



## EVC Command Reference

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

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# 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

<i>bridge-id</i>	Numerical ID of the bridge domain instance. The range is from 1 to 16384.
<b>split-horizon</b>	(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
<b>mode p2p</b>	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

<b>id</b> <i>identifier</i>	Indicates that a service instance is specified.
<b>interface</b>	Indicates that a specific interface is specified.
<i>type</i>	Type of interface.
<i>number</i>	Number of the interface.
<b>errdisable</b>	Indicates that a clear action for an error-disabled state is specified.
<b>mac table</b>	Indicates that a MAC table is specified.
<i>address</i>	Address in the specified MAC table.
<b>stats</b>	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
<b>show ethernet service instance</b>	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		
	<b>dot1q</b>	Specifies a 802.1Q tag at the ingress service instance.
	<i>any</i>	Indicates that all VLANs are to be configured.
	<i>vlan-id</i>	Integer in the range 1 to 4094 that identifies the VLAN.
	<b>second-dot1q</b>	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

<b>p2p</b>	(Optional) Configures the bridge domain in point-to-point (p2p) mode.
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## 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
<b>bridge-domain</b>	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

<b>push</b>	Adds a tag to a packet.
<b>dot1q</b>	Specifies an IEEE 802.1Q tag.
<i>vlan-id</i>	Integer in the range 1 to 4094 that identifies the VLAN.
<b>second-dot1q</b>	Specifies a different 802.1Q tag at the ingress service instance.
<b>dot1ad</b>	Specifies an IEEE 802.1ad tag.
<b>pop</b>	Removes a tag from a packet.
{1   2}	Specifies either the outermost tag or the two outermost tags for removal from a packet.
<b>translate</b>	Translates, by VLAN ID, a tag or a pair of tags defined in the <b>encapsulation</b> command.
<b>1-to-1</b>	Translates a single tag defined by the <b>encapsulation</b> command to a single tag defined in the <b>rewrite ingress tag</b> command.
<b>1-to-2</b>	Translates a single tag defined by the <b>encapsulation</b> command to a pair of tags defined in the <b>rewrite ingress tag</b> command.
<b>2-to-1</b>	Translates, by VLAN ID, a pair of tags defined by the <b>encapsulation</b> command to a single tag defined in the <b>rewrite ingress tag</b> command.
<b>2-to-2</b>	Translates, by VLAN ID, a pair of tags defined by the <b>encapsulation</b> command to a pair of tags defined in the <b>rewrite ingress tag</b> command.
<b>symmetric</b>	(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
<b>encapsulation</b>	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

<i>id</i>	Integer from 1 to 4294967295 that uniquely identifies a service instance on an interface.
<i>evc-name</i>	(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
<b>show ethernet service instance</b>	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

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

### Examples

This command is useful for system monitoring and troubleshooting. 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
<b>clear ethernet service instance</b>	Clears Ethernet service instance attributes such as MAC addresses and statistics or to purge Ethernet service instance errors.

