

IGMP Snooping Commands

This chapter contains the following sections:

- ip igmp snooping (Global), on page 2
- ip igmp snooping vlan, on page 3
- ip igmp snooping vlan mrouter, on page 4
- ip igmp snooping vlan mrouter interface, on page 5
- ip igmp snooping vlan forbidden mrouter, on page 6
- ip igmp snooping vlan static, on page 7
- ip igmp snooping vlan multicast-tv, on page 8
- ip igmp snooping map cpe vlan, on page 9
- ip igmp snooping querier, on page 10
- ip igmp snooping vlan querier, on page 11
- ip igmp snooping vlan querier address, on page 12
- ip igmp snooping vlan querier election, on page 13
- ip igmp snooping vlan querier version, on page 14
- ip igmp snooping vlan immediate-leave, on page 15
- ip igmp snooping map cpe vlan, on page 16
- show ip igmp snooping groups, on page 17
- show ip igmp snooping interface, on page 18
- show ip igmp snooping mrouter, on page 19
- show ip igmp snooping multicast-tv, on page 20

ip igmp snooping (Global)

To enable Internet Group Management Protocol (IGMP) snooping, use the **ip igmp snooping** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping

no ip igmp snooping

Default Configuration

Disabled.

Command Mode

Global Configuration mode

Example

The following example enables IGMP snooping.

```
switchxxxxxx(config)# ip igmp snooping
```

ip igmp snooping vlan

To enable IGMP snooping on a specific VLAN, use the **ip igmp snooping vlan** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id*

no ip igmp snooping vlan *vlan-id*

Parameters

- ***vlan-id***—Specifies the VLAN.

Default Configuration

Disabled

Command Mode

Global Configuration mode

User Guidelines

IGMP snooping can be enabled only on static VLANs.

IGMPv1, IGMPv2, and IGMPv3 Snooping are supported.

Example

```
switchxxxxxx(config)# ip igmp snooping vlan 2
```

ip igmp snooping vlan mrouter

To enable automatic learning of Multicast router ports on a VLAN, use the **ip igmp snooping vlan mrouter** command in Global Configuration mode. To remove the configuration, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **mrouter learn pim-dvmrp**

no ip igmp snooping vlan *vlan-id* **mrouter learn pim-dvmrp**

Parameters

- ***vlan-id***—Specifies the VLAN.

Default Configuration

Learning **pim-dvmrp** is enabled.

Command Mode

Global Configuration mode

User Guidelines

Multicast router ports are learned according to:

- Queries received on the port
- PIM/PIMv2 received on the port
- DVMRP received on the port
- MRDISC received on the port

  MOSPF received on the port

You can execute the command before the VLAN is created.

Example

```
switchxxxxxx(config)# ip igmp snooping vlan 1 mrouter learn pim-dvmrp
```

ip igmp snooping vlan mrouter interface

To define a port that is connected to a Multicast router port, use the **ip igmp snooping mrouter interface** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **mrouter interface** i*nterface-list*

no ip igmp snooping vlan *vlan-id* **mrouter interface** *interface-list*

Parameters

- ***vlan-id***—Specifies the VLAN.
- ***interface-list***—Specifies the list of interfaces. The interfaces can be one of the following types: Ethernet port or Port-channel.

Default Configuration

No ports defined

Command Mode

Global Configuration mode

User Guidelines

A port that is defined as a Multicast router port receives all IGMP packets (reports and queries) as well as all Multicast data. You can execute the command before the VLAN is created.

Example

```
switchxxxxxx(config)# ip igmp snooping vlan 1 mrouter interface gi1/0/1
```

ip igmp snooping vlan forbidden mrouter

To forbid a port from being defined as a Multicast router port by static configuration or by automatic learning, use the **ip igmp snooping vlan forbidden mrouter** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **forbidden mrouter interface** *interface-list*

no ip igmp snooping vlan vlan-id **forbidden mrouter interface** interface-list

Parameters

- ***vlan-id***—Specifies the VLAN.
- ***interface-list***—Specifies a list of interfaces. The interfaces can be of one of the following types: Ethernet port or Port-channel.

Default Configuration

No ports defined.

Command Mode

Global Configuration mode

User Guidelines

A port that is a forbidden mrouter port cannot be a Multicast router port (i.e. cannot be learned dynamically or assigned statically).

You can execute the command before the VLAN is created.

Example

```
switchxxxxxx(config)# ip igmp snooping vlan 1 forbidden mrouter interface gi1/0/1
```

ip igmp snooping vlan static

To register an IP-layer Multicast address to the bridge table, and to add static ports to the group defined by this address, use the **ip igmp snooping vlan static** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **static** *ip-address* [**interface** *interface-list*]

no ip igmp snooping vlan *vlan-id* **static** *ip-address* [**interface** *interface-list*]

Parameter

- ***vlan-id***—Specifies the VLAN.
- ***ip-address***—Specifies the IP Multicast address.
- **interface** i*nterface-list*—(Optional) Specifies a list of interfaces. The interfaces can be of one of the following types: Ethernet port or Port-channel.

Default Configuration

No Multicast addresses are defined.

Command Mode

Global Configuration mode

User Guidelines

Static Multicast addresses can only be defined on static VLANs.

You can execute the command before the VLAN is created.

You can register an entry without specifying an interface.

Using the **no** command without a port-list removes the entry.

Example

```
switchxxxxxx(config)# ip igmp snooping vlan 1 static 239.2.2.2 interface gi1/0/1
```

ip igmp snooping vlan multicast-tv

To define the Multicast IP addresses that are associated with a Multicast TV VLAN, use the **ip igmp snooping vlan multicast-tv** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **multicast-tv** *first-ip-multicast-address* [*last-ip-multicast-address* | {**count** *number*}]

no ip igmp snooping vlan *vlan-id* **multicast-tv** *first-ip-multicast-address* [*last-ip-multicast-address* | {**count** *number*}]

Parameters

- ***vlan-id***—Specifies the VLAN
- ***first-ip-multicast-address***—The first Multicast IP address of the range
- ***last-ip-multicast-address***—The last Multicast IP address of the range
- **count** *number*—(Optional) Configures multiple contiguous Multicast IP addresses. If not specified, the default is 1.

Default Configuration

No Multicast IP address is associated.

Command Mode

Global Configuration mode

User Guidelines

Use this command to define the Multicast transmissions on a Multicast-TV VLAN. The configuration is only relevant for an Access port that is a member in the configured VLAN as a Multicast-TV VLAN.

If an IGMP message is received on such an Access port, it is associated with the Multicast-TV VLAN only if it is for one of the Multicast IP addresses that are associated with the Multicast-TV VLAN.

Up to 256 VLANs can be configured.

Example

```
switchxxxxxx(config)# ip igmp snooping vlan 1 multicast-tv 239.2.2.2 count 3
```

ip igmp snooping map cpe vlan

To map CPE VLANs to Multicast-TV VLANs, use the **ip igmp snooping map cpe vlan** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping map cpe vlan *cpe-vlan-id* **multicast-tv vlan** *vlan-id*

no ip igmp snooping map cpe vlan *vlan-id*

Parameters

- ***cpe-vlan-id***—Specifies the CPE VLAN ID.
- **vlan-id**—Specifies the Multicast-TV VLAN ID.

Default Configuration

No mapping exists.

Command Mode

Global Configuration mode

User Guidelines

Use this command to associate the CPE VLAN with a Multicast-TV VLAN.

If an IGMP message is received on a customer port tagged with a CPE VLAN, and there is mapping from that CPE VLAN to a Multicast-TV VLAN, the IGMP message is associated with the Multicast-TV VLAN.

Example

The following example maps CPE VLAN 2 to Multicast-TV VLAN 31.

```
switchxxxxxx(config)# ip igmp snooping map cpe vlan 2 multicast-tv vlan 31
```

ip igmp snooping querier

To enable globally the IGMP Snooping querier, use the **ip igmp snooping querier** command in Global Configuration mode. To disable the IGMP Snooping querier globally, use the **no** form of this command.

Syntax

ip igmp snooping querier

no ip igmp snooping querier

Default Configuration

Enabled

Command Mode

Global Configuration mode

User Guidelines

To run the IGMP Snooping querier on a VLAN, you have enable it globally and on the VLAN.

Example

The following example disables the IGMP Snooping querier globally:

```
switchxxxxxx(config)# no ip igmp snooping querier
```

ip igmp snooping vlan querier

To enable the IGMP Snooping querier on a specific VLAN, use the **ip igmp snooping vlan querier** command in Global Configuration mode. To disable the IGMP Snooping querier on the VLAN interface, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **querier**

no ip igmp snooping vlan *vlan-id* **querier**

Parameters

- ***vlan-id***—Specifies the VLAN.

Default Configuration

Disabled

Command Mode

Global Configuration mode

User Guidelines

The IGMP Snooping querier can be enabled on a VLAN only if IGMP Snooping is enabled for that VLAN.

Example

The following example enables the IGMP Snooping querier on VLAN 1:

```
switchxxxxxx(config)# ip igmp snooping vlan 1 querier
```

ip igmp snooping vlan querier address

To define the source IP address that the IGMP snooping querier uses, use the **ip igmp snooping vlan querier address** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **querier address** *ip-address*

no ip igmp snooping vlan *vlan-id* **querier address**

Parameters

- ***vlan-id***—Specifies the VLAN.
- ***ip-address***—Source IP address.

Default Configuration

If an IP address is configured for the VLAN, it is used as the source address of the IGMP snooping querier. If there are multiple IP addresses, the minimum IP address defined on the VLAN is used.

Command Mode

Global Configuration mode

User Guidelines

If an IP address is not configured by this command, and no IP address is configured for the querier's VLAN, the querier is disabled.

Example

```
switchxxxxxx(config)# ip igmp snooping vlan 1 querier address 10.5.234.205
```

ip igmp snooping vlan querier election

To enable IGMP Querier election mechanism of an IGMP Snooping querier on a specific VLAN, use the **ip igmp snooping vlan querier election** command in Global Configuration mode. To disable Querier election mechanism, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **querier election**

no ip igmp snooping vlan *vlan-id* **querier election**

Parameters

- ***vlan-id***—Specifies the VLAN.

Default Configuration

Enabled

Command Mode

Global Configuration mode

User Guidelines

Use the **no** form of the **ip igmp snooping vlan querier election** command to disable IGMP Querier election mechanism on a VLAN. If the IGMP Querier election mechanism is enabled, the IGMP Snooping querier supports the standard IGMP Querier election mechanism specified in RFC2236 and RFC3376. If IGMP Querier election mechanism is disabled, IGMP Snooping Querier delays sending General Query messages for 60 seconds from the time it was enabled. During this time, if the switch did not receive an IGMP query from another Querier - it starts sending General Query messages. Once the switch acts as a Querier, it will stop sending General Query messages if it detects another Querier on the VLAN. In this case, the switch will resume sending General Query messages if it does hear another Querier for Query Passive interval that equals to

<Robustness>*<Query Interval> + 0.5*<Query Response Interval).

It is recommended to disable IGMP Querier election mechanism if there is an IPM Multicast router on the VLAN.

Example

The following example disables IGMP Snooping Querier election on VLAN 1:

```
switchxxxxxx(config)# no ip igmp snooping vlan 1 querier election
```

ip igmp snooping vlan querier version

To configure the IGMP version of an IGMP Snooping querier on a specific VLAN, use the **ip igmp snooping vlan querier version** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **querier version** {**2** | **3**}

no ip igmp snooping vlan *vlan-id* **querier version**

Parameters

- ***vlan-id***—Specifies the VLAN.
- **querier version 2**—Specifies that the IGMP version would be IGMPv2.
- **querier version 3**—Specifies that the IGMP version would be IGMPv3.

Default Configuration

IGMPv2.

Command Mode

Global Configuration mode

Example

The following example sets the version of the IGMP Snooping Querier VLAN 1 to 3:

```
switchxxxxxx(config)# ip igmp snooping vlan 1 querier version 3
```

ip igmp snooping vlan immediate-leave

To enable the IGMP Snooping Immediate-Leave processing on a VLAN, use the **ip igmp snooping vlan immediate-leave** Global Configuration mode command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping vlan *vlan-id* **immediate-leave**

no ip igmp snooping vlan *vlan-id* **immediate-leave**

Parameters

- ***vlan-id***—Specifies the VLAN ID value. (Range: 1–4094).

Default Configuration

Disabled

Command Mode

Global Configuration mode

User Guidelines

You can execute the command before the VLAN is created.

Example

The following example enables IGMP snooping immediate-leave feature on VLAN 1.

```
switchxxxxxx(config)# ip igmp snooping vlan 1 immediate-leave
```

ip igmp snooping map cpe vlan

To map CPE VLANs to Multicast-TV VLANs, use the **ip igmp snooping map cpe vlan** command in Global Configuration mode. To return to the default, use the **no** form of this command.

Syntax

ip igmp snooping map cpe vlan *cpe-vlan-id* **multicast-tv vlan** *vlan-id*

no ip igmp snooping map cpe vlan *vlan-id*

Parameters

- ***cpe-vlan-id***—Specifies the CPE VLAN ID.
- **vlan-id**—Specifies the Multicast-TV VLAN ID.

Default Configuration

No mapping exists.

Command Mode

Global Configuration mode

User Guidelines

Use this command to associate the CPE VLAN with a Multicast-TV VLAN.

If an IGMP message is received on a customer port tagged with a CPE VLAN, and there is mapping from that CPE VLAN to a Multicast-TV VLAN, the IGMP message is associated with the Multicast-TV VLAN.

Example

The following example maps CPE VLAN 2 to Multicast-TV VLAN 31.

```
switchxxxxxx(config)# ip igmp snooping map cpe vlan 2 multicast-tv vlan 31
```

show ip igmp snooping groups

To display the Multicast groups learned by the IGMP snooping, use the **show ip igmp snooping groups** command in User EXEC mode.

Syntax

show ip igmp snooping groups [**vlan** *vlan-id*] [**address** *ip-multicast-address*] [**source** *ip-address*]

Parameters

- **vlan** *vlan-id*—(Optional) Specifies the VLAN ID.
- **ip-multicast-address** *ip-multicast-address*—(Optional) Specifies the IP multicast address.
- **ip-address** *ip-address*—(Optional) Specifies the IP source address.

Command Mode

User EXEC mode

User Guidelines

To see all Multicast groups learned by IGMP snooping, use the **show ip igmp snooping groups** command without parameters.

Use the **show ip igmp snooping groups** command with parameters to see a needed subset of all Multicast groups learned by IGMP snooping

Example

The following example shows sample output:

```
switchxxxxxx# show ip igmp snooping groups vlan 1
```

```
switchxxxxxx# show ip igmp snooping groups
```

Vlan	Group Address	Source Address	Include Ports	Exclude Ports	Comp-Mode
1	239.255.255.250	*	gi1/0/1		v2

show ip igmp snooping interface

To display the IGMP snooping configuration for a specific VLAN, use the **show ip igmp snooping interface** command in User EXEC mode.

Syntax

show ip igmp snooping interface *vlan-id*

Parameters

- ***vlan-id***—Specifies the VLAN ID.

Command Mode

User EXEC mode

Example

The following example displays the IGMP snooping configuration for VLAN 1000

```
switchxxxxxx# show ip igmp snooping interface 1000
IGMP Snooping is globally enabled
IGMP Snooping Querier is globally enabled
VLAN 1000
IGMP Snooping is enabled
IGMP snooping last immediate leave: enable
Automatic learning of Multicast router ports is enabled
IGMP Snooping Querier is enabled
IGMP Snooping Querier operation state: is not running
IGMP Snooping Querier version: 2
IGMP Snooping Querier election is enabled
IGMP Snooping Querier address: 194.12.10.166
IGMP snooping robustness: admin 2  oper 2
IGMP snooping query interval: admin 125 sec oper 125 sec
IGMP snooping query maximum response: admin 10 sec oper 10 sec
IGMP snooping last member query counter: admin 2 oper 2
IGMP snooping last member query interval: admin 1000 msec oper 500 msec
IGMP Snooping interface active Querier address: 194.12.100.100 (remote)
Groups that are in IGMP version 1 compatibility mode:
231.2.2.3, 231.2.2.3
```

show ip igmp snooping mrouter

To display information on dynamically learned Multicast router interfaces for all VLANs or for a specific VLAN, use the **show ip igmp snooping mrouter** command in User EXEC mode.

Syntax

show ip igmp snooping mrouter [**interface** *vlan-id*]

Parameters

- **interface** *vlan-id*—(Optional) Specifies the VLAN ID.

Command Mode

User EXEC mode

Example

The following example displays information on dynamically learned Multicast router interfaces for VLAN 1000:

```
switchxxxxxx# show ip igmp snooping mrouter interface 1000
```

VLAN	Dynamic	Static	Forbidden
----	---------	---------	----------
1000	gi1/0/1	gi1/0/2	gi1/0/3-4

show ip igmp snooping multicast-tv

To display the IP addresses associated with Multicast TV VLANs, use the **show ip igmp snooping multicast-tv** EXEC mode command in User EXEC mode.

Syntax

show ip igmp snooping multicast-tv [**vlan** *vlan-id*]

Parameters

- **vlan** *vlan-id*—(Optional) Specifies the VLAN ID.

Command Mode

User EXEC mode

Example

The following example displays the IP addresses associated with all Multicast TV VLANs.

```
switchxxxxxx# show ip igmp snooping multicast-tv
VLAN First IP Address Last IP Address
---- ---------------- ---------------
1000 238.2.5.5 238.2.5.5
1000 239.255.0.0 239.255.1.1
1010 232.0.0.0 239.0.0.255
1010 239.0.1.2 239.255.4.5
```