

## Loopback Detection Configuration Commands

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# Chapter 1 Loopback Detection Configuration Commands

## 1.1 Loopback Detection Configuration Commands

Loopback detection configuration commands include:

- loopback-detection
- loopback-detection enable
- loopback-detection vlan-control
- loopback-detection hello-time
- loopback-detection recovery-time
- loopback-detection control
- loopback-detection dest-mac
- loopback-detection existence
- show loopback-detection
- show loopback-detection interface

### 1.1.1 loopback-detection

#### **[no] loopback-detection**

To enable or disable global loopback detection, run the above-mentioned command.

Parameter

N/A

Default value

Loopback detection is globally disabled by default.

Command mode

Global configuration mode

Explanation

N/A

### Example

```
Switch#config
Switch_config#
Switch_config#loopback-detection
```

#### 1.1.2 loopback-detection enable

##### **[no] loopback-detection enable**

To enable or disable loopback detection on a port, run the above-mentioned command.

##### Parameter

N/A

##### Default value

Loopback detection is disabled on a port by default.

##### Command mode

Port configuration mode

##### Explanation

You can run this command to enable or disable loopback detection on a specified port. However, this settings takes effect only after loopback detection is enabled globally.

##### Example

```
Switch_config#
Switch_config#interface g0/1
Switch_config_g0/1#loopback-detection enable
```

#### 1.1.3 loopback-detection vlan-control

##### **[no] loopback-detection vlan-control *vlan-list***

To set a port to perform loopback detection toward a specified VLAN, run the above-mentioned command.

##### Parameter

Parameter	Description
<i>vlan-list</i>	Stands for a VLAN specified by a port. It ranges from 1 to 4094, and up to 10 VLANs can be specified.

##### Default value

N/A

##### Command mode

Port configuration mode

### Explanation

After loopback detection is configured on a specified VLAN, the port transmits multiple detection packets of specified VLAN tag regularly and the number of these detection packets transmitted by this port can be up to 10.

### Example

```
Switch_config#interface g0/1
Switch_config_g0/1#loopback-detection vlan-control 1-5
```

## 1.1.4 loopback-detection hello-time

**[no] loopback-detection hello-time** *hello-time*

To set the transmission period of loopback detection packets, run the above-mentioned command.

### Parameter

Parameter	Description
<i>hello-time</i>	Stands for the transmission period of loopback packets, whose unit is second.

### Default value

3 seconds

### Command mode

Port configuration mode

### Explanation

N/A

### Example

N/A

## 1.1.5 loopback-detection recovery-time

**[no] loopback-detection recovery-time** *recovery-time*

To set the recovery time of a port after being controlled, run the above-mentioned command.

### Parameter

Parameter	Description
<i>recovery-time</i>	Stands for the recovery time of a port after being controlled, whose unit is second.

### Default value

10 seconds

Command mode

Port configuration mode

Explanation

N/A

Example

N/A

### 1.1.6 loopback-detection control

**[no] loopback-detection control { block|learning|shutdown}**

To set a port to be controlled, run the above-mentioned command.

Parameter

Parameter	Description
<i>block</i>	Sets a port to be blocked.
<i>learning</i>	Sets a port to be learning.
<i>shutdown</i>	Sets a port to be shutdown.

Default value

N/A

Command mode

Port configuration mode

Explanation

When a port detects loopback exists in its network, you can perform corresponding control actions to this port by setting control functions. The controlled states of a port include **block**, **nolearn**, **shutdown** and **trap**. When a controlled state is configured and loopback exists on a port, the trap message be transmitted. It is not configured by default.

After loopback detection is enabled globally, the port on which loopback detection is enabled transmits the loopback detection packets and receives the already transmitted loopback detection packets. Four control actions are conducted on the port:

**block** : This means to block the port. When loopback is found, this port will be isolated from other ports and the packets going into this port cannot be forwarded to other ports. This port is then in **protocol down** state and its MAC address table ages.

**nolearn**: This means forbidding this port to learn MAC addresses. Upon the discovery of loopback on a port, this port will not learn MAC addresses and at the same time age its MAC address table.

**shutdown**: It means to shut down the port. At the discovery of loopback, this port will not only transmit the trap message and age its MAC address but also shut down this port automatically to stop packet reception and transmission until the err-disable-recover time comes.

**trap**: It means that the port only reports alarms. When loopback is discovered, the port will only report alarms and age its MAC address table.

When a port is blocked, the packets entering into this port cannot be forwarded by this port and this port will go on transmitting loopback detection packets at the same time; when

loopback disappears, the port will recover itself automatically. Loopback disappearance takes place if the port has not received loopback detection packets within 10 seconds.

In block state the port protocol is down, while in shutdown state the port's link is down directly.

#### Example

```
Switch#config
Switch_config#interface g0/1
Switch_config_g0/1#loopback-detection control block
```

### 1.1.7 loopback-detection dest-mac

**[no] loopback-detection dest-mac *mac-addr***

To set the destination MAC address of loopback detection packets on a port, run the above-mentioned command.

#### Parameter

Parameter	Description
<i>mac-addr</i>	Stands for the destination MAC address of loopback detection packets.

#### Default value

The default destination MAC address is **01-80-C2-00-00-0a**.

#### Command mode

Port configuration mode

#### Explanation

N/A

#### Example

```
Switch_config#interface g0/1
Switch_config_g0/1#loopback-detection dest-mac 1111.1111.1111
```

### 1.1.8 loopback-detection existence

**[no] loopback-detection existence**

To set a standard to judge whether loopback exists on a port when this port is enabled or its link state is UP, run the above-mentioned command.

#### Parameter

N/A

#### Default value

Loopback is nonexistent by default.

#### Command mode

Port configuration mode

### Explanation

This command is mainly used to solve the problem that loopback exists on a port or not when this port is up and its loopback detection function takes effect. When the controlled action of this port is set to **shutdown**, it is improper to regard that loopback exists on this port for a shutdown port has already not forwarded packets.

### Example

N/A

## 1.1.9 show loopback-detection

### show loopback-detection

To display the configuration details of loopback detection, run the above-mentioned command.

### Parameter

N/A

### Default value

N/A

### Command mode

EXEC, global or interface configuration modes

### Explanation

This command is used to display the global or port's loopback detection configurations and port status.

### Example

```
Switch#show loopback-detection
Loopback-detection is enable
```

#### Interface state information

Port	Status	dest MacAddress	Control	VLAN
G0/1	UP	1234.5678.9abc	BLOCK	1-5
G0/2	UP	0180.c200.000a	WARNING	
G0/3	UP	0180.c200.000a	BLOCK	
G0/4	UP	0180.c200.000a	WARNING	
G0/5	UP	0180.c200.000a	WARNING	
G0/6	UP	0180.c200.000a	WARNING	1-8
G0/7	UP	0180.c200.000a	WARNING	
G0/8	UP	0180.c200.000a	WARNING	
G0/9	UP	0180.c200.000a	WARNING	
G0/10	UP	0180.c200.000a	WARNING	
G0/11	UP	0180.c200.000a	WARNING	
G0/12	UP	0180.c200.000a	WARNING	
G0/13	UP	0180.c200.000a	WARNING	



```
G0/14    UP  0180.c200.000a WARNING
G0/15    UP  0180.c200.000a WARNING
G0/16    UP  0180.c200.000a WARNING
```

### 1.1.10 show loopback-detection

#### **show loopback-detection** *intf-id*

To display the information about the loopback detection port, run the above-mentioned command.

#### Parameter

Parameter	Description
Interface <i>Intf-id</i>	Displays the designated port.

#### Default value

N/A

#### Command mode

EXEC, global or interface configuration modes

#### Explanation

This command is mainly used to display the status of the loopback detection port.

#### Example

```
Switch#show loopback-detection interface g0/1
Receive Packets :0
Transmit Packets: 20
Discard Packets:0
HelloTimeOut:10
RecoverTimeOut:26
```