

# Port Additional Characteristics Configuration Commands

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## Chapter 1 Port Additional Characteristics Configuration Commands

### 1.1 Configuring Port Isolation

#### 1.1.1 port-protected

##### Syntax

To configure a port isolation group, run the following command. To return to the default setting, use the no form of this command.

**port-protected** *group-id*

**[no] port-protected** *group-id*

##### Parameters

Parameters	Description
<i>group-id</i>	Configures port isolation group 1 to 28.

##### Default Value

None

##### Usage Guidelines

The command can be used to configure the group isolation in global configuration mode.

##### Example

The following example shows how to set ID of the isolation group to 1.

```
Switch_config#port-protected 1
```

#### 1.1.2 Description

##### Syntax

To set the port isolation group description, run the following command. To delete the description, use the no form of this command.

**description** *word*

**no description**

## Parameters

Parameters	Description
<i>Word</i>	Sets the port isolation description. The description covers 31 characters at most.

## Default Value

None

## Usage Guidelines

The command can be used to describe the group in global configuration mode.

## Example

The following example shows how to set ID of the isolation group g1 to 1.

```
Switch-config-p1#description g1
```

### 1.1.3 switchport protected

## Syntax

To set port isolation, run the following command. To return to the default setting, use the no form of this command. **switchport protected <group-id> no switchport protected**

## Parameters

Parameters	Description
<i>group-id</i>	Selects the port isolation group 1 to 28.

## Default Value

None

## Usage Guidelines

The command must be configured in layer-2 port configuration mode. The system configures isolation not based on groups by default and group-id doesn't need to configure at the end. If configures isolation based on groups, it should be configured in global mode. Only deleting the isolation on all ports can you reselect isolation based on groups or not based on groups.

## Example

The following example shows how to set isolation of port g0/1 not based on groups.

```
Switch_config_g0/1#switchport protected
```

## 1.2 Configuring the Storm Control Command

### Syntax

To configure the storm control function of the port, run the following command. To return to the default setting, use the no form of this command. **storm-control {broadcast | multicast | unicast} threshold *count* no storm-control {broadcast | multicast | unicast} threshold**

### Parameters

Parameters	Description
<b>broadcast   multicast   unicast</b>	Defines broadcast/multicast/unicast storm control.
<i>count</i>	Defines the threshold flux of the storm. 1-65535

### Default Value

The storm control function is disabled by default.

### Usage Guidelines

The command must be configured in L2 port configuration mode.

### Example

The following example shows how to set the unknown unicast-frame storm to 20pps on port g0/1.

```
Switch_config#interface g0/1
```

```
Switch_config_g0/1#storm-control unicast threshold 20
```

## 1.3 Configuring Switchport Rate Limit

### Syntax

To configure the rate limit for a port, run this command. To return to the default setting, use the no form of this command. **switchport rate-limit** {*band* | *bandwidth percent*} { **ingress**|**egress**} **no switchport rate-limit**{ **ingress**|**egress**}

## Parameters

Parameters	Description
<i>Band</i>	Means the rate of the flow. The step length is 64Kbps.
<i>percent</i>	Means the percentage of the flow. unit 1%
<b>ingress</b>	Functions on the ingress port.
<b>egress</b>	Functions on the egress port.

## Default Value

The rate of the port is not limited by default.

## Usage Guidelines

Layer-2 port configuration mode

## Example

The following example shows how to set the incoming flow rate to 1M on port g0/1.

```
Switch_config#interface      g0/1
Switch_config_g0/1#switchport rate-limit 16 ingress
```

## 1.4 Configuring Port Loop Check

### Syntax

To configure the interval for a port to transmit the loop check packets, run **keepalive second**. To return to the default setting, use the no form of this command.

**keepalive** *second*

**[no] keepalive** *second*

### Parameters

Parameters	Description
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<i>Second</i>	Interval, unit: second.
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#### Default Value

12 seconds

#### Usage Guidelines

The command must be configured in physical interface configuration mode.

#### Example

The following example shows how to set the transmission interval to 10 seconds on interface g0/1.

```
Switch_config#interface g0/1
Switch_config_g0/1#keepalive 10
```

## 1.5 Configuring MAC Address Learning

#### Syntax

To configure the MAC address learning for a port, run `switchport disable-learning`. To return to the default setting, use the `no` form of this command.

**switchport disable-learning**

**[no] switchport disable-learning**

#### Parameters

None

#### Default Value

The MAC address learning is enabled by default.

#### Usage Guidelines

The command must be configured in physical interface configuration mode.

#### Example

The following example shows how to disable the MAC address learning on interface g0/1.

```
Switch_config#interface g0/1
Switch_config_g0/1#switchport disable-learning
```

## 1.6 Configuring Port Security

The port security configuration commands include:

- **switchport port-security mode**
- **switchport port-security dynamic**
- **switchport port-security static**
- **switchport port-security sticky**

### 1.6.1 switchport port-security mode

#### Syntax

To set the interface security mode, run the following command. To return to the default setting, use the no form of this command.

**switchport port-security mode {dynamic | static *accept/reject* | sticky}**

**[no] switchport port-security mode**

#### Parameters

None

#### Default Value

The port security is disabled by default.

#### Usage Guidelines

The command must be configured in physical interface configuration mode.

#### Example

The following example shows how to set interface g0/1 to the dynamic port security mode.

```
Switch_config#inter g0/1
Switch_config_g0/1#switchport port-security mode dynamic
```

### 1.6.2 switchport port-security dynamic

#### Syntax

To configure the maximum number of MAC addresses when the port is in dynamic security mode, run `switchport port-security dynamic maximum`. To return to the default setting, use the `no` form of this command. **switchport port-security dynamic maximum *dynamic\_number***

**[no] switchport port-security dynamic maximum**

#### Parameters

Parameters	Description	Value Range
<i>dynamic_number</i>	The maximum address number that can be learned	1-2048

#### Default Value

The number of MAC addresses that can be learned is 1- the maximum number of items in the MAC address table.

#### Usage Guidelines

The command must be configured in physical interface configuration mode.

#### Example

The following example shows how to set the number of that can be learned MAC addresses of port g0/1 to 10.

```
Switch_config#inter g0/1
```

```
Switch_config_g0/1# switchport port-security dynamic maximum 10
```

### 1.6.3 switchport port-security static mac-address

#### Syntax

To configure a static security MAC address, run `switchport port-security static mac-address H.H.H`. To return to the default setting, use the `no` form of this command. **switchport port-security static mac-address H.H.H**

**[no] switchport port-security static mac-address H.H.H**

#### Parameters

None

#### Default Value



None

## Usage Guidelines

The command must be configured in physical interface configuration mode.

## Example

The following example shows how to set MAC address 0001.0002.0003 to a static security MAC address.

```
Switch_config#inter g0/1
```

```
Switch_config_g0/1# switchport port-security static mac-address 1.2.3
```

### 1.6.4 switchport port-security sticky

## Syntax

To configure the sticky characteristic of MAC address, run the following command. To return to the default setting, use the no form of this command.

```
switchport port-security sticky {maximum sticky_number| mac-address H.H.H| aging-time aging_time | absolute-aging | inactivity-aging}
```

```
[no] switchport port-security sticky {maximum_| mac-address H.H.H| aging-time | absolute-aging | inactivity-aging}
```

## Parameters

Parameters	Description
<i>sticky_number</i>	The maximum address number that can be learned. The default is 100 and the value range is from 1 to 2048.
H.H.H	Mac Address
<i>aging_time</i>	aging time Unit: minute, the default value is 0 and the value range is 0 to 100.

## Default Value

There is no sticky of mac address by default.

## Usage Guidelines

The command must be configured in physical interface configuration mode.

## Example

The following example shows how to set mac: 4433.0002.0021 to the sticky mac.

```
Switch_config#inter g0/1
```

```
Switch_config_g0/1# switchport port-security sticky mac-address 4433.0002.0021
```

## 1.7 Configuring Port Binding

### Syntax

To bind a MAC address to a IP address, run `switchport port-security bind|block {ip|arp|both-arp-ip ip-addr| ipv6 ipv6-addr | mac mac-addr }`.

To cancel the address binding one by one or to exit the port binding state by cancelling all addresses on the port, run `no switchport port-security bind|block {ip|arp| both-arp-ip ip-addr | ipv6 ipv6-addr | mac mac-addr}`.

**switchport port-security bind|block {ip|arp|both-arp-ip ip-addr| ipv6 ipv6-addr | mac mac-addr }**

**no switchport port-security bind|block {ip|arp| both-arp-ip ip-addr | ipv6 ipv6-addr | mac mac-addr}**

### Parameters

Parameters	Description	Value Range
<i>ip-addr</i>	IP address	A.B.C.D
<i>ipv6-addr</i>	Stands for the IPV6 address	X:X:X:X::XX
<i>Mac-addr</i>	Stands for the MAC address.	H.H.H

### Default Value

None

### Usage Guidelines

It works in layer-2 port configuration mode.

The port binding function is forbidden by default. However, if one address is bound, the port is then in binding state unless you use the negative form of this command to clear all bound address items.

### Example

The following example shows how to bind IP address 1.2.3.4 to MAC address 0001.0001.1111 on interface g0/1 to decline the IP packets and ARP packets from the bound address.

```
Switch_config#inter g0/1
```

```
Switch_config_g0/1# switchport port-security block both-arp-ip 1.2.3.4 mac 0001.0001.1111
```

## 1.8 SVL/IVL

### Syntax

To set SVL, run the following command.

**[no]vlan shared-learning**

### Parameters

None

### Default Value

VLAN IVL on the port

### Usage Guidelines

This command is run in global configuration mode.

### Example

The following example shows how to set SVL.

```
Switch_config#vlan shared-learning
```

## 1.9 Configuring Link Scan Commands

### Syntax

To set the scan interval of an interface, run the following command.

**[no] Link scan [normal | fast] *interval***

### Parameters

Parameters	Description
<b>[normal   fast]</b>	Normal means standard link scan mode. Fast means fast link scan mode.
<i>interval</i>	scan interval, unit 1ms, 10-1000.

### Default Value

The scan interval is 500ms in standard mode by default.

Fast mode, the default interval is 10ms.

## Usage Guidelines

This command is configured in global configuration mode. The Fast mode is mainly used for cooperating with the protocol, for instance, RSTP. The Normal mode is mainly used for finding up/down.

## Example

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

```
Link scan normal 20
```

## 1.10 Configuring the Enhanced Link State Detection Command

### Syntax

To enable/disable the enhanced link state detection command, run the following command.

```
[no] switchport enhanced-link
```

### Parameters

None

### Default Value

Disabled.

## Usage Guidelines

The command must be configured in port configuration mode.

### Example

The following example shows how to enable the enhanced link state detection on interface g0/1:

```
Switch_config#interface g0/1
```

```
Switch_config_g0/1#switchport enhanced-link
```

## 1.11 Configuring System MTU

### Syntax

To configure the value of system mtu, run the following command.

```
[no] system mtu mtu
```

## Parameters

Parameters	Description
<i>mtu</i>	Sets the value of system mtu, 1500-9216.

## Default Value

The default mtu is 1500 bytes.

## Usage Guidelines

This command is configured in global configuration mode.

## Example

The following example shows how to set system mtu to 2000 bytes.

```
Switch#config
```

```
Switch_config#system mtu 2000
```