet0/4
FastEthernet0/8     FastEthernet0/5
FastEthernet0/8     FastEthernet0/6
FastEthernet0/8     FastEthernet0/7
```

Related Commands

port monitor

show port security

To show the port security parameters defined for the port, use the **show port security** EXEC command.

show port security *interface*

Syntax Description

interface	The module and port number to be displayed.

Default

None

Command Mode

EXEC

Example

The following example shows how to display the port security information for a fixed port:

```
Switch# show port security fa0/4
Secure Port      Secure Addr    Secure Addr  Security   Security Action
                 Cnt (Current)  Cnt (Max)    Reject Cnt
---------------  -------------  -----------  ---------- ----------------------
FastEthernet0/4  1              132          0          Send Trap
```

Example

port security

show port storm-control

To display the rising and falling threshold for broadcast storm control, use the **show port storm-control** EXEC command. This command also displays the action that the switch takes when the thresholds are reached.

show port storm-control [*interface*]

Syntax Description

interface (Optional) Show storm-control parameters for this port.

Default

None

Command Mode

EXEC

Example

The following example shows how to display storm-control information for the switch:

```
Switch# show port storm-control
Interface  Filter State  Trap State     Rising  Falling  Current  Traps Sent
---------  ------------  -------------  ------  -------  -------  ----------
Fa0/1      <inactive>    <inactive>        500      250        0           0
Fa0/2      <inactive>    <inactive>        500      250        0           0
Fa0/3      <inactive>    <inactive>        500      250        0           0
Fa0/4      <inactive>    <inactive>        500      250        0           0
Fa0/5      <inactive>    <inactive>        500      250        0           0
Fa0/6      <inactive>    <inactive>        500      250        0           0
Fa0/7      <inactive>    <inactive>        500      250        0           0
Fa0/8      <inactive>    <inactive>        500      250        0           0
```

Related Commands

port storm-control

shutdown

To disable an interface, use the **shutdown** interface configuration command. To restart a disabled interface, use the **no** form of this command.

shutdown
no shutdown

Syntax Description

This command has no arguments or keywords.

Default

None

Command Mode

Interface configuration

Usage Guidelines

Use **shutdown Vlan1** to disable communication with the switch. The **shutdown** *interface* command causes the port to stop forwarding but maintains communication with the switch. For example, you can still enable the port with **no shutdown**.

Example

The following example shows how to disable a fixed port and how to reenable it:

```
Switch(config)# interface fa0/8
Switch(config-if)#shutdown

Switch(config-if)# no shutdown
Switch(config-if)#
```

spantree disable

To disable the Spanning-Tree Protocol, use the **spantree disable** interface configuration command. To enable the Spanning-Tree Protocol, use the **no** form of this command.

spantree disable
no spantree disable

Syntax Description

This command has no arguments or keywords.

Default

STP is enabled

Command Mode

Interface configuration

Usage Guidelines

Shutting down the Spanning-Tree Protocol causes the switch to stop participating in STP. Ports that are administratively down remain down. Ports in the blocking state behave as if they are in the forwarding state and could cause a loop. Received BPDUs are forwarded like any other multicast frame.

Example

The following example shows how to disable STP on the switch:

```
Switch(config)# interface vlan1
Switch(config-if)# spantree disable
```

Related Commands

spantree forwarding-time
spantree hello-time
spantree max-age
spantree priority
spantree priority

spantree forwarding-time

Use the **spantree forwarding-time** interface configuration command to specify the forward delay interval for the switch. Use the **no** form of this command to return to the default interval.

spantree forwarding-time *seconds*
no spantree forwarding-time

Syntax Description

seconds	A number from 10 to 200.

Default

15-second delay

Command Mode

Interface configuration

Usage Guidelines

The forward delay interval is the amount of time the switch spends listening for topology information and learning addresses after an interface activates and before forwarding actually begins.

Each switch in a spanning tree adopts the hello-time, forward-time, and max-age parameters of the root bridge.

Example

The following example shows how to set the forward-delay interval to 60 seconds

```
Switch(config)# interface vlan1
Switch(config-if)# spantree forward-time 60
```

Related Commands

spantree disable
spantree hello-time
spantree max-age
spantree priority
spantree priority

spantree hello-time

Use the **spantree hello-time** interface configuration command to specify the interval between Hello Bridge Protocol Data Units (BPDUs). Use the **no** form of this command to return to the default interval.

spantree hello-time *seconds*
no spantree hello-time

Syntax Description

seconds	A number between 1 and 10.

Default

The default is 2 seconds.

Command Mode

Interface configuration

Usage Guidelines

Each switch in a spanning tree adopts the hello-time, forward-time, and max-age parameters of the root bridge. For this reason, this parameter only applies when this switch is the root switch.

Example

The following example show how to set the interval to 5 seconds:

```
Switch(config)# interface vlan1
Switch(config-if)# spantree hello-time 5
```

Related Commands

spantree disable
spantree forwarding-time
spantree max-age
spantree priority
spantree priority

spantree max-age

Use the **spantree max-age** interface configuration command to change the interval the switch waits to hear bridge protocol data units (BPDUs) from the root bridge. If a switch does not hear BPDUs from the root bridge within the specified interval, it assumes that the network has changed and recomputes the spanning-tree topology. Use the **no** form of this command to return to the default interval.

spantree max-age *seconds*
no spantree max-age

Syntax Description

seconds	A number from 6 to 200.

Default

The default is 20 seconds.

Command Mode

Interface configuration

Usage Guidelines

Each switch in a spanning tree adopts the hello-time, forward-time, and max-age parameters of the root bridge.

Example

The following example shows how to increase the maximum idle interval to 20 seconds:

```
Switch(config)# interface vlan1
Switch(config-if)# spantree max-age 20
```

Related Commands

spantree disable
spantree forwarding-time
spantree hello-time
spantree priority
spantree priority

spantree cost

Use the **spantree cost** interface configuration command to set a different path cost. Use the **no** form of this command to choose the default path cost for the interface.

spantree cost *cost*
no spantree cost

Syntax Description

cost	Path cost can range from 1 to 65535, with higher values indicating higher costs. This range applies regardless of the Spanning-Tree Protocol that has been specified.

Default

The default is 1000/interface-speed-Mbps. Thus, a 100-Mbps interface has a default path cost of 10, and a 10-Mbps interface has a default path cost of 100.

Command Mode

Interface configuration

Usage Guidelines

By convention, the path cost is 1000/data rate of the attached LAN (IEEE), or 10000/data rate of the attached LAN (Digital), in Mbps. This parameter is automatically adjusted for, unless overridden by this command.

Example

The following example changes the default path cost for a fixed port:

```
Switch(config)# interface fa0/1
Switch(config-if)# spantree cost 250
```

Related Commands

spantree disable
spantree forwarding-time
spantree hello-time
spantree max-age
spantree priority
spantree priority

spantree portfast

Use the **spantree portfast** interface configuration command to decrease the amount of time it takes STP to bring a port into the forwarding state. Use the **no** form of this command to disable PortFast.

spantree portfast
no spantree portfast

Syntax Description

This command has no parameters.

Default

PortFast is disabled.

Command Mode

Interface configuration

Usage Guidelines

This command should only be used when a port is connected to a workstation or server. If PortFast is enabled on a port connected to another switch or hub, it can prevent STP from detecting and avoiding loops in the network.

Example

The following example shows how to enable PortFast on a fixed port:

```
Switch(config)# interface fa0/2
Switch(config-if)# spantree portfast
```

Related Commands

spantree disable
spantree forwarding-time
spantree hello-time
spantree max-age
spantree priority
spantree priority

spantree priority

Use the **spantree priority** interface configuration command to configure the priority of an individual bridge.

spantree priority *number*

Syntax Description

number A number from 0 through 65535.

Default

When the IEEE Spanning-Tree Protocol is enabled on the switch: 32768

Command Mode

Interface configuration

Usage Guidelines

When two bridges tie for position as the root bridge, a bridge priority determines which bridge serves as the root bridge. The lower the number, the more likely the bridge is chosen as root. Use the **spantree priority** interface configuration command to control an interface priority.

Example

The following example establishes this switch as a likely candidate to be the root bridge:

```
Switch(config)# interface vlan1
Switch(config-if)# spantree priority 100
```

Related Commands

spantree disable
spantree forwarding-time
spantree hello-time
spantree max-age
spantree priority
spantree priority

spantree priority

Use the **spantree priority** interface configuration command to set an interface priority when two bridges tie for position as the root bridge. The priority you set breaks the tie. Use the **no** form of this command to return to the default priority.

spantree priority *number*
no spantree priority

Syntax Description

priority	Indicates that the following parameter specifies the new priority for the vlan and interface.
number	Priority number ranging from 0 through 255 (Digital) or 0 through 64000 (IEEE).

Default

32768 - IEEE spanning-tree protocol

Command Mode

Interface configuration

Usage Guidelines

The lower the number, the more likely it is that the bridge on the interface will be chosen as the root. The switch-based version of this command sets the priority for the switch.

Example

The following example increases the likelihood that the root bridge will be the one on FastEthernet interface 0 on port 1:

```
Switch(config)#interface fastethernet 0/1
Switch(config-if)#spantree priority 100
```

Related Commands

spantree forwarding-time
spantree hello-time
spantree max-age
spantree disable
spantree priority

spantree protocol

Use the **protocol** interface configuration command to define the type of Spanning-Tree Protocol. Use the **no protocol** command to set the protocol to its default value of IEEE.

spantree protocol [**ieee** | **dec** | **ibm**]
no spantree protocol

Syntax Description

ieee	IEEE Ethernet Spanning-Tree Protocol
dec	Digital Spanning-Tree Protocol
ibm	IBM Spanning-Tree Protocol

Default

The IEEE 802.1d Spanning-Tree Protocol is enabled by default.

Command Mode

Interface configuration

Usage Guidelines

The IEEE 802.1d Spanning-Tree Protocol is the preferred way to run the switch. Use the other protocols only for backward compatibility.

Example

The following example shows how to set the switch (vlan1) to use the IEEE 802.1d Spanning-Tree Protocol:

```
Switch(config)# interface vlan1
Switch(config-if)# spantree protocol ieee
```

Related Commands

spantree disable
spantree forwarding-time
spantree hello-time
spantree max-age
spantree priority
spantree priority

speed

Use the **speed** interface configuration command to specify the speed of the interface. Use the **no** form of this command to return the interface to its default value.

speed [**10** | **100** | **auto**]
no speed

Syntax Description

10	Specifies that the interface runs at 10 Mbps.
100	Specifies that the interface runs at 100 Mbps.
auto	Specifies that the interface should automatically detect whether it should run at 10 Mbps or 100 Mbps.

Default

The default is **auto**.

Command Mode

Interface configuration

Usage Guidelines

Certain interfaces can be configured to be either 10 or 100 Mbps. Applicability of this command is hardware-dependent. All fixed ports can be configured for either 10- or 100-Mbps operation.

Note See the *Catalyst 2900 Series XL Installation and Configuration Guide* for guidelines on setting the switch speed and duplex parameters.

Example

The following example shows how to set port 1 on module 2 to 100 Mbps:

```
Switch(config)# interface fastethernet2/1
Switch(config-if)# speed 100
```

Related Commands

duplex