Loopback Detection Configuration Commands
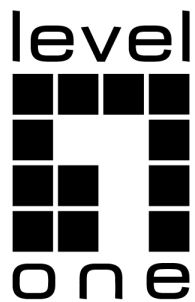
Table of Contents

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 recovery-time

- loopback-detection delay-time

- loopback-detection control

- loopback-detection dest-mac

- loopback-detection existence

- loopback-detection frames-threshold

- loopback-detection frames-monitor

- loopback-detection forbid-packet

- loopback-detection vlan-recovery

- show loopback-detection

- show loopback-detection interface

1.1.1 loopback-detection

Syntax

[no] loopback-detection

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

Parameter

None

Default

Loopback detection is globally disabled by default.

Command Mode

Global configuration mode

Usage Guidelines

None

Example

Switch#config
Switch(config)#
Switch(config)#loopback-detection

1.1.2 loopback-detection enable

Syntax

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

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

Parameter

None

Default

Loopback detection is disabled on a port by default.

Command Mode

Port configuration mode

Usage Guidelines

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 g0/0/1
Switch(config-g0/0/1)#loopback-detection enable

1.1.3 loopback-detection vlan-control

Syntax

[**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
vlan-list	Stands for a VLAN specified by a port. It ranges from 1 to 4094.

Default

None

Command Mode

Port configuration mode

Usage Guidelines

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 4094.

Example

Switch(config)#interface g0/0/1
Switch(config-g0/0/1)#loopback-detection vlan-control 1-5

1.1.4 loopback-detection hello-time

Syntax

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

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

Parameter

Parameter	Description
hello-time	Stands for the transmission period of loopback packets, whose unit is second. Range: 1 to 65535

Default

1 second

Command Mode

Port configuration mode

Usage Guidelines

None

Example

None

1.1.5 loopback-detection recovery-time

Syntax

[**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
recovery-time	Stands for the recovery time of a port after being controlled, whose unit is second. Range: 1 to 65535

Default

10 seconds

Command Mode

Port configuration mode

Usage Guidelines

None

Example

None

1.1.6 loopback-detection delay-time

Syntax

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

To configure the delay time for the port to execute the controlled action, run the above-mentioned command.

Parameter

Parameter	Description
delay-time	The recovery period of the port after the controlled configuration is performed, in seconds. Value range: 0 to 60.

Default

0s

Command Mode

Port configuration mode

Usage Guidelines

None

Example

None

1.1.7 loopback-detection control

Syntax

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

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

Parameter

Parameter	Description
block	Sets a port to be blocked.
learning	Sets a port to be learning.
shutdown	Sets a port to be shutdown.
isolate-vlan	Configures the controlled function of the port as isolate-vlan

Default

None

Command Mode

Port configuration mode

Usage Guidelines

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**, **trap** and **isolate-vlan**. When a controlled state is configured and loopback exists on a port, the trap message can 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. Five 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.

isolate-vlan: Disable the forwarding of isolated vlan packets. When a loop is detected, the port will isolate the vlan in the loop from the port, and will no longer forward the packets carrying the vlan tag.

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 g0/0/1
    Switch(config-g0/0/1)#loopback-detection control block

1.1.8 loopback-detection dest-mac

Syntax

    [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
mac-addr	Stands for the destination MAC address of loopback detection packets.

Default

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

Command Mode

    Port configuration mode

Usage Guidelines

    None

Example

    Switch(config)#interface g0/0/1
    Switch(config-g0/0/1)#loopback-detection dest-mac 00:11:11:11:11:11

1.1.9 loopback-detection existence

Syntax

    [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

    None

Default

    Loopback is nonexistent by default.

Command Mode

Port configuration mode

Usage Guidelines

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

None

1.1.10 loopback-detection frames-threshold

Syntax

[no] loopback-detection frames-threshold *frames-threshold*

To configure the upper limit of loop detection frames received per second, run the above-mentioned command

Parameter

Parameter	Description
frames-threshold	The upper limit of loop detection frames received per second (10-200).

Default

The default upper limit is 10.

Command mode

Port configuration mode

Usage Guidelines

None

Example

Switch(config)#interface g0/0/1
Switch(config-g0/0/1)#loopback-detection frames-threshold 20

1.1.11 loopback-detection frames-monitor

Syntax

[no] loopback-detection frames-monitor

To configure the port to enable or disable frames-monitor function, run the above-mentioned command.

Parameter

None

Default

The frames-monitor function is disabled by default.

Command mode

Port configuration mode

Usage Guidelines

None

Example

Switch#config
Switch(config)#interface g0/0/1
Switch(config-g0/0/1)#loopback-detection frames-monitor

1.1.12   loopback-detection forbid-packet

Syntax

[no] loopback-detection forbid-packet

To configure whether to enable the function of prohibiting forwarding of loop detection packets on the port, run the above-mentioned command.

Parameter

None

Default

Disabled

Command mode

Interface configuration modes

Usage Guidelines

None

Example

Switch#config
Switch(config)#interface g0/0/1
Switch(config-g0/0/1)#loopback-detection forbid-packet

1.1.13   loopback-detection vlan-recovery

Syntax

loopback-detection vlan-recovery

To configure port to recover vlan isolated due to loop, run the above-mentioned command.

Parameter

None

Default

Disabled by default

Command Mode

Interface configuration modes

Usage Guidelines

None

Example

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

Switch(config-g0/0/1)#loopback-detection vlan-recovery
```

1.1.14   show loopback-detection

Syntax

show loopback-detection

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

Parameter

None

Default

None

Command Mode

EXEC, global or interface configuration modes

Usage Guidelines

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

Example

```
Switch(config)#show loopback-detection
Loopback-detection is enable

Interface state information
Port      Status   dest MacAddress     Control    VLAN
-------- ------- ---------------   --------- -------------------------------
   g0/0/1 no-loop 0180.c200.000a          WARNING
```

```
g0/0/2 no-loop aabb.ccdd.eeaa        WARNING
g0/0/3 no-loop 0180.c200.000a        WARNING 1-4
g0/0/4 no-loop 0180.c200.000a        WARNING
g0/0/5 no-loop 0180.c200.000a        WARNING
g0/0/6 no-loop 0180.c200.000a        WARNING
g0/0/7 no-loop 0180.c200.000a        WARNING
g0/0/8 no-loop 0180.c200.000a        WARNING
```

1.1.15   show loopback-detection

Syntax

show loopback-detection *intf-id*

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

Parameter

Parameter	Description
Interface *Intf-id*	Displays the designated port.

Default

None

Command Mode

EXEC, global or interface configuration modes

Usage Guidelines

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

Example

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