Content

CHAPTER 2 COMMANDS FOR MAC ADDRESS TABLE

Chapter 1 VLAN Configuration

1.1 Commands for VLAN Configuration

1.1.1 debug gvrp event

Command: debug gvrp event interface (ethernet | port-channel |) IFNAME

no debug gvrp event interface (ethernet | port-channel |) IFNAME

Function: Enable/disable GVRP event debugging including the transfer of state machine and the expiration of timer.

Parameters: ethernet, physical port

port-channel, aggregate port

IFNAME, port name

Command Mode: Admin mode

Default: GVRP event debugging is disabled.

Usage Guide: Use this command to enable GVRP event debugging.

Example: Show GVRP event debugging.

Switch(config)#debug gvrp event interface ethernet 1/0/1

%Jan 16 02:25:14 2006 GVRP EVENT: LO -> VO   interface ethernet 1/0/1, vlan 100

%Jan 16 02:35:15 2006 GVRP EVENT: join timer expire   interface ethernet 1/0/1

1.1.2 debug gvrp packet

Command: debug gvrp packet (receive | send) interface (ethernet | port-channel |) IFNAME

no debug gvrp packet (receive | send) interface (ethernet | port-channel |) IFNAME

Function: Enable/disable GVRP packet debugging.

Parameters: receive, enabling the debugging of receiving GVRP packet

send, enabling the debugging of sending GVRP packet

ethernet, physical port

port-channel, aggregate port

IFNAME, port name

Command Mode: Admin mode

Default: GVRP packet debugging is disabled.

Usage Guide: Use this command to enable the debugging of GVRP packet.

Example: Show information of sending and receiving GVRP packet.

Switch(config)#debug gvrp packet receive interface ethernet 1/0/1

Receive packet, smac 00-21-27-aa-0f-46, dmac 01-80-C2-00-00-21,

      length 90, protocol ID:1,attribute type:0x01,

Attribute Index	Length	Event	Value
1	10	joinIn	100
2	10	joinEmpty	140
3	10	leaveIn	150
4	10	leaveEmpty	180

1.1.3 dot1q-tunnel enable

Command: dot1q-tunnel enable

         no dot1q-tunnel enable

Function: Set the access port of the switch to dot1q-tunnel mode; the no command restores to default.

Parameter: None.

Command Mode: Port Mode.

Default: Dot1q-tunnel function disabled on the port by default.

Usage Guide: After enabling dot1q-tunnel on the port, data packets without VLAN tag (referred to as tag) will be packed with a tag when entering through the port; those with tag will be packed with an external tag. The TPID in the tag is the global configuration TPID. it default value is 0x8100, and the VLAN ID is the VLAN ID the port belongs to. Data packets with double tags will be forwarded according to MAC address and external tag, till the external tag is removed when transmitted outside from the access port. Since the length of the data packet may be over sized when packed with external tag, it is recommended to use this command associating the Jumbo function. Normally this command is used on access ports. This command can not be used when vlan-translation enabled.

Example: Join port1 into VLAN3, enable dot1q-tunnel function.

Switch(config)#vlan 3

Switch(Config-Vlan3)#switchport interface ethernet 1/0/1

Switch(Config-Vlan3)#exit

Switch(config)#interface ethernet 1/0/1

Switch(Config-If-Ethernet1/0/1)# dot1q-tunnel enable

Switch(Config-If-Ethernet1/0/1)# exit

Switch(config)#

1.1.4 dot1q-tunnel untag add c-tag

This command is not supported by the switch.

1.1.5 dot1q-tunnel selective enable

Command: dot1q-tunnel selective enable

              no dot1q-tunnel selective enable

Function: Specify a port to enable selective QinQ, the no command restores the default value.

Parameter: None.

Command Mode: Port mode

Default: Do not enable selective QinQ.

Usage Guide: Enable selective QinQ command should associates with hybrid mode, and it should not be used with dot1q-tunnel enable synchronously.

Example: Enable dot1q-tunnel selective enable of port1.

Switch#config

Switch(config)#interface ethernet 1/0/1

Switch(Config-If-Ethernet1/0/1)#dot1q-tunnel selective enable

1.1.6 dot1q-tunnel selective s-vlan

Command: dot1q-tunnel selective s-vlan <s-vlan> c-vlan <*c-vid-list*>

              no dot1q-tunnel selective s-vlan <*s-vlan*> c-vlan <*c-vid-list*>

Function: Add the mapping relation between user s VLAN ID list and SP VLAN ID for selective QinQ, the no command deletes the mapping.

Parameters: s-vlan is SP VLAN ID, c-vid-list is the range of user s VLAN ID.

Command Mode: Port mode

Default: There is no mapping relation.

Usage Guide: This command is used to configure the mapping relation for selective QinQ. If packets match the mapping relation, they will be tagged with SP vlan tag as the outer VLAN tag.

Example: Packets of VLAN 100 through VLAN 200 are tagged with the tag of VLAN 1000 as the outer VLAN tag on Ethernet1/1.

Switch(config)#interface ethernet 1/0/1

Switch(Config-If-Ethernet1/0/1)# dot1q-tunnel selective s-vlan 1000 c-vlan 100-200

Switch(Config-If-Ethernet1/0/1)# dot1q-tunnel selective enable

Switch(Config-If-Ethernet1/0/1)#exit

Switch(config)#

1.1.7 dot1q-tunnel tpid

This command is not supported by the switch.

1.1.8 garp timer join

Command: garp timer join <200-500>

Function: Set the value of garp join timer, note that the value of join timer must be less than half leave timer.

Parameters: <200-500>, the value of timer in millisecond

Command Mode: Global mode

Default: 200 ms.

Usage Guide: Check whether the value satisfy the range. If so, modify the value of garp timer to the specified value, otherwise return a configuration error.

Example: Set the value of garp join timer as 200ms.

Switch(config)#garp timer join 200

1.1.9 garp timer leave

Command: garp timer leave <500-1200>

Function: Set the value of garp leave timer, note that the value of leave timer must be double of join timer and less than leaveAll timer.

Parameters: <500-1200>, the value of timer in millisecond

Command Mode: Global mode

Default: 600 ms.

Usage Guide: Check whether the value satisfy the range. If so, modify the value of garp timer to the specified value, otherwise return a configuration error.

Example: Set the value of garp leave timer as 600ms.

Switch(config)#garp timer leave 600

1.1.10 garp timer leaveAll

Command: garp timer leaveall <5000-60000>

Function: Set the value of garp leaveAll timer, note that the value of leaveAll timer must be larger than leave timer.

Parameters: <5000-60000>, the value of timer in millisecond

Command Mode: Global mode

Default: 10000 ms.

Usage Guide: Check whether the value satisfy the range. If so, modify the value of garp leaveAll timer to the specified value, otherwise return a configuration error.

Example: Set the value of garp leaveAll as 20000ms.

Switch(config)#garp timer leaveall 20000

1.1.11 gvrp (Global)

Command: gvrp

        no gvrp

Function: Enable/disable GVRP funciton globally.

Parameters: None.

Command Mode: Global mode

Default: Disabled.

Usage Guide: Enable GVRP function globally and only in this way GVRP module can work normally.

Example: Enable GVRP function globally.

Switch(config)#gvrp

1.1.12 gvrp (Port)

Command: gvrp

        no gvrp

Function: Enable/disable GVRP function on port. Notice: although GVRP can be enabled on port when GVRP is not enabled globally, it will not take effect until global GVRP is enabled.

Parameters: None

Command Mode: Port mode

Default: Disabled

Usage Guide: GVRP function can only be enabled on trunk and hybrid ports, and enabling GVRP will return an error on access port. After GVRP enabled on port, this port will be added to GVRP (i.e. adding corresponding state machine to GVRP of the port).

Example: Enable GVRP of port.

Switch(config-if-ethernet1/0/1)#gvrp

1.1.13 no garp timer

Command: no garp timer (join | leave | leaveall)

Function: Restore garp join | leave | leaveAll timer to the default value.

Parameters: join, join timer

        leave, leave timer

        leaveAll, leaveAll timer

Command Mode: Global mode

Default: 200 | 600 | 10000 milliseconds for join | leave | leaveall timer respectively.

Usage Guide: Check whether the default value satisfy the range. If so, modify the value of garp join | leave | leaveAll timer to the default value, otherwise return a configuration error.

Example: Restore garp timer to the default value.

Switch(config)#no garp timer leaveall

1.1.14 name

Command: name *<vlan-name>*

        no name

Function: Specify a name, a descriptive string, for the VLAN; the no operation of the command will delete the name of the VLAN.

Parameters: <vlan-name> is the specified name string.

Command Mode: VLAN Configuration Mode.

Default: The default VLAN name is vlanXXX, where xxx is VID.

Usage Guide: The switch can specify names for different VLANs, making it easier for users to identify and manage VLANs.

Examples: Specify the name of VLAN100 as TestVlan.

Switch(Config-Vlan100)#name TestVlan

1.1.15 private-vlan

Command: private-vlan {primary | isolated | community}

        no private-vlan

Function: Configure current VLAN to Private VLAN. The no command cancels the Private VLAN configuration.

Parameter: primary set current VLAN to Primary VLAN, **isolated** set current VLAN to Isolated VLAN, **community** set current VLAN to Community VLAN.

Command Mode: VLAN mode

Default: Private VLAN is not configured by default.

Usage Guide: There are three Private VLANs: **Primary** VLAN, **Isolated** VLAN and **Community** VLAN. Ports in Primary there are three Private VLANs: Primary VLAN,

Isolated VLAN and Community VLAN can communicate with ports of Isolated VLAN and Community VLAN related to this Primary VLAN; Ports in Isolated VLAN are isolated between each other and only communicate with ports in Primary VLAN they related to; ports in Community VLAN can communicate both with each other and with Primary VLAN ports they related to; there is no communication between ports in Community VLAN and port in Isolated VLAN.

Only VLANs containing empty Ethernet ports can be set to Private VLAN, and only the Private VLANs configured with associated private relationships can set the Access Ethernet ports their member ports. Normal VLAN will clear its Ethernet ports when set to Private VLAN.

It is to be noted Private VLAN messages will not be transmitted by GVRP.

Example: Set VLAN100, 200, 300 to private vlans, with respectively primary, Isolated, Community types.

Switch(config)#vlan 100

Switch(Config-Vlan100)#private-vlan primary

Note:This will remove all the ports from vlan 100

Switch(Config-Vlan100)#exit

Switch(config)#vlan 200

Switch(Config-Vlan200)#private-vlan isolated

Note:This will remove all the ports from vlan 200

Switch(Config-Vlan200)#exit

Switch(config)#vlan 300

Switch(Config-Vlan300)#private-vlan community

Note:This will remove all the ports from vlan 300

Switch(Config-Vlan300)#exit

1.1.16 private-vlan association

Command: private-vlan association <secondary-vlan-list>

          no private-vlan association

Function: Set Private VLAN association; the no command cancels Private VLAN association.

Parameter: <secondary-vlan-list> Sets Secondary VLAN list which is associated to Primary VLAN. There are two types of Secondary VLAN: Isolated VLAN and Community VLAN. Users can set multiple Secondary VLANs by ';'.

Command mode: VLAN Mode.

Default: There is no Private VLAN association by default.

Usage Guide: This command can only used for Private VLAN. The ports in Secondary VLANs which are associated to Primary VLAN can communicate to the ports in Primary

VLAN.

Before setting Private VLAN association, three types of Private VLANs should have no member ports; the Private VLAN with Private VLAN association can't be deleted. When users delete Private VLAN association, all the member ports in the Private VLANs whose association is deleted are removed from the Private VLANs.

Example: Associate Isolated VLAN200 and Community VLAN300 to Primary VLAN100.

Switch(Config-Vlan100)#private-vlan association 200;300

1.1.17 show dot1q-tunnel

Command: show dot1q-tunnel

Function: Display the information of all the ports at dot1q-tunnel state.

Parameter: None.

Command Mode: Admin and Configuration Mode.

Usage Guide: This command is used for displaying the information of the ports at dot1q-tunnel state.

Example: Display current dot1q-tunnel state.

Switch#show dot1q-tunnel

Interface Ethernet1/0/1:

dot1q-tunnel is enable

Interface Ethernet1/0/3:

dot1q-tunnel is enable

1.1.18 show garp timer

Command: show garp timer (join | leave | leaveall |)

Function: Show the value of each timer. Note that the value is not the remaining time to run the timer but the initial value when enabling the timer.

Parameters: join, join timer

leave, leave timer

leaveAll, leaveAll timer

Command Mode: Admin mode

Default: 200|600|10000 milliseconds for join | leave | leaveAll timer respectively.

Usage Guide: Show the corresponding value of the timer specified in the command.

Example: Show the value of all garp timers currently.

Switch#show garp timer join

Garp join timer's value is 200(ms)

1.1.19 show gvrp fsm information

Command: show gvrp fsm information interface (ethernet | port-channel) IFNAME

Function: Show the current state of all registered machines and request state machines on specified or all ports.

Parameters: ethernet, physical port

         port-channel, aggregate port

         IFNAME, port name

Command Mode: Admin mode

Default: MT for registered machine and VO for request state machine.

Usage Guide: Show the corresponding state of all registered machines and request state machines.

Example: Show the state of all state machines.

Switch#show gvrp fsm information interface ethernet 1/0/1

VA Very anxious Active member   AA Anxious Active member   QA Quiet Active member

VP   Very anxious Passive member   AP   Anxious Passive member   QP   Quiet Passive member

VO Very anxious Observer   AO Anxious Observer   QO Quiet Observer

LA   Leaving Acitve member   LO leaving Observer

Interface ethernet 1/0/1 gvrp fsm information:

Index	VLANID	Applicant	Registrar
1	100	VO	LV
2	300	VP	IN

1.1.20 show gvrp leaveAll fsm information

Command: show gvrp leaveall fsm information interface (ethernet | port-channel) IFNAME

Function: Show the state of leaveAll state machine on specified or all ports.

Parameters: ethernet, physical port

         port-channel, aggregate port

         IFNAME, port name

Command Mode: Admin mode

Default: Passive.

Usage Guide: Check the state of leaveAll state machine.

Example: Show the state of leaveAll state machine on port.

Switch#show gvrp leaveall fsm information interface ethernet 1/0/1

Interface   leaveAll fsm

----------   ------------

Ethernet1/0/1   passive

1.1.21 show gvrp leavetimer running information

Command: show gvrp leavetimer running information (vlan <1-4094> |) interface (Ethernet | port-channel |) IFNAME

Function: Show running of all leavetimer on current port.

Parameters: <1-4094>, VLAN tag

           Ethernet, physical port

           port-channel, aggregate port

           IFNAME, port name

Command Mode: Admin mode

Default: leavetimer is disabled.

Usage Guide: Show running state and expiration time of each leave timer.

Example: Show running state and expiration time of each leave timer on current port.

Switch#show gvrp leavetimer running information interface ethernet 1/0/1

VLANID   running state   expired time

------------   ----------   ---------

100   UP   0.2 s

300   DOWN   non

1.1.22 show gvrp port-member

Command: show gvrp (active|) port-member

Function: Shows all ports with GVRP enabled.   active means the port is in active state with GVRP enabled.

Parameters: active means the port is in active state

Command Mode: Admin mode

Default: GVRP is disabled on port.

Usage Guide: Show all ports (enable GVRP) saved in GVRP.

Example: Show all ports with GVRP enabled.

Switch#show gvrp port member

Ports which were enabled gvrp included

Ethernet1/0/3 T   Ethernet1/0/4 T

Ethernet1/0/5 T   Ethernet1/0/6 T

Ethernet1/0/7   T   Ethernet1/0/8   T

Ethernet1/0/9   T   Ethernet1/0/10   T

1.1.23 show gvrp port registerd vlan

Commmand: show gvrp port (dynamic | static |) registerd vlan interface (Ethernet |
port-channel |) IFNAME

Function: Show the dynamic or static registration VLANs on current port.

Parameters: dynamic, dynamic registration

        static, static registration

        Ethernet, physical port

        port-channel, aggregate port

        IFNAME, port name

Command Mode: Admin mode

Default: No dynamic or static registration VLANs on port.

Usage Guide: Show the corresponding VLANs of the registered machines by dynamic or
static registration.

Example: Show all dynamic or static registration VLANs on current port.

Switch#show gvrp port registerd vlan interface ethernet 1/0/1

Current port dynamic registerd vlan included

Vlan10   vlan20
Vlan40   vlan60

Current port static registerd vlan included

Vlan10   vlan30
Vlan40   vlan200

1.1.24 show gvrp timer running information

Command: show gvrp timer (join | leaveall) running information interface (ethernet |
port-channel |) IFNAME

Function: Show running of all join|leaveAll timer on current port.

Parameters: join, join timer

        leaveall, leaveAll timer

        ethernet, physical port

        port-channel, aggregate port

IFNAME, port name

Command Mode: Admin mode

Default: Join timer is disabled and leaveAll timer is enabled.

Usage Guide: Check running state of join|leaveAll timer on port.

Example: Show running state and expiration time of each timer.

Switch(config)#show gvrp timer join running information interface ethernet 1/0/1
 Current port's jointimer running state is: UP
 Current port's jointimer expired time is: 0.2 s

1.1.25 show gvrp vlan registerd port

Command: show gvrp vlan <1-4094> registerd port

Function: Show the ports with specified VLAN registered.

Parameters: <1-4094>: VLAN tag

Command Mode: Admin mode

Default: No ports with specified VLAN registered.

Usage Guide: None.

Example: Show all ports with current VLAN registered.

Switch#show gvrp vlan 100 registerd port

Ethernet1/0/3   T   Ethernet1/0/4   T

Ethernet1/0/5   T   Ethernet1/0/6   T

Ethernet1/0/7   T   Ethernet1/0/8   T

Ethernet1/0/9   T   Ethernet1/0/10   T

1.1.26 show vlan

Command: show vlan [brief | summary] [id *<vlan-id>*] [name *<vlan-name>*] [internal
                    usage [id *<vlan-id>* | name *<vlan-name>*]]

Function: Display detailed information for all VLANs or specified VLAN.

Parameter: brief stands for brief information; **summary** for VLAN statistics; ***<vlan-id>*** for
VLAN ID of the VLAN to display status information, the valid range is 1 to 4094;
<vlan-name> is the VLAN name for the VLAN to display status information, valid length is
1 to 11 characters.

Command mode: Admin Mode and Configuration Mode.

Usage Guide: If no ***<vlan-id>*** or ***<vlan-name>*** is specified, then information for all
VLANs in the switch will be displayed.

Example: Display the status for the current VLAN; display statistics for the current VLAN.

Switch#show vlan

VLAN Name   Type   Media   Ports

---- ------------ ---------- --------- --

1   default   Static   ENET   Ethernet1/0/1   Ethernet1/0/2

                                                Ethernet1/0/3   Ethernet1/0/4

                                                Ethernet1/0/9   Ethernet1/0/10

                                                Ethernet1/0/11   Ethernet1/0/12

2   VLAN0002   Static   ENET   Ethernet1/0/5   Ethernet1/0/6

                                                Ethernet1/0/7   Ethernet1/0/8

Switch#show vlan summary

The max. vlan entrys: 4094

Existing Vlans:

Universal Vlan:

1 12 13 15 16 22

Total Existing Vlans is:6

Displayed information	Explanation
VLAN	VLAN number
Name	VLAN name
Type	VLAN type, statically configured or dynamically learned.
Media	VLAN interface type: Ethernet
Ports	Access port within a VLAN

1.1.27 show vlan-translation

Command: show vlan-translation

Function: Display the information of all the ports at VLAN-translation state.

Parameter: None.

Command Mode: Admin and Configuration Mode.

Usage Guide: Display the information of all the ports at VLAN-translation state.

Example: Display current VLAN translation state information.

Switch#show vlan-translation

Interface Ethernet1/0/1:

   vlan-translation is enable

Interface Ethernet1/0/2:

   vlan-translation is enable

Interface Ethernet1/0/3:

   vlan-translation is enable

1.1.28 switchport access vlan

Command: switchport access vlan *<vlan-id>*

             no switchport access vlan

Function: Add the current Access port to the specified VLAN. The **"no switchport access vlan"** command deletes the current port from the specified VLAN, and the port will be partitioned to VLAN1.

Parameter: *<vlan-id>* is the VID for the VLAN to be added the current port, valid range is 1 to 4094.

Command mode: Port Mode.

Default: All ports belong to VLAN1 by default.

Usage Guide: Only ports in Access mode can join specified VLANs, and an Access port can only join one VLAN at a time.

Example: Add some Access port to VLAN100.

Switch(config)#interface ethernet 1/0/8

Switch(Config-If-Ethernet1/0/8)#switchport mode access

Switch(Config-If-Ethernet1/0/8)#switchport access vlan 100

Switch(Config-If-Ethernet1/0/8)#exit

1.1.29 switchport dot1q-tunnel

This command is not supported by this switch.

1.1.30 switchport forbidden vlan

Command: switchport forbidden vlan {WORD | all | add WORD | except WORD | remove WORD}

             no switchport forbidden vlan

Function: Configure the forbidden vlan for a port. Note that this command can only be used to configure on trunk or hybrid ports and the port with GVRP not enabled. No

command cancels the forbidden vlanlist for a port.

Parameters: WORD, add the vlanList as forbidden vlan and cover the previous configuration

all, set all VLANs as forbidden vlan

add WORD, add vlanList to the current forbidden vlanList

except WORD, set all VLANs as forbidden vlan except vlanList

remove WORD, remove vlan specified by vlanList from current forbidden

vlanList

Command Mode: Port mode

Default: Forbidden vlanList is empty

Usage Guide: Tag the corresponding position for forbidden vlanList and clear allow vlanList flags in ports. A port leaves these VLANs if it joins them statically, and it sends message to GVRP module to enable corresponding registered machine of the port to enter forbidden mode.

Example: Port quits the corresponding VLAN and the corresponding registered machine of GVRP to enter forbidden mode.

Switch(config-if-ethernet1/0/1)#switchport forbidden vlan all

1.1.31 switchport hybrid allowed vlan

Command: switchport hybrid allowed vlan {WORD | all | add WORD | except WORD | remove WORD} {tag | untag}

no switchport hybrid allowed vlan

Function: Set hybrid port which allow the VLAN to pass with tag or untag method; the **"no switchport hybrid allowed vlan"** command restores the default setting.

Parameter: WORD: Set vlan List to allowed vlan, and the late configuration will cover the previous configuration;

all: Set all VLANs to allowed vlan;

add WORD: Add vlanList to the existent allowed vlanList;

except WORD: Set all VLANs to allowed vlan except the configured vlanList;

remove WORD: Delete the specific VLAN of vlanList from the existent allow

vlanList;

tag: Join the specific VLAN with tag mode;

untag: Join the specific VLAN with untag mode.

Command mode: Port Mode.

Default: Deny all VLAN traffic to pass.

Usage Guide: The user can use this command to set the VLANs whose traffic allowed to pass through the Hybrid port, traffic of VLANs not included are prohibited. The difference between tag and untag mode by setting allowed vlan: set VLAN to untag mode, the frame

sent via hybrid port without VLAN tag; set VLAN to tag mode, the frame sent via hybrid port with corresponding VLAN tag. The same VLAN can not be allowed with tag and untag mode by a Hybrid port at the same time. If configure the tag (or untag) allowed VLAN to untag (or tag) allowed VLAN, the last configuration will cover the previous.

Example: Set hybrid port allowed vlan 1, 3, 5-20 with untag mode and allow vlan 100; 300; 500-2000 with tag mode.

Switch(config)#interface ethernet 1/0/5

Switch(Config-If-Ethernet1/0/5)#switchport mode hybrid

Switch(Config-If-Ethernet1/0/5)#switchport hybrid allowed vlan 1;3;5-20 untag

Switch(Config-If-Ethernet1/0/5)#switchport hybrid allowed vlan 100;300;500-2000 tag

Switch(Config-If-Ethernet1/0/5)#exit

1.1.32 switchport hybrid native vlan

Command: switchport hybrid native vlan <*vlan-id*>

             no switchport hybrid native vlan

Function: Set the PVID for Hybrid port; the **"no switchport hybrid native vlan"** command restores the default setting.

Parameter: <*vlan-id*> is the PVID of Hybrid port.

Command mode: Port Mode.

Default: The default PVID of Hybrid port is 1.

Usage Guide: When an untagged frame enters a Hybrid port, it will be added a tag of the native PVID which is set by this command, and is forwarded to the native VLAN.

Example: Set the native vlan to 100 for a Hybrid port.

Switch(config)#interface ethernet 1/0/5

Switch(Config-If-Ethernet1/0/5)#switchport mode hybrid

Switch(Config-If-Ethernet1/0/5)#switchport hybrid native vlan 100

Switch(Config-If-Ethernet1/0/5)#exit

1.1.33 switchport interface

Command: switchport interface [ethernet | portchannel] [<interface-name | interface-list>]

             no switchport interface [ethernet | portchannel] [<interface-name | interface-list>]

Function: Specify Ethernet port to VLAN; the no command deletes one or one set of ports from the specified VLAN.

Parameter: ethernet is the Ethernet port to be added. **portchannel** means that the port to be added is a link-aggregation port. **interface-name** port name, such as e1/0/1. If this

option is selected, ethernet or portchannel should not be. **interface-list** is the port list to be added or deleted, ";" and "-" are supported, for example: ethernet1/0/1;3;4-7;8.

Command mode: VLAN Mode.

Default: A newly created VLAN contains no port by default.

Usage Guide: Access ports are normal ports and can join a VLAN, but a port can only join one VLAN for a time.

Example: Assign Ethernet port 1　3　4-7　8 of VLAN100.

Switch(Config-Vlan100)#switchport interface ethernet 1/0/1;3;4-7;8

1.1.34 switchport mode

Command: switchport mode {trunk | access | hybrid}

Function: Set the port in access mode, trunk mode or hybrid mode.

Parameter: trunk means the port allows traffic of multiple VLAN; **access** indicates the port belongs to one VLAN only; **hybrid** means the port allows the traffic of multi-VLANs to pass with tag or untag mode.

Command mode: Port Mode.

Default: The port is in Access mode by default.

Usage Guide: Ports in trunk mode is called Trunk ports. Trunk ports can allow traffic of multiple VLANs to pass through. VLAN in different switches can be interconnected with the Trunk ports. Ports under access mode are called Access ports. An access port can be assigned to one and only one VLAN at a time. Hybrid ports can allow traffic of multiple VLANs to pass through, receive and send the packets of multiple VLANs, used to connect

way is same, but the deal way is different in sending the data. Because Hybrid ports can allow the packets of multiple VLANs to send with no tag, however, Trunk ports can only allow the packets of the default VLAN to send with no tag. The attribute of ports can not directly convert between Hybrid and Trunk, it must configure to be access at first, then configure to be Hybrid or Trunk. When the Trunk or Hybrid attribute is cancelled, the port attribute restores the default (access) attribute and belongs to vlan1.

Example: Set port 5 to trunk mode and port 8 to access mode, port 10 to hybrid mode.

Switch(config)#interface ethernet 1/0/5

Switch(Config-If-Ethernet1/0/5)#switchport mode trunk

Switch(Config-If-Ethernet1/0/5)#exit

Switch(config)#interface ethernet 1/0/8

Switch(Config-If-Ethernet1/0/8)#switchport mode access

Switch(Config-If-Ethernet1/0/8)#exit

Switch(config)#interface ethernet 1/0/10

Switch(Config-If-Ethernet1/0/10)#switchport mode hybrid

Switch(Config-If-Ethernet1/0/10)#exit

1.1.35 switchport mode trunk allow-null

Command: switchport mode trunk allow-null

Function: Add a port as trunk mode. When enabling GVRP, the mode that adds the ports with trunk mode to all VLANs is not appropriate. Therefore, add a port as trunk port and does not join any VLANs by default for enabling GVRP on trunk port is appropriate. It is recommended to configure a port as trunk with this command before enabling GVRP. This command can also be used when a port has been configured as trunk already, which equals to clearing allow-list and quits all VLANs.

Parameters: None

Command Mode: Port mode

Default: access mode.

Usage Guide: Configure the port as trunk, enable it to leave all VLANs and clear allow-list.

Example: Switch(config-if-ethernet1/0/1)#switchport mode trunk allow-null

1.1.36 switchport trunk allowed vlan

Command: switchport trunk allowed vlan {WORD | all | add WORD | except WORD | remove WORD}

            no switchport trunk allowed vlan

Function: Set trunk port to allow VLAN traffic; the **"no switchport trunk allowed vlan"** command restores the default setting.

Parameter: WORD: specified VIDs; keyword;

        all: all VIDs, the range from 1 to 4094;

        add: add assigned VIDs behind **allow vlan**;

        except: all VID add to **allow vlan** except assigned VIDs;

        remove: delete assigned **allow vlan** from **allow vlan** list.

Command mode: Port Mode.

Default: Trunk port allows all VLAN traffic by default.

Usage Guide: The user can use this command to set the VLAN traffic allowed to passthrough the Trunk port; traffic of VLANs not included are prohibited.

Example: Set Trunk port to allow traffic of VLAN1, 3, 5-20.

Switch(config)#interface ethernet 1/0/5

Switch(Config-If-Ethernet1/0/5)#switchport mode trunk

Switch(Config-If-Ethernet1/0/5)#switchport trunk allowed vlan 1;3;5-20

Switch(Config-If-Ethernet1/0/5)#exit

1.1.37 switchport trunk native vlan

Command: switchport trunk native vlan <*vlan-id*>
                no switchport trunk native vlan
Function: Set the PVID for Trunk port; the **"no switchport trunk native vlan"** command restores the default setting.
Parameter: <*vlan-id*> is the PVID for Trunk port.
Command mode: Port Mode.
Default: The default PVID of Trunk port is 1.
Usage Guide: PVID concept is defined in 802.1Q. PVID in Trunk port is used to tag untagged frames. When an untagged frame enters a Trunk port, the port will tag the untagged frame with the native PVID set with this commands for VLAN forwarding.
Example: Set the native VLAN for a Trunk port to 100.
Switch(config)#interface ethernet 1/0/5
Switch(Config-If-Ethernet1/0/5)#switchport mode trunk
Switch(Config-If-Ethernet1/0/5)#switchport trunk native vlan 100
Switch(Config-If-Ethernet1/0/5)#exit

1.1.38 vlan

Command: vlan WORD
                no vlan WORD
Function: Create VLANs and enter VLAN configuration mode. If using ';' and '-' connect with multi-VLANs, then only create these VLANs. If only existing VLAN, then enter VLAN configuration mode; if the VLAN is not exist, then create VLAN and enter VLAN configuration mode. In VLAN Mode, the user can set VLAN name and assign the switch ports to the VLAN. The no command deletes specified VLANs.
Parameter: WORD is the VLAN ID to be created/deleted, valid range is 1 to 4094, connect with ';' and '-'.
Command mode: Global Mode.
Default: Only VLAN1 is set by default.
Usage Guide: VLAN1 is the default VLAN and cannot be configured or deleted by the user. The maximal VLAN number is 4094. It should be noted that dynamic VLANs learnt by GVRP cannot be deleted by this command.
Example: Create VLAN100 and enter the configuration mode for VLAN 100.
Switch(config)#vlan 100
Switch(Config-Vlan100)#

1.1.39 vlan internal

This command is not supported by the switch.

1.1.40 vlan ingress enable

Command: vlan ingress enable

          no vlan ingress enable

Function: Enable the VLAN ingress filtering for a port; the **"no vlan ingress enable"** command disables the ingress filtering.

Command mode: Port Mode.

Default: Enable VLAN ingress filtering function.

Usage Guide: After VLAN ingress filtering is enabled on the port, when the system receives data it will check source port first, and forwards the data to the destination port if it is the VLAN member port, or else drop the data.

Example: Disable VLAN ingress rules on the port.

Switch(config-if-ethernet1/0/1)#no vlan ingress enable

1.1.41 vlan-translation

Command: vlan-translation <*old-vlan-id*> to <*new-vlan-id*> {in | out}

        no vlan-translation <*old-vlan-id*> {in | out}

Function: Add VLAN translation by creating a mapping between original VLAN ID and current VLAN ID; the no form of this command deletes corresponding mapping.

Parameter: old-vlan-id is the original VLAN ID; new-vlan-id is the translated VLAN ID; in indicates ingress translation; out indicates outgress translation.

Command Mode: Port Mode.

Default: There is no VLAN translation relation.

Usage Guide: The command is for configuring the translation relation of the VLAN translation function. The data packets will be matched according to the configured translation relations, and its VLAN ID will be changed to the one in the configured item once matched, while forward the packets of the original VLAN if not match. This command cannot be used with dot1q-tunnel enable at the same time.

Example: Move the VLAN100 data entered from the port1 to VLAN2 after ingress translation.

Switch#config

Switch(config)#vlan-translation 100 to 2 in

Switch(config)#interface ethernet 1/0/1

Switch(Config-If-Ethernet1/0/1)#vlan-translation enable

Switch(Config-If-Ethernet1/0/1)#exit

Switch(config)#

1.1.42 vlan-translation enable

Command: vlan-translation enable

            no vlan-translation enable

Function: Enable VLAN translation on the port; the no command restores to the default value.

Parameter: None.

Command Mode: Port Mode.

Default: VLAN translation has not been enabled on the port by default.

Usage Guide: vlan-translation and dot1q-tunnel are mutually exclusive, it is recommended to enable vlan-translation on trunk port and manually disable port filtering.

Example: Enable VLAN translation function on port1.

Switch#config

Switch(config)#interface ethernet 1/0/1

Switch(Config-If-Ethernet1/0/1)#vlan-translation enable

1.1.43 vlan-translation miss drop

Command: vlan-translation miss drop {in|out|both}

            no vlan-translation miss drop {in|out|both}

Function: Define miss drop when translation failed; the no command reback the default value.

Parameters: in is the entrance, out is export; both is two-way.

Command Mode: Port Mode.

Default: Not miss drop when translation failed.

Usage Guide: During translate the mapping relation between original VID and present VID, if not configure related translation, the default is not packets miss. After using the command, it will miss data packets when translation failed.

Example: Set port 1 translation failed and miss packets in entrance.

Switch(Config-If-Ethernet1/0/1)#vlan-translation miss drop in

1.2 Commands for Multi-to-One VLAN Translation

1.2.1 vlan-translation n-to-1

Command: vlan-translation n-to-1 *<WORD>* to *<new-vlan-id>*

　　　　no vlan-translation n-to-1 *<WORD>*

Function: Enable/disable Multi-to-One VLAN translation of the port.

Parameters: WORD is the original VLAN ID, its range from 1 to 4094, connect them with

；and －. If there are two VLANs with different range are translated into different VLAN ID

in the same port, two VLAN ranges should not be superposed.

　　　　　new-vlan-id is the translated VLAN ID, its range from 1 to 4094.

Command Mode: Port mode

Default: Disable

Usage Guide: Multi-to-One VLAN translation is used to network edge to map multiple

VLANs to one VLAN of backbone network. When data traffic returns from backbone

network to network edge, it will restore VLAN of network edge to implement Multi-to-One

VLAN translation and save VLAN resource of backbone network. Note: When using this

function, the device must establish the original and the translated VLAN firstly, and

enabling the downlink port of this function and the uplink port for connecting backbone

network, which must be join in the original and the translated VLAN with tagged mode.

This function should not be used with dot1q-tunnel and VLAN translation at the same time

Note: Multi-to-One VLAN translation should be enabled after MAC learning.

Example: On Ethernet 1/0/1, translate the data traffic from VLAN with the range

between 1 to 5 into VLAN 100, and translate the data traffic (belongs to VLAN with the

range between 1 to 5) out from VLAN100 into the corresponding VLAN ID, connect the

uplink port of the backbone network as Ethernet 1/0/5.

Switch(config)#vlan 1-5;100

Switch(config)#interface ethernet 1/0/1

Switch(Config-If-Ethernet1/0/1)#switchport mode trunk

Switch(Config-If-Ethernet1/0/1)#vlan-translation n-to-1 1-5 to 100

Switch(config)#interface ethernet 1/0/5

Switch(Config-If-Ethernet1/0/5)#switchport mode trunk

1.2.2 show vlan-translation n-to-1

Command: show vlan-translation n-to-1 [*<interface-name>*]

Function: Show the port configuration with Multi-to-One VLAN translation.

Parameter: interface-name: Specify the name of the port which will be shown. If there is

no parameter, show all port configurations with this function.

Command Mode: Admin mode.

Default: There is no Multi-to-One VLAN translation information.

Usage Guide: If appointed vlan when show, it will display the n-to-1 translation of specified vlan, if not appointed vlan, it will display all n-to-1 information.

Example: Show all port configurations with Multi-to-One VLAN translation function.

Switch# show vlan-translation n-to-1

Interface Ethernet1/0/1:

vlan-translation n-to-1 enable, vlan 1-4 to 100

vlan-translation n-to-1 enable,vlan 5-8;13 to 101

Interface Ethernet1/0/2:

    vlan-translation n-to-1 enable,vlan 1-4 to 100

1.3 Commands for Dynamic VLAN Configuration

1.3.1 dynamic-vlan mac-vlan prefer

Command: dynamic-vlan mac-vlan prefer

Function: Set the MAC-based VLAN preferred.

Parameter: None.

Command Mode: Global Mode.

Default: MAC-based VLAN is preferred by default.

Usage Guide: Configure the preference of dynamic-vlan on switch. The default priority sequence is MAC-based VLAN　IP-subnet-based VLAN　Protocol-based VLAN, namely

the preferred order when several dynamic VLAN is available. After the IP-subnet-based VLAN is set to be preferred and the user wish to restore to preferring the MAC-based VLAN, please use this command.

Example: Set the MAC-based VLAN preferred.

Switch#config

Switch(config)#dynamic-vlan mac-vlan prefer

1.3.2 dynamic-vlan subnet-vlan prefer

Command: dynamic-vlan subnet-vlan prefer

Function: Set the IP-subnet-based VLAN preferred.

Parameter: None.

Command Mode: Global Mode.

Default: MAC-based VLAN is preferred by default.

Usage Guide: Configure the preference of dynamic-vlan on switch. The default priority

sequence is MAC-based VLAN   IP-subnet-based VLAN   Protocol-based VLAN, namely

the preferred order when several dynamic VLAN is available. This command is used to set

to preferring the IP-subnet-based VLAN.

Example: Set the IP-subnet-based VLAN preferred.

Switch#config

Switch(config)#dynamic-vlan subnet-vlan prefer

1.3.3 mac-vlan

Command: mac-vlan mac *<mac-addrss>* vlan *<vlan-id>* priority *<priority-id>*

              no mac-vlan {mac *<mac-addrss>*|all}

Function: Add the correspondence between MAC address and VLAN, namely specify

certain MAC address to join specified VLAN. The no form of this command deletes all/the

correspondence.

Parameter: mac-address is the MAC address which is shown in the form of

XX-XX-XX-XX-XX-XX, mac-mask is the MAC address mask which is shown in the form of

XX-XX-XX-XX-XX-XX, vlan-id is the ID of the VLAN with a valid range of 1~4094;

priority-id is the level of priority and is used in the VLAN tag with a valid range of 0~7; all

refers to all the MAC addresses.

Command Mode: Global Mode.

Default: No MAC address joins the VLAN by default.

Usage Guide: With this command user can add specified MAC address to specified

VLAN. If there is a non VLAN label data packet enters from the switch port from the

specified MAC address, it will be assigned with specified VLAN ID so sent enter specified

VLAN. Their belonging VLAN are the same no matter which port did they enter through.

The command does not have any interfere on the VLAN label data packet.

Example: Add network device of MAC address as 00-03-0f-11-22-33 to VLAN 100.

Switch#config

Switch(config)#mac-vlan mac 00-03-0f-11-22-33 ff-ff-ff-ff-ff-ff vlan 100 priority 0

1.3.4 mac-vlan vlan

Command: mac-vlan vlan *<vlan-id>*

              no mac-vlan vlan *<vlan-id>*

Function: Configure the specified VLAN to MAC VLAN; the **"no mac-vlan vlan**

<vlan-id>" command cancels the MAC VLAN configuration of this VLAN.

Parameter: *<vlan-id>* is the number of the specified VLAN.

Command Mode: Global Mode.

Default: No MAC VLAN is configured by default.

Usage Guide: Set specified VLAN for MAC VLAN.

Example: Set VLAN100 to MAC VLAN.

Switch#config

Switch(config)#mac-vlan vlan 100

1.3.5 protocol-vlan

Command: protocol-vlan etype <etype-id> vlan *<vlan-id>*

            no protocol-vlan {etype *<etype-id>* vlan *<vlan-id>* | all}

Function: Add the correspondence between the protocol and the VLAN namely specify the protocol to join specified VLAN. The no form of this command deletes all/the correspondence.

Parameter: etype-id is the type of the packet protocol, with a valid range of 1536~65535; **vlan-id** is the ID of VLAN, the valid range is 1~4094; priority is the priority, the range is 0~7; **all** indicates all the encapsulate protocols**.**

Command Mode: Global Mode.

Default: No protocol joined the VLAN by default.

Usage Guide: The command adds specified protocol into specified VLAN. If there is any non VLAN label packet from specified protocol enters through the switch port, it will be assigned with specified VLAN ID and enter the specified VLAN. No matter which port the packets go through, their belonging VLAN is the same. The command will not interfere with VLAN labeled data packets. It is recommended to configure ARP protocol together with the IP protocol or else some application may be affected.

Example: Assign the IP protocol data packet encapsulated by the EthernetII to VLAN200.

Switch#config

Switch(config)#protocol-vlan etype 2048 vlan 200

1.3.6 show dynamic-vlan prefer

Command: show dynamic-vlan prefer

Function: Display the preference of the dynamic VLAN.

Parameter: None.

Command Mode: Admin Mode and Configuration Mode.

Usage Guide: Display the dynamic VLAN preference.

Example: Display current dynamic VLAN preference.

Switch#show dynamic-vlan prefer

Mac Vlan/Voice Vlan

IP Subnet Vlan

Protocol Vlan

1.3.7 show mac-vlan

Command: show mac-vlan

Function: Display the configuration of MAC-based VLAN on the switch.

Parameter: None.

Command Mode: Admin Mode and other configuration Mode.

Usage Guide: Display the configuration of MAC-based VLAN on the switch.

Example: Display the configuration of the current MAC-based VLAN.

Switch#show mac-vlan

MAC-Address	VLAN_ID	Priority
------------------	-----------	--------
f8-f0-82-77-ab-9d	2	2
f8-f0-82-26-8d-f3	2	2
f8-f0-82-11-22-33	5	5

1.3.8 show mac-vlan interface

Command: show mac-vlan interface

Function: Display the ports at MAC-based VLAN.

Parameter: None.

Command Mode: Admin Mode and other configuration Mode.

Usage Guide: Display the ports of enabling MAC-based VLAN, the character in the bracket indicate the ports mode, A means Access port, T means Trunk port, H means Hybrid port.

Example: Display the ports of enabling MAC-based VLAN currently.

Switch#show mac-vlan interface

Ethernet1/0/1(A)	Ethernet1/0/2(A)
Ethernet1/0/3(A)	Ethernet1/0/4(A)
Ethernet1/0/5(H)	Ethernet1/0/6(T)

1.3.9 show protocol-vlan

Command: show portocol-vlan

Function: Display the configuration of Protocol-based VLAN on the switch.

Parameter: None.

Command Mode: Admin Mode and Configuration Mode

Usage Guide: Display the configuration of Protocol-based VLAN on the switch.

Example: Display the configuration of the current Protocol-based VLAN.

Switch#show protocol-vlan

Protocol_Type	VLAN_ID	Priority
-------------------	-------------	---------
etype 0x800	200	4
etype 0x860	200	4
etype 0xabc	100	5

1.3.10 show subnet-vlan

Command: show subnet-vlan

Function: Display the configuration of the IP-subnet-based VLAN on the switch.

Parameter: None.

Command Mode: Admin Mode and other Configuration Mode.

Usage Guide: Display the configuration of the IP-subnet-based VLAN on the switch.

Example: Display the configuration of the current IP-subnet-based VLAN.

Switch#show subnet-vlan

IP-Address	Mask	VLAN_ID
------------------	-------	-------
192.168.1.165	255.255.255.0	2
202.200.121.21	255.255.0.0	2
10.0.0.1	255.248.0.0	5

1.3.11 show subnet-vlan interface

Command: show subnet-vlan interface

Function: Display the port at IP-subnet-based VLAN.

Parameter: None.

Command Mode: Admin Mode and other Configuration Mode.

Usage Guide: Display the port of enabling IP-subnet-based VLAN, the character in the bracket indicate the ports mode, A means Access port, T means Trunk port, H means Hybrid port.

Example: Display the port of enabling IP-subnet-based VLAN currently.

Switch#show subnet-vlan interface

Ethernet1/0/1(A)	Ethernet1/0/2(A)
Ethernet1/0/3(A)	Ethernet1/0/4(A)

Ethernet1/0/5(H)   Ethernet1/0/6(T)

1.3.12 subnet-vlan

Command: subnet-vlan ip-address *<ipv4-addrss>* mask *<subnet-mask>* vlan *<vlan-id>* priority *<priority-id>*

                no subnet-vlan {ip-address *<ipv4-addrss>* mask *<subnet-mask>* | all}

Function: Add a correspondence between the IP subnet and the VLAN, namely add specified IP subnet into specified VLAN; the no form of this command deletes all/the correspondence.

Parameter: ipv4-address is the IPv4 address shown in dotted decimal notation; the valid range of each section is 0~255; subnet-mask is the subnet mask code shown in dotted decimal notation; the valid range of each section is 0~255; priority-id is the priority applied in the VLAN tag with a valid range of 0~7; vlan-id is the VLAN ID with a valid range of 1~4094;all indicates all the subnets.

Command Mode: Global Mode.

Default: No IP subnet joined the VLAN by default.

Usage Guide: This command is used for adding specified IP subnet to specified VLAN. When packet without VLAN label and from the specified IP subnet enters through the switch port, it will be matched with specified VLAN id and enters specified VLAN. These packets will always come to the same VLAN no matter through which port did they enter. This command will not interfere with VLAN labeled data packets.

Example: Add the network equipment with IP subnet of 192.168.1.0/24 to VLAN 300.

Switch#config

Switch(config)#subnet-vlan ip-address 192.168.1.1 mask 255.255.255.0 vlan 300 priority 0

1.3.13 switchport mac-vlan enable

Command: switchport mac-vlan enable

        no switchport mac-vlan enable

Function: Enable the MAC-based VLAN function on the port; the no form of this command will disable the MAC-based VLAN function on the port.

Parameter: None.

Command Mode: Port Mode.

Default: The MAC-base VLAN function is enabled on the port by default.

Usage Guide: After adding a MAC address to specified VLAN, the MAC-based VLAN function will be globally enabled. This command can disable the MAC-based VLAN function on specified port to meet special user applications.

Example: Disable the MAC-based VLAN function on port1.

Switch#config

Switch(config)#interface ethernet 1/0/1

Switch(Config-If-Ethernet1/0/1)#no switchport mac-vlan enable

1.3.14 switchport subnet-vlan enable

Command: switchport subnet-vlan enable

           no switchport subnet-vlan enable

Function: Enable the IP-subnet-based VLAN on the port; the no form of this command disables the IP-subnet-based VLAN function on the port.

Parameter: None.

Command Mode: Port Mode.

Default: The IP-subnet-based VLAN is enabled on the port by default.

Usage Guide: After adding the IP subnet to specified VLAN, the IP-subnet-based VLAN function will be globally enabled. This command can disable the IP-subnet-based VLAN function on specified port to meet special user applications.

Example: Disable the IP-subnet-based VLAN function on port1.

Switch#config

Switch(config)#interface ethernet 1/0/1

Switch(Config-If-Ethernet1/0/1)#no switchport subnet-vlan enable

1.4 Commands for Voice VLAN Configuration

1.4.1 show voice-vlan

Command: show voice-vlan

Function: Display the configuration status of the Voice VLAN on the switch.

Parameter: None.

Command Mode: Admin Mode and other Configuration Mode.

Usage Guide: Display Voice VLAN Configuration.

Example: Display the Current Voice VLAN Configuration.

Switch#show voice-vlan

Voice VLAN ID:2

Ports:ethernet1/0/1;ethernet1/0/3

Voice name	MAC-Address	Mask	Priority
financePhone	f8-f0-82-77-ab-9d	0xff	5

manager	f8-f0-82-26-8d-f3	0xfe	6
Mr_Black	f8-f0-82-11-22-33	0x80	5
NULL	f8-f0-82-11-22-33	0x0	5

1.4.2 switchport voice-vlan enable

Command: switchport voice-vlan enable

        no switchport voice-vlan enable

Function: Enable the Voice VLAN function on the port; the "no" form of this command disables Voice VLAN function on the port.

Parameter: None.

Command Mode: Port Mode.

Default: Voice VLAN is enabled by default.

Usage Guide: When voice equipment is added to the Voice VLAN, the Voice VLAN is enabled globally by default. This command disables Voice VLAN on specified port to meet specified application of the user.

Example: Disable the Voice VLAN function on port3.

Switch#config

Switch(config)#interface ethernet1/0/3

switch(Config-If-Ethernet1/0/3)#no switchport voice-vlan enable

1.4.3 voice-vlan

Command: voice-vlan mac <*mac-address*> mask <*mac-mask*> priority <*priority-id*>

        [name <*voice-name*>]

        no voice-vlan {mac <*mac-address*> mask <*mac-mask*> | name

        <*voice-name*> | all}

Function: Specify certain voice equipment to join in Voice VLAN; the no form of this command will let the equipment leave the Voice VLAN.

Parameter: Mac-address is the voice equipment MAC address, shown In "xx-xx-xx-xx-xx-xx" format; mac-mask is the last eight digit of the mask code of the MAC address, the valid values are: 0xff, 0xfe, 0xfc, 0xf8, 0xf0, 0xe0, 0xc0,0x80, 0x0; priority-id is the priority of the voice traffic, the valid range is 0 7; the voice-name is the name of the voice equipment, which is to facilitate the equipment management; all indicates all the MAC addresses of the voice equipments.

Command Mode: Global Mode.

Default: This command will add a specified voice equipment into the Voice VLAN, if a non VLAN labeled data packet from the specified voice equipment enters through the switch port, then no matter through which port the packet enters, it will belongs to Voice VLAN.

The command will not interfere with the packets of VLAN labels.

Example: Add the 256 sets of voice equipments of the R&D department with MAC address ranging from 00-03-0f-11-22-00 to 00-03-0f-11-22-ff to the Voice VLAN.

Switch#config

Switch(config)#voice-vlan vlan 100

Switch(config)#voice-vlan mac 00-03-0f-11-22-00 mask 0 priority 5 name test

1.4.4 voice-vlan vlan

Command: voice-vlan vlan *<vlan-id>*

            no voice-vlan

Function: Configure the specified VLAN to Voice VLAN; the **"no voice-vlan"** command cancels the Voice VLAN configuration of this VLAN.

Parameter: Vlan id is the number of the specified VLAN.

Command Mode: Global Mode.

Default: No Voice VLAN is configured by default.

Usage Guide: Set specified VLAN for Voice VLAN, There can be only one Voice VLAN at the same time. The voice VLAN can not be applied concurrently with MAC-based VLAN.

Example: Set VLAN100 to Voice VLAN.

Switch#config

Chapter 2 Commands for MAC Address Table Configuration

2.1 Commands for MAC Address Table Configuration

2.1.1 mac-address-table avoid-collision

This command is not supported by the switch.

2.1.2 clear collision-mac-address-table

Command   **clear collision-mac-address-table**

Function   Clear the hash collision mac table.

Parameter   None.

Command mode   Admin Mode.

Usage Guide   If enable the function of the hash collision mac table that issued ffp (**mac-address-table avoid-collision**), the mac cannot be cleared.

Example   Clear the hash collision mac table.

Switch#clear collision-mac-address-table

2.1.3 clear mac-address-table dynamic

Command: clear mac-address-table dynamic [address *<mac-addr>*] [vlan *<vlan-id>*] [interface [ethernet | portchannel] *<interface-name>*]

Function: Clear the dynamic address table.

Parameter: *<mac-addr>*: MAC address will be deleted; ***<interface-name>*** the port name for forwarding the MAC packets; ***<vlan-id>*** VLAN ID.

Command mode: Admin mode.

Usage Guide: Delete all dynamic address entries which exist in MAC address table, except application, system entries. MAC address entries can be classified according to different sources, the types are as follows: DYNAMIC, STATIC, APPLICATION, SYSTEM.

DYNAMIC is the dynamic MAC address entries learned by switch, it can be aged by switch automatically.

Example: Delete all dynamic MAC.

Switch#clear mac-address-table dynamic

2.1.4 mac-address-learning cpu-control

This command is not supported by the switch.

2.1.5 mac-address-table aging-time

Command: mac-address-table aging-time <*0 | aging-time*>

   no mac-address-table aging-time

Function: Sets the aging-time for the dynamic entries of MAC address table.

Parameter: *<aging-time>* is the aging-time seconds, range from 10 to 1000000; **0** to disable aging.

Command Mode: Global Mode.

Default: Default aging-time is 300 seconds.

Usage Guide: If no destination address of the packets is same with the address entry in aging-time, the address entry will get aged. The user had better set the aging-time according to the network condition, it usually use the default value.

Example: Set the aging-time to 600 seconds.

Switch(config)#mac-address-table aging-time 600

2.1.6 mac-address-table static | blackhole

Command: mac-address-table {static | blackhole} address *<mac-addr>* vlan *<vlan-id>* [interface ethernet *<interface-name>*] | [source | destination | both]

   no mac-address-table {static | blackhole | dynamic} [address *<mac-addr>*] [vlan *<vlan-id>*] [interface ethernet *<interface-name>*]

Function: Add or modify static address entries and filter address entries. The no command deletes the three entries.

Parameter: static is the static entries; **blackhole** is filter entries, which is for discarding frames from specific MAC address, it can filter source address, destination address or the both. When choose the filter entries, blackhole address can't based on port, and not configure to interface; **dynamic** is dynamic address entries; **<mac-addr>** MAC address to be added or deleted; **<interface-name>** name of the port transmitting the MAC data packet; **<vlan-id>** is the vlan number. **source** is based on source address filter; **destination** is based on destination address filter; **both** is based on source address and destination address filter, the default is both.

Command Mode: Global Mode

Default: When VLAN interface is configured and is up, the system will generate a static address mapping entry of which the inherent MAC address corresponds to the VLAN number.

Usage Guide: In certain special applications or when the switch is unable to dynamically learn the MAC address, users can use this command to manually establish mapping relation between the MAC address and port and VLAN.

no mac-address-table command is for deleting all dynamic, static, filter MAC address entries existing in the switch MAC address list, except application, system entries. MAC address entries can be classified according to the different source, the types are as follows: DYNAMIC, STATIC, APPLICATION, SYSTEM. DYNAMIC is the dynamic MAC address entries learned by switch, it can be aged by switch automatically. STATIC is the static MAC address entries (including blackhole entries) added by user. APPLICATION is the static MAC address entries added by application protocol (such as dot1x, security port…). SYSTEM is the additive static MAC address entries according to VLAN interface. When adding STATIC entries, it can cover the conflictive DYNAMIC, except APPLICATION, SYSTEM entries.

After configure the static multicast MAC by this command, the multicast MAC traffic will be forwarded to the specified port of the specified VLAN.

Example: Port 1/0/1 belongs to VLAN200, and establishes address mapping with MAC address 00-03-0f-f0-00-18.

Switch(config)#mac-address-table static address f8-f0-82-f0-00-18 vlan 200 interface ethernet 1/0/1

Configure a static multicast MAC 01-00-5e-00-00-01, the egress is ehernet 1/0/1.

Switch(config)#mac-address-table static-multicast address 01-00-5e-00-00-01 vlan 1 interface ethernet1/0/1

2.1.7 l2-address-table static-multicast address

Command: l2-address-table static-multicast address {<*ip-addr*> |<*mac-addr*>} vlan
<*vlan-id*> **{interface** **[ethernet** **<*interface-name*>]** **|** **port-channel**
<port-channel-id>}

no l2-address-table static-multicast address {<*ip-addr*> |<*mac-addr*>}
vlan **<*vlan-id*>** **{interface** **[ethernet** **<*interface-name*>]** **|** **port-channel**
<port-channel-id>}

Function: <*ip-addr*> means add or delete IP address, **<*mac-addr*>** means add or delete
 MAC address; **<*interface-name*>** is the port that transfer MAC data packets;
 <port-channel-id> is the aggregate port name of transfer MAC data packets, **<*vlan-id*>**
 is VLAN number.

Command Mode: Global Mode.

Default: When VLAN interface is configured and is up, the system will generate a static
address mapping entry of which the inherent MAC address corresponds to the VLAN
number.

Usage Guide: In certain special applications or when the switch is unable to dynamically
learn the MAC address, users can use this command to manually establish mapping
relation between the MAC address and port and VLAN.

After configure the static multicast MAC by this command, the multicast MAC traffic
will be forwarded to the specified port of the specified VLAN.

Example: Configure a static multicast ip 232.0.0.1, the egress is ehernet 1/0/1.

Switch(config)# l2-address-table static-multicast address 232.0.0.1 vlan 200 interface
ethernet 1/0/1

2.1.8 show collision-mac-address-table

Command **show collision-mac-address-table**

Function Show the hash collision mac table.

Parameter None.

Command mode Global Mode.

Usage Guide If enable the function of the hash collision mac table that issued ffp
(**mac-address-table avoid-collision**), the collision mac which issued ffp use * to sign.

Example   Show the hash collision mac table.

Switch(Config)#show collision-mac-address-table

The max number can be recorded is 200

The max number of collision is 0

The current number recorded is 0

MAC Address   VLAN   Collision-count

2.1.9 show mac-address-table

Command: show mac-address-table [static | blackhole | aging-time <*aging-time*> |

count] [address <*mac-addr*>] [vlan <vlan-id>] [count] [interface <interface-name>]

Function: Show the current MAC table.

Parameter: static static entries; **blackhole** filter entries; **aging-time <*aging-time*>**

address aging time; **count** enrty's number, <***mac-addr***> entry's MAC address; <***vlan-id***>

entry's VLAN number; <***interface-name***> entry's interface name.

Command mode: Admin and Configuration Mode.

Default: MAC address table is not displayed by default.

Usage guide: This command can display various classes of MAC address entries. Users

can also use **show mac-address-table** to display all the MAC address entries.

Example: Display all the filter MAC address entries.

Switch#show mac-address-table blackhole

2.1.10 Show l2-address-table multicast

Command: show l2-address-table multicast {[count][vlan <*vlan-id*>]}

Function: Show the current multicast table.

Parameter: <*vlan-id*>

Command mode: Admin and Configuration Mode.

Default: MAC address table is not displayed by default.

Usage guide: This command can display various classes of multicast address entries.

Example: Display all the vlan1 multicast address entries.

Switch#show l2-address-table multicast vlan 1

2.2 Commands for MAC Notification

2.2.1 clear mac-notification statistics

Command: clear mac-notification statistics

Function: Clear the statistics of MAC notification trap.

Parameter: None.

Default: None.

Command Mode: Admin mode

Usage Guide: When this command is used with show command, it is able to check the executive result by show command after executing this command.

Example:

Switch# clear mac-notification statistics

2.2.2 mac-address-table notification

Command: mac-address-table notification

no mac-address-table notification

Function: Enable the MAC address notification globally, the no command disables the global MAC address notification.

Parameter: None.

Default: Disable.

Command Mode: Global mode

Usage Guide: This command is used with trap switch of snmp. When disabling the MAC address notification, other configuration can be shown, but the function is invalid.

Example: Enable the MAC address notification.

Switch(Config)#mac-address-table notification

2.2.3 mac-address-table notification history-size

Command: mac-address-table notification history-size <0-500>

no mac-address-table notification history-size

Function: Configure the maximum history-size for storing MAC changing message, the no command restores the default value.

Parameter: history-size: data length of sending the notification, its range from 1 to 500.

Default: 10.

Command Mode: Global mode

Usage Guide: After the global switch is disabled, this command is also able to be

configured sequentially.

Example: Change the maximum history-size to be 256.

Switch(Config)#mac-address-table notification history-size 256

2.2.4 mac-address-table notification interval

Command: mac-address-table notification interval <0-86400>

        no mac-address-table notification interval

Function: Configure the interval for sending the MAC address notification, the no command restores the default interval.

Parameter: interval: interval for sending the notification, unit is second, its range from 0 to 86400.

Default: 30s.

Command Mode: Global mode

Usage Guide: After the global switch is disabled, this command is also able to be configured sequentially.

Example: Configure the interval as 30s for sending the MAC address notification.

Switch(Config)#mac-address-table notification interval 30

2.2.5 mac-notification

Command: mac-notification {added | both | removed}

        no mac-notification

Function: Configure the MAC address notification for the specified port, the no command cancels the function.

Parameter: added: the added MAC address

           removed: the removed MAC address

           both: the added and the removed MAC addresses

Default: No MAC address notification.

Command Mode: Port mode

Usage Guide: After the global switch is disabled, this command is also able to be configured sequentially.

Example: Send the trap notification after the MAC address is added to Ethernet 1/0/5.

Switch(Config)#in ethernet 1/0/5

Switch(Config-if-ethernet 1/0/5)#mac-notification added

2.2.6 show mac-notification summary

Command: show mac-notification summary

Function: Show the configuration of MAC notification and the data of the notification packet.

Parameter: None.

Default: Do not show the summary.

Command Mode: Admin mode

Usage Guide: With this command, check the configuration of MAC address and the sending status of MAC notification trap.

Example:

Switch#show mac-notification summary

MAC address notification:enabled

MAC address snmp traps:enabled

MAC address notification interval = 10

MAC address notification history log size = 120

MAC address added = 0

MAC address removed = 0

MAC address snmp traps generated = 0

2.2.7 snmp-server enable traps mac-notification

Command: snmp-server enable traps mac-notification

       no snmp-server enable traps mac-notification

Function: Enable the trap notification of MAC address globally, the no command disables the trap notification.

Parameter: None.

Default: Disable trap notification globally.

Command Mode: Global mode

Usage Guide: This command is used with MAC notification switch. When the switch is disabled, other configuration can be shown, but the function is invalid.

Example: Enable the trap notification of MAC address.

Switch(Config)#snmp-server enable traps mac-notification