Chapter10: MAC Address Table

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Chapter 10 MAC Address Table

10.1 MAC Address Table Overview

The system maintains a MAC address table for forwarding packets. The entries in this tablecontain the device MAC addresses, VLAN IDs, and Switch port numbers. When a packetenters the Switch, the Switch looks up the MAC address table based on the destination MACaddress of the packet and the VLAN ID of the packet. If the packet is found, the Switch sendsthe packets to the specified ports. Otherwise, Switch will broadcast the packets in this VLAN. The system can be able to learn MAC address table. If the source MAC address of a receivedpacket does not exist in the MAC address table, the system will add the source MAC address,VLAN ID, and port number of the received packet as a new entry to the MAC address table.

You can manually configure MAC address entries. The administrator can configure the MAC address table based on the actual network condition, that is, the administrator can add or modify static entries, permanent entries, blackhole entries, dynamic entries.

System provides MAC address aging function. If a device does not send any packets for a certain period of time, the system deletes the MAC address entries associated with the device.MAC address aging only takes effect on the learned MAC address or the MAC address entrieswhich can be aged (the dynamic MAC address entries).

10.2 Configure MAC Address Table

10.2.1 MAC Address Table Configuration Task List

Configuration Task	Description	Detailed Configuration
Configure the Aging Time	Optional	10.2.2
Add MAC Address Table by Manual	Optional	10.2.3
Display MAC Address Table	Optional	10.2.4
Enable/Disable MAC Learning	Optional	10.2.5
Quantity Limitation on MAC Address Learning Table	Optional	10.2.6

10.2.2 Configure the Aging Time

Operation	Command	Remarks
Enter global configuration mode	**system-view**	
Configure the aging time of MAC address	**mac-address-table age-time** { *agetime*	disable }	*disable* means mac address will not be aged

Configure the default aging time of MAC address	**undo mac-address-table age-time**	300s by default
Display the aging time of MAC address	**display mac-address-table age-time**	
Display the aging time of MAC address	**display mac-address-table age-time**	

10.2.3 Add MAC Address Table by Manual

Operation	Command	Remarks
Enter global configuration mode	**system-view**	
Configure the static | permanent | dynamicmac-address	**mac-address-table** { **static** | **permanent** | **dynamic** } *mac-address* **interface ethernet** *interface-num* **vlan** *vlan-id*	
Configure the blackholemac-address	**mac-address-table blackhole mac-address** **vlan vlan-id**	
Delete the static | permanent | dynamicmac-address	**undo mac-address-table [dynamic | permanent | static] mac-address interface ethernet interface-num vlan vlan-id**	
Delete the blackholemac-address	**undo mac-address-table [blackhole | dynamic | permanent | static] mac-address** **vlan vlan-id**	
Delete the static | permanent | dynamicmac-address by port	**undo mac-address-table [static | permanent | dynamic] interface ethernet** **interface-num**	
Delete the blackholemac-address by port	**undo mac-address-table [blackhole | dynamic | permanent | static] vlan vlan-id**	
Delete all mac-address	**undo mac-address-table**	

10.2.4 Display MAC Address Table

Operation	Command	Remarks
Display all MAC address	**display mac-address-table**	
Display CPU MAC address	**display mac-address-table cpu**	
Display MAC address by mac	**display mac-address-table** *mac-address* [vlan *vlan-id*]	
Display MAC address by type	**display mac-address-table** { **static** |	
	dynamic | permanent | blackhole } [vlan **vlan-id]**	
Display MAC address by port	**display mac-address-table { static | dynamic | permanent | blackhole } interface ethernet interface-num [vlan vlan-id]**	
Display MAC address by vlan	**display mac-address-table vlan vlan-id**	

10.2.5 Enable/Disable MAC Learning

You can configure whether the device learns MAC addresses dynamically or not.

If MAC address learning is disabled under global configuration mode, all ports cannot learn MAC address; If you want to disable mac address learning on some ports, just enable MAC address learning under global configuration mode and disable MAC address learning on the port will be OK.

Operation	Command	Remarks
Enter global configuration mode	**system-view**	
Enable global mac learning	**mac-address-table learning**	
Disable global mac learning	**undo mac-address-table learning**	
Enter interface configuration mode	**interface** { { ethernet *interface-num* } | interface-name }	
Enable mac learning	**mac-address-table learning**	
Disable mac learning	**undo mac-address-table learning**	
Display mac learning	**display mac-address learning** [interface ethernet [*interface-num*]]	

10.2.6 Quantity Limitation on MAC Address Learning Table

Under port configuration mode, you can configure the maximum number of learned MACaddresses on a port. By default, the number of MAC addresses learning table are unlimited.

Operation	Command	Remarks
Enter global configuration mode	**system-view**	
Enter vlan configuration mode	**vlan** *vlan-id*	
Configure max-mac-count	**mac-address-table max-mac-count** *max-mac-count*	
Configure the default max-mac-count	**undo mac-address-table max-mac-count**	
Enter interface configuration mode	**interface** { { ethernet *interface-num* }	interface-name }	
Configure max-mac-count	**mac-address-table max-mac-count** *max-mac-count*	
Configure the default max-mac-count	**undo mac-address-table max-mac-count**	
Display the max-mac-count	**display mac-address max-mac-count** { interface ethernet [*interface-num*]	vlan *vlan-id* }	