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 togroup members join, leave, and dynamically create, maintain and delete the multicast addresstable, 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
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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** *time*	300s by default
Configure the maximum response time to leave	**mld-snooping max-response-time** *time*	10s by default

26.2.4 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** *interface-num*	
Fast-leave configuration port	**mld-snooping fast-leave**	

26.2.5 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** *interface-num*	
Configured port number of the largest study of multicast	**mld-snooping group-limit** *number*	By default, the maximum learning of multicast port number NUM_MULTICAST_GROUPS

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 willshare this NUM_MULTICAST_GROUPS multicast group resources.

26.2.6 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 canbe 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 *vlan-id* }	
Enter port configuration mode	**interface ethernet** *interface-num vlan-id*	
Configure the port multicast blacklist	**mld-snooping** { permit | deny } **group** *multicast-address* **vlan** *vlan-id*	
Configure the port multicast blacklist	**mld-snooping** { permit | deny } **group-range** *multicast-address* **multi-count** *num* **vlan**	
Configure the port multicast black list	**mld-snooping** { permit | deny } **group-range** *multicast-address* **multi-count** *num* **vlan**	

26.2.7 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 Switch function, so no way to query device capabilities, universal group can't send query message. Users can configure MLD-Snooping querier, the Switch 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** *interval*	
Configuration is generally the maximum query response time of message	**mld-snooping query-max-respond** *time*	

26.2.8 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 Switch receives a host membership report sent packets, the port will be forwarded tothe 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 | *age-time* }	
Configure static routing port	**mld-snooping route-port vlan** *vlan-id* **interface** { all | ethernet *interface-num* }	

26.2.9 Multicast VLAN Port Configuration

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

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

26.2.10 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**	