

Contents

Introduction	1
Prerequisites	1
Example: Configuring basic IGMP features	1
Network configuration	1
Analysis	2
Applicable hardware and software versions	2
Restrictions and guidelines	4
Procedures	4
Verifying the configuration	5
Configuration files	6
Example: Configuring IGMP static group members	8
Network configuration	8
Analysis	9
Applicable hardware and software versions	9
Restrictions and guidelines	11
Procedures	11
Verifying the configuration	13
Configuration files	13
Example: Configuring IGMP SSM mappings	15
Network configuration	15
Applicable hardware and software versions	16
Restrictions and guidelines	18
Procedures	18
Verifying the configuration	19
Configuration files	20

Introduction

This document provides IGMP configuration examples.

Prerequisites

The configuration examples in this document were created and verified in a lab environment, and all the devices were started with the factory default configuration. When you are working on a live network, make sure you understand the potential impact of every command on your network.

This document assumes that you have basic knowledge of IGMP.

Example: Configuring basic IGMP features

Network configuration

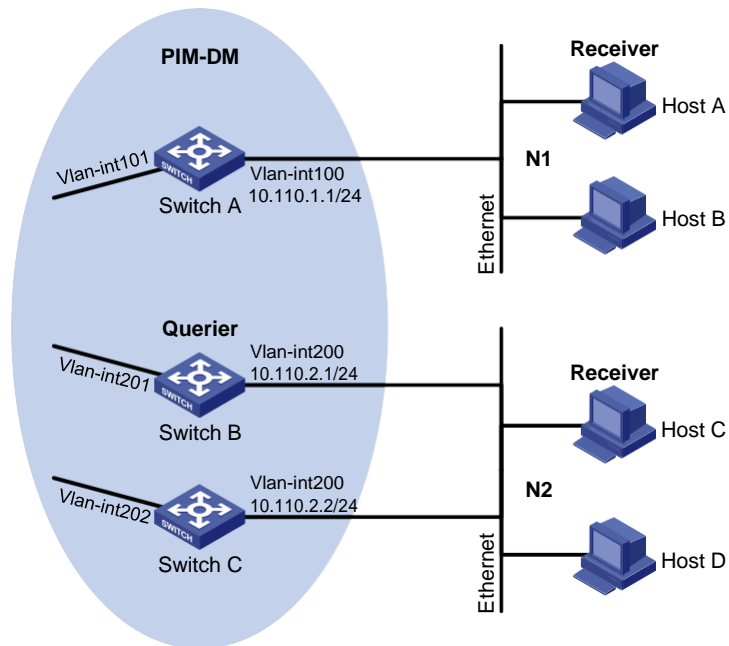
As shown in [Figure 1](#):

- OSPF and PIM-DM run on the network.
- VOD streams are sent in multicast. Hosts of different organizations form stub networks N1 and N2.
- IGMPv2 runs between Switch A and N1, and between the other two switches and N2. Switch A acts as the IGMP querier in N1. Switch B acts as the IGMP querier in N2 because it has a lower IP address.

Configure basic IGMP features on the switches to meet the following requirements:

- Hosts in N1 can join any multicast groups.
- Hosts in N2 can join only multicast group 224.1.1.1.

Figure 1 Network diagram



Analysis

To limit the multicast groups that hosts can join, create an IPv4 basic ACL and specify the multicast groups that you want the hosts to join.

Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

Hardware	Software version
SC 3570 switch series	Release 11xx
SC 5525 switch series	Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx
SC 5520 switch series	Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx
SC 3170 switch series	Not supported
SC 3130 switch series	Not supported

Restrictions and guidelines

When you configure basic IGMP features, follow these restrictions and guidelines:

- The protocol packets of different IGMP versions are different in structures and types. For IGMP to operate correctly, you must enable the same IGMP version for all switches on the same subnet.
- You must configure the same multicast group policy for all switches on the same subnet.
- By default, Ethernet interfaces, VLAN interfaces, and aggregate interfaces are shut down. You must first use the **undo shutdown** command to bring them up. This example assumes that all these interfaces are already up.

Procedures

1. Assign an IP address and subnet mask to each interface, as shown in [Figure 1](#). (Details not shown.)
2. Configure OSPF on the switches in the PIM-DM domain. (Details not shown.)
3. Configure Switch A:

Enable IP multicast routing.

```
<SwitchA> system-view
[SwitchA] multicast routing
[SwitchA-mrib] quit
```

Enable IGMP on the receiver-side interface VLAN-interface 100.

```
[SwitchA] interface vlan-interface 100
[SwitchA-Vlan-interface100] igmp enable
[SwitchA-Vlan-interface100] quit
```

Enable PIM-DM on VLAN-interface 101.

```
[SwitchA] interface vlan-interface 101
[SwitchA-Vlan-interface101] pim dm
[SwitchA-Vlan-interface101] quit
```

4. Configure Switch B:

Create ACL 2001 to permit IGMP reports for multicast group 224.1.1.1.

```
<SwitchB> system-view
[SwitchB] acl basic 2001
[SwitchB-acl-ipv4-basic-2001] rule permit source 224.1.1.1 0
[SwitchB-acl-ipv4-basic-2001] quit
```

Enable IP multicast routing.

```
[SwitchB] multicast routing
[SwitchB-mrib] quit
```

Enable IGMP on the receiver-side interface VLAN-interface 200.

```
[SwitchB] interface vlan-interface 200
[SwitchB-Vlan-interface200] igmp enable
```

Configure a multicast group policy that uses ACL 2001.

```
[SwitchB-Vlan-interface200] igmp group-policy 2001
[SwitchB-Vlan-interface200] quit
```

Enable PIM-DM on VLAN-interface 201.

```
[SwitchB] interface vlan-interface 201
[SwitchB-Vlan-interface201] pim dm
[SwitchB-Vlan-interface201] quit
```

5. Configure Switch C:

Create ACL 2001 to permit IGMP reports for multicast group 224.1.1.1.

```
<SwitchC> system-view
[SwitchC] acl basic 2001
[SwitchC-acl-ipv4-basic-2001] rule permit source 224.1.1.1 0
[SwitchC-acl-ipv4-basic-2001] quit
```

Enable IP multicast routing.

```
[SwitchC] multicast routing
[SwitchC-mrib] quit
```

Enable IGMP on the receiver-side interface VLAN-interface 200.

```
[SwitchC] interface vlan-interface 200
[SwitchC-Vlan-interface200] igmp enable
```

Configure a multicast group policy that uses ACL 2001.

```
[SwitchC-Vlan-interface200] igmp group-policy 2001
[SwitchC-Vlan-interface200] quit
```

Enable PIM-DM on VLAN-interface 202.

```
[SwitchC] interface vlan-interface 202
[SwitchC-Vlan-interface202] pim dm
[SwitchC-Vlan-interface202] quit
```

Verifying the configuration

1. Verify that hosts in N1 can join the multicast groups 224.1.1.1 and 224.1.1.2:

Send IGMP reports from Host A (10.110.1.10) to join the multicast groups 224.1.1.1 and 224.1.1.2. (Details not shown.)

Display information about IGMP groups that hosts have dynamically joined on Switch A.

```
[SwitchA] display igmp group
```

IGMP groups in total: 2

Vlan-interface100 (10.110.1.1):

IGMP groups reported in total: 2

Group address	Last reporter	Uptime	Expires
224.1.1.1	10.110.1.10	00:02:04	00:01:15
224.1.1.2	10.110.1.10	00:02:00	00:01:19

The output shows that Host A has joined the multicast groups 224.1.1.1 and 224.1.1.2.

2. Verify that hosts in N2 can join only multicast group 224.1.1.1:

Send IGMP reports from Host C (10.110.2.10) to join the multicast groups 224.1.1.1 and 224.1.1.2. (Details not shown.)

Display information about IGMP groups that hosts have dynamically joined on Switch B.

```
[SwitchB] display igmp group
```

IGMP groups in total: 1

Vlan-interface200(10.110.2.1):

IGMP groups reported in total: 1

Group address	Last reporter	Uptime	Expires
224.1.1.1	10.110.2.10	04:36:03	00:01:23

Display information about IGMP groups that hosts have dynamically joined on Switch C.

```
[SwitchC] display igmp group
```

IGMP groups in total: 1

Vlan-interface200(10.110.2.2):

IGMP groups reported in total: 1

Group address	Last reporter	Uptime	Expires
224.1.1.1	10.110.2.10	04:21:03	00:01:13

The output shows that Switch B and Switch C each have IGMP information about only the multicast group, 224.1.1.1. The multicast group policy has taken effect, and hosts in N2 can join only multicast group 224.1.1.1.

Configuration files

! IMPORTANT:

Support for the **port link-mode bridge** command depends on the device model.

- Switch A:

```
#
vlan 100 to 101
#
interface Vlan-interface100
ip address 10.110.1.1 255.255.255.0
igmp enable
#
interface Vlan-interface101
ip address 10.111.1.1 255.255.255.0
pim dm
#
interface GigabitEthernet1/0/1
```

- ```

 port link-mode bridge
port access vlan 100
#
 interface GigabitEthernet1/0/2
 port link-mode bridge
 port access vlan 101
#
multicast routing
#

```
- **Switch B:**

```

#
acl basic 2001
 rule 0 permit source 224.1.1.1 0
#
vlan 200 to 201
#
interface Vlan-interface200
 ip address 10.110.2.1 255.255.255.0
 igmp enable
 igmp group-policy 2001
#
interface Vlan-interface201
 ip address 10.111.2.1 255.255.255.0
 pim dm
#
 interface GigabitEthernet1/0/1
 port link-mode bridge
 port access vlan 200
#
 interface GigabitEthernet1/0/2
 port link-mode bridge
 port access vlan 201
#
multicast routing
#

```
  - **Switch C:**

```

#
acl basic 2001
 rule 0 permit source 224.1.1.1 0
#
vlan 200
#
vlan 202
#
interface Vlan-interface200
 ip address 10.110.2.2 255.255.255.0
 igmp enable
 igmp group-policy 2001

```

```
#
interface Vlan-interface202
 ip address 10.111.3.1 255.255.255.0
 pim dm
#
interface GigabitEthernet1/0/1
 port link-mode bridge
 port access vlan 200
#
interface GigabitEthernet1/0/2
 port link-mode bridge
 port access vlan 202
#
multicast routing
#
```

## Example: Configuring IGMP static group members

### Network configuration

As shown in [Figure 2](#):

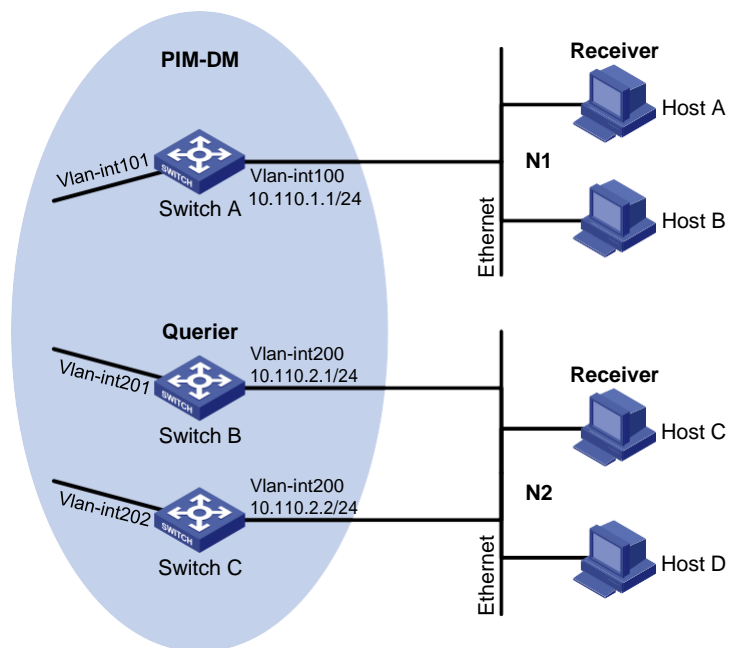
- OSPF and PIM-DM run on the network.
- VOD streams are sent in multicast. Hosts of different organizations form stub networks N1 and N2.
- IGMPv2 runs between Switch A and N1, and between the other two switches and N2. Switch A acts as the IGMP querier in N1. Switch B acts as the IGMP querier in N2 because it has a lower IP address.

Configure the switches to meet the following requirements:

- Hosts in N1 can join any multicast groups, and Host A can permanently receive multicast data addressed to multicast group 224.1.1.2.
- Hosts in N2 can join only multicast group 224.1.1.1.



**Figure 2 Network diagram**



## Analysis

For Host A to permanently receive multicast data addressed to the group 224.1.1.2, configure VLAN-interface 100 on Switch A as a static member of the multicast group.

To limit the multicast groups that hosts can join, create an IPv4 basic ACL and specify the multicast groups that you want the hosts to join.

## Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

| Hardware              | Software version                                             |
|-----------------------|--------------------------------------------------------------|
| SC 3570 switch series | Release 11xx                                                 |
| SC 5525 switch series | Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx |
| SC 5520 switch series | Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx |
| SC 3170 switch series | Not supported                                                |
| SC 3130 switch series | Not supported                                                |

## Restrictions and guidelines

When you configure IGMP static group member ports, follow these restrictions and guidelines:

- The protocol packets of different IGMP versions are different in structures and types. For IGMP to operate correctly, specify the same IGMP version for all switches on the same subnet.
- You must configure the same multicast group policy for all switches on the same subnet.
- By default, Ethernet interfaces, VLAN interfaces, and aggregate interfaces are shut down. You must first use the **undo shutdown** command to bring them up. This example assumes that all these interfaces are already up.

## Procedures

1. Assign an IP address and subnet mask to each interface, as shown in [Figure 2](#). (Details not shown.)
2. Configure OSPF on the switches in the PIM-DM domain. (Details not shown.)
3. Configure Switch A:

**# Enable IP multicast routing.**

```
<SwitchA> system-view
[SwitchA] multicast routing
[SwitchA-mrib] quit
```

**# Enable PIM-DM on VLAN-interface 101.**

```
[SwitchA] interface vlan-interface 101
[SwitchA-Vlan-interface101] pim dm
```

```
[SwitchA-Vlan-interface101] quit
Enable IGMP on the receiver-side interface VLAN-interface 100.
[SwitchA] interface vlan-interface 100
[SwitchA-Vlan-interface100] igmp enable
Configure VLAN-interface 100 as a static member of multicast group 224.1.1.2.
[SwitchA-Vlan-interface100] igmp static-group 224.1.1.2
[SwitchA-Vlan-interface100] quit
```

#### 4. Configure Switch B:

```
Enable IP multicast routing.
<SwitchB> system-view
[SwitchB] multicast routing
[SwitchB-mrib] quit
Enable PIM-DM on VLAN-interface 201.
[SwitchB] interface vlan-interface 201
[SwitchB-Vlan-interface201] pim dm
[SwitchB-Vlan-interface201] quit
Create ACL 2001 to permit IGMP reports for multicast group 224.1.1.1.
[SwitchB] acl basic 2001
[SwitchB-acl-ipv4-basic-2001] rule permit source 224.1.1.1 0
[SwitchB-acl-ipv4-basic-2001] quit
Enable IGMP on the receiver-side interface VLAN-interface 200.
[SwitchB] interface vlan-interface 200
[SwitchB-Vlan-interface200] igmp enable
Configure a multicast group policy that uses ACL 2001.
[SwitchB-Vlan-interface200] igmp group-policy 2001
[SwitchB-Vlan-interface200] quit
```

#### 5. Configure Switch C:

```
Enable IP multicast routing.
<SwitchC> system-view
[SwitchC] multicast routing
[SwitchC-mrib] quit
Enable PIM-DM on VLAN-interface 202.
[SwitchC] interface vlan-interface 202
[SwitchC-Vlan-interface202] pim dm
[SwitchC-Vlan-interface202] quit
Create ACL 2001 to permit IGMP reports for multicast group 224.1.1.1.
[SwitchC] acl basic 2001
[SwitchC-acl-ipv4-basic-2001] rule permit source 224.1.1.1 0
[SwitchC-acl-ipv4-basic-2001] quit
Enable IGMP on VLAN-interface 200.
[SwitchC] interface vlan-interface 200
[SwitchC-Vlan-interface200] igmp enable
Configure a multicast group policy that uses ACL 2001.
[SwitchC-Vlan-interface200] igmp group-policy 2001
[SwitchC-Vlan-interface200] quit
```

# Verifying the configuration

1. Verify that hosts in N1 can join the multicast groups 224.1.1.1 and 224.1.1.2:  
# Send IGMP reports from Host A (10.110.1.10) to join the multicast groups 224.1.1.1 and 224.1.1.2. (Details not shown.)

# Display information about IGMP groups that hosts have dynamically joined on Switch A.

```
[SwitchA] display igmp group
IGMP groups in total: 2.
Vlan-interface100 (10.110.1.1):
 IGMP groups reported in total: 2
 Group address Last reporter Uptime Expires
 224.1.1.1 10.110.1.10 00:02:04 00:01:15
 224.1.1.2 10.110.1.10 00:02:00 00:01:19
```

The output shows that Host A has dynamically joined the multicast groups 224.1.1.1 and 224.1.1.2.

# Display information about IGMP groups that hosts have statically joined on Switch A.

```
[SwitchA] display igmp group static
Entries in total: 1
 Group address Source address Interface Expires
 224.1.1.2 0.0.0.0 Vlan100 Never
```

The output shows that Host A has statically joined multicast group 224.1.1.1 through VLAN-interface 100.

2. Verify that hosts in N2 can join only multicast group 224.1.1.1:  
# Send IGMP reports from Host C (10.110.2.10) to join multicast groups 224.1.1.1 and 224.1.1.2. (Details not shown.)

# Display information about IGMP groups that hosts have dynamically joined on Switch B.

```
[SwitchB] display igmp group
IGMP groups in total: 1
Vlan-interface200(10.110.2.1):
 IGMP groups reported in total: 1
 Group address Last reporter Uptime Expires
 224.1.1.1 10.110.2.10 04:36:03 00:01:23
```

# Display information about IGMP groups that hosts have dynamically joined on Switch C.

```
[SwitchC] display igmp group
IGMP groups in total: 1
Vlan-interface200(10.110.2.2):
 IGMP groups reported in total: 1
 Group address Last reporter Uptime Expires
 224.1.1.1 10.110.2.10 04:21:03 00:01:13
```

The output shows that Switch B and Switch C each have information only about multicast group 224.1.1.1. The multicast group policy has taken effect, and hosts in N2 can join only multicast group 224.1.1.1.

## Configuration files

### ❗ IMPORTANT:

Support for the `port link-mode bridge` command depends on the device model.

- **Switch A:**

```
#
vlan 100 to 101
#
interface Vlan-interface100
ip address 10.110.1.1 255.255.255.0
igmp enable
igmp static-group 224.1.1.2
#
interface Vlan-interface101
ip address 10.111.1.1 255.255.255.0
pim dm
#
interface GigabitEthernet1/0/1
port link-mode bridge
port access vlan 100
#
interface GigabitEthernet1/0/2
port link-mode bridge
port access vlan 101
#
multicast routing
#
```

- **Switch B:**

```
#
acl basic 2001
rule 0 permit source 224.1.1.1 0
#
vlan 200 to 201
#
interface Vlan-interface200
ip address 10.110.2.1 255.255.255.0
igmp enable
igmp group-policy 2001
#
interface Vlan-interface201
ip address 10.111.2.1 255.255.255.0
pim dm
#
interface GigabitEthernet1/0/1
port link-mode bridge
port access vlan 200
#
interface GigabitEthernet1/0/2
port link-mode bridge
port access vlan 201
#
multicast routing
```

```

#
• Switch C:
#
acl basic 2001
 rule 0 permit source 224.1.1.1 0
#
vlan 200
#
vlan 202
#
interface Vlan-interface200
 ip address 10.110.2.2 255.255.255.0
 igmp enable
 igmp group-policy 2001
#
interface Vlan-interface202
 ip address 10.111.3.1 255.255.255.0
 pim dm
#
interface GigabitEthernet1/0/1
 port link-mode bridge
 port access vlan 200
#
interface GigabitEthernet1/0/2
 port link-mode bridge
 port access vlan 202
#
multicast routing
#

```

## Example: Configuring IGMP SSM mappings

### Network configuration

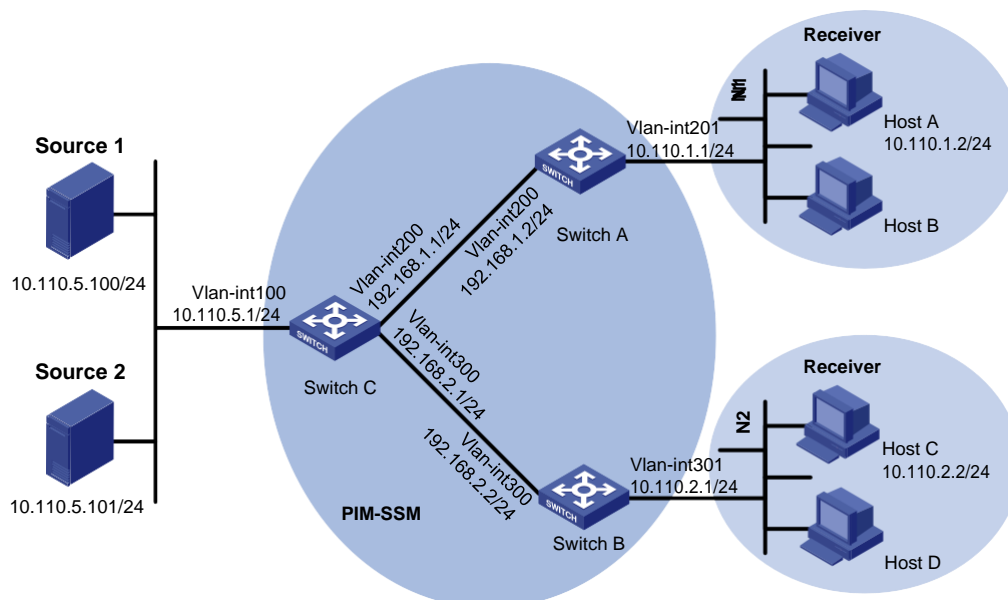
As shown in [Figure 3](#):

- The SSM group range for the PIM-SSM domain is 232.1.1.0/24.
- Switch A and Switch B in the PIM-SSM domain run IGMPv3.
- Host A in N1 and Host B in N2 run IGMPv2, and they do not support IGMPv3. The other hosts in N1 and N2 run IGMPv3.

Configure IGMP SSM mappings on Switch A and Switch B to meet the following requirements:

- Hosts in N1 receive multicast data only from Source 1.
- Hosts in N2 receive multicast data only from Source 2.

Figure 3 Network diagram



## Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

| Hardware              | Software version                                             |
|-----------------------|--------------------------------------------------------------|
| SC 3570 switch series | Release 11xx                                                 |
| SC 5525 switch series | Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx |
| SC 5520 switch series | Release 63xx, Release 65xx, Release 6615Pxx, Release 6628Pxx |
| SC 3170 switch series | Not supported                                                |
| SC 3130 switch series | Not supported                                                |

## Restrictions and guidelines

By default, Ethernet interfaces, VLAN interfaces, and aggregate interfaces are shut down. You must use the **undo shutdown** command to bring them up. This example assumes that all these interfaces are already up.

## Procedures

1. Assign an IP address and subnet mask to each interface, as shown in [Figure 3](#). (Details not shown.)

2. Configure OSPF on the switches in the PIM-SSM domain. (Details not shown.)
3. Enable IP multicast routing and enable PIM-SM:  
# On Switch A, enable IP multicast routing, and enable PIM-SM on VLAN-interface 200.

```
<SwitchA> system-view
[SwitchA] multicast routing
[SwitchA-mrib] quit
[SwitchA] interface vlan-interface 200
[SwitchA-Vlan-interface200] pim sm
[SwitchA-Vlan-interface200] quit
```

# Configure Switch B in the same way Switch A is configured. (Details not shown.)

# On Router C, enable IP multicast routing, and enable PIM-SM on each interface.

```
<SwitchC> system-view
[SwitchC] multicast routing
[SwitchC-mrib] quit
[SwitchC] interface vlan-interface 100
[SwitchC-Vlan-interface100] pim sm
[SwitchC-Vlan-interface100] quit
[SwitchC] interface vlan-interface 200
[SwitchC-Vlan-interface200] pim sm
[SwitchC-Vlan-interface200] quit
[SwitchC] interface vlan-interface 300
```



- ```
[SwitchC-Vlan-interface300] pim sm
[SwitchC-Vlan-interface300] quit
```
4. On Switch C, configure VLAN-interface 200 as a C-BSR and a C-RP:


```
[SwitchC] pim
[SwitchC-pim] c-bsr 192.168.1.1
[SwitchC-pim] c-rp 192.168.1.1
[SwitchC-pim] quit
```
 5. Configure IGMPv3 on the receiver-side interfaces:

On Switch A, enable IGMP, and specify IGMP version 3 on VLAN-interface 201.

```
[SwitchA] interface vlan-interface201
[SwitchA-Vlan-interface201] igmp enable
[SwitchA-Vlan-interface201] igmp version 3
[SwitchA-Vlan-interface201] quit
```

Configure Switch B in the same way Switch A is configured. (Details not shown.)
 6. Configure the SSM group range:

On Switch A, configure the SSM group range as 232.1.1.0/24.

```
[SwitchA] acl basic 2000
[SwitchA-acl-ipv4-basic-2000] rule permit source 232.1.1.0 0.0.0.255
[SwitchA-acl-ipv4-basic-2000] quit
[SwitchA] pim
[SwitchA-pim] ssm-policy 2000
[SwitchA-pim] quit
```

Configure Switch B and Switch C in the same way Switch A is configured. (Details not shown.)
 7. Configure IGMP SSM mappings:

On Switch A, configure an IGMP SSM mapping with multicast source 10.110.5.100 and multicast group range 232.1.1.0/24 specified in ACL 2000.

```
[SwitchA] igmp
[SwitchA-igmp] ssm-mapping 10.110.5.100 2000
[SwitchA-igmp] quit
```

On Switch B, configure an IGMP SSM mapping with multicast source 10.110.5.101 and multicast group range 232.1.1.0/24 specified in ACL 2000.

```
[SwitchB] igmp
[SwitchB-igmp] ssm-mapping 10.110.5.101 2000
[SwitchB-igmp] quit
```

Verifying the configuration

Send IGMPv2 reports from Host A and Host C to join multicast group 232.1.1.1. (Details not shown.)

Send multicast data from Source 1 and Source 2 to multicast group 232.1.1.1. (Details not shown.)

Display IGMP SSM mappings for multicast group 232.1.1.1 on Switch A.

```
[SwitchA] display igmp ssm-mapping 232.1.1.1
```

```
Group: 232.1.1.1
```

```
Source list:
```

```
10.110.5.100
```

The output shows that multicast group 232.1.1.1 is associated with Source 1 (10.110.5.100). Switch A will translate (0.0.0.0, 232.1.1.1) in IGMPv2 reports to (10.110.5.100, 232.1.1.1).

Display the PIM routing table on Switch A.

```
[SwitchA] display pim routing-table
Total 0 (*, G) entries; 1 (S, G) entries
```

```
(10.110.5.100, 232.1.1.1)
  Protocol: pim-ssm, Flag:
  UpTime: 00:13:25
  Upstream interface: Vlan-interface200
    Upstream neighbor: 192.168.1.1
    RPF prime neighbor: 192.168.1.1
  Downstream interface(s) information:
    Total number of downstreams: 1
    1: Vlan-interface201
      Protocol: igmp, UpTime: 02:54:43, Expires: 00:02:47
```

The output shows that Switch A has the (10.110.5.100, 232.1.1.1) entry.

Display IGMP SSM mappings for multicast group 232.1.1.1 on Switch B.

```
[SwitchB] display igmp ssm-mapping 232.1.1.1
Group: 232.1.1.1
Source list:
  10.110.5.101
```

The output shows that multicast group 232.1.1.1 is associated with Source 2 (10.110.5.101). Switch B will translate (0.0.0.0, 232.1.1.1) in IGMPv2 reports to (10.101.5.101, 232.1.1.1).

Display the PIM routing table on Switch B.

```
[SwitchB] display pim routing-table
Total 0 (*, G) entries; 1 (S, G) entries
```

```
(10.110.5.101, 232.1.1.1)
  Protocol: pim-ssm, Flag:
  UpTime: 00:12:16
  Upstream interface: Vlan-interface300
    Upstream neighbor: 192.168.2.1
    RPF prime neighbor: 192.168.2.1
  Downstream interface(s) information:
    Total number of downstreams: 1
    1: Vlan-interface301
      Protocol: igmp, UpTime: 02:54:43, Expires: 00:02:47
```

The output shows that Switch B has the (10.110.5.101, 232.1.1.1) entry.

Configuration files



IMPORTANT:

Support for the **port link-mode bridge** command depends on the device model.

- Switch A:
#

```

interface Vlan-interface200
  pim sm
#
interface Vlan-interface201
  igmp enable
  igmp version 3
#
multicast routing
#
pim
  ssm-policy 2000
#
igmp
  ssm-mapping 10.110.5.100 2000
#
acl basic 2000
  rule 0 permit source 232.1.1.0 0.0.0.255
#

```

- **Switch B:**

```

#
interface Vlan-interface300
  pim sm
#
interface Vlan-interface301
  igmp enable
  igmp version 3
#
multicast routing
#
pim
  ssm-policy 2000
#
igmp
  ssm-mapping 10.110.5.100 2000
#
acl basic 2000
  rule 0 permit source 232.1.1.0 0.0.0.255
#

```

- **Switch C:**

```

#
interface Vlan-interface100
  pim sm
#
interface Vlan-interface200
  pim sm
#
interface Vlan-interface200
  pim sm

```

```
#
multicast routing
#
pim
  c-bsr 192.168.1.1
  c-rp 192.168.1.1
#
```