Multipoint Layer 2 Services Commands

action (VPLS)

To configure the bridge behavior when the number of learned MAC addresses reaches the MAC limit configured, use the **action** command in L2VPN bridge group bridge domain MAC limit configuration mode. To disable this feature, use the **no** form of this command.

action {**flood** | **no-flood** | **shutdown**}
no action {**flood** | **no-flood** | **shutdown**}

Syntax Description

flood	Configures the action to flood all unknown unicast packets when the MAC limit is reached. If the action is set to flood, all unknown unicast packets, with unknown destinations addresses, are flooded over the bridge.
no-flood	Configures the action to no-flood so all unknown unicast packets are dropped when the MAC limit is reached. If the action is set to no-flood, all unknown unicast packets, with unknown destination addresses, are dropped.
shutdown	Stops forwarding when the MAC limit is reached. If the action is set to shutdown, all packets are dropped.

Command Default

No action is taken when the MAC address limit is reached.

Command Modes

L2VPN bridge group bridge domain MAC limit configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **action** command to specify the type of action to be taken when the action is violated.

The configured action has no impact if the MAC limit has not been reached.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to configure the bridge bar to flood all unknown unicast packets when the number of MAC addresses learned by the bridge reaches 10:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)#l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)#bridge group 1
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg)#bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)#mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)#limit
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-limit)#action flood
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-limit)#maximum 10
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
limit (VPLS), on page 35	Sets the MAC address limit for action, maximum, and notification and enters L2VPN bridge group bridge domain MAC limit configuration mode.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.
maximum (VPLS), on page 41	Configures the specified action when the number of MAC addresses learned on a bridge is reached.
notification (VPLS), on page 53	Specifies the type of notification that is sent when the number of learned MAC addresses exceeds the configured limit.

aging (VPLS)

To enter the MAC aging configuration submode to set the aging parameters such as time and type, use the **aging** command in L2VPN bridge group bridge domain configuration mode. To return to the default value for all parameters that are attached to this configuration submode, use the **no** form of this command.

aging
no aging

Syntax Description

This command has no keywords or arguments.

Command Default

No defaults are attached to this parameter since it is used as a configuration submode. See defaults that are assigned to the time (VPLS), on page 129 and the type (VPLS), on page 133 parameters.

Command Modes

L2VPN bridge group bridge domain MAC configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **aging** command to enter L2VPN bridge group bridge domain MAC aging configuration mode.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to enter MAC aging configuration submode and to set the MAC aging time to 120 seconds:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# aging
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-aging)# time 120
```

Related Commands

Commands	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain and enters L2VPN bridge group bridge domain configuration mode.

Commands	Description
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then assigns network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.
time (VPLS), on page 129	Configures the maximum aging time.
type (VPLS), on page 133	Configures the type for MAC address aging.

aps-channel

To configure G.8032 instance APS channel and to enter Ethernet ring G.8032 instance aps-channel configuration submode, use the **aps-channel** command in the Ethernet ring g8032 instance configuration submode. To remove the G.8032 instance APS channel configuration, use the **no** form of this command.

aps-channel [{**level** *message-level* | **port0 interface** {**Bundle-Ether** | **FastEthernet** | **GigabitEthernet** | **TenGigE**} *interface-id* | **port1** {**bridge-domain** *bridge-domain-name* | **interface** {**Bundle-Ether** | **FastEthernet** | **GigabitEthernet** | **TenGigE**} *interface-id* | **none** | **xconnect** *xconnect-name*}}]
no aps-channel [{**level** *message-level* | **port0 interface** {**Bundle-Ether** | **FastEthernet** | **GigabitEthernet** | **TenGigE**} *interface-id* | **port1** {**bridge-domain** *bridge-domain-name* | **interface** {**Bundle-Ether** | **FastEthernet** | **GigabitEthernet** | **TenGigE**} *interface-id* | **none** | **xconnect** *xconnect-name*}}]

Syntax Description

level	Specifies the APS message level. The message level ranges from 0 to 7.
port0	Configures G.8032 aps-channel information associated to port0.
port1	Configures G.8032 aps-channel information associated to port1.
interface	Assigns interface associated to port0 or port1. You can assign one of these interfaces: • Bundle Ethernet • Fast Ethernet • Gigabit Ethernet • TenGigabit Ethernet
bridge-domain	Specifies VPLS domain where virtual channel is connected.
none	Specify APS channel port0 or port1 as none.
xconnect	Specifies VPWS xconnect where virtual channel is connected.

Command Default

None

Command Modes

L2VPN configuration mode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows how to configure G.8032 instance APS channel:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 r1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# instance 1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# description test
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# profile p1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# rpl port0 neighbor
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# inclusion-list vlan-ids e-g
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# aps-channel
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance-aps)#
```

Related Commands

Command	Description
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.
inclusion-list, on page 26	Associates a set of VLAN IDs with the current instance.

autodiscovery bgp

To enable BGP autodiscovery, use the **autodiscovery bgp** command in the VFI configuration mode. To return to the default value, use the **no** form of this command.

autodiscovery bgp
no autodiscovery bgp

Syntax Description

This command has no keywords or arguments.

Command Default

None.

Command Modes

VFI configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to configure a bridge domain:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group EGroup
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain eastdomain
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi eastvfi
RP/0/RSP0/CPU0:routerr(config-l2vpn-bg-bd-vfi)# autodiscovery bgp
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

bridge-domain (VPLS)

To establish a bridge domain and to enter L2VPN bridge group bridge domain configuration mode, use the **bridge-domain** command in L2VPN bridge group configuration mode. To return to a single bridge domain, use the **no** form of this command.

bridge-domain *bridge-domain-name*
no bridge-domain *bridge-domain-name*

Syntax Description

bridge-domain-name	Name of the bridge domain.

Note The maximum number of characters that can be specified in the bridge domain name is 27.

Command Default

The default value is a single bridge domain.

Command Modes

L2VPN bridge group configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

Use the **bridge-domain** command to enter L2VPN bridge group bridge domain configuration mode.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to configure a bridge domain:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)#
```

Related Commands

Command	Description
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

bridge group (VPLS)

To create a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain, use the **bridge group** command in L2VPN configuration mode. To remove all the bridge domains that are created under this bridge group and to remove all network interfaces that are assigned under this bridge group, use the **no** form of this command.

bridge group *bridge-group-name*
no bridge-group *bridge-group-name*

Syntax Description

bridge-group-name	Number of the bridge group to which the interface belongs.

Command Default

No bridge group is created.

Command Modes

L2VPN configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **bridge group** command to enter L2VPN bridge group configuration mode.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows that bridge group 1 is assigned:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)#
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
l2vpn	Enters L2VPN configuration mode.

clear l2vpn bridge-domain (VPLS)

To clear the MAC addresses and to restart the bridge domains on the router, use the **clear l2vpn bridge-domain** command in EXEC mode.

clear l2vpn bridge-domain {**all** | **bd-name** *name* | **group** *group*}

Syntax Description

all	Clears and restarts all the bridge domains on the router.
bd-name *name*	Clears and restarts the specified bridge domain. The *name* argument specifies the name of the bridge-domain.
group *group*	Clears and restarts all the bridge domains that are part of the bridge group.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

This is the method that allows a bridge to forward again after it was put in Shutdown state as a result of exceeding the configured MAC limit.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to clear all the MAC addresses and to restart all the bridge domains on the router:

```
RP/0/RSP0/CPU0:router# clear l2vpn bridge-domain all
```

Related Commands

Command	Description
show l2vpn bridge-domain (VPLS), on page 73	Display information for the bridge ports such as attachment circuits and pseudowires for the specific bridge domains.

debug l2vpn forwarding platform vpls all location

To display debugging information about L2VPN forwarding Virtual Private LAN Service (VPLS) platform of a specified location, use the **debug l2vpn forwarding platform vpls all location** command in EXEC mode. To disable debugging, use the **no** form of this command.

debug l2vpn forwarding platform vpls all location *location*
no debug l2vpn forwarding platform vpls all location *location*

Syntax Description

location	Location to dispaly debugging information.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 5.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
root-system	read, write

description (G.8032)

To specify a string that serves as a description for a G.8032 Ethernet ring instance, use the **description** command in the Ethernet ring G.8032 instance configuration submode.

description *ring-instance-identifier*

Syntax Description

ring-instance-identifier	A string that serves as a description for a G.8032 Ethernet ring instance. The string can be a maximum of 32 characters.

Command Default

None

Command Modes

Ethernet ring G.8032 instance configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows how to specify a description for G.8032 Ethernet ring instance:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 r1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# instance 1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# description test
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.
instance (G.8032), on page 28	Configures a G.8032 Ethernet ring instance and enters Ethernet ring G.8032 instance configuration submode.

dhcp ipv4 snoop profile (VPLS)

To enable DHCP snooping on a bridge and to attach a DHCP snooping profile to the bridge, use the **dhcp ipv4 snoop** command in L2VPN bridge group bridge domain configuration mode. To disable DHCP snooping on an interface, use the **no** form of this command.

dhcp ipv4 snoop profile *profile-name*
no dhcp ipv4 snoop

Syntax Description

profile *profile-name*	Attaches a DHCP profile. Profile name for DHCPv4 snooping.

Command Default

None

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to enable DHCP snooping on a bridge:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# dhcp ipv4 snoop profile attach
```

This example shows how to enable DHCP snooping over a pseudowire:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)#vfi vf1
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)#exit
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)#neighbor 10.1.1.1 pw-id 100
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-pw)#dhcp ipv4 snoop profile A
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

ethernet ring g8032

To enable G.8032 ring mode and enter the G.8032 configuration submode, use the **ethernet ring g8032** command in the L2VPN configuration mode. To disable the G.8032 ring mode, use the **no** form of this command.

ethernet ring g8032 *protocol ring identifier*
no ethernet ring g8032 *protocol ring identifier*

Syntax Description

protocol ring identifier	Ring profile name. The maximum size of the profile name is 32 characters.

Command Default

None

Command Modes

L2VPN configuration mode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

Example

This example shows how to enable the G.8032 ring mode:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)#l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)#ethernet ring g8032 p1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)#
```

Related Commands

Command	Description
exclusion list, on page 20	Defines a set of Virtual LAN (VLAN) IDs that are not protected by the Ethernet ring protection mechanism.
instance (G.8032), on page 28	Configures a G.8032 Ethernet ring instance and enters Ethernet ring G.8032 instance configuration submode.
port0 interface, on page 56	Enables G.8032 for a specified ring port.
port1, on page 57	Enables G.8032 for a specified ring port.

ethernet ring g8032 profile

To configure G.8032 ring profile and to enter the G.8032 ring profile configuration mode, use the **ethernet ring g8032 profile**command in the global configuration mode. To disable the G.8032 ring profile, use the **no** form of this command.

ethernet ring g8032 profile *profile-name* [{**non-revertive** | **timer** {**guard** *milliseconds* | **hold-off** *seconds* | **wtr** *minutes* }}]

Syntax Description

non-revertive	Configures non-revertive ring instance.
timer	Configures G.8032 timer.
guard	Configures G.8032 guard timer. The Guard timer can be configured and the default time interval is 500 ms. The time interval ranges from 10 to 2000 ms.
hold-off	Configures G.8032 hold-off timer. The hold-off timer can be configured and the default time interval is 0 seconds. The time interval ranges from 0 to 10 seconds.
wtr	Configures G.8032 WTR timer. The WTR timer can be configured by the operator, and the default time interval is 5 minutes. The time interval ranges from 1 to 12 minutes.

Command Default

None

Command Modes

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
ethernet-services	read, write

This example shows you how to configure a G.8032 ring profile:

```
RP/0/RSP0/CPU0:router# configure
```

```
RP/0/RSP0/CPU0:router(config)# ethernet ring g8032 profile p1
RP/0/RSP0/CPU0:router(config-g8032-ring-profile)#
```

Related Commands

Command	Description
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

exclusion list

To define a set of Virtual LAN (VLAN) IDs that are not protected by the Ethernet ring protection mechanism, use the **exclusion list** command in Ethernet ring g8032 configuration submode. To delete the set of VLAN IDs, use the **no** form of this command.

exclusion list vlan-ids *vlan range*
no exclusion list vlan-ids *vlan range*

Syntax Description

vlan-ids	Specifies a list of VLANs. Ranges in the form a-b,c,d,e-f,g where VLAN value is 1–4094 and/or untagged. By default, all the VLANs configured under ring ports are blocked. VLAN IDs specified here cannot belong to the inclusion-list. VLAN IDs range cannot overlap with the IDs specified under inclusion-list.

Command Default

Configured physical Ethernet or ether bundle interface

Command Modes

Ethernet ring g8032 configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows the output from the exclusion list command:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 r1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# exclusion-list vlan-ids e-g
RP/0/RSP0/CPU0:router(config-l2vpn-erp)#
```

Related Commands

Command	Description
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

flooding disable

To configure flooding for traffic at the bridge domain level or at the bridge port level, use the **flooding disable** command in L2VPN bridge group bridge domain configuration mode. To return the bridge to normal flooding behavior when all unknown unicast packets, all broadcast packets, and all multicast packets are flooded over all other bridge domain network interfaces, use the **no** form of this command.

flooding disable
no flooding disable

This command has no keywords or arguments.

Command Default

The default behavior is that packets are flooded when their destination MAC address is not found.

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **flooding disable** command to override the parent bridge configuration.

By default, bridge ports inherit the flooding behavior of the bridge domain.

When flooding is disabled, all unknown unicast packets, all broadcast packets, and all multicast packets are discarded.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to disable flooding on the bridge domain called bar:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# flooding disable
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.

Command	Description
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mtu (VPLS), on page 47	Adjusts the maximum packet size or maximum transmission unit (MTU) size for the bridge domain.

flooding unknown-unicast disable (VPLS)

To disable flooding of unknown unicast traffic at the bridge domain level or at the bridge port level, use the **flooding unknownunknow-unicast disable** command in L2VPN bridge group bridge domain configuration mode. To return the bridge to normal flooding behavior, use the **no** form of this command.

flooding unknown-unicast disable
no flooding unknown-unicast disable

Syntax Description

This command has no keywords or arguments.

Command Default

The default behavior is that packets are flooded when their destination MAC address is not found.

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **flooding unknown-unicast disable** command to override the parent bridge configuration.

By default, bridge ports inherit the flooding behavior of the bridge domain.

When flooding is disabled, all unknown unicast packets are discarded.

Use this command on Layer 2 interfaces. This command is not applicable on BVI interfaces.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to disable flooding on the bridge domain called bar:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# flooding unknown-unicast disable
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.

Command	Description
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mtu (VPLS), on page 47	Adjusts the maximum packet size or maximum transmission unit (MTU) size for the bridge domain.

igmp snooping disable

To disable IGMP snooping on a bridge domain within the L2VPN, use the **igmp snooping disable** command in the L2VPN bridge group bridge-domain configuration mode. To return to the default, use the **no** form of this command.

igmp snooping disable
no igmp snooping disable

Syntax Description

This command has no keywords or arguments.

Command Default

IGMP snooping is active on a bridge domain when an IGMP snooping profile is configured to the bridge domain.

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 5.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

This example shows how to disable IGMP snooping profile for a bridge domain in the L2VPN:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# igmp snooping disable
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.

inclusion-list

To associate a set of VLAN IDs with the current instance, use the **inclusion-list** command in the Ethernet ring G.8032 instance configuration submode. To disassociate the VLAN IDs with the current instance, use the **no** form of this command.

inclusion-list vlan-ids*vlan-id*
no inclusion-list vlan-ids*vlan-id*

Syntax Description

vlan-ids	Associates a set of VLAN IDs with the current instance.
vlan-id	List of VLAN IDs in the form vlan-id <vlan range>[,<vlan range][,<vlan range>][,<vlan range>].

Command Default

None

Command Modes

Ethernet ring G.8032 instance configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows how to associate VLAN IDs with instance 1:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 r1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# instance 1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# description test
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# profile p1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# rpl port0 neighbor
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# inclusion-list vlan-ids e-g
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

Command	Description
instance (G.8032), on page 28	Configures a G.8032 Ethernet ring instance and enters Ethernet ring G.8032 instance configuration submode.

instance (G.8032)

To configure a G.8032 Ethernet ring instance and enter Ethernet ring G.8032 instance configuration submode, use the instance command in the Ethernet ring G.8032 configuration submode. To disable the G.8032 Ethernet ring instance, use the no form of this command.

instance *instance-id*
no instance *instance-id*

Syntax Description

instance-id	Instance ID; currently, supports up to two instances per Ethernet ring. The instance ID can be 1 or 2.

Command Default

None

Command Modes

Ethernet ring G.8032 configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows how to configure G.8032 Ethernet ring instance:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 r1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# instance 1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)#
```

Related Commands

Command	Description
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.
l2vpn	Enters L2VPN configuration mode.

interface (VPLS)

To add an interface to a bridge domain that allows packets to be forwarded and received from other interfaces that are part of the same bridge domain, use the **interface** command in L2VPN bridge group bridge domain configuration mode. To remove an interface from a bridge domain, use the **no** form of this command.

interface *type interface-path-id*
no interface *type interface-path-id*

Syntax Description

type	Interface type. For more information, use the question mark (**?**) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.

Command Default

None

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **interface** command to enter L2VPN bridge group bridge domain attachment circuit configuration mode. In addition, the **interface** command enters the interface configuration submode to configure parameters specific to the interface.

By default, an interface is not part of a bridge.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to configure the bundle Ethernet interface as an attachment circuit:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# interface gigabitethernet 0/1/0/9
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-ac)#
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

l2vpn resynchronize forwarding mac-address-table location

To retrieve a MAC address table from network processors and transfer the MAC address tables to the L2FIB manager, use the **l2vpn resynchronize forwarding mac-address-table location** command in EXEC mode.

l2vpn resynchronize forwarding mac-address-table location *node-id*

Syntax Description

node-id	Location of the mac-address-table. The *node-id* argument is entered using the *rack/slot/module* notation.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

To ensure that correct information is displayed, enter this command before issuing any **show** commands for the mac address tables.

The **l2vpn resynchronize forwarding mac-address-table location** command initiates the transfer of MAC learn information from the network processors, to the L2FIB manager. This operation is CPU intensive especially when there are 512K MACs. Therefore, the command is throttled, so that you cannot issue this command back to back. The throttle time depends on the number of MAC addresses. If the number of MAC addresses is under 16K MACs, the throttle time is five seconds. If it is between 16K and 128K, the throttle time is one minute, and if it is between 128K and 256K, the throttle time is two minutes. The throttle time is four minutes for MAC addresses above 256K.

Task ID

Task ID	Operations
l2vpn	read, write, execute

Examples

The following example shows how to retrieve the MAC address table from the network processors:

```
RP/0/RSP0/CPU0:router# l2vpn resynchronize forwarding mac-address-table location 0/4/CPU0
```

Related Commands

Command	Description
show l2vpn forwarding	Displays forwarding information from the layer2_fib manager on the line card.

learning disable (VPLS)

To override the MAC learning configuration of a parent bridge or to set the MAC learning configuration of a bridge, use the **learning disable** command in L2VPN bridge group bridge domain MAC configuration mode. To disable this feature, use the **no** form of this command.

learning disable
no learning disable

Syntax Description

This command has no keywords or arguments.

Command Default

By default, learning is enabled on all bridge domains and all interfaces on that bridge inherits this behavior.

Command Modes

L2VPN bridge group bridge domain MAC configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When set, the **learning disable** command stops all MAC learning either on the specified interface or the bridge domain.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

In the following example, MAC learning is disabled on all ports in the bridge domain called bar, which is applied to all interfaces in the bridge unless the interface has its own MAC learning enable command.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# learning disable
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.

Command	Description
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.

level

To specify the APS message level, use the **level** command in the Ethernet ring G.8032 instance aps-channel configuration submode.

level *number*

Syntax Description

number	The APS message level. The range is from between 0 to 7.

Command Default

None

Command Modes

Ethernet ring G.8032 instance aps-channel configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows how to enable the G.8032 ring mode:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 r1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# instance 1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# description test
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# profile p1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# rpl port0 neighbor
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# inclusion-list vlan-ids e-g
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# aps-channel
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance-aps)# level 3
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

limit (VPLS)

To set the MAC address limit for action, maximum, and notification and to enter L2VPN bridge group bridge domain MAC limit configuration mode, use the **limit** command in L2VPN bridge group bridge domain MAC configuration mode. To remove all limits that were previously configured under the MAC configuration submodes, use the **no** form of this command.

limit
no limit

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

L2VPN bridge group bridge domain MAC configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **limit** command to enter L2VPN bridge group bridge domain MAC limit configuration mode. The **limit** command specifies that one syslog message is sent or a corresponding trap is generated with the MAC limit when the action is violated.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how the MAC limit for the bridge bar is set to 100 with an action of shutdown. After the configuration, the bridge stops all forwarding after 100 MAC addresses are learned. When this happens, a syslog message and an SNMP trap are created.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# limit
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-limit)# maximum 100
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-limit)# action shutdown
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-limit)# notification both
```

Related Commands

Command	Description
action (VPLS), on page 3	Configures bridge behavior when the number of learned MAC addresses reaches the MAC limit configured.
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.
maximum (VPLS), on page 41	Configures the specified action when the number of MAC addresses learned on a bridge is reached.
notification (VPLS), on page 53	Specifies the type of notification that is sent when the number of learned MAC addresses exceeds the configured limit.

mac (VPLS)

To enter L2VPN bridge group bridge domain MAC configuration mode, use the **mac** command in L2VPN bridge group bridge domain configuration mode. To disable all configurations added under the MAC configuration submodes, use the **no** form of this command.

mac
no mac

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **mac** command to enter L2VPN bridge group bridge domain MAC configuration mode.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to enter L2VPN bridge group bridge domain MAC configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)#
```

Related Commands

Command	Description
aging (VPLS), on page 5	Enters the MAC aging configuration submode to set the aging parameters such as time and type.
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.

Command	Description
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
learning disable (VPLS), on page 32	Overrides the MAC learning configuration of a parent bridge or sets the MAC learning configuration of a bridge.
limit (VPLS), on page 35	Sets the MAC address limit for action, maximum, and notification and enters L2VPN bridge group bridge domain MAC limit configuration mode.
static-address (VPLS), on page 124	Adds static entries to the MAC address for filtering.
withdraw (VPLS), on page 137	Disables MAC address withdrawal for a specified bridge domain

mac secure

To configure MAC security at a port and to set the default action that is to be taken when security is violated, use the **mac secure** command in the l2vpn bridge group bridge domain configuration mode. To disable MAC security, use the **no** form of this command.

mac secure {**action** [{ **none** | **shutdown** | **restrict**}] | **logging** | **disable**}
no mac secure {**action** [{ **none** | **shutdown**}] | **logging** | **disable**}

Syntax Description

action	(Optional) Indicates the action to be taken when security is violated.
none	Forwards the violating packet and allows the MAC address to be relearned.
shutdown	Shuts down the violating bridge port.
restrict	Drops the violating packet and disables the learn attempt. **Note** The **restrict** keyword in applicable to interfaces only.
logging	(Optional) Enables logging.
disable	(Optional) Disables mac security.

Command Default

If a MAC address has been learned on a secure port and, a relearn attempt from another port (secure or not) is made, the default action is restrict.

Command Modes

l2vpn bridge group bridge domain configuration

Command History

Release	Modification
Release 4.0.1	This command was introduced.

Usage Guidelines

This command has no keywords or arguments.

Task ID

Task ID	Operations
l2vpn	Read, write

Examples

This example shows how to enable mac security on bridge bar.

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)#l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)#bridge group b1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)#bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)#mac secure
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-secure)#
```

This example shows how to shut down a violating bridge port on bridge bar:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)#l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)#bridge group b1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)#bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)#mac secure
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-secure)#action shutdown
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-secure)#
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

maximum (VPLS)

To configure the specified action when the number of MAC addresses learned on a bridge is reached, use the **maximum** command in L2VPN bridge group bridge domain MAC limit configuration mode. To disable this feature, use the **no** form of this command.

maximum *value*
no maximum *value*

Syntax Description

value	Maximum number of learned MAC addresses. For Release 5.1.0, the range is from 5 to 512000. For Release 5.1.1, the range is from 5 to 128000.

Command Default

The default maximum value is 4000.

Command Modes

L2VPN bridge group bridge domain MAC limit configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The action can either be flood, no flood, or shutdown. Depending on the configuration, a syslog, an SNMP trap notification, or both are issued.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows when the number of MAC address learned on the bridge reaches 5000 and the bridge stops learning but continues flooding:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# limit
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-limit)# maximum 5000
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-limit)# action no-flood
```

Related Commands

Command	Description
action (VPLS), on page 3	Configures bridge behavior when the number of learned MAC addresses reaches the MAC limit configured.
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
limit (VPLS), on page 35	Sets the MAC address limit for action, maximum, and notification and enters L2VPN bridge group bridge domain MAC limit configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.
notification (VPLS), on page 53	Specifies the type of notification that is sent when the number of learned MAC addresses exceeds the configured limit.

monitor interface (port0)

To specify a port to detect a ring link failure, use the **monitor interface** command in g8032 port0 submode. To delete the port, use the **no** form of this command.

monitor interface *interface-name*
no monitor interface *interface-name*

Syntax Description

interface-name	Name of the monitored interface. The monitored interface must be a sub-interface of the main interface.

Command Default

Configured physical Ethernet or Ether Bundle interface

Command Modes

Ethernet ring g8032 port0 submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows the output from the monitor interface command:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 g1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# port0 interface TenGigE 0/4/0/0
RP/0/RSP0/CPU0:router(config-l2vpn-erp-port0)# monitor interface GigabitEthernet 0/0/1/0
RP/0/RSP0/CPU0:router(config-l2vpn-erp-port0)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

monitor interface (port1)

To specify the port to detect a ring link failure, use the **monitor interface** command in g8032 port1 submode. To delete the port, use the **no** form of this command.

monitor interface *interface-name*
no monitor interface *interface-name*

Syntax Description

interface-name	Name of the monitored interface. The monitored interface must be a sub-interface of the main interface.

Command Default

Configured physical Ethernet or ether bundle interface

Command Modes

Ethernet ring g8032 port1 submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows the output from the monitor interface command:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 g1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# port1 interface TenGigE 0/4/0/0
RP/0/RSP0/CPU0:router(config-l2vpn-erp-port1)# monitor interface GigabitEthernet 0/0/1/0
RP/0/RSP0/CPU0:router(config-l2vpn-erp-port1)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

mpls static label (VPLS)

To configure the MPLS static labels and the static labels for the access pseudowire configuration, use the **mpls static label** command in L2VPN bridge group bridge domain VFI pseudowire configuration mode. To assign the dynamic MPLS labels to either the virtual forwarding interface (VFI) pseudowire or the access pseudowire, use the **no** form of this command.

mpls static label local *value value* **remote** *value*
no mpls static label local *value value* **remote** *value*

Syntax Description

local *value*	Configures the local pseudowire label. **Note** Use the **show mpls label range** command to obtain the range for the local labels.
remote *value*	Configures the remote pseudowire label. **Note** The range of values for the remote labels depends on the label allocator of the remote router.

Command Default

By default, the router attempts to assign dynamic labels to the pseudowire.

Command Modes

L2VPN bridge group bridge domain Access/VFI pseudowire configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Ensure that both ends of the pseudowire have matching static labels.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to configure the VFI pseudowire 10.1.1.2 with pseudowire ID of 1000 to use MPLS label 800 and remote MPLS label 500:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi model
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# neighbor 10.1.1.2 pw-id 1000
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-pw)# mpls static label local 800 remote 500
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
neighbor (VPLS), on page 51	Adds an access pseudowire port to a bridge domain or a pseudowire to a bridge virtual forwarding interface (VFI).
pw-class , on page 61	Configures the pseudowire class template name to use for the pseudowire.
vfi (VPLS), on page 135	Configures virtual forwarding interface (VFI) parameters.

mtu (VPLS)

To adjust the maximum packet size or maximum transmission unit (MTU) size for the bridge domain, use the **mtu** command in L2VPN bridge group bridge domain configuration mode. To disable this feature, use the **no** form of this command.

mtu *bytes*
no mtu

Syntax Description

bytes	MTU size, in bytes. The range is from 46 to 65535.

Command Default

The default MTU value is 1500.

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Each interface has a default maximum packet size or MTU size. This number generally defaults to the largest size possible for that interface type. On serial interfaces, the MTU size varies, but cannot be set smaller than 64 bytes.

The MTU for the bridge domain includes only the payload of the packet. For example, a configured bridge MTU of 1500 allows tagged packets of 1518 bytes (6 bytes DA, 6 bytes SA, 2 bytes ethertype, or 4 bytes qtag).

Note Bridge wide MTU is not enforced on the data traffic.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example specifies an MTU of 1000 bytes:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mtu 1000
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
flooding disable, on page 21	Configures flooding for traffic at the bridge domain level or at the bridge port level.
l2vpn	Enters L2VPN configuration mode.

multicast p2mp

To enable point to multi-point pseudowire in a VFI and to enter L2VPN bridge group bridge domain VFI multicast P2MP configuration mode, use the **multicast p2mp** command in L2VPN bridge group bridge domain VFI configuration mode. To return to a VFI mode, use the **no** form of this command.

multicast p2mp [{**signaling-protocol** | **transport**}]
no multicast p2mp [{**signaling-protocol** | **transport**}]

Syntax Description

signaling-protocol	Specifies the signaling protocol selection
transport	Specifies the transport type selection

Command Default

None

Command Modes

L2VPN bridge group bridge domain VFI configuration

Command History

Release	Modification
Release 5.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

Example

This example shows how to configure a point to multi-point pseudowire in a VFI:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi v1
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# multicast p2mp
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-p2mp)#
```

Related Commands

Command	Description
transport rsvp-te, on page 131	Enables RSVP-TE as transport on a VFI.

Command	Description
vfi (VPLS), on page 135	Configures virtual forwarding interface (VFI) parameters.
bridge-domain (VPLS), on page 10	Establishes a bridge domain and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

neighbor (VPLS)

To add an access pseudowire port to a bridge domain or a pseudowire to a bridge virtual forwarding interface (VFI), use the **neighbor** command in the appropriate L2VPN bridge group bridge domain configuration submode. To remove the pseudowire either from the bridge or from the VFI, use the **no** form of this command.

neighbor *A.B.C.D* **pw-id** *value*
no neighbor *A.B.C.D* **pw-id** *value*

Syntax Description

A.B.C.D	IP address of the cross-connect peer.
pw-id *value*	Configures the pseudowire ID and ID value. Range is 1 to 4294967295.

Command Default

None

Command Modes

L2VPN bridge group bridge domain configuration

L2VPN bridge group bridge domain VFI configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **neighbor** command to enter L2VPN bridge group bridge domain VFI pseudowire configuration mode. Alternatively, use the **neighbor** command to enter L2VPN bridge group bridge domain access pseudowire configuration mode.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to configure an access pseudowire directly under a bridge domain in L2VPN bridge group bridge domain configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# neighbor 10.1.1.2 pw-id 1000
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-pw)#
```

The following example shows how to configure the parameters for any pseudowire in L2VPN bridge group bridge domain VFI configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi v1
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# neighbor 10.1.1.2 pw-id 1000
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-pw)#
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mpls static label (VPLS), on page 45	Configures the MPLS static labels and the static labels for the access pseudowire configuration.
pw-class , on page 61	Configures the pseudowire class template name to use for the pseudowire.
static-mac-address (VPLS), on page 126	Configures the static MAC address to associate a remote MAC address with a pseudowire or any other bridge interface.
vfi (VPLS), on page 135	Configures virtual forwarding interface (VFI) parameters.

notification (VPLS)

To specify the type of notification that is sent when the number of learned MAC addresses exceeds the configured limit, use the **notification** command in L2VPN bridge group bridge domain MAC limit configuration mode. To use the notification as only a syslog entry, use the **no** form of this command.

notification {**both** | **none** | **trap**}
no notification {**both** | **none** | **trap**}

Syntax Description

both	Sends syslog and trap notifications when the action is violated.
none	Specifies no notification.
trap	Sends trap notifications when the action is violated.

Command Default

By default, only a syslog message is sent when the number of learned MAC addresses reaches the maximum configured.

Command Modes

L2VPN bridge group bridge domain MAC limit configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

A syslog message and an SNMP trap is generated. Alternatively, an SNMP trap is generated. Finally, no notification is generated.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how both a syslog message and an SNMP trap are generated with the bridge bar and learns more MAC addresses than the configured limit:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# limit
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-limit)# notification both
```

Related Commands

Command	Description
action (VPLS), on page 3	Configures bridge behavior when the number of learned MAC addresses reaches the MAC limit configured.
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.
maximum (VPLS), on page 41	Configures the specified action when the number of MAC addresses learned on a bridge is reached.

open ring

To specify Ethernet ring g8032 as an open ring, use the **open-ring** command in Ethernet ring g8032 configuration submode. To delete, use the **no** form of this command.

open-ring
no open-ring

This command has no keywords or arguments.

Command Default

The default value is FALSE.

Command Modes

Ethernet ring g8032 configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

Example

This example shows the output from the **open-ring** command:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 g1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# open-ring
RP/0/RSP0/CPU0:router(config-l2vpn-erp)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

port0 interface

To enable G.8032 for a specified ring port, use the **port0 interface** command in g8032 configuration port0 submode. To disable, use the **no** form of this command.

port 0 interface *interface name*
no port 0 interface *interface name*

Syntax Description

interface name	Any physical Ethernet or Bundle Ethernet interface. A physical port of the local node connected to G.8032 ring.

Command Default

None

Command Modes

Ethernet ring g8032 configuration port0 submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

Example

This example shows the output from the port0 interface command:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 g1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# port0 interface Bundle-Ether 555
RP/0/RSP0/CPU0:router(config-l2vpn-erp-port0)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

port1

To enable G.8032 for a specified ring port, use the **port1** command in g8032 configuration port1 submode. To disable, use the **no** form of this command.

port1 {**interface** *interface name* | **none**}

Syntax Description

interface *interface name*	Specifies physical Ethernet or Bundle Ethernet interface. A physical port of the local node connected to G.8032 ring. Enables G.8032 for the specified physical port to form a closed ring.
none	Specifies local node endpoint of an open-ring.

Command Default

None

Command Modes

Ethernet ring g8032 configuration port1 submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows the output from the port1 command:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 g1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# port1 interface TenGigE 0/6/0/3
RP/0/RSP0/CPU0:router(config-l2vpn-erp-port1)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

port-down flush disable (VPLS)

To disable MAC flush when the bridge port is nonfunctional, use the **port-down flush disable** command in the L2VPN bridge group bridge domain MAC configuration mode. Use the **no** form of this command to enable the MAC flush when the bridge port is nonfunctional.

port-down flush disable
no port-down flush disable

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

L2VPN bridge group bridge domain MAC configuration

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The **port-down flush disable** command disables the MAC flush when the bridge port is nonfunctional.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to disable MAC flush when the bridge port is nonfunctional:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# port-down flush disable
```

Related Commands

Command	Description
action (VPLS), on page 3	Configures bridge behavior when the number of learned MAC addresses reaches the MAC limit configured.
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.

Command	Description
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.
maximum (VPLS), on page 41	Configures the specified action when the number of MAC addresses learned on a bridge is reached.
notification (VPLS), on page 53	Specifies the type of notification that is sent when the number of learned MAC addresses exceeds the configured limit.

profile

To specify an associated Ethernet ring G.8032 profile, use the **profile** command in the Ethernet ring G.8032 instance configuration submode.

profile *profile-name*

Syntax Description

profile-name	Ethernet ring G.8032 profile name.

Command Default

None

Command Modes

Ethernet ring G.8032 instance configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

Example

This example shows how to specify a G.8032 ring profile name:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 r1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# instance 1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# description test
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# profile p1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

pw-class

To configure the pseudowire class template name to use for the pseudowire, use the **pw-class** command in L2VPN bridge group bridge domain Access pseudowire configuration mode. To delete the pseudowire class, use the **no** form of this command.

pw-class *class-name*
no pw-class *class-name*

Syntax Description

class-name	Pseudowire class name.

Command Default

None

Command Modes

L2VPN bridge group bridge domain Access pseudowire configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to attach the pseudowire class to the pseudowire:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi v1
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# neighbor 10.1.1.2 pw-id 1000
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-pw)# pw-class canada
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.

Command	Description
l2vpn	Enters L2VPN configuration mode.
mpls static label (VPLS), on page 45	Configures the MPLS static labels and the static labels for the access pseudowire configuration.
neighbor (VPLS), on page 51	Adds an access pseudowire port to a bridge domain or a pseudowire to a bridge virtual forwarding interface (VFI).
vfi (VPLS), on page 135	Configures virtual forwarding interface (VFI) parameters.

pw-oam

To enable the Operations, Administration, and Maintenance (OAM) feature on a pseudowire for defect notifications, use the **pw-oam** command in L2VPN configuration submode. To disable the feature, use the **no** form of this command.

pw-oam refresh transmit *value*
no pw-oam refresh transmit *value*

Syntax Description

refresh transmit	Refresh interval when outbound pseudowire status messages are transmitted.
value	Interval value in seconds. The range is from 1 to 4095. The default value is 30.

Command Default

None

Command Modes

L2VPN configuration submode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

Example

This example shows how to enable the oam feature on a pseudowire:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# pw-oam refresh transmit
RP/0/RSP0/CPU0:router(config-l2vpn)# pw-oam refresh transmit 456
```

Related Commands

Command	Description
pw-class (L2VPN)	Enters pseudowire class submode to define a pseudowire class template.

route-target

To specify a route target for the VFI, PBB EVPN or EVPN bridge domain, use the **route-target** command in the BGP autodiscovery mode or in the EVPN EVI BGP configuration mode. To return to the default value, use the **no** form of this command.

route-target {*as-number:nn* *ip-address:nn* | [{**export** | **import** }] | **none**}
no route-target {*as-number:nn* *ip-address:nn* | [{**export** | **import** }] | **none**}

Syntax Description

as-number:nn	Autonomous system (AS) number of the route distinguisher. • as-number—16-bit AS number Range for 2-byte numbers is 1 to 65535. Range for 4-byte numbers is 1.0 to 65535.65535. In the EVPN EVI BGP configuration, range for the 4-byte AS number is 65536-4294967295. • nn—32-bit number
ip-address:nn	IP address of the route distinguisher. • ip-address—32-bit IP address • nn—16-bit number
export	Specifies export route target.
import	Specifies import route target.
none	Withholds BGP RTs. **Note** This keyword appears only in the EVPN EVI BGP configuration.

Command Default

None.

Command Modes

BGP autodiscovery configuration

EVPN EVI BGP configuration

Command History

Release	Modification
Release 4.0.0	This command was introduced.
Release 4.3.2	Support for this command in the EVPN EVI BGP configuration was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The default value is auto-generated based on VPN-ID.

None is used in the EVPN EVI BGP configuration mode to remove the auto-generated route targets. It can only be applied after all other route targets of that type (import or export) have been removed.

The **Import** and **Export** keywords in the EVPN EVI BGP configuration are optional. If neither is used, both are supported by default.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to configure a bridge domain:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group EGroup
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain eastdomain
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi eastvfi
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# autodiscovery bgp
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-ad)#route-target 100:20
```

The following example shows how to set the BGP route target for the PBB EVPN or EVPN bridge domain:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# evpn
RP/0/RSP0/CPU0:router(config-evpn)# evi 2
RP/0/RSP0/CPU0:router(config-evpn-evi)# bgp
RP/0/RSP0/CPU0:router(config-evpn-evi-bgp)# route-target 20:30
RP/0/RSP0/CPU0:router(config-evpn-evi-bgp)#
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
evpn	Enters EVPN configuration mode.
evi	Enters the EVPN EVI configuration mode to configure optional BGP settings for a bridge domain or EVI.
bgp (EVPN)	Enables BGP in the PBB EVPN configuration.

routed

To specify the bridge domain L3 interface, use the **routed** command in L2VPN bridge-group bridge-domain configuration submode. To revert, use the **no** form of the command.

routed interface BVI *BVI interface number*
no routed interface BVI *BVI interface number*

Syntax Description

interface	Bridge domain L3 interface.
BVI	Bridge-Group Virtual Interface.
BVI interface number	BVI interface number. The range is 1-65535.

Command Default

None

Command Modes

L2VPN bridge-group bridge-domain configuration submode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

The example shows how to specify the L3 bridge domain interface:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group bg1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bd1
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# routed interface BVI 100
```

Related Commands

Command	Description
dynamic-arp-inspection	Validates Address Resolution Protocol (ARP) packets in a network.
ip-source-guard	Enables source IP address filtering on a layer 2 port.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.

Command	Description
mtu (VPLS), on page 47	Adjusts the maximum packet size or maximum transmission unit (MTU) size for the bridge domain.
neighbor (VPLS), on page 51	Adds an access pseudowire port to a bridge domain or a pseudowire to a bridge virtual forwarding interface (VFI).
pbb	Configures the provider backbone bridge core or edge.
shutdown (Bridge Domain), on page 117	Shuts down a bridge domain to bring the bridge and all attachment circuits and pseudowires under it to admin down state.
vfi (VPLS), on page 135	Configures virtual forwarding interface (VFI) parameters.

rpl

To specify one ring port on local node being RPL owner, neighbor or next-neighbor, use the **rpl** command in the Ethernet ring G.8032 instance configuration submode. To disable the port as RPL owner, neighbor or next-neighbor, use the **no** form of this command.

rpl {**port0** | **port1**} {**owner** | **neighbor** | **next-neighbor**}
no rpl {**port0** | **port1**} {**owner** | **neighbor** | **next-neighbor**}

Syntax Description

port0	Assigns port0 as RPL owner, neighbor or next-neighbor.
port1	Assigns port1 as RPL owner, neighbor or next-neighbor.
owner	Assigns port0 or port1 as RPL owner.
neighbor	Assigns port0 or port1 as neighbor.
next-neighbor	Assigns port0 or port1 as next neighbor.

Command Default

None

Command Modes

Ethernet ring G.8032 instance configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows how to assign port0 as neighbor:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# ethernet ring g8032 r1
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# instance 1
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# description test
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# profile p1
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)# rpl port0 neighbor
RP/0/RSP0/CPU0:router(config-l2vpn-erp-instance)#
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

show ethernet ring g8032

To display Ethernet ring G.8032 Protection data, use the **show ethernet ring g8032** command in the EXEC mode.

show ethernet ring g.8032 {**brief** *ring-name* | **profile** *ring-profile-name* | **statistics** | **status** {*ring-name* | **location** *location*} | **summary**}

Syntax Description

brief	Displays brief information on the G.8032 ethernet ring.
profile	Displays information about the G.8032 ethernet ring profile.
statistics	Displays the statistics of the G.8032 ethernet ring.
status	Displays the status of the G.8032 ethernet ring.
summary	Displays a summary of the G.8032 ethernet ring.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
vlan	read
interface	read
ethernet-services	read

This example shows the output of the **show ethernet ring g8032** command:

```
RP/0/RSP0/CPU0:router# show ethernet ring g8032 status


Ethernet ring Subring instance 1 is RPL Owner node in Protection state
  Port0: Bundle-Ether100 (Monitor: Bundle-Ether100)
         APS-Channel: Bundle-Ether100.1
         Status: RPL, faulty, blocked
         Remote R-APS NodeId: 0000.0000.0000, BPR: 0
  Port1: GigabitEthernet0/0/0/38 (Monitor: GigabitEthernet0/0/0/38)
         APS-Channel: GigabitEthernet0/0/0/38.1
```

```
        Status: NonRPL
        Remote R-APS NodeId: 0000.0000.0000, BPR: 0
  APS Level: 7
  Open APS ring topology
  Profile: timer-wtr (not defined)
    WTR interval: 5 minutes
    Guard interval: 500 milliseconds
    Hold-off interval: 0 seconds
    Revertive mode

Ethernet ring Subring-2 instance 1 is RPL Owner node in Idle state
  Port0: GigabitEthernet0/0/0/33 (Monitor: GigabitEthernet0/0/0/33)
        APS-Channel: GigabitEthernet0/0/0/33.1
        Status: RPL, blocked
        Remote R-APS NodeId: 0000.0000.0000, BPR: 0
  Port1: GigabitEthernet0/0/0/3 (Monitor: GigabitEthernet0/0/0/3)
        APS-Channel: GigabitEthernet0/0/0/3.1
        Status: NonRPL
        Remote R-APS NodeId: 0000.0000.0000, BPR: 0
  APS Level: 7
  Open APS ring topology
  Profile: timer-wtr (not defined)
    WTR interval: 5 minutes
    Guard interval: 500 milliseconds
    Hold-off interval: 0 seconds
    Revertive mode
RP/0/RSP0/CPU0:router#


RP/0/RSP0/CPU0:router# show ethernet ring g8032 brief
Wed Mar 16 07:14:28.719 UTC

  R: Interface is the RPL-link
  F: Interface is faulty
  B: Interface is blocked
 FS: Local forced switch
 MS: Local manual switch

RingName                          Inst NodeType  NodeState    Port0    Port1
-------------------------------------------------------------------------------
Subring                              1 Owner     Protection   R,F,B
Subring-2                            1 Owner     Idle         R,B
RP/0/RSP0/CPU0:F4-2-A9K#


RP/0/RSP0/CPU0:router# show ethernet ring g8032 summary
Wed Mar 16 07:14:52.419 UTC

Chassis Node Id 0026.982b.c6e7

States
------------------------------
  Init              0
  Idle              1
  Protection        1
  Manual Switch     0
  Forced Switch     0
  Pending           0
  ---------------------------
  Total             2
RP/0/RSP0/CPU0:router#


RP/0/RSP0/CPU0:router# show ethernet ring g8032 statistics Subring instance 1
```

```
Statistics for Ethernet ring Subring instance 1
Local SF detected:
  Port0: 1
  Port1: 0

R-APS   Port0(Tx/Rx)                    Port1(Tx/Rx)
        Last Tx time                    Last Tx time
        Last Rx time                    Last Rx time
--------------------------------------------------------------------------------
NR    : 3/0                             0/0
        Tue Mar 15 04:41:00.964 UTC     Never
        Never                           Never
NR,RB : 0/0                             0/0
        Never                           Never
        Never                           Never
SF    : 19129/0                         19129/0
        Wed Mar 16 07:15:28.995 UTC     Wed Mar 16 07:15:28.774 UTC
        Never                           Never
MS    : 0/0                             0/0
        Never                           Never
        Never                           Never
FS    : 0/0                             0/0
        Never                           Never
        Never                           Never
EVENT : 0/0                             0/0
        Never                           Never
        Never                           Never

State           Last entry into state time
--------------------------------------------------------------------------------
Init          : Tue Mar 15 04:41:00.933 UTC
Idle          : Never
Protection    : Tue Mar 15 04:41:00.973 UTC
Manual Switch : Never
Forced Switch : Never
Pending       : Tue Mar 15 04:41:00.962 UTC
RP/0/RSP0/CPU0:router#


RP/0/RSP0/CPU0:router# show ethernet ring g8032 profile timer-wtr
Wed Mar 16 07:20:04.996 UTC

Ethernet ring profile name: timer-wtr
    WTR interval: 1 minutes
    Guard interval: 500 milliseconds
    Hold-off interval: 0 seconds
    Revertive mode
RP/0/RSP0/CPU0:router#
```

Related Commands

Command	Description
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

show l2vpn bridge-domain (VPLS)

To display information for the bridge ports such as attachment circuits and pseudowires for the specific bridge domains, use the **show l2vpn bridge-domain** command in EXEC mode.

show l2vpn bridge-domain [{**autodiscovery** | **bd-name** *bridge-domain-name* | **brief** | **detail** | **group** *bridge-domain-group-name* | **hardware** | **interface** *type interface-path-id* | **pw-id** *value* }] **neighbor IP-address** [{**pw-id** *value* | **pbb** | **summary**}]

Syntax Description

autodiscovery	(Optional) Displays BGP autodiscovery information.
bd-name *bridge-domain-name*	(Optional) Displays filter information on the *bridge-domain-name*. The *bridge-domain-name* argument is used to name a bridge domain.
brief	(Optional) Displays brief information about the bridges.
detail	(Optional) Displays detailed information about the bridges. Also, displays the output for the Layer 2 VPN (L2VPN) to indicate whether or not the MAC withdrawal feature is enabled and the number of MAC withdrawal messages that are sent or received from the pseudowire.
group *bridge-domain-group-name*	(Optional) Displays filter information on the bridge-domain group name. The *bridge-domain-group-name* argument is used to name the bridge domain group.
hardware	(Optional) Displays hardware information.
interface *type interface-path-id*	(Optional) Displays the filter information for the interface on the bridge domain. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
neighbor *ip-address*	(Optional) Displays the bridge domains that contain the pseudowires to match the filter for the neighbor. The *ip-address* argument is used to specify IP address of the neighbor.
pw-id *value*	(Optional) Displays the filter for the pseudowire ID. The range is from 1 to 4294967295.
pbb	(Optional) Displays provider backbone bridge information.
summary	(Optional) Displays the summary information for the bridge domain.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 5.1.2	This command was modified to enable filtering the command output for specific pseudowire with just the pseudowire ID.
Release 5.3.1	The show command output was enhanced to display VXLAN anycast gateway parameters.
Release 5.3.2	The show command output is enhanced to display the MAC move counter information.
Release 6.1.2	The show command output is enhanced to display the Service Path Preference and Route-Policy configuration.

Usage Guidelines

To use commands of this module, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using any command, contact your AAA administrator for assistance.

Use the **interface** keyword to display only the bridge domain that contains the specified interface as an attachment circuit. In the sample output, only the attachment circuit matches the filter that is displayed. No pseudowires are displayed.

Note For Cisco IOS XR software Release 5.1.2 and above, you can filter the command output for a specific pseudowire with just the pseudowire ID. However, in case of configurations with BGP Auto-discovery with BGP or LDP signaling (in VPLS), you can specify the pseudowire only with the combination of the neighbor filter and the pseudowire ID.

Task ID

Task ID	Operations
l2vpn	read

Examples

This is the sample output for **show l2vpn bridge-domain** command with VxLAN parameters configured:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain bd-name bg1_bd1 detail
Legend: pp = Partially Programmed.
Bridge group: bg1, bridge-domain: bg1_bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  Coupled state: disabled
  MAC learning: enabled
  MAC withdraw: enabled
    MAC withdraw for Access PW: enabled
```

```
  MAC withdraw sent on: bridge port up
  MAC withdraw relaying (access to access): disabled
Flooding:
  Broadcast & Multicast: enabled
  Unknown unicast: enabled
MAC aging time: 300 s, Type: inactivity
MAC limit: 4000, Action: none, Notification: syslog
MAC limit reached: no
MAC port down flush: enabled
MAC Secure: disabled, Logging: disabled
Split Horizon Group: none
Dynamic ARP Inspection: disabled, Logging: disabled
IP Source Guard: disabled, Logging: disabled
DHCPv4 snooping: disabled
IGMP Snooping: enabled
IGMP Snooping profile: none
MLD Snooping profile: none
Storm Control: disabled
Bridge MTU: 1500
MIB cvplsConfigIndex: 1
Filter MAC addresses:
P2MP PW: disabled
Create time: 30/03/2015 22:25:38 (00:26:08 ago)
No status change since creation
ACs: 2 (2 up), VFIs: 1, PWs: 0 (0 up), PBBs: 0 (0 up)
List of ACs:
  AC: BVI1, state is up
    Type Routed-Interface
    MTU 1514; XC ID 0x80000001; interworking none
    BVI MAC address:
      1000.4444.0001
  AC: GigabitEthernet0/8/0/0.1, state is up
    Type VLAN; Num Ranges: 1
    Outer Tag: 1
    VLAN ranges: [1001, 1001]
    MTU 1508; XC ID 0x508000a; interworking none
    MAC learning: enabled
    Flooding:
      Broadcast & Multicast: enabled
      Unknown unicast: enabled
    MAC aging time: 300 s, Type: inactivity
    MAC limit: 4000, Action: none, Notification: syslog
    MAC limit reached: no
    MAC port down flush: enabled
    MAC Secure: disabled, Logging: disabled
    Split Horizon Group: none
    Dynamic ARP Inspection: disabled, Logging: disabled
    IP Source Guard: disabled, Logging: disabled
    DHCPv4 snooping: disabled
    IGMP Snooping: enabled
    IGMP Snooping profile: none
    MLD Snooping profile: none
    Storm Control: bridge-domain policer
    Static MAC addresses:

    Storm control drop counters:
      packets: broadcast 0, multicast 0, unknown unicast 0
      bytes: broadcast 0, multicast 0, unknown unicast 0
    Dynamic ARP inspection drop counters:
      packets: 0, bytes: 0
    IP source guard drop counters:
      packets: 0, bytes: 0
List of VNIs:
  VNI 1, state is up
```

```
      XC ID 0x80000014
      Encap type VXLAN
      Overlay nve100, Source 1.1.1.1, Multicast Group 225.1.1.1, UDP Port 4789
      Anycast VTEP 100.1.1.1, Anycast Multicast Group 224.10.10.1
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: no
      MAC port down flush: enabled
      MAC Secure: disabled, Logging: disabled
      Split Horizon Group: none
      Dynamic ARP Inspection: disabled, Logging: disabled
      IP Source Guard: disabled, Logging: disabled
      DHCPv4 snooping: disabled
      IGMP Snooping: enabled
      IGMP Snooping profile: none
      MLD Snooping profile: none
      Storm Control: bridge-domain policer

  List of Access PWs:
  List of VFIs:
    VFI bg1_bd1_vfi (up)
      VFI Statistics:
        drops: illegal VLAN 0, illegal length 0
```

The following sample output shows information for the bridge ports such as attachment circuits and pseudowires for the specific bridge domains:

```
RP/0/RSP0/CPU0:router# #show l2vpn bridge-domain
Tue Feb 23 20:21:56.758 PST
Bridge group: 189, bridge-domain: 189, id: 0, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 2 (2 up), VFIs: 0, PWs: 0 (0 up), PBBs: 0 (0 up)
  List of ACs:
    Gi0/1/0/3.189, state: up, Static MAC addresses: 0
    Gi0/1/0/7.189, state: up, Static MAC addresses: 0
  List of Access PWs:
  List of VFIs:
Bridge group: 190, bridge-domain: 190, id: 1, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 0 (0 up), VFIs: 1, PWs: 3 (3 up), PBBs: 0 (0 up)
  List of ACs:
  List of Access PWs:
  List of VFIs:
    VFI 190
      Neighbor 10.19.19.19 pw-id 190, state: up, Static MAC addresses: 0
Bridge group: 210, bridge-domain: 210, id: 2, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up), PBBs: 0 (0 up)
  List of ACs:
    Gi0/1/0/7.210, state: up, Static MAC addresses: 0
  List of Access PWs:
  List of VFIs:
    VFI 210
      Neighbor 10.19.19.19 pw-id 210, state: up, Static MAC addresses: 0
Bridge group: 211, bridge-domain: 211, id: 3, state: up, ShgId: 0, MSTi: 0
```

```
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up), PBBs: 0 (0 up)
  List of ACs:
    Gi0/1/0/7.211, state: up, Static MAC addresses: 0
  List of Access PWs:
  List of VFIs:
    VFI 211
      Neighbor 10.19.19.19 pw-id 211, state: up, Static MAC addresses: 0
Bridge group: 215, bridge-domain: 215, id: 4, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 2 (2 up), VFIs: 1, PWs: 1 (1 up), PBBs: 0 (0 up)
  List of ACs:
    Gi0/1/0/3.215, state: up, Static MAC addresses: 0
    Gi0/1/0/7.215, state: up, Static MAC addresses: 0
  List of Access PWs:
  List of VFIs:
    VFI 215
      Neighbor 10.19.19.19 pw-id 215, state: up, Static MAC addresses: 0
Bridge group: 2130, bridge-domain: 2130, id: 5, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up), PBBs: 0 (0 up)
  List of ACs:
    Gi0/1/0/7.2130, state: up, Static MAC addresses: 0
  List of Access PWs:
  List of VFIs:
    VFI 2130
      Neighbor 10.19.19.19 pw-id 2130, state: up, Static MAC addresses: 0
```

This table describes the significant fields shown in the display.

Table 1: show l2vpn bridge-domain Command Field Descriptions

Field	Description
Bridge group	Name of bridge domain group is displayed.
bridge-domain	Name of bridge domain is displayed.
id	ID assigned to this bridge domain is displayed.
state	Current state of the bridge domain is displayed.
ShgId	ID for the default Split Horizon Group assigned to all attachment circuits and access pseudowires that are part of this bridge domain is displayed. **Note** Members of the special Split Horizon Group ID 0 forwards to other members of the same SPG.

The following example shows sample output for a bridge named bd1:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain bd-name bd1

Bridge group: g1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
```

```
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up)
  List of ACs:
    Gi0/1/0/0, state: up, Static MAC addresses: 2, MSTi: 0 (unprotected)
  List of Access PWs:
  List of VFIs:
    VFI 1
      Neighbor 10.1.1.1 pw-id 1, state: up, Static MAC addresses: 0
```

The following sample output shows brief information about the bridges:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain brief
Bridge Group/Bridge-Domain Name  ID    State      Num ACs/up     Num PWs/up
-------------------------------- ----- ---------- -------------- ------------
bg1/bd1                          0     up         1/1            0/0
bg1/bd2                          1     up         0/0            0/0
bg1/bd3                          2     up         0/0            0/0
```

This table describes the significant fields shown in the display.

Table 2: show l2vpn bridge-domain brief Command Field Descriptions

Field	Description
Bridge Group/Bridge-Domain Name	Bridge domain group name followed by the bridge domain name are displayed.
ID	ID assigned to this bridge domain is displayed.
State	Current state of the bridge domain is displayed.
Num ACs/up	Total number of attachment circuits that are up in this bridge domain is displayed.
Num PWs/up	Total number of pseudowires that are up in this bridge domain is displayed. The count includes both VFI pseudowires and access pseudowires.

The following sample output shows detailed information for IOS-XR releases 5.3.1 and earlier releases.

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain detail

Bridge group: 210, bridge-domain: 210, id: 2, state: up, ShgId: 0, MSTi: 0
  MAC learning: enabled
  MAC withdraw: disabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4000, Action: none, Notification: syslog
  MAC limit reached: no
  Security: disabled
  Split Horizon Group: none
  DHCPv4 snooping: disabled
  IGMP Snooping profile: none
  Bridge MTU: 9000
  Filter MAC addresses:
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up)
  List of ACs:
    AC: GigabitEthernet0/1/0/7.210, state is up
      Type VLAN; Num Ranges: 1
```

```
    vlan ranges: [100, 100]
     MTU 9008; XC ID 0x440007; interworking none; MSTi 0 (unprotected)
     MAC learning: enabled
     Flooding:
       Broadcast & Multicast: enabled
       Unknown unicast: enabled
     MAC aging time: 300 s, Type: inactivity
     MAC limit: 4000, Action: none, Notification: syslog
     MAC limit reached: no
     Security: disabled
     Split Horizon Group: enabled
     DHCPv4 snooping: disabled
     IGMP Snooping profile: none
     Storm Control: disabled
     Static MAC addresses:
     Statistics:
       packet totals: receive 31645, send 6
       byte totals: receive 2405020, send 456
       Storm control drop counters:
         packet totals: broadcast 0, multicast 0, unknown unicast 0
         byte totals: broadcast 0, multicast 0, unknown unicast 0
  List of Access PWs:
  List of VFIs:
    VFI 210
      PW: neighbor 10.19.19.19, PW ID 210, state is up ( established )
        PW class not set, XC ID 0xfffc0004
        Encapsulation MPLS, protocol LDP
        PW type Ethernet, control word disabled, interworking none
        PW backup disable delay 0 sec
        Sequencing not set
                MPLS         Local                          Remote
        ------------ ------------------------------ -------------------------
        Label        16001                          16
        Group ID     0x2                            0x0
        Interface    210                            unknown
        MTU          9000                           9000
        Control word disabled                       disabled
        PW type      Ethernet                       Ethernet
        VCCV CV type 0x2                            0x2
                       (LSP ping verification)        (LSP ping verification)
        VCCV CC type 0x6                           0x2
                     (router alert label)           (router alert label)         s
                     (TTL expiry)
        ------------ ------------------------------ -------------------------
        Create time: 13/04/1900 14:36:13 (17:46:22 ago)
        Last time status changed: 13/04/1900 15:37:03 (16:45:32 ago)
        MAC withdraw message: send 0 receive 0
        Static MAC addresses:
        Statistics:
          packet totals: receive 6, send 31655
          byte totals: receive 432, send 2279160
      IGMP Snooping profile: none
      VFI Statistics:
        drops: illegal VLAN 0, illegal length 0
```

The following sample output shows detailed information for IOS-XR release 5.3.2 release.

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain detail
Bridge group: pbb, bridge-domain: pbb_core2, id: 11, state: up, ShgId: 0, MSTi: 0
  Coupled state: disabled
  Type: pbb-core
  Number of associated pbb-edge BDs: 1
  EVPN:
    EVI: 2
```

```
  Route Distinguisher: (auto) 20.20.20.20:2
  Imposition Statistics:
    Packet Count: 0
    Byte Count  : 0
  Disposition Statistics:
    Packet Count: 599123
    Byte Count  : 166433410
  AS Number: 200
MAC learning: enabled
MAC withdraw: enabled
  MAC withdraw for Access PW: enabled
  MAC withdraw sent on: bridge port up
  MAC withdraw relaying (access to access): disabled
Flooding:
  Broadcast & Multicast: enabled
  Unknown unicast: enabled
MAC aging time: 300 s, Type: inactivity
MAC limit: 4000, Action: none, Notification: syslog
MAC limit reached: no
MAC port down flush: enabled
MAC Secure: disabled, Logging: disabled
Split Horizon Group: none
Dynamic ARP Inspection: disabled, Logging: disabled
IP Source Guard: disabled, Logging: disabled
DHCPv4 snooping: disabled
IGMP Snooping: enabled
IGMP Snooping profile: none
MLD Snooping profile: none
Storm Control: disabled
Bridge MTU: 1500
MIB cvplsConfigIndex: 12
Filter MAC addresses:
P2MP PW: disabled
Create time: 03/08/2015 04:09:55 (2w6d ago)
No status change since creation
ACs: 0 (0 up), VFIs: 0, PWs: 0 (0 up), PBBs: 1 (1 up)
List of PBBs:
  PBB Core, state is up
    Vlan-id: 2; XC ID 0x80000011
    MAC learning: enabled
    Flooding:
      Broadcast & Multicast: enabled
      Unknown unicast: enabled
    MAC aging time: 300 s, Type: inactivity
    MAC limit: 4000, Action: none, Notification: syslog
    MAC limit reached: no
    MAC port down flush: enabled
    Split Horizon Group: none
    DHCPv4 snooping: disabled
    IGMP Snooping: enabled
    IGMP Snooping profile: none
    MLD Snooping profile: none
    MMRP Flood Optimization: disabled
    Storm Control: bridge-domain policer
List of EVPNs:
  EVPN, state: up
    evi: 2
    XC ID 0x80001f51
List of ACs:
List of Access PWs:
List of VFIs:
```

The following sample output shows detailed information including P2MP enabled, P-Tree-ID and LSM ID with 1 VFI PW in a bridge domain for IOS-XR 5.3.1 and earlier releases:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain detail

Bridge group: bg1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  MAC learning: enabled
  MAC withdraw: enabled
    MAC withdraw for Access PW: enabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4294967295, Action: none, Notification: syslog
  MAC limit reached: no
  MAC port down flush: enabled
  MAC Secure: disabled, Logging: disabled
  Split Horizon Group: none
  Dynamic ARP Inspection: disabled, Logging: disabled
  IP Source Guard: disabled, Logging: disabled
  DHCPv4 snooping: disabled
  IGMP Snooping profile: none
  Bridge MTU: 1500
  MIB cvplsConfigIndex: 1
  Filter MAC addresses:
  Create time: 27/04/2011 10:00:47 (00:14:31 ago)
  No status change since creation
  ACs: 0 (0 up), VFIs: 1, PWs: 1 (1 up), PBBs: 0 (0 up)
  List of ACs:
  List of Access PWs:
  List of VFIs:
    VFI 1
      P2MP:
        RSVP-TE transport, BGP signaling, PTree ID 14
        LSM-ID: 0xdeadbeef
      PW: neighbor 110.110.110.110, PW ID 1234, state is up (established)
        PW class not set, XC ID 0xfffc0001
        Encapsulation MPLS, protocol LDP
        Source address 100.100.100.100
        PW type Ethernet, control word disabled, interworking none
        PW backup disable delay 0 sec
        Sequencing not set

        PW Status TLV in use
          MPLS         Local                          Remote

          Label        16000                          16000
          Group ID     0x0                            0x0
          Interface    1                              1
          MTU          1500                           1500
          Control word disabled                       disabled
          PW type      Ethernet                       Ethernet
          VCCV CV type 0x2                            0x2
                       (LSP ping verification)        (LSP ping verification)
          VCCV CC type 0x6                            0x6
                       (router alert label)           (router alert label)
                       (TTL expiry)                   (TTL expiry)

        Incoming Status (PW Status TLV):
          Status code: 0x0 (Up) in Notification message
        Outgoing Status (PW Status TLV):
          Status code: 0x0 (Up) in Notification message
        MIB cpwVcIndex: 4294705153
        Create time: 27/04/2011 10:14:45 (00:00:34 ago)
        Last time status changed: 27/04/2011 10:15:16 (00:00:02 ago)
        MAC withdraw message: send 0 receive 0
```

```
    P2MP-PW:
      FEC            Local                          Remote

      Label          NULL (inclusive tree)          NULL (inclusive tree)
      P2MP ID        1                              1
      Flags          0x00                           0x00
      PTree Type     RSVP-TE                        RSVP-TE
      Tunnel ID      1000                           1000
      Ext. Tunnel ID 192.168.0.1                    192.168.0.2

      P2MP forwarding: enabled
    Static MAC addresses:
    Statistics:
      packets: received 0, sent 0
      bytes: received 0, sent 0
  DHCPv4 snooping: disabled
  IGMP Snooping profile: none
  VPN-ID: 1
  VFI Statistics:
    drops: illegal VLAN 0, illegal length 0
```

The following sample output shows detailed information including P2MP enabled, P-Tree-ID and LSM ID with 1 VFI PW in a bridge domain for IOS-XR 5.3.2 release:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain detail

Bridge group: bg1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  MAC learning: enabled
  MAC withdraw: enabled
    MAC withdraw for Access PW: enabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4294967295, Action: none, Notification: syslog
  MAC limit reached: no
  MAC port down flush: enabled
  MAC Secure: disabled, Logging: disabled
  Split Horizon Group: none
  Dynamic ARP Inspection: disabled, Logging: disabled
  IP Source Guard: disabled, Logging: disabled
  DHCPv4 snooping: disabled
  IGMP Snooping profile: none
  Bridge MTU: 1500
  MIB cvplsConfigIndex: 1
  Filter MAC addresses:
  Create time: 27/04/2011 10:00:47 (00:14:31 ago)
  No status change since creation
  ACs: 0 (0 up), VFIs: 1, PWs: 1 (1 up), PBBs: 0 (0 up)
  List of ACs:
  List of Access PWs:
  List of VFIs:
    VFI 1
      P2MP:
        RSVP-TE transport, BGP signaling, PTree ID 14
        LSM-ID: 0xdeadbeef
      PW: neighbor 110.110.110.110, PW ID 1234, state is up (established)
        PW class not set, XC ID 0xfffc0001
        Encapsulation MPLS, protocol LDP
        Source address 100.100.100.100
        PW type Ethernet, control word disabled, interworking none
        PW backup disable delay 0 sec
```

```
  Sequencing not set

  PW Status TLV in use
    MPLS         Local                          Remote

    Label        16000                          16000
    Group ID     0x0                            0x0
    Interface    1                              1
    MTU          1500                           1500
    Control word disabled                       disabled
    PW type      Ethernet                       Ethernet
    VCCV CV type 0x2                            0x2
                 (LSP ping verification)        (LSP ping verification)
    VCCV CC type 0x6                            0x6
                 (router alert label)           (router alert label)
                 (TTL expiry)                   (TTL expiry)

  Incoming Status (PW Status TLV):
    Status code: 0x0 (Up) in Notification message
  Outgoing Status (PW Status TLV):
    Status code: 0x0 (Up) in Notification message
  MIB cpwVcIndex: 4294705153
  Create time: 27/04/2011 10:14:45 (00:00:34 ago)
  Last time status changed: 27/04/2011 10:15:16 (00:00:02 ago)
  MAC withdraw message: send 0 receive 0
  P2MP-PW:
    FEC            Local                         Remote

    Label          NULL (inclusive tree)         NULL (inclusive tree)
    P2MP ID        1                             1
    Flags          0x00                          0x00
    PTree Type     RSVP-TE                       RSVP-TE
    Tunnel ID      1000                          1000
    Ext. Tunnel ID 192.168.0.1                   192.168.0.2

    P2MP forwarding: enabled
  Static MAC addresses:
 Statistics:
  packets: received 1000 (unicast 1000), sent 0
  bytes: received 128000 (unicast 128000), sent 0
  MAC move: 10
DHCPv4 snooping: disabled
IGMP Snooping profile: none
VPN-ID: 1
VFI Statistics:
  drops: illegal VLAN 0, illegal length 0
```

The following sample output shows that when a bridge operates in VPLS mode, the irrelevant information for MAC learning is suppressed:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain detail
Bridge group: g1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  MAC learning: enabled
  MAC withdraw: disabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4000, Action: none, Notification: syslog
  MAC limit reached: yes
  Security: disabled
  DHCPv4 snooping: disabled
```

```
  MTU: 1500
  Filter MAC addresses:
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up)
  List of ACs:
    AC: GigabitEthernet0/1/0/0, state is up
      Type Ethernet
      MTU 1500; XC ID 0x2000001; interworking none; MSTi 0
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Security: disabled
      DHCPv4 snooping: disabled
      Static MAC addresses:
        0000.0000.0000
        0001.0002.0003

  List of Access PWs:
  List of VFIs:
    VFI 1
      PW: neighbor 1.1.1.1, PW ID 1, state is up ( established )
        PW class mpls, XC ID 0xff000001
        Encapsulation MPLS, protocol LDP
        PW type Ethernet, control word disabled, interworking none
        PW backup disable delay 0 sec
        Sequencing not set
                MPLS         Local                          Remote
          ------------ ------------------------------ ----------
          Label        16003                          16003
          Group ID     0x0                            0x0
          Interface    1                              1
          MTU          1500                           1500
          Control word disabled                       disabled
          PW type      Ethernet                       Ethernet
          VCCV CV type 0x2                            0x2
                       (LSP ping verification)        (LSP ping verification)
          VCCV CC type 0x2                            0x2
                       (router alert label)           (router alert label)
          ------------ ------------------------------ ----------
        Create time: 12/03/2008 14:03:00 (17:17:30 ago)
        Last time status changed: 13/03/2008 05:57:58 (01:22:31 ago)
        MAC withdraw message: send 0 receive 0
        Static MAC addresses:

      VFI Statistics:
        drops: illegal VLAN 0, illegal length 0

Bridge group: g2, bridge-domain: pbb-bd1, id: 1, state: up, ShgId: 0, MSTi: 0
  Type:  pbb-edge, I-SID: 1234
  Core-bridge: pbb-bd2
  MAC learning: enabled
  MAC withdraw: disabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4000, Action: none, Notification: syslog
  MAC limit reached: yes
  Security: disabled
  DHCPv4 snooping: disabled
  MTU: 1500
```

```
  Filter MAC addresses:
ACs: 1 (1 up), VFIs: 0, PWs: 0 (0 up), PBBs: 1 (1 up)
List of PBBs:
    PBB Edge, state is up
      XC ID 0x2000001
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Split Horizon Group: none
      DHCPv4 snooping: disabled
      IGMP Snooping profile:
      Storm Control: disabled
      Unknown-unicast-bmac: 666.777.888
      CMAC to BMAC Mapping Table:
         CMAC             |    BMAC
         -------------------------------------------------
         222.333.444      |    777.888.999
         333.444.555      |    888.999.111
      Statistics:
        packet totals: receive 3919680,send 9328
        byte totals: receive 305735040,send 15022146

 List of ACs:
    AC: GigabitEthernet0/1/0/0, state is up
      Type Ethernet
      MTU 1500; XC ID 0x2000001; interworking none; MSTi 0
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Security: disabled
      DHCPv4 snooping: disabled
      Static MAC addresses:
        0000.0000.0000
        0001.0002.0003



Bridge group: g2, bridge-domain: pbb-bd2, id: 2, state: up, ShgId: 0, MSTi: 0
  Type:  pbb-core
  Number of associated pbb-edge BDs: 1
  MAC learning: enabled
  MAC withdraw: disabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4000, Action: none, Notification: syslog
  MAC limit reached: yes
  Security: disabled
  DHCPv4 snooping: disabled
  MTU: 1500
  Filter MAC addresses:

ACs: 1 (1 up), VFIs: 0, PWs: 0 (0 up), PBBs: 1 (1 up)
List of PBBs:
    PBB Core, state is up
```

```
      Vlan-id: 1; XC ID 0x2000001
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 600, Action: none, Notification: syslog
      MAC limit reached: no
      Security: disabled
      Split Horizon Group: none
      DHCPv4 snooping: profile foo
      IGMP Snooping profile:
      Storm Control: disabled

List of ACs:
    AC: GigabitEthernet0/1/0/0, state is up
      Type Ethernet
      MTU 1500; XC ID 0x2000001; interworking none; MSTi 0
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Security: disabled
      DHCPv4 snooping: disabled
      Static MAC addresses:
        0000.0000.0000
        0001.0002.0003
```

This table describes the significant fields shown in the display.

Table 3: show l2vpn bridge-domain detail Command Field Descriptions

Field	Description
Bridge group	Name of bridge domain group is displayed.
bridge-domain	Name of bridge domain is displayed.
ID	ID assigned to this bridge domain is displayed.
state	Current state of the bridge domain is displayed.
ShgId	Split horizon group ID. This field is not used.
MSTi	ID for the Multiple Spanning Tree.
Split Horizon Group	Shows whether the AC is a member of the split horizon group for ACs. There is only one split horizon group for ACs per bridge domain. • Enabled—The port belongs to the split horizon group for ACs. • None—The port does not belong to the split horizon group for ACs.

The following sample output shows filter information about the bridge-domain group named g1:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain group g1
```

```
Bridge group: g1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up)
  List of ACs:
    Gi0/1/0/0, state: up, Static MAC addresses: 2, MSTi: 0 (unprotected)
  List of Access PWs:
  List of VFIs:
    VFI 1
      Neighbor 10.1.1.1 pw-id 1, state: up, Static MAC addresses: 0
```

The following sample output shows display the filter information for the interface on the bridge domain for IOS-XR 5.3.1 and earlier releases:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain interface gigabitEthernet 0/1/0/0

Bridge group: g1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up)
  List of ACs:
    Gi0/1/0/0, state: up, Static MAC addresses: 2, MSTi: 0 (unprotected)
```

The following sample output shows display the filter information for the interface on the bridge domain for IOS-XR 5.3.2 release:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain interface gigabitEthernet 0/1/0/0

Bridge group: g1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up)
  List of ACs:
    Gi0/1/0/0, state: up, Static MAC addresses: 2, MSTi: 0 (unprotected)
Statistics:
        packets: received 2000 (multicast 0, broadcast 0, unicast 1000, unknown unicast
1000), sent 1000
        bytes: received 93372 (multicast 0, broadcast 0, unicast 64000, unknown unicast
64000), sent 124000
        MAC move: 500
```

The following sample output shows that the bridge domain contains the pseudowires to match the filter for the neighbor for IOS-XR 5.3.1 and earlier releases:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain neighbor 10.1.1.1

Bridge group: g1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up)
  List of Access PWs:
  List of VFIs:
    VFI 1
      Neighbor 10.1.1.1 pw-id 1, state: up, Static MAC addresses: 0
```

The following sample output shows that the bridge domain contains the pseudowires to match the filter for the neighbor for IOS-XR 5.3.2 release:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain neighbor 10.1.1.1

Bridge group: g1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
  Aging: 300 s, MAC limit: 4000, Action: none, Notification: syslog
  Filter MAC addresses: 0
  ACs: 1 (1 up), VFIs: 1, PWs: 1 (1 up)
  List of Access PWs:
  List of VFIs:
    VFI 1
      Neighbor 10.1.1.1 pw-id 1, state: up, Static MAC addresses: 0
Statistics:
        packets: received 1000 (unicast 1000), sent 0
        bytes: received 128000 (unicast 128000), sent 0
        MAC move: 10
```

The following sample output shows the summary information for the bridge domain:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain summary

Number of groups: 1, bridge-domains: 2, Up: 2, Shutdown: 0
Default: 0, pbb-edge: 1, pbb-core: 1
Number of ACs: 1 Up: 1, Down: 0
Number of PWs: 0 Up: 0, Down: 0
```

The following sample output shows the summary information for the bridge domain including number of bridge-domains with P2MP PW enabled:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain summary

Number of groups: 1, bridge-domains: 1, Up: 1, Shutdown: 0
Default: 1, pbb-edge: 0, pbb-core: 0
Bridge-domains with P2MP PW enabled: 1
Number of ACs: 3 Up: 3, Down: 0
Number of PWs: 2 Up: 2, Down: 0, Standby: 0
```

This table describes the significant fields shown in the display.

Table 4: show l2vpn bridge-domain summary Command Field Descriptions

Field	Description
Number of groups	Number of configured bridge domain groups is displayed.
bridge-domains	Number of configured bridge domains is displayed.
Shutdown	Number of bridge domains that are in Shutdown state is displayed.
Number of ACs	Number of attachment circuits that are in Up state and Down state are displayed.
Number of PWs	Number of pseudowires that are in Up state and Down state are displayed. This includes the VFI pseudowire and the access pseudowire.

This example shows sample output of a PBB Edge Bridge Domain for IOS-XR 5.3.1 and earlier releases:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain bd-name pbb-bd1 detail
```

```
Bridge group: g2, bridge-domain: pbb-bd1, id: 1, state: up, ShgId: 0, MSTi: 0
  Type:  pbb-edge, I-SID: 1234
  Core-bridge: pbb-bd2
  MAC learning: enabled
  MAC withdraw: enabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4000, Action: none, Notification: syslog
  MAC limit reached: yes
  Security: disabled
  DHCPv4 snooping: disabled
  MTU: 1500
  Filter MAC addresses:
ACs: 1 (1 up), VFIs: 0, PWs: 0 (0 up), PBBs: 1 (1 up)
List of PBBs:
    PBB Edge, state is up
      XC ID 0x2000001
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Split Horizon Group: none
      DHCPv4 snooping: disabled
      IGMP Snooping profile:
      Storm Control: disabled
      Unknown-unicast-bmac: 666.777.888
      CMAC to BMAC Mapping Table:
         CMAC             |    BMAC
         -------------------------------------------------
         222.333.444      |    777.888.999
         333.444.555      |    888.999.111
      Statistics:
        packet totals: receive 3919680,send 9328
        byte totals: receive 305735040,send 15022146
List of ACs:
    AC: GigabitEthernet0/1/0/0, state is up
      Type Ethernet
      MTU 1500; XC ID 0x2000001; interworking none; MSTi 0
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Security: disabled
      DHCPv4 snooping: disabled
      Static MAC addresses:
        0000.0000.0000
        0001.0002.0003
      Statistics:
         packet totals: receive 3919680,send 9328
         byte totals: receive 305735040,send 15022146
```

This example shows sample output of a PBB Edge Bridge Domain for IOS-XR 5.3.2 release:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain bd-name pbb-bd1 detail
Bridge group: g2, bridge-domain: pbb-bd1, id: 1, state: up, ShgId: 0, MSTi: 0
```

```
  Type:  pbb-edge, I-SID: 1234
  Core-bridge: pbb-bd2
  MAC learning: enabled
  MAC withdraw: enabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4000, Action: none, Notification: syslog
  MAC limit reached: yes
  Security: disabled
  DHCPv4 snooping: disabled
  MTU: 1500
  Filter MAC addresses:
ACs: 1 (1 up), VFIs: 0, PWs: 0 (0 up), PBBs: 1 (1 up)
List of PBBs:
    PBB Edge, state is up
      XC ID 0x2000001
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Split Horizon Group: none
      DHCPv4 snooping: disabled
      IGMP Snooping profile:
      Storm Control: disabled
      Unknown-unicast-bmac: 666.777.888
      CMAC to BMAC Mapping Table:
         CMAC             |    BMAC
         -------------------------------------------------
         222.333.444     |    777.888.999
         333.444.555     |    888.999.111
      Statistics:
        packets: received 1000 (unicast 1000), sent 0
        bytes: received 128000 (unicast 128000), sent 0
        MAC move: 10
List of ACs:
    AC: GigabitEthernet0/1/0/0, state is up
      Type Ethernet
      MTU 1500; XC ID 0x2000001; interworking none; MSTi 0
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Security: disabled
      DHCPv4 snooping: disabled
      Static MAC addresses:
        0000.0000.0000
        0001.0002.0003
      Statistics:
        packets: received 1000 (unicast 1000), sent 0
        bytes: received 128000 (unicast 128000), sent 0
        MAC move: 10
```

This example shows sample output of a PBB Core Bridge Domain:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain bd-name pbb-bd2 detail
```

```
Bridge group: g2, bridge-domain: pbb-bd2, id: 2, state: up, ShgId: 0, MSTi: 0
  Type:  pbb-core
  Number of associated pbb-edge BDs: 1
  MAC learning: enabled
  MAC withdraw: disabled
  Flooding:
    Broadcast & Multicast: enabled
    Unknown unicast: enabled
  MAC aging time: 300 s, Type: inactivity
  MAC limit: 4000, Action: none, Notification: syslog
  MAC limit reached: yes
  Security: disabled
  DHCPv4 snooping: disabled
  MTU: 1500
  Filter MAC addresses:

ACs: 1 (1 up), VFIs: 0, PWs: 0 (0 up), PBBs: 1 (1 up)
List of PBBs:
    PBB Core, state is up
      Vlan-id: 1; XC ID 0x2000001
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 600, Action: none, Notification: syslog
      MAC limit reached: no
      Security: disabled
      Split Horizon Group: none
      DHCPv4 snooping: profile foo
      IGMP Snooping profile:
      Storm Control: disabled
List of ACs:
    AC: GigabitEthernet0/1/0/0, state is up
      Type Ethernet
      MTU 1500; XC ID 0x2000001; interworking none; MSTi 0
      MAC learning: enabled
      Flooding:
        Broadcast & Multicast: enabled
        Unknown unicast: enabled
      MAC aging time: 300 s, Type: inactivity
      MAC limit: 4000, Action: none, Notification: syslog
      MAC limit reached: yes
      Security: disabled
      DHCPv4 snooping: disabled
      Static MAC addresses:
        0000.0000.0000
        0001.0002.0003
```

The following sample output shows detailed information about a bridge domain that has VXLAN configured.

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain detail
Fri Mar 14 13:30:26.476 EST
Legend: pp = Partially Programmed.
Bridge group: bg1, bridge-domain: 10, id: 0, state: up, ShgId: 0, MSTi: 0
  Coupled state: disabled
  MAC learning: enabled
  MAC withdraw: enabled
    MAC withdraw for Access PW: enabled
    MAC withdraw sent on: bridge port up
    MAC withdraw relaying (access to access): disabled
  Flooding:
```

```
  Broadcast & Multicast: enabled
  Unknown unicast: enabled
MAC aging time: 300 s, Type: inactivity
MAC limit: 4000, Action: none, Notification: syslog
MAC limit reached: no
MAC port down flush: enabled
MAC Secure: disabled, Logging: disabled
Split Horizon Group: none
Dynamic ARP Inspection: disabled, Logging: disabled
IP Source Guard: disabled, Logging: disabled
DHCPv4 snooping: disabled
IGMP Snooping: enabled
IGMP Snooping profile: none
MLD Snooping profile: none
Storm Control: disabled
Bridge MTU: 1500
MIB cvplsConfigIndex: 1
Filter MAC addresses:
P2MP PW: disabled
Create time: 14/03/2014 12:37:53 (00:52:33 ago)
Last time status changed: 14/03/2014 13:12:20 (00:18:06 ago)
ACs: 1 (1 up), VFIs: 0, PWs: 0 (0 up), PBBs: 0 (0 up)
List of ACs:
  AC: GigabitEthernet0/1/0/8.10, state is up
    Type VLAN; Num Ranges: 1
    VLAN ranges: [10, 10]
    MTU 1504; XC ID 0x1880017; interworking none
    MAC learning: enabled
    Flooding:
      Broadcast & Multicast: enabled
      Unknown unicast: enabled
    MAC aging time: 300 s, Type: inactivity
    MAC limit: 4000, Action: none, Notification: syslog
    MAC limit reached: no
    MAC port down flush: enabled
    MAC Secure: disabled, Logging: disabled
    Split Horizon Group: none
    Dynamic ARP Inspection: disabled, Logging: disabled
    IP Source Guard: disabled, Logging: disabled
    DHCPv4 snooping: disabled
    IGMP Snooping: enabled
    IGMP Snooping profile: none
    MLD Snooping profile: none
    Storm Control: disabled
    Static MAC addresses:

    Storm control drop counters:
      packets: broadcast 0, multicast 0, unknown unicast 0
      bytes: broadcast 0, multicast 0, unknown unicast 0
    Dynamic ARP inspection drop counters:
      packets: 0, bytes: 0
    IP source guard drop counters:
      packets: 0, bytes: 0
List of VNIs:
  VNI 5010, state is up
    Encap type VXLAN
    Overlay nve1, Source 55.55.55.52, Multicast Group 225.0.1.10, UDP Port 8472
    MAC learning: enabled
    Flooding:
      Broadcast & Multicast: enabled
      Unknown unicast: enabled
    MAC aging time: 300 s, Type: inactivity
    MAC limit: 4000, Action: none, Notification: syslog
    MAC limit reached: no
```

```
      MAC port down flush: enabled
      MAC Secure: disabled, Logging: disabled
      Split Horizon Group: none
      Dynamic ARP Inspection: disabled, Logging: disabled
      IP Source Guard: disabled, Logging: disabled
      DHCPv4 snooping: disabled
      IGMP Snooping: enabled
      IGMP Snooping profile: none
      MLD Snooping profile: none
      Storm Control: disabled
  List of Access PWs:
  List of VFIs:
```

The following sample output shows detailed information including bridge-domain VFI configuration for service path preference:

```
RP/0/RSP0/CPU0:router# show l2vpn bridge-domain bd-name bd1 detail
Mon Jun 20 20:03:55.218 EDT
Legend: pp = Partially Programmed.
Bridge group: bg1, bridge-domain: bd1, id: 0, state: up, ShgId: 0, MSTi: 0
…
 ACs: 0 (0 up), VFIs: 1, PWs: 1 (1 up), PBBs: 0 (0 up), VNIs: 0 (0 up)
  List of ACs:
  List of Access PWs:
  List of VFIs:
    VFI v1 (up)
      VPN-ID: 1001, Auto Discovery: BGP, state is  Provisioned (Service Connected
      Route Distinguisher:  (auto) 1.1.1.1:65524
      Import Route Targets:         1.1.1.1:1001
      Export Route Targets:         1.1.1.1:1001
      Signaling protocol: LDP
      AS Number: 100
      VPLS-ID: (auto) 100:1001
      L2VPN Router ID: 1.1.1.1
      PW: neighbor 2.2.2.2, PW ID 100:1001, state is up ( established )
        PW class not set, XC ID 0xfff8000f
        Encapsulation MPLS, Auto-discovered (BGP), protocol LDP
        Source address 1.1.1.1
        PW type Ethernet, control word disabled, interworking none
        Sequencing not set
        PW Status TLV in use          MPLS         Local                          Remote
        ------------ ------------------------------ -------------------------
        …
        ------------ ------------------------------ -------------------------
        Incoming Status (PW Status TLV):
          Status code: 0x0 (Up) in Notification message
        MIB cpwVcIndex: 0
        Create time: 20/06/2016 19:40:49 (00:23:06 ago)
        Last time status changed: 20/06/2016 19:40:51 (00:23:04 ago)
        MAC withdraw messages: sent 0, received 0
        Table-policy Name: fwd1
        Forward-class: 1
        Static MAC addresses:
        Statistics:
          packets: received 0 (unicast 0), sent 0
          bytes: received 0 (unicast 0), sent 0
          MAC move: 0
        Storm control drop counters:
           packets: broadcast 0, multicast 0, unknown unicast 0
           bytes: broadcast 0, multicast 0, unknown unicast 0
       DHCPv4 snooping: disabled
      IGMP Snooping profile: none
      MLD Snooping profile: none
```

```
VFI Statistics:
  drops: illegal VLAN 0, illegal length 0
```

Related Commands

Command	Description
clear l2vpn bridge-domain (VPLS), on page 12	Clears the MAC addresses and restarts the bridge domains on the router.

show l2vpn ethernet ring g8032

To display an overview of the G.8032 ethernet ring configuration, use the **show l2vpn ethernet ring g8032** command in EXEC mode.

show l2vpn ethernet ring g8032 *[name]* [{**brief** | **detail** | **instance** *ID* | **location** | **private** | **standby**}]

Syntax Description

name	Ethernet ring G.8032 name.
brief	Brief information about the G.8032 ethernet ring configuration.
detail	Information in detail about the G.8032 ethernet ring configuration.
instance*ID*	Instance number about the G.8032 ethernet ring configuration.
location	Information about the G.8032 ethernet ring configuration for the specified location.
private	Private information about the G.8032 ethernet ring configuration.
standby	Standby node specific information

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 4.1.0	This command was introduced.
Release 4.3.0	The **location** and **standby** keywords were added.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read

Example

This example shows the output from the **show l2vpn ethernet ring g8032** command:

```
# show l2vpn ethernet ring g8032 foo instance 1
Ethernet ring g8032 foo
  Port0: GigabitEthernet0/1/2/0
  Port1: GigabitEthernet0/1/2/1
```

```
  Instance 1
     Inclusion-list vlan ids: 500-1000, 1017
     aps-channel
        port0: GigabitEthernet0/1/2/0.1
        port1: GigabitEthernet0/1/2/1.1


# show l2vpn ethernet ring g8032 foo instance 1 brief
Ring      instance  status
--------- --------  --------
Foo        1        resolved

# show l2vpn ethernet ring g8032 foo instance 1 detail
Ethernet ring g8032 foo
  Operating in Provider Bridge mode
  Port0: GigabitEthernet0/1/2/0
     Monitor: none
  Port1: GigabitEthernet0/1/2/1
     Monitor: none
  Exclusion-list vlan ids: 2000-2100, untagged
  Open-ring: no

  Instance 1
     Description: This_is_a_sample
     Profile    : none
     RPL        : none
     Inclusion-list vlan ids: 500-1000, 1017
     aps-channel
        level: 7
        port0: GigabitEthernet0/1/2/0.1
        port1: GigabitEthernet0/1/2/1.1


# show l2vpn ethernet ring g8032 foo instance 1 private
Ethernet ring g8032 foo (task-id = cisco-support)
  Operating in Provider Bridge mode
  Port0: GigabitEthernet0/1/2/0
     Monitor: none
  Port1: GigabitEthernet0/1/2/1
     Monitor: none
  Exclusion-list vlan ids: 2000-2100, untagged
  Open-ring: no

  Instance 1
     Description: This_is_a_sample
     Profile    : none
     RPL        : none
     Inclusion-list vlan ids: 500-1000, 1017
     aps-channel
        level: 7
        port0: GigabitEthernet0/1/2/0.1
        port1: GigabitEthernet0/1/2/1.1


   ethernet ring g8032 trace history [Num events: 6]
   ---------------------------------------------------
   Time                Event                     Sticky Many
   ====                =====                     ====== ====
   05/18/2010 21:45:54 Create                    No     No
   05/18/2010 21:45:54 Resolved                  No     No
   05/18/2010 21:45:57 Create                    No     No
   05/18/2010 21:45:57 Modify                    No     No
   05/18/2010 21:45:57 Resolved                  No     No
```

```
05/18/2010 21:45:57 Delete                    No      No
```

Related Commands

Command	Description
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

show l2vpn forwarding bridge-domain (VPLS)

To display information on the bridge that is used by the forwarding layer, use the **show l2vpn forwarding bridge-domain** command in EXEC mode.

show l2vpn forwarding bridge-domain [*bridge-domain-name*] {**detail** | **hardware** {**egress** | **ingress**}} **location** *node-id*

Syntax Description

bridge-domain-name	(Optional) Name of a bridge domain.
detail	Displays all the detailed information on the attachment circuits and pseudowires.
hardware	Displays the hardware location entry.
egress	Reads information from the egress PSE.
ingress	Reads information from the ingress PSE.
location *node-id*	Displays the bridge-domain information for the specified location. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 5.3.1	The show command output was enhanced to display VXLAN anycast gateway parameters.
Release 5.3.2	The show command output was enhanced to display MAC Move Counter information.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

For each bridge, you can display summary information about the number of bridge ports, number of MAC addresses, configured VXLANs and so forth.

The **detail** keyword displays detailed information on the attachment circuits and pseudowires, and is meant for field investigation by a specialized Cisco engineer.

Note All bridge ports in the bridge domain on that line card are displayed. Therefore, if the bridge domain contains non-local bridge ports, those are displayed as well.

Task ID

Task ID	Operations
l2vpn	read

Examples

The following sample output shows bridge-domain information for location 0/1/CPU0 for IOS-XR 5.3.1 and earlier releases:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain location 0/1/CPU0

Bridge-Domain Name               ID     Ports addr   Flooding Learning State
-------------------------------- ------ ----- ------ -------- -------- ---------
g1:bd1

Bridge-domain name: g1:bd1, id: 0, state: up
 MAC learning: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4000, Action: none, Notification: syslog
 MAC limit reached: yes
 Security: disabled
 DHCPv4 snooping: profile not known on this node
 Bridge MTU: 1500 bytes
 Number of bridge ports: 2
 Number of MAC addresses: 65536
 Multi-spanning tree instance: 0

  GigabitEthernet0/1/0/0, state: oper up
    Number of MAC: 32770
    Sent(Packets/Bytes): 0/21838568
    Received(Packets/Bytes): 5704781/444972918

  Nbor 1.1.1.1 pw-id 1
    Number of MAC: 32766
    Sent(Packets/Bytes): 0/0
    Received(Packets/Bytes): 5703987/444910986
            0      2     65536  Enabled  Enabled  UP
```

The following sample output shows bridge-domain information for location 0/1/CPU0 for IOS-XR 5.3.2 release:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain location 0/1/CPU0

Bridge-Domain Name               ID     Ports addr   Flooding Learning State
-------------------------------- ------ ----- ------ -------- -------- ---------
g1:bd1

Bridge-domain name: g1:bd1, id: 0, state: up
 MAC learning: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4000, Action: none, Notification: syslog
 MAC limit reached: yes
 Security: disabled
 DHCPv4 snooping: profile not known on this node
 Bridge MTU: 1500 bytes
```

```
 Number of bridge ports: 2
 Number of MAC addresses: 65536
 Multi-spanning tree instance: 0

  GigabitEthernet0/1/0/0, state: oper up
    Number of MAC: 32770
    Sent(Packets/Bytes): 0/21838568
    Received(Packets/Bytes): 5704781/444972918
Statistics:
packets: received 5704781 (multicast 0, broadcast 0, unknown unicast 5704781, unicast 0),
sent 0
bytes: received 444972918 (multicast 0, broadcast 0, unknown unicast 444972918, unicast 0),
 sent 4950
MAC move: 0

  Nbor 1.1.1.1 pw-id 1
    Number of MAC: 32766
    Sent(Packets/Bytes): 0/0
    Received(Packets/Bytes): 5703987/444910986
            0      2     65536  Enabled  Enabled  UP
Statistics:
        packets: received 1000 (unicast 1000), sent 0
        bytes: received 128000 (unicast 128000), sent 0
        MAC move: 10
```

This table describes the significant fields shown in the display:

Table 5: show l2vpn forwarding bridge-domain Command Field Descriptions

Field	Description
Bridge-Domain Name	Name of bridge domain is displayed.
Bridge ID	ID assigned to this bridge domain is displayed.
Ports	Number of ports that are part of this bridge domain is displayed.
MAC Addr	Number of MAC addresses that are learned on this bridge domain is displayed.
Flooding	Flooding of packets are displayed if they are enabled on this bridge domain.
Learning	Learning of MAC addresses are displayed if they are enabled on this bridge domain.
State	Current state of the bridge domain is displayed.

This example shows sample output of detailed information on the bridge that is used by the forwarding layer:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain detail location 0/0/CPU0
Tue Mar 13 12:35:45.276 PDT

Bridge-domain name: bg1:bd1, id: 0, state: up
 Type: pbb-edge, I-SID: 1000
 Core-bridge: bg1:pbb-core1
 MAC learning: enabled
 MAC port down flush: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
```

```
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4294967295, Action: none, Notification: syslog
 MAC limit reached: no
 MAC Secure: disabled, Logging: disabled
 DHCPv4 snooping: profile not known on this node
 Dynamic ARP Inspection: disabled, Logging: disabled
 IP Source Guard: disabled, Logging: disabled
 IGMP snooping: disabled, flooding: enabled
 Bridge MTU: 1500 bytes
 Number of bridge ports: 3
 Number of MAC addresses: 0
 Multi-spanning tree instance: 0
 MIRP-lite: received 0, sent 0
```

This example shows sample output of detailed information on the bridge that is used by the forwarding layer.

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain detail location 0/1/CPU0
Bridge-domain name: bg1:bd1, id: 0, state: up
 MAC learning: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4000, Action: none, Notification: syslog
 MAC limit reached: no
 Security: disabled
 DHCPv4 snooping: profile not known on this node
 IGMP snooping: disabled, flooding: disabled
 Bridge MTU: 1500 bytes
 Number of bridge ports: 1
 Number of MAC addresses: 0
 Multi-spanning tree instance: 0

  GigabitEthernet0/1/0/1.2, state: oper up
    Number of MAC: 0
    Statistics:
      packets: received 0, sent 0
      bytes: received 0, sent 0
    Storm control drop counters:
      packets: broadcast 0, multicast 0, unknown unicast 0
      bytes: broadcast 0, multicast 0, unknown unicast 0


Bridge-domain name: bg1:bd2, id: 1, state: up
  Type:  pbb-edge, I-SID: 1234
  Core-bridge: pbb-bd2
 MAC learning: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4000, Action: none, Notification: syslog
 MAC limit reached: no
 Security: disabled
 DHCPv4 snooping: profile not known on this node
 IGMP snooping: disabled, flooding: disabled
 Bridge MTU: 1500 bytes
 Number of bridge ports: 0
 Number of MAC addresses: 0
 Multi-spanning tree instance: 0

 PBB Edge, state: up
```

```
    Number of MAC: 0
 GigabitEthernet0/1/0/1.3, state: oper up
    Number of MAC: 0
    Storm control drop counters:
      packets: broadcast 0, multicast 0, unknown unicast 0
      bytes: broadcast 0, multicast 0, unknown unicast 0

Bridge-domain name: bg1:bd3, id: 2, state: up
  Type:  pbb-core
  Number of associated pbb-edge BDs: 1

MAC learning: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4000, Action: none, Notification: syslog
 MAC limit reached: no
 Security: disabled
 DHCPv4 snooping: profile not known on this node
 IGMP snooping: disabled, flooding: disabled
 Bridge MTU: 1500 bytes
 Number of bridge ports: 0
 Number of MAC addresses: 0
 Multi-spanning tree instance: 0

  PBB Core, state: up
  Vlan-id: 1

  GigabitEthernet0/1/0/1.4, state: oper up
    Number of MAC: 0
    Storm control drop counters:
      packets: broadcast 0, multicast 0, unknown unicast 0
      bytes: broadcast 0, multicast 0, unknown unicast 0
```

The following sample output shows detailed information with P2MP PW enabled on the bridge domain:

```
RP/0/RSP0/CPU0:router#  show l2vpn forwarding bridge-domain detail location
Tue May 24 23:14:22.934 EDT

Bridge-domain name: bg1:bd1, id: 0, state: up
 MAC learning: enabled
 MAC port down flush: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4000, Action: none, Notification: syslog
 MAC limit reached: no
 MAC Secure: disabled, Logging: disabled
 DHCPv4 snooping: profile not known on this node
 Dynamic ARP Inspection: disabled, Logging: disabled
 IP Source Guard: disabled, Logging: disabled
 IGMP snooping: disabled, flooding: enabled
 Bridge MTU: 1500 bytes
 Number of bridge ports: 1
 Number of MAC addresses: 0
 Multi-spanning tree instance: 0
 P2MP PW RSVP-TE enabled, LSM ID: 0x12

  GigabitEthernet0/0/0/2.3, state: oper up
    Number of MAC: 0
```

```
  Nbor 2.2.2.2 pw-id 101, state: oper up
    Number of MAC: 0
```

The following sample output shows detailed information on a bridge domain for location 0/2/CPU0 that has VXLAN configured.

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain detail location 0/2/CPU0
Bridge-domain name: bg1:10, id: 0, state: up
 MAC learning: enabled
 MAC port down flush: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4000, Action: none, Notification: syslog
 MAC limit reached: no
 MAC Secure: disabled, Logging: disabled
 DHCPv4 snooping: profile not known on this node
 Dynamic ARP Inspection: disabled, Logging: disabled
 IP Source Guard: disabled, Logging: disabled
 IGMP snooping: disabled, flooding: enabled
 MLD snooping: disabled, flooding: disabled
 Storm control: disabled
 P2MP PW: disabled
 Bridge MTU: 1500 bytes
 Number of bridge ports: 2
 Number of MAC addresses: 0
 Multi-spanning tree instance: 0

  GigabitEthernet0/2/0/19.10, state: oper up
    Number of MAC: 0
    Statistics:
      packets: received 0, sent 0
      bytes: received 0, sent 0
    Storm control drop counters:
      packets: broadcast 0, multicast 0, unknown unicast 0
      bytes: broadcast 0, multicast 0, unknown unicast 0
    Dynamic arp inspection drop counters:
      packets: 0, bytes: 0
    IP source guard drop counters:
      packets: 0, bytes: 0

 VNI5010, state: oper up
    Number of MAC: 0
    Statistics:
      packets: received 0, sent 0
      bytes: received 0, sent 0
```

Related Commands

Command	Description
clear l2vpn bridge-domain (VPLS), on page 12	Clears the MAC addresses and restarts the bridge domains on the router.

show l2vpn forwarding bridge-domain mac-address (VPLS)

To display the summary information for the MAC address, use the **show l2vpn forwarding bridge-domain mac-address** command in EXEC mode.

show l2vpn forwarding bridge-domain [*bridge-domain-name*] **mac-address** {*MAC-address* | **detail** | **hardware** {**egress** | **ingress**} | **interface** *type interface-path-id* | **neighbor** *address* **pw-id** *pw-id*} **location** *node-id*

Syntax Description

bridge-domain-name	(Optional) Name of a bridge domain.
MAC-address	MAC address.
detail	Displays detailed information for the MAC address.
hardware	Reads information from the hardware.
egress	Reads information from the egress PSE.
ingress	Reads information from the ingress PSE.
interface	Displays the match for the attachment circuit subinterface.
type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
neighbor *address*	Displays the match for the neighbor IP address.
pw-id *pw-id*	Displays the match for the pseudowire ID.
location *node-id*	Displays the bridge-domain information for the MAC address of the specified location. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.0	This command was introduced.
Release 3.7.2	This command was introduced.
Release 3.8.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read

Examples

The following sample output shows the specified location of the bridge-domain name g1:bd1 for the MAC address:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain g1:bd1 location 0/1/CPU0
                                  Bridge       MAC
Bridge-Domain Name                ID     Ports addr   Flooding Learning State
--------------------------------- ------ ----- ------ -------- -------- ---------
g1:bd1                            0      2     65536  Enabled  Enabled  UP
```

The following sample output shows the list of MAC addresses that are learned on a specified bridge and summary information for the addresses:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain mac-address location 0/1/CPU0

Fri Mar 14 13:30:38.285 EST
 To Resynchronize MAC table from the Network Processors, use the command...
    l2vpn resynchronize forwarding mac-address-table location <r/s/i>

Mac Address    Type    Learned from/Filtered on    LC learned Resync Age         Mapped to

--------------------------------------------------------------------------------
0000.0001.0103 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 22s       N/A

0000.0001.0104 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 22s       N/A

0000.0001.0105 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 22s       N/A

000b.6019.141b dynamic Gi0/1/0/8.10                0/1/CPU0   0d 0h 0m 2s        N/A

000a.42db.e419 dynamic nve1                       0/1/CPU0   0d 0h 0m 21s       55.55.55.53

0013.7faf.681b dynamic nve1                       0/1/CPU0   0d 0h 0m 20s       55.55.55.51

....
```

The following sample output shows the MAC address on a specified interface on a specified bridge:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain g1:bd1 mac-address 1.2.3 location
 0/1/CPU0

Mac Address    Type    Learned from/Filtered on    LC learned Age
--------------------------------------------------------------------------------
0001.0002.0003 static  Gi0/1/0/0                   N/A        N/A
```

The following sample output shows the hardware information from the egress pse:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain g1:bd1 mac-address hardware
egress location 0/1/CPU0
```

```
Mac Address    Type    Learned from/Filtered on    LC learned Age
------------------------------------------------------------------------------
0000.0000.0000 static  Gi0/1/0/0                   N/A        N/A
0000.0001.0101 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0102 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0103 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0104 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0105 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0106 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0107 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0108 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0109 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.010a dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.010b dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.010c dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.010d dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.010e dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.010f dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0110 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0111 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0112 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0113 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
0000.0001.0114 dynamic Gi0/1/0/0                   0/1/CPU0   0d 0h 2m 24s
...
```

The following sample output shows the MAC addresses that are learned on a specified pseudowire on a specified bridge:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain mac-address neighbor 10.1.1.1
pw-id 1 location 0/1/CPU0

Mac Address    Type    Learned from/Filtered on    LC learned Age
------------------------------------------------------------------------------
0000.0003.0101 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0102 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0103 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0104 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0105 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0106 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0107 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0108 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0109 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.010a dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.010b dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.010c dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.010d dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.010e dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.010f dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0110 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0111 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0112 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0113 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0114 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
0000.0003.0115 dynamic 10.1.1.1, 1                  0/1/CPU0   0d 0h 0m 30s
...
```

The following sample output shows the detailed information for MAC addresses that are learned on a specified interface and on specified bridge of a specified interface card. The sample output lists all the MAC addresses, the learned location, and the current age.

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain g1:bd1 mac-address interface
```

```
gigabitEthernet 0/1/0/0 location 0/1/CPU0

Mac Address    Type    Learned from/Filtered on    LC learned Age
-------------------------------------------------------------------------------
0000.0000.0000 static  Gi0/1/0/0                  N/A        N/A
0000.0001.0101 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0102 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0103 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0104 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0105 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0106 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0107 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0108 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0109 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.010a dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.010b dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.010c dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.010d dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.010e dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.010f dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0110 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0111 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0112 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0113 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
0000.0001.0114 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 14s
```

The following example shows the list of MAC addresses along with the location details:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain mac-address detail location
0/7/CPU0
l2fib_edm_fill_mac_bag mac_info 0 l2fm_l3_encap_vlan=0
l2fib_get_mac_l3_encap_vlan_str
l2fib_edm_fill_mac_bag mac_info 0 l2fm_l3_encap_vlan=0
l2fib_get_mac_l3_encap_vlan_str
Bridge-domain name: bg1:bd1, id: 0, state: up
 MAC learning: enabled
 MAC port down flush: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4000, Action: none, Notification: syslog
 MAC limit reached: no
 MAC Secure: disabled, Logging: disabled
 DHCPv4 snooping: profile not known on this node
 Dynamic ARP Inspection: disabled, Logging: disabled
 IP Source Guard: disabled, Logging: disabled
 IGMP snooping: disabled, flooding: enabled
 Routed interface: BVI100, Xconnect id: 0xfff00001, state: up
  IRB platform data: {0x0, 0x0, 0x0, 0x0}, len: 4
 Bridge MTU: 1500 bytes
 Number of bridge ports: 1
 Number of MAC addresses: 2
 Multi-spanning tree instance: 0

 Mac Address: 029d.af84.4105, LC learned: N/A
   Age: N/A, Flag: static, BVI
   L3 encapsulation Vlan = 0

 GigabitEthernet0/0/0/0.1, state: oper up
    Number of MAC: 1

 Mac Address: 0000.0002.0003, LC learned: N/A
   Age: N/A, Flag: static
```

```
   L3 encapsulation Vlan = 1001


RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain mac-address location 0/1/CPU0

Mac Address    Type    Learned from/Filtered on    LC learned Age
-------------------------------------------------------------------------------
0000.0000.0000 static  Gi0/1/0/0                  N/A        N/A
0000.0001.0101 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0102 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0103 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0104 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0105 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0106 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0107 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0108 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0109 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.010a dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.010b dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.010c dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.010d dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.010e dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.010f dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0110 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0111 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
0000.0001.0112 dynamic Gi0/1/0/0                  0/1/CPU0   0d 0h 2m 22s
....
```

This example shows sample output of the **show l2vpn forwarding bridge-domain mac-address location** command:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain mac-address location 0/1/CPU0
Mac Address    Type    Learned from/Filtered on    LC learned Age   Mapped to
-------------------------------------------------------------------------------
0002.0003.0004 filter  bg1:bd1                    N/A        N/A
0002.0003.0005 filter  bg1:bd1                    N/A        N/A
0002.0003.0006 filter  bg1:bd1                    N/A        N/A

0002.0002.0002 static  Gi0/0/0/0.1                N/A        N/A

0333.0444.0555 static  bg1:bd2                    N/A        N/A   0777.0888.0999
0444.0555.0666 static  bg1:bd2                    N/A        N/A   0888.0999.0111
```

This example shows sample output of the **show l2vpn forwarding bridge-domain mac-address detail location** command:

```
RP/0/RSP0/CPU0:router# show l2vpn forwarding bridge-domain mac-address detail location
0/1/CPU0
Bridge-domain name: bg1:bd1, id: 0, state: up
Type:  pbb-edge, I-SID: 1234
  Core-bridge: pbb-bd2
 MAC learning: enabled
 Flooding:
   Broadcast & Multicast: enabled
   Unknown unicast: enabled
 MAC aging time: 300 s, Type: inactivity
 MAC limit: 4294967295, Action: none, Notification: syslog
 MAC limit reached: no
 Security: disabled
 DHCPv4 snooping: profile not known on this node
 IGMP snooping: disabled, flooding: disabled
 Bridge MTU: 1500 bytes
 Number of bridge ports: 2
```

```
Number of MAC addresses: 1
Multi-spanning tree instance: 0

 PBB Edge, state: up
   Number of MAC: 1


Mac Address: 0004.0005.0006, LC learned: N/A,
  Mapping value: 0007.0008.0009
  Age: N/A, Flag: mapping
```

Related Commands

Command	Description
show l2vpn forwarding bridge-domain (VPLS), on page 98	Displays information on the bridge that is used by the forwarding layer.

show l2vpn forwarding ethernet ring g8032

To display an overview of the G.8032 ethernet ring configuration from L2Forwarding Information Base (L2FIB) process, use the **show l2vpn forwarding ethernet ring g8032** command in EXEC mode.

show l2vpn forwarding ethernet ring g8032 *name* [{**detail** | **instance** *ID* | **location** | **private**}]

Syntax Description

name	Ethernet ring G.8032 name.
detail	Information in detail about the G.8032 ethernet ring configuration.
instance*ID*	Instance number about the G.8032 ethernet ring configuration.
location	Location specified in the rack/slot/module notation.
private	Private information about the G.8032 ethernet ring configuration.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read

Example

This example shows the output from the **show l2vpn forwarding ethernet ring g8032** command:

```
# show l2vpn forwarding ethernet ring g8032 private location <r/s/i>
Ethernet ring g8032 foo (task-id = cisco-support)
  Port0: GigabitEthernet0/1/2/0
     Monitor: none
  Port1: GigabitEthernet0/1/2/1
     Monitor: none
  Open-ring: no
  TCN propagation: no
  Instance 1
     Profile    : none
     RPL        : none
     aps-channel
```

```
        port0: GigabitEthernet0/1/2/0.1, status: bound
        port1: GigabitEthernet0/1/2/1.1, status: unbound
  Instance 2
     Profile    : none
     RPL        : none
     aps-channel
        level: 7
        port0: GigabitEthernet0/1/2/0.10, status: unbound
   ethernet ring g8032 trace history [Num events: 6]
   ------------------------------------------------
   Time                Event                     Sticky Many
   ====                =====                     ====== ====
   05/18/2010 21:45:54 Create                    No     No
   05/18/2010 21:45:57 Create                    No     No
   05/18/2010 21:45:57 Modify                    No     No
   05/18/2010 21:45:57 Delete                    No     No

# show l2vpn forwarding ethernet ring g8032 foo instance 1 detail location <r/s/i>
Ethernet ring g8032 foo
  Port0: GigabitEthernet0/1/2/0
     Monitor: none
  Port1: GigabitEthernet0/1/2/1
     Monitor: none
  Open-ring: no
  TCN propagation: no
  Instance 1
     Profile    : none
     RPL        : none
     aps-channel
        level: 7
        port0: GigabitEthernet0/1/2/0.1, status: bound
        port1: GigabitEthernet0/1/2/1.1, status: unbound

# show l2vpn forwarding ethernet ring g8032 foo instance 1 private location <r/s/i>
Ethernet ring g8032 foo (task-id = cisco-support)
  Port0: GigabitEthernet0/1/2/0
     Monitor: none
  Port1: GigabitEthernet0/1/2/1
     Monitor: none
  Open-ring: no
  TCN propagation: no
  Instance 1
     Profile    : none
     RPL        : none
     aps-channel
        level: 7
        port0: GigabitEthernet0/1/2/0.1, status: bound
        port1: GigabitEthernet0/1/2/1.1, status: unbound

   ethernet ring g8032 instance trace history [Num events: 6]
   ----------------------------------------------------------
   Time                Event                     Sticky Many
   ====                =====                     ====== ====
   05/18/2010 21:45:54 Create                    No     No
   05/18/2010 21:45:57 Create                    No     No
   05/18/2010 21:45:57 Modify                    No     No
   05/18/2010 21:45:57 Delete                    No     No
```

Related Commands

Command	Description
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

show l2vpn forwarding protection main-interface

To display an overview of the main interface or instance operational information from L2Forwarding Information Base (L2FIB), use the **show l2vpn forwarding protection main-interface** command in EXEC mode.

show l2vpn forwarding protection main-interface [*interface name*] [{**detail** | **location** | **private**}]

Syntax Description

interface name	Interface name of the Ethernet ring G.8032 name.
detail	Information in detail about the G.8032 ethernet ring configuration.
location	Brief information about the G.8032 ethernet ring configuration.
private	Private information about the G.8032 ethernet ring configuration.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read

Example

This example shows the output from the **show l2vpn forwarding protection main-interface** command:

```
# show l2vpn forwarding protection main-interface location <r/s/i>
Main Interface ID               Instance   State
------------------------------- ---------- --------
GigabitEthernet0/0/0/0          1          forward
GigabitEthernet0/0/0/0          2          forward
GigabitEthernet0/0/0/1          1          forward
```

```
# show l2vpn forwarding protection main-interface detail location <r/s/i>
Main Interface ID                 Instance  State    # of subIntf
--------------------------------- --------  -------- -------------
GigabitEthernet0/0/0/0            1        forward   1
GigabitEthernet0/0/0/0            2        forward    3
GigabitEthernet0/0/0/1            1        forward    1


# show l2vpn forwarding protection main-interface private location <r/s/i>

Main Interface ID                 Instance State    # of subIntf
--------------------------------- -------- -------- ------------
GigabitEthernet0/0/0/0            1       forward   1

   Base info: version=0xaabbcc1c, flags=0x0, type=14, reserved=0
   Ifhandle: 0x20000040, cfg_instance: 1, Protected: no
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.

show l2vpn protection main-interface

To display an overview of the main interface or instance operational information, use the **show l2vpn protection main-interface** command in EXEC mode.

show l2vpn protection main-interface [*interface name*{*Interface*}] [{**brief** | **detail** | **location** | **private** | **standby**}]

Syntax Description

interface name	Interface name of the Ethernet ring G.8032 name.
interface	The forwarding interface ID in number or in Rack/Slot/Instance/Port format as required.
brief	Brief information about the G.8032 ethernet ring configuration.
detail	Information in detail about the G.8032 ethernet ring configuration.
location	Location specific information
private	Private information about the G.8032 ethernet ring configuration.
standby	Standby node specific information.

Command Default

None

Command Modes

EXEC

Command History

Release	Modification
Release 4.1.0	This command was introduced.
Release 4.3.0	The keywords **location** and **standby** were added.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read

Example

This example shows the output from the **show l2vpn protection main-interface** command:

```
RP/0/0/CPU0:router# show l2vpn protection main-interface

Main Interface ID              Subintf Count Protected  Blocked
------------------------------ ------------- ---------- ----------
GigabitEthernet0/0/0/0         1             None       No
   Instance : 0
      State          : FORWARDING
      Sub-Intf #     : 1
      Flush    #     : 0
       Sub-interfaces : GigabitEthernet0/0/0/0.4


Main Interface ID              Subintf Count Protected  Blocked
------------------------------ ------------- ---------- ----------
GigabitEthernet0/0/0/1         1             None       No
   Instance : 0
      State          : FORWARDING
      Sub-Intf #     : 1
      Flush    #     : 0
       Sub-interfaces : GigabitEthernet0/0/0/0.4


RP/0/0/CPU0:router# show l2vpn protection main-interface brief

Main Interface ID              Ref Count  Instance   Protected  State
------------------------------ ---------- ---------- ---------  -----
GigabitEthernet0/0/0/0         3          2    No         FORWARDING
GigabitEthernet0/0/0/1         1          1    No         FORWARDING


RP/0/RSP0/CPU0:router# show l2vpn protection main-interface detail

Main Interface ID              # of subIntf Protected
------------------------------ ------------ ----------
GigabitEthernet0/1/0/19        4            No

Main Interface ID              # of subIntf Protected
------------------------------ ------------ ----------
GigabitEthernet0/1/0/20        3            No

Main Interface ID              # of subIntf Protected
------------------------------ ------------ ----------
GigabitEthernet0/1/0/3         2            No

Main Interface ID              # of subIntf Protected
------------------------------ ------------ ----------
GigabitEthernet0/1/0/30        1            No

Main Interface ID              # of subIntf Protected
------------------------------ ------------ ----------
GigabitEthernet0/1/0/7         4            No


RP/0/0/CPU0:router# show l2vpn protection main-interface private

Main Interface ID              Ref Count  Protected  Blocked    If Handle  Registered
------------------------------ ---------- ---------- ---------- ---------- ----------
GigabitEthernet0/0/0/0         3          None       No         0x20000020 No

   Instance : 0
      State          : FORWARDING        Config ID  : 0
      Sub-Intf #     : 0                 Ack      # : 0
      Bridge D #     : 0                 N-Ack    # : 0
```

```
 Flush    #     : 0                 Rcv      # : 0
 Sub-interfaces : GigabitEthernet0/0/0/0.4

Instance event trace history [Total events: 1, Max listed: 8]
-----------------------------------------------------------
Time                Event                           State           Action
====                =====                           ========        ========
01/01/1970 01:00:01 Rcv state IF known              Invalid         134833160
07/02/2010 10:13:03 Update L2FIB                    FORWARDING      0
01/01/1970 01:00:25 Rcvd AC MA create + UP I/F ST   FORWARDING      0
```

Related Commands

Command	Description
l2vpn	Enters L2VPN configuration mode.

shutdown (Bridge Domain)

To shut down a bridge domain to bring the bridge and all attachment circuits and pseudowires under it to admin down state, use the **shutdown** command in L2VPN bridge group bridge domain configuration mode. To re-enable the bridge domain, use the **no** form of this command.

shutdown
no shutdown

Syntax Description

This command has no keywords or arguments.

Command Default

By default, the bridge is not shutdown.

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When a bridge domain is disabled, all VFIs associated with the bridge domain are disabled. You can still attach or detach members to or from the bridge domain as well as the VFIs associated with the bridge domain.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to disable the bridge domain named bar:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# shutdown
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

shutdown (VFI)

To disable virtual forwarding interface (VFI), use the **shutdown** command in L2VPN bridge group bridge domain VFI configuration mode. To re-enable VFI, use the **no** form of this command.

shutdown
no shutdown

Syntax Description

This command has no keywords or arguments.

Command Default

By default, the VFI is not shutdown.

Command Modes

L2VPN bridge group bridge domain VFI configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to disable VFI:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi v1
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# shutdown
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mpls static label (VPLS), on page 45	Configures the MPLS static labels and the static labels for the access pseudowire configuration.

Command	Description
neighbor (VPLS), on page 51	Adds an access pseudowire port to a bridge domain or a pseudowire to a bridge virtual forwarding interface (VFI).

signaling-protocol

To enable signaling for the VFI, use the **signaling-protocol** command in the BGP autodiscovery mode or in the L2VPN bridge group bridge domain VFI multicast P2MP configuration mode. To return to the default value, use the **no** form of this command.

signaling-protocol {**bgp** | **ldp**}
no signaling-protocol {**bgp** | **ldp**}

Syntax Description

bgp	Enables BGP protocol signaling.
ldp	Enables LDP protocol signaling.

Command Default

LDP signaling is enabled.

Command Modes

BGP autodiscovery configuration

L2VPN bridge group bridge domain VFI multicast P2MP configuration

Command History

Release	Modification
Release 3.9.1	This command was introduced.
Release 5.1	Support for this command in the L2VPN bridge group bridge domain VFI multicast P2MP configuration mode was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

This example shows how to enable signaling for BGP protocol:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group EGroup
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain eastdomain
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi eastvfi
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# autodiscovery bgp
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-ad)#route-target 100:20
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-ad)#signaling-protocol bgp
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

split-horizon group

To add an AC to a split horizon group, use the **split-horizon group** command in L2VPN bridge group bridge domain attachment circuit configuration mode. To remove the AC from the group, use the **no** form of this command.

split-horizon group
no split-horizon group

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

L2VPN bridge group bridge domain attachment circuit configuration mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Only one split horizon group exists for ACs per bridge domain. By default, the group does not have any ACs. You can configure individual ACs to become members of the group using the **split-horizon group** configuration command.

You can configure an entire physical interface or EFPs within an interface to become members of the split horizon group.

Task ID

Task ID	Operations
l2vpn	Read, write

Examples

The following example adds an EFP under a GigabitEthernet interface to the AC split horizon group:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group metroA
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain east
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# interface GigabitEthernet0/1/0/6.15
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-ac)# split-horizon group
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-ac)# commit
```

Related Commands

Command	Description
show l2vpn bridge-domain (VPLS), on page 73	Display information for the bridge ports such as attachment circuits and pseudowires for the specific bridge domains.

static-address (VPLS)

To add static entries to the MAC address for filtering, use the **static-address** command in L2VPN bridge group bridge domain MAC configuration mode. To remove entries profiled by the combination of a specified entry information, use the **no** form of this command.

static-address *MAC-address* **drop**
no static-address *MAC-address* **drop**

Syntax Description

MAC-address	Static MAC address that is used to filter on the bridge domain.
drop	Drops all traffic that is going to the configured MAC address.

Command Default

No static MAC address is configured.

Command Modes

L2VPN bridge group bridge domain MAC configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to add static MAC entries in L2VPN bridge group bridge domain MAC configuration mode. This entry causes all packets with destination MAC address 1.1.1 to be dropped.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# static-address 1.1.1 drop
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.

Command	Description
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.

static-mac-address (VPLS)

To configure the static MAC address to associate a remote MAC address with a pseudowire or any other bridge interface, use the **static-mac-address** command in the appropriate L2VPN bridge group bridge domain configuration submode. To disable this feature, use the **no** form of this command.

static-mac-address *MAC-address*
no static-mac-address *MAC-address*

Syntax Description

MAC-address	Static address to add to the MAC address.

Command Default

None

Command Modes

L2VPN bridge group bridge domain VFI pseudowire configuration

L2VPN bridge group bridge domain attachment circuit configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to associate a remote MAC address with a pseudowire:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi model
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# neighbor 10.1.1.2 pw-id 1000
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-pw)# static-mac-address 1.1.1
```

The following example shows how to associate a GigabitEthernet interface from a bridge domain to static MAC address 1.1.1:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# interface GigabitEthernet 0/1/0/0
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-ac)# static-mac-address 1.1.1
```

The following example shows how to associate an access pseudowire to static MAC address 2.2.2:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# neighbor 10.1.1.2 pw-id 2000
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-pw)# static-mac-address 2.2.2
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mpls static label (VPLS), on page 45	Configures the MPLS static labels and the static labels for the access pseudowire configuration.
neighbor (VPLS), on page 51	Adds an access pseudowire port to a bridge domain or a pseudowire to a bridge virtual forwarding interface (VFI).
vfi (VPLS), on page 135	Configures virtual forwarding interface (VFI) parameters.

tcn-propagation

To enable topology change notification (TCN) propagation, use the **tcn-propagation** command in the L2VPN configuration submode.

tcn-propagation

This command has no keywords or arguments.

Command Default

None

Command Modes

L2VPN configuration submode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

This example shows how to enable the G.8032 ring mode:

```
RP/0/RSP0/CPU0:router#configure
RP/0/RSP0/CPU0:router(config)#l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn-erp)# tcn-propagation
RP/0/RSP0/CPU0:router(config-l2vpn)#
```

Related Commands

Command	Description
ethernet ring g8032, on page 17	Enables G.8032 ring mode and enters the G.8032 configuration submode.

time (VPLS)

To configure the maximum aging time, use the **time** command in L2VPN bridge group bridge domain MAC aging configuration mode. To disable this feature, use the **no** form of this command.

time *seconds*
no time *seconds*

Syntax Description

seconds	MAC address table entry maximum age. The range is from 300 to 30000 seconds. Aging time is counted from the last time that the switch saw the MAC address. The default value is 300 seconds.

Command Default

seconds: 300

Command Modes

L2VPN bridge group bridge domain MAC aging configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

If no packets are received from the MAC address for the duration of the maximum aging time, the dynamic MAC entry previously learned is removed from the forwarding table.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to increase the maximum aging time to 600 seconds. After 600 seconds of inactivity from a MAC address, the MAC address is removed form the forwarding table.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# aging
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-aging)# time 600
```

Related Commands

Command	Description
aging (VPLS), on page 5	Enters the MAC aging configuration submode to set the aging parameters such as time and type.

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.
type (VPLS), on page 133	Configures the type for MAC address aging.

transport rsvp-te

To enable RSVP-TE as transport on a VFI and to enter L2VPN bridge group bridge domain VFI multicast P2MP RSVP - TE configuration mode, use the **transport rsvp-te** command in L2VPN bridge group bridge domain VFI multicast P2MP configuration mode. To return to P2MP mode, use the **no** form of this command.

transport rsvp-te [**attribute-set**]
no transport rsvp-te [**attribute-set**]

Syntax Description

[**attribute-set**]	Specifies the TE attribute set parameters.

Command Default

Command Modes

L2VPN bridge group bridge domain VFI multicast P2MP configuration

Command History

Release	Modification
Release 5.1	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
l2vpn	read, write

Example

This example shows how to enable RSVP-TE as transport on a VFI:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi v1
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)# multicast p2mp
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-p2mp)# transport rsvp-te
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi-p2mp-te)#
```

Related Commands

Command	Description
multicast p2mp, on page 49	Configures point to multi-point pseudowire in a VFI.

Command	Description
vfi (VPLS), on page 135	Configures virtual forwarding interface (VFI) parameters.
bridge-domain (VPLS), on page 10	Establishes a bridge domain and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.

type (VPLS)

To configure the type for MAC address aging, use the **type** command in L2VPN bridge group bridge domain MAC aging configuration mode. To disable this feature, use the **no** form of this command.

type {**absolute** | **inactivity**}
no type {**absolute** | **inactivity**}

Syntax Description

absolute	Configures the absolute aging type.
inactivity	Configures the inactivity aging type.

Command Default

By default, the inactivity type is configured.

Command Modes

L2VPN bridge group bridge domain MAC aging configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

In general, the type is set to inactivity. With an inactivity type configuration, a MAC address is removed from the forwarding table after the MAC address is inactive for the configured aging time.

With an absolute type configuration, a MAC address is always removed from the forwarding table after the aging time has elapsed once it is initially learned.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to configure the MAC address aging type to absolute for every member of the bridge domain named bar:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# aging
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac-aging)# type absolute
```

Related Commands

Command	Description
aging (VPLS), on page 5	Enters the MAC aging configuration submode to set the aging parameters such as time and type.
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.
time (VPLS), on page 129	Configures the maximum aging time.

vfi (VPLS)

To configure virtual forwarding interface (VFI) parameters and to enter L2VPN bridge group bridge domain VFI configuration mode, use the **vfi** command in L2VPN bridge group bridge domain configuration mode. To remove all configurations that are made under the specified VFI, use the **no** form of this command.

vfi *vfi-name*
no vfi *vfi-name*

Syntax Description

vfi-name	Name of the specified virtual forwarding interface.

Command Default

None

Command Modes

L2VPN bridge group bridge domain configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **vfi** command to enter L2VPN bridge group bridge domain VFI configuration mode.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to create a VFI:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# vfi v1
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-vfi)#
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.

Command	Description
l2vpn	Enters L2VPN configuration mode.
mpls static label (VPLS), on page 45	Configures the MPLS static labels and the static labels for the access pseudowire configuration.
neighbor (VPLS), on page 51	Adds an access pseudowire port to a bridge domain or a pseudowire to a bridge virtual forwarding interface (VFI).

withdraw (VPLS)

To disable MAC address withdrawal for a specified bridge domain, use the **withdraw** command in L2VPN bridge group bridge domain MAC configuration mode. To enable this feature, use the **no** form of this command

withdraw {**access-pw disable** | **disable**}
no withdraw {**access-pw disable** | **disable** }

Syntax Description

access-pw disable	Disables the sending of MAC withdraw messages to access pseudowires.
disable	Disables MAC address withdrawal.

Command Default

By default, MAC address withdrawal is enabled.

Command Modes

L2VPN bridge group bridge domain MAC configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.0.0	The **access-pw disable** keyword was added.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

Examples

The following example shows how to enable disable MAC withdrawal:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# withdraw disable
```

The following example shows how to disable sending MAC withdrawal messages to access pseudowires:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2vpn
RP/0/RSP0/CPU0:router(config-l2vpn)# bridge group 1
RP/0/RSP0/CPU0:router(config-l2vpn-bg)# bridge-domain bar
```

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# mac
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-mac)# withdraw access-pw disable
```

Related Commands

Command	Description
bridge-domain (VPLS), on page 10	Establishes a bridge domain, and enters L2VPN bridge group bridge domain configuration mode.
bridge group (VPLS), on page 11	Creates a bridge group so that it can contain bridge domains and then to assign network interfaces to the bridge domain.
l2vpn	Enters L2VPN configuration mode.
mac (VPLS), on page 37	Enters L2VPN bridge group bridge domain MAC configuration mode.