

Configure Internet Group Management Protocol (IGMP) or Multicast Listener Discovery (MLD) Snooping on a Switch

Objective

Multicast is the network layer technique used to transmit data packets from one host to selected hosts in the network. At the lower layer, the switch broadcasts the multicast traffic on all ports, even if only one host needs to receive it. Internet Group Management Protocol (IGMP) snooping is used to forward Internet Protocol version 4 (IPv4) multicast traffic to the desired host. On the other hand, Multicast Listener Discovery (MLD) snooping is used to forward Internet Protocol version 6 (IPv6) multicast traffic to the desired hosts.

When IGMP is enabled, it detects the IGMP messages exchanged between the IPv4 router and the multicast hosts attached to the interfaces. It then maintains a table that restricts IPv4 multicast traffic and forwards them dynamically to the parts that need to receive them.

The following configurations are prerequisites for configuring IGMP.

1. Configure Virtual Local Area Network (VLAN).
2. Enable Bridge Multicast Filtering.

When MLD is enabled, it detects the MLD messages exchanged between the IPv6 router and the multicast hosts attached to the interfaces. It then maintains a table that restricts IPv6 multicast traffic and forwards them dynamically to the ports that need to receive them.

Applicable Devices

- Sx250 Series
- Sx350 Series
- SG350X Series
- Sx550X Series

Software Version

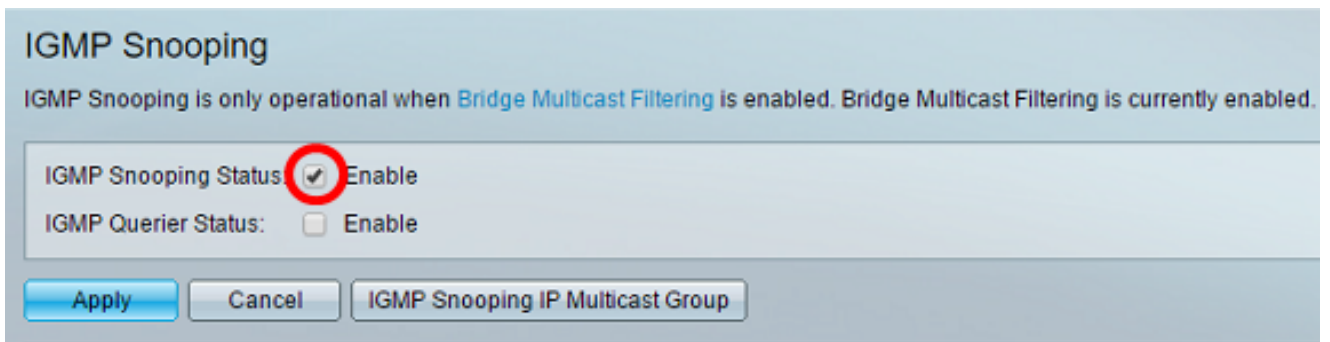
- 2.2.0.66

Configure IGMP Snooping

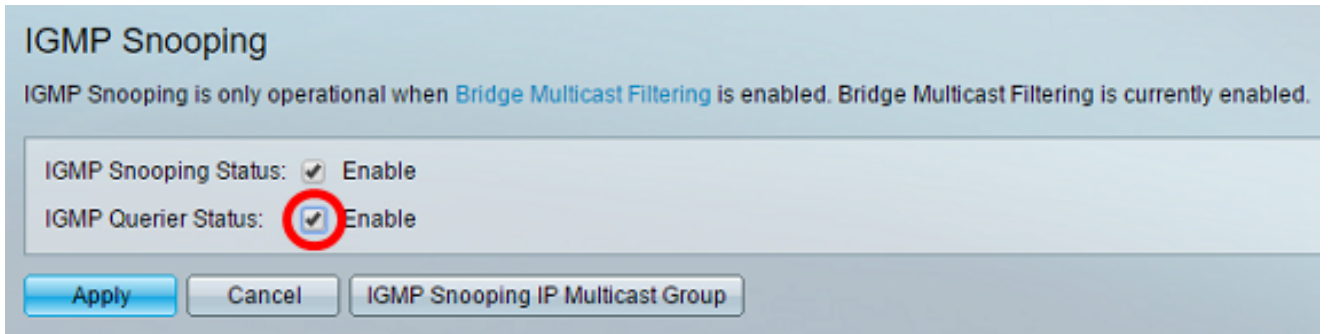
Step 1. Log in to the web-based utility and choose **Multicast > IPv4 Multicast Configuration > IGMP Snooping**.

Getting Started
Dashboard
Configuration Wizards
Search
▶ Status and Statistics
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▶ Port Management
▶ Smartport
▶ VLAN Management
▶ Spanning Tree
▶ MAC Address Tables
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Properties
MAC Group Address
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▼ IPv4 Multicast Configuration
IGMP Snooping
IGMP Interface Settings
IGMP VLAN Settings
IGMP Proxy
▼ IPv6 Multicast Configuration
MLD Snooping
MLD Interface Settings
MLD VLAN Settings
MLD Proxy
IGMP/MLD Snooping IP Multicast Group
Multicast Router Port
Forward All
Unregistered Multicast
▶ IP Configuration
▶ Security
▶ Access Control
▶ Quality of Service
▶ SNMP

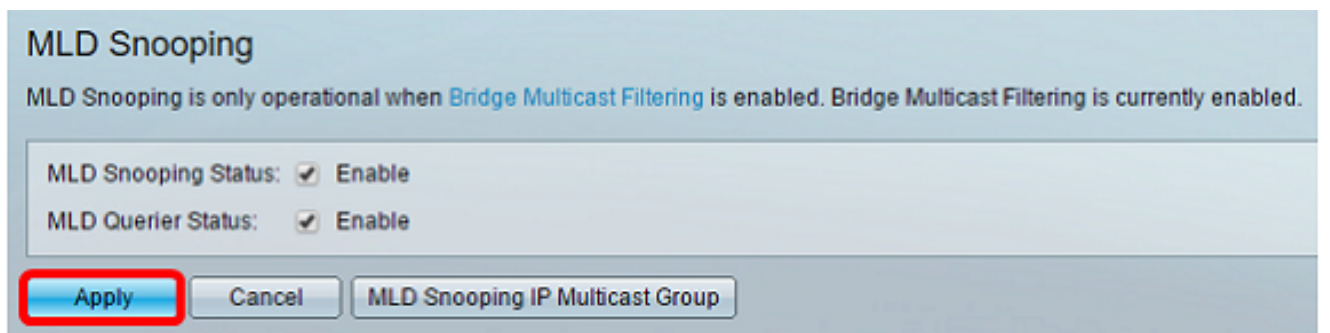
Step 2. Check the Enable check box for IGMP Snooping Status. When this feature is enabled globally, the device monitoring network traffic can determine which hosts have requested to receive Multicast traffic.



Step 3. (Optional) Check the Enable check box for IGMP Querier Status to enable the IGMP Querier.



Step 4. Click **Apply**.



Step 5. Under IGMP Snooping Table, click the radio button corresponding to the VLAN ID on the IGMP Snooping table.

IGMP Snooping Table											
Entry No.	VLAN ID	IGMP Snooping Status		MRouter Ports Auto Learn	Immediate Leave	Last Member Query Counter	IGMP Querier Status		IGMP Querier Election	IGMP Querier Version	Querier IP Address
		Administrative	Operational				Administrative	Operational			
<input checked="" type="radio"/>	1	1	Disabled	Disabled	Enabled	Disabled	2	Disabled	Disabled	Enabled	v2
<input type="radio"/>	2	4	Disabled	Disabled	Enabled	Disabled	2	Disabled	Disabled	Enabled	v2

Copy Settings... Edit...

Step 6. Click **Edit**.

IGMP Snooping Table											
Entry No.	VLAN ID	IGMP Snooping Status		MRouter Ports Auto Learn	Immediate Leave	Last Member Query Counter	IGMP Querier Status		IGMP Querier Election	IGMP Querier Version	Querier IP Address
		Administrative	Operational				Administrative	Operational			
<input checked="" type="radio"/>	1	1	Disabled	Disabled	Enabled	Disabled	2	Disabled	Disabled	Enabled	v2
<input type="radio"/>	2	4	Disabled	Disabled	Enabled	Disabled	2	Disabled	Disabled	Enabled	v2

Copy Settings... Edit...

Step 7. Choose the desired VLAN from the VLAN ID drop-down list.

VLAN ID:

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

✱ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined

Step 8. Check the Enable check box for IGMP Snooping Status to determine which hosts under the chosen VLAN have requested to send the multicast traffic. The status of IGMP snooping is displayed in the Operational IGMP Snooping Status field.

VLAN ID:

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

✱ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined

Step 9. (Optional) To allow the multicast router to automatically learn the connected ports, check the Enable check box for MRouter Ports Auto Learn.

VLAN ID:

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined

Step 10. (Optional) To reduce the time taken by the switch to block the MLD traffic that does not belong to its member port, check the Enable check box for Immediate Leave.

VLAN ID:

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined

Step 11. Set the Last Member Query Counter. It is the interval that the switch waits to receive a response from a group-specific message. The time ranges from 100 to 25500ms. The default is 1000ms.

Use Query Robustness (2) — sets the IGMP Robustness Variable to the default value if this device is elected the querier. The default value is 2.

User Defined — Choose the User Defined radio button and enter the number of IGMP Group-Specific Queries sent before the device assumes there are no more members for the

group, if the device is elected querier. You can enter any value from 1 to 7.

Step 12. (Optional) Check the IGMP Querier Status check box to let this device work as a querier. A querier sends query messages to discover which network devices are members of a given multicast group.

VLAN ID: 1

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

Last Member Query Counter: Use Query Robustness (2)
 User Defined [] (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined [192.168.1.104]

Apply Close

Step 13. (Optional) Check the IGMP Querier Election check box to elect this device as the querier. There can only be one IGMP Querier in a network.

VLAN ID: 1

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

Last Member Query Counter: Use Query Robustness (2)
 User Defined [] (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined [192.168.1.104]

Apply Close

Step 14. (Optional) Choose the IGMP Querier Version used if the device becomes the elected querier. Click v3 if there are switches and/or Multicast routers in the VLAN that perform source-specific IP Multicast forwarding.

Note: In this example, version 2 is chosen. It allows the membership query to be both general and group-specific. The general Membership Query is used to determine all multicast groups that the stations are subscribed to. Group-specific Membership Query is used to determine if there is a subscriber for a particular group.

VLAN ID: 1 ▾

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

⚙ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined ▾

Step 15. Set the IGMP Querier Source IP Address. It displays the IP address of the elected querier.

Auto – automatically determines the source IP address of the querier.

User Defined – allows you to choose the IP address of the querier.

Note: In this example, Auto is chosen.

VLAN ID:

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

⚙️ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined

Step 16. Click **Apply**.

VLAN ID:

IGMP Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

⚙️ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

IGMP Querier Status: Enable

IGMP Querier Election: Enable

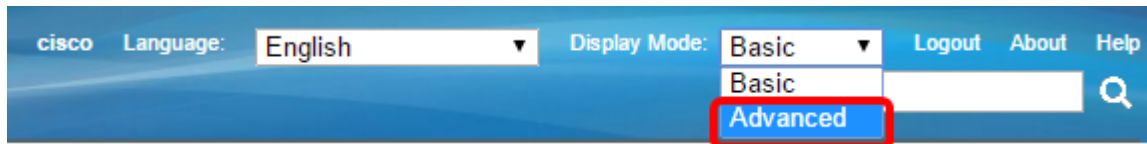
IGMP Querier Version: v2
 v3

Querier Source IP Address: Auto
 User Defined

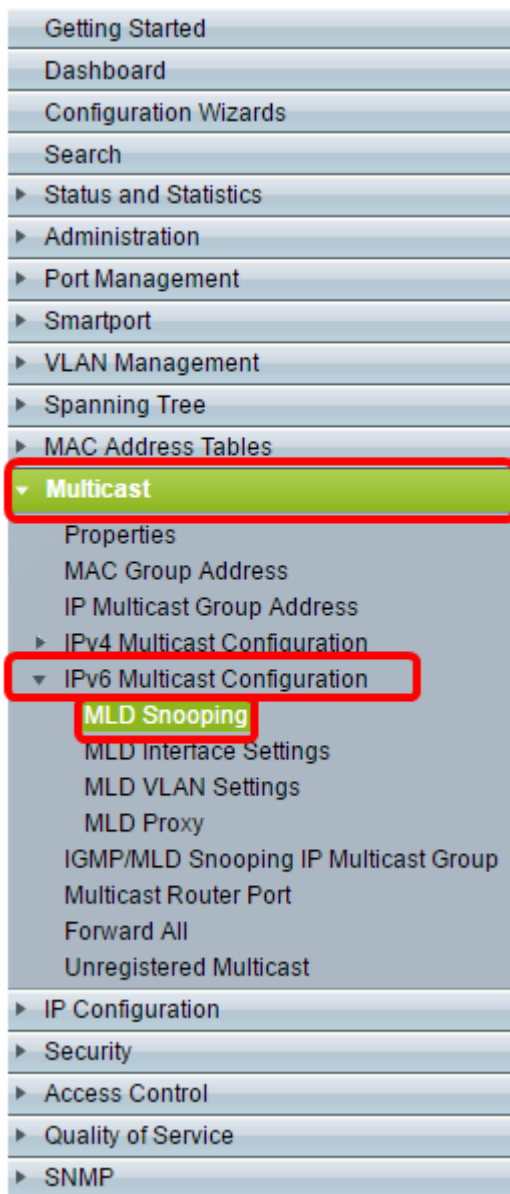
You should now have configured IGMP Snooping.

Configure MLD Snooping

Step 1. Log in to the web-based utility and choose **Advanced** in the Display Mode drop-down list at the upper right portion.

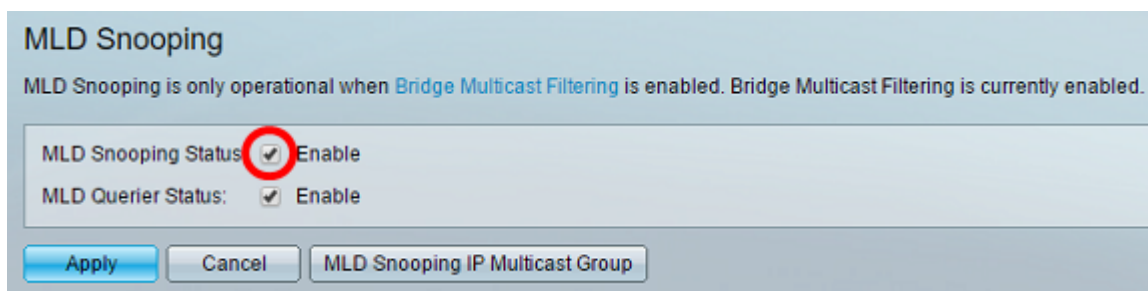


Step 2. Choose **Multicast > IPv6 Multicast Configuration > MLD Snooping**.



Step 3. Check the check box for MLD Snooping Status. When MLD Snooping is globally enabled, the device monitoring network traffic can determine which hosts have requested to receive Multicast traffic. The device performs MLD Snooping only if both MLD snooping and Bridge Multicast filtering are enabled.

Note: In this scenario, Bridge Multicast Filtering is currently enabled.



Step 4. Check the MLD Querier Status check box to enable the MLD Querier.

MLD Snooping

MLD Snooping is only operational when [Bridge Multicast Filtering](#) is enabled. Bridge Multicast Filtering is currently enabled.

MLD Snooping Status: Enable

MLD Querier Status: Enable

Step 5. Click **Apply**.

MLD Snooping

MLD Snooping is only operational when [Bridge Multicast Filtering](#) is enabled. Bridge Multicast Filtering is currently enabled.

MLD Snooping Status: Enable

MLD Querier Status: Enable

Step 6. Click the radio button corresponding to the VLAN ID on the MLD Snooping table.

MLD Snooping Table

Entry No.	VLAN ID	MLD Snooping Status		MRouter Ports Auto Learn	Immediate Leave	Last Member Query Counter	MLD Querier Status		MLD Querier Election	MLD Querier Version	
		Administrative	Operational				Administrative	Operational			
<input checked="" type="radio"/>	1	1	Disabled	Disabled	Enabled	Disabled	2	Disabled	Disabled	Enabled	v1
<input type="radio"/>	2	4	Disabled	Disabled	Enabled	Disabled	2	Disabled	Disabled	Enabled	v1

Step 7. Click **Edit**.

MLD Snooping Table

Entry No.	VLAN ID	MLD Snooping Status		MRouter Ports Auto Learn	Immediate Leave	Last Member Query Counter	MLD Querier Status		MLD Querier Election	MLD Querier Version	
		Administrative	Operational				Administrative	Operational			
<input checked="" type="radio"/>	1	1	Disabled	Disabled	Enabled	Disabled	2	Disabled	Disabled	Enabled	v1
<input type="radio"/>	2	4	Disabled	Disabled	Enabled	Disabled	2	Disabled	Disabled	Enabled	v1

Step 8. (Optional) Choose the VLAN ID where you want to apply MLD Snooping.

VLAN ID:

MLD Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

✱ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

MLD Querier Status: Enable

MLD Querier Election: Enable

MLD Querier Version: v1
 v2

Step 9. (Optional) Check the Enable check box for MLD Snooping Status. This option monitors network traffic to determine which hosts have requested to send Multicast traffic.

VLAN ID:

MLD Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

✱ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

MLD Querier Status: Enable

MLD Querier Election: Enable

MLD Querier Version: v1
 v2

Step 10. (Optional) Check the Mrouter Ports Auto Learn check box. This option enables auto learning of the ports to which the Mrouter is connected. An Mrouter is a router designed to properly route multicast packets.

VLAN ID:	<input type="text" value="1"/>
MLD Snooping Status:	<input checked="" type="checkbox"/> Enable
MRouter Ports Auto Learn:	<input checked="" type="checkbox"/> Enable
Immediate Leave:	<input type="checkbox"/> Enable
⚙️ Last Member Query Counter:	<input checked="" type="radio"/> Use Query Robustness (2) <input type="radio"/> User Defined <input type="text" value=""/> (Range: 1 - 7)
<hr/>	
MLD Querier Status:	<input checked="" type="checkbox"/> Enable
MLD Querier Election:	<input checked="" type="checkbox"/> Enable
MLD Querier Version:	<input checked="" type="radio"/> v1 <input type="radio"/> v2
<input type="button" value="Apply"/> <input type="button" value="Close"/>	

Step 11. Check the Enable check box for Immediate Leave to quickly block a multicast stream sent to a member port in case an IGMP Group Leave message is received.

VLAN ID:	<input type="text" value="1"/>
MLD Snooping Status:	<input checked="" type="checkbox"/> Enable
MRouter Ports Auto Learn:	<input checked="" type="checkbox"/> Enable
Immediate Leave:	<input type="checkbox"/> Enable
⚙️ Last Member Query Counter:	<input type="radio"/> Use Query Robustness (2) <input type="radio"/> User Defined <input type="text" value=""/> (Range: 1 - 7)
<hr/>	
MLD Querier Status:	<input checked="" type="checkbox"/> Enable
MLD Querier Election:	<input checked="" type="checkbox"/> Enable
MLD Querier Version:	<input checked="" type="radio"/> v1 <input type="radio"/> v2
<input type="button" value="Apply"/> <input type="button" value="Close"/>	

Step 12. Set the Last Member Query Counter.

Use Query Robustness (2) – sets the query robustness to the default value. The default values is 2.

User Defined – Allows you to specify a number of IGMP Group-Specific queries to be sent before the switch assumes there are no more members in the group.

Step 13. (Optional) Check the Enable check box for MLD Querier Status to let this device work as a querier. A querier sends query messages to discover which network devices are members of a given multicast group.

VLAN ID:

MLD Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

✱ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

MLD Querier Status: Enable

MLD Querier Election: Enable

MLD Querier Version: v1
 v2

Step 14.(Optional) Check the check box for MLD Querier Election to elect this device as the querier. There can only be one IGMP Querier in a network.

VLAN ID:

MLD Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

✱ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

MLD Querier Status: Enable

MLD Querier Election: Enable

MLD Querier Version: v1
 v2

Step 15. (Optional) Choose the MLD Querier Version used if the device becomes the elected querier. Choose v2 if there are switches and/or Multicast routers in the VLAN that perform source-specific IP Multicast forwarding.

Note: In this example, v1 is chosen.

VLAN ID:

MLD Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

✱ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

MLD Querier Status: Enable

MLD Querier Election: Enable

MLD Querier Version: v1
 v2

Step 16. Click **Apply**.

VLAN ID:

MLD Snooping Status: Enable

MRouter Ports Auto Learn: Enable

Immediate Leave: Enable

✱ Last Member Query Counter: Use Query Robustness (2)
 User Defined (Range: 1 - 7)

MLD Querier Status: Enable

MLD Querier Election: Enable

MLD Querier Version: v1
 v2

You should now have successfully configured MLD on your switch.