

MLD-Snooping Configuration (GTL-2091)



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Chapter 1 MLD-Snooping Configuration

1.1 IPv6 Multicast Overview

The task of MLD snooping is to maintain the forwarding relationship of IPv6 group addresses in VLAN and synchronize with the change of the multicast group, enabling the data to be forwarded according to the topology of the multicast group. Its functions include monitoring MLD-snooping packets, maintaining the table between group address and VLAN, keep the MLD-snooping host the same with the MLD-snooping router and solve the flooding problems.

When a L2 device has not got MLD snooping run, the multicast data will be broadcast at the second layer; when the L2 device gets MLD snooping run, the multicast data of the known multicast group will not be broadcast at the second layer but be sent to the designated receiver, and the unknown multicast data will be dropped.

Note:

Because MLD-snooping solves the above-mentioned problems by monitoring the Query or Report packets of MLD-Snooping, MLD snooping can work normally only when there exists the multicast router.

1.2 MLD-Snooping Multicast Configuration Tasks

- Enabling/Disabling MLD-Snooping
- Enabling/Disabling the Solicitation of Hardware Forward of Multicast Group
- Adding/Deleting the Static Multicast Address of VLAN
- Setting Router Age Timer of MLD-Snooping
- Setting Response Time Timer of MLD-Snooping
- Setting the Port of the Static Multicast Router
- Setting the Immediate Leave Function
- Monitoring and Maintaining MLD-Snooping

1.2.1 Enabling/Disabling MLD-Snooping Multicast

Run the following commands in global configuration mode.

Command	Purpose
ipv6 mld-snooping-snooping	Enables MLD snooping multicast.
no ipv6 mld-snooping-snooping	Disables MLD snooping.

Note:

After MLD-Snooping is enabled and the multicast packets fail to be found, the multicast packets whose destination addresses are not registered are dropped.

1.2.2 Enabling/Disabling the Solicitation of Hardware Forward of Multicast Group

Run the following commands in global configuration mode.

Command	Purpose
ipv6 mld-snooping solicitation	Enables the solicitation of hardware forward of multicast group.
no ipv6 mld-snooping solicitation	Disables the solicitation of hardware forward of multicast group.

1.2.3 Adding/Canceling the Static Multicast Address of VLAN

Run the following commands in global configuration mode.

Command	Purpose
ipv6 mld-snooping vlan <i>vlan_id</i> static X:X:X:X::X interface <i>intf</i>	Adds the static multicast address of VLAN.
no ipv6 mld-snooping vlan <i>vlan_id</i> static X:X:X:X::X interface <i>intf</i>	Removes the static multicast address of VLAN.

1.2.4 Setting Router Age Timer of MLD-Snooping

Run the following commands in global configuration mode.

Command	Operation
ipv6 mld-snooping timer router-age <i>timer_value</i>	Sets the router age of MLD-Snooping.
no ipv6 mld-snooping timer router-age	Resumes the default router age of MLD-Snooping.

Note:

The settings of this timer shall refer to the query period settings of MLD-Snooping and be larger than the query period. It is recommended to set the router age timer to be triple of the query period.

The default router age of MLD snooping is 260 seconds.

1.2.5 Setting Response Time Timer of MLD-Snooping

Run the following commands in global configuration mode.

Command	Operation
ipv6 mld-snooping timer response-time <i>timer_value</i>	Sets the response time of MLD-Snooping.
no ipv6 mld-snooping timer response-time	Resumes the default response time of MLD-Snooping.

Note:

The value of the timer cannot be set too small, or the multicast communication may be unstable.

The default response time of MLD snooping is 15 seconds.

1.2.6 Setting the Port of the Static Multicast Router

Run the following commands in global configuration mode.

Command	Operation
ipv6 mld-snooping vlan WORD mrouter interface <i>inft_name</i>	Sets the static multicast router's port of MLD snooping in Vlan word .
no ipv6 mld-snooping vlan WORD mrouter interface <i>inft_name</i>	Deletes the static multicast router's port of MLD snooping in Vlan word .

1.2.7 Enabling/Disabling Immediate Leave

Run the following commands in global configuration mode.

Command	Purpose
ipv6 mld-snooping vlan WORD immediate-leave	Enables the immediate-leave functionality.
no ipv6 mld-snooping vlan WORD immediate-leave	Resumes the default settings.

1.2.8 Monitoring and Maintaining MLD-Snooping Multicast

Run the following commands in EXEC mode:

Command	Operation
show ipv6 mld-snooping	Displays the configuration of MLD-Snooping.
show ipv6 mld-snooping timer	Displays the clock of MLD-Snooping.

show ipv6 mld -snooping groups	Displays the multicast group of MLD-Snooping.
show ipv6 mld-snooping statistics	Displays the statistics information of MLD-Snooping.
show ipv6 mld-snooping vlan	Displays the configuration of MLD-Snooping in VLAN.
show ipv6 mld-snooping mac	Displays the multicast MAC addresses recorded by MLD snooping.

The MLD-Snooping information is displayed below:

#show ipv6 mld-snooping

Global MLD snooping configuration:

```

-----
Globally enable      : Enabled
Querier              : Enabled
Querier address      : FE80::3FF:FEFE:FD00:1
Router age           : 260 s
Response time        : 10 s
Handle Solicitation  : Disabled

```

Vlan 1:

```

-----
Running
Routers: SWITCH(querier);

```

The multicast group of MLD-Snooping is displayed blow:

#show ipv6 mld--snooping groups

```

Vlan Group      Type Port(s)
-----
1 FF02::1:FF32:1B9B MLD  G2/23
1 FF02::1:FF00:2  MLD  G2/23
1 FF02::1:FF00:12 MLD  G2/23
1 FF02::1:FF13:647D MLD  G2/23
2 FF02::1:FF00:2  MLD  G2/22
2 FF02::1:FF61:9901 MLD  G2/22

```

The timer of MLD-Snooping is displayed blow:

#show ipv6 mld-snooping timers

vlan 1 Querier on port 0 : 251

#

Querier on port 0: 251 meaning the router age timer times out.

vlan 2 multicast address 3333.0000.0005 response time : This shows the time period from receiving a multicast query packet to the present; if there is no host to respond when the timer times out, the port will be canceled.

The MLD-snooping statistics information is displayed below:

#show ipv6 mld-snooping statistics

vlan 1

```

v1_packets:0      quantity of v1 packets
v2_packets:6      quantity of v2 packets
v3_packets:0      quantity of v3 packets
general_query_packets:5  Quantity of general query packets
special_query_packets:0  Quantity of special query packets
listener_packets:6    Quantity of Report packets
done_packets:0      Quantity of Leave packets
err_packets:0       Quantity of error packets

```

The MLD-Snooping proxying is displayed below:

#show ipv6 mld-snooping mac

Vlan	Mac	Ref	Flags
------	-----	-----	-------

1	3333:0000:0001	1	2
2	3333:ff61:9901	1	0
	FF02::1:FF61:9901		
1	3333:0000:0002	1	2
1	3333:ff00:0002	1	0
	FF02::1:FF00:2		
1	3333:ff00:0012	1	0
	FF02::1:FF00:12		
1	3333:ff13:647d	1	0
	FF02::1:FF13:647D		
1	3333:ff32:1b9b	1	0
	FF02::1:FF32:1B9B		
2	3333:ff00:0002	1	0
	FF02::1:FF00:2		
1	3333:ff00:0001	1	2
1	3333:ff8e:7000	1	2