# IP Multicast Optimization: SSM Channel Based Filtering for Multicast


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## Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

## Prerequisites for SSM Channel Based Filtering for Multicast Boundaries

IP multicast is enabled on the device using the tasks described in the "Configuring Basic IP Multicast" module of the *IP Multicast: PIM Configuration Guide*.

# Information About the SSM Channel Based Filtering for Multicast Boundaries Feature

## Rules for Multicast Boundaries

The SSM Channel Based Filtering for Multicast Boundaries feature expands the **ip multicast boundary** command for control plane filtering support. More than one **ip multicast boundary** command can be applied to an interface.

The following rules govern the **ip multicast boundary** command:

- One instance of the **in** and **out** keywords can be configured on an interface.
- The **in** and **out** keywords can be used for standard or extended access lists.
- Only standard access lists are permitted with the use of the **filter-autorp** keyword or no keyword.
- A maximum of three instances of a command will be allowed on an interface: one instance of **in**, one instance of **out**, and one instance of **filter-autorp** or no keyword.
- When multiple instances of the command are used, the filtering will be cumulative. If a boundary statement with no keyword exists with a boundary statement with the **in**keyword, both access lists will be applied on the in direction and a match on either one will be sufficient.
- All instances of the command apply to both control and data plane traffic.
- Protocol information on the extended access list is parsed to allow reuse and filtering for consistency. An (S,G) operation will be filtered by an extended access list under all conditions stated above for keywords if the access list filters (S,G) traffic for all protocols.

### Related Topics

Configuring Multicast Boundaries, on page 3
Configuring the Multicast Boundaries Permitting and Denying Traffic Example, on page 4
Configuring the Multicast Boundaries Permitting Traffic Example, on page 4
Configuring the Multicast Boundaries Denying Traffic Example, on page 5

## Benefits of SSM Channel Based Filtering for Multicast Boundaries

- This feature allows input on the source interface.
- The access control capabilities are the same for SSM and Any Source Multicast (ASM).

# How to Configure SSM Channel Based Filtering for Multicast Boundaries

## Configuring Multicast Boundaries

**Procedure**

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **enable**<br>**Example:**<br>`Device> enable` | Enables privileged EXEC mode. |
| **Step 2** | **configure terminal**<br>**Example:**<br>`Device# configure terminal` | Enters global configuration mode. |
| **Step 3** | **ip access-list** {**standard**\| **extended**} *access-list-name*<br>**Example:**<br>`Device(config)# ip access-list 101` | Configures the standard or extended access list. |
| **Step 4** | **permit** *protocol* **host** *address* **host** *address*<br>**Example:**<br>`Device(config-ext-nacl)# permit ip host 181.1.2.201 host 232.1.1.11` | Permits specified ip host traffic. |
| **Step 5** | **deny** *protocol* **host** *address* **host** *address*<br>**Example:**<br>`Device(config-acl-nacl)# deny ip host 181.1.2.203 host 232.1.1.1` | Denies specified multicast ip group and source traffic. |
| **Step 6** | Repeat Step 4 or Step 5 as needed. | Permits and denies specified host and source traffic. |
| **Step 7** | **interface** *type* **interface-number** *port -number*<br>**Example:** | Enables interface configuration mode. |

| | Command or Action | Purpose |
|---|---|---|
| | `Device(config)# interface gigabitethernet 2/3/0` | |
| **Step 8** | **ip multicast boundary** *access-list-name* [**in**\| **out** \| **filter-autorp**]<br>**Example:**<br>`Device(config-if)# ip multicast boundary acc_grp1 out` | Configures the multicast boundary.<br>**Note** The **filter-autorp** keyword does not support extended access lists. |

**Related Topics**

Rules for Multicast Boundaries, on page 2
Configuring the Multicast Boundaries Permitting and Denying Traffic Example, on page 4
Configuring the Multicast Boundaries Permitting Traffic Example, on page 4
Configuring the Multicast Boundaries Denying Traffic Example, on page 5

# Configuration Examples for SSM Channel Based Filtering for Multicast Boundaries

## Configuring the Multicast Boundaries Permitting and Denying Traffic Example

The following example permits outgoing traffic for (181.1.2.201, 232.1.1.1) and (181.1.2.202, 232.1.1.1) and denies all other (S,G)s.

```
configure terminal
 ip access-list extended acc_grp1
 permit ip host 0.0.0.0 232.1.1.1 0.0.0.255
 permit ip host 181.1.2.201 host 232.1.1.1
 permit udp host 181.1.2.202 host 232.1.1.1
 permit ip host 181.1.2.202 host 232.1.1.1
 deny igmp host 181.2.3.303 host 232.1.1.1
 interface gigabitethernet 2/3/0
 ip multicast boundary acc_grp1 out
```

**Related Topics**

Configuring Multicast Boundaries, on page 3
Rules for Multicast Boundaries, on page 2

## Configuring the Multicast Boundaries Permitting Traffic Example

The following example permits outgoing traffic for (192.168.2.201, 232.1.1.5) and 192.168.2.202, 232.1.1.5).

```
configure terminal
ip access-list extended acc_grp6
 permit ip host 0.0.0.0 232.1.1.1 5.0.0.255
 deny udp host 192.168.2.201 host 232.1.1.5
```

```
 permit ip host 192.168.2.201 host 232.1.1.5
 deny pim host 192.168.2.201 host 232.1.1.5
 permit ip host 192.168.2.202 host 232.1.1.5
 deny igmp host 192.2.3.303 host 232.1.1.1
interface gigabitethernet 2/3/0
 ip multicast boundary acc_grp6 out
```

### Related Topics

Configuring Multicast Boundaries, on page 3
Rules for Multicast Boundaries, on page 2

## Configuring the Multicast Boundaries Denying Traffic Example

The following example denies a group-range that is announced by the candidate RP. Because the group range is denied, no pim auto-rp mappings are created.

```
configure terminal
ip access-list standard acc_grp10
 deny 225.0.0.0 0.255.255.255
 permit any
 access-list extended acc_grp12
 permit pim host 181.1.2.201 host 232.1.1.8
 deny udp host 181.1.2.201 host 232.1.1.8
 permit pim host 181.1.2.203 0.0.0.255 host 227.7.7.7
 permit ip host 0.0.0.0 host 227.7.7.7
 permit ip 181.1.2.203 0.0.0.255 host 227.7.7.7
 permit ip host 181.1.2.201 host 232.1.1.7
ip access-list extended acc_grp13
 deny ip host 181.1.2.201 host 232.1.1.8
 permit ip any any
interface gigabitethernet 2/3/0
 ip multicast boundary acc_grp10 filter-autorp
 ip multicast boundary acc_grp12 out
 ip multicast boundary acc_grp13 in
```

### Related Topics

Configuring Multicast Boundaries, on page 3
Rules for Multicast Boundaries, on page 2

# Additional References

### Related Documents

| Related Topic | Document Title |
|---|---|
| Cisco IOS commands | Cisco IOS Master Commands List, All Releases |
| Cisco IOS IP Multicast commands | Cisco IOS IP Multicast Command Reference |

### MIBs

| MIB | MIBs Link |
|---|---|
| No new or modified MIBs are supported by this feature, and support for existing standards has not been modified by this feature. | To locate and download MIBs for selected platforms, Cisco IOS XE releases, and feature sets, use Cisco MIB Locator found at the following URL:<br>http://www.cisco.com/go/mibs |

### Technical Assistance

| Description | Link |
|---|---|
| The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password. | http://www.cisco.com/cisco/web/support/index.html |

# Feature History and Information for SSM Channel Based Filtering for Multicast Boundaries

| Release | Modification |
|---|---|
| Cisco IOS XE 3.3SE | This feature was introduced. |