

Chapter 26: MLD Snooping



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Chapter 26 MLD Snooping

26.1 MLD Snooping Overview

MLD (Multicast Listener Discovery) Internet Group Management Protocol is part of the IPv6 protocol, to support and manage hosts and multicast routers IP multicast. IP Multicast allows the transmission of IP packets to a multicast group constitutes a set of host, multicast group membership relationship is dynamic, host can dynamically join or leave the group, so to minimize the network load, effective online data transfer.

MLD Snooping is used to monitor hosts and routers between the MLD messages, according to group members join, leave, and dynamically create, maintain and delete the multicast address table, this time, multicast frames based on their respective multicast address table be forwarded.

26.2 MLD Snooping

26.2.1 MLD Snooping Configuration List

Configuration Task	Description	Detailed Configuration
Start MLD Snooping	Required	26.2.2
Configure MLD Snooping Timer	Optional	26.2.3
Configure Fast-leave Port	Optional	26.2.4

Maximum number of learning multicast configuration port	Optional	26.2.5
Configure MLD-Snooping Multicast Learning Strategies	Optional	26.2.6
Configure MLD-Snooping querier	Optional	26.2.7
Configure Routing port	Optional	26.2.8
Multicast VLAN port configuration	Optional	26.2.9
Display and maintenance of MLD Snooping	Optional	26.2.10

26.2.2 Start MLD Snooping

Operation	Command	Remarks
Enter global configuration mode	system-view	
Start MLD Snooping	mld-snooping	

26.2.3 Configure MLD Snooping Timer

Operation	Command	Remarks
Enter global configuration mode	system-view	
Configure dynamic multicast member port aging time	mld-snooping host-aging-time <i>time</i>	300s by default
Configure the maximum response time to leave	mld-snooping max-response-time <i>time</i>	10s by default

26.1.1 Configure Fast-leave Port

Under normal circumstances, MLD-Snooping in MLD leave message is received directly will not remove the port from the multicast group, but to wait some time before the port from the multicast group.

Start quickly delete function, MLD-Snooping received MLD leave message, the direct port from the multicast group. When the port is only one user, it can be quickly removed to save bandwidth.

Operation	Command	Remarks
Enter global configuration mode	system-view	
Enter port configuration mode	interface ethernet <i>interface-num</i>	
Fast-leave configuration port	mld-snooping fast-leave	

26.1.2 Maximum Number of Learning Multicast Configuration Port

You can use the following command to set up each port can learn the number of multicast.

Operation	Command	Remarks
Enter global configuration mode	system-view	
Enter port configuration mode	interface ethernet <i>interface-num</i>	
Configured port number of the largest study of multicast	mld-snooping group-limit <i>number</i>	By default, the maximum learning of multicast port number NUM_MULTICA

		ST_GROUPS
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Caution:

NUM_MULTICAST_GROUPS refers to the machine can learn the maximum number of multicast, each product NUM_MULTICAST_GROUPS may be different. Although theoretically a maximum of learning multicast port number NUM_MULTICAST_GROUPS, but also that other ports can learn the number of multicast will be occupied. In other words, all the ports will share this NUM_MULTICAST_GROUPS multicast group resources.

26.1.3 Configure MLD Snooping Multicast Learning Strategies

Configured multicast learning strategies, the administrator can control the router only to learn the specific multicast group. If a multicast group is added to the blacklist, then the router will not learn the multicast group; the contrary, in the white list in the multicast group of routers can be learned.

Operation	Command	Remarks
Enter global configuration mode	system-view	
Configuration is not black and white list in the multicast group to learn the rules of the default	mld-snooping { permit deny } { group all vlan <i>vlan-id</i> }	
Enter port configuration mode	interface ethernet <i>interface-num</i>	
Configure the port multicast black list	mld-snooping { permit deny } group-range <i>multicast-address</i> multi-count	

	<i>num</i> vlan <i>vlan-id</i>	
Configure the port multicast black list	mld-snooping { permit deny } group <i>multicast-address</i> vlan <i>vlan-id</i>	

26.1.4 Configure MLD-Snooping querier

After running the MLD protocol multicast network, there will be a full-time query multicast router or Layer 3 multicast router is responsible for sending MLD query.

However, MLD does not support Layer 2 GPON function, so no way to query device capabilities, universal group can't send query message. Users can configure MLD-Snooping querier, the GPON to the second floor take the initiative in the data link layer to send general queries, messages, in order to establish and maintain multicast forwarding entry.

Users can also configure the MLD Snooping querier sends general query messages with the source address, the maximum response time and query cycle.

Operation	Command	Remarks
Enter global configuration mode	system-view	
On MLD-Snooping querier	mld-snooping querier	
Configured to send general query message interval	mld-snooping query-interval <i>interval</i>	
Configuration is generally the maximum query response time of message	mld-snooping query-max-respond <i>time</i>	

26.1.5 Configure Routing Port

You can configure the router port will be automatically added to the dynamic MLD SnoopingMulticast learn to make routing port also has a multicast packet forwarding capability.

When the GPON receives a host membership report sent packets, the port will be forwarded to the route.

Operation	Command	Remarks
Enter global configuration mode	system-view	
Hybrid routing port configuration function	mld-snooping route-port forward	
Configure dynamic routing port aging time	mld-snooping router-port-age { on off <i>age-time</i> }	
Configure static routing port	mld-snooping route-port vlan <i>vlan-id</i> interface { all ethernet <i>interface-num</i> }	

26.1.6 Multicast VLAN Port Configuration

Multicast VLAN on the port function, regardless of the port received MLD messages belong to which VLAN, the GPON will be modified as a multicast VLAN.

Operation	Command	Remarks
Enter global configuration mode	system-view	
Enter port configuration mode	interface ethernet <i>interface-num</i>	
Multicast VLAN port configuration	mld-snooping multicast vlan <i>vlan-id</i>	

26.1.7 Display and Maintenance of MLD Snooping

After completing the above configuration, can use the following command to view configuration.

Operation	Command	Remarks
See related MLD Snooping Configuration	display mld-snooping	
See dynamic routing port	display mld-snooping router-dynamic	
View static router port configuration	display mld-snooping router-static	
View multicast group	display mld-snooping group	