VLAN Configuration Commands

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Chapter 1 VLAN Configuration Commands

1.1 VLAN Configuration Commands

VLAN configuration commands include：

- vlan
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1.1.1 vlan

To add a VLAN, use the **vlan** command. Use the no form of this command to delete a VLAN.

[**no**] **vlan** *vlan-id*

Parameter

Parameter	Description
vlan-id	ID of the VLAN. Range is from 1 to 4094。

Default

None

Command mode

Global

Instruction

Use this command to enter the VLAN configuration mode and to modify some attributes of the VLAN.

Example

This example shows how to add a new VLAN:

```
Switch_config#
Switch_config#vlan 2
Switch_config_vlan_2#
```

1.1.2 name

To assign a name to a VLAN, use the **name** command. Use the no form of this command to remove the name assigned to a VLAN.

[**no**] **name** *str*

Parameter

Parameter	Description
str	Name of the defined VLAN。The name consists of up to 32 characters.

Default

The default VLAN name is ‘Default’. Other VLAN name is VLANxxxx (xxxx is 4-digit stack ID).

Command mode

VLAN configuration mode

Instruction

This command can modify VLAN name to indicate special VLAN according to special requirements.

Example

The following command modify vlan200 to main405.

```
Switch_config#
Switch_config#
Switch_config#vlan 200
Switch_config_vlan_200#name ?
  WORD   The ascii name of VLAN(32bytes)
Switch_config_vlan_200#name main405
```

1.1.3 switchport pvid

To configure port VLAN of in the access mode, use the **switchport pvid** command.

switchport pvid *vlan-id*

no switchport pvid

Parameter

Parameter	Description
vlan-id	VLAN ID of the port。 Range is from 1 to 4094。

Default

All ports are subordinate to VLAN 1.

Command mode

Interface configuration mode

Instruction

Vlan of the pvid must exist before configuring this command. The port can be access mode or frame relay mode.

Example

The following example configures interface fastethernet 0/1 as the access interface of VLAN 10:

Switch(config)#interface f0/1

Switch(config)#vlan10

Switch(config-f0/1)#switchport pvid 10

1.1.4 switchport mode

To configure the interface mode, use the **switchport mode** command.

switchport mode {*access* | *dot1q-tunnel* | *trunk*}

Parameter

Parameter	Description
access	Sets a nontrunking, nontagged single VLAN Layer 2 interface.

dot1q-tunnel	Sets the trunking mode to TUNNEL unconditionally.
trunk	Specifies a trunking VLAN Layer 2 interface.

Default

Access mode

Command mode

Interface configuration mode

Instruction

If you enter access mode, the interface goes into permanent non-trunking mode and negotiates to convert the link into a nontrunk link even if the neighboring interface does not agree to the change.

If you enter trunk mode, the interface goes into permanent trunking mode and negotiates to convert the link into a trunk link even if the neighboring interface does not agree to the change.

If you enter dot1q-tunnel mode, the port is set unconditionally as an 802.1Q tunnel port.

The switchport mode command conflicts with 802.1X protocol. You cannot configure 802.1X protocol in trunk mode. 802.1X protocol is valid only in access mode.

Example

The following example configures the port to the trunk mode:

```
Switch(config-f0/1)#switchport mode trunk
```

1.1.5 switchport trunk

To set the trunk characteristics, use the **switchport trunk** command. To reset all of the trunking characteristics back to the original defaults, use the no form of this command.

[**no**] **switchport trunk** {*vlan-allowed vlan-list*} | {*vlan-untagged vlan-list* }

Parameter

Parameter	Description
vlan-allowed	Sets the list of allowed VLANs that transmit traffic from this interface in tagged format. Value is from 1 to 4094.
vlan-untagged	Sets the list of allowed VLANs that transmit traffic from this interface in untagged format.Value is from 1 to 4094.

Default

The default native vlan ID is 1.

The valid VLAN ID is from 1 to 4094 (all VLANs).

Command mode

Interface configuration

Instruction

You can use this command on an interface no matter it is in access or trunk mode. But this command is valid only when the interface is in trunking mode.

The vlan-allowed parameter sets the list of allowed VLANs that transmit traffic from this interface in tagged format. The vlan-untagged parameter sets the list of allowed VLANs that transmit traffic from this interface in untagged format.

The vlan-list format is all | none | add | remove | except vlan-list[,vlan-list...] where:

•all—Specifies all VLANs from 1 to 1005.

•none—Indicates an empty list. This keyword is not supported in the switchport trunk allowed vlan form of the command.

•add—Adds the defined list of VLANs to those currently set instead of replacing the list.

•remove—Removes the defined list of VLANs from those currently set instead of replacing the list.

•except—Lists the VLANs that should be calculated by inverting the defined list of VLANs.

•vlan-list—Is either a single VLAN number from 1 to 1005 or a continuous range of VLANs described by two VLAN numbers, the lesser one first, separated by a hyphen that represents the VLAN IDs of the allowed VLANs when this port is in trunking mode.

Example

The following example configures VLAN ID range to 1-10:

```
Switch(config-f0/1)#switchport trunk vlan-allowed 1-10,20-30,55
Switch(config-f0/1)#switchport trunk vlan-untagged 2-1000
```

1.1.6 double-tagging

To configure global VLAN tunnel characteristic, use the **double-tagging** command.

[**no**] **double-tagging**

Note：

Since the realization of the switch chip features vary widely, some switches can only enable/disable VLAN tunnel characteristic in global configuration mode, and some can also be configured on an interface.

Parameter

none

Default

disabled

Command mode

Interface configuration

Instruction

Some switch chips don’t support port-based VLAN tunnelling configuration. They only support enabling or disabling this characteristic at the same time on all interfaces (please refer to the model description of the configuration manual). The switch that uses this kind of switch doesn’t provide the switchport mode dot1q-tunnel command in the interface configuration mode. It provides the double-tagging command in the global configuration mode instead to enable or disable the double-tagging characteristic in the global configuration.

Example

The following example enables global vlan tunnel characteristic of the switch:

Switch(config)#double-tagging

1.1.7 show vlan

To display VLAN information, use the show vlan command.

show vlan [**id** *vlan-id* | **interface** *intf-id*]

Parameter

Parameter	Description
id	Displays information about a single VLAN that is identified by a VLAN ID number; valid values are from 1 to 4094.
interface	Displays the specified interface

Default

None

Command mode

EXEC/ All configuration modes

Instruction

None

Example

The following example shows all VLAN information:

```
Switch#sho vlan
VLAN Status  Name            Ports
---- ------- --------------- ------------------------------------------------
1    Static  Default         F0/1, F0/2, F0/3, F0/4, F0/5, F0/6, F0/7, F0/8
                             F0/9, F0/10, F0/11, F0/12, F0/13, F0/14, F0/15
                             F0/16, F0/17, F0/18, F0/19, F0/20, F0/21, F0/22
                             F0/23, F0/24, G1/1, G2/1, P1
2    Static  VLAN0002        F0/3
3    Static  VLAN0003        F0/3
4    Static  VLAN0004        F0/3
5    Static  VLAN0005        F0/3
6    Static  VLAN0006        F0/3
```

Status: it indicates the source of VLAN. Static: indicates the VLAN is formed by configuration. Dynamic: indicates the VLAN is dynamically formed by GVRP protocol.

The following example shows the concrete information of a VLAN:

```
Switch> show vlan id 1
VLAN id: 1, Name: default, TotalPorts:11

Ports            Atttributes
-------------------------------------------------------------------
F0/1             Trunk,Untagged
F0/2             Access
F0/5             Trunk,Untagged
F0/7             Trunk,Tagged
F0/8             Trunk,Tagged
F0/9             Trunk,Tagged
F0/11            Access
F0/12            Access
F0/14            Trunk,Tagged
F0/15            Trunk,Tagged
F0/16            Trunk,Untagged
```

The following example shows the relevant information about a VLAN on an interface:

```
Switch#sho vlan int f0/6

Interface          VLAN
Name               Property PVID Vlan-Map        uTagg-VLan-Map
------------------- -------- ---- ---------------- ----------------
FastEthernet0/6    Trunk    1    3,5,7,9,11,13,15 none
                              17,19
Switch#sho vlan int f0/7

Interface          VLAN
Name               Property PVID Vlan-Map        uTagg-VLan-Map
------------------- -------- ---- ---------------- ----------------
FastEthernet0/7    Access   7    7                ----
```

1.1.8 interface supervlan

Description

[**no**] **interface supervlan** *index*

It is used to configure the SuperVLAN interface.

Parameter

Parameter	Description
index	Index of the SuperVlan port, ranging from 1 to 32

Default

None

Explanation

The command is configured in global configuration mode. It is used to configure a SuperVLAN port and enable the system to enter the port configuration mode. Its “no” form can be used to delete the configured interface.

Example

See the **sub vlaN** command.

1.1.9 sub vlan

Description

[**no**] **sub vlan** [*string*] [**add** *add-string*] [**remove** *rem-string*]

It is used to configure a SubVLAN on the SuperVLAN interface. Its “no” form can be used to delete all SubVlans on the SuperVLAN interface. Only one subcommand can be used each time.

Parameter

Parameter	Description
string	Sets SubVlan in a SuperVLAN. If you set a SubVlan, the original configuration will be deleted. **string** here means the VLAN list, for example, 2, 4, 5 and 6 stand for VLAN 2, VLAN 4, VLAN 5 and VLAN 6 respectively.
add-string	Adds the **add-string** VLAN list to the original SubVlan. The format is the same as above.
rem-string	Removes the **del-string** VLAN list from the original SubVlan. The format is the same as above.

Default

The SubVlan in SuperVlan is null by default.

Explanation

A SubVLAN list can be configured in the SuperVLAN.

Example

In the following example, interface SuperVlan 5 is configured and SubVLANs are set. Interface SuperVlan 5 has the SubVlan lists 2, 3, 5, 6, 7, 9, 11 and 12, that is, Vlan 2, Vlan 3, Vlan 5, Vlan 6, Vlan 7, Vlan 9, Vlan 11 and Vlan 12.

```
interface supervlan 5
subvlan 2,3,5-7
subvlan add 7,9-12
subvlan remove 10
```