

IGMP-SNOOPING

Configuration Commands

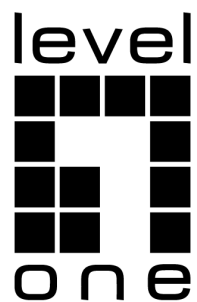


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Chapter 1 IGMP-SNOOPING Configuration Commands

IGMP-SNOOPING configuration commands include:

- ip igmp-snooping
- ip igmp-snooping static
- ip igmp-snooping immediate-leave
- ip igmp-snooping mrouter
- ip igmp-snooping dlf-drop
- ip igmp-snooping router age
- ip igmp-snooping response time
- ip igmp-snooping querier
- ip igmp-snooping querier timer
- ip igmp-snooping forward-l3-to-mrouter
- ip igmp-snooping sensitive
- ip igmp-snooping v3-leave-check
- ip igmp-snooping forward-wrongiif-within-vlan
- ip igmp-snooping limit
- ip igmp-snooping report-suppression
- show ip igmp-snooping
- show ip igmp-snooping vlan
- show ip igmp-snooping timer
- show ip igmp-snooping group
- show ip igmp-snooping group interface
- show ip igmp-snooping statistics
- debug ip igmp-snooping packet
- debug ip igmp-snooping timer
- debug ip igmp-snooping event
- debug ip igmp-snooping error

- debug ip igmp-snooping

1.1.1 igmp-snooping

Syntax

To enable the IGMP-snooping of VLAN, use the ip igmp-snooping command. Use the no form of this command to restore the default.

ip igmp-snooping [vlan *vlan_id*]

no ip igmp-snooping [vlan *vlan_id*]

Parameter

Parameter	Description
<i>vlan_id</i>	VLAN identity.Value is from 1 to 4094.

Default

Disabled

Usage Guidelines

If not specified the vlan parameter, this command enable or disable all vlans in the system (IGMP-snooping currently can be ran on 16 vlans at most at the same time.)

Example

The following command enables IGMP snooping of vlan 1:

```
Switch(config)# ip igmp-snooping vlan 1
Switch(config)#
```

1.1.2 igmp-snooping static

Syntax

ip igmp-snooping vlan *vlan_id* static *A.B.C.D* interface *intf*

no ip igmp-snooping vlan *vlan_id* static *A.B.C.D* interface *intf*

Parameter

Parameter	Description
-----------	-------------

<i>vlan id</i>	VLAN identity.Value is from 1 to 4094.
<i>A.B.C.D</i>	Specifies the IP address of multicast
<i>inft</i>	Specifies the interface

Default

None

Usage Guidelines

Use this command to configure the static multicast address of vlan. Use the no form of this command to delete the address.

Example

The following command adds the static multicast address at 234.5.6.7 to the fast ethernet interface G0/0/5 of vlan 2:

```
Switch(config)# ip igmp-snooping vlan 2 static 234.5.6.7 interface gigaEthernet0/0/5
Switch(config)#
```

Note:

224.0.0.0-224.0.0.255, as the multicast address which cannot be routed, cannot be registered to each interface.

1.1.3 igmp-snooping immediate-leave

Syntax

In global configuration mode:

To configure the immediate-leave characteristic of vlan, use the **ip igmp-snooping vlan** command. Use the no form of this command to restore the default.

ip igmp-snooping vlan *vlan_id* immediate-leave

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

Parameter

Parameter	Description
<i>vlan id</i>	VLAN identity. Value is from 1 to 4094.

Default

Disabled

Syntax

In interface configuration mode:

To configure the immediate-leave characteristic of vlan, use the **ip igmp-snooping immediate-leave** command. Use the no form of this command to restore the default.

ip igmp-snooping immediate-leave

no ip igmp-snooping immediate-leave

Parameter

None

Default

Disabled

Usage Guidelines

Configuring the immediate-leave feature of a VLAN or port allows the switch to delete the port from the port list of the corresponding multicast group immediately after receiving the leave message on the port, instead of turning on the timer and waiting for other hosts to join this multicast. If other hosts under the same port also belong to this group but do not want to leave, the multicast communication of these users may be affected, and the immediate-leave function should not be enabled at this time.

The immediate-leave configuration of the port and the immediate-leave configuration of the VLAN work simultaneously.

Example

The following command enables immediate-leave characteristic of vlan 1:

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

The following command enables immediate-leave characteristic of interface g0/0/8:

```
Switch(config)_g0/0/8#ip igmp-snooping immediate-leave
```

1.1.4 igmp-snooping mrouter

Syntax

ip igmp-snooping vlan *vlan_id* mrouter interface *intf*

no ip igmp-snooping vlan *vlan_id* mrouter interface *intf*

Parameter

Parameter	Description
<i>vlan id</i>	VLAN identifier. The value ranges from 1 to 4094.
<i>intf</i>	Interface

Default

None

Usage Guidelines

The command is used to configure the static route port. Use the no form of this command to delete the route port.

Only static routing ports can be configured for existing VLANs.

Example

The following example shows how to add the gigabit Ethernet G0/0/5 of VLAN 2 as its static route port.

```
Switch(config)# ip igmp-snooping vlan 2 mrouter interface GigaEthernet0/0/5
Switch(config)#
```

1.1.5 igmp-snooping dlf-drop

Syntax

ip igmp-snooping dlf-drop

no ip igmp-snooping dlf-drop

Default

Parameter	Description
	Filter unregistered address multicast packets.

Usage Guidelines

This command is used to set the multicast packets whose destination multicast addresses are not registered to the filtration mode. The negative form of this command is used to resume the default settings.

Example

The following example shows how to drop the multicast packets with unregistered destination addresses in all VLANs.

```
Switch(config)# ip igmp-snooping dlf-drop
Switch(config)#
```

1.1.6 igmp-snooping router age

Syntax

```
ip igmp-snooping timer router-age timer_value
no ip igmp-snooping timer router-age
```

Parameter

Parameter	Description
<i>time value</i>	Query timer time. Value is from 10 to 2147483647.

Default

260 seconds

Usage Guidelines

Use this command to configure query timer time. Use the no form of this command to restore the default value.

Example

The following example configures router-age to 300 seconds

```
Switch(config)# ip igmp-snooping timer router-age 300
Switch(config)#
```

1.1.7 igmp-snooping response time

Syntax

To configure the maximum response time of IGMP-snooping, use IGMP-snooping command. Use the no form of this command to restore the default value.

```
ip igmp-snooping timer response-time timer_value
```


no ip igmp-snooping timer response-time**Parameter**

Parameter	Description
<i>time value</i>	Query timer time. The value ranges from 1 to 2147483647.

Default

15 seconds

Usage Guidelines

None

Example

The following example configures response-time to 20 seconds:

```
Switch(config)# ip igmp-snooping timer response-time 20
Switch(config)#
```

1.1.8 igmp-snooping querier**Syntax**

To activate IGMP-snooping querier mechanism or configure the source ip address of the spontaneous query packets. Use the no form of this command to restore the default value.

ip igmp-snooping querier [address <ip_addr>]

no ip igmp-snooping querier [address <ip_addr>]

Parameter

Parameter	Description
<i>ip_addr</i>	The common unicast IP address

Default

Disabled, the default source IP address is 10.0.0.200.

Usage Guidelines

None

Example

The following command activates IGMP querier:

```
Switch(config)# ip igmp-snooping querier
Switch(config)#
```

1.1.9 igmp-snooping querier querier-timer

Syntax

ip igmp-snooping querier querier-timer *time_value*

no ip igmp-snooping querier querier-timer

To configure the forward interval of forwarding query packets by the local querier, run the first one of the above commands. To return to the default setting, use the no form of this command.

Parameter

Parameter	Description
<i>time_value</i>	The query interval of the local querier.

Default

The default interval is 200s when enable the Querier function.

Usage Guidelines

None

Example

The following command shows how to configure the query period of the local querier as 140s.

```
Switch(config)# ip igmp-snooping querier querier-timer 140
Switch(config)#
```

1.1.10 igmp-snooping forward-l3-to-mrouter

Syntax

ip igmp-snooping forward-l3-to-mrouter

no ip igmp-snooping forward-l3-to-mrouter

To send the data packets to the multicast routing port, run **ip igmp-snooping forward-l3-to-mrouter**. To return to the default setting, use the no form of this command.

Parameter

None

Default

If the forward-l3-to-mrouter command is not enabled, the data packets will not be sent to the related multicast routing port.

Usage Guidelines

This command is mainly to send the data packets to the IGMP JOIN port and meanwhile to the multicast routing port. Especially in case of L3 multicast cascading, the upstream L3 switches cannot receive the IGMP JOIN packets from a relative group and hence cannot learn the information about the relative group, and then the data packets will be sent to all physical ports in the L3 egress VLAN. After this command is run, the data packets will only be sent to the multicast routing port, which is registered on PIM-SM.

Example

The following example shows how to activate IGMP forward-l3-to-mrouter and make the upstream multicast data packets be sent to the multicast routing port:

```
Switch(config)# ip igmp-snooping forward-l3-to-mrouter
Switch(config)#
```

1.1.11 igmp-snooping sensitive**Syntax**

ip igmp-snooping sensitive [value int<3-30>]

no ip igmp-snooping sensitive [value]

To activate IGMP-snooping sensitive mechanism or set the value of sensitive, run the first one of the above commands. To return to the default setting, use the no form of this command.

Parameter

Parameter	Description
-----------	-------------

<i>int</i>	3-30, unit: second
------------	--------------------

Default

The sensitive function is disabled. The default value is 5s.

Usage Guidelines

This command is mainly used to modify the router-age of the mrouter port in active state and deliver the new query packets rapidly when a port in trunk mode is shut down.

Example

The following example shows how to activate IGMP sensitive and set the router-age of mrouter to be a converged one.

```
Switch(config)# ip igmp-snooping sensitive
Switch(config)# ip igmp-snooping sensitive value 10
```

1.1.12 igmp-snooping v3-leave-check

Syntax

ip igmp-snooping v3-leave-check

no ip igmp-snooping v3-leave-check

To send the special query packets after the v3-leave packet is received, run `ip igmp-snooping v3-leave-check`; To return to the default setting, use the no form of this command.

Default

v3-leave-check is disabled and the special query packet will not be sent after v3-leave packet is received.

Parameter

None

Usage Guidelines

None

Example

The following example shows how to activate IGMP v3-leave-check and send the special query packet after the v3-leave packet is received.

```
Switch(config)# ip igmp-snooping v3-leave-check  
Switch(config)#
```

1.1.13 igmp-snooping forward-wrongiif-within-vlan

Syntax

ip igmp-snooping forward-wrongiif-within-vlan

no ip igmp-snooping forward-wrongiif-within-vlan

To send the multicast data packets, received from the wrongiif port, to the relative physical ports in the local vlan, run `ip igmp-snooping forward-wrongiif-within-vlan`; To return to the default setting, use the `no` form of this command.

Parameter

None

Default

This command is enabled by default and the multicast packets from the wrongiif port will be sent to the relative physical ports.

Usage Guidelines

This command takes its importance only when the L3 multicast is enabled. After this command is enabled, the multicast packets, entering from the wrongiif port, will be sent to the physical ports that are added into the group of vlan; otherwise, the multicast packets will be dropped.

Example

The following example shows how to activate IGMP forward-wrongiif-within-vlan, and how to send the multicast packets from the wrongiif port to the relative physical ports in the local VLAN:

```
Switch(config)# ip igmp-snooping forward-wrongiif-within-vlan  
Switch(config)#
```

1.1.14 igmp-snooping limit

Syntax

ip igmp-snooping limit *value*

no ip igmp-snooping limit

Parameter

Parameter	Description
<i>value</i>	1-2048

Default

2048

Usage Guidelines

The command configures the max multicast IP address number in the port of IGMP-snooping. The command will estimate whether the applied groups have reached the configuration number when IGMP-snooping generating the forward table. Otherwise, the table of the port is no longer generated.

Command Mode

Interface configuration mode

Example

The following example shows how to set the max number of the joining group as 1000.

```
Switch(config)_G0/0/1# ip igmp-snooping limit 1000
```

```
Switch(config)_G0/0/1#
```

1.1.15 igmp-snooping report-suppression

Syntax

ip igmp-snooping report-suppression [**max-number** *value*]

no ip igmp-snooping report-suppression

Parameter

Parameter	Description
value	This parameter specifies the maximum number of reports that can be forwarded to the same multicast group in a query period within the same VLAN after report-suppression is enabled. The value ranges from 1 to 5. If this command is configured without keyword max-number, the maximum number of report forwarding is 1.

Default

Disabled.

Usage Guidelines

If the report-suppression function of IGMP-snooping is configured, in the same VLAN, for the report request of a multicast group, whether the client enables the function in the initial state or the response to the query, the switch forwards only a limited number to the mrouter port. The forwarding number is determined by the Parameter after max-number, and the range is from 1 to 5. If the max-number keyword is omitted, the number of forwardings is 1 by default.

This function is to reduce the processing cost of the local switch and the upstream switch and save the bandwidth for forwarding report packets when the IGMP Snooping function is normal.

Command Mode

Global configuration mode

Example

The following example shows how to enable report-suppression function of IGMP-snooping.

```
Switch(config)# ip igmp-snooping report-suppression
Switch(config)#
```

1.1.16 show ip igmp-snooping

Syntax

show ip igmp-snooping

Parameter

None

Default

None

Usage Guidelines

Use this command to show configuration information of IGMP-snooping.

Example

The following example shows the vlan information of the running ipmp-snooping:

```
Switch(config)# show ip igmp-snooping
```

```
Global IGMP snooping configuration:
```

```
-----
Globally enable      : Enabled
VLAN nodes           : 1,50,100,200,400,500
Dlf-frames filtering : Disabled
Sensitive            : Disabled
Querier              : Enabled
Querier address      : 10.0.0.200
Querier interval     : 140 s
Router age           : 260 s
Response time        : 15 s
```

vlan_id	Immediate-leave	Ports	Router Ports
1	Disabled	5-10	SWITCH(querier);
50	Disabled	1-4	SWITCH(querier);
100	Disabled	NULL	SWITCH(querier);G0/0/1(static);
200	Disabled	NULL	SWITCH(querier);
400	Disabled	NULL	SWITCH(querier);
500	Disabled	NULL	SWITCH(querier);

```
Switch(config)#
```

1.1.17 show ip igmp-snooping timer**Syntax**

```
show ip igmp-snooping timer
```


Parameter

None

Default

None

Usage Guidelines

Use this command to show timer information of IGMP.

Example

The following example shows timer information of igmp-snooping:

```
Switch(config)# show ip igmp-snooping timer
vlan 1 mrouter on port 3 : 251
Switch(config)#
```

1.1.18 show ip igmp-snooping groups**Syntax**

show ip igmp-snooping groups

Parameter

None

Default

None

Usage Guidelines

Use this command to display multicast group information of IGMP-snooping.

Example

The following example shows the multicast group information of igmp-snooping:

```
Switch(config)# show ip igmp-snooping group
The total number of groups      2
```

Vlan Group	Type Port(s)
------------	--------------

```

-----
1 226.1.1.1      IGMP G0/0/1      G0/0/3
1 225.1.1.16    IGMP G0/0/1      G0/0/3
Switch(config)#

```

1.1.19 show ip igmp-snooping group interface

Syntax

show ip igmp-snooping group interface

Parameter

None

Default

None

Usage Guidelines

Displays the IGMP-snooping multicast group information added on the port.

Example

The following example shows how to display the igmp-snooping multicast group information on port g0/0/4.

Switch#show ip igmp-snooping group interface g0/0/4

Number of joined groups: 1

```

Vlan Group      Mode      Source Num
-----
2 230.1.1.1     Exclude   0
Switch#

```

1.1.20 show ip igmp-snooping statistics

Syntax

show ip igmp-snooping statistics [message|packet|hardware|vlan *vlanid*]

Parameter

Parameter	Description
<i>vlanid</i>	When the command is followed by the optional keyword VLAN, it specifies the vlan ID.

Default

None

Usage Guidelines

Display IGMP-snooping statistics. The keywords message, packet, hardware, VLAN are optional. With optional keywords, the message statistics, received packet statistics, hardware operation statistics, and sub-VLAN statistics of the IGMP-Snooping task are displayed separately. Without optional keywords, global messages, messages, and hardware operation statistics are displayed. When using a keyword VLAN, you need to specify Parameter *vlanid* to display the statistics under the VLAN.

Example

The following example shows igmp-snooping statistics:

```
Switch#show ip igmp-snooping statistics
```

```
IGMP Snooping Message Statistics
```

```
-----
L2 main messages sent OK      : 305
L2 main messages sent failed  : 0
L2 packets received           : 302
L2 packets sent               : 302
L2 packets sent failed        : 0
L2 link-status messages       : 3
IGMP Snooping messages received: 313
IGMP packet messages received  : 302
```

```
IGMP Snooping Packet Statistics
```

```
-----
Received packets              : 302
IGMP packets                  : 259
M-routing protocol packets     : 0
Other packets                 : 43
Received IGMP general queries  : 0
Received IGMPv2 specific queries : 0
Received IGMPv3 g specific queries : 0
Received IGMPv3 gs specific queries: 0
Received IGMPv1 reports        : 0
Received IGMPv2 reports        : 230
```

```

Received IGMP leaves           : 0
Received IGMPv3 reports       : 29
Flooded queries               : 0
Forwarded and proxy-sent reports : 0
Forwarded and proxy-sent leaves : 0

```

IGMP Snooping Hardware Operation Statistics

```

-----
Total           : 9
Succeeded       : 9
Failed          : 0
Report/leave processing: 5
Response timer expiring: 4
Group creating/updating: 7
Group deleting  : 2

```

1.1.21 show ip igmp-snooping vlan

Syntax

show ip igmp-snooping vlan *vlan-id*

Parameter

Parameter	Description
vlan	1-4094

Default

None

Usage Guidelines

Display VLAN information of IGMP-snooping.

Example

The following example shows how to display the vlan information of igmp-snooping.

```

Switch(config)#show ip igmp-snooping vlan
vlan_id    Immediate-leave  Ports    Router Ports
-----
1          Disabled       7-30
2          Disabled       NULL
Switch(config)#

```

1.1.22 debug ip igmp-snooping packet

Syntax

debug ip igmp-snooping packet

no debug ip igmp-snooping packet

Parameter

None

Default

None

Usage Guidelines

Use this command to enable/disable the packet debugging switch of IGMP-snooping.

Example

The followig command enables the packet debugging switch of igmp-snooping:

```
switch# debug ip igmp-snooping packet  
switch#
```

1.1.23 debug ip igmp-snooping timer

Syntax

debug ip igmp-snooping timer

no debug ip igmp-snooping timer

Parameter

None

Default

None

Usage Guidelines

Use this command to enable/disable the timer debugging switch of IGMP-snooping

Example

The following example enables timer debugging switch of igmp-snooping:

```
switch# debug ip igmp-snooping timer
switch#
```

1.1.24 debug ip igmp-snooping event

Syntax

```
debug ip igmp-snooping event
no debug ip igmp-snooping event
```

Parameter

None

Default

None

Usage Guidelines

Use this command to enable/disable the event debugging switch of IGMP-snooping.

Example

The following example enable event debugging switch of igmp-snooping:

```
Switch#debug ip igmp-snooping event
Switch#
```

1.1.25 debug ip igmp-snooping error

Syntax

```
debug ip igmp-snooping error
```

no debug ip igmp-snooping error

Parameter

None

Default

None

Usage Guidelines

Use this command to enable/disable the error debugging switch of IGMP-snooping.

Example

The following example shows how to enable error debugging switch of igmp-snooping:

```
Switch#debug ip igmp-snooping error
Switch#
```

1.1.26 debug ip igmp-snooping

Syntax

debug ip igmp-snooping

no debug ip igmp-snooping

Parameter

None

Default

None

Usage Guidelines

Turn on/off all debugging switches of igmp-snooping.

Example

The following example shows how to turn on all debugging switches of igmp-snooping.

```
Switch#debug ip igmp-snooping
```

```
IGMP-snooping packet debugging is on
IGMP-snooping timer debugging is on
IGMP-snooping event debugging is on
IGMP-snooping error debugging is on
Switch#
```