

# VLAN Configuration Commands

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# Chapter 1 VLAN Configuration Commands

## 1.1 VLAN Configuration Commands

VLAN configuration commands include:

- `vlan`
- `name`
- `switchport pvid`
- `switchport mode`
- `switchport trunk`
- `show vlan`

### 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
<i>vlan-id</i>	ID of the VLAN. Range is from 1 to 4094.

#### Default

none

#### Command mode

global

#### Instruction

Use this command to enter 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
<i>str</i>	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
<i>vlan-id</i>	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
<i>access</i>	Sets a nontrunking, nontagged single VLAN Layer 2 interface.

<i>dot1q-tunnel</i>	Sets the trunking mode to TUNNEL unconditionally.
<i>trunk</i>	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 nontrunking 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 commands. 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
<i>vlan-allowed</i>	Sets the list of allowed VLANs that transmit traffic from this interface in tagged format. Value is from 1 to 4094.
<i>vlan-untagged</i>	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. Beginning with Cisco IOS Release 12.4(15)T, the valid VLAN ID range is from 1 to 4094.
- 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. Beginning with Cisco IOS Release 12.4(15)T, the valid VLAN ID range is from 1 to 4094.

## 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 show vlan

To display VLAN information, use the show vlan command.

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

### Parameter

Parameter	Description
<i>id</i>	Displays information about a single VLAN that is identified by a VLAN ID number; valid values are from 1 to 4094.
<i>interface</i>	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 : 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	Attributes
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	----