

Port Additional Characteristics Configuration

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Chapter 1 Port Additional Characteristics Configuration

1.1 Storm Block

In actual application, the Ethernet interface may receive the unknown packets (DLF packets) and the switch 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 broadcasted, you can set on the egress to drop the DLF packets, which is called storm limit.

Command	Purpose
config	Enters the global configuration mode.
interface g0/1	Enters the to-be-configured port.
[no] switchport block {unicast multicast broadcast}	Configures the port storm block. Unicast means that storm block is conducted to the unknown unicast packets. Multicast means that storm block is conducted to the multicast packets. Broadcast means that storm block is conducted to the broadcast packets.
exit	Backs to the global configuration mode.
exit	Backs to the EXEC mode.

1.2 Port Isolation

Generally, the packets between different ports of a switch can be freely forwarded. In some cases, the data flows between ports need be forbidden and port isolation is then required. Data communication cannot go on between isolated ports, but can do between normal ports or between normal port and isolated port. Data communication cannot go on between the isolated ports within one group, but can do between the isolated port and any arbitrary port outside the group. It is noted that port isolation plays a role in the layer-2 packets. This switch series does not support group-based isolation.

Isolation not based on the group:

Command	Purpose
config	Enters the global configuration mode.
interface g0/1	Enters the to-be-configured port.

[no] switchport protected	Sets or Cancels Port Isolation
exit	Backs to the global configuration mode.
exit	Backs to the EXEC mode.

1.3 Storm Control

The port of a switch 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 switch breaks down. That's why a mechanism must be provided to limit this phenomena. The storm control enables the switch to set on the ingress the rates of different kinds of packets.

Command	Purpose
config	Enters the global configuration mode.
interface g0/1	Enters the to-be-configured port.
[no] storm-control { broadcast multicast unicast } threshold <i>count</i>	Configures the port storm block. Unicast means that storm control 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. Count means to-be-configured threshold.
exit	Backs to the global configuration mode.
exit	Backs to the EXEC mode.

1.4 Rate Limit

Rate limit is used to limit the rate of a flow that runs through a port. Run the following command in the EXEC mode to configure the rate limit.

Command	Purpose
config	Enters the global configuration mode.
interface g0/1	Enters the to-be-configured port.
[no] switchport rate-limit { <i>band</i> Bandwidth <i>percent</i> } { ingress egress }	Configures the rate limit for a port. <i>Band</i> is the limited rate. <i>Percent</i> is the limited ratio.

	<p>ingress means to exert an influence on the ingress.</p> <p>egress means to exert an influence on the egress.</p>
exit	Backs to the global configuration mode.
exit	Backs to the EXEC mode.

1.5 Loopback Detection

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. Run the following command in EXEC mode to forward the time interval of the loopback detection packets.

Command	Purpose
config	Enters the global configuration mode.
Interface g0/1	Enters the to-be-configured port.
[no] keepalive [<i>second</i>]	<p>To configure the interval for a port to transmit the loop check packets, run <i>keepalive second</i>.</p> <p><i>second</i> means the interval of transmitting the packets.</p>
exit	Backs to the global configuration mode.
exit	Backs to the EXEC mode.

1.6 MAC Address Learning

To enable or disable MAC learning on a port, run the following commands.

Command	Purpose
config	Enters the global configuration mode.
interface g0/1	Enters the to-be-configured port.
[no] switchport disable-learning	<p>Configures MAC Learning on a Port.</p> <p>Enable/disable port MAC address learning.</p>
exit	Backs to the global configuration mode.
exit	Backs to the EXEC mode.

1.7 Port Security

Port security supports security control on an interface. Port security has three modes: dynamic security mode, static reception mode and static rejection mode. In dynamic security mode, you can set the threshold of MAC addresses that can be learned by a port. If the learned MAC addresses on a port have reached the threshold in number, the switch will not learn the MAC addresses any more and at the same time drop all DLF packets. In static security mode, you can set the static security MAC address on a port and then you should consider two cases: if it is in static reception mode, only the packets whose destination MACs are security MACs can be allowed to enter this port and other packets will be dropped; if it is in static rejection mode, the packets whose destination MACs are security MACs will be all dropped and other packets will be allowed to pass through this port.

Command	Purpose
config	Enters the global configuration mode.
interface g0/1	Enters the to-be-configured port.
[no] switchport port-security mode { dynamic static accept reject }	Configures the port security mode. Dynamic means the dynamic security mode. <i>static accept</i> means the static reception mode. <i>static reject</i> means the static rejection mode.
[no] switchport port-security dynamic maximum num	Sets the threshold of learning MAC addresses.
[no] switchport port-security static mac-address H.H.H	Sets static security address
exit	Backs to the global configuration mode.
exit	Backs to the EXEC mode.

1.8 Port Binding

This type of switches 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.

Run the following commands to enter the EXEC mode:

Command	Purpose
config	Enters the global configuration mode.
interface g0/1	Enters the to-be-configured port.
[no] switchport port-security	Configures the port binding function.

bind block {ip arp both-arp-ip A.B.C.D mac H.H.H}	<p>bind means that only the packets that comply with the binding requirements can pass while other packets will be dropped; block means that only the packets that comply with the binding requirements will be rejected and other packets will pass.</p> <p>Ip means only the ip packets that comply with the binding requirements can pass.</p> <p>Arp means only the arp packets that comply with the binding requirements can pass.</p> <p>both-arp-ip means that ip and arp packets that comply with the binding requirements can pass.</p>
exit	Backs to the global configuration mode.
exit	Backs to the EXEC mode.

1.9 VLAN MAC Address Learning

To enable or disable Vlan MAC learning on a port, run the following commands.

Command	Purpose
config	Enters the global configuration mode.
[no] vlan disable-learning < add remove word word>	Disable/enable vlan mac address learning Enable/disable vlan mac address learning.
exit	Backs to the EXEC configuration mode.

1.10 VLAN MAC Address Learning Number

To configure VLAN MAC Address Learning Number, run the following command:

Command	Purpose
config	Enters the global configuration mode
[no] vlan dynamic vlan word maximum num	<p>Cancels/configures the learnable max number of vlan mac address</p> <p>Word needs to configure vlan of learning address</p> <p>num learnable max mac address num</p>
exit	Exit to management

	configuration mode
--	--------------------

1.11 Port FEC

To reduce error rate of 100G port using dual-mode optical module, enable FEC. The function runs with enabled ports on both sides. Disable this function when using the single-mode optical module.

To enter the configuration mode, run the following mode:

Command	Purpose
config	Enters the global configuration mode.
interface cg0/1	Enters the port to be configured.
[no] fec-enable	Configures port FEC.
exit	Exit from the global configuration mode.
exit	Exit from the management configuration mode.

1.12 Configuring Link scan

1.12.1 Overview

The command is used to scan the time interval on the port. You can fast scan the up/down state on the port.

1.12.2 Link Scan Configuration Task

- Configure the time interval on the port.

1. Set the time interval of port scan

To set the scan interval of an interface, run the following command in the global configuration mode:

Command	Purpose
[no] Link scan {mode highspeed normal <i>interval</i> fast <i>interval</i> }	Mode: optical port scan mode Normal: standard link scan mode Fast link scan mode. Fast mode is mainly used for service protocol requirement, such as rstp. <i>interval</i> : Set the time interval of port scan.

Command	Purpose
link scan normal time	Sets the time interval of port scan.

1.12.3 Configuration Example

The following example shows how to set the scan interval to 20ms.

```
link scan normal 20
```

1.13 Configuring system mtu

1.13.1 Overview

This is used to configure system mtu.

1.13.2 Configuration Task

- Set system mtu.

1. Set system mtu

Run the following command in the global configuration mode:

Command	Purpose
[no] system mtu <i>mtu</i>	Set the mtu value of the system.

1.13.3 Configuration Example

The following example shows how to set mtu to 1536 bytes.

```
Switch_config#system mtu 1536
```