1 Private VLAN Commands

Command	Function
debug bridge pvlan	Enable the private VLAN (PVLAN) debugging function.
private-vlan	Configure a common static VLAN as a PVLAN and configure the PVLAN as a primary or secondary VLAN.
show vlan private-vlan	Display the PVLAN configurations.
switchport mode private-vlan	Configure a port as a host or promiscuous port of a PVLAN.

1.1   debug bridge pvlan

Function

Run the **debug bridge pvlan** command to enable the private VLAN (PVLAN) debugging function.

Run the **no** form of this command to disable this feature.

The PVLAN debugging function is disabled by default.

Syntax

debug bridge pvlan

no debug bridge pvlan

Parameter Description

N/A

Command Modes

Privileged EXEC mode

Default Level

2

Usage Guidelines

Debugging information includes all errors occurring during the configuration of a PVLAN, prompt messages, and causes of VLAN and port configuration failures.

After you enable this function, you can view the configuration of the PVLAN function, packet processing by virtual interfaces, and debugging information in the case of a packet processing failure debug information, which helps you locate and diagnose faults.

Examples

The following example enables the PVLAN debug function.

```
Hostname> enable
Hostname# debug bridge pvlan
```
The following example disables the PVLAN debug function.

```
Hostname> enable
Hostname# no debug bridge pvlan
```

Debugging Information

PVLAN configuration debugging information

Debugging information: The VLAN pair (4-6) is invalid.

Explanation: When you try to associate a port with a PVLAN pair or remove the association, the PVLAN pair does not have a valid L2 association.

Cause: The specified PVLAN pair does not have a valid L2 association.

Handling suggestion: Ensure that the specified PVLAN pair has a valid L2 association.

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.2 private-vlan

Function

Run the **private-vlan** command to configure a common static VLAN as a PVLAN and configure the PVLAN as a primary or secondary VLAN.

Run the **no** form of this command to remove this configuration.

Run the **default** form of this command to restore the default configuration.

A VLAN is a common VLAN and has no PVLAN attribute by default.

Syntax

private-vlan { **community** | **isolated** | **primary** }

no private-vlan { **community** | **isolated** | **primary** }

default private-vlan { **community** | **isolated** | **primary** }

Parameter Description

community: Configures the VLAN as a community VLAN of the secondary VLAN.

isolated: Configures the VLAN as an isolated VLAN of the secondary VLAN.

primary: Configures the VLAN as a primary VLAN.

Command Modes

VLAN mode

Default Level

14

Usage Guidelines

If VLAN 1 contains non-host and non-promiscuous ports, when you configure VLAN 1 as a PVLAN, an error is displayed. It is not recommended to configure VLAN 1 as a PVLAN.

You can use the **show vlan private-vlan** { **community** | **isolated** | **primary** } command to display configurations of different types of VLANs in a PVLAN.

Examples

The following example configures VLAN 90 as a primary VLAN, VLAN 91 as an isolated VLAN, and VLAN 92 as a community VLAN.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# vlan 90
Hostname(config-vlan)# private-vlan primary
Hostname(config-vlan)# exit
Hostname(config)# vlan 91
Hostname(config-vlan)# private-vlan isolated
Hostname(config-vlan)# exit
Hostname(config)# vlan 92
Hostname(config-vlan)# private-vlan community
Hostname(config-vlan)# exit
```

The following example cancels the attributes of the primary VLAN and secondary VLAN.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# vlan 90
Hostname(config-vlan)# no private-vlan primary
Hostname(config-vlan)# exit
Hostname(config)# vlan 91
Hostname(config-vlan)# no private-vlan isolated
Hostname(config)# vlan 92
Hostname(config-vlan)# no private-vlan community
```

The following example restores the default configurations of a VLAN, that is, restores the PVLAN to a common VLAN.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# vlan 90
Hostname(config-vlan)# default private-vlan primary
Hostname(config-vlan)# exit
Hostname(config)# vlan 91
Hostname(config-vlan)# default private-vlan isolated
Hostname(config-vlan)# exit
Hostname(config)# vlan 92
Hostname(config-vlan)# default private-vlan community
```

Notifications

When you try to use the **no private-vlan** command to restore a PVLAN to a common static VLAN and the { **community** | **isolated** | **primary** } parameter in the command is inconsistent with the PVLAN mode of the PVLAN, the following notification will be displayed:

```
Types of private VLANs do not match
```

When you try to configure a VLAN that contains a non-host or non-promiscuous port as a PVLAN, the following notification will be displayed:

```
Setting failure for some ports are not allowed to private vlan
```

When you try to configure a VLAN that has been configured as a MAC VLAN as a PVLAN, the following notification will be displayed:

```
Can't set VLAN as non static vlan when mac vlan enabled.
```
When you try to configure a VLAN that is bound to an L3 SVI as a community VLAN, the following notification will be displayed:

```
The VLAN with svi can not be set to secondary VLAN
```

Common Errors

A dynamic VLAN is configured as a PVLAN.

Platform Description

N/A

Related Commands

- **show vlan private-vlan**

1.3   show vlan private-vlan

Function

Run the **show vlan private-vlan** command to display the PVLAN configurations.

Syntax

show vlan private-vlan { **community** | **primary** | **isolated** }

Parameter Description

primary: Displays the primary VLAN information.

community: Displays the community VLAN information.

isolated: Displays the isolated VLAN information.

Command Modes

All modes except the user EXEC mode

Default Level

2

Usage Guidelines

N/A

Examples

The following example configures a PVLAN and displays PVLAN configuration.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)#vlan range 3-5
Hostname(config-vlan-range)# exit
Hostname(config)# vlan 3
Hostname(config-vlan)# private-vlan isolated
Hostname(config-vlan)# exit
```

```
Hostname(config)# vlan range 4-5
Hostname(config-vlan-range)# private-vlan community
Hostname(config-vlan-range)# exit
Hostname(config)# vlan 6
Hostname(config-vlan)# private-vlan primary
Hostname(config-vlan)# private-vlan association add 3-5
Hostname(config-vlan)# show vlan private

VLAN  Type        Status   Routed   Ports                          Associated VLANs
----- ---------- -------- -------- ------------------------------ ------
3     isolated   active   Disabled                                6
4     community  active   Disabled                                6
5     community  active   Disabled                                6
6     primary    active   Disabled                                3-5

Hostname(config-vlan)# exit
Hostname(config)# interface gigabitethernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# switchport mode trunk
Hostname(config-if-GigabitEthernet 0/1)# switchport mode private-vlan promiscuous
Hostname(config-if-GigabitEthernet 0/1)# switchport private-vlan mapping 6 add 3-
5
Hostname(config-if-GigabitEthernet 0/1)# exit

Hostname(config)# interface range gigabitethernet 0/2-4
Hostname(config-if-range)# switchport mode private-vlan host
Hostname(config-if-range)# switchport private-vlan host-association 6 3
Hostname(config-if-range)# exit

Hostname(config)# interface range gigabitethernet 0/5-8
Hostname(config-if-range)# switchport mode private-vlan host
Hostname(config-if-range)# switchport private-vlan host-association 6 4
Hostname(config-if-range)# exit

Hostname(config)# interface range gigabitethernet 0/9-12
Hostname(config-if-range)# switchport mode private-vlan host
Hostname(config-if-range)# switchport private-vlan host-association 6 5
Hostname(config-if-range)# exit
Hostname(config)# show vlan private

VLAN  Type        Status   Routed   Ports                          Associated
VLANs
----- ---------- -------- -------- ------------------------------ ------------
3     isolated   active   Disabled  Gi0/2, Gi0/3, Gi0/4                6
4     community  active   Disabled  Gi0/5, Gi0/6, Gi0/7,Gi0/8         6
5     community  active   Disabled  Gi0/9, Gi0/10, Gi0/11,Gi0/12      6
6     primary    active   Disabled  Gi0/1                             3-5
```

```
Hostname(config)# interface vlan 6
Hostname(config-if-VLAN 6)# ip address 192.168.11.1 255.255.255.0
Hostname(config-if-VLAN 6)# private-vlan mapping 3-5
Hostname(config-if-VLAN 6)# exit
Hostname(config)# show vlan private

VLAN  Type       Status   Routed   Ports                              Associated
VLANs
----- ---------- -------- -------- ------------------------------ -----------
3     isolated   active   Enabled  Gi0/2, Gi0/3, Gi0/4                     6
4     community  active   Enabled  Gi0/5, Gi0/6, Gi0/7,Gi0/8              6
5     community  active   Enabled  Gi0/9, Gi0/10, Gi0/11,Gi0/12           6
6     primary    active   Enabled  Gi0/1                                3-5
```

Table 1-1Output Fields of the show vlan private-vlan Command

Field	Description
VLAN	VLAN ID
Type	VLAN attribute ● **primary**: Primary VLAN ● **isolated**: Isolated VLAN ● **community**: Community VLAN
Status	L2 association status of a PVLAN ● **inactive**: No L2 association is configured for a PVLAN. ● **active**: An L2 association has been configured for a PVLAN.
Routed	L3 interface status of the primary VLAN or L3 association status of a secondary VLAN ● Disabled: No L3 interface is created for the primary VLAN or no L3 association is configured between the primary VLAN and a secondary VLAN. ● Enabled: An L3 interface has been created for the primary VLAN or an L3 association has been configured between the primary VLAN and a secondary VLAN.
Ports	Ports that are added to a PVLAN
Associated VLANs	Secondary VLANs that are L2 associated with the primary VLAN or a primary VLAN that is L2 associated with secondary VLANs

Notifications

N/A

Platform Description

N/A

Related Commands

N/A

1.4   switchport mode private-vlan

Function

Run the **switchport mode private-vlan** command to configure a port as a host or promiscuous port of a PVLAN.

Run the **no switchport mode** command to restore the port to an access port.

Run the **default switchport mode** command to restore the port to an access port.

A port is an access port by default.

Syntax

switchport mode private-vlan { **host** | **promiscuous** }

no switchport mode

default switchport mode

Parameter Description

host: Configures a port as a host port of a PVLAN. A port connected to a host is configured as a host port.

promiscuous: Configures a port as a promiscuous port of a PVLAN. A port connected to a gateway or server is configured as a promiscuous port.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

If a port is configured as a host port and associated with a PVLAN pair by using the **switchport private-vlan host-association** *pvid svid* command, the host port can be added to a secondary VLAN. A host port in an isolated VLAN is called an isolated port, and a host port in a community VLAN is called a community port.

If a port is configured as a promiscuous port and associated with a PVLAN pair by using the **switchport private-vlan mapping** *pvid* { *svlist* **| add** *svlist* | **remove** *svlist* } command, the port can be added to the primary VLAN. In this case, the port is a promiscuous port.

Examples

The following example configures GigabitEthernet 0/1 as a host port of a PVLAN.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitethernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# switchport mode private-vlan host
```

The following example configures GigabitEthernet 0/2 as a promiscuous port.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitethernet 0/2
Hostname(config-if-GigabitEthernet 0/2)# sw mode private-vlan promiscuous
```

The following example restores GigabitEthernet 0/1 from a host port to an access port.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitethernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# no switchport mode
```

Notifications

When the MAC VLAN function is enabled on GigabitEthernet 0/1 and you try to configure the interface as a host or promiscuous port, the following notification will be displayed:

```
Can't change port mode since mac vlan has been enabled.
Operation is not supported on interface GigabitEthernet 0/1: it is not supported
by the hardware!
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A