



Using MVR in a Multicast Television Application

In a multicast television application, a Personal Computer (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. The figure below 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 Cisco ME 2600X node to join the appropriate multicast. If the IGMP report matches one of the configured IP multicast group addresses, the Cisco ME 2600X 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.

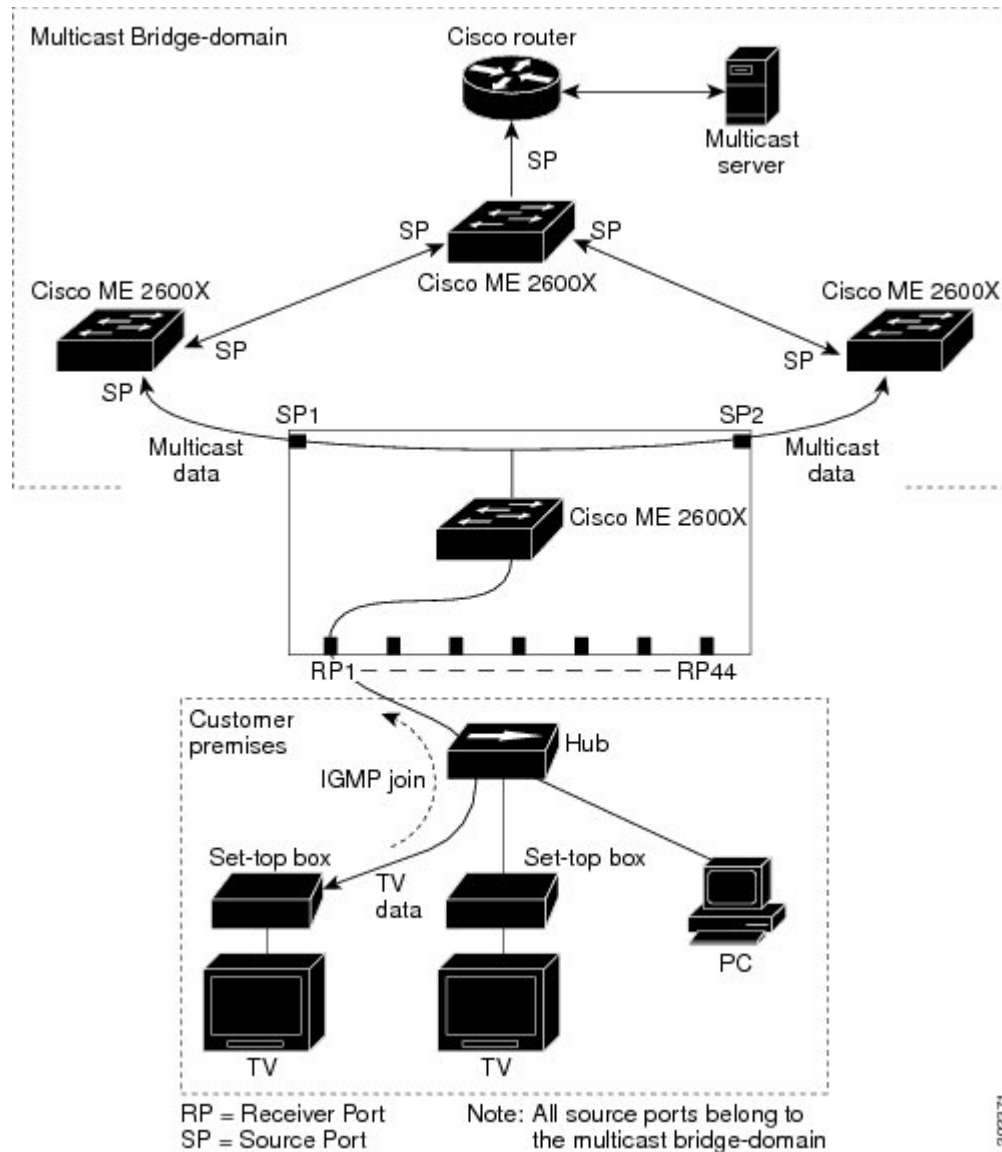
When a subscriber changes channels or turns off the television, the set-top box sends an IGMP leave message for the multicast stream. The Cisco ME 2600X system sends a MAC-based general query through the receiver EFP bridge-domain. If there is another set-top box in the bridge-domain still subscribing to this group, that set-top box must respond within the maximum response time specified in the query. If the Cisco ME 2600X 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 Cisco ME 2600X 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 Cisco ME 2600X node 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 Cisco ME 2600X node 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



- [Configuring Multicast VLAN Registration, page 3](#)
- [MVR Interaction with LAG, page 12](#)
- [Configuring MVR with IGMP, page 14](#)

Configuring Multicast VLAN Registration

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

MVR Configuration Guidelines

- Receiver EFPs on a Cisco ME 2600X 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 Cisco ME 2600X system is 2000.
- The Cisco ME 2600X system supports up to 20 MVR bridge-domains.
- The maximum number of receiver EFPs on an MVR bridge-domain is 20.
- Because an MVR on the Cisco ME 2600X system uses IP multicast addresses instead of MAC multicast addresses, aliased IP multicast addresses are allowed on the Cisco ME 2600X system.
- MVR can coexist with IGMP snooping on a Cisco ME 2600X system on a bridge domain.
- 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.
- Cisco ME 2600X 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 and receiver, the packets are untagged using the **rewrite pop** configuration at the EFP level.

Restrictions for MVR

- 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.
- MVR with IGMP on REP segment results in a stale entry in the IGMP snooping table when REP state changes.

To configure MVR using Cisco IOS commands, see [Configuring MVR](#), on page 3.

Configuring MVR

To configure MVR, complete the following procedures:

- 1 [Enabling or Disabling MVR on a Bridge Domain](#), on page 4
- 2 [Enabling or Disabling MVR on the Source and Receiver EFPs](#), on page 5

3 [Viewing MVR Configuration, on page 10](#)

Enabling or Disabling MVR on a Bridge Domain

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **bridge domain** *bridge-domain value*
4. **[no] mvr**
5. **[no] mvr group** *ip-address count*
6. **end**
7. **show mvr**
8. **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Switch> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	configure terminal Example: Switch# configure terminal	Enters global configuration mode.
Step 3	bridge domain <i>bridge-domain value</i> Example: Switch(config)# bridge-domain 22	Enters the bridge-domain configuration mode. • Enter the value of the bridge domain.
Step 4	[no] mvr Example: Switch(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: Switch(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 Cisco ME 2600X 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.

	Command or Action	Purpose
Step 6	end Example: Switch(config-bdmain)# end	Exits the bridge domain configuration mode and returns to privileged EXEC mode.
Step 7	show mvr Example: Switch# show mvr	Verifies the configuration.
Step 8	copy running-config startup-config Example: Switch# 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.

```
Switch(config)# bridge-domain 22
Switch(config-bdmain)# mvr
Switch(config-bdmain)# mvr group 228.1.23.4 5
Switch(config-bdmain)# end
```

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

```
Switch(config)# bridge-domain 22
Switch(config-bdmain)# no mvr group 228.1.23.4 5
Switch(config-bdmain)# no mvr
Switch(config-bdmain)# end
```

The following example shows how to verify the MVR multicast group addresses on the Cisco ME 2600X system.

```
Switch# show mvr groups
```

```
MVR multicast VLAN: 22
MVR max Multicast Groups allowed: 2000
MVR current multicast groups: 5
MVR groups:
```

Group start	Group end	Type	Count/Mask
228.1.23.4	228.1.23.8	count	5

Enabling or Disabling MVR on the Source and Receiver EFPs

- Step 1 through Step 9 explains MVR configuration of the source EFP.
- Step 10 through Step 15 explains MVR configuration of the receiver EFP.

Prerequisite

[Enabling or Disabling MVR on a Bridge Domain](#), on page 4

**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.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface type slot/port**
4. **service instance id ethernet**
5. **encapsulation dot1q vlan-id**
6. **rewrite ingress tag pop {1|2} symmetric**
7. **bridge-domain bridge-domain id**
8. **[no] mvr type source**
9. **exit**
10. **interface type slot/port**
11. **service instance id ethernet**
12. **encapsulation dot1q {vlan-id}**
13. **bridge-domain bridge-domain id**
14. **[no] mvr type receiver bridge-domain id**
15. **rewrite ingress tag pop 1 symmetric**
16. **end**
17. **show mvr**
18. **copy running-config startup-config**

DETAILED STEPS

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

	Command or Action	Purpose
Step 3	interface <i>type slot/port</i> Example: Switch(config)# interface TenGigabitEthernet 0/45	Specifies the type and location of the interface to configure, where: <ul style="list-style-type: none"> • <i>type</i>—Specifies the type of the interface. • <i>slot/port</i>—Specifies the location of the interface.
Step 4	service instance <i>id ethernet</i> Example: Switch(config-if)# service instance 10 ethernet	Configures an Ethernet service instance on an interface.
Step 5	encapsulation dot1q <i>vlan-id</i> Example: Switch(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: Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric	Specifies the rewrite operation.
Step 7	bridge-domain <i>bridge-domain id</i> Example: Switch(config-if-srv)# bridge-domain 22	Enters the bridge-domain
Step 8	[no] mvr type source Example: Switch(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 Cisco ME 2600X system belong to the single multicast bridge-domain. The no form of the command removes the MVR source EFP configuration.
Step 9	exit Example: exit	Exits the service instance mode.
Step 10	interface <i>type slot/port</i> Example: Switch(config)# interface TenGigabitEthernet 0/46	Specifies the type and location of the interface to configure. <ul style="list-style-type: none"> • <i>type</i>—Type of the interface. • <i>slot/port</i>—Location of the interface.
Step 11	service instance <i>id ethernet</i> Example: Switch(config-if)# service instance 100 ethernet	Configures an Ethernet service instance on an interface.

	Command or Action	Purpose
Step 12	encapsulation dot1q <i>{vlan-id}</i> Example: Switch(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 13	bridge-domain <i>bridge-domain id</i> Example: Switch(config-if-srv) # bridge-domain 100	Enters the bridge-domain
Step 14	[no] mvr type receiver bridge-domain id Example: Switch(config-if-srv) # mvr type receiver bridge-domain 22 immediate	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. Note This command applies to only receiver EFPs and should only be enabled on receiver EFPs to which a single receiver device is connected.
Step 15	rewrite ingress tag pop 1 symmetric Example: Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric	Specifies the rewrite operation.
Step 16	end Example: Switch(config-if-srv) # end	Returns to privileged EXEC mode.
Step 17	show mvr Example: Switch# show mvr	Verifies the configuration.
Step 18	copy running-config startup-config Example: Switch# copy running-config startup-config	(Optional) Saves your entries in the configuration file.

To return the Cisco ME 2600X system to its default settings, use the **no mvr [type type] immediate** 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.

```
Switch(config)# interface TenGigabitEthernet 0/46
```



```
Switch(config-if)# service instance 100 ethernet
Switch(config-if-srv)# encapsulation dot1q 10
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 100
Switch(config-if-srv)# mvr type receiver bridge-domain 22 immediate
end
Switch#show mvr receiver-ports
```

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

```
Switch(config)# interface TenGigabitEthernet 0/46
Switch(config-if)# service instance 100 ethernet
Switch(config-if-srv)# no mvr type receiver bridge-domain 22 immediate
Switch(config-if-srv)# exit
Switch(config-if)# no service instance 100 ethernet
```

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.

```
Switch(config)# interface GigabitEthernet 0/2
Switch(config-if)# service instance 10 ethernet
Switch(config-if-srv)# encapsulation dot1q 10
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 100
Switch(config-if-srv)# mvr type receiver bridge-domain 22 immediate
```

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

```
Switch(config)# TenGigabitEthernet 0/45
Switch(config-if)# service instance 100 ethernet
Switch(config-if-srv)# encapsulation dot1q 12
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 22
Switch(config-if-srv)# mvr type source
```

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

```
Switch(config)# TenGigabitEthernet 0/45
Switch(config-if)# service instance 100 ethernet
Switch(config-if-srv)# no mvr type source
Switch(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.
Switch(config)# bridge-domain 22
Switch(config-bdmain)# mvr
Switch(config-bdmain)# mvr group 225.0.0.1 5
Switch(config-bdmain)# end
```

```
Switch(config)# bridge-domain 30
Switch(config-bdmain)# mvr
Switch(config-bdmain)# mvr group 226.0.0.1 5
```

```
! Configuring source EFP on the bridge domain 22.
Switch(config)# TenGigabitEthernet 0/45
Switch(config-if)# service instance 100 ethernet
Switch(config-if-srv)# encapsulation dot1q 12
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 22
Switch(config-if-srv)# mvr type source
```

```
! Configuring receiver EFP on the bridge domain 50.
Switch(config)# interface TenGigabitEthernet 0/46
Switch(config-if)# service instance 100 ethernet
Switch(config-if-srv)# encapsulation dot1q 10
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 50
```

```

Switch(config-if-srv)# mvr type receiver bridge-domain 22 [immediate]

! Configuring source EFP on the bridge domain 30.
Switch(config)# TenGigabitEthernet 0/47
Switch(config-if)# service instance 100 ethernet
Switch(config-if-srv)# encapsulation dot1q 12
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 30
Switch(config-if-srv)# mvr type source

! Configuring receiver EFP on the bridge domain 60.
Switch(config)# interface TenGigabitEthernet 0/48
Switch(config-if)# service instance 100 ethernet
Switch(config-if-srv)# encapsulation dot1q 10
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 60
Switch(config-if-srv)# mvr type receiver bridge-domain 30 [immediate]

```

Viewing MVR Configuration

SUMMARY STEPS

1. enable
2. show mvr [source-ports] [receiver-ports] [groups]
3. show ip igmp snooping [groups] [querier] [mrouter]

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Switch> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	show mvr [source-ports] [receiver-ports] [groups] Example: Switch# 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] [mrouter] Example: Switch# show ip igmp snooping	(Optional) Displays the querier and snooping information.

Examples

This example shows how to view MVR receiver port configuration.

```
Switch# 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
Gi0/2         100    ACTIVE /UP         DISABLED        0              0
Po10          200    ACTIVE /UP         DISABLED        0              0
Gi0/2         101    ACTIVE /UP         DISABLED        0              0

```

This example shows how to view MVR source port configuration.

```
Switch# 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)
-----
Gi0/1         1      ACTIVE /UP         DISABLED        0              0
Gi0/1         2      ACTIVE /UP         DISABLED        0              0

```

This example shows how to view MVR group details.

```
Switch# 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.

```
Switch# 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 Gi0/2
1	229.1.1.2	I	v3	Po10 Gi0/2
1	229.1.1.3	I	v3	Po10 Gi0/2
1	229.1.1.4	I	v3	Po10 Gi0/2
1	229.1.1.5	I	v3	Po10 Gi0/2
1	229.1.1.6	I	v3	Po10 Gi0/2
1	229.1.1.7	I	v3	Po10 Gi0/2
1	229.1.1.8	I	v3	Po10 Gi0/2
1	229.1.1.9	I	v3	Po10 Gi0/2
1	229.1.1.10	I	v3	Po10 Gi0/2

This example shows how to view querier details.

```
Switch# show ip igmp snooping querier
```

Vlan	IP Address	IGMP Version	Port
1	12.12.12.12	v3	Gi0/1

This example shows how to view generic MVR details.

```
Switch# 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)
```

This example shows how to view mrouter details.

```
Switch# show ip igmp snooping mrouter
```

Vlan	ports
1	Gi0/1 (dynamic)

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.

```
Switch(config)# bridge-domain 30
Switch(config-bdomain)# mvr
Switch(config-bdomain)# mvr group 239.0.0.1 10
```

! Configuring source EFP on the bridge domain 30.

```
Switch(config)# interface port-channel 10
Switch(config-if)# service instance 10 ethernet
Switch(config-if-srv)# encapsulation dot1q 10
```

```
Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric
Switch(config-if-srv) # bridge-domain 30
Switch(config-if-srv) # mvr type source
Switch(config-if-srv) # exit
```

! Adding members to the port channel interface.

```
Switch(config) # interface Gi0/25
Switch(config-if) # channel-group 10
```

```
Switch(config) # interface Gi0/26
Switch(config-if) # channel-group 10
```

! Configuring receiver EFP on the bridge domain 100.

```
Switch(config) # interface Gi0/1
Switch(config-if) # service instance 10 ethernet
Switch(config-if-srv) # encapsulation dot1q 100
Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric
Switch(config-if-srv) # bridge-domain 100
Switch(config-if-srv) # mvr type receiver bridge-domain 30
```

! Configuring receiver EFP on the bridge domain 200.

```
Switch(config) # interface Gi0/2
Switch(config-if) # service instance 10 ethernet
Switch(config-if-srv) # encapsulation dot1q 100
Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric
Switch(config-if-srv) # bridge-domain 200
Switch(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.

```
Switch(config) # bridge-domain 30
Switch(config-bdomain) # mvr
Switch(config-bdomain) # mvr group 228.1.23.4 5
Switch(config-bdomain) # end
```

! Configuring the source EFP.

```
Switch(config) # interface ten 0/45
Switch(config-if) # service instance 10 ethernet
Switch(config-if-srv) # encapsulation dot1q 10 second-dot1q 30
Switch(config-if-srv) # rewrite ingress tag pop 2 symmetric
Switch(config-if-srv) # bridge-domain 30
Switch(config-if-srv) # mvr type source
```

! Configuring the receiver EFP.

```
Switch(config) # interface port-channel 10
Switch(config-if) # service instance 10 ethernet
Switch(config-if-srv) # encapsulation dot1q 10
Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric
Switch(config-if-srv) # bridge-domain 100
Switch(config-if-srv) # mvr type receiver bridge-domain 30
```

! Adding members to the port channel interface.

```
Switch(config) # interface gi0/25
Switch(config-if) # channel-group 10
```

```
Switch(config) # interface gi0/26
Switch(config-if) # channel-group 10
```

! Configuring the receiver EFP.

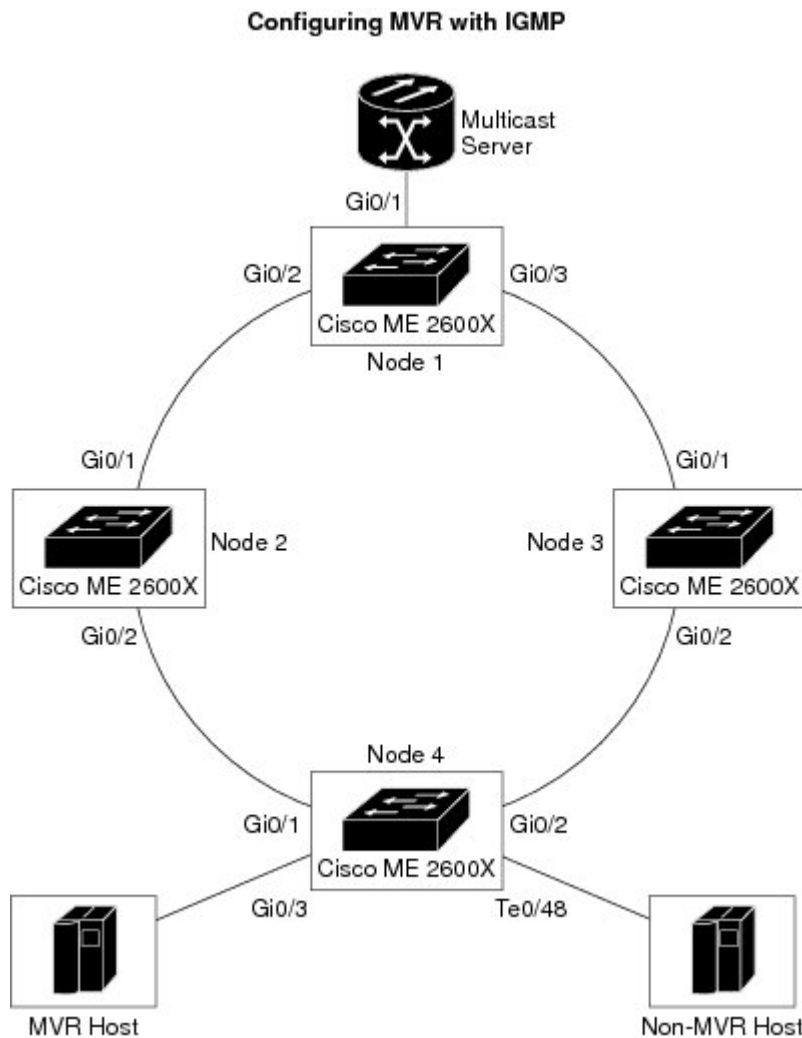
```
Switch(config) # interface gi0/1
Switch(config-if) # service instance 10 ethernet
Switch(config-if-srv) # encapsulation dot1q 100
Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric
Switch(config-if-srv) # bridge-domain 200
Switch(config-if-srv) # mvr type receiver bridge-domain 30
```

Configuring MVR with IGMP

MVR and IGMP can be configured together in the same bridge-domain. This section discusses the configurations in a specific scenario where MVR and non-MVR hosts are required to send join and leave packets.

In the following topology all the nodes have MVR configurations. However, Node 4 has a host which is not the MVR receiver port. For this host to get the multicast stream, it must send the join packets from Node 2 or Node 3, where MVR is configured.

Figure 2: Configuring MVR with IGMP



The following examples show you how to configure MVR with IGMP.

Configuring MVR Bridge Domain on Node 1

```
Switch(config)# bridge-domain 100
Switch(config-bdomain)# mvr
Switch(config-bdomain)# mvr group 225.10.10.10 10
```

Configuring MVR Source Port on Node 1

```
Switch(config)# int GigabitEthernet 0/1
Switch(config-if)# service instance 10 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 100
Switch(config-if-srv)# mvr type source
```

Configuring MVR Receiver Port on Node 1

```
Switch(config)# int GigabitEthernet 0/2
Switch(config-if)# service instance 20 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 20
Switch(config-if-srv)# mvr type receiver bridge-domain 100
```

```
Switch(config)# int GigabitEthernet 0/3
Switch(config-if)# service instance 20 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 20
Switch(config-if-srv)# mvr type receiver bridge-domain 100
```

Configuring MVR Bridge Domain on Node 2

```
Switch(config)# bridge-domain 20
Switch(config-bdomain)# mvr
Switch(config-bdomain)# mvr group 225.10.10.10 10
```

Configuring MVR Source Port on Node 2

```
Switch(config)# int GigabitEthernet 0/1
Switch(config-if)# service instance 10 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 20
Switch(config-if-srv)# mvr type source
```

Configuring MVR Receiver Port on Node 2

```
Switch(config)# int GigabitEthernet 0/2
Switch(config-if)# service instance 20 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 30
Switch(config-if-srv)# mvr type receiver bridge-domain 100
```

Configuring MVR Bridge Domain on Node 3

```
Switch(config)# bridge-domain 20
Switch(config-bdomain)# mvr
Switch(config-bdomain)# mvr group 225.10.10.10 10
```

Configuring MVR Source Port on Node 3

```
Switch(config)# int GigabitEthernet 0/1
Switch(config-if)# service instance 10 ethernet
```

```
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 20
Switch(config-if-srv)# mvr type source
```

Configuring MVR Receiver Port on Node 3

```
Switch(config)# int GigabitEthernet 0/2
Switch(config-if)# service instance 20 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 30
Switch(config-if-srv)# mvr type receiver bridge-domain 20
```

Configuring MVR Bridge Domain on Node 4

```
Switch(config)# bridge-domain 30
Switch(config-bdmain)# mvr
Switch(config-bdmain)# mvr group 225.10.10.10 10
```

Configuring MVR Source Port on Node 4

```
Switch(config)# int GigabitEthernet 0/1
Switch(config-if)# service instance 10 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 30
Switch(config-if-srv)# mvr type source
```

```
Switch(config)# int GigabitEthernet 0/2
Switch(config-if)# service instance 10 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 30
Switch(config-if-srv)# mvr type source
```

Configuring MVR Receiver Port on Node 4

```
Switch(config)# int GigabitEthernet 0/3
Switch(config-if)# service instance 20 ethernet
Switch(config-if-srv)# encapsulation dot1q 100
Switch(config-if-srv)# rewrite ingress tag pop 1 symmetric
Switch(config-if-srv)# bridge-domain 40
Switch(config-if-srv)# mvr type receiver bridge-domain 30
```

Enabling MVR and IGMP on the Same Bridge Domain

One host in the example above is not a receiver port in MVR (port Te0/48) and it is simply sending join packets and leave packets for group 225.1.1.1. For the MVR system to carry these packets from port Te0/48, we need a slight modification in the configuration.

Configuring MVR Bridge Domain on Node 4

```
Switch(config)# bridge-domain 30
Switch(config-bdmain)# mvr
Switch(config-bdmain)# mvr group 225.10.10.10 10
Switch(config-bdmain)# ip igmp snooping
```

Configuring Non-MVR Host Port on Node 4

This is not a MVR receiver port.

```
Switch(config)# int TenGigabitEthernet 0/48
Switch(config-if)# service instance 10 ethernet
```



```
Switch(config-if-srv) # encapsulation dot1q 100
Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric
Switch(config-if-srv) # bridge-domain 30
```

Configuring MVR Bridge Domain on Node 3

Add bridge-domain 30 so that packets from Node 4 can be detected and forwarded to upstream.

```
Switch(config) # bridge-domain 30
Switch(config-bdomain) # ip igmp snooping
```

Configuring MVR Bridge Domain on Node 2

Add bridge-domain 30 so that packets from Node 4 can be detected and forwarded to upstream.

```
Switch(config) # bridge-domain 30
Switch(config-bdomain) # ip igmp snooping
```

Configuring MVR Bridge Domain on Node 1

```
Switch(config) # bridge-domain 30
Switch(config-bdomain) # ip igmp snooping
```

Configuring MVR Receiver Port on Node 1

Port 0/2 and 0/3 should be capable of forwarding the packets sent from MVR receiver port and non-MVR receiver ports.

```
Switch(config) # int GigabitEthernet 0/2
Switch(config-if) # service instance 20 ethernet
Switch(config-if-srv) # encapsulation dot1q 100
Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric
Switch(config-if-srv) # bridge-domain 20
Switch(config-if-srv) # mvr type receiver bridge-domain 100
Switch(config-if-srv) # exit
Switch(config-if) # service instance 1 ethernet
Switch(config-if-srv) # encapsulation untagged
Switch(config-if-srv) # bridge-domain 30
Switch(config) # int GigabitEthernet 0/3
Switch(config-if) # service instance 20 ethernet
Switch(config-if-srv) # encapsulation dot1q 100
Switch(config-if-srv) # rewrite ingress tag pop 1 symmetric
Switch(config-if-srv) # bridge-domain 20
Switch(config-if-srv) # mvr type receiver bridge-domain 100
Switch(config-if-srv) # exit
Switch(config-if) # service instance 1 ethernet
Switch(config-if-srv) # encapsulation untagged
Switch(config-if-srv) # bridge-domain 30
```

