EVC Command Reference

This chapter describes commands used to configure an Ethernet Virtual Circuit (EVC).

bridge-domain

To bind a service instance to a bridge domain instance, use the **bridge-domain** command in service instance configuration mode. To unbind a service instance from a bridge domain instance, use the **no** form of this command.

bridge-domain *bridge-id* [**split-horizon**]

no bridge-domain

Syntax Description

bridge-id	Numerical ID of the bridge domain instance. The range is from 1 to 16384.
split-horizon	(Optional) Configures a port or service instance as a member of a split-horizon group.

Command Default

Service instances are not bound to a bridge domain instance.

Command Modes

Service instance configuration (config-if-svc)

Command History

Release	Modification
9.3.0	This command was introduced.

Usage Guidelines

Use the **bridge-domain** command to bind a service instance to a bridge domain.

Examples

The following example shows how to bind a bridge domain to a service instance using the **bridge-domain** command

```
Router> enable
Router# configure terminal
Router(config)# interface TenGigabitEthernet 4/1
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# encapsulation dot1q 100
Router(config-if-srv)# bridge-domain 200
```

Related Commands

Command	Description
mode p2p	Configures the bridge domain in p2p or p2mp mode.

clear ethernet service instance

To clear Ethernet service instance attributes such as MAC addresses and statistics or to purge Ethernet service instance errors, use the **clear ethernet service instance** command in privileged EXEC mode.

clear ethernet service instance {id *identifier* **interface** *type number* {**errdisable** | **mac table** [*address*] | **stats**} | **interface** *type number* **stats**}

Syntax Description

id *identifier*	Indicates that a service instance is specified.
interface	Indicates that a specific interface is specified.
type	Type of interface.
number	Number of the interface.
errdisable	Indicates that a clear action for an error-disabled state is specified.
mac table	Indicates that a MAC table is specified.
address	Address in the specified MAC table.
stats	Indicates that the service instance statistics are specified.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
9.3.0	This command was introduced.

Usage Guidelines   Use the **clear ethernet service instance** command to clear the service instance attributes that are not needed and to purge service instance errors.

Examples   The following example shows how to clear an error-disabled state on service instance 100 on interface TenGigabitEthernet 4/1 using the **clear ethernet service instance** command:

```
Router# clear ethernet service instance id 100 interface TenGigabitEthernet 4/1 errdisable
```

Related Commands

Command	Description
show ethernet service instance	Displays information about Ethernet service instances.

encapsulation

To define the matching criteria that maps the ingress dot1q, QinQ, or untagged frames on an interface to the appropriate service instance, use the **encapsulation dot1q** command in service instance configuration mode.

encapsulation dot1q {*any* | *vlan-id* [*vlan-id* [*-vlan-id*]]} **second-dot1q** {*any* | *vlan-id* [*vlan-id* [*-vlan-id*]]}

Syntax Description

dot1q	Specifies a 802.1Q tag at the ingress service instance.
any	Indicates that all VLANs are to be configured.
vlan-id	Integer in the range 1 to 4094 that identifies the VLAN.
second-dot1q	Specifies a different 802.1Q tag at the ingress service instance.

Command Default   Encapsulation is not configured.

Command Modes   Service instance configuration mode (config-if-srv)

Command History

Release	Modification
9.3.0	This command was introduced.

Examples   The following example shows how to configure dot1q encapsulation.

```
Router> enable
Router# configure terminal
Router(config)# interface TenGigabitEthernet 4/1
Router(config-if)# service instance 101 ethernet
Router(config-if-srv)# encapsulation dot1q 100
Router(config-if-srv)#
```

l2protocol

To configure Layer 2 protocol tunneling for the interfaces, use the **l2protocol** command in interface configuration mode.

l2protocol [**drop**|**forward**|**peer**] [**cdp**|**dot1x**|**dtp**|**lacp**|**pagp**|**stp**|**vtp**]

Syntax Description

This command has no arguments or keywords.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
9.3.0	This command was introduced.

Examples

The following example shows how to define a Layer 2 protocol tunneling action for an interface.

```
Router> enable
Router# configure terminal
Router(config)# interface TenGigabitEthernet 4/1
Router(config-if)# l2protocol forward cdp
```

mode

To configure the bridge domain, use the **mode** command in global configuration mode. To remove the bridge domain from p2p mode, use the **no** form of this command.

mode [p2p]

Syntax Description

p2p	(Optional) Configures the bridge domain in point-to-point (p2p) mode.

Command Default The default mode of the bridge domain is point-to-multipoint (p2mp).

Command Modes Global configuration (config)

Command History

Release	Modification
9.3.0	This command was introduced.

Usage Guidelines The p2p bridge domain can be used for Ethernet Private Line (EPL) and Ethernet Virtual Private Line (EVPL) services. The p2mp bridge domain can be used for Ethernet Private LAN (EPLAN) and Ethernet Virtual Private LAN (EVPLAN) services.

Examples The following example shows how to configure the bridge domain in p2p mode.

```
Router> enable
Router# configure terminal
Router(config)# bridge-domain 12
Router(config)# mode p2p
```

Related Commands

Command	Description
bridge-domain	Binds a service instance to a bridge domain instance.

rewrite ingress tag

To specify the rewrite operation to be applied on the frame ingress to the service instance, use the **rewrite ingress** tag command in service instance configuration mode. To remove the rewrite operation, use the **no** form of this command.

rewrite ingress tag {**push** {**dot1q** *vlan-id* | **dot1q** *vlan-id* **second-dot1q** *vlan-id* | **dot1ad** *vlan-id* **dot1q** *vlan-id*} | **pop** {**1** | **2**} | **translate** {**1-to-1** {**dot1q** *vlan-id* | **dot1ad** *vlan-id*}| **2-to-1 dot1q** *vlan-id* | **dot1ad** *vlan-id*}| **1-to-2** {**dot1q** *vlan-id* **second-dot1q** *vlan-id* | **dot1ad** *vlan-id* **dot1q** *vlan-id*} | **2-to-2** {**dot1q** *vlan-id* **second-dot1q** *vlan-id* | **dot1ad** *vlan-id* **dot1q** *vlan-id*}} {**symmetric**}
no rewrite ingress tag

Syntax Description

push	Adds a tag to a packet.
dot1q	Specifies an IEEE 802.1Q tag.
vlan-id	Integer in the range 1 to 4094 that identifies the VLAN.
second-dot1q	Specifies a different 802.1Q tag at the ingress service instance.
dot1ad	Specifies an IEEE 802.1ad tag.
pop	Removes a tag from a packet.
**{1	2}**	Specifies either the outermost tag or the two outermost tags for removal from a packet.
translate	Translates, by VLAN ID, a tag or a pair of tags defined in the **encapsulation** command.
1-to-1	Translates a single tag defined by the **encapsulation** command to a single tag defined in the **rewrite ingress tag** command.
1-to-2	Translates a single tag defined by the **encapsulation** command to a pair of tags defined in the **rewrite ingress tag** command.
2-to-1	Translates, by VLAN ID, a pair of tags defined by the **encapsulation** command to a single tag defined in the **rewrite ingress tag** command.
2-to-2	Translates, by VLAN ID, a pair of tags defined by the **encapsulation** command to a pair of tags defined in the **rewrite ingress tag** command.
symmetric	(Optional) Indicates a reciprocal adjustment to be done in the egress direction. For example, if the ingress pops a tag, the egress pushes a tag and if the ingress pushes a tag, the egress pops a tag.

Command Default   The frame is left intact on ingress.

Command Modes   Service instance configuration (config-if-srv)

Command History

Release	Modification
9.3.0	This command was introduced.

Usage Guidelines

- The EFP point–to–point service does not support the rewrite egress operation. It supports only the symmetric rewrite operation.

- The EFP multipoint–to–multipoint service supports rewrite ingress with the symmetric option. It does not support the rewrite egress operation.

- Rewrite Push 1 tag operation is not supported for encapsulations with double tag.

- Rewrite Push 2 tag operation is not supported for encapsulations with single or double tag.

- Translate rewrite operations are not supported for encapsulations, such as untagged, any, default, and for encapsulations involving VLAN range and list.

Examples   The following example shows how to specify the rewrite operation to be applied on the frame ingress to the service instance.

```
Router> enable
Router# configure terminal
Router(config)# interface TenGigabitEthernet 4/1
Router(config-if)# service instance 101 ethernet
Router(config-if-srv)# encapsulation dot1q 100
Router(config-if-srv)# rewrite ingress tag push dot1q 20 symmetric
Router(config-if-srv)# bridge-domain 12
Router(config-if-srv)# exit
```

Related Commands

Command	Description
encapsulation	Sets the encapsulation method used by an interface.

service instance ethernet

To configure an Ethernet service instance on an interface and to enter Ethernet service configuration mode, use the **service instance ethernet** command in interface configuration mode. To delete a service instance, use the **no** form of this command.

service instance *id* **ethernet** [*evc-name*]
no service instance *id*

Syntax Description

id	Integer from 1 to 4294967295 that uniquely identifies a service instance on an interface.
evc-name	(Optional) String of a maximum of 100 bytes that associates an Ethernet virtual connection (EVC) to the service instance.

Command Default

No Ethernet service instances are defined.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
9.3.0	This command was introduced.

Usage Guidelines

A service instance is a configuration object that holds all the management and control-plane attributes and parameters that apply to that service instance on a per-port basis. Different service instances that correspond to the same EVC must share the same name. Service instances are associated with a global EVC object through their shared name.

Examples

The following example shows how to define an Ethernet service instance and enter Ethernet service configuration mode for an EVC:

```
Router> enable
Router# configure terminal
Router(config)# interface TenGigabitEthernet 4/1
Router(config-if)# service instance 101 ethernet
Router(config-if-srv)#
```

Related Commands

Command	Description
show ethernet service instance	Displays information about configured Ethernet service instances.

show ethernet service instance

To display information about Ethernet service instances, use the **show ethernet service instance** command in privileged EXEC mode.

show ethernet service instance [**detail** | **id** *id* {**interface** *type number* [**detail** | **mac**] }] | **load-balance** | **platform** | **stats** | **interface** *type number* [**detail** | **load-balance** | **platform** | **stats** | **summary**] | **platform** | **policy-map** | **stats** | **summary**]

Syntax Description

detail	(Optional) Displays detailed information about service instances.
id	(Optional) Displays a specific service instance on an interface that does not map to a VLAN.
id	(Optional) Integer from 1 to 4294967295 that identifies a service instance on an interface that does not map to a VLAN.
interface	(Optional) Displays a specific interface selection for a specified service instance or displays all the service instances in the given interface.
type	(Optional) Type of interface.
number	(Optional) Number of the interface.
mac	(Optional) Displays MAC address data.
load-balance	(Optional) Displays manual load balancing configuration.
platform	(Optional) Displays the port channel EFPs that are currently using the manual or platform load balancing and the egress link.
stats	(Optional) Displays statistics for a specified service instance.
summary	(Optional) Displays summary information about service instances.
policy-map	(Optional) Displays the policy map for service instances.

Command Modes   Privileged EXEC (#)

Command History

Release	Modification
9.3.0	This command was introduced.

Usage Guidelines   This command is useful for system monitoring and troubleshooting.

Examples   The following example shows how to view EFP statistics.

```
Router> show ethernet service instance stats
```

```
System maximum number of service instances: 32768
Service Instance 2, Interface TenGigabitEthernet3/1
Pkts In       Bytes In       Pkts Out       Bytes Out
   0              0              0              0
Service Instance 2, Interface Port-channel15
Pkts In       Bytes In       Pkts Out       Bytes Out
   0              0              0              0
```

The following example shows how to display manual load balancing configuration.

```
Router# show ethernet service instance load-balance
```

```
Manually Assigned Load-Balancing Status for Port-channel1

 Link ID 1: TenGigabitEthernet4/1 (Active)
  Backup: Link ID 2 TenGigabitEthernet3/2
  Service instances: 10

 Link ID 2: TenGigabitEthernet3/2 (Active)
  Backup: Link ID 1 TenGigabitEthernet4/1
  Service instances: 20
```

The following example shows how to display the port channel EFPs that are currently using the manual or platform load balancing and the egress link.

```
Router# show ethernet service instance platform
```

```
EFP id: 10 Interface Port-channel1
        Load balancing type: Manual
        Associated Egress Interface: TenGigabitEthernet4/1
EFP id: 20 Interface Port-channel1
        Load balancing type: Manual
        Associated Egress Interface: TenGigabitEthernet3/2
EFP id: 10 Interface Port-channel2
        Load balancing type: Manual
        Associated Egress Interface: TenGigabitEthernet5/1
EFP id: 20 Interface Port-channel2
        Load balancing type: Platform
        Associated Egress Interface: TenGigabitEthernet5/1
```

Related Commands

Command	Description
clear ethernet service instance	Clears Ethernet service instance attributes such as MAC addresses and statistics or to purge Ethernet service instance errors.