



Configuring Multicast VLAN Registration

This chapter describes Multicast VLAN Registration and procedures to configure Multicast VLAN Registration.

- [Using MVR in a Multicast Television Application](#) , page 1
- [Configuring Multicast VLAN Registration](#), page 4
- [MVR Interaction with LAG](#), page 17

Using MVR in a Multicast Television Application

In a multicast television application, a PC or a television with a set-top box can receive the multicast stream. Multiple set-top boxes or PCs can be connected to one subscriber port, which is an EFP configured as the MVR receiver. [Figure 1: Multicast Bridge-Domain Registration Example](#), on page 2 is an example configuration. The DHCP assigns an IP address to the set-top box or the PC. When a subscriber selects a channel, the set-top box or PC sends an IGMP report to the CPT node (CPT 200 or CPT 600 along with CPT 50) to join the appropriate multicast. If the IGMP report matches one of the configured IP multicast group addresses, the CPT system modifies the hardware address table to include this receiver EFP and bridge-domain as a forwarding destination of the specified multicast stream when it is received from the multicast bridge-domain.

When a subscriber changes channels or turns off the television, the set-top box sends an IGMP leave message for the multicast stream. The CPT system sends a MAC-based general query through the receiver EFP bridge-domain. If there is another set-top box in the bridge-domain still subscribing to this group, that set-top box must respond within the maximum response time specified in the query. If the CPT system does not receive a response, it eliminates the receiver EFP as a forwarding destination for this group.

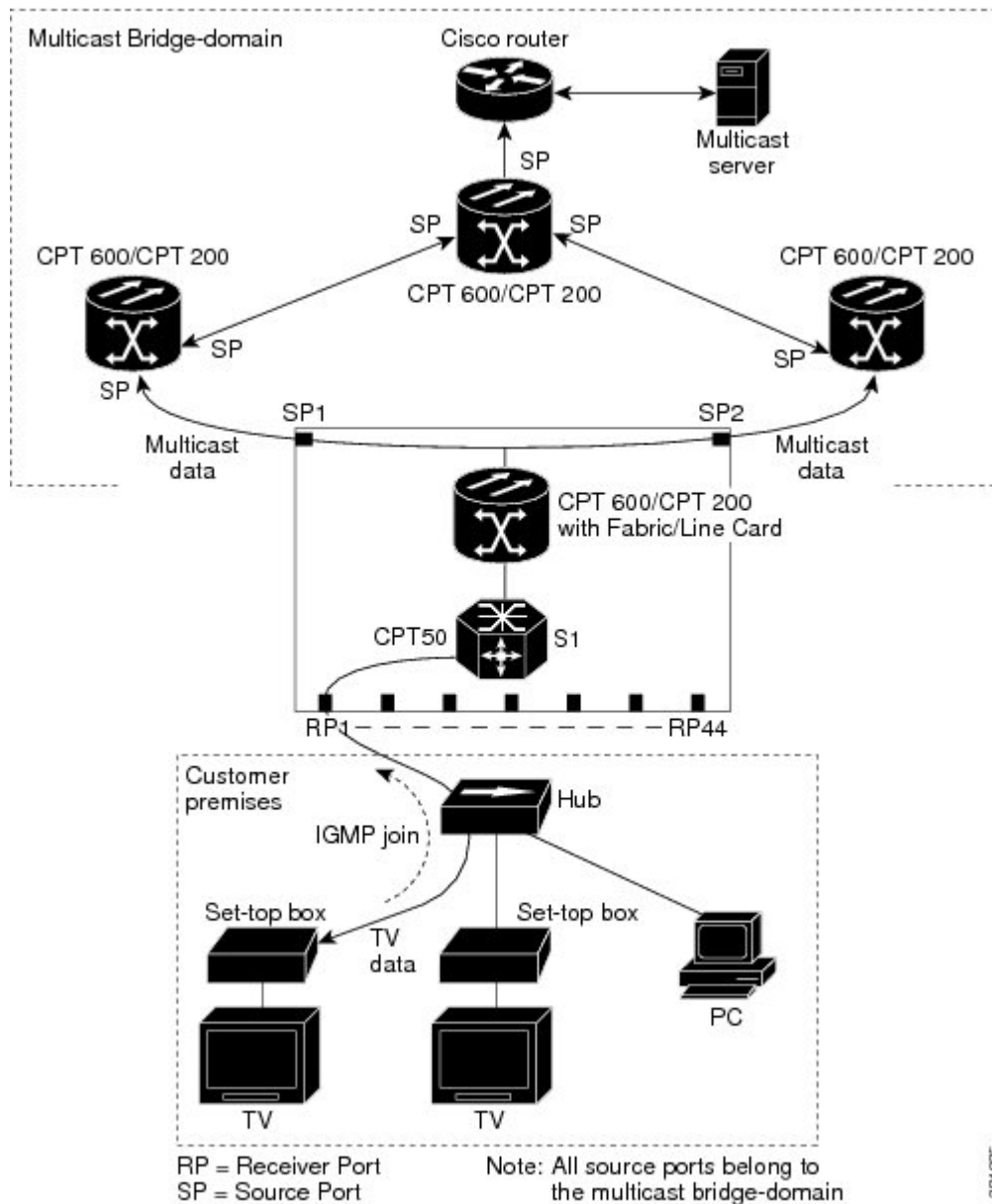
If the Immediate Leave feature is enabled on a receiver EFP, the EFP leaves a multicast group more quickly. Without Immediate Leave, when the CPT system receives an IGMP leave message from a subscriber on a receiver EFP, it sends out an IGMP group specific query on that EFP and waits for the IGMP group membership reports. If no reports are received in a configured time period, the receiver EFP is removed from the multicast group membership. With Immediate Leave, an IGMP query is not sent from the receiver EFP where the IGMP leave was received. As soon as the leave message is received, the receiver EFP is removed from the multicast group membership, which speeds up leave latency. Enable the Immediate Leave feature only on receiver EFPs to which a single receiver device is connected.

MVR eliminates the need to duplicate television-channel multicast traffic for subscribers in each bridge-domain. Multicast traffic for all channels is only sent around the bridge domain source EFPs —only on the multicast

bridge-domain. The IGMP leave and join messages are in the bridge-domain to which the subscriber port is assigned. These messages dynamically register for streams of multicast traffic in the multicast bridge-domain on the Layer 3 device. The CPT node (CPT 200 or CPT 600 along with CPT 50) modifies the forwarding behavior to allow the traffic to be forwarded from the multicast bridge domain to the subscriber port in a different bridge-domain, thereby selectively allowing traffic to cross between the two bridge-domains.

IGMP reports are sent to the same IP multicast group address as the multicast data. The CPT node (CPT 200 or CPT 600 along with CPT 50) must capture all IGMP join and leave messages from the receiver EFPs and forward them to the multicast bridge domain of the source EFP.

Figure 1: Multicast Bridge-Domain Registration Example



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Using MVR in a Multicast Television Application

In a multicast television application, a PC or a television with a set-top box can receive the multicast stream. Multiple set-top boxes or PCs can be connected to one subscriber port, which is an EFP configured as the MVR receiver. [Figure 2: Multicast Bridge-Domain Registration Example, on page 4](#) is an example configuration. The DHCP assigns an IP address to the set-top box or the PC. When a subscriber selects a channel, the set-top box or PC sends an IGMP report to the CPT node (CPT 200 or CPT 600 along with CPT 50) to join the appropriate multicast. If the IGMP report matches one of the configured IP multicast group addresses, the CPT system modifies the hardware address table to include this receiver EFP and bridge-domain as a forwarding destination of the specified multicast stream when it is received from the multicast bridge-domain.

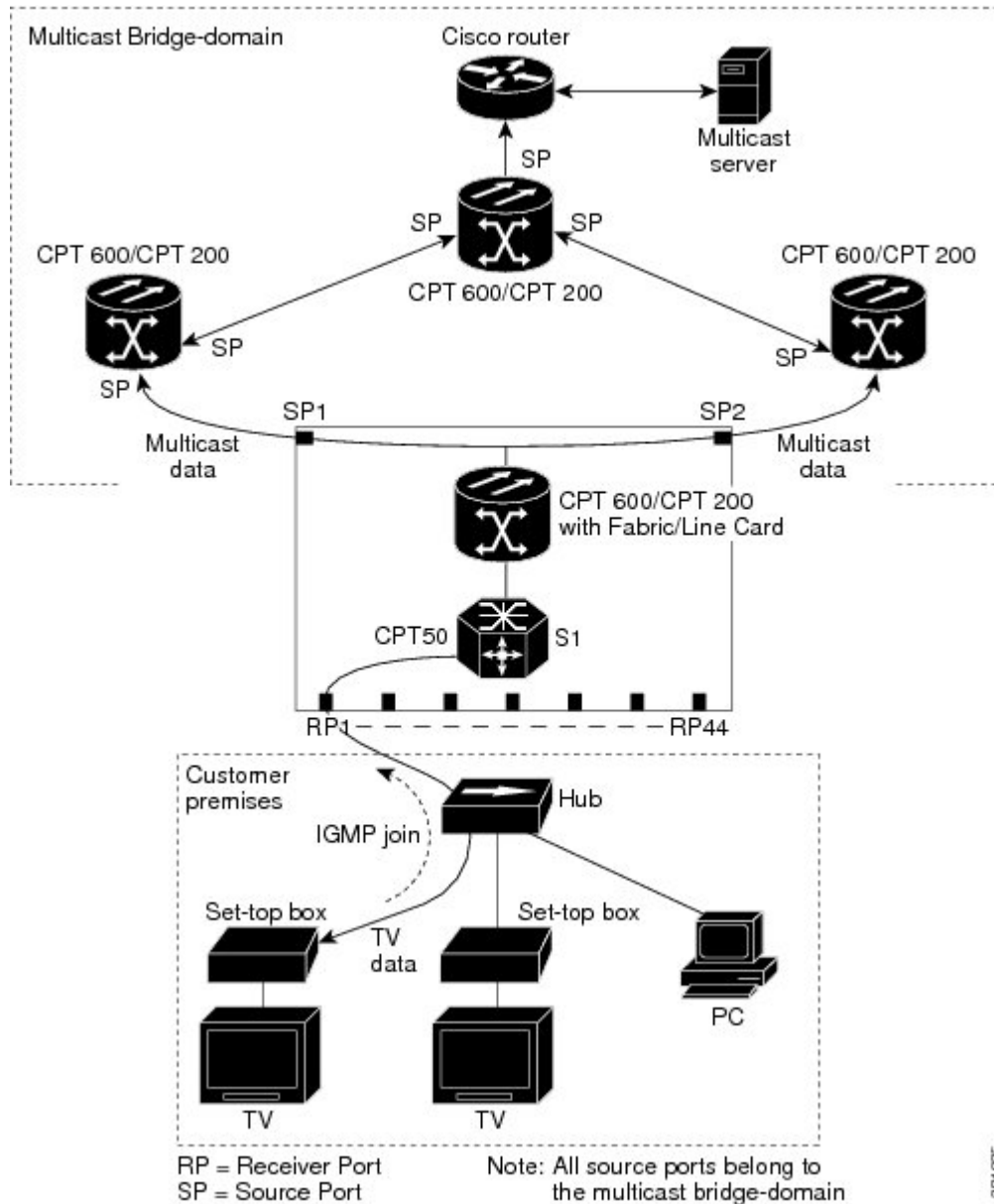
When a subscriber changes channels or turns off the television, the set-top box sends an IGMP leave message for the multicast stream. The CPT system sends a MAC-based general query through the receiver EFP bridge-domain. If there is another set-top box in the bridge-domain still subscribing to this group, that set-top box must respond within the maximum response time specified in the query. If the CPT system does not receive a response, it eliminates the receiver EFP as a forwarding destination for this group.

If the Immediate Leave feature is enabled on a receiver EFP, the EFP leaves a multicast group more quickly. Without Immediate Leave, when the CPT system receives an IGMP leave message from a subscriber on a receiver EFP, it sends out an IGMP group specific query on that EFP and waits for the IGMP group membership reports. If no reports are received in a configured time period, the receiver EFP is removed from the multicast group membership. With Immediate Leave, an IGMP query is not sent from the receiver EFP where the IGMP leave was received. As soon as the leave message is received, the receiver EFP is removed from the multicast group membership, which speeds up leave latency. Enable the Immediate Leave feature only on receiver EFPs to which a single receiver device is connected.

MVR eliminates the need to duplicate television-channel multicast traffic for subscribers in each bridge-domain. Multicast traffic for all channels is only sent around the bridge domain source EFPs —only on the multicast bridge-domain. The IGMP leave and join messages are in the bridge-domain to which the subscriber port is assigned. These messages dynamically register for streams of multicast traffic in the multicast bridge-domain on the Layer 3 device. The CPT node (CPT 200 or CPT 600 along with CPT 50) modifies the forwarding behavior to allow the traffic to be forwarded from the multicast bridge domain to the subscriber port in a different bridge-domain, thereby selectively allowing traffic to cross between the two bridge-domains.

IGMP reports are sent to the same IP multicast group address as the multicast data. The CPT node (CPT 200 or CPT 600 along with CPT 50) must capture all IGMP join and leave messages from the receiver EFPs and forward them to the multicast bridge domain of the source EFP.

Figure 2: Multicast Bridge-Domain Registration Example



Configuring Multicast VLAN Registration

This section provides MVR configuration guidelines and limitations, and procedures to configure MVR using Cisco IOS commands and CTC.

MVR Configuration Guidelines and Limitations

- Receiver EFPs on a CPT system can be in different bridge-domains, but should not belong to the multicast bridge-domain.
- The maximum number of multicast entries (MVR group addresses) that can be configured on a CPT system is 2000.
- The CPT system supports up to 20 MVR bridge-domains.
- The maximum number of receiver EFPs on an MVR bridge-domain is 128.
- Because an MVR on the CPT system uses IP multicast addresses instead of MAC multicast addresses, aliased IP multicast addresses are allowed on the CPT system.
- MVR can coexist with IGMP snooping on a CPT system.
- MVR data received on an MVR receiver EFP is not forwarded to MVR source EFPs.
- A physical port can have only one receiver EFP for a given MVR bridge domain.
- CPT system does not support MVR in point to point bridge-domains.
- Query response time is 0.5 second.
- It is mandatory to untag the packets before they enter the bridge domain:
 - For an MVR source, the packets are untagged using the **rewrite pop** configuration at the EFP level.
 - For an MVR receiver, the **rewrite pop** operation is implicit. User-defined rewrite operation is used for bridge-domains that do not have MVR enabled.
- Following configuration restrictions are applicable while configuring MVR source EFPs on the CPT system:
 - For a single tagged packet, the tag is removed using the **rewrite ingress tag pop 1 symmetric** command at the EFP level.
 - For a double tagged packet, the tag is removed using the **rewrite ingress tag pop 2 symmetric** command at the EFP level.
 - For an untagged packet, a rewrite operation is not required.

To configure MVR using Cisco IOS commands, see [NTP-J69 Configuring MVR Using Cisco IOS Commands, on page 5](#).

To configure MVR using CTC, see [NTP-J70 Configuring MVR Using CTC, on page 15](#).

NTP-J69 Configuring MVR Using Cisco IOS Commands

Purpose	This procedure configures MVR using Cisco IOS commands.
Tools/Equipment	None
Prerequisite Procedures	None

Required/As Needed	As needed
Onsite/Remote	Remote
Security Level	None

Procedure

-
- Step 1** Complete the [DLP-J210 Enabling or Disabling MVR on a Bridge Domain Using Cisco IOS Commands](#) , on page 6.
- Step 2** Complete the [DLP-J211 Enabling or Disabling MVR on the Source and Receiver EFPs Using Cisco IOS Commands](#), on page 8.
- Step 3** (Optional) Complete the [DLP-J229 Viewing MVR Configuration Using Cisco IOS Commands](#), on page 13.
Stop. You have completed this procedure.
-

DLP-J210 Enabling or Disabling MVR on a Bridge Domain Using Cisco IOS Commands

Purpose	This procedure enables or disables MVR on a bridge domain using Cisco IOS commands.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Remote
Security Level	None

Procedure

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.

	Command or Action	Purpose
Step 3	bridge domain <i>bridge-domain value</i> Example: Router(config)# bridge-domain 22	Enters the bridge-domain configuration mode. • Enter the value of the bridge-domain.
Step 4	[no] mvr Example: Router(config-bdomain)# mvr	Enables MVR on the bridge-domain. The no form of the command disables MVR.
Step 5	[no] mvr group <i>ip-address count</i> Example: Router(config-bdomain)# mvr group 228.1.23.4 5	Defines a global range of IP multicast groups on which MVR must be enabled. The optional count parameter is used to configure a contiguous series of MVR group addresses (the range for count is from 1 to 2000; the default is 1). Any multicast data sent to the IP address mentioned in the command is sent to all source EFPs on the CPT system and all receiver EFPs that have elected to receive data on that multicast address. The no form of the deletes the multicast IP address configuration. <i>ip-address</i> —Group IP address. <i>count</i> —Group count inside the bridge domain.
Step 6	end Example: Router(config-bdomain)# end	Exits the bridge domain configuration mode and returns to privileged EXEC mode.
Step 7	show mvr Example: Router#show mvr	Verifies the configuration.
Step 8	copy running-config startup-config Example: copy running-config startup-config	(Optional) Saves your entries in the configuration file.

Examples:

The following example shows how to enable MVR on bridge domain 22 and configure the group address.

```
Router(config)# bridge-domain 22
Router(config-bdomain)# mvr
Router(config-bdomain)# mvr group 228.1.23.4 5
Router(config-bdomain)# end
```

The following example shows how to disable MVR on bridge domain 22 and group address.

```
Router(config)# bridge-domain 22
Router(config-bdomain)# no mvr
```

```
Router(config-bdomain)# no mvr group 228.1.23.4 5
Router(config-bdomain)# end
```

The following example shows how to verify the MVR multicast group addresses on the CPT system.

```
Router# show mvr groups
```

```
MVR multicast VLAN: 20
MVR max Multicast Groups allowed: 2000
MVR current multicast groups: 20
MVR groups:
```

Group start	Group end	Type	Count/Mask
230.1.2.3	230.1.2.22	count	20

DLP-J211 Enabling or Disabling MVR on the Source and Receiver EFPs Using Cisco IOS Commands

Purpose	This procedure enables or disables MVR on the source and receiver EFPs: <ul style="list-style-type: none"> • Step 1 through Step 9 explains MVR configuration of the source EFP. • Step 10 through Step 15 explains MVR configuration of the receiver EFP.
Tools/Equipment	None
Prerequisite Procedures	DLP-J210 Enabling or Disabling MVR on a Bridge Domain Using Cisco IOS Commands , on page 6
Required/As Needed	As needed
Onsite/Remote	Remote
Security Level	None



Note

Users must configure an MVR bridge domain before configuring the MVR source and receiver EFPs. Step 1 through Step 9 explains MVR configuration of the source EFP. Step 8 through Step 16 explains MVR configuration of the receiver EFP.

The **mvr type {source | receiver bridge-domain id [vlan id] [immediate]}** command is used to configure the EFPs, where **bridge-domain id [vlan id] [immediate]** is only applicable to the receiver EFPs.

Procedure

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface <i>type number</i> Example: Router(config)# interface TengigabitEthernet 4/1	Specifies the type and location of the interface to configure, where: • <i>type</i> —Specifies the type of the interface. • <i>number</i> —Specifies the location of the interface.
Step 4	service instance <i>id ethernet</i> Example: Router(config-if)# service instance 10 ethernet	Configures an Ethernet service instance on an interface.
Step 5	encapsulation dot1q <i>vlan-id</i> Example: Router(config-if-srv)# encapsulation dot1q 10	Defines the matching criteria to be used in order to map ingress dot1q frames on an interface to the appropriate service instance.
Step 6	rewrite ingress tag pop {1 2} symmetric Example: Router(config-if-srv)# rewrite ingress tag pop 1 symmetric	Specifies the rewrite operation.
Step 7	bridge-domain <i>bridge-domain id</i> Example: Router(config-if-srv)# bridge-domain 22	Enters the bridge-domain
Step 8	[no] mvr type source Example: Router(config-if-srv)#mvr type source	Configures an MVR EFP as the source. Subscribers cannot be directly connected to the source EFPs. All source EFPs on a CPT system belong to the single multicast bridge-domain. The no form of the command removes the MVR source EFP configuration.

	Command or Action	Purpose
Step 9	exit Example: exit	Exits the service instance mode.
Step 10	interface <i>type number</i> Example: Router(config)# interface TengigabitEthernet 6/3	Specifies the type and location of the interface to configure. <ul style="list-style-type: none"> • <i>type</i>—Type of the interface. • <i>number</i>—Location of the interface.
Step 11	service instance <i>id ethernet</i> Example: Router(config-if)# service instance 100 ethernet	Configures an Ethernet service instance on an interface.
Step 12	encapsulation dot1q { <i>vlan-id</i> <i>vlan-range</i> } Example: <ul style="list-style-type: none"> • Router(config-if-srv)# encapsulation dot1q 10 or • Router(config-if-srv)# encapsulation dot1q 100-1000 	Defines the matching criteria to be used in order to map ingress dot1q frames on an interface to the appropriate service instance.
Step 13	bridge-domain <i>bridge-domain id</i> Example: Router(config-if-srv)# bridge-domain 100	Enters the bridge-domain
Step 14	[no] mvr type receiver bridge-domain <i>id</i> [vlan <i>vlan-id</i>] [immediate] Example: <ul style="list-style-type: none"> • Router(config- if-srv)# mvr type receiver bridge-domain 22 immediate or • Router(config-if-srv)# mvr type receiver bridge-domain 22 vlan 200 	Configures an MVR EFP (subscriber port) as the receiver to receive only multicast data. It does not receive data unless it becomes a member of the multicast group, either statically or by using IGMP leave and join messages. Receiver EFPs cannot belong to the multicast bridge-domain. The no form of the command removes the MVR receiver EFP configuration. <p>immediate— (Optional) Enables the Immediate-Leave feature on the receiver EFP.</p> <p>Note This command applies to only receiver EFPs and should only be enabled on receiver EFPs to which a single receiver device is connected.</p>

	Command or Action	Purpose
		vlan <i>vlan-id</i> — (Optional) Specifies the VLAN ID to be used when the VLAN range is mentioned. This option is used only on the receiver EFP.
Step 15	end Example: Router(config-if-srv)# end	Returns to privileged EXEC mode.
Step 16	show mvr Example: Router(config)# show mvr	Verifies the configuration.
Step 17	copy running-config startup-config Example: copy running-config startup-config	(Optional) Saves your entries in the configuration file.

To return the CPT system to its default settings, use the **no mvr [type *type* | immediate | vlan *vlan-id*]** command in the interface configuration mode.

Examples:

This example shows how to configure an EFP as a receiver and receive multicast traffic sent to the multicast group address. It also shows how to enable Immediate Leave on the receiver EFP and verify the results.

```
Router(config)# interface TengigabitEthernet 6/3
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# encapsulation dot1q 10
Router(config-if-srv)# rewrite ingress tag pop 1 symmetric
Router(config-if-srv)# bridge-domain 100
Router(config-if-srv)# mvr type receiver bridge-domain 22 immediate
end
Router(config)#show mvr receiver
```

This example shows how to disable MVR on the receiver EFP.

```
Router(config)# interface TengigabitEthernet 6/3
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# no mvr type receiver bridge-domain 22 immediate
Router(config-if-srv)# no service instance 100 ethernet
```

This example shows how to configure an EFP as a receiver with encapsulation range, and receive multicast traffic sent to the multicast group address. It also shows how to enable Immediate Leave on the receiver EFP.

```
Router(config)# interface gi36/1
Router(config-if)# service instance 10 ethernet
Router(config-if-srv)# encapsulation dot1q 100-1000
Router(config-if-srv)# rewrite ingress tag push dot1q 100 symmetric
Router(config-if-srv)# bridge-domain 100
Router(config-if-srv)# mvr type receiver bridge-domain 22 immediate vlan 200
```

This example shows how to configure an EFP as a receiver with encapsulation ID, and receive multicast traffic sent to the multicast group address. It also shows how to enable Immediate Leave on the receiver EFP.

```
Router(config)# interface gi36/2
Router(config-if)# service instance 10 ethernet
Router(config-if-srv)# encapsulation dot1q 10
Router(config-if-srv)# rewrite ingress tag push dot1q 10 symmetric
Router(config-if-srv)# bridge-domain 100
Router(config-if-srv)# mvr type receiver bridge-domain 22 immediate
```

This example shows how to enable MVR on the source EFP.

```
Router(config)# TengigabitEthernet 6/3
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# encapsulation dot1q 12
Router(config-if-srv)# rewrite ingress tag pop 1 symmetric
Router(config-if-srv)# bridge-domain 22
Router(config-if-srv)# mvr type source
```

This example shows how to disable MVR on the source EFP.

```
Router(config)# TengigabitEthernet 6/3
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# no mvr type source
Router(config-if-srv)# no service instance 100 ethernet
```

This example shows how to enable MVR on the bridge domains and configure source MVR EFPs and receiver MVR EFPs.

```
! Enabling MVR on the bridge domain 22 and bridge domain 30.
Router(config)# bridge-domain 22
Router(config-bdomain)# mvr
Router(config-bdomain)# mvr group 225.0.0.1 5
Router(config-bdomain)# end

Router(config)# bridge-domain 30
Router(config-bdomain)# mvr
Router(config-bdomain)# mvr group 226.0.0.1 5

! Configuring source EFP on the bridge domain 22.
Router(config)# TengigabitEthernet 6/3
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# encapsulation dot1q 12
Router(config-if-srv)# rewrite ingress tag pop 1 symmetric
Router(config-if-srv)# bridge-domain 22
Router(config-if-srv)# mvr type source

! Configuring receiver EFP on the bridge domain 50.
Router(config)# interface TengigabitEthernet 5/3
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# encapsulation dot1q 10
Router(config-if-srv)# rewrite ingress tag pop 1 symmetric
Router(config-if-srv)# bridge-domain 50
Router(config-if-srv)# mvr type receiver bridge-domain 22 immediate

! Configuring source EFP on the bridge domain 30.
Router(config)# TengigabitEthernet 4/3
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# encapsulation dot1q 12
Router(config-if-srv)# rewrite ingress tag pop 1 symmetric
Router(config-if-srv)# bridge-domain 30
Router(config-if-srv)# mvr type source

! Configuring receiver EFP on the bridge domain 60.
Router(config)# interface TengigabitEthernet 2/3
Router(config-if)# service instance 100 ethernet
Router(config-if-srv)# encapsulation dot1q 10
```

```

Router(config-if-srv) # rewrite ingress tag push dot1q 100 symmetric
Router(config-if-srv) # bridge-domain 60
Router(config-if-srv) # mvr type receiver bridge-domain 30 immediate

! Configuring receiver EFP on the bridge domain 60 encapsulation range.
Router(config) # interface TengigabitEthernet 2/4
Router(config-if) # service instance 200 ethernet
Router(config-if-srv) # encapsulation dot1q 10-1000
Router(config-if-srv) # bridge-domain 60
Router(config-if-srv) # mvr type receiver bridge-domain 30 immediate vlan 20

```

DLP-J229 Viewing MVR Configuration Using Cisco IOS Commands

Purpose	This procedure explains how to view MVR configuration using Cisco IOS commands.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Remote
Security Level	None

Procedure

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	show mvr [source-ports] [receiver-ports] [groups] Example: Router# show mvr	Displays MVR status and values for all the bridge-domains where MVR is enabled. It provides the number of groups configured per bridge domain and displays all receiver and source EFPs.
Step 3	show ip igmp snooping [groups] [querier] Example: Router# show ip igmp snooping	(Optional) Displays the querier and snooping information.

Examples

This example shows how to view MVR receiver port configuration.

```
Router# show mvr receiver-ports
```

```

Joins: v1,v2,v3 counter shows total IGMP joins
       v3 counter shows IGMP joins received with both MVR and non-MVR
groups
Port          VLAN    Status      Immediate      Joins
              VLAN    /UP        Leave          (v1,v2,v3)    (v3)
-----
Po10          100    ACTIVE /UP        DISABLED       0              0
Gi40/2        100    ACTIVE /UP        DISABLED       0              0
Po10          200    ACTIVE /UP        DISABLED       0              0
Gi40/2        101    ACTIVE /UP        DISABLED       0              0

```

This example shows how to view MVR source port configuration.

```
Router# show mvr source-ports
```

```

Joins: v1,v2,v3 counter shows total IGMP joins
       v3 counter shows IGMP joins received with both MVR and non-MVR
groups
Port          VLAN    Status      Immediate      Joins
              VLAN    /UP        Leave          (v1,v2,v3)    (v3)
-----
Gi36/2        1      ACTIVE /UP        DISABLED       0              0
Gi36/2        2      ACTIVE /UP        DISABLED       0              0

```

This example shows how to view MVR group details.

```
Router# show mvr groups
```

```

MVR multicast VLAN: 1
MVR max Multicast Groups allowed: 2000
MVR current multicast groups: 60
MVR groups:

```

Group start	Group end	Type	Count/Mask
224.1.1.1	224.1.1.20	count	20
225.1.1.1	225.1.1.20	count	20
229.1.1.1	229.1.1.10	count	10
230.1.1.1	230.1.1.10	count	10

```

MVR multicast VLAN: 2
MVR max Multicast Groups allowed: 2000
MVR current multicast groups: 60
MVR groups:

```

Group start	Group end	Type	Count/Mask
224.1.1.1	224.1.1.20	count	20
225.1.1.1	225.1.1.20	count	20
229.1.1.1	229.1.1.10	count	10
230.1.1.1	230.1.1.10	count	10

This example shows how to view snooping details.

```
Router# show ip igmp snooping groups
```

Flags: I -- IGMP snooping, S -- Static, P -- PIM snooping, A -- ASM mode

Vlan	Group/source	Type	Version	Port List
1	229.1.1.1	I	v3	Po10 Gi40/2
1	229.1.1.2	I	v3	Po10 Gi40/2
1	229.1.1.3	I	v3	Po10 Gi40/2
1	229.1.1.4	I	v3	Po10 Gi40/2
1	229.1.1.5	I	v3	Po10 Gi40/2
1	229.1.1.6	I	v3	Po10 Gi40/2
1	229.1.1.7	I	v3	Po10 Gi40/2
1	229.1.1.8	I	v3	Po10 Gi40/2
1	229.1.1.9	I	v3	Po10 Gi40/2
1	229.1.1.10	I	v3	Po10 Gi40/2

This example shows how to view querier details.

Router# **show ip igmp snooping querier**

Vlan	IP Address	IGMP Version	Port
1	12.12.12.12	v3	Gi36/2

This example shows how to view generic MVR details.

Router# **show mvr**

```
MVR Running: TRUE
MVR multicast VLAN: 2
MVR Max Multicast Groups: 2000
MVR Current multicast groups: 100
MVR Global query response time: 5 (tenths of sec)
```

NTP-J70 Configuring MVR Using CTC

Purpose	This procedure explains how to enable MVR on the bridge domain, create a source MVR EFP, a receiver MVR EFP, and disable MVR.
Tools/Equipment	None

Prerequisite Procedures	<p>Create an Ethernet Virtual Private LAN EVC circuit with the following conditions:</p> <ul style="list-style-type: none"> • Type of VLAN Tagging: <ul style="list-style-type: none"> ◦ Double Tagged ◦ Single Tagged ◦ Untagged • Rewrite Operation: <ul style="list-style-type: none"> ◦ POP 1 for Single Tagged ◦ POP 2 for Double Tagged ◦ N/A for Untagged <p>Note While creating an EVPLAN circuit, the source EFP and the receiver EFP of the same MVR bridge domain cannot be present on the same physical port.</p> <p>To create an EVC circuit, see DLP-J2 Create an EVC Circuit Using CTC.</p>
Required/As Needed	As needed
Onsite/Remote	Remote
Security Level	None



Note An MVR source is configured on the EVPLAN circuit that has MVR enabled; however, an MVR receiver is configured on the EVPLAN circuit that does not have MVR enabled.

Procedure

- Step 1** Complete the [NTP-J22 Log into CTC](#) procedure at a node where you want to enable MVR.
- Step 2** In the node view, click the **Layer2+** tab.
- Step 3** Click **Carrier Ethernet**.
- Step 4** From the list of Ethernet Virtual Circuits (EVCs), select an Ethernet Virtual Private LAN EVC circuit to enable MVR.
- Step 5** Click **Edit**. The Edit Circuit dialog box appears. In the **MVR** tab, specify the multicast settings for the bridge domain as described in the subsequent steps.
- Step 6** To enable MVR on the bridge domain, do the following:
 - a) Check the **MVR** check box to enable MVR for this bridge domain.

Note To disable MVR, uncheck the **MVR** check box.

- b) Click **Apply**.
- Step 7** To add multicast IP addresses for the bridge domain, do the following:
- Check **Multicast IP Address Configuration**. The Multicast IP Addresses dialog box appears.
 - Enter one or more multicast IP address in the IP Address field and click **Add**. The added multicast addresses appear in the IP Addresses area.

Note When the EVPLAN circuit spans across more than one node in the network, the Multicast IP address configuration must be performed on all those nodes.
 - Click **Apply**.
- Step 8** To create an MVR source EFP, do the following:
- From the MVR Type drop-down list, choose **Source** for each EFP.

Note Choose **None** to remove the MVR type from the EFP.
 - Enter one or more multicast IP address in the IP Address field and click **Add**. The added multicast addresses appear in the IP Addresses area.
 - Click **Apply** and close the Multicast IP Addresses dialog box.
- Step 9** To create an MVR receiver EFP, do the following:
- From the MVR Type drop-down list, choose **Receiver** for each EFP.

Note Choose **None** to remove the MVR type from the EFP.
 - Click the Source Service ID field and select an MVR enabled service.
 - Check the **Immediate Leave** check box. When you enable Immediate Leave, MVR immediately removes a port when it detects a leave message on that port.

Note In case of VLAN range in the MVR receiver configuration, specify the Egress VLAN ID.
 - Click **Apply**.
- Step 10** To disable MVR on the bridge-domain, source MVR EFP, or receiver MVR EFP, do the following:
- Choose **None** to remove the MVR type from the EFP.
 - Delete the multicast IP address configuration.
 - Uncheck the **MVR** check box.
- Step 11** To view the MVR configuration, refer to the procedure explained in [DLP-J56 Open the Cisco IOS Configuration Mode and View the Feature Configuration Details Using CTC](#).

MVR Interaction with LAG

We can add a LAG interface to a bridge domain which has MVR enabled.

The following example shows the source EFP configuration, which is part of the LAG interface that is a member of the MVR-enabled bridge domain.

```
! Enabling MVR on the bridge domain.
Router(config)# bridge-domain 30
Router(config-bdmain)# mvr
Router(config-bdmain)# mvr group 239.0.0.1 10

! Configuring source EFP on the bridge domain 30.
Router(config)# interface port-channel 10
```

```

Router(config-if)# service instance 10 ethernet
Router(config-if-srv)# encapsulation dot1q 10
Router(config-if-srv)# bridge-domain 30
Router(config-if-srv)# mvr type source
Router(config-if-srv)# exit

! Adding members to the port channel interface.
Router(config)# interface ten 6/1
Router(config-if)# channel-group 10

Router(config)# interface ten 6/2
Router(config-if)# channel-group 10

! Configuring receiver EFP on the bridge domain 100.
Router(config)# interface gi36/5
Router(config-if)# service instance 10 ethernet
Router(config-if-srv)# encapsulation dot1q 100
Router(config-if-srv)# bridge-domain 100
Router(config-if-srv)# mvr type receiver bridge-domain 30

! Configuring receiver EFP on the bridge domain 200.
Router(config)# interface gi36/6
Router(config-if)# service instance 10 ethernet
Router(config-if-srv)# encapsulation dot1q 100
Router(config-if-srv)# rewrite ingress tag push dot1q 100 symmetric
Router(config-if-srv)# bridge-domain 200
Router(config-if-srv)# mvr type receiver bridge-domain 30

```

The following example shows the receiver EFP configuration, which is part of the LAG interface.

```

! Enabling MVR on the bridge domain.
Router(config)# bridge-domain 30
Router(config-bdmain)# mvr
Router(config-bdmain)# mvr group 228.1.23.4 5
Router(config-bdmain)# end

! Configuring the source EFP.
Router(config)# interface ten 6/1
Router(config-if)# service instance 10 ethernet
Router(config-if-srv)# encapsulation dot1q 10 second-dot1q 30
Router(config-if-srv)# bridge-domain 30
Router(config-if-srv)# mvr type source

! Configuring the receiver EFP.
Router(config)# interface port-channel 10
Router(config-if)# service instance 10 ethernet
Router(config-if-srv)# encapsulation dot1q 10
Router(config-if-srv)# bridge-domain 100
Router(config-if-srv)# mvr type receiver bridge-domain 30

! Adding members to the port channel interface.
Router(config)# interface gi36/5
Router(config-if)# channel-group 10

Router(config)# interface gi36/6
Router(config-if)# channel-group 10

! Configuring the receiver EFP.
Router(config)# interface gi36/6
Router(config-if)# service instance 10 ethernet
Router(config-if-srv)# encapsulation dot1q 100
Router(config-if-srv)# rewrite ingress tag push dot1q 100 symmetric
Router(config-if-srv)# bridge-domain 200
Router(config-if-srv)# mvr type receiver bridge-domain 30

```