l2 vfi manual through loopback (PA-MC-8TE1 + port adapter)

l2protocol-tunnel

To enable the protocol tunneling on an interface and specify the type of protocol to be tunneled, use the **l2protocol-tunnel** command in global or interface configuration mode. To disable protocol tunneling, use the **no** form of this command.

Global Configuration

l2protocol-tunnel [**cos cos-value**| **global**| **mac-address**]

no l2protocol-tunnel

Interface Configuration

l2protocol-tunnel [**cdp**| **lldp**| **stp**| **vtp**]

no l2protocol-tunnel

Syntax Description

cos cos-value	(Optional) Specifies a class of service (CoS) value globally on all ingress Layer 2 protocol tunneling ports.
global	(Optional) Displays global settings.
mac-address	(Optional) Displays L2PT MAC address.
cdp	(Optional) Enables Cisco Discovery Protocol (CDP) tunneling.
lldp	(Optional) Enables Link Layer Discovery Protocol (LLDP) tunneling.
stp	(Optional) Enables Spanning Tree Protocol (STP) tunneling.
vtp	(Optional) Enables VLAN Trunking Protocol (VTP) tunneling.

Command Default

Disabled

Command Modes

Global configuration (config)

Interface configuration (config-if)

Command History

Release	Modification
12.2(14)SX	Support for this command was introduced on the Supervisor Engine 720.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was extended to Release 12.2(17d)SXB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
15.2(2)T	This command was modified. The **lldp**, cos, global, and mac-address keywords were added.

Usage Guidelines

On all the service provider edge switches, you must enable PortFast BPDU filtering on the 802.1Q tunnel ports by entering these commands:

```
Router(config-if)# spanning-tree bpdufilter enable
Router(config-if)# spanning-tree portfast
```

Note PortFast BPDU filtering is enabled automatically on tunnel ports.

If you do not specify a protocol, all protocols are tunneled.

You can configure protocol tunneling on VLAN and trunk interfaces.

You must enter the **switchport** command once without any keywords to configure the LAN port as a Layer 2 interface before you can enter additional **switchport** commands with keywords. This action is required only if you have not entered the **switchport** command for the interface.

Examples

This example shows how to enable a tunneling protocol on an interface:

```
Router> enable
Router# configure terminal
Router#(config)interface FastEthernet 0/0
Router(config-if)# l2protocol-tunnel cdp
```

This example shows how to disable a tunneling protocol on an interface:

```
Router> enable
Router# configure terminal
Router#(config)interface fastEthernet 4/0
Router(config-if)# no l2protocol-tunnel
Protocol tunneling disabled on interface fastEthernet 4/1
```

Related Commands

Command	Description
show l2protocol-tunnel	Displays the protocols that are tunneled on an interface or on all interfaces.

Command	Description
switchport	Modifies the switching characteristics of the Layer 2-switched interface.

l2protocol-tunnel cos

To specify a class of service (CoS) value globally on all ingress Layer-2 protocol tunneling ports, use the **l2protocol-tunnelcos**command in global configuration mode. To return to the default , use the **no** form of this command.

l2protocol-tunnel cos *cos-value*

no l2protocol-tunnel cos

Syntax Description

cos-value	CoS value; valid values are from 0 to 7.

Command Default

The *cos-value* is **5**

Command Modes

Global configuration

Command History

Release	Modification
12.2(14)SX	Support for this command was introduced on the Supervisor Engine 720.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was extended to Release 12.2(17d)SXB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

The *cos-value* is the CoS value that you assign to the PDUs on a Layer 2-protocol tunnel port before tunneling the PDUs through the service-provider network.

You can specify a CoS value globally on all ingress Layer 2-protocol tunneling ports. Because the CoS value applies to all ingress tunneling ports, all encapsulated PDUs that are sent out by the Cisco 7600 series router have the same CoS value.

On all the service-provider edge switches, you must enable PortFast BPDU filtering on the 802.1Q tunnel ports by entering these commands:

```
Router(config-if)# spanning-tree bpdufilter enable
Router(config-if)# spanning-tree portfast
```

Note PortFast BPDU filtering is enabled automatically on tunnel ports.

Examples

This example shows how to specify a CoS value on all ingress Layer 2-protocol tunneling ports:

```
Router(config)# l2protocol-tunnel cos 6
Router(config)#
```

Related Commands

Command	Description
show l2protocol-tunnel	Displays the protocols that are tunneled on an interface or on all interfaces.

lacp port-priority

To set the priority for a physical interface, use the **lacp port-priority** command in interface configuration mode. To return to the default setting, use the **no** form of this command.

lacp port-priority *priority*

no lacp port-priority

Syntax Description

priority	Integer from 1 to 65535 that indicates the priority for the physical interface. The default is 32768. • On the Cisco ASR 1000 series router, the range is 0 to 65535.

Command Default

The default port priority is set.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
12.1(13)EW	This command was introduced on the Cisco Catalyst 4500 series switches.
12.2(14)SX	Support for this command on the Supervisor Engine 720 was integrated into Cisco IOS Release12.2(14)SX.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was integrated into Cisco IOS Release12.2(17d) SXB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2.
12.2(33)SRB	Support for this command on the Cisco 7600 router was integrated into Cisco IOS Release 12.2(33)SRB.
Cisco IOS XE Release 2.4	This command was integrated into Cisco IOS XE Release 2.4.
15.1(2)SNG	This command was implemented on the Cisco ASR 901 Series Aggregation Services Router.

Usage Guidelines

You may assign a port priority to each port on a device running Link Aggregation Control Protocol (LACP). You can specify the port priority by using the **lacp port-priority** command at the command-line interface (CLI) or use the default port priority (32768) that is carried as part of the LACP protocol data unit (PDU) exchanged with the partner. Port priority is used to decide which ports should be put in standby mode when a hardware limitation or the **lacp max-bundle** command configuration prevents all compatible ports from aggregating. Priority is supported only on port channels with LACP-enabled physical interfaces.

Note A high priority number means a low priority.

Port priority together with port number form a port identifier.

To verify the configured port priority, issue the **show lacp** command.

Examples

This example shows how to set a priority of 23700 for an interface:

```
Device> enable
Device#  configure terminal
Device(config)#  interface ethernet0/0
Device(config-if)# lacp port-priority 23700
Device(config-if)#
```

Related Commands

Command	Description
channel-group	Assigns and configures an EtherChannel interface to an EtherChannel group.
debug lacp	Enables debugging of LACP activities.
lacp max-bundle	Defines the maximum number of active bundled LACP ports allowed in a port channel.
lacp system-priority	Sets the priority of the system.
show lacp	Displays information about LACP activity on the device.

lacp system-priority

To set the priority for a system, use the **lacp system-priority** command in global configuration mode. To return to the default setting, use the **no** form of this command.

lacp system-priority *priority*

no lacp system-priority

Syntax Description

priority	Integer from 1 to 65535 that indicates the priority for the system. The default is 32768. • On the Cisco ASR 1000 series router, the range is 0 to 65535.

Command Default

The default system priority is set.

Command Modes

Global configuration (config)

Command History

Release	Modification
12.1(13)EW	This command was introduced on the Cisco Catalyst 4500 series switches.
12.2(14)SX	Support for this command on the Supervisor Engine 720 was integrated into Cisco IOS Release12.2(14)SX.
12.2(17d)SXB	Support for this command on the Supervisor Engine 2 was integrated into Cisco IOS Release12.2(17d) SXB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(31)SB2	This command was integrated into Cisco IOS Release 12.2(31)SB2.
12.2(33)SRB	Support for this command on the Cisco 7600 router was integrated into Cisco IOS Release 12.2(33)SRB.
Cisco IOS XE Release 2.4	This command was integrated into Cisco IOS XE Release 2.4.
15.1(2)SNG	This command was implemented on the Cisco ASR 901 Series Aggregation Services Router.

Usage Guidelines

You can assign a system priority to each device running Link Aggregation Control Protocol (LACP). You can specify the system priority by using the **lacp system-priority** command at the command-line interface (CLI) or use the default system priority (32768) that is carried as part of the LACP protocol data unit (PDU) exchanged with the partner. System priority is used with the MAC address of the device to form the system ID and also is used during negotiation with other systems. Priority is supported only on port channels with LACP-enabled physical interfaces.

Note A high priority number means a low priority.

To verify the configured system priority, issue the **show lacp** command.

Examples

The following example shows how to set a system priority of 25500 for a device:

```
Router> enable
Router# configure terminal
Router(config)# lacp system-priority 25500
```

Related Commands

Command	Description
channel-group	Assigns and configures an EtherChannel interface to an EtherChannel group.
debug lacp	Enables debugging of LACP activities.
lacp port-priority	Sets the priority of a port.
show lacp	Displays information about LACP activity on the device.

link state group

To configure the link state group, use the **linkstategroup** command in interface configuration mode.

link state group [*number*] {**upstream**| **downstream**}

Syntax Description

number	Specifies a link-state group. The acceptable range of group number is between 1 to 10 and the default value is 1.
upstream	Configures the interface as an upstream interface in the group.
downstream	Configures the interface as a downstream interface in the group.

Command Default

The default **linkstategroup**number is 1.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
15.1(1)S	This command was introduced.

Usage Guidelines

Link State Ttracking (LST), also known as trunk failover, is a feature that binds the link state of multiple interfaces. When you configure LST for the first time, add upstream interfaces to the link state group before adding the downstream interface, otherwise the downstream interfaces would move into error-disable mode. The maximum number of link state groups configurable is 10. These are the limitations:

- An interface can only be an upstream or downstream interface.
- An interface cannot be part of more than one link state tracking group.

Examples

The following example shows how to configure the link state group number.

```
Router# configure terminal
Router(config)# link state track 1
Router(config)# interface gigabitethernet3/1
Router(config-if)# link state group 1 upstream
Router(config-if)# interface gigabitethernet3/3
Router(config-if)# link state group 1 upstream
Router(config-if)# interface gigabitethernet3/5
Router(config-if)# link state group 1 downstream
```

```
Router(config-if)# interface gigabitethernet3/7
Router(config-if)# link state group 1 downstream
```

Related Commands

Command	Description
link state track	Configures the link-state track number.
show link state group	Displays the link-state group information.

link state track

To configure a link state tracking number, use the **linkstatetrack** command in global configuration mode. To restore the default **linkstatetrack**number, use the no form of this command.

link state track *number*

no link state track *number*

Syntax Description

number	Specifies the link state tracking number. The acceptable range is between 1 and 10 and the default value is 1.

Command Default

The default link state track number is 1.

Command Modes

Global configuration (config)

Command History

Release	Modification
15.1(1)S	This command was introduced.

Usage Guidelines

Link State Ttracking (LST), also known as trunk failover, is a feature that binds the link state of multiple interfaces. When you configure LST for the first time, add upstream interfaces to the link state group before adding the downstream interface, otherwise the downstream interfaces would move into error-disable mode.

Examples

The following example shows how to configure the link state tracking number.

```
Router# configure terminal
Router(config)# link state track 1
```

Related Commands

Command	Description
link state group	Configures the link state group and the interface as either an upstream or downstream interface in the group.
show link state group	Displays the link state group information.