# Configure IGMP Snooping on CBS220 Series Switches

## Objective

The objective of this document is to show you how to configure Internet Group Management Protocol (IGMP) Snooping on the Cisco Business 220 Series Switches.

### Applicable Devices | Software Version

- CBS220 series **(DataSheet)** | 2.0.0.17

## Introduction

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.

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:

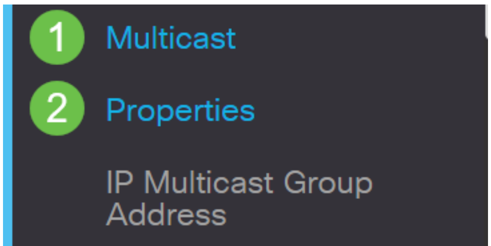
- **Configure Virtual Local Area Network (VLAN)**
- Enable Bridge Multicast Filtering (steps shown in the next section)

## Enable IGMP Snooping and Multicast Action

In order for IGMP Snooping to work, Bridge Multicast filtering must be enabled. The IGMP Snooping must be enabled globally and for each relevant VLAN on the IGMP Snooping page.

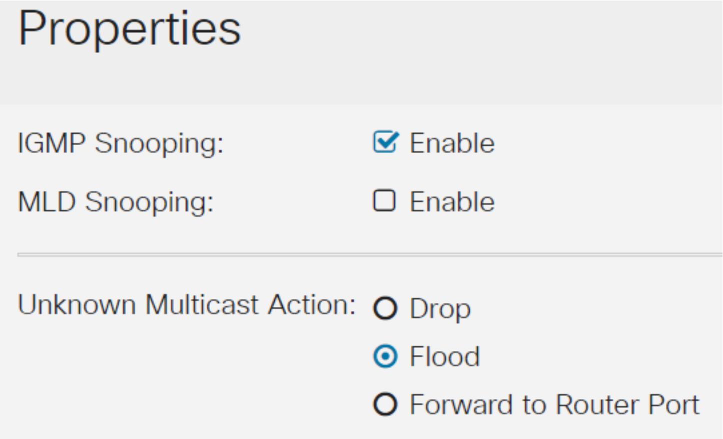
**Step 1**

Log in to the web configuration utility and choose **Multicast > Properties**.



**Step 2**

Make sure IGMP Snooping is enabled. Select the procedure for *Unknown Multicast Action*. The options are *Drop*, *Flood*, or *Forward to Router Port*.



Properties

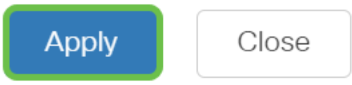
IGMP Snooping: ☑ Enable

MLD Snooping: □ Enable

Unknown Multicast Action: ○ Drop ● Flood ○ Forward to Router Port

**Step 3**

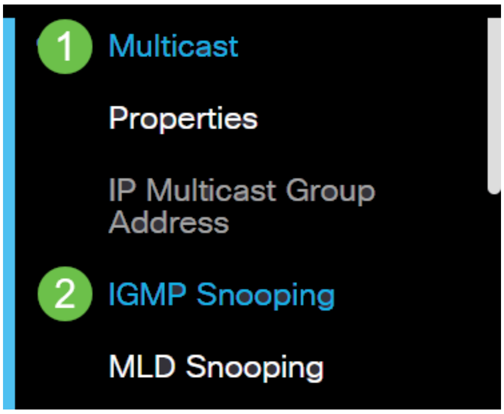
Click **Apply**.



## Configure IGMP Snooping

**Step 1**

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



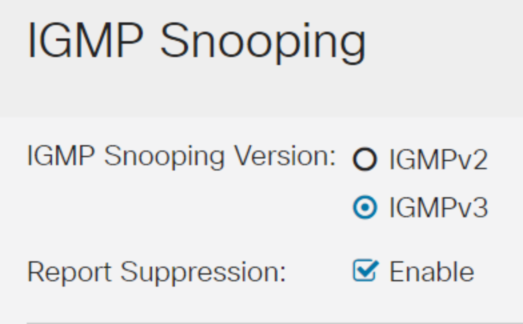
**Step 2**

Select the radio button for the IGMP version you would want to use. Your options are IGMPv2 or IGMPv3.

Report suppression is enabled by default. If you disable this feature, all IGMP reports will be forwarded to Multicast routers.

IGMP report suppression is supported only when the Multicast query has IGMPv1 and

IGMPv2 reports. This feature is not supported when the query includes IGMPv3 reports. The switch uses IGMP report suppression to forward only one IGMP report per Multicast router query to Multicast devices. When IGMP report suppression is enabled, the switch sends the first IGMP report from all hosts for a group to all Multicast routers. The switch does not send the remaining IGMP reports for the group to the Multicast routers. This feature prevents duplicate reports from being sent to the Multicast devices. The switch always forwards only the first IGMPv1 or IGMPv2 report from all hosts for a group to all Multicast routers, regardless of the Multicast router query also includes requests for IGMPv3 reports.



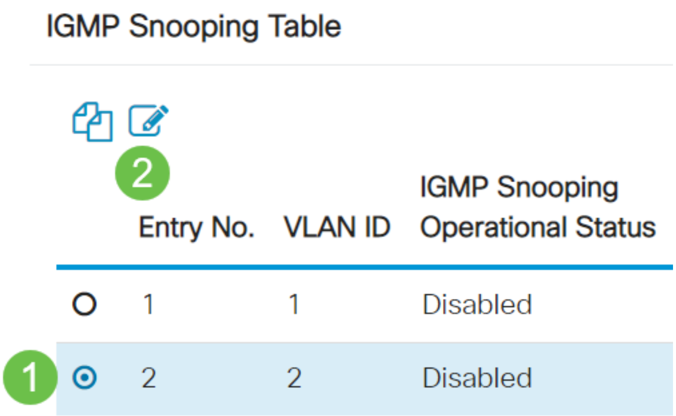
IGMP Snooping

IGMP Snooping Version: ○ IGMPv2 ● IGMPv3

Report Suppression: ☑ Enable

**Step 3**

Select a VLAN and click the **edit icon**.

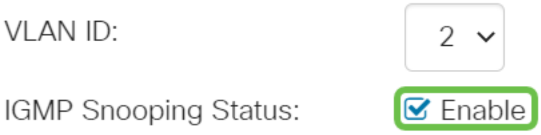


IGMP Snooping Table

| | Entry No. | VLAN ID | IGMP Snooping Operational Status |
|---|---|---|---|
| ○ | 1 | 1 | Disabled |
| ● | 2 | 2 | Disabled |

**Step 4**

Check the Enable check box for *IGMP Snooping Status*. This will enable IGMP snooping on the VLAN. The device monitors network traffic to determine which hosts have asked to be sent Multicast traffic.

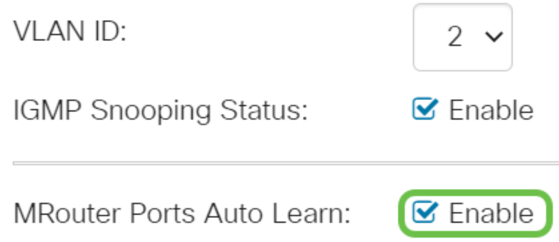


VLAN ID: 2

IGMP Snooping Status: ☑ Enable

**Step 5 (Optional)**

To allow the multicast router to automatically learn the connected ports, check the Enable check box for *MRouter Ports Auto Learn*.



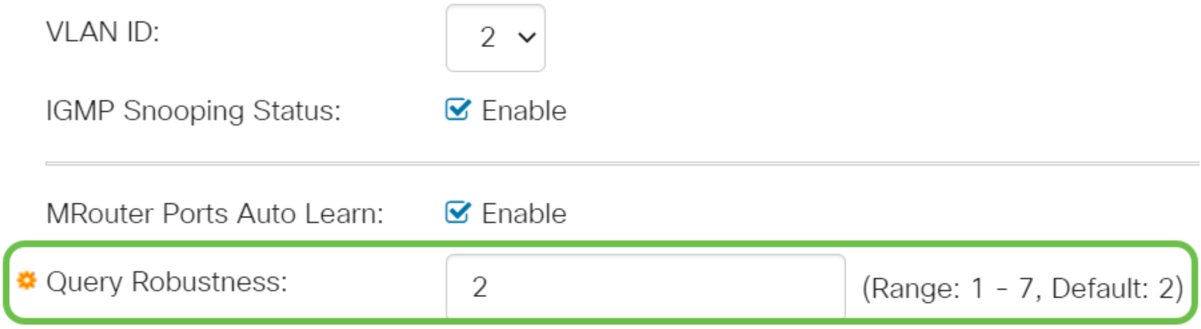
VLAN ID: 2

IGMP Snooping Status: ☑ Enable

MRouter Ports Auto Learn: ☑ Enable

**Step 6**

Query Robustness - Enter the robustness variable to be used if this switch is the elected querier.



VLAN ID: 2

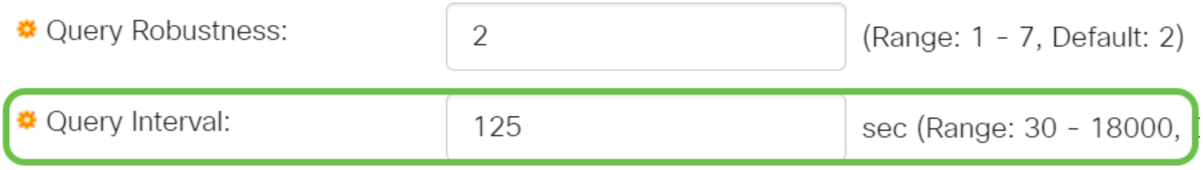
IGMP Snooping Status: ☑ Enable

MRouter Ports Auto Learn: ☑ Enable

Query Robustness: 2 (Range: 1 - 7, Default: 2)

**Step 7**

Query Interval - Enter the interval between the general queries to be used if this switch is the elected querier.

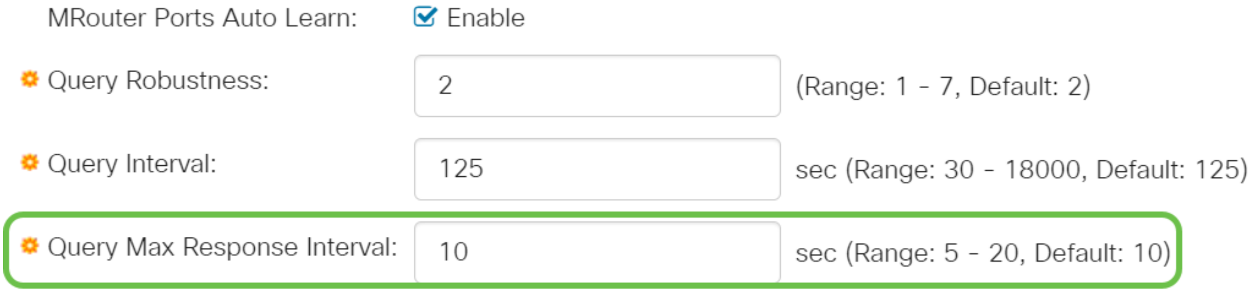


Query Robustness: 2 (Range: 1 - 7, Default: 2)

Query Interval: 125 sec (Range: 30 - 18000,

**Step 8**

Query Max Response Interval - Enter the delay used to calculate the maximum response code inserted into the periodic general queries.



MRouter Ports Auto Learn: ☑ Enable

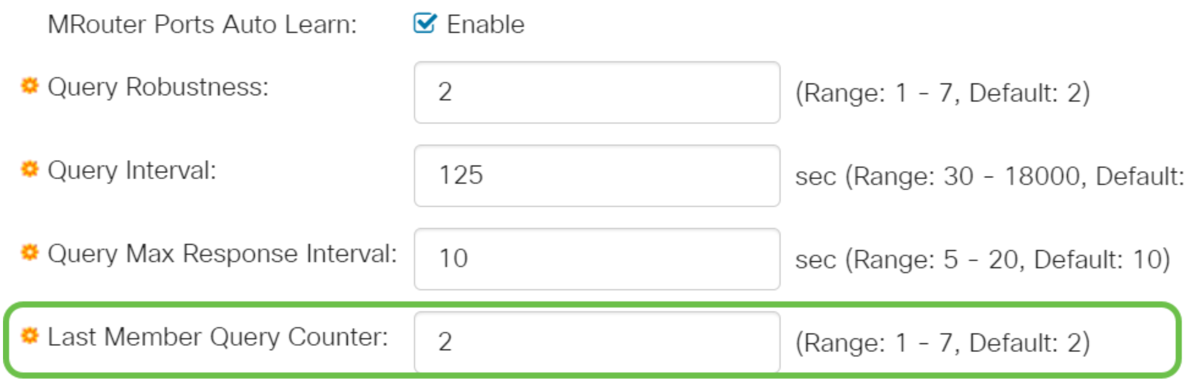
Query Robustness: 2 (Range: 1 - 7, Default: 2)

Query Interval: 125 sec (Range: 30 - 18000, Default: 125)

Query Max Response Interval: 10 sec (Range: 5 - 20, Default: 10)

**Step 9**

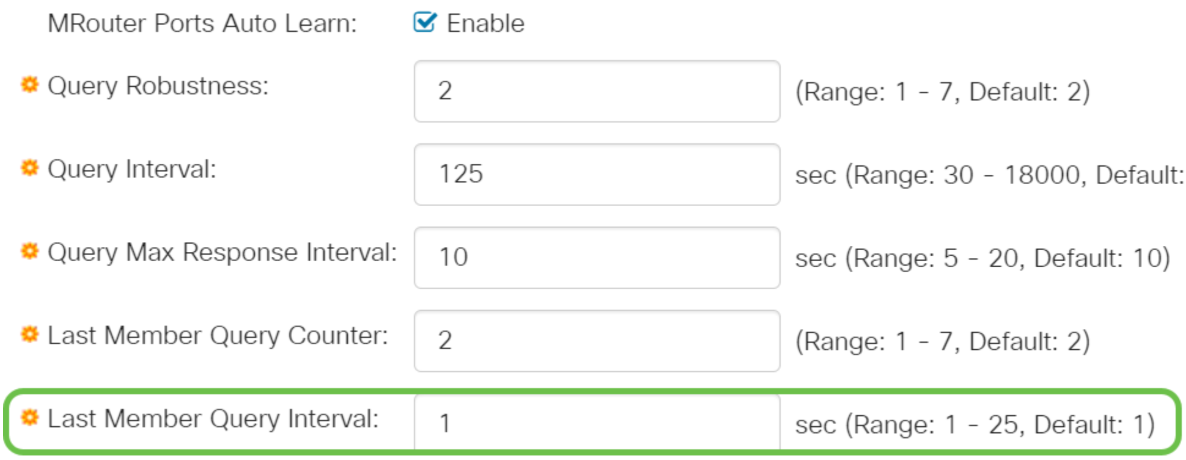
Last Member Query Counter – The number of IGMP group-specific queries sent before the device assumes that there are no more members for the group if the device is the elected querier.



| | | |
|---|---|---|
| MRouter Ports Auto Learn: | ☑ Enable | |
| Query Robustness: | 2 | (Range: 1 - 7, Default: 2) |
| Query Interval: | 125 | sec (Range: 30 - 18000, Default: 125) |
| Query Max Response Interval: | 10 | sec (Range: 5 - 20, Default: 10) |
| Last Member Query Counter: | 2 | (Range: 1 - 7, Default: 2) |

**Step 10**

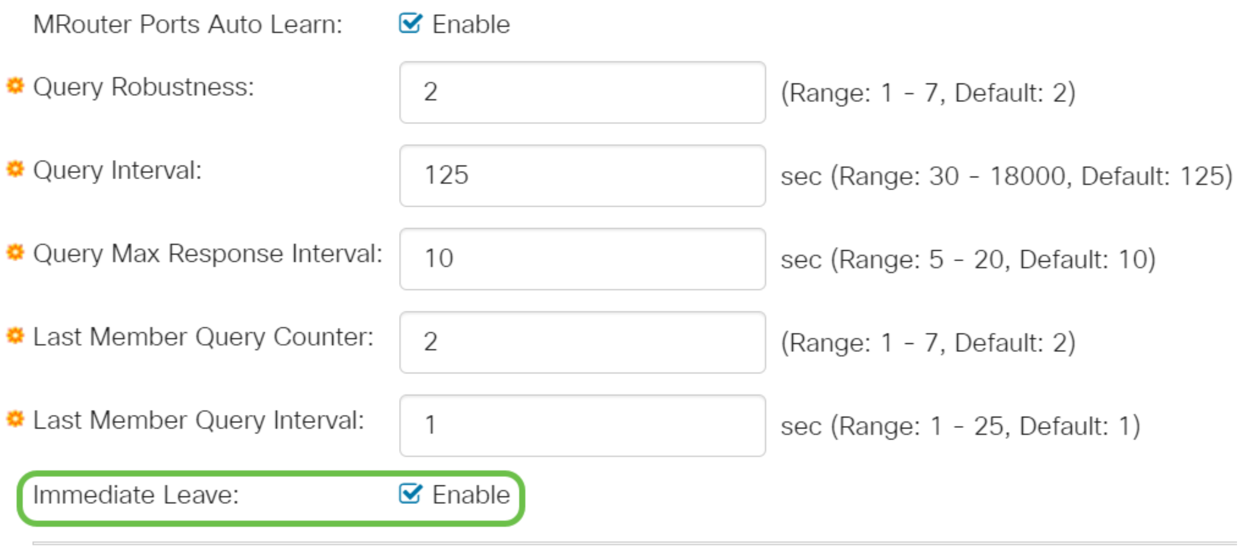
Last Member Query Interval - Enter the maximum response delay to be used if the switch cannot read the maximum response time value from group-specific queries sent by the elected querier.



| | | |
|---|---|---|
| MRouter Ports Auto Learn: | ☑ Enable | |
| Query Robustness: | 2 | (Range: 1 - 7, Default: 2) |
| Query Interval: | 125 | sec (Range: 30 - 18000, Default: 125) |
| Query Max Response Interval: | 10 | sec (Range: 5 - 20, Default: 10) |
| Last Member Query Counter: | 2 | (Range: 1 - 7, Default: 2) |
| Last Member Query Interval: | 1 | sec (Range: 1 - 25, Default: 1) |

**Step 11**

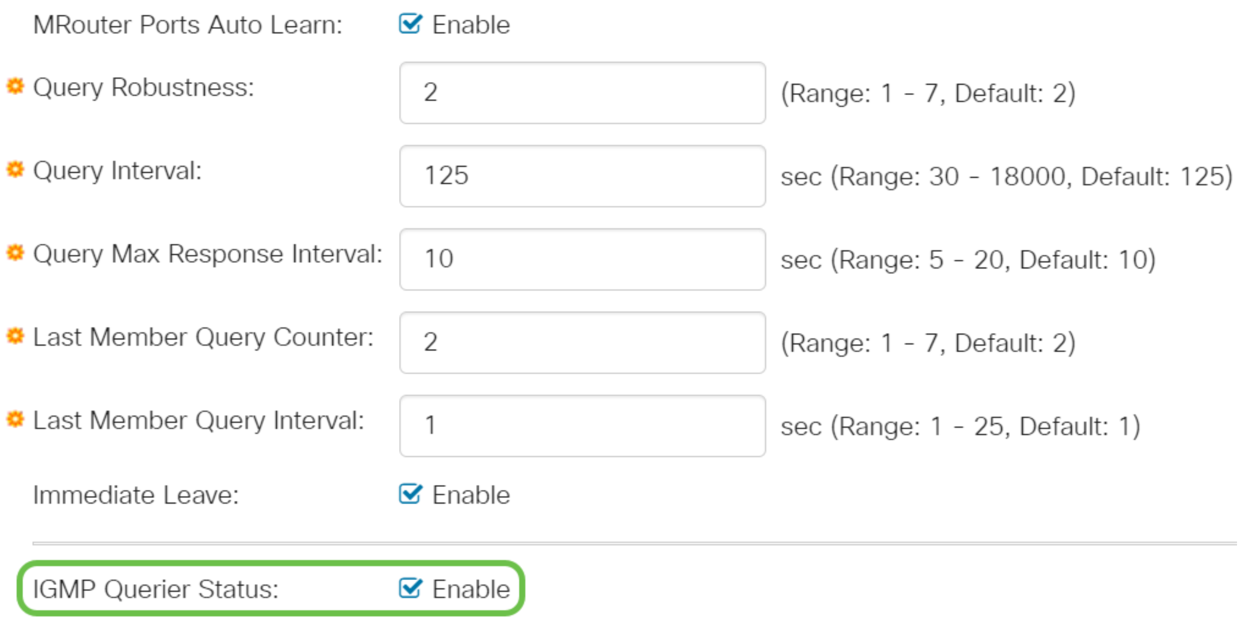
Immediate Leave - Select to enable the switch to remove an interface that sends a leave message from the forwarding table without first sending out MAC-based general queries to the interface. When Immediate Leave an IGMP Leave Group message is received from a host, the system removes the host port from the table entry. After it relays the IGMP queries from the Multicast router, it deletes entries periodically if it doesn’t receive any IGMP membership reports from the Multicast clients. When enabled, this feature reduces the time it takes to block unnecessary IGMP traffic sent to a device port.



| | | |
|---|---|---|
| MRouter Ports Auto Learn: | ☑ Enable | |
| Query Robustness: | 2 | (Range: 1 - 7, Default: 2) |
| Query Interval: | 125 | sec (Range: 30 - 18000, Default: 125) |
| Query Max Response Interval: | 10 | sec (Range: 5 - 20, Default: 10) |
| Last Member Query Counter: | 2 | (Range: 1 - 7, Default: 2) |
| Last Member Query Interval: | 1 | sec (Range: 1 - 25, Default: 1) |
| Immediate Leave: | ☑ Enable | |

**Step 12 (Optional)**

IGMP Querier Status - Select to enable this feature. This feature is required if there's no Multicast router.

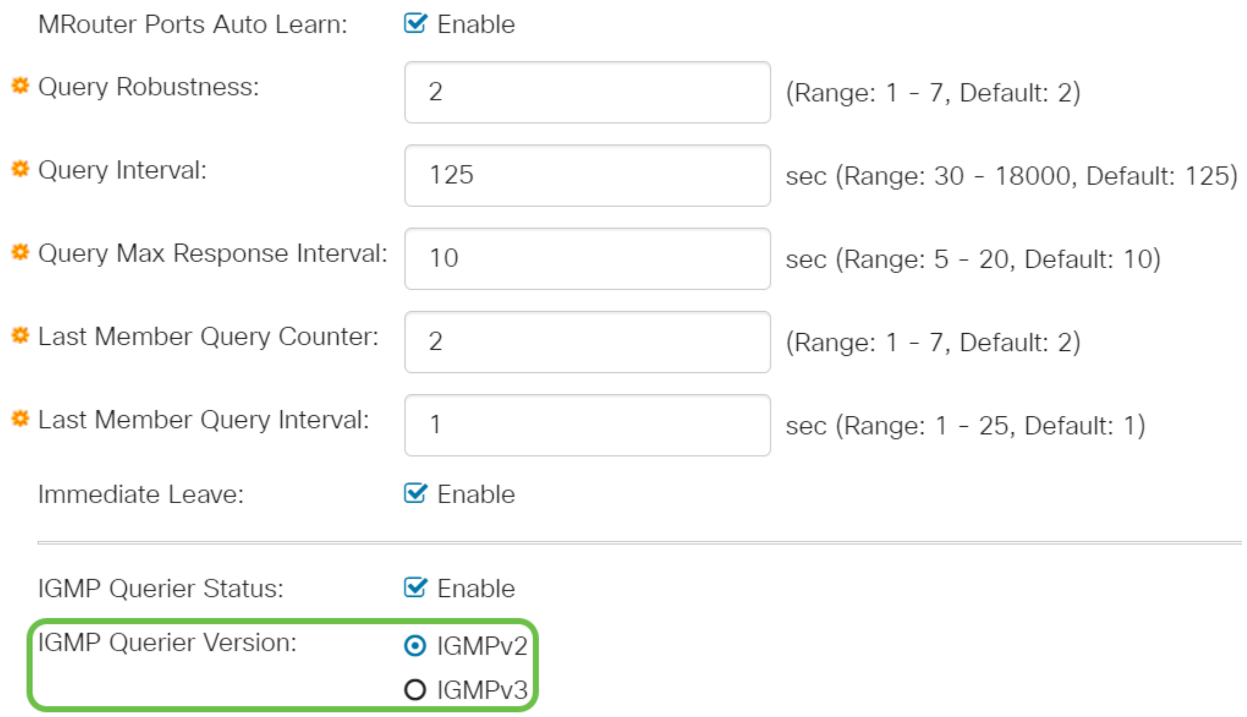


| | | |
|---|---|---|
| MRouter Ports Auto Learn: | ☑ Enable | |
| Query Robustness: | 2 | (Range: 1 - 7, Default: 2) |
| Query Interval: | 125 | sec (Range: 30 - 18000, Default: 125) |
| Query Max Response Interval: | 10 | sec (Range: 5 - 20, Default: 10) |
| Last Member Query Counter: | 2 | (Range: 1 - 7, Default: 2) |
| Last Member Query Interval: | 1 | sec (Range: 1 - 25, Default: 1) |
| Immediate Leave: | ☑ Enable | |
| IGMP Querier Status: | ☑ Enable | |

**Step 13**

IGMP Querier Version - Select the IGMP version to be used if the device becomes the elected querier. Select IGMPv3 if there are switches and/or Multicast routers in the VLAN that perform source-specific IP Multicast forwarding. Otherwise, select IGMPv2.

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.



MRouter Ports Auto Learn: ☑ Enable

Query Robustness: 2 (Range: 1 - 7, Default: 2)

Query Interval: 125 sec (Range: 30 - 18000, Default: 125)

Query Max Response Interval: 10 sec (Range: 5 - 20, Default: 10)

Last Member Query Counter: 2 (Range: 1 - 7, Default: 2)

Last Member Query Interval: 1 sec (Range: 1 - 25, Default: 1)

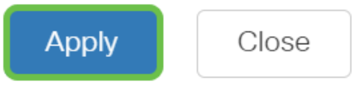
Immediate Leave: ☑ Enable

IGMP Querier Status: ☑ Enable

IGMP Querier Version: ● IGMPv2 ○ IGMPv3

**Step 14**

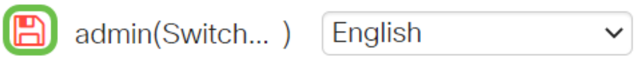
Click **Apply**. The Running Configuration file is updated.



Changes in IGMP Snooping timer configuration (including Query Robustness, Query Interval, etc.) don’t take effect on timers that have already been created.

**Step 15**

To save this configuration from the running configuration to the startup configuration, click the **save icon** in the top right corner of your screen.



## Conclusion

It’s as simple as that, you have now configured IGMP Snooping.

For more configurations, refer to the **Cisco Business 220 Series Switches Administration Guide**.

If you want to see more articles on CBS220 switches, check out the **220 Series support page**.