

# Configure Internet Group Management Protocol (IGMP) Snooping on the 200/300 Series Managed Switches

## Objective

Internet Group Management Protocol (IGMP) is a protocol designed for multicast purposes. With IGMP, you can establish group memberships between different users within a network. IGMP is mainly used for multimedia streaming, such as video-chat, between different users (one-to-many users or many-to-many users) in a network. Snooping, on the other hand, is the term used when a third party in a communication listens or observes the current connection data traffic. Therefore, IGMP Snooping is a process that listens specifically to multicast traffic. By default, the 300 Series Managed Switches forwards all multicast frames to all the ports that are assigned to a specific VLAN. This behavior is insecure and the multicast frames could end up in the wrong place. You can enable IGMP Snooping to forward multicast traffic to only already registered multicast clients on specific ports of the switch. This way, the multicast frames are only forwarded to a specific multicast client within a VLAN instead of to all the users in that VLAN.

The objective of this document is to show you how to configure IGMP Snooping on the 200/300 Series Managed Switches.

## Applicable Devices

- SF/SG 200 and SF/SG 300 Series Managed Switches

## Software Version

- 1.3.0.62

## Enable Bridge Multicast

In order for IGMP Snooping to work, Bridge Multicast must be enabled.

Step 1. Log in to the web configuration utility and choose **Multicast > Properties**. The *Properties* page opens:

**Properties**

Bridge Multicast Filtering Status:  Enable

VLAN ID:

Forwarding Method for IPv6:
 

- MAC Group Address
- IP Group Address
- Source Specific IP Group Address

Forwarding Method for IPv4:
 

- MAC Group Address
- IP Group Address
- Source Specific IP Group Address

Step 2. In the *Bridge Multicast Filtering Status* field, check the **Enable** check box.

**Properties**

Bridge Multicast Filtering Status:  Enable

Step 3. Click **Apply**.

**Note:** For more information on how to configure multicast properties, refer to the article [Multicast Properties Configuration on 200/300 Series Managed Switches](#).

## Configure IGMP Snooping

### Configure IGMP Snooping on a Single VLAN

Step 1. Log in to the web configuration utility and choose **Multicast > IGMP Snooping**. The *IGMP Snooping* page opens:

**IGMP Snooping**

IGMP Snooping Status:  Enable

Entry No.	VLAN ID	IGMP Snooping Operational Status	Router IGMP Version	MRouter Ports Auto Learn	Query Robustness	Query Interval (sec)	Query Max Response Interval (sec)	Last Member Query Counter	Last Member Query Interval (mSec)	Immediate Leave	IGMP Querier Status	IGMP Version
<input type="radio"/>	1	Disabled	v3	Enabled	2	125	10	2	1000	Disabled	Disabled	v2

Step 2. In the *IGMP Snooping Status* field, check the **Enable** check box to start IGMP Snooping globally.

**IGMP Snooping**

IGMP Snooping Status:  Enable

Step 3. Click **Apply**.

Step 4. Click the radio button that corresponds to the VLAN entry you want to apply IGMP Snooping, and then click **Edit**.

IGMP Snooping Table													
Entry No.	VLAN ID	IGMP Snooping Operational Status	Router IGMP Version	MRouter Ports Auto Learn	Query Robustness	Query Interval (sec)	Query Max Response Interval (sec)	Last Member Query Counter	Last Member Query Interval (mSec)	Immediate Leave	IGMP Querier Status	IGMP Version	
1	1	Disabled	v3	Enabled	2	125	10	2	1000	Disabled	Disabled	v2	

The *Edit IGMP Snooping* window appears:

VLAN ID:	<input type="text" value="1"/>	Operational IGMP Snooping Status:	Disabled
IGMP Snooping Status:	<input type="checkbox"/> Enable	Operational Query Robustness:	2
MRouter Ports Auto Learn:	<input checked="" type="checkbox"/> Enable	Operational Query Interval:	125 (sec)
Query Robustness:	<input type="text" value="5"/> (Range: 1 - 7, Default: 2)	Operational Query Max Response Interval:	10 (sec)
Query Interval:	<input type="text" value="250"/> sec (Range: 30 - 18000, Default: 125)	Operational Last Member Query Counter:	2
Query Max Response Interval:	<input type="text" value="15"/> sec (Range: 5 - 20, Default: 10)	Operational Last Member Query Interval:	1000 (mS)
Last Member Query Counter:	<input type="radio"/> Use Default <input type="radio"/> User Defined <input type="text" value=""/> (Range: 1 - 7, Default: 5 (Query Robustness))		
Last Member Query Interval:	<input type="text" value="2000"/> mS (Range: 100 - 25500, Default: 1000)		
Immediate leave:	<input type="checkbox"/> Enable		
IGMP Querier Status:	<input type="checkbox"/> Enable	Operational Querier Source IP Address:	
Administrative Querier Source IP Address:	<input type="radio"/> Auto <input type="radio"/> User Defined <input type="text" value="192.168.1.254"/>		
IGMP Querier Version:	<input type="radio"/> IGMPV2 <input type="radio"/> IGMPV3		

Apply Close

Step 5. In the *IGMP Snooping Status* field, check the **Enable** check box. This option monitors the traffic to determine which hosts requested multicast traffic.

VLAN ID:	<input type="text" value="1"/>
IGMP Snooping Status:	<input checked="" type="checkbox"/> Enable

Step 6. In the *MRouter Ports Auto Learn* field, check the **Enable** check box. This option automatically learns the ports to which the MRouter is connected. An MRouter is a router designed to properly route multicast packets.

MRouter Ports Auto Learn:	<input checked="" type="checkbox"/> Enable
---------------------------	--

Step 7. In the *Query Robustness* field, enter the number of queries the switch performs to connect to a host. If no response is received, the switch deletes the host information.

Query Robustness:	<input type="text" value="5"/> (Range: 1 - 7, Default: 2)	Operational Query Robustness:	2
Query Interval:	<input type="text" value="250"/> sec (Range: 30 - 18000, Default: 125)	Operational Query Interval:	125 (sec)
Query Max Response Interval:	<input type="text" value="15"/> sec (Range: 5 - 20, Default: 10)	Operational Query Max Response Interval:	10 (sec)
Last Member Query Counter:	<input type="radio"/> Use Default <input type="radio"/> User Defined <input type="text" value=""/> (Range: 1 - 7, Default: 5 (Query Robustness))	Operational Last Member Query Counter:	2
Last Member Query Interval:	<input type="text" value="2000"/> mS (Range: 100 - 25500, Default: 1000)	Operational Last Member Query Interval:	1000 (mS)

Step 8. In the *Query Interval* field, enter the time interval between sent query messages.

Step 9. In the *Query Max Response Interval* field, enter the time (in seconds) a host replies with a report.

Step 10. In the *Last Member Query Counter* field, click one of the following:

- Use Default — This option uses the default number of IGMP Group-Specific queries to be sent before the switch assumes there are no more members in the group.

- User Defined — This option lets you enter a specific number of IGMP Group-Specific queries to be sent before the switch assumes there are no more members in the group.

Step 11. In the *Last Member Query Interval* field, enter the Maximum Response Delay used in case the switch cannot read the Max Response Interval value from group-specific queries.

Step 12. In the *Immediate Leave* field, check the **Enable** check box to quickly block a multicast stream that was sent to a member port in the case that an IGMP Group Leave message is received.

Immediate leave:	<input checked="" type="checkbox"/> Enable
------------------	--

Step 13. In the *IGMP Querier Status* field, check the **Enable** check box to enable IGMP Querier.

IGMP Querier Status:	<input checked="" type="checkbox"/> Enable
Administrative Querier Source IP Address:	<input checked="" type="radio"/> Auto
	<input type="radio"/> User Defined <input type="text" value="192.168.1.254"/>
IGMP Querier Version:	<input checked="" type="radio"/> IGMPV2
	<input type="radio"/> IGMPV3

Step 14. In the *Administrative Querier Source IP Address* field, click one of the following radio buttons:

- Auto — This option chooses the management IP address.
- User Defined — This option lets you choose an IP address of your choice from the drop-down list.

Step 15. In the *IGMP Querier Version* field, click **IGMPV3** if the VLAN has switches or multicast routers that perform source-specific IP multicast forwarding; otherwise, click **IGMPV2**.

IGMP Querier Version:	<input checked="" type="radio"/> IGMPV2
	<input type="radio"/> IGMPV3

**Note:** The information on the right side of the *Edit IGMP Snooping* window displays the current IGMP configuration.

Operational IGMP Snooping Status:	Disabled
<hr/>	
Operational Query Robustness:	2
Operational Query Interval:	125 (sec)
Operational Query Max Response Interval:	10 (sec)
Operational Last Member Query Counter:	2
Operational Last Member Query Interval:	1000 (mS)
<hr/>	
Operational Querier Source IP Address:	

The following information is displayed:

- Operational IGMP Status — The current IGMP status of the chosen VLAN.
- Operational Query Robustness — The current Query Robustness value of the chosen VLAN.
- Operational Query Interval — The current Query Interval value of the chosen VLAN.
- Operational Query Max Response Interval — The current Query Max Response Interval value of the chosen VLAN.
- Operational Last Member Response Interval — The Last Member Response Interval value of the chosen VLAN.
- Operational Last Member Query Counter — The Last Member Query Counter value of the chosen VLAN.
- Operational Last Member Query Interval — The Last Member Query Interval value of the chosen VLAN.
- Operational Querier Source IP Address — The current Querier Source IP Address of the chosen VLAN.

Step 16. Click **Apply**.

## Configure IGMP Snooping on Multiple VLANs

This section explains how to apply the IGMP Snooping configuration of a specific VLAN to multiple VLANs.

Step 1. Log in to the web configuration utility and choose **Multicast > IGMP Snooping**. The *IGMP Snooping* page opens.

Step 2. Click the radio button of the VLAN entry with the IGMP snooping configuration that you want to apply to other VLANs.

IGMP Snooping

IGMP Snooping Status:  Enable

Entry No.	VLAN ID	IGMP Snooping Operational Status	Router IGMP Version	MRouter Ports Auto Learn	Query Robustness	Query Interval (sec.)	Query Max Response Interval (sec.)	Last Member Query Counter	Last Member Query Interval (mSec.)	Immediate Leave	IGMP Querier Status	IGMP Querier Version	Querier IP Address
1	1	Disabled	v3	Enabled	2	125	10	2	1000	Disabled	Disabled	v2	
2	10	Enabled	v3	Enabled	2	125	10	2	1000	Disabled	Disabled	v2	

Step 3. Click **Copy Settings**. The *Copy Settings* window appears.

Copy configuration from entry 2 (VLAN10)

to:  (Example: 1,3,5-10 or VLAN1,VLAN3-VLAN5)

Step 4. In the field provided, enter the VLANs you want to apply the IGMP snooping configuration of the previously chosen VLAN. You can enter each VLAN or a range of VLANs based on their entry number from the IGMP Snooping Table, such as 1, 2 or 1-2, or with their VLAN ID, such as VLAN1, VLAN2 or VLAN1-VLAN2.

Step 5. Click **Apply**.