Port Additional Characteristics Configuration

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Chapter 1 Port Additional Characteristics Configuration

1.1 Configuring an Interface to Handle the Unknown Packets

In actual application, the Ethernet interface may receive the unknown packets (DLF packets) and the OLT then broadcasts by default this kind of packets to all interfaces in a VLAN. This will increase the network load and influence the network capacity. To avoid the DLF packets from being broadcast, you can set on the egress to drop the DLF packets, which is called storm limit.

Note:

The storm limitation function cannot be applied on the ONU port. For how to create an ONU port, see the manual "ONU Management Configuration".

Command	Purpose
config	Enters the global configuration mode.
interface g0/1	Enters the to-be-configured port.
[**no**] **switchport block {unicast|multicast| broadcast}**	Sets flow control for a port. **Unicast** means that storm limit is conducted to the unknown unicast packets. **Multicast** means that storm control is conducted to the multicast packets. **Broadcast** means that storm control is conducted to the broadcast packets.
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.2 Configuring Port Isolation

By default, the data packet between different uplink ports of the OLT, or the uplink port and PON port can be freely forwarded. But the data packet between PON ports are mutual isolated and not intercommunicated. In some cases, the isolation configuration must be adjusted, such as forbidding the data flow of uplink ports or enabling data communication between PON ports. This is what port isolation does. The ports within an isolated group based on the group's port isolation function cannot communicate with data. Ports between different groups and ports between the isolation group and out of the isolation group can forward regularly.

Note:

Port isolation can only be configured on the NNI port or the PON port. If port isolation is set on the PON port, all ONU ports under the PON port cannot communicate with other PON ports and NNI ports on which port isolation is configured. All PON ports are in the isolation group 1 by default. Port isolation is not supported on the ONU port.

All isolation groups must be deleted, including the default existed isolation group 1, can the isolation not based on the group be applied.

The port isolation function cannot be applied on the ONU port. For how to create an ONU port, see the manual "ONU Management Configuration".

Isolation based on the group:

Command	Purpose
config	Enters the global configuration mode.
[no] **port-protected** *group-id*	Creates and enters the isolation group mode, run this command. *group-id* Sets ID of the isolation group
[**no**] **description** *word*	Describes the group. *Word* Describes the character string of the group.
exit	Goes back to the global configuration mode.
interface *g0/1*	Enters the to-be-configured port.
[**no**] **switchport protected** *group-id*	Adds/removes the isolation group *group-id* The isolation group ID
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

Isolation not based on the group:

Command	Purpose
config	Enters the global configuration mode.
no port-protected *group-id*	Deletes the existed isolation group. Sets ID of the isolation group
interface *gp0/1*	Enters the to-be-configured port.
[**no**] **switchport protected**	Enables or disables Port Isolation
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.3 Configuring Storm Control on a Port

The ports of OLT may bear continuous and abnormal impact from unicast (MAC address fails to be found), multicast or broadcast packets, and therefore gets paralyzed even to the extent that the whole OLT breaks down. That's why a mechanism must be provided to limit this phenomena. The storm control enables the OLT to set on the ingress the rates of different kinds of packets.

Note:

The storm control function cannot be applied on the ONU port. For how to create an ONU port, see the manual "ONU Management Configuration".

Command	Purpose
config	Enters the global configuration mode.
interface gp0/1	Enters the to-be-configured port.
[**no**] **storm-control** {**broadcast**	**multicast**	**unicast**} **threshold** *count*	Configures storm control function of the port **Unicast** means that storm control is

	conducted to the unicast packets.
	Multicast means that storm control is conducted to the multicast packets.
	Broadcast means that storm control is conducted to the broadcast packets.
	Count means the threshold of the being configuration
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.4 Configuring Rate Limit on a Port

Rate limit is used to limit the rate of a flow that runs through a port.

Note:

The port limitation function cannot be applied on the ONU port. For how to create an ONU port, see the manual "ONU Management Configuration".

Command	Purpose
config	Enters the global configuration mode.
interface *gp0/1*	Enters the to-be-configured port.
[**no**] **switchport rate-limit** {*band* **| bandwidth** *percent* } { **ingress** | **egress**}	Configures the rate limit for a port. *Band* means to limit the flow rate. *Percent* means to limit the flow percentage. **Ingress** means to exert an influence on the ingress. **Egress** means to exert an influence on the egress.
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.5 Configuring Port Loop Check

Loopback detection is used to check whether loopback exists on an interface. You can configure the interval for a port to transmit the loop check packets.

Note:

The port loopback function cannot be applied on the ONU port. For how to create an ONU port, see the manual "ONU Management Configuration".

Command	Purpose
config	Enters the global configuration mode.
interface *g0/1*	Enters the to-be-configured port.
[**no**] **keepalive** [*second*]	Configures the interval for an interface to transmit the loop check packets. *Second* means the interval of transmitting the packets.
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.6 Configuring MAC Learning on a Port

MAC address learning is used to enable or disable MAC address learning on the interface.

Note:

The mac address learning function cannot be applied on the ONU port. For how to create an ONU port, see the manual "ONU Management Configuration".

Command	Purpose
config	Enters the global configuration mode.
interface *g0/1*	Enters the to-be-configured port.
[**no**] **switchport disable-learning**	Sets MAC address learning on a port. Enables/disables interface MAC address learning.
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.7 Configuring Port Security

1.7.1 Overview

The security port can control the port access, enabling a port to be used in an allowable range that you set. You can enable the security function of a port by setting the maximum number (threshold) of secure MAC addresses and enabling the secure MAC address; if the MAC addresses which enters the port exceed the threshold and the MAC addresses are not the secure MAC addresses, we define this phenomenon as port security violation; if this phenomenon happens, different actions will be acted according to different violation modes.

The security port has two functions: setting the maximum number of MAC addresses for the security port and setting the static secure MAC address. If the security port has no static secure MAC address or the number of the static secure MAC addresses is smaller than that of the secure MAC addresses, the dynamic learning of the secure MAC addresses will be conducted. If security port violation appears, the packets will be dropped until security port violation disappears.

This section presents how to set a security port on OLT.

1.7.2 Configuring Maximum MAC Limitation

In the dynamic port security mode, the maximum MAC address number can be configured.

Note:

Maximum MAC limitation is not supported by the ONU port or PON port, so it can be configured only on the uplink ports.

Command	Purpose
config	Enters the global configuration mode.
interface *g0/1*	Enters the to-be-configured port.
[**no**] **switchport port-security mode dynamic**	Sets/Cancels the port security mode to be dynamic.
[**no**] **switchport port-security dynamic maximum** *count*	Sets the allowable maximum MAC addresses for a port. *Count*max to be learned address number
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.7.3 Configuring Static Mode Security Port

The static mode will enable or disable the configured mac address list based on the rule

Note:

The static mode security port cannot be applied on the PON port or ONU port, but can be applied on the uplink port.

Command	Purpose
config	Enters the global configuration mode.
interface *g0/1*	Enters the to-be-configured port.
[**no**] **switchport port-security mode static** {**accept**|**reject**}	Sets/Cancels the port security mode to be static mode. **Accept** means static security acceptation mode, which enables packets in the source mac to pass. **Reject** means static security mode, which enables packets in the source mac to pass.
[**no**] **switchport port-security static mac-address** *H.H.H*	Sets port security static mode mac address list. *H.H.H* means the concrete mac address.
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.7.4 Port Binding

This type of OLT can bind the IP address and the MAC address to a port at the same time, and of course you can bind either one to the port. Port binding is effective to the IP or ARP packets.

Note:

Port binding can only be applied on ONU port.

Command	Purpose
config	Enters the global configuration mode.
interface *g0/1*	Enters the to-be-configured port.
[**no**] **switchport port-security** {**bind|block**} {**ip|arp| both-arp-ip** *A.B.C.D* **| mac** *H.H.H* **| ipv6** *ipv6_addr*}	Configures Port Binding **Bind** means only packets complying with the binding requirement can pass and others will be refused. **Block** means only packets complying with the binding requirement will be refused, and other packets are allowed to pass. **ip** means only effective to the Ip packets that comply with the binding requirements. **arp** means only effective to the ARP packets that comply with the binding requirements. **both-arp-ip** means effective to the IP and ARP packets that comply with the binding requirements. **mac** means effective to the ip packets complying with the source mac address; **Ipv6** means effective to the Ipv6 packets that comply with the binding requirements.
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.8 SVL/IVL

The OLT can configure SVL or IVL VLAN mode. It is IVL mode by default.

Note:

VLAN learning mode cannot apply on the ONU port.

Command	Purpose
config	Enters the global configuration mode.
interface *g0/1*	Enters the to-be-configured port.
[**no**] **switchport shared-learning**	Sets the VLAN mode of a port. **shared-learning** means to configure SVL

	mode.
	The default is IVL mode.
exit	Goes back to the global configuration mode.
exit	Goes back to the EXEC mode.

1.9 Configuring Link Scan

The command is used to scan the time interval on the port. You can fast scan the up/down state on the port. To configure the authentication mode, you also can run the following command in interface configuration mode:

Command	Purpose
config	Enters the global configuration mode.
[**no**] **link scan** {**normal** | **fast**} *interval*	Configures the time interval on the port. **Normal** means standard link scan mode. **Fast** Fast mode is mainly used for service protocol requirement, such as rstp. *Interval* Configures the scan time interval on the port.
exit	Goes back to the EXEC mode.

1.10 Configuring System Mtu

Run the following commands in the global mode to configure system MTU:

Command	Purpose
config	Enters the global configuration mode.
[**no**] **system mtu** *mtu*	Configures the value of system mtu. *mtu* Configured mtu value. The value ranges from 1500 to 9216.
exit	Goes back to the EXEC mode.