



Managing Physical Interfaces

CHAPTERS

1. Physical Interface
2. Basic Parameters Configurations
3. Port Isolation Configurations
4. Loopback Detection Configuration
5. Configuration Examples
6. Appendix: Default Parameters



This guide applies to:

T1500G-10PS v2 or above, T1500G-8T v2 or above, T1500G-10MPS v2 or above, T1500-28PCT v3 or above, T1600G-52TS v3 or above, T1600G-52PS v3 or above, T1600G-28PS v3 or above, T1600G-28TS v3 or above, T1600G-18TS v2 or above, T2600G-52TS v3 or above, T2600G-28TS v3 or above, T2600G-28MPS v3 or above, T2600G-28SQ v1 or above.

1 Physical Interface

1.1 Overview

Interfaces are used to exchange data and interact with interfaces of other network devices. Interfaces are classified into physical interfaces and Layer 3 interfaces.

- Physical interfaces are the ports on the switch panel. They forward packets based on MAC address table.
- Layer 3 interfaces are used to forward IPv4 and IPv6 packets using static or dynamic routing protocols. You can use Layer 3 interfaces for IP routing and inter-VLAN routing.

This chapter introduces the configurations for physical interfaces.

1.2 Supported Features

The switch supports the following features about physical interfaces:

Basic Parameters

You can configure port status, speed mode, duplex mode, flow control and other basic parameters for ports.

Port Isolation

You can use this feature to restrict a specific port to send packets to only the ports in the forwarding port list that you configure.

Loopback Detection

This function allows the switch to detect loops in the network. When a loop is detected on a port or VLAN, the switch will display an alert on the management interface and block the corresponding port or VLAN according to your configurations.

2 Basic Parameters Configurations

2.1 Using the GUI

Choose the menu **L2 FEATURES > Switching > Port > Port Config** to load the following page.

Figure 2-1 Configuring Basic Parameters

Port Config

Jumbo:

1518

bytes (1518-9216)

Apply

UNIT1

LAGS

| <input type="checkbox"/> | Port | Type | Description | Status | Speed | Duplex | Flow Control | LAG |
|-------------------------------------|--------|--------|-------------|---------|-------|--------|--------------|-----|
| <input checked="" type="checkbox"/> | 1/0/1 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/2 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/3 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/4 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/5 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/6 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/7 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/8 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/9 | Copper | | Enabled | Auto | Auto | Disabled | -- |
| <input type="checkbox"/> | 1/0/10 | Copper | | Enabled | Auto | Auto | Disabled | -- |

Total: 281 entry selected.

CancelApply

Follow these steps to configure basic parameters for the ports:

- 1) Configure the MTU size of jumbo frames for all the ports, then click **Apply**.

Jumbo

Configure the size of jumbo frames. By default, it is 1518 bytes.

Generally, the MTU (Maximum Transmission Unit) size of a normal frame is 1518 bytes. If you want the switch supports to transmit frames of which the MTU size is greater than 1518 bytes, you can configure the MTU size manually here.

- 2) Select one or more ports to configure the basic parameters. Then click **Apply**.

UNIT/LAGS

Click the **UNIT** number to configure physical ports. Click **LAGS** to configure LAGs.

Type

Displays the port type. **Copper** indicates an Ethernet port, and **Fiber** indicates an SFP port.

Description

(Optional) Enter a description for the port.

| | |
|--------------|---|
| Status | With this option enabled, the port forwards packets normally. Otherwise, the port cannot work. By default, it is enabled. |
| Speed | Select the appropriate speed mode for the port. When Auto is selected, the port automatically negotiates speed mode with the neighbor device. The default setting is Auto . It is recommended to select Auto if both ends of the link support auto-negotiation. |
| Duplex | <p>Select the appropriate duplex mode for the port. There are three options: Half, Full and Auto. The default setting is Auto.</p> <p>Half: The port can send and receive packets, but only one-way at a time.</p> <p>Full: The port can send and receive packets simultaneously.</p> <p>Auto: The port automatically negotiates duplex mode with the peer device.</p> |
| Flow Control | With this option enabled, when a device gets overloaded it will send a PAUSE frame to notify the peer device to stop sending data for a specified period of time, thus avoiding the packet loss caused by congestion. By default, it is disabled. |

Note:

We recommend that you set the ports on both ends of a link as the same speed and duplex mode.

2.2 Using the CLI

Follow these steps to set basic parameters for the ports.

| | |
|--------|--|
| Step 1 | <p>configure</p> <p>Enter global configuration mode.</p> |
| Step 2 | <p>jumbo-size size</p> <p>Change the MTU (Maximum Transmission Unit) size to support jumbo frames. The default MTU size for frames received and sent on all ports is 1518 bytes. To transmit jumbo frames, you can manually configure MTU size of frames up to 9216 bytes.</p> <p>size: Configure the MTU size of jumbo frames. The value ranges from 1518 to 9216bytes.</p> |
| Step 3 | <p>interface { fastEthernet port range fastEthernet port-list gigabitEthernet port range gigabitEthernet port-list ten-gigabitEthernet port ten-range gigabitEthernet port-list port-channel port-channel range port-channel port-channel-list }</p> <p>Enter interface configuration mode.</p> |

| | |
|--------|---|
| Step 4 | <p>Configure basic parameters for the port:</p> <p>description <i>string</i></p> <p>Give a port description for identification.</p> <p><i>string</i>: Content of a port description, ranging from 1 to 16 characters.</p> <p>shutdown no shutdown</p> <p>Use shutdown to disable the port, and use no shutdown to enable the port. When the status is enabled, the port can forward packets normally, otherwise it will discard the received packets. By default, all ports are enabled.</p> <p>speed { 10 100 1000 10000 auto }</p> <p>Set the appropriate speed mode for the port.</p> <p>10 100 1000 10000 auto: Speed mode of the port. The options are subject to your actual product. The device connected to the port should be in the same speed and duplex mode with the port. When auto is selected, the speed mode will be determined by auto-negotiation.</p> <p>duplex { auto full half }</p> <p>Set the appropriate duplex mode for the port.</p> <p>auto full half: Duplex mode of the port. The device connected to the port should be in the same speed and duplex mode with the port. When auto is selected, the duplex mode will be determined by auto-negotiation.</p> <p>flow-control</p> <p>Enable the switch to synchronize the data transmission speed with the peer device, avoiding the packet loss caused by congestion. By default, it is disabled.</p> |
| Step 5 | <p>show interface configuration [fastEthernet <i>port</i> gigabitEthernet <i>port</i> ten-gigabitEthernet <i>port</i> port-channel <i>port-channel-id</i>]</p> <p>Verify the configuration of the port or LAG.</p> |
| Step 6 | <p>end</p> <p>Return to privileged EXEC mode.</p> |
| Step 7 | <p>copy running-config startup-config</p> <p>Save the settings in the configuration file.</p> |

The following example shows how to implement the basic configurations of port1/0/1, including setting a description for the port, configuring the jumbo frame, making the port automatically negotiate speed and duplex with the neighboring port, and enabling the flow-control:

Switch#configure

Switch#jumbo-size 9216

Switch(config)#interface gigabitEthernet 1/0/1

Switch(config-if)#no shutdown

Switch(config-if)#description router connection

Switch(config-if)#speed auto

Switch(config-if)#duplex auto

Switch(config-if)#flow-control

Switch(config-if)#show interface configuration gigabitEthernet 1/0/1

| Port | State | Speed | Duplex | FlowCtrl | Jumbo | Description |
|---------|--------|-------|--------|----------|---------|-------------------|
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Gi1/0/1 | Enable | Auto | Auto | Enable | Disable | router connection |

Switch(config-if)#show jumbo-size

Global jumbo size : 9216

Switch(config-if)#end

Switch#copy running-config startup-config

3 Port Isolation Configurations

3.1 Using the GUI


Port Isolation is used to limit the data transmitted by a port. The isolated port can only send packets to the ports specified in its forwarding Port list.

Choose the menu **L2 FEATURES > Switching > Port > Port Isolation** to load the following page.

Figure 3-1 Port Isolation List

Port Isolation Config

UNIT1

 Edit

| Port | LAG | Forwarding Port List |
|--------|-----|----------------------|
| 1/0/1 | -- | 1/0/1-28,LAG1-14 |
| 1/0/2 | -- | 1/0/1-28,LAG1-14 |
| 1/0/3 | -- | 1/0/1-28,LAG1-14 |
| 1/0/4 | -- | 1/0/1-28,LAG1-14 |
| 1/0/5 | -- | 1/0/1-28,LAG1-14 |
| 1/0/6 | -- | 1/0/1-28,LAG1-14 |
| 1/0/7 | -- | 1/0/1-28,LAG1-14 |
| 1/0/8 | -- | 1/0/1-28,LAG1-14 |
| 1/0/9 | -- | 1/0/1-28,LAG1-14 |
| 1/0/10 | -- | 1/0/1-28,LAG1-14 |

Total: 28


The above page displays the port isolation list. Click  Edit to configure Port Isolation on the following page.

Figure 3-2 Port Isolation

Port Isolation List

Port

☐ Select All

UNIT1

LAGS

2

4

6

8

10

12

14

16

18

20

22

24

26

28

1

3

5

7

9

11

13

15

17

19

21

23

25

27

Selected

Unselected

Not Available

Forwarding Port List

☐ Select All

UNIT1

LAGS

2

4

6

8

10

12

14

16

18

20

22

24

26

28

1

3

5

7

9

11

13

15

17

19

21

23

25

27

Selected

Unselected

Not Available

Cancel

Apply

Follow these steps to configure Port Isolation:

- 1) In the **Port** section, select one or multiple ports to be isolated.
- 2) In the **Forwarding Port List** section, select the forwarding ports or LAGs which the isolated ports can only communicate with. It is multi-optional.
- 3) Click **Apply**.

3.2 Using the CLI

Follow these steps to configure Port Isolation:

| | |
|--------|---|
| Step 1 | configure Enter global configuration mode. |
| Step 2 | interface { fastEthernet <i>port</i> range fastEthernet <i>port-list</i> gigabitEthernet <i>port</i> range gigabitEthernet <i>port-list</i> ten-gigabitEthernet <i>port</i> ten-range gigabitEthernet <i>port-list</i> port-channel <i>port-channel</i> / range port-channel <i>port-channel-list</i> } Specify the port to be isolated and enter interface configuration mode. |

| | |
|--------|---|
| Step 3 | port isolation { [fa-forward-list <i>fa-forward-list</i>] [gi-forward-list <i>gi-forward-list</i>] [te-forward-list <i>te-forward-list</i>] [po-forward-list <i>po-forward-list</i>] } Add ports or LAGs to the forwarding port list of the isolated port. It is multi-optional. <i>fa-forward-list</i> / <i>gi-forward-list</i> / <i>te-forward-list</i> : Specify the forwarding Ethernet ports. <i>po-forward-list</i> : Specify the forwarding LAGs. |
| Step 4 | show port isolation interface { fastEthernet <i>port</i> gigabitEthernet <i>port</i> ten-gigabitEthernet <i>port</i> port-channel <i>port-channel</i> } Verify the Port Isolation configuration of the specified port. |
| Step 5 | end Return to privileged EXEC mode. |
| Step 6 | copy running-config startup-config Save the settings in the configuration file. |

The following example shows how to add ports 1/0/1-3 and LAG 4 to the forwarding list of port 1/0/5:

Switch#configure

Switch(config)#interface gigabitEthernet 1/0/5

Switch(config-if)#port isolation gi-forward-list 1/0/1-3 po-forward-list 4

Switch(config-if)#show port isolation interface gigabitEthernet 1/0/5

| Port | LAG | Forward-List |
|---------|-----|---------------|
| ---- | --- | ----- |
| Gi1/0/5 | N/A | Gi1/0/1-3,Po4 |

Switch(config-if)#end

Switch#copy running-config startup-config

4 Loopback Detection Configuration

4.1 Using the GUI

To avoid broadcast storm, we recommend that you enable storm control before loopback detection is enabled. To get detailed introductions about storm control, refer to [Configuring QoS_T1500G&T1500G&T1600G](#) (for T1500G-10PS v2, T1500G-8T v2, T1500G-10MPS v2, T1500-28PCT v3, T1600G-18TS v2, T1600G-28TS v3, T1600G-28PS v3, T1600G-52TS v4, T1600G-52PS v4) series switches; refer to [Configuring QoS_T2600G&T1600G-52TS v3&T1600G_52PS v3](#) (for T1600G-52TS v3, T1600G-52PS v3, T2600G-28TS v3, T2600G-52ST v3, T2600G-28MPS v3, T2600G-28SQ v1).

Choose the menu **L2 FEATURES > Switching > Port > Loopback Detection** to load the following page.

Figure 4-1 Configuring Loopback Detection

Loopback Detection

Loopback Detection Status:

☐ Enable

Detection Interval:

seconds (1-1000)

Auto-recovery Time:

seconds (2-100,000)

Web Refresh Status:

☐ Enable

Web Refresh Interval:

seconds (3-100)

Apply

Port Config

UNIT1

LAGS

Recovery

| <input type="checkbox"/> | Port | Status | Operation Mode | Recovery Mode | Loop Status | Block Status | Block VLAN | LAG |
|-------------------------------------|--------|----------|----------------|---------------|-------------|--------------|------------|-----|
| <input checked="" type="checkbox"/> | 1/0/1 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/2 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/3 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/4 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/5 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/6 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/7 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/8 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/9 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/10 | Disabled | Alert | Auto | --- | --- | -- | --- |

Total: 281 entry selected.

CancelApply

Follow these steps to configure loopback detection:

- 1) In the **Loopback Detection** section, enable loopback detection and configure the global parameters. Then click **Apply**.

| | |
|---------------------------|---|
| Loopback Detection Status | Enable loopback detection globally. |
| Detection Interval | Set the interval of sending loopback detection packets in seconds. The valid value ranges from 1 to 1000 and the default value is 30. |
| Auto-recovery Time | Set the recovery time globally. The blocked port in Auto Recovery mode will automatically be recovered to normal status after the Auto-recovery Time expires. The value ranges from 2 to 100,000 in seconds, and the default value is 90. |
| Web Refresh Status | With this option enabled, the switch will refresh the web timely. By default, it is disabled. |
| Web Refresh Interval | If you enabled web refresh status, set the refresh interval in seconds between 3 and 100. The default value is 6. |

- 2) In the **Port Config** section, select one or more ports to configure the loopback detection parameters. Then click **Apply**.

| | |
|----------------|--|
| Status | Enable loopback detection for the port. |
| Operation Mode | Select the operation mode when a loopback is detected on the port: Alert: The Loop Status will display whether there is a loop detected on the corresponding port. It is the default setting. Port Based: In addition to displaying alerts, the switch will block the port on which the loop is detected. VLAN-Based: If a loop is detected in a VLAN on that port, in addition to displaying alerts, the switch will block that VLAN. The traffic of the other VLANs can still be normally forwarded by the port. |
| Recovery Mode | If you select Port Based or VLAN-Based as the operation mode, you also need to configure the recovery mode for the blocked port: Auto: The blocked port will automatically be recovered to normal status after the automatic recovery time expires. It is the default setting. Manual: You need to manually release the blocked port. Click Recovery to release the selected port. |

- 3) (Optional) View the loopback detection information.

| | |
|--------------|--|
| Loop Status | Displays whether a loop is detected on the port. |
| Block Status | Displays whether the port is blocked. |
| Block VLAN | Displays the blocked VLANs. |

4.2 Using the CLI

Follow these steps to configure loopback detection:

| | |
|--------|--|
| Step 1 | configure Enter global configuration mode. |
| Step 2 | loopback-detection Enable the loopback detection feature globally. By default, it is disabled. |
| Step 3 | loopback-detection interval <i>interval-time</i> Set the interval of sending loopback detection packets which is used to detect the loops in the network. <i>interval-time</i> : The interval of sending loopback detection packets. The valid values are from 1 to 1000 seconds. By default, the value is 30 seconds. |
| Step 4 | loopback-detection recovery-time <i>recovery-time</i> Set the auto-recovery time, after which the blocked port in Auto Recovery mode can automatically be recovered to normal status. <i>recovery-time</i> : Specify the detection interval, ranging from 2 to 100,000 seconds. The default value is 90. |
| Step 5 | interface { fastEthernet <i>port</i> range fastEthernet <i>port-list</i> gigabitEthernet <i>port</i> range gigabitEthernet <i>port-list</i> ten-gigabitEthernet <i>port</i> ten-range gigabitEthernet <i>port-list</i> port-channel <i>port-channel</i> range port-channel <i>port-channel-list</i> } Enter interface configuration mode. |
| Step 6 | loopback-detection Enable loopback detection for the port. By default, it is disabled. |
| Step 7 | loopback-detection config process-mode { alert port-based vlan-based } recovery-mode { auto manual } Set the process mode when a loopback is detected on the port. There are three modes: <i>alert</i> : The switch will only display alerts when a loopback is detected. It is the default setting. <i>port-based</i> : In addition to displaying alerts, the switch will block the port on which the loop is detected. <i>vlan-based</i> : In addition to displaying alerts, the switch will block the VLAN of the port in which the loop is detected. Set the recovery mode for the blocked port. There are two modes: <i>auto</i> : After the recovery time expires, the blocked port will automatically recover to normal status and restart to detect loops in the network. <i>manual</i> : The blocked port can only be released manually. You can use the command 'loopback-detection recover' to recover the blocked port to normal status. |
| Step 9 | show loopback-detection global Verify the global configuration of Loopback Detection. |

| | |
|---------|--|
| Step 10 | show loopback-detection interface { fastEthernet <i>port</i> gigabitEthernet <i>port</i> ten-gigabitEthernet <i>port</i> port-channel <i>port-channel</i> } Verify the Loopback Detection configuration of the specified port. |
| Step 11 | end Return to privileged EXEC mode. |
| Step 12 | copy running-config startup-config Save the settings in the configuration file. |

The following example shows how to enable loopback detection globally (keep the default parameters):

Switch#configure

Switch(config)#loopback-detection

Switch(config)#show loopback-detection global

Loopback detection global status : enable

Loopback detection interval : 30s

Loopback detection recovery time : 3 intervals

Switch(config-if)#end

Switch#copy running-config startup-config

The following example shows how to enable loopback detection of port 1/0/3 and set the process mode as alert and recovery mode as auto:

Switch#configure

Switch(config)#interface gigabitEthernet 1/0/3

Switch(config-if)#loopback-detection

Switch(config-if)#loopback-detection config process-mode alert recovery-mode auto

Switch(config-if)#show loopback-detection interface gigabitEthernet 1/0/3

| Port | Enable | Process Mode | Recovery Mode | Loopback | Block | LAG |
|---------|--------|--------------|---------------|----------|-------|------|
| ---- | ----- | ----- | ----- | ----- | ----- | ---- |
| Gi1/0/3 | enable | alert | auto | N/A | N/A | N/A |

Switch(config-if)#end

Switch#copy running-config startup-config

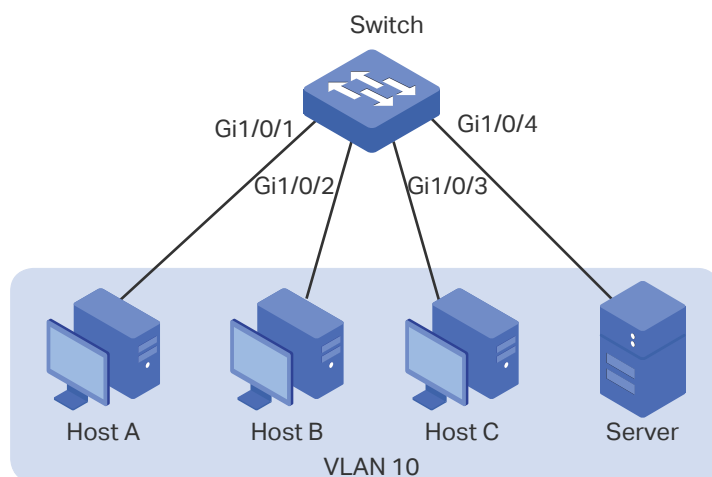
5 Configuration Examples

5.1 Example for Port Isolation

5.1.1 Network Requirements

As shown below, three hosts and a server are connected to the switch and all belong to VLAN 10. Without changing the VLAN configuration, Host A is not allowed to communicate with the other hosts except the server, even if the MAC address or IP address of Host A is changed.

Figure 5-1 Network Topology



5.1.2 Configuration Scheme

You can configure port isolation to implement the requirement. Set port 1/0/4 as the only forwarding port for port 1/0/1, thus forbidding Host A to forward packets to the other hosts.

Since communications are bidirectional, if you want Host A and the server to communicate normally, you also need to add port 1/0/1 as the forwarding port for port 1/0/4.

Demonstrated with T2600G-28TS, the following sections provide configuration procedure in two ways: using the GUI and using the CLI.

5.1.3 Using the GUI

- 1) Choose the menu **L2 FEATURES > Switching > Port > Port Isolation** to load the following page. It displays the port isolation list.

Figure 5-2 Port Isolation List

Port Isolation List

UNIT1

Edit

| Port | LAG | Forwarding Port List |
|--------|-----|----------------------|
| 1/0/1 | -- | 1/0/1-28,LAG1-14 |
| 1/0/2 | -- | 1/0/1-28,LAG1-14 |
| 1/0/3 | -- | 1/0/1-28,LAG1-14 |
| 1/0/4 | -- | 1/0/1-28,LAG1-14 |
| 1/0/5 | -- | 1/0/1-28,LAG1-14 |
| 1/0/6 | -- | 1/0/1-28,LAG1-14 |
| 1/0/7 | -- | 1/0/1-28,LAG1-14 |
| 1/0/8 | -- | 1/0/1-28,LAG1-14 |
| 1/0/9 | -- | 1/0/1-28,LAG1-14 |
| 1/0/10 | -- | 1/0/1-28,LAG1-14 |

Total: 28

- 2) Click **Edit** on the above page to load the following page. Select port 1/0/1 as the port to be isolated, and select port 1/0/4 as the forwarding port. Click **Apply**.

Figure 5-3 Port Isolation Configuration

Port Isolation List

Port

☐ Select All

UNIT1

LAGS

2

4

6

8

10

12

14

16

18

20

22

24

26

28

1

3

5

7

9

11

13

15

17

19

21

23

25

27

SelectedUnselectedNot Available

Forwarding Port List

☐ Select All

UNIT1

LAGS

2

4

6

8

10

12

14

16

18

20

22

24

26

28

1

3

5

7

9

11

13

15

17

19

21

23

25

27

SelectedUnselectedNot Available

Cancel

Apply

3) Select port 1/0/4 as the port to be isolated, and select port 1/0/1 as the forwarding port. Click **Apply**.

Figure 5-4 Port Isolation Configuration

Port Isolation List

Port

☐ Select All

UNIT1

LAGS

2

4

6

8

10

12

14

16

18

20

22

24

26

28

1

3

5

7

9

11

13

15

17

19

21

23

25

27

Selected

Unselected

Not Available

Forwarding Port List

☐ Select All

UNIT1

LAGS

2

4

6

8

10

12

14

16

18

20

22

24

26

28

1

3

5

7

9

11

13

15

17

19

21

23

25

27

Selected

Unselected

Not Available

Cancel

Apply

4) Click  Save to save the settings.

5.1.4 Using the CLI

```
Switch#configure
```

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

```
Switch(config-if)#port isolation gi-forward-list 1/0/4
```

```
Switch(config-if)#exit
```

```
Switch(config)#interface gigabitEthernet 1/0/4
```

```
Switch(config-if)#port isolation gi-forward-list 1/0/1
```

```
Switch(config-if)#end
```

```
Switch#copy running-config startup-config
```

Verify the Configuration

```
Switch#show port isolation interface
```

| Port | LAG | Forward-List |
|------|-----|--------------|
| ---- | --- | ----- |

| | | |
|---------|-----|-------------------|
| Gi1/0/1 | N/A | Gi1/0/4 |
| Gi1/0/2 | N/A | Gi1/0/1-28,Po1-14 |
| Gi1/0/3 | N/A | Gi1/0/1-28,Po1-14 |
| Gi1/0/4 | N/A | Gi1/0/1 |
| ... | | |

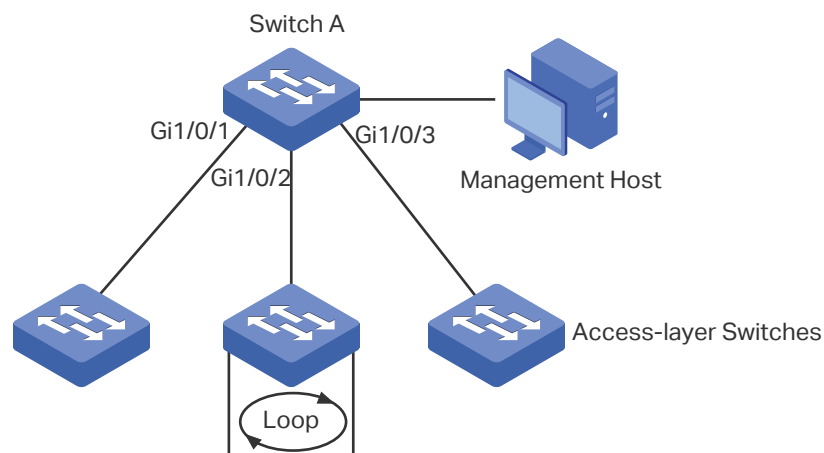
5.2 Example for Loopback Detection

5.2.1 Network Requirements

As shown below, Switch A is a convergence-layer switch connecting to several access-layer switches. Loops can be easily caused in case of misoperation on the access-layer switches. If there is a loop on an access-layer switch, broadcast storms will occur on Switch A or even in the entire network, creating excessive traffic and degrading the network performance.

To reduce the impacts of broadcast storms, users need to detect loops in the network via Switch A and timely block the port on which a loop is detected.

Figure 5-5 Network Topology



5.2.2 Configuration Scheme

Enable loopback detection on ports 1/0/1-3 and configure SNMP to receive the trap notifications. For detailed instructions about SNMP, refer to [Configuring SNMP & RMON](#). Here we introduce how to configure loopback detection and monitor the detection result on the management interface of the switch.

Demonstrated with T2600G-28TS, the following sections provide configuration procedure in two ways: using the GUI and using the CLI.

5.2.3 Using the GUI

- 1) Choose the menu **L2 FEATURES > Switching > Port > Loopback Detection** to load the configuration page.
- 2) In the **Loopback Detection** section, enable loopback detection and web refresh globally. Keep the other parameters as default values and click **Apply**.

Figure 5-6 Global Configuration

Loopback Detection

Loopback Detection Status: ☒ Enable

Detection Interval: seconds (1-1000)

Auto-recovery Time: seconds (2-100,000)

Web Refresh Status: ☒ Enable

Web Refresh Interval: seconds (3-100)

Apply

- 3) In the **Port Config** section, enable ports 1/0/1-3, select the operation mode as **Port -Based** so that the port will be blocked when a loop is detected, and keep the recovery mode as **Auto** so that the port will automatically be recovered to normal status after the auto-recovery time. Click **Apply**.

Figure 5-7 Port Configuration

Port Config

UNIT1 LAGS Recovery

| <input type="checkbox"/> | Port | Status | Operation Mode | Recovery Mode | Loop Status | Block Status | Block VLAN | LAG |
|-------------------------------------|--------|----------|----------------|---------------|-------------|--------------|------------|-----|
| <input checked="" type="checkbox"/> | 1/0/1 | Enabled | Port Based | Auto | --- | --- | -- | --- |
| <input checked="" type="checkbox"/> | 1/0/2 | Enabled | Port Based | Auto | --- | --- | -- | --- |
| <input checked="" type="checkbox"/> | 1/0/3 | Enabled | Port Based | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/4 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/5 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/6 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/7 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/8 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/9 | Disabled | Alert | Auto | --- | --- | -- | --- |
| <input type="checkbox"/> | 1/0/10 | Disabled | Alert | Auto | --- | --- | -- | --- |

Total: 28 3 entries selected. **Cancel** **Apply**

- 4) Monitor the detection result on the above page. The **Loop status** and **Block status** are displayed on the right side of ports.

5.2.4 Using the CLI

- 1) Enable loopback detection globally and configure the detection interval and recovery time.

```
Switch#configure
```

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

```
Switch(config)#loopback-detection interval 30
```

```
Switch(config)#loopback-detection recovery-time 3
```

- 2) Enable loopback detection on ports 1/0/1-3 and set the process mode and recovery mode.

```
Switch(config)#interface range gigabitEthernet 1/0/1-3
```

```
Switch(config-if-range)#loopback-detection
```

```
Switch(config-if-range)#loopback-detection config process-mode port-based  
recovery-mode auto
```

```
Switch(config-if-range)#end
```

```
Switch#copy running-config startup-config
```

Verify the Configuration

Verify the global configuration:

```
Switch#show loopback-detection global
```

```
Loopback detection global status : enable
```

```
Loopback detection interval: 30 s
```

```
Loopback detection recovery time : 90 s
```

Verify the loopback detection configuration on ports:

```
Switch#show loopback-detection interface
```

| Port | Enable | Process Mode | Recovery Mode | Loopback | Block | LAG |
|---------|--------|--------------|---------------|----------|-------|-------|
| ---- | ----- | ----- | ----- | ----- | ----- | ----- |
| Gi1/0/1 | enable | port-based | auto | N/A | N/A | N/A |
| Gi1/0/2 | enable | port-based | auto | N/A | N/A | N/A |
| Gi1/0/3 | enable | port-based | auto | N/A | N/A | N/A |

6 Appendix: Default Parameters

Default settings of ports are listed in the following tables.

Table 6-1 Default Parameters for Switching

| Parameter | Default Setting |
|---------------------------|--|
| Port Config | |
| Jumbo | 1518 bytes |
| Type | Copper (For RJ45 Ports) Fiber (For SFP Ports) |
| Status | Enabled |
| Speed | Auto (For RJ45 Ports) 1000M (For SFP Ports) |
| Duplex | Auto (For RJ45 Ports) Full (For SFP Ports) |
| Flow Control | Disabled |
| Loopback Detection | |
| Loopback Detection Status | Disabled |
| Detection Interval | 30 seconds |
| Auto-recovery Time | 90 seconds |
| Web Refresh Status | Disabled |
| Web Refresh Interval | 6 seconds |
| Port Status | Disable |
| Operation mode | Alert |
| Recovery mode | Auto |