Private VLAN
Configuration Commands
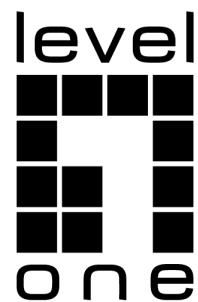
level
one

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1.1 Private VLAN Configuration Commands

The following are private VLAN configuration commands:

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1.1.1   private-vlan

Syntax

private-vlan {primary|community|isolated}

To configure the features of private VLAN, run the aforementioned command.

Parameter

Parameter	Description
primary	Sets VLAN to the primary VLAN.
community	Sets VLAN to the community VLAN.
isolated	Sets VLAN to the isolated VLAN.

Default value

No configuration is done to any type of private VLAN.

Command mode

VLAN configuration mode

Usage guidelines

Primary VLAN: It is relevant to a promiscuous port and only one primary VLAN exists in the private VLAN. Each port in the primary VLAN is a member in the primary VLAN.

Isolated VLAN: No layer-2 communication can be conducted between two ports in the same isolated VLAN. Also, there is only one isolated VLAN in a private VLAN. The isolated

VLAN must be related with the primary VLAN.

Community VLAN: Layer-2 communication can be conducted between two ports in the same VLAN, but they have no communication with the ports in another community VLAN. One private VLAN may contain multiple community VLANs. The community VLAN must be related with the primary VLAN.

Example

The following example shows how to set VLAN2 to be the primary VLAN.

Switch(config)#
Switch(config)#vlan-view 2
Switch(config-vlanid2)#private-vlan primary

1.1.2 private-vlan association

Syntax

private-vlan association   **{***svlist* **| add** *svlist* **| remove** *svlist***}**

no private-vlan association

To configure the private VLAN's association, run the first one of the above-mentioned commands.

Parameter

Parameter	Description
svlist	Sets the to-be-associated secondary VLAN.

Default value

No secondary VLAN is associated.

Command mode

VLAN configuration mode

Usage guidelines

This command is used to associate primary VLAN with secondary VLAN to enable them to realize VLAN learning sharing in the whole private VLAN. This command is run only in primary VLAN configuration mode.

When svlist is used, you can add or remove the lists to or from secondary VLAN. The entered lists are separated by the comma or the hyphen. For example, "1, 3, 5, 7" stands for "vlan 1, vlan 3, vlan 5, vlan 7", while "1, 3-5, 7" stands for "vlan 1, vlan 3, vlan 4, vlan 5, vlan 7".

The validation of the whole private VLAN depends on the correct configurations of all features in private VLNA.

Example

The following example shows how to associate primary VLAN 2 with community VLAN 3 or community VLAN 4.

Switch(config)#
Switch(config)#vlan-view 2
Switch(config-vlanid2)#private-vlan association 3-4

1.1.3   switchport mode private-vlan

Syntax

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

To set the mode for a layer-2 port in private VLAN, run the above-mentioned command.

Parameter

Parameter	Description
host	Sets the layer-2 port to be in host's port mode.
promiscuous	Sets the layer-2 port to be in promiscuous port mode.

Default value

No mode in any private VLAN is configured.

Command mode

Port configuration mode

Usage guidelines

This command is used to set the mode in private VLAN for layer-2 port: the promiscuous port mode or the host port mode. The latter can be classified into the public port and the isolated port.

Promiscuous port: it belongs to the primary VLAN. It can communicate with all other ports, including the isolated port and community port of a secondary VLAN in the same private VLAN.

Isolated port: It is the host port in the isolated VLAN. In the same private VLAN, the isolated port is totally L2 isolated from other ports except the promiscuous port, so the flows received from the isolated port can only be forwarded to the promiscuous port.

Community port: It is the host port in the community VLAN. In a private VLAN, the community ports of the same community VLAN can conduct L2 communication each other or with the promiscuous port, but not with the community ports of other VLANs and the isolated ports in the isolated VLANs.

Example

The following example shows how to set interface g0/0/1 to a promiscuous port:

Switch(config)#
Switch(config)#interface g0/0/1
Switch(config-g0/0/1)#switchport mode private-vlan promiscuous

1.1.4 switchport private-vlan host-association

Syntax

switchport private-vlan host-association *p_vid s_vid*

To set the private VLAN associating with the L2 host port, run the above-mentioned command.

Parameter

Parameter	Description
p_vid	Sets the VLAN ID of the to-be-associated primary VLAN, which ranges between 1 and 4094.
s_vid	Sets the VLAN ID of the to-be-associated secondary VLAN, which ranges between 1 and 4094.

Default value

No association is set for private VLAN.

Command mode

Port configuration mode

Usage guidelines

This command is mainly used to set the L2 host port to associate primary and secondary VLANs. This newly configured host port takes no effect on the associated primary and secondary VLANs until you set it to be the host port, the private VLAN type of the two associated VLANs is set correctly and the association of the two VLANs is correctly set.

Example

The following example shows how to build up the host association between port g0/0/1 and primary VLAN2 and secondary VLAN3.

Switch(config)#
Switch(config)#interface g0/0/1

Switch(config-g0/0/1)#switchport private-vlan host-association 2 3

1.1.5 switchport private-vlan mapping

Syntax

switchport private-vlan mapping

*p_vid***{***svlist* **| add** *svlist* **| remove** *svlist***}**

To set the private VLAN associating with the L2 promiscuous port, run the above-mentioned command.

Parameter

Parameter	Description
p_vid	Sets the VLAN ID of the to-be-associated primary VLAN, which ranges between 1 and 4094.
svlist	Sets the to-be-associated secondary VLAN.

Default value

No association is set for private VLAN.

Command mode

Port configuration mode

Usage guidelines

This command is mainly used to set the L2 promiscuous port to associate primary and secondary VLANs. This newly configured port takes no effect on the associated primary and secondary VLANs until you set it to be the promiscuous port, the private VLAN type of the two associated VLANs is set correctly and the association of the two VLANs is correctly set.

When svlist is used, you can add or remove the lists to or from secondary VLAN. The entered lists are separated by the comma or the hyphen. For example, "1, 3, 5, 7" stands for "vlan 1, vlan 3, vlan 5, vlan 7", while "1, 3-5, 7" stands for "vlan 1, vlan 3, vlan 4, vlan 5, vlan 7".

Example

The following example shows how to build up the promiscuous association between port g0/0/1 and primary VLAN2 and secondary VLANs 3-5.

Switch(config)#
Switch(config)#interface g0/0/1
Switch(config-g0/0/1)#switchport private-vlan mapping 2 3-5

1.1.6   switchport private-vlan

Syntax

switchport private-vlan { tag-pvid *p_vid* **| tag-pri** *priority* **| untagged }**

no switchport private-vlan untagged

To set the tag and its field of the egress packets on the L2 port of the private VLAN, run the first of the above-mentioned two commands.

Parameter

Parameter	Description

p_vid	Stands for the VLAN ID in the tag, which ranges from 1 to 4094.
priority	Sets the priority field in the tag, which ranges from 0 to 7.
untagged	Sets the egress packets to have the tag or not.

Default value

The default VLAN ID in the tag is 1.

The default priority is 0.

The egress has no tag by default.

Command mode

Port configuration mode

Usage guidelines

This command is mainly used to set the tag of egress packets in private VLAN or set whether egress packets have the tag. This command takes effect after private VLAN, the association between private VLANs in the private VLAN domain, the L2 port mode in private VLAN, and the association between L2 port and private VLAN are all correctly set.

1.1.7 show vlan private-vlan

Syntax

show vlan private-vlan

To display the configurations of VLAN and L2 port in the private VLAN, run the above-mentioned command.

Parameter

N/A

Default value

N/A

Command mode

Port configuration mode, VLAN configuration mode and EXEC mode

Usage guidelines

This command is used to display the configurations of VLAN and L2 port in the private VLAN.

Example

The following example shows how to display the configuration of private VLAN.

Switch(config)#

Switch(config)#show vlan private-vlan

Primary	Secondary	Type	Ports
2	3	community	g0/0/1, g0/0/2, g0/0/3
2	4	isolated	g0/0/1, g0/0/4
2	5	community	g0/0/1, g0/0/5

1.1.8 show vlan private-vlan interface

Syntax

show vlan private-vlan interface *interface*

To display the configurations of the L2 port in the private VLAN, run the above-mentioned command.

Parameter

Parameter	Description
Interface	Stands for the to-be-shown interface.

Default value

N/A

Command mode

Port configuration mode, VLAN configuration mode and EXEC mode

Usage guidelines

This command is used to display the configuration of L2 port in the private VLAN.

Example

The following example shows how to display the configuration of L2 interface g0/0/1 in the private VLAN.

Switch(config)#

Switch(config)#show vlan private-vlan interface g0/0/1

port type: promiscuous port

private-vlan host-association: primary vlan 2 secondary vlan 3

private-vlan mapping: primary vlan 2 secondary vlan 3-5

Native VLAN tagging enable: untagged

Native VLAN tagging priority 0

Native VLAN tagging pvid: 1