TP-LINK®

CLI Reference Guide

TL-SG3210

JetStream L2 Lite Managed Switch

Rev: 1.0.0

1910010509

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Chapter 1 Using the CLI

1.1 Accessing the CLI

You can log on to the switch and access the CLI by the following two methods:

1. Log on to the switch by the console port on the switch.
2. Log on to the switch remotely by a Telnet or SSH connection through an Ethernet port.

1.1.1 Logon by a console port

To log on to the switch by the console port on the switch, please take the following steps:

1. Connect the PCs or Terminals to the console port on the switch by a provided cable.
2. Click **Start** →**All Programs** →**Accessories**→**Communications** →**Hyper Terminal** to open the Hyper Terminal as the figure 1-1 shown.

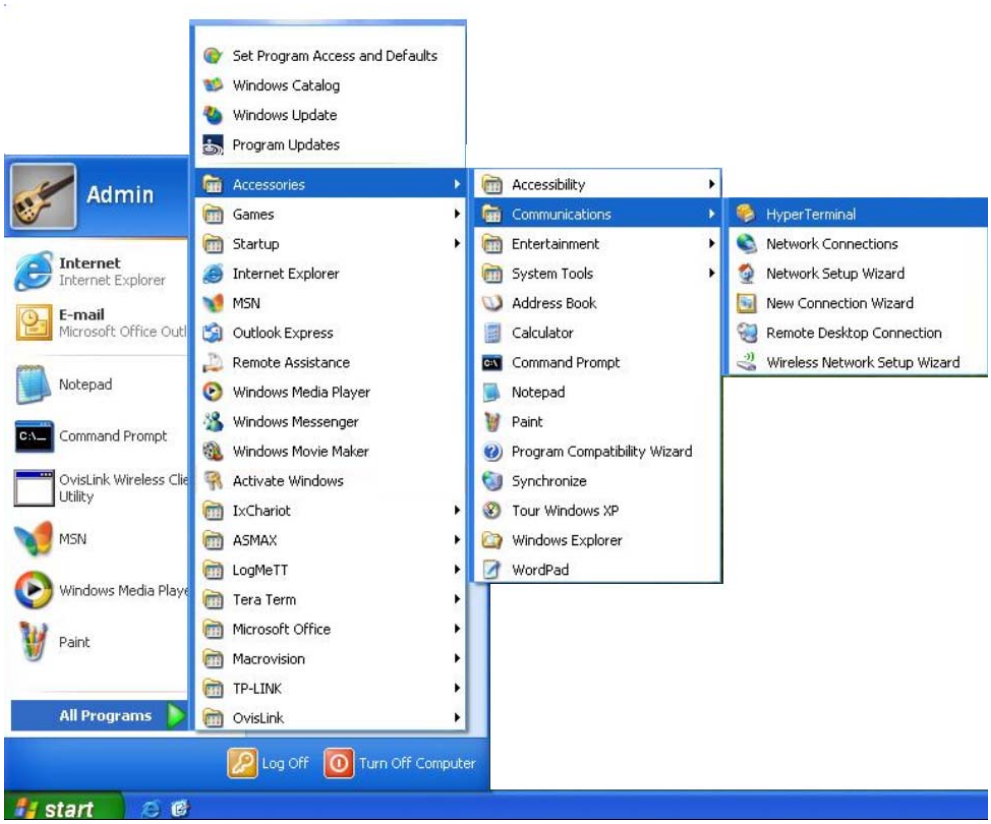


Figure 1-1 Open Hyper Terminal

3. The Connection Description Window will prompt as figure1-2. Enter a name into the Name field and click **OK**.

Figure 1-2 Connection Description

4. Select the port to connect in figure 1-3, and click **OK**.

Figure 1-3 Select the port to connect

5. Configure the port selected in the step above as the following figure1-4 shown. Configure **Bits per second** as 38400, **Data bits** as 8, **Parity** as None, **Stop bits** as 1, **Flow control** as None, and then click **OK**.

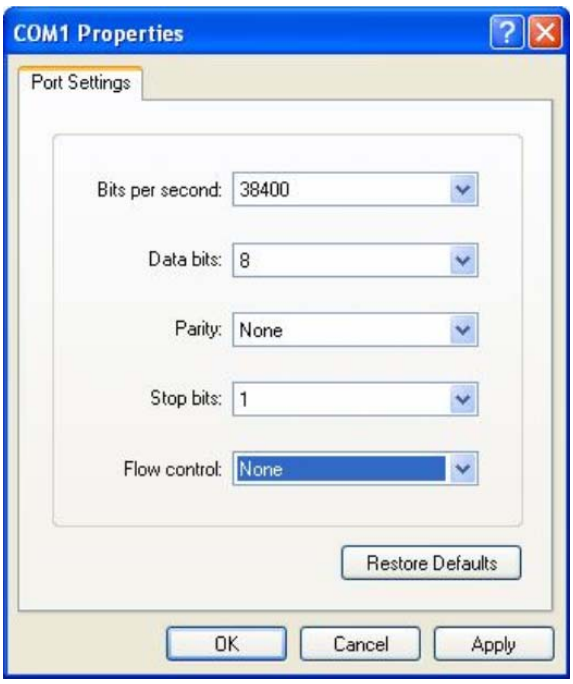


Figure 1-4 Port Settings

6. Type the User name and Password in the Hyper Terminal window, the factory default value for both of them is admin. The DOS prompt" TP-LINK>" will appear after pressing the **Enter** button as figure1-5 shown. It indicates that you can use the CLI now.

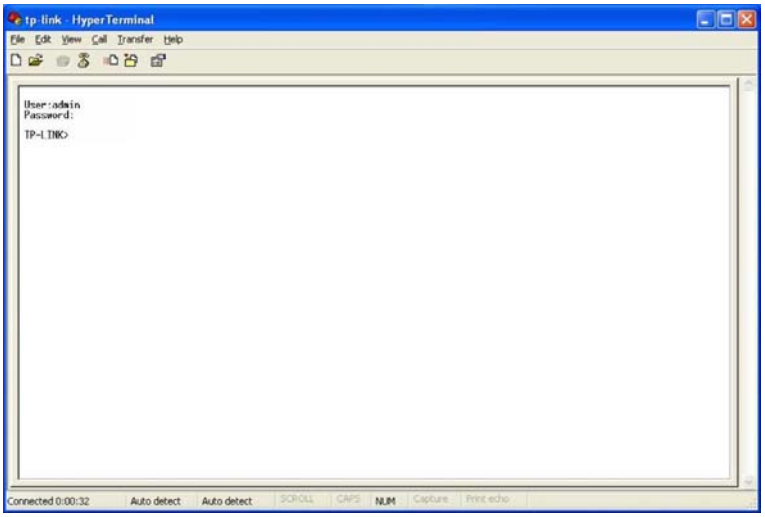


Figure 1-5 Log in the Switch

1.1.2 Logon by Telnet

To log on to the switch by a Telnet connection, please take the following steps:

1. Make sure the switch and the PC are in the same LAN.

2. Click **Start** → **Run** to open the **Run** window.

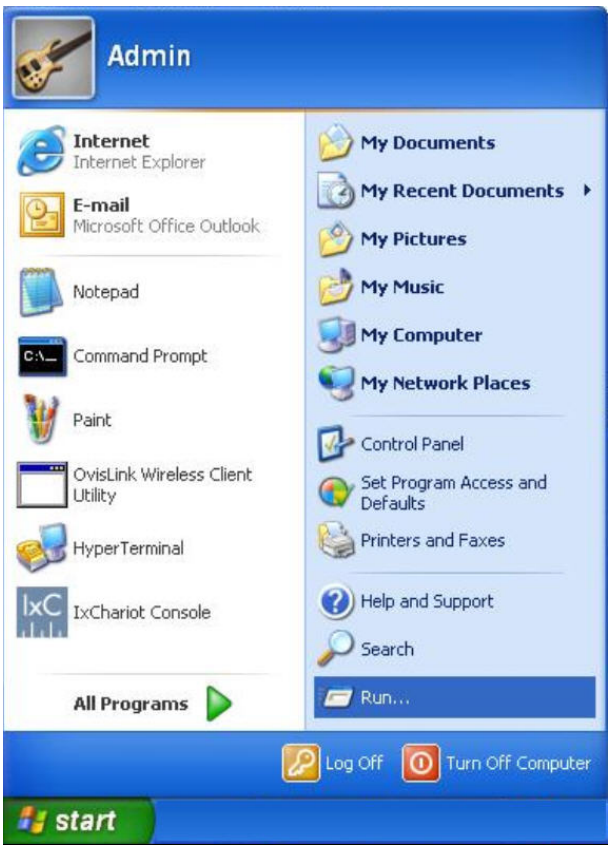


Figure 1-6 Open the Run window

3. Type cmd in the prompt Run window as figure 1-7 and click **OK**.

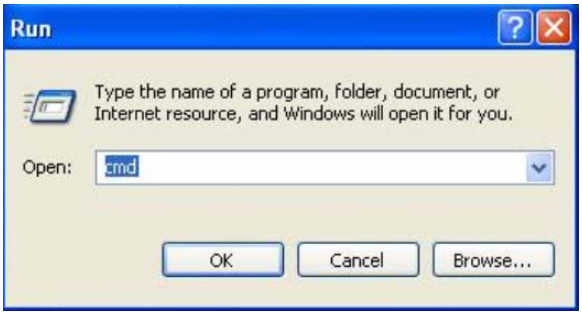


Figure 1-7 Run Window

4. Type telnet 192.168.0.1 in the **command prompt** shown as figure1-8, and press the **Enter** button.

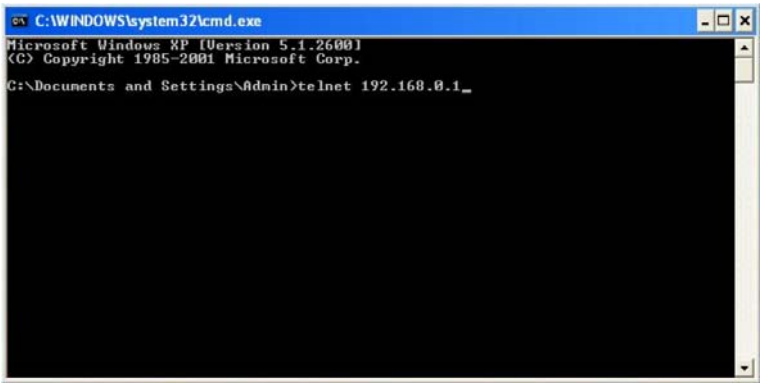


Figure 1-8 Connecting to the Switch

5. Type the User name and Password (the factory default value for both of them is admin) and press the **Enter** button, then you can use the CLI now, which is shown as figure1-9.

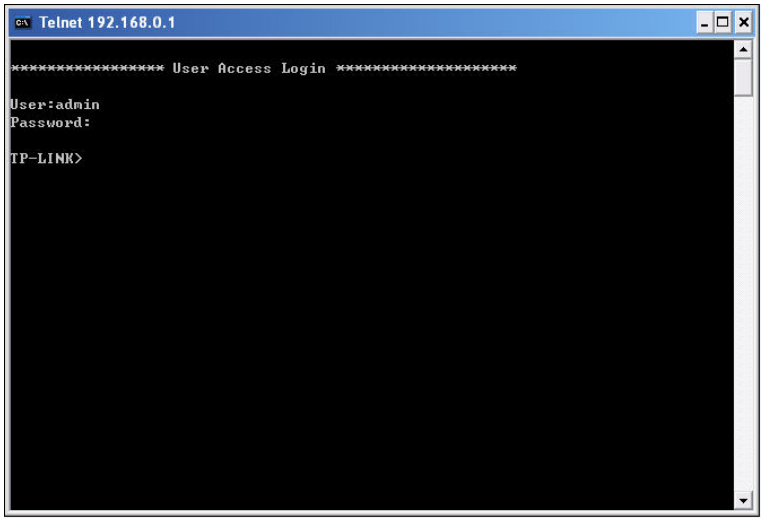
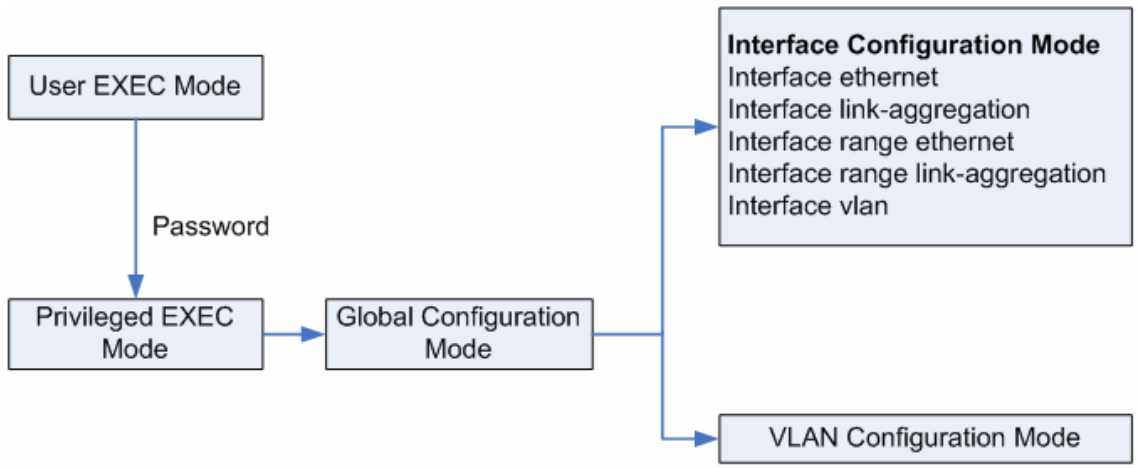


Figure 1-9 Log in the Switch

1.2 CLI Command Modes

The CLI is divided into different command modes: User EXEC Mode, Privileged EXEC Mode, Global Configuration Mode, Interface Configuration Mode and VLAN Database (VLAN Configuration Mode). Interface Configuration Mode can also be divided into Interface Ethernet, Interface link-aggregation and some other modes, which is shown as the following diagram.



The following table gives detailed information about the Accessing path, Prompt of each mode and how to exit the current mode and access the next mode.

Mode	Accessing Path	Prompt	Logout or Access the next mode

User EXEC Mode	Primary mode once it is connected with the switch.	**TP-LINK>**	Use the **exit** command to disconnect the switch (except that the switch is connected through the Console port). Use the **enable** command to access Privileged EXEC mode.
Privileged EXEC Mode	Use the **enable** command to enter this mode from User EXEC mode.	**TP-LINK#**	Use the **exit** command to disconnect the switch (except that the switch is connected through the Console port). Enter the **disable** command to return to User EXEC mode. Enter **configure** command to access Global Configuration mode.
Global Configuration Mode	Use the **configure** command to enter this mode from Privileged EXEC mode.	**TP-LINK(config)#**	Use the **exit** or the **end** command or press **Ctrl+Z** to return to Privileged EXEC mode. Use the **interface** *type number* command to access interface Configuration mode. Use the **vlan database** to access VLAN Configuration mode.
Interface Configuration Mode	Use the **interface** *type number* command to enter this mode from Global Configuration mode.	**TP-LINK(config-if)#**	Use the **end** command or press **Ctrl+Z** to return to Privileged EXEC mode. Enter **exit** command to return to Global Configuration mode. A port number must be specified in the **interface** command.
VLAN Configuration Mode	Use the **vlan database** command to enter this mode from Global Configuration mode.	**TP-LINK(config-vlan)#**	Use the **end** command or press **Ctrl+Z** to return to Privileged EXEC mode. Enter the **exit** command to return to Global configuration mode.

Note:

1. The user is automatically in User EXEC Mode after the connection between the PC and the switch is established by a console port or by a telnet connection.
2. Each command mode has its own set of specific commands. To configure some commands,

you should access the corresponding command mode firstly.

- **Global Configuration Mode**: In this mode, global commands are provided, such as the Spanning Tree, Schedule Mode and so on.
- **Interface Configuration Mode**: In this mode, users can configure one or several ports, different ports corresponds to different commands
  a). Interface Ethernet: Configure parameters for an Ethernet port, such as Duplex-mode, flow control status.
  b). Interface range Ethernet: The commands contained are the same as that of the Interface Ethernet. Configure parameters for several Ethernet ports.
  c). Interface link-aggregation: Configure parameters for a link-aggregation, such as broadcast storm.
  d). Interface range link-aggregation: Configure parameters for multi-trunks.
  e). Interface vlan: Configure parameters for the vlan-port.
- **Vlan Configuration Mode**: In this mode, users can create a VLAN and add a specified port to the VLAN.

3. Some commands are global, that means they can be performed in all modes:

- **show**: display all information of switch, for example: statistic information, port information, VLAN information.
- **history**: Display the commands history.

1.3 Security Levels

This switch's security is divided into two levels: User level and Admin level.

User level only allows users to do some simple operations in User EXEC Mode; Admin level allows you to monitor, configure and manage the switch in Privileged EXEC Mode, Global Configuration Mode, Interface Configuration Mode and VLAN Configuration Mode.

Users get the privilege to the User level once connecting console port with the switch or logging in by Telnet. However, Guest users are restricted to access the CLI..

Users can enter Privileged EXEC mode from User EXEC mode by using the **enable** command. In default case, no password is needed. In Global Configuration Mode, you can configure password for Admin level by **enable password** command. Once password is configured, you are required to enter it to access Privileged EXEC mode.

1.4 Conventions

1.4.1 Format Conventions

The following conventions are used in this Guide:

- Items in square brackets [ ] are optional
- Items in braces { } are required
- Alternative items are grouped in braces and separated by vertical bars. For example: **speed** {10 | 100 | 1000 }
- Bold indicates an unalterable keyword. For example: **show logging**
- Normal Font indicates a constant (several options are enumerated and only one can be selected). For example: **switchport type** { access | trunk | general }
- Italic Font indicates a variable (an actual value must be assigned). For example: **bridge aging-time** *aging-time*

1.4.2 Special Characters

You should pay attentions to the describtion below if the variable is a character string:

- These six characters ” < > , \ & can not be input.
- If a blank is contained in a character string, single or double quotation marks should be used, for example ’hello world’, ”hello world”, and the words in the quotation marks will be identified as a string. Otherwise, the words will be identified as several strings.

1.4.3 Parameter Format

Some parameters must be entered in special formats which are shown as follows:

- MAC Address must be enter in the format of xx:xx:xx:xx:xx:xx
- One or several values can be typed for a port-list or a vlan-list using comma to separate. Use a hyphen to designate a range of values, for instance, 1,3-5,7 indicates choosing 1,3,4,5,7.

Chapter 2 User Interface

enable

Description

The **enable** command is used to access Privileged EXEC Mode from User EXEC Mode.

Syntax

enable

Command Mode

User EXEC Mode

Example

If you have set the password to access Privileged EXEC Mode from User EXEC Mode:

```
TP-LINK>enable
Enter password：
TP-LINK#
```

enable password

Description

The **enable password** command is used to set the password for users to access Privileged EXEC Mode from User EXEC Mode. To return to the default configuration, please use **no enable password** command.

Syntax

enable password *password*

no enable password

Parameter

password —— super password，which contains 16 characters at most, composing digits, English letters and underdashes only. By default, it is empty.

Command Mode

Global Configuration Mode

Example

Set the super password as admin to access Privileged EXEC Mode from User EXEC Mode:

```
TP-LINK(config)# enable password admin
```

disable

Description

The **disable** command is used to return to User EXEC Mode from Privileged EXEC Mode.

Syntax

disable

Command Mode

Privileged EXEC Mode

Example

Return to User EXEC Mode from Privileged EXEC Mode:

```
TP-LINK# disable

TP-LINK>
```

configure

Description

The **configure** command is used to access Global Configuration Mode from Privileged EXEC Mode.

Syntax

configure

Command Mode

Privileged EXEC Mode

Example

Access Global Configuration Mode from Privileged EXEC Mode:

```
TP-LINK# configure

TP-LINK(config)#
```

exit

Description

The **exit** command is used to return to the previous Mode from the current Mode.

Syntax

exit

Command Mode

Any Configuration Mode

Example

Return to Global Configuration Mode from Interface Configuration Mode,and then return to Privileged EXEC Mode:

```
TP-LINK(config-if)# exit

TP-LINK(config)#exit

TP-LINK#
```

end

Description

The **end** command is used to return to Privileged EXEC Mode.

Syntax

end

Command Mode

Any Configuration Mode

Example

Return to Privileged EXEC Mode from Interface Configuration Mode:

```
TP-LINK(config-if)#end

TP-LINK#
```

Chapter 3 IEEE 802.1Q VLAN Commands

VLAN (Virtual Local Area Network) technology is developed for the switch to divide the LAN into multiple logical LANs flexibly. Hosts in the same VLAN can communicate with each other, regardless of their physical locations. VLAN can enhance performance by conserving bandwidth, and improve security by limiting traffic to specific domains.

vlan database

Description

The **vlan database** command is used to access VLAN Configuration Mode for creating, deleting 802.1Q VLAN and other operations.

Syntax

vlan database

Command Mode

Global Configuration Mode

Example

Access VLAN Configuration Mode:

```
TP-LINK(config)# vlan database

TP-LINK(config-vlan)#
```

vlan

Description

The **vlan** command is used to creat IEEE 802.1Q VLAN. To delete the IEEE 802.1Q VLAN, please use **no vlan** command.

Syntax

vlan *vlan-id*

no vlan *vlan-id*

Parameter

vlan-id ——VLAN ID, ranging from 2 to 4094.

Command Mode

VLAN Configuration Mode

Example

Create a VLAN, the vid of which is 12:

TP-LINK(config)# vlan database

TP-LINK(config-vlan)#vlan 12

interface vlan

Description

The **interface vlan** command is used to access VLAN Interface Mode to configure the specified VLAN.

Syntax

interface vlan *vlan-id*

Parameter

vlan-id ——VLAN ID,ranging from 1 to 4094.

Command Mode

Global Configuration Mode

Example

Configure the VLAN2:

TP-LINK(config)# interface vlan 2

description

Description

The **description** command is used to assign a description string to a VLAN. To clear the description, please use **no description** command.

Syntax

description *descript*

no descriotion

Parameter

descript ——String to describe the VLAN, which contains 16 characters at most.

Command Mode

Interface Configuration Mode（interface vlan）

Example

Specify the description string of the VLAN 2 as “vlan 2”:

TP-LINK(config)# interface vlan 2

TP-LINK(config-if)#description vlan2

switchport type

Description

The **switchport type** command is used to configure the Link Types for the ports.

Syntax

switchport type { access | trunk | general }

Parameter

access | trunk | general —— Link Types. There are three Link Types for the ports.

Command Mode

Interface Configuration Mode (interface ethernet / interface range ethernet)

Example

Specify the Link Type of port 5 as general:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)#switchport type general

switchport allowed vlan

Description

The **switchport allowed vlan** command is used to add the desired port to IEEE 802.1Q VLAN,or to remove a port from the correspounding VLAN.

Syntax

switchport allowed vlan add *vlan-list*

switchport allowed vlan remove *vlan-list*

Parameter

vlan-list —— VLAN ID list, it is multi-optional.

Command Mode

Interface Configuration Mode (interface ethernet / interface range ethernet)

Example

Add port 2 to IEEE 802.1Q VLAN:

TP-LINK(config)# interface ethernet 2

```
TP-LINK(config-if)# switchport allowed vlan add 2
```

switchport pvid

Description

The **switchport pvid** command is used to configure the PVID for the switch ports.

Syntax

switchport pvid vlan-id

Parameter

vlan-id —— VLAN ID, ranging from 1 to 4094.

Command Mode

Interface Configuration Mode (interface ethernet / interface range ethernet)

Example

Specify the PVID of port 2 as 2:

```
TP-LINK(config)# interface ethernet 2

TP-LINK(config-if)# switchport pvid 2
```

switchport general egress-rule

Description

The **switchport general egress-rule** command is used to configure the egress-rule of the general port.

Syntax

switchport general egress-rule [*vlan-id*]{ untagged | tagged }

Parameter

vlan-id —— VLAN ID, ranging from 1 to 4094. By default , display all the information of IEEE 802.1Q VLAN.

untagged | tagged ——egress-rule，untagged or tagged

Command Mode

Interface Configuration Mode (interface ethernet / interface range ethernet)

Example

Specify the egress-rule of port 2 in vlan 3as tagged:

```
TP-LINK(config)# interface ethernet 2
```

```
TP-LINK(config-if)# switchport general egress-rule 3 tagged
```

show vlan

Description

The **show vlan** command is used to display the information of IEEE 802.1Q VLAN .

Syntax

show vlan [*vlan-id*]

Parameter

vlan-id —— VLAN ID, ranging from 1 to 4094. By default , display all the information of IEEE 802.1Q VLAN.

Command Mode

Any Configuration Mode

Example

Display the information of vlan 5:

```
TP-LINK(config)# show vlan 5
```

show interface switchport

Description

The **show interface switchport** command is used to display the IEEE 802.1Q VLAN configuration information of the specified port.

Syntax

show interface switchport [*port-num*]

Parameter

port-num —— The port number. By default, display the VLAN configuration information of all ports.

Command Mode

Any Configuration Mode

Example

Display the VLAN configuration information of all ports:

```
TP-LINK(config)# show interface switchport
```

Chapter 4 MAC VLAN Commands

MAC VLAN (Virtual Local Area Network) is the way to classify the VLANs based on MAC Address. A MAC address is relative to a single VLAN ID. The untagged packets and the priority-tagged packets coming from the MAC address will be tagged with this VLAN ID.

mac-vlan add

Description

The **mac-vlan add** decommand is used to create a MAC-Based VLAN entry.

Syntax

mac-vlan add {*vlan-id*} {*mac-addr*} [*description*]

Parameter

vlan-id ——VLAN ID , ranging from 1 to 4094.

mac-addr —— MAC address.

description ——Give a description to the MAC address for identification.By default , it is empty.

Command Mode

Global Configuration Mode

Example

Create VLAN 2 named “RD”,and the MAC address is 00:00:00:00:00:01:

```
TP-LINK(config)# mac-vlan add 2 00:00:00:00:00:01 RD
```

mac-vlan remove

Description

The **mac-vlan remove** command is used to delete the subsistent MAC-Based VLAN entry.

Syntax

mac-vlan remove {*mac-addr*}

Parameter

mac-addr —— MAC address

Command Mode

Global Configuration Mode

Example

Delete the existing MAC-Based VLAN entry with the MAC address of 00:00:00:00:00:02:

```
TP-LINK(config)# mac-vlan remove 00:00:00:00:00:02
```

mac-vlan modify

Description

The **mac-vlan modify** command is used to modify the settings of the subsistent MAC VLAN entry.

Syntax

mac-vlan modify {*vlan-id*} {*mac-addr*} [*description*]

Parameter

vlan-id —— VLAN ID, ranging from 1 to 4094.

mac-addr —— MAC address

description ——Give a description to the MAC VLAN entry. You can not edit this entry if there is no desription .

Command Mode

Global Configuration Mode

Example

Modify the VLAN ID of the MAC VLAN entry with the MAC address of 00:00:00:00:00:02 as 12:

```
TP-LINK(config)# mac-vlan modify 12 00:00:00:00:00:02
```

show mac-vlan

Description

The **show mac-vlan** command is used to display the information of the MAC VLAN entry .

Syntax

show mac-vlan

Command Mode

Any Configuration Mode

Example

Display the information of the MAC VLAN entry:

```
TP-LINK(config)# show mac-vlan
```

Chapter 5 Protocol VLAN Commands

Protocol VLAN (Virtual Local Area Network) is the way to classify VLANs based on Protocols. A Protocol is relative to a single VLAN ID. The untagged packets and the priority-tagged packets matching the protocol template will be tagged with this VLAN ID.

protocol-vlan template

Description

The **protocol-vlan template** command is used to create or delete Protocol VLAN template.

Syntax

protocol-vlan template add {*protocol-name*} {*ether-type*} {*frame-type*}

protocol-vlan template remove *index*

Parameter

protocol-name —— Give a name for the Protocol Template , which contains 8 characters at most.

ether-type ——Enter the Ethernet protocol type field in the protocol template, composing 4 Hex integers.

index —— The number of the Protocol template.You can get the template corresponding to the number by the **show protocol-vlan template** command.

frame-type ——Frame Type for the Protocol Templete.

Command Mode

Global Configuration Mode

Example

Create a Protocol VLAN template named “arp” whose Frame-type is ethernet2, Ethernet protocol type is 0806. Delete the Protocol template whose number is 2:

TP-LINK(config)# protocol-vlan template add arp 0806 ethernet2

TP-LINK(config)# protocol-vlan template remove 2

protocol-vlan vlan

Description

The **protocol-vlan vlan** command is used to create a Protocol VLAN entry.To delete a Protocol VLAN entry ,please use **no protocol-vlan** command.

Syntax

protocol-vlan vlan *vid* **template** *index member-list*

no protocol-vlan *entry-id*

Parameter

vid ——VLAN ID，ranging from 1-4094.

index ——The number of the Protocol template.You can get the template corresponding to the number by the **show protocol-vlan template** command.

entry-id ——The number of the Protocol VLAN . You can get the Protocol VLAN entry corresponding to the number by the **show protocol-vlan vlan** command.

member-list —— The port numbers needed to be added in the vlan.

Command Mode

Global Configuration Mode

Example

Create a Protocol VLAN entry, whose index is 1 and vid is 2, and add port4、5、6、8 in the protocol vlan. Delete the Protocol VLAN entry whose number is 1:

TP-LINK(config)# protocol-vlan vlan 2 **template** 1 4-6,8

TP-LINK(config)# no protocol-vlan vlan 1

show protocol-vlan template

Description

The **show protocol-vlan template** command is used to display the information of the Protocol VLAN templates.

Syntax

show protocol-vlan template

Command Mode

Any Configuration Mode

Example

Display the information of the Protocol VLAN templates:

TP-LINK(config)# show protocol-vlan template

show protocol-vlan vlan

Description

The **show protocol-vlan vlan** command is used to display the information about Protocol VLAN entry.

Syntax

show protocol-vlan vlan

Command Mode

Any Configuration Mode

Example

Display information of the protocol-vlan entry:

```
TP-LINK(config)# show protocol-vlan vlan
```

Chapter 6 Voice VLAN Commands

Voice VLANs are configured specially for voice data stream. By configuring Voice VLANs and adding the ports with voice devices attached to voice VLANs, you can perform QoS-related configuration for voice data, ensuring the transmission priority of voice data stream and voice quality.

voice-vlan enable

Description

The **voice-vlan enable** command is used to enable Voice VLAN function. To disable Voice VLAN function, please use **no voice-vlan enable** command.

Syntax

voice-vlan enable *vlan-id*

no voice-vlan enable

Parameter

vlan-id —— VLAN ID, ranging from 2 to 4094.

Command Mode

Global Configuration Mode

Example

Enable the Voice VLAN function for VLAN 2:

TP-LINK(config)# voice-vlan enable 2

voice-vlan aging-time

Description

The **voice-vlan aging-time** command is used to set the aging time for a voice VLAN. To restore to the default aging time for the Voice VLAN, please use **no voice-vlan aging-time** command.

Syntax

voice-vlan aging-time *aging-time*

no voice-vlan aging-time

Parameter

aging-time ——Aging time (in minutes) to be set for the Voice VLAN. It ranges from 1 to 43200 and the default value is 1440.

Command Mode

Global Configuration Mode

Example

Set the aging time for the Voice VLAN as 2880 minutes:

```
TP-LINK(config)# voice-vlan aging-time 2880
```

voice-vlan priority

Description

The **voice-vlan priority** command is used to configure the priority for the VoiceVLAN. To restore to the default priority, please use **no voice-vlan priority** command.

Syntax

voice-vlan priority *priority*

no voice-vlan priority

Parameter

priority ——Priority,ranging from0 to 6, and the default value is 6.

Command Mode

Global Configuration Mode

Example

Configure the priority of the Voice VLAN as 3:

```
TP-LINK(config)# voice-vlan priority 3
```

voice-vlan oui

Description

The **voice-vlan oui** command is used to create or delete Voice VLAN OUI.

Syntax

voice-vlan oui add *mac-addr* **mask** *mask-addr* [*description*]

voice-vlan oui remove *mac-addr*

Parameter

mac-addr —— The OUI address of the voice device.

mask-addr —— The OUI address mask of the voice device.

description ——Give a description to the OUI for identification which contains 16 characters at most. By default, it is empty.

Command Mode

Global Configuration Mode

Example

Create a Voice VLAN OUI descripted as TP-LINK Phone with the MAC address 00:01:E3:00:00:01 and the mask address FF:FF:FF:00:00:00. Andthen delete the Voice VLAN OUI with the MAC address 00:00:00:11:00:01:

TP-LINK(config)# voice-vlan oui add 00:01:E3:00:00:01 **mask** FF:FF:FF:00:00:00 "TP-LINK Phone"

TP-LINK(config)# voice-vlan oui remove 00:00:00:11:00:01

switchport voice-vlan mode

Description

The **switchport voice-vlan mode** command is used to configure the Voice VLAN mode for the Ethernet port.

Syntax

switchport voice-vlan mode { manual | auto }

Parameter

manual / auto —— Port mode.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure Ethernet port 2 to operate in the manual voice VLAN mode:

TP-LINK(config)# interface ethernet 2

TP-LINK(config-if)# switchport voice-vlan mode manual

switchport voice-vlan security

Description

The **switchport voice-vlan security** command is used to configure the Voice VLAN security mode.

Syntax

switchport voice-vlan security {disable | enable}

Parameter

disable / enable —— disable/enable the security mode for the specified port .

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable Ethernet port 2 for the Voice VLAN security mode:

```
TP-LINK(config)# interface ethernet 2
TP-LINK(config-if)# switchport voice-vlan security enable
```

show voice-vlan global

Description

The **show voice-vlan global** command is used to display the global configuration information of Voice VLAN.

Syntax

show voice-vlan global

Command Mode

Any Configuration Mode

Example

Display the configuration information of Voice VLAN globally:

```
TP-LINK(config)# show voice-vlan global
```

show voice-vlan oui

Description

The **show voice-vlan oui** command is used to display the configuration information of Voice VLAN OUI.

Syntax

show voice-vlan oui

Command Mode

Any Configuration Mode

Example

Display the configuration information of Voice VLAN OUI:

```
TP-LINK(config)# show voice-vlan oui
```

show voice-vlan switchport

Description

The **show voice-vlan switchport** command is used to displays the configuration information of the port in the Voice VLAN.

Syntax

show voice-vlan switchport [*port*]

Parameter

port —— Ethernet port. By default, it will display the configuration information of all the ports in the Voice VLAN.

Command Mode

Any Configuration Mode

Example

Display the configuration information of all the ports in the Voice VLAN:

```
TP-LINK(config)# show voice-vlan switchport
```

Chapter 7 GVRP Commands

GVRP (GARP VLAN registration protocol) is an implementation of GARP (generic attribute registration protocol). GVRP allows the switch to automatically add or remove the VLANs via the dynamic VLAN registration information and propagate the local VLAN registration information to other switches, without having to individually configure each VLAN.

gvrp

Description

The **gvrp** command is used to enable the GVRP function globally. To disable the GVRP function, please use **no gvrp** command.

Syntax

gvrp

no gvrp

Command Mode

Global Configuration Mode

Example

Enable the GVRP function globally:

```
TP-LINK(config)# gvrp
```

gvrp (interface)

Description

The **gvrp**(interface) command is used to enable the GVRP function for the desired port.To disable the GVRP function of this port, please use **no gvrp** command. The GVRP feature can only be enabled for the trunk-type ports.

Syntax

gvrp

no gvrp

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the GVRP function for ports 2-6:

TP-LINK(config)# interface range ethernet 2-6

TP-LINK(config-if)# gvrp

gvrp registration

Description

The **gvrp registration** command is used to configure the GVRP registration type on the desired port. To restore to the default value, please use **no gvrp registration** command.

Syntax

gvrp registration { normal | fixed | forbidden }

no gvrp registration

Parameter

normal | fixed | forbidden —— Registration mode. By default, the registration mode is nomal.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the GVRP registration mode on the port 2-6 to fixed:

TP-LINK(config)# interface range ethernet 2-6

TP-LINK(config-if)# gvrp registration fixed

gvrp timer

Description

The **gvrp timer** command is used to set a GVRP timer for the desired port. To restore to the default setting of a GARP timer, please use **no gvrp timer** command.

Syntax

gvrp timer { leaveall | join | leave } {*value*}

no gvrp timer [leaveall | join | leave]

Parameter

leaveall | join | leave —— They are the three timers: leave All、join and leave. Once the LeaveAll Timer is set, the port with GVRP enabled can send a LeaveAll message after the timer times out, so that other GARP ports can re-register all the attribute information. After that, the LeaveAll timer will start to begin a new cycle. To guarantee the transmission of the Join messages, a GARP port sends each Join message two times. The Join Timer is used to define the interval between the two sending operations of each Join message. Once the Leave Timer is set, the GARP port receiving a Leave message will start its Leave timer, and unregister the attribute information if it does not receive a Join message again before the timer times out.

value ——The value of the timer. The LeaveAll Timer ranges from 1000 to 30000 centiseconds and the default value is 1000. The Join Timer ranges from 20 to 1000 centiseconds and the default value is 20. The Leave Timer ranges from 60 to 3000 centiseconds and the default value is 60.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Set the GARP leaveall timer of port 6 to 2000 centiseconds and restore to the join timer of it to the default value:

```
TP-LINK(config)# interface ethernet 6
TP-LINK(config-if)# gvrp timer leaveall 2000
TP-LINK(config-if)# no gvrp timer join
```

show gvrp global

Description

The **show gvrp global** command is used to to display the global GVRP status.

Syntax

show gvrp global

Command Mode

Any Configuration Mode

Example

Display the global GVRP status:

```
TP-LINK(config)# show gvrp global
```

show gvrp interface

Description

The **show gvrp interface** command is used to display the GVRP configuration information of the specified Ethernet ports.

Syntax

show gvrp interface [**ethernet** *port-num*]

Parameter

port-num ——The Ethernet port number. By default, the GVRP configuration information of all the Ethernet ports isdisplayed.

Command Mode

Any Configuration Mode

Example

Display the GVRP configuration information of all the Ethernet ports:

```
TP-LINK(config)# show gvrp interface
```

Chapter 8 LAG Commands

LAG (Link Aggregation Group) is to combine a number of ports together to make a single high-bandwidth data path, which can highly extend the bandwidth. The bandwidth of the LAG is the sum of bandwidth of its member port.

interface link-aggregation

Description

The **interface link-aggregation** command is used to access the Interface Link-aggregation Mode. To delete the aggregation group, please use **no interface link-aggregation** command.

Syntax

interface link-aggregation *group-number*

no Interface link-aggregation *group-number*

Parameter

group-number ——The LAG number, ranging from1 to 14.

Command Mode

Global Configuration Mode

Example

Access the Interface Link-aggregation Mode and configure the aggregation group 1:

```
TP-LINK(config)# interface link-aggregation 1
TP-LINK(config-if)#
```

interface range link-aggregation

Description

The **interface range link-aggregation** command is used to access the Interface range Link-aggregation Mode, and you can configure some aggregation groups at the same time. To delete the aggregation group, please use **no interface range link-aggregation** command.

Syntax

interface range link-aggregation *group-list*

no interface range link-aggregation *group-list*

Command Mode

Global Configuration Mode

Parameter

group-list ——The aggregation group list. You can configure some aggregation groups at the same time.

Example

Access the Interface range Link-aggregation Mode and configure the aggregation group 1,4-6:

TP-LINK(config)# interface range link-aggregation 1,4-6

TP-LINK(config-if)#

link-aggregation

Description

The **link-aggregation** command is used to add the current Ethernet port to a aggregation group. To remove the current Ethernet port from the aggregation group, please use **no link-aggregation** command.

Syntax

link-aggregation *group-num*

no link-aggregation

Parameter

group-num ——The LAG number, ranging from1 to 14.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Add the Ethernet port 2-4 to aggregation group 1:

TP-LINK(config)# interface range ethernet 2-4

TP-LINK(config-if)#link-aggregation 1

link-aggregation hash-algorithm

Description

The **link-aggregation hash-algorithm** command is used to configure the Aggregate Arithmetic for LAG.

Syntax

link-aggregation hash-algorithm {*src_dst_mac* | *src_dst_ip* }

Parameter

src_dst_mac —— The source and destination MAC addresses.

src_dst_ip ——The source and destination IP addresses.

Command Mode

Global Configuration Mode

Example

Configure the Aggregate Arithmetic for LAG as src_dst_mac:

TP-LINK(config)# link-aggregation hash-algorithm src_dst_mac

description

Description

The **description** command is used to set a description for an aggregation group.To remove the description of an aggregation group, please use **no description** command.

Syntax

description *description*

no description

Parameter

description——The description of LAG, which contains 16 characters at most.

Command Mode

Interface Configuration Mode（interface link-aggregation）

Example

Set the description "movie server" for aggregation group1:

TP-LINK(config)# interface link-aggregation 1

TP-LINK(config-if)# description movie server

show interfaces link-aggregation

Description

The **show interfaces link-aggregation** command is used to display the configuration information of the Aggregate Arithmetic and the aggregation groups.

Syntax

show interface link-aggregation [*group-num*]

Parameter

group-num ——The LAG number,ranging from1 to 14. By default, the GVRP configuration information of all the Ethernet ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the GVRP configuration information of all the Ethernet ports:

TP-LINK(config)#show interface link-aggregation

Chapter 9 LACP Commands

LACP (Link Aggregation Control Protocol) is defined in IEEE802.3ad and enables the dynamic link aggregation and disaggregation by exchanging LACP packets with its partner. The switch can dynamically group similarly configured ports into a single logical link, which will highly extend the bandwidth and flexibly balance the load.

lacp system-priority

Description

The **lacp system-priority** command is used to set global lacp system priority..

Syntax

Lacp system-priority *value*

Command Mode

Global Configuration Mode

Parameter

value —— system-priority, ranging from 0 to 65535. By default, the value is 32768.

Example

Set global lacp system priority 1024:

```
TP-LINK(config)# lacp system-priority 1024
```

lacp admin-key

Description

The **lacp admin-key** command is used to configure the admin key. To restore to the default value, please use **no lacp admin-key** command.

Syntax

lacp admin-key *value*

no lacp admin-key

Parameter

value —— admin key, ranging from 0 to 65535. By default, the value is 1.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the admin key of port 1 as 1024:

TP-LINK(config)# interface ethernet 1

TP-LINK(config-if)# lacp admin-key 1024

lacp port-priority

Description

The **lacp port-priority** command is used to set the port priority for a port. To restore to the default priority, please use **no lacp port-priority** command.

Syntax

lacp port-priority *value*

no lacp port-priority

Parameter

value —— System priority, ranging from 0 to 65535. By default, the value is 32768.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Set the system priority of port 1 to1024:

TP-LINK(config)# interface ethernet 1

TP-LINK(config-if)# lacp port-priority 1024

show lacp interface

Description

The **show lacp interface** command is used to display the port configuration information of LACP.

Syntax

show lacp interface [**ethernet** *port-num*]

Parameter

port-num —— The Ethernet port number. By default, display the configuration information of all the Ethernet ports.

Command Mode

Any Configuration Mode

Example

Display the configuration information of all the Ethernet ports:

```
TP-LINK(config)# show lacp interface
```

show lacp system-priority

Description

The **show lacp system-priority** command is used to display the global system priority value of LACP.

Syntax

show lacp system-priority

Command Mode

Any Configuration Mode

Example

Display the global system priority vlaue of LACP:

```
TP-LINK(config)# show lacp system-priority
```

Chapter 10 User Manage Commands

User Manage Commands are used to configure the user name and password for users to log on to the Web management page with a certain access level so as to protect the settings of the switch from being randomly changed.

user add

Description

The **user add** command is used to add a new user.

Syntax

user add *user-name* **password** *password* **confirm-password** *confirm-password* {guest | admin} {disable | enable}

Parameter

user-name ——Type a name for users' login, which contains 16 characters at most, composing digits, English letters and underdashes only.

password ——Type a password for users' login, which contains 16 characters at most, composing digits, English letters and underdashes only.

confirm-password ——Type the password again.

guest | admin —— Access level.

Guest： only can view the settings without the right to edit and modify.

Admin: can edit, modify and view all the settings of different functions.

disable | enable ——Enable/disable the user.

Command Mode

Global Configuration Mode

Example

Add and enable a new admin user named tplink, and of which the password is password:

```
TP-LINK(config)#user add tplink password password confirm-password password admin enable
```

user remove

Description

The user remove command is used to delete an existing user. The current user can't be deleted by itself.

Syntax

user remove *user-name*

Parameter

user-name —— An existing user name.

Command Mode

Global Configuration Mode

Example

Delete the user named tplink:

```
TP-LINK(config)# user remove tplink
```

user modify status

Description

The **user modify status** command is used to modify the status of the existing user. The current user can't be modified by itself.

Syntax

user modify status *user-name* {disable | enable}

Parameter

user-name —— The existing user name.

disable | enable ——Disable/enable the user.

Command Mode

Global Configuration Mode

Example

Change the status of tplink to enabled:

```
TP-LINK(config)# user modify status tplink enable
```

user modify type

Description

The **user modify type** command is used to modify the access level for the existing user. The current user can't be modified by itself.

Syntax

user modify type *user-name* {guest | admin}

Parameter

user-name —— The existing user name.

guest | admin —— Access level. Guest: limited user; admin: manager.

Command Mode

Global Configuration Mode

Example

Change the access level of tplink to admin:

```
TP-LINK(config)# user modify type tplink admin
```

user modify password

Description

The **user modify password** command is used to modify the password for the existing user.

Syntax

user modify password *user-name old-password new-password confirm-password*

Parameter

user-name —— The existing user name.

old-password —— The old password.

new-password —— The new password, which contains 16 characters at most, composing digits, English letters and underdashes only.

confirm-password —— Type the new password again.

Command Mode

Global Configuration Mode

Example

Modify the password of tplink as newpwd:

TP-LINK(config)# user modify password tplink password newpwd newpwd

user access-control disable

Description

The **user access-control disable** command is used to cancel the user access-control.

Syntax

user access-control disable

Command Mode

Global Configuration Mode

Example

Cancel the user access-control:

TP-LINK(config)# user access-control disable

user access-control ip-based

Description

The **user access-control ip-based** command is used to limit the IP-range of the users for login. Only the users within the IP-range you set here are allowed for login.

Syntax

user access-control ip-based *ip-addr ip-mask*

Parameter

ip-addr —— The source IP address.

ip-mask —— The IP mask address.

Command Mode

Global Configuration Mode

Example

Enable the access-control of the user whose Ip address is 192.168.0.148:

TP-LINK(config)# user access-control ip-based 192.168.0.148 255.255.255.0

user access-control mac-based

Description

The **user access-control mac-based** command is used to limit the MAC Address of the users for login. Only the user with this MAC Address you set here is allowed for login

Syntax

user access-control mac-based *mac-addr*

Parameter

mac-addr —— The source MAC address.

Command Mode

Global Configuration Mode

Example

Enable the access-control of the user whose MAC address is 00:00:13:0A:00:01:

TP-LINK(config)# user access-control mac-based 00:00:13:0A:00:01

user access-control port-based

Description

The **user access-control port-based** command is used to to limit the ports for login. Only the users connected to these ports you set here are allowed for login.

Syntax

user access-control port-based *port-list*

Parameter

port-list ——The Ethernet port numbers. You can appoint 5 ports at most.

Command Mode

Global Configuration Mode

Example

Enable the access-control of the ports 2, port4, port5, port6,and port8:

TP-LINK(config)# user access-control port-based 2,4-6,8

user max-number

Description

The **user max-number** command is used to configure the number of the users logging on at the same time. To cancel the limit to the numbers of the users loging in, please use **no user max-number** command.

Syntax

user max-number *admin-num* *guest-num*

no user max-number

Parameter

admin-num ——The maximum number of the users logging on as Admin, ranging from 1 to 16. The total number of Admin and Guest should be less than 16.

guest-num ——The maximum number of the users logging on as Guest, ranging from 1 to 16.The total number of Admin and Guest should be less than 16.

Command Mode

Global Configuration Mode

Example

Configure the number of the users as Amin and Guest logging on as 5 and 3:

TP-LINK(config)# user max-num 5 3

user idle-timeout

Description

The **user idle-timeout** command is used to configure the timeout time of the switch. To restore to the default timeout time, please use **no user idle-timeout** command.

Syntax

user idle-timeout *minutes*

no user idle-timeout

Parameter

minute ——The timeout time, ranging from 5 to 30 in minites. By default, the value is 10.

Command Mode

Global Configuration Mode

Example

Configure the timeout time of the switch as 15 minites:

```
TP-LINK(config)# user idle-timeout 15
```

show user account-list

Description

The **show user account-list** command is used to display the information of the current users.

Syntax

show user account-list

Command Mode

Any Configuration Mode

Example

Display the information of the current users:

```
TP-LINK(config)# show user account-list
```

show user configuration

Description

The **user configuration** command is used to display the security configuration information of the users, including access-control, max-number and the idle-timeout, etc.

Syntax

show user configuration

Command Mode

Any Configuration Mode

Example

Display the security configuration information of the users:

```
TP-LINK(config)# show user configuration
```

Chapter 11 Binding Table Commands

You can bind the IP address, MAC address, VLAN and the connected Port number of the Host together, which can be the condition for the ARP Inspection to filter the packets.

binding-table user-bind

Description

The **binding-table user-bind** command is used to bind the IP address, MAC address, VLAN ID and the Port number together manually. You can manually bind the IP address, MAC address, VLAN ID and the Port number together in the condition that you have got the related information of the Hosts in the LAN.

Syntax

binding-table user-bind *hostname ip-addr mac-addr* **vlan** *vid* **port** *port-num* {none | arp-detection}

Parameter

hostname ——The Host Name, which contains 20 characters at most.

ip-addr —— The IP Address of the Host.

mac-addr —— The MAC Address of the Host.

vid ——The VLAN ID neened to be bound, ranging from 1 to 4094.

port-num —— The number of port connected to the Host.

{none | arp-detection}——Disable or Enable ARP detection for the entry.

Command Mode

Global Configuration Mode

Example

Bind an ACL entry with the IP is 192.168.0.1, MAC is 00:00:00:00:00:01, VLAN ID is 2 and the Port number is 5 manually. Andthen enable the entry for the ARP detection.:

TP-LINK(config)# binding-table user-bind host1 192.168.0.1 00:00:00:00:00:01 **vlan** 2 **port** 5 arp-detection

binding-table remove

Description

The **binding-table remove** command is used to delete the IP-MAC –VID-PORT entry from the binding table.

Syntax

binding-table remove index *idx*

Parameter

idx —— The entry number needed to be deleted. You can use the **show binding-table** command to get the idx. Pay attention to that, the entry number is the actual number in the binding table not arranged in an order.

Command Mode

Global Configuration Mode

Example

Delete the IP-MAC –VID-PORT entry with the index 5:

TP-LINK(config)# binding-table remove index 5

dhcp-snooping

Description

The **dhcp-snooping** command is used to enable the DHCP-snooping function for the switch. To disable the DHCP-snooping function, please use **no dhcp-snooping** command. DHCP Snooping functions to monitor the process of the Host obtaining the IP address from DHCP server, and record the IP address, MAC address, VLAN and the connected Port number of the Host for automatic binding.

Syntax

dhcp-snooping

no dhcp-snooping

Command Mode

Global Configuration Mode

Example

Enable the DHCP-snooping function globally:

TP-LINK(config)# dhcp-snooping

dhcp-snooping global

Description

The **dhcp-snooping global** command is used to configure the DHCP snooping globally. To restore to the default value, please use **no dhcp-snooping global** command.

Syntax

dhcp-snooping global [global-rate{*global-rate*}] [dec-threshold{*dec-threshold*}] [dec-rate{*dec-rate*}]

no dhcp-snooping global

Parameter

global-rate —— The value to specify the maximum amount of DHCP messages that can be forwarded by the switch per second. The excessive massages will be discarded. The options are 0/10/20/30/40/50 (packet/second).By default, it is 0 standing for disable.

dec-threshold ——The value to specify the minimum transmission rate of the Decline packets to trigger the Decline protection for the specific port.The options are 0/5/10/15/20/25/30 (packet/second).By default, it is 0 standing for disable.

Dec-rate ——The value to specify the Decline Flow Control. The traffic flow of the corresponding port will be limited to be this value if the transmission rate of the Decline packets exceeds the Decline Threshold. The options are 5/10/15/20/25/30 (packet/second). By default, it is 5.

Command Mode

Global Configuration Mode

Example

Configure the Global Flow Control as 30pps, the Decline Threshold as 20 pps, Decline Flow Control as 20 pps for DHCP Snooping

TP-LINK(config)# dhcp-snooping global global-rate 30 dec-threshold 20 dec-rate 20

dhcp-snooping information enable

Description

The **dhcp-snooping information enable** command is used to enable the Option 82 function of DHCP Snooping. To disable the Option 82 function, please use **no dhcp-snooping information enable** command.

Syntax

dhcp-snooping information enable

no dhcp-snooping information enable

Command Mode

Global Configuration Mode

Example

Enable the Option 82 function of DHCP Snooping:

```
TP-LINK(config)# dhcp-snooping information enable
```

dhcp-snooping information strategy

Description

The **dhcp-snooping information strategy** command is used to select the operation for the Option 82 filed of the DHCP request packets from the Host. To restore to the default option, please use **no dhcp-snooping information strategy** command.

Syntax

dhcp-snooping information strategy {keep | replace | drop}

no dhcp-snooping information strategy

Parameter

keep ——Indicates to keep the Option 82 field of the packets. It is the default option.

replace ——Indicates to replace the Option 82 field of the packets with the switch defined one.

drop ——Indicates to discard the packets including the Option 82 field

Command Mode

Global Configuration Mode

Example

Replace the Option 82 field of the packets with the switch defined one and then send out:

TP-LINK(config)# dhcp-snooping information strategy replace

dhcp-snooping information user-defined

Description

The **dhcp-snooping information user-defined** command is used to permit users to define the Option 82. To disable the function, please use **no dhcp-snooping information user-defined** command.

Syntax

dhcp-snooping information user-defined

no dhcp-snooping information user-defined

Command Mode

Global Configuration Mode

Example

Permit users to define the Option 82:

TP-LINK(config)# dhcp-snooping information user-defined

dhcp-snooping information remote-id

Description

The **dhcp-snooping information remote-id** command is used to configure the sub-option Remote ID for the customized Option 82.

Syntax

dhcp-snooping information remote-id *string*

Parameter

string ——Enter the sub-option Remote ID, which contains 32 characters at most.

Command Mode

Global Configuration Mode

Example

Configure the sub-option Remote ID for the customized Option 82 as tplink:

TP-LINK(config)# dhcp-snooping information remote-id tplink

dhcp-snooping information circuit-id

Description

The **dhcp-snooping information circuit-id** command is used to configure the sub-option Circuit ID for the customized Option 82.

Syntax

dhcp-snooping information circuit-id *string*

Parameter

string ——Enter the sub-option Circuit ID, which contains 32 characters at most.

Command Mode

Global Configuration Mode

Example

Configure the sub-option Circuit ID for the customized Option 82 as tplink:

TP-LINK(config)# dhcp-snooping information circuit-id tplink

dhcp-snooping trusted

Description

The **dhcp-snooping trusted** command is used to configure a port to be a Trusted Port. Only the Trusted Port can receive the DHCP packets from DHCP servers.To turn the port back to a distrusted port, please use **no dhcp-snooping trusted** command.

Syntax

dhcp-snooping trusted

no dhcp-snooping trusted

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the port 2 to be a Trusted Port:

TP-LINK(config)# interface ethernet 2

TP-LINK(config-if)# dhcp-snooping trusted

dhcp-snooping mac-verify

Description

The **dhcp-snooping mac-verify** command is used to enable the MAC Verify feature. To disable the MAC Verify feature, please use **no dhcp-snooping mac-verify** command. There are two fields of the DHCP packet containing the MAC address of the Host. The MAC Verify feature is to compare the two fields and discard the packet if the two fields are different.

Syntax

dhcp-snooping mac-verify

no dhcp-snooping mac-verify

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the MAC Verify feature for the port 2:

TP-LINK(config)# interface ethernet 2

TP-LINK(config-if)# dhcp-snooping mac-verify

dhcp-snooping rate-limit

Description

The **dhcp-snooping rate-limit** command is used to enable the Flow Control feature for the DHCP packets. The excessive DHCP packets will be discarded. To restore to the default configuration, please use **no dhcp-snooping rate-limit** command.

Syntax

dhcp-snooping rate-limit *value*

no dhcp-snooping rate-limit

Parameter

value ——The value of Flow Control. The options are 0/5/10/15/20/25/30 (packet/second). The default value is 0, which stands for disable.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Set the Flow Control of port 2 as 20 pps:

```
TP-LINK(config)# interface ethernet 2
TP-LINK(config-if)# dhcp-snooping rate-limit 20
```

dhcp-snooping decline

Description

The **dhcp-snooping decline** command is used to enable the Decline Protect feature. To disable the Decline Protect feature, please use **no dhcp-snooping decline** command.

Syntax

dhcp-snooping decline

no dhcp-snooping decline

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the Decline Protect feature of port 2:

```
TP-LINK(config)# interface ethernet  2
TP-LINK(config-if)# dhcp-snooping decline
```

show binding-table

Description

The **show binding-table** command is used to display the IP-MAC-VID-PORT binding table.

Syntax

show binding-table

Command Mode

Any Configuration Mode

Example

Display the IP-MAC-VID-PORT binding table:

```
TP-LINK(config)# show binding-table
```

show dhcp-snooping global

Description

The **show dhcp-snooping global** command is used to display the global configuration of DHCP Snooping.

Syntax

show dhcp-snooping global

Command Mode

Any Configuration Mode

Example

Display the configuration of DHCP Snooping globally:

```
TP-LINK(config)# show dhcp-snooping global
```

show dhcp-snooping information

Description

The **show dhcp-snooping information** command is used to display the Option 82 configuration of DHCP Snooping.

Syntax

show dhcp snooping information

Command Mode

Any Configuration Mode

Example

Display the Option 82 configuration of DHCP Snooping:

```
TP-LINK(config)# show dhcp-snooping information
```

show dhcp-snooping interface

Description

The **show dhcp-snooping interface** command is used to display the interface configuration of DHCP Snooping.

Syntax

show dhcp snooping interface [**ethernet** *port-num*]

Parameter

port-num ——The number of the switch port. By default, it will display the configuration of all the ports.

Command Mode

Any Configuration Mode

Example

Display the interface configuration of all the ports:

```
TP-LINK(config)# show dhcp-snooping interface
```

Chapter 12 ARP Inspection Commands

ARP (Address Resolution Protocol) Detect function is to protect the switch from the ARP cheating, such as the Network Gateway Spoofing and Man-In-The-Middle Attack, etc.

arp detection (global)

Description

The **arp detection** (global) command is used to enable the ARP Detection function globally. To disable the ARP Detection function, please use **no arp detection** command.

Syntax

arp detection

no arp detection

Command Mode

Global Configuration Mode

Example

Enable the ARP Detection function globally:

```
TP-LINK(config)# arp detection
```

arp detection trust-port

Description

The **arp detection trust-port** command is used to configure the port for which the ARP Detect function is unnecessary as the Trusted Port. To clear the Trusted Port list, please use **no arp detection trust-port** command .The specific ports, such as up-linked port, routing port and LAG port, should be set as Trusted Port. To ensure the normal communication of the switch, please configure the ARP Trusted Port before enabling the ARP Detect function.

Syntax

arp detection trust-port *port-list*

no arp detection trust-port

Parameter

port-list ——The specified Trusted Port list.

Command Mode

Global Configuration Mode

Example

Configure the ports 2-4,5-8 as the Trusted Port:

TP-LINK(config)# arp detection trust-port 2-4,5-8

arp detection (interface)

Description

The **arp detection** (interface) command is used to enable the ARP Defend function. To disable the **arp detection** function, please use no arp detection command. ARP Attack flood produces lots of ARP Packets, which will occupy the bandwidth and slow the network speed extremely. With the ARP Defend enabled, the switch can terminate receiving the ARP packets for 300 seconds when the transmission speed of the legal ARP packet on the port exceeds the defined value so as to avoid ARP Attack flood.

Syntax

arp detection

no arp detection

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the arp defend function for the ports 2-6:

TP-LINK(config)# interface range ethernet 2-6

TP-LINK(config-if)# arp detection

arp detection limit-rate

Description

The **arp detection limit-rate** command is used to configure the speed. The switch can terminate receiving the ARP packets for 300 seconds when the transmission speed of the legal ARP packet on the port exceeds the defined

value. To restore to the default speed, please use **no arp detection limit-rate** command.

Syntax

arp detection limit-rate *value*

no arp detection limit-rate

Parameter

value ——The value to specify the maximum amount of the received ARP packets per second, ranging from 10 to 100 in pps(packet/second). By default ,the value is 15.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the maximum amount of the received ARP packets per second as 50 pps for the port 5:

```
TP-LINK(config)# interface ethernet  5
TP-LINK(config-if)# arp detection limit-rate 50
```

arp detection recover

Description

The **arp detection recover** command is used to restore to the port to the ARP transmit status from the ARP filter status.

Syntax

arp detection recover

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Restore the port 5 to the ARP transmit status:

```
TP-LINK(config)# interface ethernet  5
TP-LINK(config-if)# arp detection recover
```

show arp detection global

Description

The **show arp detection global** command is used to display the ARP detection global configuration including the enable/disable status and the Trusted Port list.

Syntax

show arp detection global

Command Mode

Any Confiuration Mode

Example

Display the ARP detection configuration globally:

```
TP-LINK(config)# show arp detection global
```

show arp detection interface

Description

The **show arp detection interface** command is used to display the interface configuration of ARP detedtion.

Syntax

show arp detection interface [**ethernet** *port-num*]

Parameter

port-num ——The number of switch port. By default, display the configuration of all the ports.

Command Mode

Any Configuration Mode

Example

Display the configuration of all the ports:

```
TP-LINK(config)# show arp detection interface
```

show arp detection statistic

Description

The **show arp detection statistic** command is used to display the number of the illegal ARP packets received.

Syntax

show arp detection statistic

Command Mode

Any Configuration Mode

Example

Display the number of the illegal ARP packets received:

```
TP-LINK(config)# show arp detection statistic
```

show arp detection statistic reset

Description

The **show arp detection statistic reset** command is used to clear the statistic fo the the illegal ARP packets received.

Syntax

show arp detection statistic reset

Command Mode

Global Configuration Mode

Example

Clear the statistic of the the illegal ARP packets received:

```
TP-LINK(config)# show arp detection statistic reset
```

Chapter 13 DoS Defend Command

DoS (Denial of Service) Attack is to occupy the network bandwidth maliciously by the network attackers or the evil programs sending a lot of service requests to the Host. With the DoS Defend enabled, the switch can analyze the specific field of the received packets and provide the defend measures to ensure the normal working of the local network.

dos-prevent

Description

The **dos-prevent** command is used to enable the DoS defend function globally.To disable the DoS defend function, please use **no dos-prevent** command.

Syntax

dos-prevent

no dos-prevent

Command Mode

Globlal Configuration Mode

Example

Enable the DoS defend function globally:

```
TP-LINK(config)# dos-prevent
```

dos-prevent type

Description

The **dos-prevent type** command is used to select the DoS Defend Type. To disable the corresponding Defend Type, please use **no dos-prevent** type command.

Syntax

dos-prevent type [land] [scan-synfin] [xma-scan] [null-scan] [port-less-1024] [blat] [ping-flood] [syn-flood]

no dos-prevent type [land] [scan-synfin] [xma-scan] [null-scan] [port-less-1024] [blat] [ping-flood] [syn-flood]

Parameter

land —— Land attack.

scan-synfin —— Scan SYNFIN attack.

xma-scan —— Xma Scan attack.

null-scan —— NULL Scan attack.

port-less-than-1024 ——The SYN packets whose Source Port less than 1024.

blat —— Blat attack.

ping-flood —— Ping flooding attack, If Ping-flood attack is enabled, the switch will automatically limit the tansmission rate of ping packets to 512K upon being attacked.

syn-flood —— SYN/SYN-ACK flooding attack. If SYN/SYN-ACK flooding attack is enabled, the switch will automatically limit the tansmission rate of SYN/SYN-ACK packets to 512K upon being attacked..

Command Mode

Global Configuration Mode

Example

Enable three DoS Defend Types named Land attack, Xma Scan attack and Ping flooding attack:

```
TP-LINK(config)# dos-prevent type land xma-scan ping-flood
```

show dos-prevent

Description

The **show dos-prevent** command is used to display the DoS information of the detected DoS attack, including enable/disable status, the DoS Defend Type,etc.

Syntax

show dos-prevent

Command Mode

Any Configuration Mode

Example

Display the DoS information of the detected DoS attack globally:

```
TP-LINK(config)# show dos-prevent
```

Chapter 14 IEEE 802.1X Commands

IEEE 802.1X function is to provide an access control for LAN ports via the authentication. Only the supplicant passing the authentication can access the LAN.

dot1x

Description

The **dot1x** command is used to enable the IEEE 802.1X function globally. To disable the IEEE 802.1X function, please use **no dot1x** command.

Syntax

dot1x

no dot1x

Command Mode

Global Configuration Mode

Example

Enable the IEEE 802.1X function:

```
TP-LINK(config)# dot1x
```

dot1x authentication-method

Description

The **dot1x authentication-method** command is used to configure the Authentication Method of IEEE 802.1X. To restore to the default 802.1x authentication method, please use **no dot1x authentication-method** command.

Syntax

dot1x authentication-method { pap | eap-md5 }

no dot1x authentication-method

Parameter

pap | eap-md5 ——Authentication Methods.

PAP: IEEE 802.1X authentication system uses extensible authentication

protocol (EAP) to exchange information between the switch and the client. The transmission of EAP packets is terminated at the switch and the EAP packets are converted to the other protocol (such as RADIUS) packets for transmission

EAP-MD5: IEEE 802.1X authentication system uses extensible authentication protocol (EAP) to exchange information between the switch and the client. The EAP protocol packets with authentication data can be encapsulated in the advanced protocol (such as RADIUS) packets to be transmitted to the authentication server.

Command Mode

Global Configuration Mode

Example

Configure the Authentication Method of IEEE 802.1X as pap:

```
TP-LINK(config)# dot1x authentication-method pap
```

dot1x guest-vlan

Description

The **dot1x guest-vlan** command is used to enable the Guest VLAN function globally. To disable the Guest VLAN function, please use **no dot1x guest-vlan** command.

Syntax

dot1x guest-vlan *vid*

no dot1x guest-vlan

Parameter

vid ——The VLAN ID needed to enable the Guest VLAN function, ranging from 2 to 4094. The supplicants in the Guest VLAN can access the specified network source.

Command Mode

Global Configuration Mode

Example

Enable the Guest VLAN function for VLAN 5:

```
TP-LINK(config)# dot1x guest-vlan 5
```

dot1x quiet-period

Description

The **dot1x quiet-period** command is used to enable the quiet-period function. To disable the function, please use **no dot1x quiet-period** command.

Syntax

dot1x quiet-period

no dot1x quiet-period

Command Mode

Global Configuration Mode

Example

Enable the quiet-period function:

```
TP-LINK(config)# dot1x quiet-period
```

dot1x timer

Description

The **dot1x timer** command is used to configure the Quiet Period and the SupplicantTimeout. To restore to the default, please use **no dot1x timer** command.

Syntax

dot1x timer quiet-period *period* **supp-timeout** *timeout*

no dot1x timer

Parameter

period ——The value for Quiet Period, ranging from 1 to 999 in seconds. By default, it is 10. Once the supplicant failed to the 802.1X Authentication, then the switch will not respond to the authentication request from the same supplicant during the Quiet Period.

timeout ——The maximum time for the switch to wait for the response from supplicant before resending a request to the supplicant., ranging from 1 to 9 in second. By default, it is 3.

Command Mode

Global Configuration Mode

Example

Configure the Quiet Period and the SupplicantTimeout as 12 seconds and 6 seconds:

```
TP-LINK(config)# dot1x timer quiet-period 12 supp-timeout 6
```

dot1x retry

Description

The **dot1x retry** command is used to configure the maximum transfer times of the repeated authentication request. To restore to the default value, please use **no dot1x retry** command.

Syntax

dot1x retry *retry-time*

no dot1x retry

Parameter

retry-time ——The maximum transfer times of the repeated authentication request, ranging from 1 to 9 in times. By default, the value is 3.

Command Mode

Global Configuration Mode

Example

Configure the maximum transfer times of the repeated authentication request as 5:

```
TP-LINK(config)# dot1x retry 5
```

dot1x(interface)

Description

The **dot1x** command is used to enable the IEEE 802.1X function for a specified port. To disable the the IEEE 802.1X function for a specified port, please use **no dot1x** command.

Syntax

dot1x

no dot1x

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the IEEE 802.1X function for the port 1:

TP-LINK(config)# interface ethernet 1

TP-LINK(config-if)# dot1x

dot1x guest-vlan

Description

The **dot1x guest-vlan** command is used to enable the Guest VLAN function for a specified port. To disable the Guest VLAN function for a specified port, please use **no dot1x guest-vlan** command. Please ensure that the Control Type of the corresponding port is port-based before enabling the Guest VLAN function for it. Please refer to **dot1x port-method** for details.

Syntax

dot1x guest-vlan

no dot1x guest-vlan

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the Guest VLAN function for port 2:

TP-LINK(config)# interface ethernet 2

TP-LINK(config-if)# dot1x guest-vlan

dot1x port-control

Description

The **dot1x port-control** command is used to configure the Control Mode of IEEE 802.1X for the specified port. To restore to the default configuration, please use **no dot1x port-control** command.

Syntax

dot1x port-control { auto | authorized-force | unauthorized-force }

no dot1x port-control

Parameter

auto | authorized-force | unauthorized-force —— The Control Mode for the port.

Auto: In this mode, the port will normally work only after passing the 802.1X Authentication.

Authorized-force: In this mode, the port can work normally without passing the 802.1X Authentication.

Unauthorized-force: In this mode, the port is forbidden working for its fixed unauthorized status.

By default, the Control Mode is auto.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the Control Mode for port 1 as authorized-force:

TP-LINK(config)# interface ethernet 1

TP-LINK(config-if)# dot1x port-control authorized-force

dot1x port-method

Description

The **dot1x port-method** command is used to configure the Control Type of IEEE 802.1X for the specified port. To restore to the default configuration, please use **no dot1x port-method** command.

Syntax

dot1x port-method { mac-based | port-based }

no dot1x port-method

Parameter

mac-based | port-based ——The Control Type for the port.

Mac-based: Any client connected to the port should pass the 802.1X Authentication for access.

Port-based: All the clients connected to the port can access the network on the condition that any one of the clients has passed the 802.1X Authentication.

By default, the Control Type is mas-based.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the Control Type for port 5 as port-based:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)# dot1x port-method port-based

radius authentication primary-ip

Description

The **radius authentication primary-ip** command is used to configure the IP addressof the authentication server. Authentication server provides the authentication service for the switch via the stored client information, such as the user name, password, etc, with the purpose to control the authentication and accounting status of the clients. The RADIUS（Remote Authentication Dial-In User Service）server is used as the Authentication server generally.

Syntax

radius authentication primary-ip *ip-addr*

Parameter

ip-addr —— The IP address of the authentication server.

Command Mode

Global Configuration Mode

Example

Configure the IP of the authentication server as 10.20.1.100:

TP-LINK(config)# radius authentication primary-ip 10.20.1.100

radius authentication secondary-ip

Description

The **radius authentication secondary-ip** command is used to configure the IP address of the alternate authentication server. To restore to the default configuration, please use **no radius authentication secondary-ip** command.

Syntax

radius authentication secondary-ip *ip-addr*

no radius authentication secondary-ip

Parameter

ip-addr ——The IP address of the alternate authentication server. By default, it is 0.0.0.0.

Command Mode

Global Configuration Mode

Example

Configure the IP address of the alternate authentication server as 10.20.1.101:

TP-LINK(config)# radius authentication secondary-ip 10.20.1.101

radius authentication port

Description

The **radius authendication port** command is used to configure the authentication port of the alternate authentication server. To restore to the default value, please use **no radius authendication port** command.

Syntax

radius authentication port *port-num*

no radius authentication port

Parameter

port-num ——The UDP port of authentication server(s) raging from 1 to 65535 and the default port is 1812.

Command Mode

Global Configuration Mode

Example

Configure the authentication port of the alternate authentication server as 1815:

TP-LINK(config)# radius authentication port 1815

radius authentication key

Description

The **radius authentication key** command is used to configure the shared password for the switch and the authentication servers to exchange messages. To clear the radius authentication key, please use **no radius authentication key** command.

Syntax

radius authentication key *key-string*

no radius authentication key

Parameter

key-string——The shared password for the switch and the authentication servers to exchange messages which contains 15 characters at most..

Command Mode

Global Configuration Mode

Example

Configure the shared password for the switch and the authentication servers as tplink:

TP-LINK(config)# radius authentication key tplink

radius accounting enable

Description

The **radius accunting enable** command is used to enable the accounting feature. To disable the accounting feature, please use **no radius accunting enable** command.

Syntax

radius accounting enable

no radius accounting enable

Command Mode

Global Configuration Mode

Example

Enable the accounting feature:

TP-LINK(config)# radius accounting enable

radius accounting primary-ip

Description

The **radius accounting primary-ip** command is used to configure the IP address of the accounting server.

Syntax

radius accounting primary-ip *ip-addr*

Parameter

ip-addr —— The IP address of the accounting server.

Command Mode

Global Configuration Mode

Example

Configure the IP address of the accounting server as 10.20.1.100:

TP-LINK(config)# radius accounting primary-ip 10.20.1.100

radius accounting secondary-ip

Description

The **radius accounting secondary-ip** command is used to configure the IP address of the alternate accounting server. To restore to the default configuration, please use **no radius accounting secondary-ip** command.

Syntax

radius accounting secondary-ip *ip-addr*

no radius accounting secondary-ip

Parameter

ip-addr ——The IP address of the alternate accounting server. By default, it is 0.0.0.0.

Command Mode

Global Configuration Mode

Example

Configure the IP address of the alternate accounting server as 10.20.1.101:

TP-LINK(config)# radius accounting secondary-ip 10.20.1.101

radius accounting port

Description

The **radius accounting port** command is used to set the UDP port of accounting server(s). To restore to the default value, please use **no radius accounting port**.

Syntax

radius accounting port *port-num*

no radius accounting port

Parameter

port-num ——The UDP port of accounting server(s) ranging from 1 to 65535. The default port is 1813.

Command Mode

Global Configuration Mode

Example

Set the UDP port of accounting server(s) as 1816:

TP-LINK(config)# radius accounting port 1816

radius accounting key

Description

The **radius accounting key** command is used to configure the shared password for the switch and the accounting servers to exchange messages.To clear the shared password for the switch and the accounting servers, please use **no radius accounting key** command.

Syntax

radius accounting key *key-string*

no radius accounting key

Parameter

key-string ——The shared password for the switch and the accounting servers to exchange messages which contains 15 characters at most.

Command Mode

Global Configuration Mode

Example

Configure the shared password for the switch and the accounting servers as tplink:

TP-LINK(config)# radius accounting key tplink

radius response-timeout

Description

The **radius response-timeout** command is used to configure the maximum time for the switch to wait for the response from the RADIUS authentication and the accounting server. To restore to the default value, please use **no radius response-timeout** command.

Syntax

radius response-timeout *time*

no radius response-timeout

Parameter

time ——The maximum time for the switch to wait for the response before resending a request to the supplicant., ranging from 1 to 9 in second. By default, it is 3.

Command Mode

Global Configuration Mode

Example

Configure the maximum time for the switch to wait for the response from the RADIUS authentication and the accounting server as 5 seconds:

TP-LINK(config)# radius response-timeout 5

show dot1x global

Description

The **show dot1x global** command is used to display the global configuration of 801.X.

Syntax

show dot1x global

Command Mode

Any configuration Mode

Example

Display the configuration of 801.X globally:

```
TP-LINK(config)# show dot1x global
```

show dot1x interface

Description

The **show dot1x interface** command is used to display the port configuration of 801.X.

Syntax

show dot1x interface [**ethernet** *port-num*]

Parameter

port-num ——The number of the Ethernet port, ranging from 1 to 16. Display the configuration of all the ports ,by default.

Command Mode

Any configurartion Mode

Example

Display the port configuration of 801.X:

```
TP-LINK(config)# show dot1x interface
```

show radius authentication

Description

The **show radius authentication** command is used to display the configuration of the RADIUS authentication server.

Syntax

show radius authentication

Command Mode

Any configuration Mode

Example

Display the configuration of the RADIUS authentication server:

```
TP-LINK(config)# show radius authentication
```

show radius accounting

Description

The **show radius accounting** command is used to display the configuration of the accounting server.

Syntax

show radius accounting

Command Mode

Any configuration Mode

Example

Display the configuration of the accounting server:

```
TP-LINK(config)# show radius accounting
```

Chapter 15 Log Commands

The log information will record the settings and operation of the switch respectively for you to monitor operation status and diagnose malfunction.

logging local buffer

Description

The **logging local buffer** command is used to configure the severity level and the status of theconfiguration input to the log buffer. To restore to the default configuration, please use **no logging local buffer** command. Local Log is the log information saved in the switch. It has two output channels, that is, it can be saved to two different positions, log buffer and log file. Indicates the RAM for saving system log and the inforamtion in the log buffer can be got by **show logging buffer** command. It will be lost when the switch is restarted.

Syntax

logging local buffer {*level*} [disable | enable]

no logging local buffer

Parameter

level ——Severity level of the log information output to each channel. There are 8 severity levels marked with values 0-7. The smaller value has the higher priority. Only the log with the same or smaller severity level value will be output. By default, it is 7 indicating that all the log information will be saved in the log buffer.

disable | enable —— Disable or enable the log buffer. By default, it is enabled.

Command Mode

Global Configuration Mode

Example

Enable the log buffer function and set the severity as 6:

```
TP-LINK(config)# logging local buffer 6 enable
```

logging local flash

Description

The **logging local flash** command is used to configure the level and the status of the log file input.To restore to the default configuration, please use **no logging local flash** command. The log file indicates the flash sector for saving system log. The inforamtion in the log file will not be lost after the switch is restarted and can be got by the **show logging flash** command.

Syntax

logging local flash {*level*} [disable | enable]

no logging local flash

Parameter

level ——Severity level of the log information output to each channel. There are 8 severity levels marked with values 0-7. The smaller value has the higher priority. Only the log with the same or smaller severity level value will be output. By default, it is 4 indicating that the log information marked with 0~4 will be saved in the log buffer.

disable | enable ——Disable or enable the log file. By default, it is enabled.

Command Mode

Global Configuration Mode

Example

Enable the log file function and set the severity as 7:

```
TP-LINK(config)# logging local flash 7
```

logging clear

Description

The **logging clear** command is used to clear the information in the log buffer and log file.

Syntax

logging clear [buffer | flash]

Parameter

buffer | flash —The output channels: buffer and flash. Clear the information of the two channels, by default.

Command Mode

Global Configuration Mode

Example

Clear the information in the log file:

TP-LINK(config)# logging clear buffer

logging loghost

Description

The **logging loghost** command is used to configure the Log Host. To clear the configuration of the specified Log Host, please use **no logging loghost** command. Log Host is to receive the system log from other devices. You can remotely monitor the settings and operation status of other devices through the log host.

Syntax

logging loghost index {*idx*} {*host-ip*} {*level*} { disable | enable }

no logging loghost index {*idx*}

Parameter

idx ——The index of the log host. The switch supports 4 log hosts.

host-ip —— The IP for the log host.

level ——The severity level of the log information sent to each log host. There are 8 severity levels marked with values 0-7. The smaller value has the higher priority. Only the log with the same or smaller severity level value will be sent to the corresponding log host. By default, it is 6 indicating that the log information marked with 0~6 will be sent to the log host.

disable | enable ——Disable or enable the log host. By default, it is disabled.

Command Mode

Global Configuration Mode

Example

Enable the log host 2 and set the IP address 192.168.0.148, the level 5:

TP-LINK(config)# logging loghost index 2 192.168.0.148 5 enable

show logging local-config

Description

The **show logging lolcal-config** command is used to display the configuration

of the Local Log including the log buffer and the log file.

Syntax

show logging local-config

Command Mode

Any configuration Mode

Example

Display the configuration of the Local Log:

```
TP-LINK(config)# show logging local-config
```

show logging loghost

Description

The **show logging loghost** command is used to display the configuration of the log host.

Syntax

show logging loghost [*index*]

Parameter

index ——The index of the log host whose configuration will be displayed. Display the configuration of all the log hosts by default.

Command Mode

Any Configuration Mode

Example

Display the configuration of the log host 2:

```
TP-LINK(config)# show logging loghost 2
```

show logging buffer level

Description

The **show logging buffer level** command is used to display the log information in the log buffer according to the severity level.

Syntax

show logging buffer level [*level*]

Parameter

level ——Severity level. There are 8 severity levels marked with values 0-7. The information will be displayed only when the log with the same or smaller severity level value. Display all the log information in the log buffer by default.

Command Mode

Any Configuration Mode

Example

Display the log information from level 0 to level 5 in the log buffer:

TP-LINK(config)# show logging buffer level 5

show logging flash level

Description

The **show logging flash level** command is used to display the log information in the log file according to the severity level.

Syntax

show logging flash level [*level*]

Parameter

level ——Severity level. There are 8 severity levels marked with values 0-7. The information will be displayed only when the log with the same or smaller severity level value. Display all the log information in the log file by default.

Command Mode

Any Configuration Mode

Example

Display the log information with the level marked 0~3 in the log file:

TP-LINK(config)# show logging flash level 3

Chapter 16 SSH Commands

SSH (Security Shell) can provide the unsecured remote management with security and powerful authentication to ensure the security of the management information.

ssh server enable

Description

The **ssh server enable** command is used to enable SSH function. To disable the SSH function, please use **no ssh server enable** command.

Syntax

ssh server enable

no ssh server enable

Command Mode

Global Configuration Mode

Example

Enable the SSH function:

```
TP-LINK(config)# ssh server enable
```

ssh version

Description

The **ssh version** command is used to enable the SSH protocol version. To disable the protocol version, please use **no ssh version** command.

Syntax

ssh version { v1 | v2 }

no ssh version { v1 | v2 }

Parameter

v1 | v2 —— The SSH protocol version to be enabled. They represent SSH v1 and SSH v2 respectively.

Command Mode

Global Configuration Mode

Example

Enable SSH v2:

TP-LINK(config)# ssh version v2

ssh idle-timeout

Description

The **ssh idle-timeout** command is used to specify the idle-timeout time of SSH. To restore to the factory defaults, please use **no ssh idle-timeout** command.

Syntax

ssh idle-timeout *value*

no ssh idle-timeout

Parameter

value —— The Idle-timeout time. During this period, the system will automatically release the connection if there is no operation from the client. It ranges from 1 to 999 in seconds. By default, this value is 500.

Command Mode

Global Configuration Mode

Example

Specify the idle-timeout time of SSH as 300 seconds:

TP-LINK(config)# ssh idle-timeout 300

ssh max-client

Description

The **ssh max-client** command is used to specify the maximum number of the connections to the SSH server. To return to the default configuration, please use **no ssh max-client** command.

Syntax

ssh max-client *number*

no ssh max-client

Parameter

number —— The maximum number of the connections to the SSH server. It ranges from 1 to 5. By default, this value is 5.

Command Mode

Global Configuration Mode

Example

Specify the maximum number of the connections to the SSH server as 3:

TP-LINK(config)# ssh max-client 3

ssh download

Description

The **ssh max-client** command is used to download the SSH key file from TFTP server.

Syntax

ssh download { v1 | v2 } *key-file* **ip-address** *ip-addr*

Parameter

v1 | v2 —— Select the type of SSH key to download, v1 represents SSH-1, v2 represents SSH-2.

key-file —— The name of the key-file which is selected to download. The length of the name ranges from 1 to 25 characters. The key length of the downloaded file must be in the range of 256 to 3072 bits.

ip-addr —— The IP address of the TFTP server.

Command Mode

Global Configuration Mode

Example

Download a SSH-1 type key file named ssh-key from TFTP server with the IP Address 192.168.0.148:

TP-LINK(config)# ssh download v1 ssh-key **ip-address** 192.168.0.148

show ssh

Description

The **show ssh** command is used to display the global configuration of SSH.

Syntax

show ssh

Command Mode

Any Configuration Mode

Example

Display the global configuration of SSH:

TP-LINK(config)# show ssh

Chapter 17 SSL Commands

SSL（Secure Sockets Layer）, a security protocol, is to provide a secure connection for the application layer protocol(e.g. HTTP) based on TCP. Adopting asymmetrical encryption tecnology, SSL uses key pair to encrypt/decrypt information. A key pair refers to a public key (contained in the certificate) and its corresponding private key. By default the switch has a certificate (self-signed certificate) and a corresponding private key. The Certificate/Key Download function enables the user to replace the default key pair.

ssl enable

Description

The **ssl enable** command is used to enable the SSL function on the switch. To disable the SSL function, please use **no ssl enable** command. Only the SSL function is enabled, a secure HTTPS connection can be established.

Syntax

ssl enable

no ssl enable

Command Mode

Global Configuration Mode

Example

Enable the SSL function:

```
TP-LINK(config)# ssl enable
```

ssl download certificate

Description

The **ssl download certificate** command is used to download a certificate to the switch from from TFTP server.

Syntax

ssl download certificate *ssl-cert* **ip-address** *ip-addr*

Parameter

ssl-cert —— The name of the SSL certificate which is selected to download to the switch . The length of the name ranges from 1 to 25 characters. The Certificate must be BASE64 encoded.

ip-addr —— The IP address of the TFTP server.

Command Mode

Global Configuration Mode

Example

Download a SSL Certificate named ssl-cert from TFTP server with the IP Address of 192.168.0.148:

TP-LINK(config)# ssl download certificate ssl-cert **ip-address** 192.168.0.148

ssl download key

Description

The **ssl download key** command is used to download a SSL key to the switch from TFTP server.

Syntax

ssl download key *ssl-key* **ip-address** *ip-addr*

Parameter

ssl-key —— The name of the SSL key which is selected to download to the switch . The length of the name ranges from 1 to 25 characters. The Key must be BASE64 encoded.

ip-addr —— The IP address of the TFTP server.

Command Mode

Global Configuration Mode

Example

Download a SSL Key named ssl-key cert from TFTP server with the IP Address of 192.168.0.148:

TP-LINK(config)# ssl download key ssl-key **ip-address** 192.168.0.148

show ssl

Description

The **show ssl** command is used to display the global configuration of SSL.

Syntax

show ssl

Command Mode

Any Configuration Mode

Example

Display the global configuration of SSL:

TP-LINK(config)# show ssl

Chapter 18 Address Commands

Address configuration can improve the network security by configuring the Port Security and maintaining the address information by managing the Address Table.

bridge address port-security

Description

The **bridge address port-security** command is used to configure port security. To return to the default configuration, please use **no bridge address port-security** command. Port Security is to protect the switch from the malicious MAC address attack by limiting the maximum number of the MAC addresses that can be learned on the port. The port with Port Security feature enabled will learned the MAC address dynamically. When the learned MAC address number reaches the maximum, the port will stop learning. Therefore, the other devices with the MAC address unlearned can not access to the network via this port.

Syntax

bridge address port-security [**max-number** {*num*}] [**mode** {dynamic | static | permanent}] [**status** {disable | enable}]

no bridge address port-security

Parameter

num —— The maximum number of MAC addresses that can be learned on the port. It ranges from 0 to 64. By default this value is 64.

mode —— Learn mode for MAC addresses. There are three modes, including Dynamic mode, Static mode and Permanent mode. When Dynamic mode is selected, the learned MAC address will be deleted automatically after the aging time. When Static mode is selected, the learned MAC address will be out of the influence of the aging time and can only be deleted manually. The learned entries will be cleared after the switch is rebooted. When permanent mode is selected, the learned MAC address will be out of the influence of the aging time and can only be deleted manually too. However, the learned entries will be saved even the switch is rebooted.

status —— Enable or disable the Port Security function for a specified port. By default, this function is disabled.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable Port Security function for port1, select Static mode as the learn mode, and specify the maximum number of MAC addresses that can be learned on this port as 30:

```
TP-LINK(config)# interface ethernet 1
TP-LINK(config-if)# bridge address port-security max-number 30 mode static status enable
```

bridge address static

Description

The **bridge address static** command is used to add the static MAC address entry. To remove the corresponding entry, please use **no bridge address static** command. The static address can be added or removed manually, independent of the aging time. In the stable networks, the static MAC address entries can facilitate the switch to reduce broadcast packets and enhance the efficiency of packets forwarding remarkably.

Syntax

bridge address static {**mac** *mac*} {**vid** *vid*} {**port** *port*}

no bridge address static [*mac*] [*vid*] [*port*]

Parameter

mac ——The MAC address of the entry you desire to add.

vid —— The VLAN ID number of your desired entry. It ranges from 1 to 4094.

port —— The Port number of your desired entry. It ranges from 1 to 16.

Command Mode

Global Configuration Mode

Example

Add a static Mac address entry to bind the MAC address 00:02:58:4f:6c:23, VLAN1 and Port1 together:

```
TP-LINK(config)# bridge address static mac 00:02:58:4f:6c:23 vid 1 port 1
```

bridge aging-time

Description

The **bridge aging-time** command is used to configure aging time for the dynamic address. To return to the default configuration, please use **no bridge aging-time** command.

Syntax

bridge aging-time *aging-time*

no bridge aging-time

Parameter

aging-time —— The aging time for the dynamic address. The value of it can be 0 or ranges from 10 to 630 seconds. When 0 is entered, the Auto Aging function is disabled. By default, this value is 300.

Command Mode

Global Configuration Mode

Example

Configure the aging time as 500 seconds:

TP-LINK(config)# bridge aging-time 500

bridge address filtering

Description

The **bridge address filtering** command is used to add the filtering address entry. To delete the corresponding entry, please use **no bridge address filtering** command. The filtering address function is to forbid the undesired package to be forwarded. The filtering address can be added or removed manually, independent of the aging time.

Syntax

bridge address filtering {*mac*} {*vid*}

no bridge address filtering [*mac*] [*vid*]

Parameter

mac —— The MAC address to be filtered.

vid —— The corresponding VLAN ID of the MAC address. It ranges from 1 to 4094.

Command Mode

Global Configuration Mode

Example

Add a filtering address entry whose VLAN ID is 1 and MAC address is

00:1e:4b:04:01:5d:

TP-LINK(config)# bridge address filtering 00:1e:4b:04:01:5d 1

show bridge port-security

Description

The **show bridge port-security** command is used to configure the Port Security for each port, such as configure the Max number of MAC addressed that can be learned on the port and the Learn Mode.

Syntax

show bridge port-security [*port-num*]

Parameter

port-num —— The port number of the switch. It ranges from 1 to 16. By default, the Port Security configuration of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the Port Security configuration of port2:

TP-LINK(config)# show bridge port-security 2

show bridge address

Description

The **show bridge address** command is used to display the information of all Address entries.

Syntax

show bridge address { dynamic | static | filtering | all }

Parameter

dynamic | static | filtering | all —— the type of your desired entry

Command Mode

Any Configuration Mode

Example

Display the information of all Address entries:

TP-LINK(config)# show bridge address all

show bridge aging-time

Description

The **show bridge aging-time** command is used to display the Aging Time of the MAC address.

Syntax

show bridge aging-time

Command Mode

Any Configuration Mode

Example

Display the Aging Time of the MAC address:

```
TP-LINK(config)# show bridge aging-time
```

Chapter 19 System Commands

System Commands can be used to configure the System information and System IP, reboot and reset the switch, upgrade the switch system and other operations.

system-descript

Description

The **system-descript** command is used to configure the Device Name, Device Location and System Contact. To clear all the information, please use **no system-descript** command.

Syntax

system-descript { **sysname** {*sysname*} | **location** {*location*} | **contact-info** {*contact_info*} }

no system-descript {sysname | location | contact_info}

Parameter

sysname —— System Name(Device Name). The length of the name ranges from 1 to 32 characters. By default, it is empty.

location —— Device Location. It consists of 32 characters at most. By default, it is empty.

contact_info —— Contact Information. It consists of 32 characters at most. By default, it is empty.

Command Mode

Global Configuration Mode

Example

Configure the System Contact as www.tp-link.com.cn:

TP-LINK(config)# system-descript contact-info www.tp-link.com.cn

system-time gmt

Description

The **system-time gmt** command is used to configure the time zone and the IP Address for the NTP Server. To clear all the information, please use **no system-time gmt** command.

Syntax

system-time gmt {*time-zone*} {*ntp-server*} {*backup-ntp-server*}

no system-time gmt {*time-zone*} {*ntp-server*} {*backup-ntp-server*}

Parameter

time-zone —— Your local time-zone, and it ranges from -12 to 13.

ntp-server —— The IP Address for the Primary NTP Server.

Backup-ntp-server —— The IP Address for the Secondary NTP Server.

Command Mode

Global Configuration Mode

Example

Configure the system time mode as gmt, the time zone is -12, the primary ntp server is 133.100.9.2 and the secondary ntp server is 139.78.100.163:

```
TP-LINK(config)# system-time gmt -12 133.100.9.2 139.78.100.163
```

system-time manual

Description

The **system-time manual** command is used to configure the system time manually. To clear all the information, please use **no system-time manual** command.

Syntax

system-time manual {*time* }

no system-time manual {*time* }

Parameter

time —— Set the date and time manually, MM/DD/YYYY-HH:MM:SS

Command Mode

Global Configuration Mode

Example

Configure the system mode as manual, and the time is 12/20/2010 17:30:35

```
TP-LINK(config)# system-time manual 12/20/2010-17:30:35
```

system-time dst

Description

The **system-time dst** command is used to configure the DST (Daylight Saving Time). To clear all the information, please use **no system-time dst** command.

Syntax

system-time dst {*start-date*} {*start-time*} {end-*date*} {*end-time*}

no system-time dst

Parameter

start-date —— The start date of DST you set.

start-time —— The start time of DST you set.

end-date —— The end date of DST you set.

end-time —— The end time of DST you set.

Command Mode

Global Configuration Mode

Example

Configure the dst, dst is from April 1 00:00 to November 1 23:00.

```
TP-LINK(config)# system-time dst 04/01 0 11/01 23
```

ip address

Description

The **ip address** command is used to configure the IP Address, Subnet Mask and Default Gateway. To restore to the factory defaults, please use **no ip address** command.

Syntax

ip address {*ip-addr*} {*ip-mask*} [*gateway*]

no ip address

Parameter

ip-addr —— The system IP of the Switch. The default system IP is 192.168.0.1.

ip-mask —— The Subnet Mask of the Switch. The default Subnet Mask is 255.255.255.0.

gateway —— The Default Gateway of the Switch. By default, it is empty.

Command Mode

Global Configuration Mode

Example

Configure the system IP as 192.168.0.69 and the Subnet Mask as 255.255.255.0:

TP-LINK(config)# ip address 192.168.0.69 255.255.255.0

ip management-vlan

Description

The **ip management-vlan** command is used to configure the management VLAN, through which you can log on to the switch.

Syntax

ip management-vlan {*vlan-id*}

Parameter

vlan-id —— VLAN ID, ranging from 1 to 4094.

Command Mode

Global Configuration Mode

Example

Set the VLAN6 as management VLAN:

TP-LINK(config)# ip management-vlan 6

ip dhcp-alloc

Description

The **ip dhcp-alloc** command is used to enable the DHCP Client function. When this function is enabled, the switch will obtain IP from DHCP Client server.

Syntax

ip dhcp-alloc

Command Mode

Global Configuration Mode

Example

Enable the DHCP Client function:

TP-LINK(config)# ip dhcp-alloc

ip bootp-alloc

Description

The **ip bootp-alloc** command is used to obtain IP address from BOOTP Server.

Syntax

ip bootp-alloc

Command Mode

Global Configuration Mode

Example

Enable the BOOTP Protocol to obtain IP address from BOOTP Server:

```
TP-LINK(config)# ip bootp-alloc
```

reset

Description

The **reset** command is used to reset the switch's software. After resetting, all configuration of the switch (except the IP Address) will restore to the factory defaults and your current settings will be lost.

Syntax

reset

Command Mode

Privileged EXEC Mode

Example

Reset the software of the Switch:

```
TP-LINK# reset
```

reboot

Description

The **reboot** command is used to reboot the Switch. To avoid damage, please don't turn off the device while rebooting.

Syntax

reboot

Command Mode

Privileged EXEC Mode

Example

Reboot the Switch:

```
TP-LINK# reboot
```

user-config backup

Description

The **user-config backup** command is used to backup the configuration file by TFTP server.

Syntax

user-config backup filename *name* **ip-address** *ip-addr*

Parameter

name —— Specify the name for the configuration file which would be backuped.

ip-addr —— IP Address of the TFTP server.

Command Mode

Privileged EXEC Mode

Example

Backup the configuration files by TFTP server with the IP 192.168.0.148 and name this file config.cfg:

TP-LINK# user-config backup filename config.cfg **ip-address** 192.168.0.148

user-config load

Description

The **user-config load** command is used to download the configuration file to the switch by TFTP server.

Syntax

user-config load filename *name* **ip-address** *ip-addr*

Parameter

name —— Specify the name for the configuration file which would be downloaded.

ip-addr —— IP Address of the TFTP server.

Command Mode

Privileged EXEC Mode

Example

Download the configuration file to the switch by TFTP server with the IP

192.168.0.148 and name this file config.cfg:

TP-LINK# user-config load filename config.cfg **ip-address** 192.168.0.148

user-config save

Description

The **user-config save** command is used to save current settings.

Syntax

user-config save

Command Mode

Privileged EXEC Mode

Example

Save current settings:

TP-LINK# user-config save

firmware upgrade

Description

The **firmware upgrade** command is used to upgrade the switch system via the TFTP server.

Syntax

firmware upgrade filename *name* **ip-address** *ip-addr*

Parameter

name —— Specify the name for the Firmware File.

ip-addr —— IP Address of the TFTP server.

Command Mode

Privileged EXEC Mode

Example

Upgrade the switch system via the TFTP server with the IP 192.168.0.148:

TP-LINK# firmware upgrade filename firmware.bin **ip-address** 192.168.0.148

ping

Description

The **ping** command is used to test the connectivity between the switch and one node of the network.

Syntax

ping {*ip_addr*} [**-n** {*count*}] [**-l** {*count*}] [**-i** {*count*}]

Parameter

ip_addr —— The IP address of the destination node for ping test.

count (-n) —— The amount of times to send test data during Ping testing. It ranges from 1 to 10. By default, this value is 4.

count (-l) —— The size of the sending data during ping testing. It ranges from 1 to 1024 bytes. By default, this value is 64.

count (-i) —— The interval to send ICMP request packets. It ranges from 100 to 1000 milliseconds. By default, this value is 1000.

Command Mode

User EXEC Mode and Privileged EXEC Mode

Example

To test the connectivity between the switch and the network device with the IP 192.168.0.131, please specify the *count* (-l) as 512 bytes and *count* (-i) as 1000 milliseconds. If there is not any response after 8 times' Ping test, the connection between the switch and the network device is failed to establish:

```
TP-LINK# ping 192.168.0.131 –n 8 –l 512
```

tracert

Description

The **tracert** command is used to test the connectivity of the gateways during its journey from the source to destination of the test data.

Syntax

tracert {*url*} [*maxHops*]

Parameter

url —— The IP address of the destination device.

maxHops —— The maximum number of the route hops the test data can pass though. It ranges from 1 to 30. By default, this value is 4.

Command Mode

User EXEC Mode and Privileged EXEC Mode

Example

Test the connectivity between the switch and the network device with the IP 192.168.0.131. If the destination device has not been found after 20 *maxHops*, the connection between the switch and the destination device is failed to establish:

TP-LINK# tracert 192.168.0.131 20

loopback

Description

The **loopback** command is used to test whether the port is available or not.

Syntax

loopback {*port*} { internal | external }

Parameter

port —— The number of the port which is selected for loopback test. It ranges from 1 to 10.

internal | external —— Loopback Type. There are two options, Internal and External.

Command Mode

User EXEC Mode and Privileged EXEC Mode

Example

Do a Internal-type loopback test for port 4:

TP-LINK#loopback 4 internal

show system-info

Description

The **show system-info** command is used to display System Description, Device Name, Device Location, System Contact, Hardware Version, Firmware Version, System Time, Run Time and so on.

Syntax

show system-info

Command Mode

Any Configuration Mode

Example

Display the system information:

```
TP-LINK# show system-info
```

show ip address

Description

The **show ip address** command is used to display MAC Address, IP Address, Subnet Mask and Default Gateway of the system, whether the DHCP Client function is enabled or not and some other information.

Syntax

show ip address

Command Mode

Any Configuration Mode

Example

Display the IP Address of the system

```
TP-LINK# show ip address
```

show system-time

Description

The **show system-time** command is used to display the time information of the switch.

Syntax

show system-time

Command Mode

Any Configuration Mode

Example

Display the time information of the switch

```
TP-LINK# show system-time
```

show system-time dst

Description

The **show system-time dst** command is used to display the DST time information of the switch.

Syntax

show system-time dst

Command Mode

Any Configuration Mode

Example

Display the DST time information of the switch

```
TP-LINK# show system-time dst
```

Chapter 20 Ethernet Configuration Commands

Ethernet Configuration Commands can be used to configure the Bandwidth Control, Negotiation Mode and Storm Control for Ethernet ports.

interface ethernet

Description

The **interface ethernet** command is used to enter the Interface Configuration Mode and configure one Ethernet port.

Syntax

interface ethernet *interface*

Parameter

interface —— The Ethernet port to be configured.

Command Mode

Global Configuration Mode

Example

Enter the Interface Configuration Mode and configure Ethernet port2:

```
TP-LINK(config)# interface ethernet 2
```

interface range ethernet

Description

The **interface range ethernet** command is used to enter the Interface Configuration Mode and configure multiple Ethernet ports at the same time.

Syntax

interface range ethernet *port-list*

Parameter

port-list —— The list of the Ethernet ports to be configured. Inconsecutive ports or port-groups are separated by a comma with no space. Use a hyphen to designate a range of ports, for instance 1-10 indicates from port 1 to port 10.

Command Mode

Global Configuration Mode

User Guidelines

Command in the Interface Range Ethernet Mode is executed independently on all ports in the range. It does not effect the execution on the other ports at all if the command results in an error on one port.

Example

Enter the Interface Configuration Mode, add ports 1-3, 6-8 to the port-list and configure them:

TP-LINK(config)# interface range ethernet 1-3,6-8

description

Description

The **description** command is used to add a description to the Ethernet port. To clear the description of the corresponding port, please use **no description** command.

Syntax

description *string*

no description

Parameter

string —— Content of a port description, ranging from 1 to 16 characters.

Command Mode

Interface Configuration Mode（interface ethernet）

Example

Add a description Port #5 to port5:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)# description Port #5

shutdown

Description

The **shutdown** command is used to disable an Ethernet port. To enable this port again, please use **no shutdown** command.

Syntax

shutdown

no shutdown

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Disable Ethernet port3:

```
TP-LINK(config)# interface ethernet 3
TP-LINK(config-if)# shutdown
```

flow-control

Description

The **flow-control** command is used to enable the flow-control function for a port. To disable the flow-control function for this corresponding port, please use **no flow-control** command. With the flow-control function enabled, the Ingress Rate and Egress Rate can be synchronized to avoid packets drop in the network.

Syntax

flow-control

no flow-control

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the flow-control function for Ethernet port 5:

```
TP-LINK(config)# interface ethernet 5
TP-LINK(config-if)# flow-control
```

negotiation

Description

The **negotiation** command is used to configure the Negotiation Mode for an Ethernet port. To return to the default configuration, please use **no negotiation** command.

Syntax

negotiation { auto | 10h |10f |100h |100f |1000f }

no negotiation

Parameter

auto —— Auto negotiation (default).

10h —— 10M half-duplex.
10f —— 10M full-duplex.
100h —— 100M half-duplex.
100f —— 100M full-duplex.
1000f —— 1000M full-duplex.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the Negotiation Mode as 100M full-duplex for Ethernet port5:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)# negotiation 100f

storm-control

Description

The **storm-control** command is used to configure the Storm Control function. To disable the Storm Control function, please use **no storm-control** command. Storm Control function allows the switch to filter broadcast, multicast and UL frame in the network. If the transmission rate of the three kind packets exceeds the set bandwidth, the packets will be automatically discarded to avoid network broadcast storm.

Syntax

storm-control [**bc-rate** *bc-rate*] [**mc-rate** *mc-rate*] [**ul-rate** *ul-rate*]

no storm-control

Parameter

bc-rate —— The maximum ingress rate of the Broadcast. The packet traffic exceeding the bandwidth will be discarded. The value of it can be 128 | 256| 512kbps or 1 | 2 | 4 | 5 | 10 | 20 | 40 | 50mbps.

mc-rate —— The maximum ingress rate of the Multicast packets. The packet traffic exceeding the bandwidth will be discarded. The value of it can be 128 | 256| 512kbps or 1 | 2 | 4 | 5 | 10 | 20 | 40 | 50mbps.

ul-rate —— The maximum ingress rate of the UL-Frame. The packet traffic exceeding the bandwidth will be discarded. The value of it can be 128 | 256| 512kbps or 1 | 2 | 4 | 5 | 10 | 20 | 40 | 50mbps.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the Storm Control function for port5 and specify the *bc-rate* as 128kbps, *mc-rate* as 512kbps and *ul-rate* as 2Mbps:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)# storm-control bc-rate 128k **mc-rate** 512k **ul-rate** 2m

storm-control disable bc-rate

Description

The **storm-control disable bc-rate** command is used to disable the Broadcast packets control.

Syntax

storm-control disable bc-rate

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Disable the Broadcast packets control for port5:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)# storm-control disable bc-rate

storm-control disable mc-rate

Description

The **storm-control disable mc-rate** command is used to disable the Multicast packets control.

Syntax

storm-control disable mc-rate

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Disable the Multicast packets control for port5:

```
TP-LINK(config)# interface ethernet 5
TP-LINK(config-if)# storm-control disable mc-rate
```

storm-control disable ul-rate

Description

The **storm-control disable ul-rate** command is used to disable the UL-Frame control.

Syntax

storm-control disable ul-rate

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Disable the UL-Frame control for port5:

```
TP-LINK(config)# interface ethernet 5
TP-LINK(config-if)# storm-control disable ul-rate
```

port rate-limit

Description

The **port rate-limit** command is used to configure the Rate Limit for an Ethernet port. To disable the Rate Limit, please use **no port rate-limit** command.

Syntax

port rate-limit [**ingress** *ingress-rate*] [**egress** *egress-rate*]

no port rate-limit

Parameter

ingress-rate —— Specify the bandwidth for receiving packets.Range:1-102400 for the megaport, 1-1024000 for the gigaport

egress-rate —— Specify the bandwidth for sending packets. Range:1-102400 for the megaport, 1-1024000 for the gigaport

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the ingress-rate as 5120Kbps and egress-rate as 1024Kbps for port5:

```
TP-LINK(config)# interface ethernet 5
TP-LINK(config-if)# port rate-limit ingress 5120 egress 1024
```

port rate-limit disable ingress

Description

The **port rate-limit disable ingress** command is used to disable the ingress-rate limit.

Syntax

port rate-limit disable ingress

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Disable the ingress-rate limit for port5:

```
TP-LINK(config)# interface ethernet 5
TP-LINK(config-if)# port rate-limit disable ingress
```

port rate-limit disable egress

Description

The **port rate-limit disable egress** command is used to disable the egress-rate limit.

Syntax

port rate-limit disable egress

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Disable the egress-rate limit for port5:

```
TP-LINK(config)# interface ethernet 5
TP-LINK(config-if)# port rate-limit disable egress
```

show interface configuration

Description

The **show interface configuration** command is used to display the configurations of an Ethernet port, including Port-status, Bandwidth Control, Negotiation Mode and Port-description.

Syntax

show interface configuration { **ethernet** [*interface*] }

Parameter

interface —— The port selected to display the configurations. By default, the configuration information of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the configurations of port5:

TP-LINK# show interface configuration ethernet 5

show interface status

Description

The **show interface status** command is used to display the connective-status of an Ethernet port.

Syntax

show interface status { **ethernet** [*interface*] }

Parameter

Interface —— The port selected to display the connective-status. By default, the connective-status of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the connective-status of all Ethernet ports:

TP-LINK(config)# show interface status ethernet

show interface counters

Description

The **show interface counters** command is used to display the statistic information of an Ethernet port.

Syntax

show interface counters { **ethernet** [*interface*] }

Parameter

Interface ——The port selected to display the statistic information. By default, the statistic information of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the statistic information of Ethernet port3:

```
TP-LINK(config)# show interface counters ethernet 3
```

show storm-control ethernet

Description

The **show storm-control ethernet** command is used to display the storm-control information of an Ethernet port.

Syntax

show storm-control ethernet [*port*]

Parameter

port —— The port-number of the port selected to display the storm-control information. It ranges from 1 to 10. By default, the storm-control information of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the storm-control information of all Ethernet ports:

```
TP-LINK(config)# show storm-control ethernet
```

show port rate-limit

Description

The **show port rate-limit** command is used to display the rate-limit information of an Ethernet port.

Syntax

show port rate-limit [*interface-num*]

Parameter

port —— The port-number of the port selected to display the rate-limit information. It ranges from 1 to 10. By default, the rate-limit information of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the rate-limit information of all Ethernet ports:

```
TP-LINK(config)# show port rate-limit
```

Chapter 21 QoS Commands

QoS (Quality of Service) function is used to optimize the network performance. It provides you with network service experience of a better quality.

qos

Description

The **qos** command is used to configure CoS (Class of Service) based on port. To return to the default configuration, please use **no qos** command.

Syntax

qos *cos-id*

no qos

Parameter

cos-id —— The priority of port. It ranges from 0 to 7, which represent CoS0, CoS1, CoS2, CoS3, CoS4, CoS5, CoS6, CoS7 respectively. By default, the priority is 0.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

User Guidelines

Port priority is one property of the port. When the port priority is specified, the data will be classified into the egress queue based on the CoS value of the ingress port and the mapping relation between the CoS and TC in IEEE 802.1P.

Example

Configure the priority of port 5 as 3:

```
TP-LINK(config)# interface ethernet 5
TP-LINK(config-if)# qos 3
```

qos dot1p config

Description

The **qos dot1p config** command is used to configure the mapping relation between IEEE 802.1P Priority and Egress Queue. To return to the default configuration, please use **no qos dot1p config** command. IEEE 802.1P gives the Pri field in IEEE 802.1Q tag a recommended definition. This field is used to

divide packets into 8 priorities. When IEEE 802.1P Priority is enabled, the packets with IEEE 802.1Q tag are mapped to different priority levels based on IEEE 802.1P priority mode. The untagged packets are mapped based on port priority mode.

Syntax

qos dot1p config {*tag*} {*pri* }

no qos dot1p config

Parameter

tag —— The 8 priority levels defined by IEEE 802.1P, ranging from 0 to 7.

pri —— The priority level the packets with tag are mapped to. It ranges from 0 to 3, which represent TC0, TC1, TC2, TC3 respectively.

Command Mode

Global Configuration Mode

User Guidelines

1. By default, the mapping relation between tag and the egress queue is: 0-TC1, 1-TC0, 2-TC0, 3-TC1, 4-TC2, 5-TC2, 6-TC3, 7-TC3
2. Among the priority levels TC0-TC3, the bigger value, the higher priority.

Example

Map tag value 0 to TC3:

```
TP-LINK(config)# qos dot1p config 0 3
```

qos dscp enable

Description

The **qos dscp enable** command is used to enable the mapping relation between DSCP Priority and Egress Queue. To disable the mapping relation, please use **no qos dscp enable** command.

Syntax

qos dscp enable

no qos dscp enable

Command Mode

Global Configuration Mode

Example

Enable the mapping relation between DSCP Priority and Egress Queue:

```
TP-LINK(config)# qos dscp enable
```

qos dscp config

Description

The **qos dscp config** command is used to configure the mapping relation between DSCP Priority and 802.1P Priority. To return to the default configuration, please use **no qos dscp config** command. DSCP (DiffServ Code Point) is a new definition to IP ToS field given by IEEE. This field is used to divide IP datagram into 64 priorities. When DSCP Priority is enabled, IP datagram are mapped to different priority levels based on DSCP priority mode; non-IP datagram with IEEE 802.1Q tag are mapped to different priority levels based on IEEE 802.1P priority mode if IEEE 802.1P Priority is enabled; the untagged non-IP datagram are mapped based on port priority mode.

Syntax

qos dscp config {*dscp-list*} {*cos-id*}

no qos dscp config

Parameter

dscp-list —— List of DSCP value. One or several DSCP values can be typed using comma to separate. Use a hyphen to designate a range of values, for instance, 1,4-7,11 indicates choosing 1,4,5,6,7,11. The DSCP value ranges form 0 to 63.

cos-id —— The priority level the packets with tag are mapped to, which ranges from CoS 0 to CoS 7.

Command Mode

Global Configuration Mode

User Guidelines

DSCP priorities are mapped to the corresponding 802.1p priorities. IP datagram will detemin its egress queue based on the mapping relation between 802.1p priority and priority levels.

Example

Map DSCP values 10,11,15 to CoS0:

```
TP-LINK(config)# qos dscp config 10,11,15 0
```

qos scheduler

Description

The **qos scheduler** command is used to configure the Schedule Mode. To return to the default configuration, please use **no qos scheduler** command. When the network is congested, the program that many packets complete for resources must be solved, usually in the way of queue scheduling. The switch will control the forwarding sequence of the packets according to the priority queues and scheduling algorithms you set. On this switch, the priority levels are labeled as TC0, TC1… TC3.

Syntax

qos scheduler { sp | wrr | sp+wrr | equ }

no qos scheduler

Parameter

sp —— Strict-Priority Mode. In this mode, the queue with higher priority will occupy the whole bandwidth. Packets in the queue with lower priority are sent only when the queue with higher priority is empty.

wrr —— Weight Round Robin Mode. In this mode, packets in all the queues are sent in order based on the weight value for each queue. The weight value ratio of TC0, TC1, TC2 and TC3 is 1:2:4:8.

sp+wrr —— Strict-Priority + Weight Round Robin Mode. In this mode, the switch provides two scheduling groups, SP group and WRR group. Queues in SP group and WRR group are scheduled strictly based on Strict-Priority mode while the queues inside WRR group follow the WRR mode. In SP + WRR mode, TC3 is the SP group; TC0, TC1 and TC2 belong to the WRR group and the weight value ratio of TC0, TC1 and TC2 is 1:2:4. In this way, when scheduling queues, the switch allows TC3 to occupy the whole bandwidth following the SP mode and the TC0, TC1 and TC2 in the WRR group will take up the bandwidth according to their ratio 1:2:4.

equ —— Equal-Mode. In this mode, all the queues occupy the bandwidth equally. The weight value ratio of all the queues is 1:1:1:1.

Command Mode

Global Configuration Mode

Example

Specify the Schedule Mode as Weight Round Robin Mode:

```
TP-LINK(config)# qos scheduler wrr
```

show qos port-based

Description

The **show qos port-based** command is used to display the configuration of QoS based on port priority.

Syntax

show qos port-based [*interface-num*]

Parameter

interface-num —— The Ethernet port selected to display the configuration, ranging from 1 to 10. By default, information of all the ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the configuration of QoS for port 5:

```
TP-LINK# show qos port-based 5
```

show qos dot1p

Description

The **show qos dot1p** command is used to display the configuration of IEEE 802.1P Priority.

Syntax

show qos dot1p

Command Mode

Any Configuration Mode

Example

Display the configuration of IEEE 802.1P Priority:

```
TP-LINK# show qos dot1p
```

show qos dscp

Description

The **show qos dscp** command is used to display the configuration of DSCP Priority.

Syntax

show qos dscp

Command Mode

Any Configuration Mode

Example

Display the configuration of DSCP Priority:

```
TP-LINK# show qos dscp
```

show qos scheduler

Description

The **show qos scheduler** command is used to display the schedule rule of the egress queues.

Syntax

show qos scheduler

Command Mode

Any Configuration Mode

Example

Display the schedule rule of the egress queues:

```
TP-LINK# show qos scheduler
```

Chapter 22 Port Mirror Commands

Port Mirror refers to the process of forwarding copies of packets from one port to a mirroring port. Usually, the mirroring port is connected to data diagnose device, which is used to analyze the mirrored packets for monitoring and troubleshooting the network.

mirror add

Description

The **mirror add** command is used to enable Port Mirror function.

Syntax

mirror add [mirrored *port*] [mirroring *port*] { none | ingress | egress | both } [group-*num*]

Parameter

mirrored port —— The port to be monitored.

mirroring port —— The mirroring port.

none —— Remove the mirrored port from the current mirror group.

ingress —— Ingress monitoring. Select this option, the incoming packets received by the mirrored port will be copied to the mirroring port.

egress —— Egress monitoring. Select this option, the outgoing packets sent by the mirrored port will be copied to the mirroring port.

both —— Ingress and Egress monitoring. Select this option, the incoming packets received and the outgoing packets sent by the mirrored port will both be copied to the mirroring port.

group-num—— The group number of mirrior group.

Command Mode

Global Configuration Mode

Example

Configure port 3 as mirrored port, port 4 as mirroring port, the mirror mode as both and group number as 1 :

```
TP-LINK(config)# mirror add 3 4 both 1
```

User Guidelines

1. The mirroring port is corresponding to current interface configuration mode.
2. Mirrored ports number is not limited, but it can’t be the mirroring port at the

same time.

3. Whether the mirroring port and mirrored ports are in the same VLAN or not is not demanded strictly.
4. The mirroring port and mirrored ports cannot be link-aggregation member.

mirror remove group

Description

The **mirror remove group** command is used to remove mirror group.

Syntax

mirror remove group [group-*num*]

Parameter

group-num—— *The group number of mirrior group.*

Command Mode

Global Configuration Mode

Example

Remove mirror group 1:

```
TP-LINK(config)# mirror remove group 1
```

mirror remove mirrored

Description

The **mirror remove mirrored** command is used to remove the mirrored port from the mirror group.

Syntax

mirror remove mirrored [mirrored *port*] [group-*num*]

Parameter

Mirrored port —— *The port to be monitored.*

group-num —— *The group number of mirrior group.*

Command Mode

Global Configuration Mode

Example

Remove mirrored port 1,2-4 from mirror group 1:

```
TP-LINK(config)# mirror remove mirrored 1,2-4 1
```

show mirror

Description

The **show mirror** command is used to display the configuration of mirror group.

Syntax

show mirror [group-*num*]

Parameter

group-num —— *The group number of mirrior group.*

Command Mode

Any Configuration Mode

Example

Display configuration fo mirror group 1:

```
TP-LINK# show mirror 1
```

Chapter 23 Port isolation Commands

Port Isolation provides a method of restricting traffic flow to improve the network security by forbidding the port to forward packets to the ports that are not on its forwarding port list.

port isolation

Description

The **port isolation** command is used to configure the forward portlist of a port, so that this port can only communicate with the ports on its portlist. To delete the corresponding configuration, please use **no port isolation** command.

Syntax

port isolation { *forward-list* }

no port isolation

Parameter

forward-list —— portlist of forward port. It is multi-optional.

Command Mode

Interface Configuration Mode (interface ethernet/interface range ethernet)

Example

Configure port 1 and port 2 can only forward packets to port 6 and port 10:

TP-LINK(config)# interface range ethernet 1-2

TP-LINK(config-if)# port isolation 6,10

show port isolation

Description

The **show port isolation** command is used to display the forward portlist of a port.

Syntax

show port isolation [*port*]

Parameter

port —— The port-number you want to show its forward portlist.

Command Mode

Any Configuration Mode

Example

Display the forward-list of port 6:

TP-LINK# show port isolation 6

Chapter 24 ACL Commands

ACL (Access Control List) is used to filter data packets by configuring a series of match conditions, operations and time ranges. It provides a flexible and secured access control policy and facilitates you to control the network security.

acl time-segment

Description

The **acl time-segment** command is used to add Time-Range. To delete the corresponding Time-Range, please use **no acl time-segment** command. A time-range based ACL enables you to implement ACL control over packets by differentiating the time-ranges. A time-range can be specified in each rule in an ACL. The rule takes effect only when the specified time-range is configured and the system time is within the time-range.

Syntax

acl time-segment {*name*} [**start-time** *start-time*] [**end-time** *end-time*] [**week-day** *week-day*] [**start-date** *start-date*] [**end-date** *end-date*] [**holiday** { disable | enable }]

no acl time-segment {*name*}

Parameter

name —— The Time-Range name, ranging from 1 to 16 characters.

start-time —— The start time of the time-slice, in the format of HH:MM. By default, it is 00:00.

end-time —— The end time of the time-slice, in the format of HH:MM. By default, it is 23:59.

week-day —— Period Mode, in the format of 1-3,6 or daily, off-day, working-day. 1-3,6 represent Monday, Tuesday, Wednesday and Saturday; daily represents every day; off-day represents weekend and working-day represents working day. By default, the period mode is disabled.

start-date —— The start date in Absoluteness Mode, in the format of MM/DD/YYYY. By default, it is 01/01/1970.

end-date —— The end date in Absoluteness Mode, in the format of MM/DD/YYYY. By default, it is 12/31/2099. The absoluteness mode will be disabled if the start date and end date are both not configured.

holiday —— Enable/ Disable Holiday Mode. By default, it is disabled.

Command Mode

Global Configuration Mode

Example

Add a time-range named tSeg1, with time from 8:30 to 12:00 at working day:

TP-LINK(config)# acl time-segment tSeg1 **start-time** 08:30 **end-time** 12:00 **week-day** working-day

acl edit time-segment

Description

The **acl edit time-segment** command is used to edit Time-Range.

Syntax

acl edit time-segment {*name*} [**start-time** *start-time*] [**end-time** *end-time*] [**week-day** *week-day*] [**start-date** *start-date*] [**end-date** *end-date*] [**holiday** {disable | enable}]

Parameter

name —— The Time-Range name, ranging from 1 to 16 characters.

start-time —— The start time of the time-slice, in the format of HH:MM. By default, it is 00:00.

end-time —— The end time of the time-slice, in the format of HH:MM. By default, it is 23:59.

week-day —— Period Mode, in the format of 1-3,6 or daily, off-day, working-day. 1-3, 6 represent Monday, Tuesday, Wednesday and Saturday; daily represents every day; off-day represents weekend and working-day represents working day. By default, the period mode is disabled.

start-date —— The start date in Absoluteness Mode, in the format of MM/DD/YYYY. By default, it is 01/01/1970.

end-date —— The end date in Absoluteness Mode, in the format of MM/DD/YYYY. By default, it is 12/31/2099. The absoluteness mode will be disabled if the start date and end date are both not configured.

holiday —— Enable/ Disable Holiday Mode. By default, it is disabled.

Command Mode

Global Configuration Mode

Example

Edit the time-range named tSeg1, with time from 8:30 to 12:00 at working day:

TP-LINK(config)# acl edit time-segment tSeg1 start-time 08:30 end-time 12:00 week-day working-day

acl holiday

Description

The **acl holiday** command is used to create holiday in Holiday Mode in the **acl time-segment** command. To delete the corresponding holiday, please use **no acl holiday** command.

Syntax

acl holiday {*name*} {*start-date*} {*end-date*}

no acl holiday {*name*}

Parameter

name —— The holiday name, ranging from 1 to 16 characters.

start-date —— The start date of the holiday, in the format of MM/DD, for instance, 05/01.

end-date —— The end date of the holiday, in the format of MM/DD, for instance, 05/03.

Command Mode

Global Configuration Mode

Example

Define National Day, configuring the start date as October 1st, and the end date as October 3rd:

TP-LINK(config)# acl holiday NationalDay 10/01 10/03

acl create

Description

The **acl create** command is used to create ACL. To delete the corresponding ACL, please use **no acl create** command.

Syntax

acl create *id*

no acl create *id*

Parameter

id —— ACL ID, ranging from 0 to 299. 0-99 must be MAC ACL, 100-199 must

be Standard-IP ACL, and 200-299 must be Extend-IP ACL.

Command Mode

Global Configuration Mode

Example

Create a MAC ACL whose ID is 20:

```
TP-LINK(config)# acl create 20
```

acl rule mac-acl

Description

The **acl rule mac-acl** command is used to add MAC ACL rule. To delete the corresponding rule, please use **no acl rule mac-acl** command. MAC ACLs analyze and process packets based on a series of match conditions, which can be the source MAC addresses, destination MAC addresses, VLAN ID, and EtherType carried in the packets.

Syntax

acl rule mac-acl {*acl-id*} {*rule-id*} [**op** { discard | permit }] [[**smac** *source-mac*] {**smask** *source-mac-mask*}] [[**dmac** *destination-mac*] {**dmask** *destination-mac-mask*}] [**vid** *vlan-id*] [**type** *ethernet-type*] [**pri** *user-pri*] [**tseg** *time-segment*]

no acl rule mac-acl {*acl-id*} {*rule-id*}

Parameter

acl-id —— The desired MAC ACL for configuration.

rule-id —— The rule ID.

op —— The operation for the switch to process packets which match the rules. There are two options, discard and permit. Discard means discarding packets, and permit means forwarding packets. By default, the option is permit.

source-mac —— The source MAC address contained in the rule.

source-mac-mask —— The source MAC address mask. It is required if you typed the source MAC address.

destination-mac —— The destination MAC address contained in the rule.

destination-mac-mask —— The destination MAC address mask. It is required if you typed the destination MAC address.

vlan-id —— The VLAN ID contained in the rule, ranging form 1 to 4094.

ethernet-type —— EtherType contained in the rule, in the format of 4-hex

number.

user-pri —— The user priority contained in the rule, ranging from 0 to 7. By default, it is not limited.

time-segment —— The time-range for the rule to take effect. By default, it is not limited.

Command Mode

Global Configuration Mode

Example

Create a MAC ACL whose ID is 20, and add Rule 10 for it. In the rule, the source MAC address is 00:01:3F:48:16:23, the source MAC address mask is 11:11:11:11:11:00, VLAN ID is 2, the user priority is 5, the time-range for the rule to take effect is tSeg1, and the packets match this rule will be forwarded by the switch:

TP-LINK(config)# acl create 20

TP-LINK(config)# acl rule mac-acl 20 10 **op** permit **smac** 00:01:3F:48:16:23 **smask** 11:11:11:11:11:00 **vid** 2 **pri** 5 **tseg** tSeg1

acl edit rule mac-acl

Description

The **acl edit rule mac-acl** command is used to edit MAC ACL rule.

Syntax

acl edit rule mac-acl {*acl-id*} {*rule-id*} [**op** {discard | permit}] [[**smac** *source-mac*] {**smask** *source-mac-mask*}] [[**dmac** *destination-mac*] {**dmask** *destination-mac-mask*}] [**vid** *vlan-id*] [**type** *ethernet-type*] [**pri** *user-pri*] [**tseg** *time-segment*] [**index** *idx*]

Parameter

acl-id —— The desired MAC ACL for configuration.

rule-id —— The rule ID.

op —— The operation for the switch to process packets which match the rules. There are two options, discard and permit. Discard means discarding packets, and permit means forwarding packets. By default, the option is permit.

source-mac —— The source MAC address contained in the rule.

source-mac-mask —— The source MAC address mask. It is required if you typed the source MAC address.

destination-mac —— The destination MAC address contained in the rule.

destination-mac-mask —— The destination MAC address mask. It is required if you typed the destination MAC address.

vlan-id —— The VLAN ID contained in the rule, ranging form 1 to 4094.

ethernet-type —— EtherType contained in the rule, in the format of 4-hex number.

user-pri —— The user priority contained in the rule, ranging from 0 to 7. By default, it is not limited.

time-segment —— The time-range for the rule to take effect. By default, it is not limited.

index —— Change the index number of the entry.

Command Mode

Global Configuration Mode

Example

Edit the MAC ACL whose ID is 20, and add Rule 10 for it. In the rule, the source MAC address is 00:01:3F:48:16:23, the source MAC address mask is 11:11:11:11:11:00, VLAN ID is 2, the user priority is 5, the time-range for the rule to take effect is tSeg1, and the packets match this rule will be forwarded by the switch:

TP-LINK(config)# acl edit rule mac-acl 20 10 op permit smac

00:01:3F:48:16:23 smask 11:11:11:11:11:00 vid 2 pri 5 tseg tSeg1

acl rule std-acl

Description

The **acl rule std-acl** command is used to add Standard-IP ACL rule. To delete the corresponding rule, please use **no acl rule std-acl** command. Standard-IP ACLs analyze and process data packets based on a series of match conditions, which can be the source IP addresses and destination IP addresses carried in the packets.

Syntax

acl rule std-acl {*acl-id*} {*rule-id*} [**op** { discard | permit }] [[**sip** *source-ip*] {**smask** *source-ip-mask*}] [[**dip** *destination-ip*] {**dmask** *destination-ip-mask*}] [**tseg** *time-segment*]

no acl rule std-acl {*acl-id*} {*rule-id*}

Parameter

acl-id —— The desired Standard-IP ACL for configuration.

rule-id —— The rule ID.

op —— The operation for the switch to process packets which match the rules. There are two options, discard and permit. Discard means discarding packets, and permit means forwarding packets. By default, the option is permit.

source-ip —— The source IP address contained in the rule.

source-ip-mask —— The source IP address mask. It is required if you typed the source IP address.

destination-ip —— The destination IP address contained in the rule.

destination-ip-mask —— The destination IP address mask. It is required if you typed the destination IP address.

time-segment —— The time-range for the rule to take effect. By default, it is not limited.

Command Mode

Global Configuration Mode

Example

Create a Standard-IP ACL whose ID is 120, and add Rule 10 for it. In the rule, the source IP address is 192.168.0.100, the source IP address mask is 255.255.255.0, the time-range for the rule to take effect is tSeg1, and the packets match this rule will be forwarded by the switch:

TP-LINK(config)# acl create 120

TP-LINK(config)# acl rule std-acl 120 10 **op** permit **dip** 192.168.0.100 **dmask** 255.255.255.0 **tseg** tSeg1

acl edit rule std-acl

Description

The **acl edit rule std-acl** command is used to edit Standard-IP ACL rule.

Syntax

acl edit rule std-acl {*acl-id*} {*rule-id*} [**op** {discard | permit}] [[**sip** *source-ip*] {**smask** *source-ip-mask*}] [[**dip** *destination-ip*] {**dmask** *destination-ip-mask*}] [**tseg** *time-segment*] [**index** *idx*]

Parameter

acl-id —— The desired Standard-IP ACL for configuration.

rule-id —— The rule ID.

op —— The operation for the switch to process packets which match the rules. There are two options, discard and permit. Discard means discarding packets, and permit means forwarding packets. By default, the option is permit.

source-ip —— The source IP address contained in the rule.

source-ip-mask —— The source IP address mask. It is required if you typed the source IP address.

destination-ip —— The destination IP address contained in the rule.

destination-ip-mask —— The destination IP address mask. It is required if you typed the destination IP address.

time-segment —— The time-range for the rule to take effect. By default, it is not limited.

index —— Change the index number of the entry.

Command Mode

Global Configuration Mode

Example

Edit Rule 10 for the Standard-IP ACL whose ID is 120. In the rule, the source IP address is 192.168.0.100, the source IP address mask is 255.255.255.0, the time-range for the rule to take effect is tSeg1, and the packets match this rule will be forwarded by the switch:

TP-LINK(config)# acl edit rule std-acl 120 10 **op** permit **dip** 192.168.0.100 **dmask** 255.255.255.0 **tseg** tSeg1

acl policy policy-add

Description

The **acl policy policy-add** command is used to add Policy. To delete the corresponding Policy, please use **no acl policy policy-add** command. A Policy is used to control the data packets those match the corresponding ACL rules by configuring ACLs and actions together for effect. The operations here include stream mirror, stream condition, QoS Remarking and redirect.

Syntax

acl policy policy-add *name*

no acl policy policy-add *name*

Parameter

name —— The Policy Name, ranging from 1 to 16 characters.

Command Mode

Global Configuration Mode

Example

Add a Policy named policy1:

TP-LINK(config)# acl policy policy-add policy1

acl policy action-add

Description

The **acl policy action-add** command is used to add ACLs and create actions for the policy. To delete the corresponding actions, please use **no acl policy action-add** command.

Syntax

acl policy action-add {*policy-name*} {*acl-id*} [**rate** *rate*] [**osd** { none | discard }] [**e-port** *egress-port*] [**dscp** *dscp*] [**pri** *local-pri*] [**mirr** *mirror*]

no acl policy action-add {*policy-name*} {*acl-id*}

Parameter

policy-name —— The Policy Name, ranging from 1 to 16 characters.

acl-id —— The ACL for configuration in the policy.

rate —— The rate of Stream Condition, ranging from 1 to 1000000 in kbps.

osd —— Out of Band disposal of Stream Condition. It is the disposal way of the data packets those are transmitted beyond the rate. There are two options, none and discard. By default, the option is none.

egress-port —— The Destination Port of Redirect. The data packets those match the corresponding ACL will be forwarded to the specific port. The destination port ranges from 1 to 8. By default, it is All Ports.

dscp —— DSCP of QoS Remark. Specify the DSCP region for the data packets those match the corresponding ACL. DSCP ranges from 0 to 63. By default, it is not limited.

local-pri —— Local Priority of QoS Remark. Specify the local priority for the data packets those match the corresponding ACL. Local Priority ranges form 0 to 3.

mirror —— The Mirror Port of Stream Mirror, ranging form 1 to 8. By default, it is 1.

Command Mode

Global Configuration Mode

Example

Create a Policy named policy1. For the data packets those match ACL 120 in the policy, if the rate beyond 1000kbps, will be discarded by the switch:

TP-LINK(config)# acl policy policy-add policy1

TP-LINK(config)# acl policy action-add policy1 120 **rate** 1000 **osd** discard

acl edit action

Description

The **acl edit action** command is used to edit actions for the policy.

Syntax

acl edit action {*policy-name*} {*acl-id*} [**rate** *rate*] [**osd** {none | discard}] [**e-port** *egress-port*] [**vid** *vlan-id*] [**mirr** *mirror*]

Parameter

policy-name —— The Policy Name, ranging from 1 to 16 characters.

acl-id —— The ACL for configuration in the policy.

rate —— The rate of Stream Condition, ranging from 1 to 1000000 in kbps.

osd —— Out of Band disposal of Stream Condition. It is the disposal way of the data packets those are transmitted beyond the rate. There are two options, none and discard. By default, the option is none.

egress-port —— The Destination Port of Redirect. The data packets those match the corresponding ACL will be forwarded to the specific port. The destination port ranges from 1 to 28. By default, it is All Ports.

vlan-id —— The VLAN ID of Redirect. The data packets those match the corresponding ACL will be forwarded in the specific VLAN. The VLAN ID ranges from 1 to 4094.

mirror —— The Mirror Port of Stream Mirror, ranging form 1 to 28. By default, it is 1.

Command Mode

Global Configuration Mode

Example

Edit the actions for the policy1. For the data packets those match ACL 120 in the policy, if the rate beyond 1000kbps, will be discarded by the switch:

TP-LINK(config)# acl edit action policy1 120 **rate** 1000 **osd** discard

acl bind to-port

Description

The **acl bind to-port** command is used to bind a policy to a port. To cancel the bind relation, please use **no acl bind to-port** command.

Syntax

acl bind to-port {*policy-name*} {*port*}

no acl bind to-port {*policy-name*} {*port*}

Parameter

policy-name —— The name of the policy desired to bind.

port —— The number of the port desired to bind, ranging from 1 to 10.

Command Mode

Global Configuration Mode

Example

Bind policy1 to Port 1,3-5:

```
TP-LINK(config)# acl bind to-port policy1 1,3-5
```

acl bind to-vlan

Description

The **acl bind to-vlan** command is used to bind a policy to a VLAN. To cancel the bind relation, please use **no policy to-vlan** command.

Syntax

acl bind to-vlan {*policy-name*} {*vlan-id*}

no policy to-vlan {*policy-name*} {*vlan-id*}

Parameter

policy-name —— The name of the policy desired to bind.

vlan-id —— The ID of the VLAN desired to bind, ranging from 1 to 4094.

Command Mode

Global Configuration Mode

Example

Bind policy1 to VLAN 2,4-6:

```
TP-LINK(config)# acl bind to-vlan policy1 2,4-6
```

show acl time-segment

Description

The **show acl time-segment** command is used to display the configuration of Time-Range.

Syntax

show acl time-segment

Command Mode

Any Configuration Mode

Example

Display the configuration of Time-Range:

```
TP-LINK> show acl time-segment
```

show acl holiday

Description

The **show acl holiday** command is used to display the defined holiday.

Syntax

show acl holiday

Command Mode

Any Configuration Mode

Example

Display the defined holiday:

```
TP-LINK> show acl holiday
```

show acl config

Description

The **show acl config** command is used to display the configuration of ACL.

Syntax

show acl config *acl-id*

Parameter

acl-id —— The ID of the ACL selected to display the configuration.

Command Mode

Any Configuration Mode

Example

Display the configuration of the MAC ACL whose ID is 20:

```
TP-LINK> show acl config 20
```

show acl bind

Description

The **show acl bind** command is used to display the configuration of Policy bind.

Syntax

show acl bind

Command Mode

Any Configuration Mode

Example

Display the configuration of Policy bind:

```
TP-LINK> show acl bind
```

Chapter 25 MSTP Commands

MSTP (Multiple Spanning Tree Protocol), compatible with both STP and RSTP and subject to IEEE 802.1s, can disbranch a ring network. STP is to block redundant links and backup links as well as optimize paths.

spanning-tree global

Description

The **spanning-tree global** command is used to configure STP globally. To return to the default configuration, please use **no spanning-tree global** command.

Syntax

spanning-tree global [**status** { disable | enable }] [**mode** { stp | rstp | mstp }] [**cist** *cist*] [**htime** *hello-time*] [**mage** *max-age*] [**delay** *forward-delay*] [**hcount** *hold-count*] [**mhop** *max-hops*]

no spanning-tree global

Parameter

status —— Enable/ Disable STP function globally. By default, it is disabled.

mode —— STP Version. There are three options, including SRP (Spanning Tree Protocol), RSTP (Rapid Spanning Tree Protocol) and MSTP (Multiple Spanning Tree Protocol). By default, the STP version is STP.

cist —— CIST Priority, which must be multiple of 4096 ranging from 0 to 61440. By default, the CIST priority is 32768. CIST Priority is an important criterion on determining the root bridge. In the same condition, the switch with the highest priority will be chosen as the root bridge. The lower value has the higher priority.

hello-time —— Hello Time, which is the interval to send BPDU packets, and used to test the links. Hello Time rangs form 1 to10 in seconds and it is 2 by default. Otherwise, 2 * (Hello Time + 1) <= Max Age.

max-age —— Max Age, which is the maximum time the switch can wait without receiving a BPDU before attempting to reconfigure. Max Age ranges form 6 to 40 in seconds. By default, it is 20.

forward-delay —— Forward Delay, which is the time for the port to transit its state after the network topology is changed. Forward Delay ranges from 4 to 30 in seconds and it is 15 by default. Otherwise, 2 * (Forward Delay - 1) >= Max Age.

hold-count —— TxHold Count, which is the maximum number of BPDU packets transmitted per Hello Time interval. TxHold Count ranges from 1 to 20 in pps. By default, it is 5.

max-hops —— Max Hops, which is the maximum number of hops that occur in a specific region before the BPDU is discarded. Max Hops ranges form 1 to 40 in hop. By default, it is 20.

Command Mode

Global Configuration Mode

Example

Enable the STP function, and configure the STP version as MSTP, CIST priority as 4096, Hello Time as 4 seconds, Max Age as 10 seconds, Forward Delay as 10 seconds, TxHold Count as 8pps and Max Hops as 15 hops:

TP-LINK(config)# spanning-tree global status enable **mode** mstp **cist** 4096 **htime** 4 **mage** 10 **delay** 10 **hcount** 8 **mhop** 15

spanning-tree common-config

Description

The **spanning-tree common-config** command is used to configure the parameters of the ports for comparison in the CIST and the common parameters of all instances. To return to the default configuration, please use **no spanning-tree common-config** command. CIST (Common and Internal Spanning Tree) is the spanning tree in a switched network, connecting all devices in the network.

Syntax

spanning-tree common-config [**status** { disable | enable }] [**pri** *priority*] [**expath** *expath-consum*] [**inpath** *inpath-consum*] [**edge** { disable | enable }] [**ptop** { auto | open | close }]

no spanning-tree common-config

Parameter

status —— Enable/ Disable STP function for the desired port. By default, it is disabled.

priority —— Port Priority, which must be multiple of 16 ranging from 0 to 240. By default, the port priority is 128. Port Priority is an important criterion on determining if the port connected to this port will be chosen as the root port. In the same condition, the port with the highest priority will be chosen as the root

port. The lower value has the higher priority.

expath-consum —— ExtPath Cost, which is used to choose the path and calculate the path costs of ports in different MST regions. It is an important criterion on determining the root port. The lower value has the higher priority. By default, it is automatic.

inpaht-consum —— IntPath Cost, which is used to choose the path and calculate the path costs of ports in an MST region. It is an important criterion on determining the root port. The lower value has the higher priority. By default, it is automatic.

edge —— Enable/ Disable Edge Port. By default, it is disabled. The edge port can transit its state from blocking to forwarding rapidly without waiting for forward delay.

ptop —— The P2P link status, with auto, open and close options. By default, the option is auto. If the two ports in the P2P link are root port or designated port, they can transit their states to forwarding rapidly to reduce the unnecessary forward delay.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable the STP function of port 1, and configure the Port Priority as 64, ExtPath Cost as 100, IntPath Cost as 100, and then enable Edge Port:

```
TP-LINK(config)# interface ethernet 1
TP-LINK(config-if)# spanning-tree common-config status enable pri 64
expath 100 inpath 100 edge enable
```

spanning-tree region

Description

The **spanning-tree region** command is used to configure the region of MSTP. A switched network can be divided into many MST regions (Multiple Spanning Tree Regions). An MST region comprises multiple switches which have the same region configuration (including region name and region revision configuration) and the same VLAN-to-spanning-tree mapping configuration.

Syntax

spanning-tree region {*name*} {*revision*}

Parameter

name —— The region name, used to identify MST region. It ranges from 1 to 32 characters.

revision —— The revision for MST region identification, ranging from 0 to 65535.

Command Mode

Global Configuration Mode

Example

Configure the region name of MSTP as r1, and the revision level as 100:

```
TP-LINK(config)# spanning-tree region r1 100
```

spanning-tree msti

Description

The **spanning-tree msti** command is used to configure MSTP Instance. To return to the default configuration of the corresponding Instance, please use **no spanning-tree msti** command. Instance Configuration, a property of MST region, is used to describe the VLAN-to-spanning-tree mapping configuration. You can assign VLAN to different instances appropriate to your needs. Every instance is a VLAN group independent of other instances and CST.

Syntax

spanning-tree msti {*msti-id*} [**status** { disable | enable }] [**pri** *priority*] [**mapped** *mapped*]

no spanning-tree msti {*msti-id*}

Parameter

msti-id —— Instance ID, ranging from 1 to 8.

status —— Enable/ Disable the corresponding instance. By default, it is disabled.

priority —— MSTI Priority, which must be multiple of 4096 ranging from 0 to 61440. By default, it is 32768. MSTI priority is an important criterion on determining if the switch will be chosen as the root bridge in the specific instance.

mapped —— VLAN-Instance mapping. Enter the VLAN ID which belongs to the corresponding instance ID, in the format of 1,2-4.

Command Mode

Global Configuration Mode

Example

Enable Instance 1, add VLAN 2, 3, 4, 5, 8 for it, and configure MSTI Priority as 4096:

TP-LINK(config)# spanning-tree msti 1 **status** enable **pri** 4096 **mapped** 2-5,8

spanning-tree msti

Description

The **spanning-tree msti** command is used to configure MSTP Instance Port. To return to the default configuration of the corresponding Instance Port, please use **no spanning-tree msti** command. A port can play different roles in different spanning tree instance. You can use this command to configure the parameters of the ports in different instance IDs as well as view status of the ports in the specified instance.

Syntax

spanning-tree msti {*id*} [**pri** *pri*] [**path** *path*]

no spanning-tree msti {*id*}

Parameter

id —— The desired instance ID for its port configuration, ranging from 1 to 8.

pri —— Port Priority, which must be multiple of 16 ranging from 0 to 240. By default, it is 128. Port Priority is an important criterion on determining if the port will be chosen as the root port by the device connected to this port.

path —— Path Cost, which is used to choose the path and calculate the path costs of ports in an MST region. It is an important criterion on determining the root port. The lower value has the higher priority.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Configure the priority of port 5 in instance 1 as 64, and Path Cost as 100:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)# spanning-tree msti 1 **pri** 64 **path** 100

spanning-tree tc-defend

Description

The **spanning-tree tc-defend** command is used to configure the TC Protect of

Spanning Tree globally. To return to the default configuration, please use **no spanning-tree tc-defend** command. A switch removes MAC address entries upon receiving TC-BPDUs. If a malicious user continuously sends TC-BPDUs to a switch, the switch will be busy with removing MAC address entries, which may decrease the performance and stability of the network.

Syntax

spanning-tree tc-defend [**threshold** *threshold*] [**period** *period*]

no spanning-tree tc-defend

Parameter

threshold —— TC Threshold, ranging from 1 to 100 packets. By default, it is 20. TC Threshold is the maximum number of the TC-BPDUs received by the switch in a TC Protect Cycle.

period —— TC Protect Cycle, ranging from 1 to 10 in seconds. By default, it is 5.

Command Mode

Global Configuration Mode

Example

Configure TC Threshold as 30 packets, and TC Protect Cycle as 10 seconds:

TP-LINK(config)# spanning-tree tc-defend threshold 30 **period** 10

spanning-tree security

Description

The **spanning-tree security** command is used to configure MSTP Port Protect. To return to the default configuration, please use **no spanning-tree security** command. Port Protect function is to prevent the devices from any malicious attack against STP features.

Syntax

spanning-tree security [**loop** { disable | enable }] [**root** { disable | enable }] [**TC** { disable | enable }] [**defend** { disable | enable }] [**hold** { disable | enable }]

no spanning-tree security

Parameter

loop —— Enable/ Disable Loop Protect. By default, it is disabled. Loop Protect is to prevent the loops in the network brought by recalculating STP because of link failures and network congestions.

root —— Enable/ Disable Root Protect. By default, it is disabled. Root Protect

is to prevent wrong network topology change caused by the role change of the current legal root bridge.

TC —— Enable/ Disable TC Protect. By default, it is disabled.

defend —— Enable/ Disable BPDU Protect. By default, it is disabled. BPDU Protect is to prevent the edge port from being attacked by maliciously created BPDUs.

hold —— Enable/ Disable BPDU Filter. By default, it is disabled. BPDU Filter is to prevent BPDUs flood in the STP network.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable Loop Protect, Root Protect, TC Protect, BPDU Protect, and BPDU Filter for port 2:

```
TP-LINK(config)# interface ethernet 2
TP-LINK(config-if)# spanning-tree security loop enable root enable TC
enable defend enable hold enable
```

spanning-tree mcheck

Description

The **spanning-tree mcheck** command is used to enable MCheck.

Syntax

spanning-tree mcheck

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable MCheck for port 2:

```
TP-LINK(config)# interface ethernet 2
TP-LINK(config-if)# spanning-tree mcheck
```

show spanning-tree global-info

Description

The **show spanning-tree global-info** command is used to display the current status of Spanning Tree.

Syntax

show spanning-tree global-info

Command Mode

Any Configuration Mode

Example

Display the current status of Spanning Tree:

```
TP-LINK# show spanning-tree global-info
```

show spanning-tree global-config

Description

The **show spanning-tree global-config** command is used to display the global configuration of Spanning Tree.

Syntax

show spanning-tree global-config

Command Mode

Any Configuration Mode

Example

Display the global configuration of Spanning Tree:

```
TP-LINK# show spanning-tree global-config
```

show spanning-tree port-config

Description

The **show spanning-tree port-config** command is used to display the Port configuration of Spanning Tree.

Syntax

show spanning-tree port-config [*port*]

Parameter

port —— The port selected to display the configuration, ranging from 1 to 10. By default, the configuration of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the configuration of port 5:

TP-LINK(config)# show spanning-tree port-config 5

show spanning-tree region

Description

The **show spanning-tree region** command is used to display the Region configuration of MSTP.

Syntax

show spanning-tree region

Command Mode

Any Configuration Mode

Example

Display the region configuration of MSTP:

TP-LINK(config)# show spanning-tree region

show spanning-tree msti config

Description

The **show spanning-tree msti config** command is used to display the Instance configuration of Spanning Tree.

Syntax

show spanning-tree msti config {*id*}

Parameter

id —— The ID of the instance selected to display the configuration, ranging from 1 to 8.

Command Mode

Any Configuration Mode

Example

Display the configuration of instance 1:

TP-LINK(config)# show spanning-tree msti config 1

show spanning-tree msti port

Description

The **show spanning-tree msti port** command is used to display the Instance Port configuration of Spanning Tree.

Syntax

show spanning-tree msti port {*id*} [*port*]

Parameter

id —— Instance ID, ranging from 1 to 8.

port —— The port selected to display the configuration, ranging from 1 to 10. By default, the configuration of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the configuration of port 5 in Instance 1:

```
TP-LINK(config)# show spanning-tree msti port 1 5
```

show spanning-tree security tc-defend

Description

The **show spanning-tree security tc-defend** command is used to display TC Threshold and TC Protect Cycle of Spanning Tree.

Syntax

show spanning-tree security tc-defend

Command Mode

Any Configuration Mode

Example

Display TC Threshold and TC Protect Cycle of Spanning Tree:

```
TP-LINK(config)# show spanning-tree security tc-defend
```

show spanning-tree security port-defend

Description

The **show spanning-tree security port-defend** command is used to display the Port Protect configuration of Spanning Tree.

Syntax

show spanning-tree security port-defend [*port*]

Parameter

port —— The port selected to display the configuration, ranging from 1 to 10. By default, the Port Protect configuration of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the Port Protect configuration of port 2:

TP-LINK(config)# show spanning-tree security port-defend 2

Chapter 26 IGMP Commands

IGMP Snooping (Internet Group Management Protocol Snooping) is a multicast control mechanism running on Layer 2 switch. It can effectively prevent multicast groups being broadcasted in the network.

igmp-snooping global

Description

The **igmp-snooping global** command is used to configure IGMP globally. To return to the default configuration, please use **no igmp-snooping global** command.

Syntax

igmp-snooping global [**status** { disable | enable }] [**unknown-packet** { pass | discard }]

no igmp-snooping global

Parameter

status —— Enable/ Disable IGMP Snooping function globally on the switch. By default, it is disabled.

unknown-packet —— The operation for the switch to process unknown multicast, with pass and discard options.

Command Mode

Global Configuration Mode

Example

Enable IGMP Snooping function, and specify the operation to process unknown multicast as discard:

TP-LINK(config)# igmp-snooping global status enable **unknown-packet** discard

igmp-snooping config

Description

The **igmp-snooping config status** command is used to configure IGMP Snooping and Fast Leave function for port. To return to the default configuration, please use **no igmp-snooping config** command.

Syntax

igmp-snooping config status {disable | enable} **fast-leave** {disable | enable}

no igmp-snooping config

Parameter

status —— Enable/ Disable IGMP Snooping for the desired port.

fast-leave —— Enable/ Disable Fast Leave feature for the desired port. If Fast Leave is enabled for a port, the switch will immediately remove this port from the multicast group upon receiving IGMP leave messages.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable IGMP Snooping and Fast Leave function for port 5:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)# igmp-snooping config status enable **fast-leave** enable

igmp-snooping vlan-config-add

Description

The **igmp-snooping vlan-config-add** command is used to configure IGMP Snooping parameters for individual VLANs. To delete the corresponding configuration for the certain VLAN, please use **no igmp-snooping vlan-config-add** command. Multicast groups established by IGMP Snooping are based on VLANs. You can configure different IGMP parameters for different VLANs.

Syntax

igmp-snooping vlan-config-add {*vlan-id*} [**rtime** *router-time*] [**mtime** *member-time*] [**ltime** *leave-time*] [**rport** *router-port*]

no igmp-snooping vlan-config-add {*vlan-id*}

Parameter

vlan-id —— The ID of the VLAN desired to enable IGMP Snooping, ranging from 1 to 4094.

router-time —— Router Port Time. Within this time, if the switch does not receive IGMP query message from the router port, it will consider this port is not a router port any more. Router Port Time ranges from 60 to 600 in seconds. By default, it is 300.

member-time —— Member Port Time. Within this time, if the switch does not receive IGMP report message from the member port, it will consider this port is not a member port any more. Member Port Time ranges from 60 to 600 in seconds. By default, it is 260.

leave-time —— Leave Time, which is the interval between the switch reveiving a leave message from a host and the switch removing the host from the multicast groups. Leave Time ranges from 1 to 30 in seconds. By default, it is 1.

router-port —— Static Router Port, which is mainly used in the network with stable topology. It ranges from 1 to 10.

Command Mode

Global Configuration Mode

Example

Enable IGMP Snooping for VLAN 1, and configure Router Port Time as 200 seconds, Member Port Time as 100 seconds, Leave time as 10 seconds and Static Router Port as port 1:

TP-LINK(config)# igmp-snooping vlan-config-add 1 **rtime** 200 **mtime** 100 **ltime** 10 **rport** 1

igmp-snooping vlan-config

Description

The **igmp-snooping vlan-config** command is used to modify IGMP Snooping parameters for individual VLANs. To return to the primary configuration of the corresponding VLAN, please use **no igmp-snooping vlan-config** command.

Syntax

igmp-snooping vlan-config {*vlan-id*} [**rtime** *router-time*] [**mtime** *member-time*] [**ltime** *leave-time*] [**rport** *router-port*]

no igmp-snooping vlan-config {*vlan-id*}

Parameter

vlan-id —— The ID of the VLAN desired to modify configuration, ranging from 1 to 4094.

router-time —— Router Port Time. Within this time, if the switch does not receive IGMP query message from the router port, it will consider this port is not a router port any more. Router Port Time ranges from 60 to 600 in seconds. By default, it is 300.

member-time —— Member Port Time. Within this time, if the switch does not

receive IGMP report message from the member port, it will consider this port is not a member port any more. Member Port Time ranges from 60 to 600 in seconds. By default, it is 260.

leave-time —— Leave Time, which is the interval between the switch reveiving a leave message from a host and the switch removing the host from the multicast groups. Leave Time ranges from 1 to 30 in seconds. By default, it is 1.

router-port —— Static Router Port, which is mainly used in the network with stable topology. It ranges from 1 to 10.

Command Mode

Global Configuration Mode

Example

Modify Router Port Time as 300 seconds, Member Port Time as 200 seconds, and Leave time as 15 seconds for VLAN 1:

TP-LINK(config)# igmp-snooping vlan-config 1 **rtime** 300 **mtime** 200 **ltime** 15

igmp-snooping multi-vlan-config

Description

The **igmp-snooping multi-vlan-config** command is used to create Multicast VLAN. To delete the corresponding Multicast VLAN, please use **no igmp-snooping multi-vlan-config** command.

Syntax

igmp-snooping multi-vlan-config { disable | enable } {*vid*} [**rtime** *router-time*] [**mtime** *member-time*] [**ltime** *leave-time*] [**rport** *router-port*]

no igmp-snooping multi-vlan-config

Parameter

disable | enable —— Enable/ Disable Multicast VLAN.

vid —— The ID of the VLAN desired to modify configuration, ranging from 2 to 4094.

router-time —— Router Port Time. Within this time, if the switch does not receive IGMP query message from the router port, it will consider this port is not a router port any more. Router Port Time ranges from 60 to 600 in seconds. By default, it is 300.

member-time —— Member Port Time. Within this time, if the switch does not receive IGMP report message from the member port, it will consider this port is not a member port any more. Member Port Time ranges from 60 to 600 in

seconds. By default, it is 260.

leave-time —— Leave Time, which is the interval between the switch reveiving a leave message from a host and the switch removing the host from the multicast groups. Leave Time ranges from 1 to 30 in seconds. By default, it is 1.

router-port —— Static Router Port, which is mainly used in the network with stable topology. It ranges from 1 to 10.

Command Mode

Global Configuration Mode

Example

Enable Multicast VLAN, and configure Router Port Time as 300 seconds, Member Port Time as 200 seconds, and Leave time as 15 seconds for VLAN 2:

TP-LINK(config)# igmp-snooping multi-vlan-config enable 2 **rtime** 300 **mtime** 200 **ltime** 15

igmp-snooping static-entry-add

Description

The **igmp-snooping static-entry-add** command is used to create static multicast IP entry. To delete the corresponding entry, please use **no igmp-snooping static-entry-add** command. The multicast groups configured here are not learned by IGMP Snooping and independent of dynamic multicast groups and multicast filter. Multicast IP addresses ranges from 224.0.0.0 to 239.255.255.255. The range for receivers to join is from 224.0.1.0 to 239.255.255.255.

Syntax

igmp-snooping static-entry-add {*ip*} {*vlan-id*} {*switch-port*}

no igmp-snooping static-entry-add {*ip*} {*vlan-id*}

Parameter

ip —— The static multicast IP address.

vlan-id —— The VLAN ID of the multicast IP, ranging from 1 to 4094.

switch-port —— The forward port of the multicast group, in the format of 1-3,6.

Command Mode

Global Configuration Mode

Example

Add static multicast IP address 225.0.0.1, which correspond to VLAN 2, and

configure the forward port as port 1:

TP-LINK(config)# igmp-snooping static-entry-add 225.0.0.1 2 1

igmp-snooping filter-add

Description

The **igmp-snooping filter-add** command is used to configure the multicast IP-range desired to filter. To delete the corresponding IP-range, please use **no igmp-snooping filter-add** command. When IGMP Snooping is enabled, you can specified the multicast IP-range the ports can join so as to restrict users ordering multicast programs via configuring multicast filter rules. Multicast IP addresses ranges from 224.0.0.0 to 239.255.255.255. The range for receivers to join is from 224.0.1.0 to 239.255.255.255.

Syntax

igmp-snooping filter-add {*id*} {*start-ip*} {*end-ip*}

no igmp-snooping filter-add {*id*}

Parameter

id —— IP-range ID, ranging from 1 to 30.

start-ip —— The start multicast IP of the IP-range.

end-ip —— The end multicast IP of the IP-range.

Command Mode

Global Configuration Mode

Example

Add multicast IP-range 225.0.0.1~225.0.0.4 to filter, and specify the IP-range ID as 20:

TP-LINK(config)# igmp-snooping filter-add 20 225.0.0.1 225.0.0.4

igmp-snooping filter-config

Description

The **igmp-snooping filter-config** command is used to modify the multicast filtering IP-range.

Syntax

igmp-snooping filter-config {*id*} {*start-ip*} {*end-ip*}

Parameter

id —— IP-range ID, ranging from 1 to 30.

start-ip —— The start multicast IP of the IP-range.

end-ip —— The end multicast IP of the IP-range.

Command Mode

Global Configuration Mode

Example

Modify the multicast IP-range whose ID is 20 as 225.0.0.10~225.0.0.12:

TP-LINK(config)# igmp-snooping filter-config 20 225.0.0.10 225.0.0.12

igmp-snooping filter

Description

The **igmp-snooping filter** command is used to configure Port Filter. To return to the default configuration, please use **no igmp-snooping filter** command. When the switch receives IGMP report message, it examines the multicast filtering IP ID configured on the access port to determine if the port can join the multicast group. If the multicast IP is not filtered, the switch will add the port to the forward port list of the multicast group. Otherwise, the switch will drop the IGMP report message. In that way, you can control the multicast groups that users can access.

Syntax

igmp-snooping filter [**status** [disable | enable] | **mode** [refuse | accept] | **addr-id** [*filter-addr-id*] | **maxgroup** [*max-group*]]

no igmp-snooping filter

Parameter

status —— Enable/ Disable port multicast filtering function. By default, it is disabled.

mode —— Action Mode, with refuse and accept options. Refuse indicates only the multicast packets whose multicast IP is not in the IP-range will be processed, while accept indicates only the multicast packets whose multicast IP is in the IP-range will be processed. By default, the option is accept.

filter-addr-id —— The IP-range ID the port will be bound to, in the format of 1-3, 4, 6. Up to 5 IP-Ranges can be bound to one port.

max-group —— The maximum number of multicast groups for the port to join in. It is used to prevent some ports taking up too much bandwidth.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable multicast filtering function for port 5, specify Action Mode as accept, bound IP-range 2, 3, 4, and specify the maximum number of multicast groups for port 5 to join in as 128:

```
TP-LINK(config)# interface ethernet 5
TP-LINK(config-if)# igmp-snooping filter status enable mode accept addr-id 2-4 maxgroup 128
```

show igmp-snooping global-config

Description

The **show igmp-snooping global-config** command is used to display the global configuration of IGMP.

Syntax

show igmp-snooping global-config

Command Mode

Any Configuration Mode

Example

Display the global configuration of IGMP:

```
TP-LINK> show igmp-snooping global-config
```

show igmp-snooping port-config

Description

The **show igmp-snooping port-config** command is used to display the port configuration of IGMP.

Syntax

show igmp-snooping port-config [*port*]

Parameter

port —— The port selected to display the configuration, ranging from 1 to 10. By default, the configuration of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the IGMP configuration of port 2:

```
TP-LINK> show igmp-snooping port-config 2
```

show igmp-snooping vlan-config

Description

The **show igmp-snooping vlan-config** command is used to display the VLAN configuration of IGMP.

Syntax

show igmp-snooping vlan-config

Command Mode

Any Configuration Mode

Example

Display the VLAN configuration of IGMP:

```
TP-LINK> show igmp-snooping vlan-config
```

show igmp-snooping multi-vlan

Description

The **show igmp-snooping multi-vlan** command is used to display the Multicast VLAN configuration.

Syntax

show igmp-snooping multi-vlan

Command Mode

Any Configuration Mode

Example

Display the Multicast VLAN configuration:

```
TP-LINK> show igmp-snooping multi-vlan
```

show igmp-snooping multi-ip-list

Description

The **show igmp-snooping multi-ip-list** command is used to display the Multicast IP table.

Syntax

show igmp-snooping multi-ip-list

Command Mode

Any Configuration Mode

Example

Display the Multicast IP table:

```
TP-LINK> show igmp-snooping multi-ip-list
```

show igmp-snooping filter-ip-addr

Description

The **show igmp-snooping filter-ip-addr** command is used to display the Multicast Filter IP-Range table.

Syntax

show igmp-snooping filter-ip-addr

Command Mode

Any Configuration Mode

Example

Display the Multicast Filter IP-Range table:

```
TP-LINK(config)# show igmp-snooping filter-ip-addr
```

show igmp-snooping port-filter

Description

The **show igmp-snooping port-filter** command is used to display the configuration of Multicast Port Filter.

Syntax

show igmp-snooping port-filter [*port-num*]

Parameter

port-num —— The port selected to display the configuration of Multicast Filter, ranging from 1 to 10. By default, the configuration of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the Multicast Filter configuration of port 5:

```
TP-LINK> show igmp-snooping port-filter 5
```

show igmp-snooping packet-stat

Description

The **show igmp-snooping packet-stat** command is used to display the Packet Statistics information of all ports.

Syntax

show igmp-snooping packet-stat

Command Mode

Any Configuration Mode

Example

Display the Packet Statistics information:

```
TP-LINK> show igmp-snooping packet-stat
```

show igmp-snooping packet-stat-clear

Description

The **show igmp-snooping packet-stat-clear** command is used to clear the Packet Statistics information of all ports.

Syntax

show igmp-snooping packet-stat-clear

Command Mode

Any Configuration Mode

Example

Clear the Packet Statistics information:

```
TP-LINK> show igmp-snooping packet-stat-clear
```

Chapter 27 SNMP Commands

SNMP (Simple Network Management Protocol) functions are used to manage the network devices for a smooth communication, which can facilitate the network administrators to monitor the network nodes and implement the proper operation.

snmp global

Description

The **snmp global** command is used to configure the SNMP function globally. To return to the default configuration, please use **no snmp global** command.

Syntax

snmp global [**status** { disable | enable }] [**engine-id** *engine-id*] [**remote-id** *remote-id*]

no snmp global

Parameter

status —— Enable/ Disable the SNMP function. By default, it is disabled.

engine-id —— Local Engine ID for local clients. The Engine ID is a unique alphanumeric string used to identify the SNMP engine on the switch. Its length ranges from 10 to 64 hexadecimal characters, which must be even number meanwhile.

remote-id —— Remote Engine ID for remote clients. The Engine ID is a unique alphanumeric string used to identify the SNMP engine on the switch. Its length ranges from 10 to 64 hexadecimal characters, which must be even number meanwhile.

Command Mode

Global Configuration Mode

Example

Enable the SNMP function, and specify the Local Engine ID as 1234567890, the Remote Engine ID as 123456abcdef:

TP-LINK(config)# snmp global status enable **engine-id** 1234567890 **remote-id** 123456abcdef

snmp view-add

Description

The **snmp view-add** command is used to add View. To delete the corresponding View, please use **no snmp view-add** command. The OID (Object Identifier) of the SNMP packets is used to describe the managed objects of the switch, and the MIB (Management Information Base) is the set of the OIDs. The SNMP View is created for the SNMP management station to manage MIB objects.

Syntax

snmp view-add {*name*} {*mib-oid*} { include | exclude }

no snmp view-add {*name*} {*mib-oid*}

Parameter

name —— The entry name of View, ranging from 1 to 16 characters. Each View can include several entries with the same name.

mib-oid —— MIB Object ID. It is the Object Identifier (OID) for the entry of View, ranging from 1 to 61 characters.

include | exclude —— View Type, with include and exclude options. They represent the view entry can/cannot be managed by the SNMP management station individually.

Command Mode

Global Configuration Mode

Example

Add a View named view1, configuring the OID as 1.3.6.1.6.3.20, and this OID can be managed by the SNMP management station:

```
TP-LINK(config)# snmp view-add view1 1.3.6.1.6.3.20 include
```

snmp group-add

Description

The **snmp group-add** command is used to manage and configure the SNMP group. To delete the correspounding SNMP group, please use **no snmp group-add** command. SNMP v3 provides the VACM (View-based Access Control Model) and USM (User-Based Security Model) mechanisms for authentication. The users in the SNMP Group can manage the device via the Read View, Write View and Notify View. And the authentication mode and the

privacy mode guarantee the high security for the communication between the management station and the managed device.

Syntax

snmp group-add {*name*} [**smode** { v1 | v2c | v3 }] [**slev** { noAuthNoPriv | authNoPriv | authPriv }] [**ro** *ro-view*] [**wo** *wo-view*] [**inform** *inform-view*]

no snmp group-add {*name*} {**smode** { v1 | v2c | v3 }} {**slev** { noAuthNoPriv | authNoPriv | authPriv }}

Parameter

name ——The SNMP Group name, ranging from 1 to 16 characters. The Group Name, Security Model and Security Level compose the identifier of the SNMP Group. These three items of the Users in one group should be the same.

smode —— Security Model, with v1、v2c and v3 options. They represent SNMP v1, SNMP v2c and SNMP v3. SNMP v1 and SNMP v2c are both authenticated by Community Name (please refer **snmp community-add** for detailed information), SNMP v3 is authenticated by USM mechanism. By default, the Security Model is v1.

slev —— The Security Level of SNMP v3 Group. There are three options, including noAuthNoPriv（no authorization and no encryption）、authNoPriv（authorization and no encryption）and authPriv（authorization and encryption）. By default, the Security Level is noAuthNoPriv. There is no need to configure this in SNMP v1 Model and SNMP v2c Model.

ro-view —— Read-only view. The management access is restricted to read-only, and changes cannot be made to the assigned SNMP View.

wo-view —— Write-only view. The management access is writing only and changes can be made to the assigned SNMP View. The View defined both as the Read View and the Write View can be read and modified.

inform-view —— Notify view. The management station oftware can receive trap messages of the assigned SNMP view generated by the Switch's SNMP agent.inform.

Command Mode

Global Configuration mode

Example

Add group 1, configure its Security Model as SNMP v2c, view1 can be read and edited by group member, and the trap messages sent by view2 can be received by Management station:

```
TP-LINK(config)# snmp group-add group1 smode v2c ro view1 wo view1
inform view2
```

snmp user-add

Description

The **snmp user-add** command is used to add User. To delete the corresponding User, please use **no snmp user-add** command. The User in a SNMP Group can manage the switch via the management station software. The User and its Group have the same security level and access right.

Syntax

snmp user-add {*name*} { local | remote } {*group-name*} [**smode** { v1 | v2c | v3 }] [**slev** { noAuthNoPriv | authNoPriv | authPriv }] [**cmode** { none | MD5 | SHA }] [**cpwd** *confirm-pwd*] [**emode** { none | DES }] [**epwd** *encrypt-pwd*]

no snmp user-add {*name*}

Parameter

name —— User Name, ranging from 1 to 16 characters.

local | remote —— User Type, with local and remote options. Local indicates that the user is connected to a local SNMP engine, while remote indicates that the user is connected to a remote SNMP engine.

group-name —— The Group Name of the User. The User is classified to the corresponding Group according to its Group Name, Security Model and Security Level.

smode —— The Security Model of the User, with v1, v2c and v3 options. By default, the option is v1. The Security Model of the User must be the same with that of the Group which the User belongs to.

slev —— The Security Level of SNMP v3 Group. There are three options, including noAuthNoPriv (no authorization and no encryption), authNoPriv (authorization and no encryption) and authPriv (authorization and encryption). By default, the option is noAuthNoPriv. The Security Level of the User must be the same with that of the Group which the User belongs to.

cmode —— The Authentication Mode of the SNMP v3 User, with none, MD5 and SHA options. None indicates no authentication method is used, MD5 indicates the port authentication is performed via HMAC-MD5 algorithm and SHA indicates the port authentication is performed via SHA (Secure Hash Algorithm). SHA authentication mode has a higher security than MD5 mode. By default, the Authentication Mode is none.

confirm-pwd —— Authentication Password, ranging from 1 to 16 characters.

emode —— The Privacy Mode of the SNMP v3 User, with none and DES options. None indicates no privacy method is used, and DES indicates DES

encryption method is used. By default, the Privacy Mode is none.

encrypt-pwd —— Privacy Password, ranging from 1 to 16 characters.

Command Mode

Global Configuration Mode

Example

Add User admin to Group group2, and configure the Security Model of the user as v3, the Security Level of the group as authPriv, the Authentication Mode of the user as MD5, the Authentication Password as 11111, the Privacy Mode as DES, and the Privacy Password as 22222:

TP-LINK(config)# snmp user-add admin local group2 **smode** v3 **slev** authPriv **cmode** MD5 **cpwd** 11111 **emode** DES **epwd** 22222

snmp community-add

Description

The **snmp community-add** command is used to add Community. To delete the corresponding Community, please use **no snmp community-add** command. SNMP v1 and SNMP v2c adopt community name authentication. The community name can limit access to the SNMP agent from SNMP network management station, functioning as a password.

Syntax

snmp community-add {*name*} { read-only | read-write } {*mib-view*}

no snmp community-add {*name*}

Parameter

name —— Community Name, ranging from 1 to 16 characters.

read-only | read-write —— The access rights of the community, with read-only and read-write options.

mib-view —— The MIB View for the community to access.

Command Mode

Global Configuration Mode

Example

Add Community community1, and the community has read-write management right to View view1:

TP-LINK(config)# snmp community-add community1 read-write view1

snmp notify-add

Description

The **snmp notify-add** command is used to add Notification. To delete the corresponding Notification, please use **no snmp notify-add** command. With the Notification function enabled, the switch can initiatively report to the management station about the important events that occur on the Views, which allows the management station to monitor and process the events in time.

Syntax

snmp notify-add {*ip*} {*udp-port*} {*user-name*} [**smode** { v1 | v2c | v3 }] [**slev** { noAuthNoPriv | authNoPriv | authPriv }] [**type** { trap | inform }] [**resend** *resend*] [**timeout** *timeout*]

no snmp notify-add {*ip*} {*user-name*}

Parameter

ip —— The IP Address of the management Host.

udp-port —— UDP port, which is used to send notifications. The UDP port functions with the IP address for the notification sending. By default, it is 162.

user-name —— The User name of the management station.

smode —— The Security Model of the management station, with v1, v2c and v3 options. By default, the option is v1.

slev —— The Security Level of SNMP v3 Group. There are three options, including noAuthNoPriv (no authorization and no encryption), authNoPriv (authorization and no encryption) and authPriv (authorization and encryption). By default, the option is noAuthNoPriv.

type —— The type of the notifications, with trap and inform options. Trap indicates traps are sent, while inform indicates informs are sent. The inform type has a higher security than the trap type and resend and timeout need to be configured if you select this option. You can only select the trap type in Security Model v1. By default, the type of the notifications is trap.

resend —— The amount of times the switch resends an inform request, ranging from 1 to 255. The switch will resend the inform request if it doesn't get the response from the management station during the Timeout interval, and it will terminate resending the inform request if the resending times reach the specified Retry times.

timeout —— The maximum time for the switch to wait for the response from the management station before resending a request, ranging from 1 to 3600 in seconds.

Command Mode

Global Configuration Mode

Example

Add a Notification entry, and configure the IP Address of the management Host as 192.168.0.1, the UDP port as 162, the User name of the management station as admin, the Security Model of the management station as v2c, the type of the notifications as inform, the maximum time for the switch to wait as 1000 seconds, and the resending time as 100:

TP-LINK(config)# snmp notify-add 192.168.0.1 162 admin **smode** v2c **type** inform **resend** 100 **timeout** 1000

snmp-rmon history sample-cfg

Description

The **snmp-rmon history sample-cfg** command is used to configure the history sample entry. To return to the default configuration, please use **no snmp-rmon history sample-cfg** command. RMON (Remote Monitoring), based on SNMP architecture, functions to monitor the network. History Group is one of the commonly used RMON Groups. After a history group is configured, the switch collects network statistics information periodically, based on which the management station can monitor network effectively.

Syntax

snmp-rmon history sample-cfg {*index*} {*port*} {*interval*}

no snmp-rmon history sample-cfg {*index*}

Parameter

index —— The index number of the entry, ranging from 1 to 12, in the format of 1-3,5.

port —— The port from which the history samples were taken, ranging from 1 to 10.

interval —— The interval to take samplings from the port, ranging from 10 to 3600 in seconds. By default, it is 1800.

Command Mode

Global Configuration Mode

Example

Configure the sample port as 1, and the sample interval as 100 seconds for the entries 1-3:

TP-LINK(config)# snmp-rmon history sample-cfg 1-3 1 100

snmp-rmon history owner

Description

The **snmp-rmon history owner** command is used to configure the owner of the history sample entry. To return to the default configuration, please use **no snmp-rmon history owner** command.

Syntax

snmp-rmon history owner {*index*} [*owner*]

no snmp-rmon history owner {*index*}

Parameter

index —— The index number of the sample entry, ranging from 1 to 12. You can only select one entry for each command.

owner —— The owner of the history sample entry, ranging from 1 to 16 characters. By default, it is minitor.

Command Mode

Global Configuration Mode

Example

Configure the owner of entry 1 as owner1:

TP-LINK(config)# snmp-rmon history owner 1 owner1

snmp-rmon history enable

Description

The **snmp-rmon history enable** command is used to enable the history sample entry. To disable the corresponding entry, please use **no snmp-rmon history enable** command.

Syntax

snmp-rmon history enable {*index*}

no snmp-rmon history enable {*index*}

Parameter

index —— The index number of the entry desired to enable, ranging from 1 to 12, in the format of 1-3,5.

Command Mode

Global Configuration Mode

Example

Enable the history sample entries 1,2,3,4 and 8:

```
TP-LINK(config)# snmp-rmon history enable 1-4,8
```

snmp-rmon event user

Description

The **snmp-rmon event user** command is used to configure the user name of SNMP-RMON Event. To return to the default configuration, please use **no snmp-rmon event user** command. Event Group, as one of the commonly used RMON Groups, is used to define RMON events. Alarms occur when an event is detected.

Syntax

snmp-rmon event user {*index*} [*user*]

no snmp-rmon event user {*index*}

Parameter

index —— The index number of the event entry, ranging from 1 to 12. You can only select one entry for each command.

user —— The name of the User to which the event belongs, ranging from 1 to 16 characters. By default, it is public.

Command Mode

Global Configuration Mode

Example

Configure the user name of entry 1 as user1:

```
TP-LINK(config)# snmp-rmon event user 1 user1
```

snmp-rmon event description

Description

The **snmp-rmon event description** command is used to configure the description of SNMP-RMON Event. To return to the default configuration, please use **no snmp-rmon event description** command.

Syntax

snmp-rmon event description {*index*} {*description*}

no snmp-rmon event description {*index*}

Parameter

index —— The index number of the event entry, ranging from 1 to 12. You can only select one entry for each command.

description —— The description of the event, ranging from 1 to 16 characters. By default, it is empty.

Command Mode

Global Configuration Mode

Example

Configure the description of entry 1 as description1:

```
TP-LINK(config)# snmp-rmon event description 1 description1
```

snmp-rmon event type

Description

The **snmp-rmon event type** command is used to configure the type of SNMP-RMON Event. To return to the default configuration, please use **no snmp-rmon event type** command.

Syntax

snmp-rmon event type {*index*} { none | log | notify | both }

no snmp-rmon event type {*index*}

Parameter

index —— The index number of the entry, ranging from 1 to 12, in the format of 1-3,5.

none | log | notify | both —— The event type, with none, log, notify and both options. None indicates no processing, log indicates logging the event, notify indicates sending trap messages to the management station, and both indicates logging the event and sending trap messages to the management station.

Command Mode

Global Configuration Mode

Example

Configure the event type of entries 1,2,3,4 and 8 as log:

```
TP-LINK(config)# snmp-rmon event type 1-4,8 log
```

snmp-rmon event owner

Description

The **snmp-rmon event owner** command is used to configure the owner of SNMP-RMON Event. To return to the default configuration, please use **no snmp-rmon event owner** command.

Syntax

snmp-rmon event owner {*index*} [*owner*]

no snmp-rmon event owner {*index*}

Parameter

index —— The index number of the event entry, ranging from 1 to 12. You can only select one entry for each command.

owner —— The owner of the event entry, ranging from 1 to 16 characters. By default, it is minitor.

Command Mode

Global Configuration Mode

Example

Configure the owner of entry 1 as owner1:

```
TP-LINK(config)# snmp-rmon event owner 1 owner1
```

snmp-rmon event enable

Description

The **snmp-rmon event enable** command is used to enable SNMP-RMON Event entry. To disable the corresponding entry, please use **no snmp-rmon event enable** command.

Syntax

snmp-rmon event enable {*index*}

no snmp-rmon event enable {*index*}

Parameter

index —— The index number of the entry desired to enable, ranging from 1 to 12, in the format of 1-3,5.

Command Mode

Global Configuration Mode

Example

Enable the SNMP-RMON Event entries 1,2,3,4 and 8:

TP-LINK(config)# snmp-rmon event enable 1-4,8

snmp-rmon alarm config

Description

The **snmp-rmon alarm config** command is used to configure SNMP-RMON Alarm Management. To return to the default configuration, please use **no snmp-rmon alarm config** command. Alarm Group is one of the commonly used RMON Groups. RMON alarm management allows monitoring the specific alarm variables. When the value of a monitored variable exceeds the threshold, an alarm event is generated, which triggers the switch to act in the set way.

Syntax

snmp-rmon alarm config {*index*} [**var** { drop | revbyte | revpkt | bpkt | mpkt | crc-align | undersize | oversize | fragment | jabber | collision | 64 | 65-127 | 128-511 | 512-1023 | 1024-10240 }] [**port** *port*] [**s-type** { absolute | increment }] [**r-hold** *r-hold*] [**r-event** *r-event*] [**f-hold** *f-hold*] [**f-event** *f-event*] [**a-type** { rise | fall | all }] [**interval** *interval*]

no snmp-rmon alarm config {*index*}

Parameter

index —— The index number of the Alarm Management entry, ranging from 1 to 12, in the format of 1-3,5.

var —— The alarm variable. By default, the option is drop.

port —— The port on which the Alarm entry acts, ranging from 1 to 10.

s-type —— Sample Type, which is the sampling method for the selected variable and comparing the value against the thresholds. There are two options, absolute and increment. Absolute indicates comparing the values directly with the thresholds at the end of the sampling interval. Increment indicates subtracting the last sampled value from the current value, and then comparing the difference in the values with the threshold. By default, the Sample Type is absolute.

r-hold —— The rising counter value that triggers the rise hold alarm, ranging from 1 to 65535. By default, it is 100.

r-event —— Rise Event, which is the index of the corresponding event which will be triggered if the sampled value is larger than the Rise Hold. It ranges from 1 to 12.

f-hold —— The falling counter value that triggers the fall hold alarm, ranging from 1 to 65535. By default, it is 100.

f-event —— Fall Event, which is the index of the corresponding event which will be triggered if the sampled value is lower than the Fall Hold. It ranges from 1 to 12.

a-type —— Alarm Type, with rise, fall and all options. Rise indicates that the alarm event will be triggered when the sampled value exceeds the Rise Hold, fall indicates that the alarm event will be triggered when the sampled value is under the Fall Hold, and all indicates that the alarm event will be triggered either the sampled value exceeds the Rise Hold or is under the Fall Hold. By default, the Alarm Type is all.

interval —— The alarm interval time, ranging from 10 to 3600 in seconds. By default, it is 1800.

Command Mode

Global Configuration Mode

Example

Configure the alarm interval time of the entries 1,2,3 and 6 as 1000 seconds:

```
TP-LINK(config)# snmp-rmon alarm config 1-3,6 interval 1000
```

snmp-rmon alarm owner

Description

The **snmp-rmon alarm owner** command is used to configure the owner of the Alarm Management entry. To return to the default configuration, please use **no snmp-rmon alarm owner** command.

Syntax

snmp-rmon alarm owner {*index*} [*owner*]

no snmp-rmon alarm owner {*index*}

Parameter

index —— The index number of the entry, ranging from 1 to 12. You can only select one entry for each command.

owner —— The owner of the entry, ranging from 1 to 16 characters. By default, it is minitor.

Command Mode

Global Configuration Mode

Example

Configure the owner of entry 1 as owner1:

TP-LINK(config)# snmp-rmon alarm owner 1 owner1

snmp-rmon alarm enable

Description

The **snmp-rmon alarm enable** command is used to enable SNMP-RMON Alarm Management entry. To disable the corresponding entry, please use **no snmp-rmon alarm enable** command.

Syntax

snmp-rmon alarm enable {*index*}

no snmp-rmon alarm enable {*index*}

Parameter

index —— The index number of the entry desired to enable, ranging from 1 to 12, in the format of 1-3,5.

Command Mode

Global Configuration Mode

Example

Enable the Alarm Management entries 1,2,3,4 and 8:

TP-LINK(config)# snmp-rmon alarm enable 1-4,8

show snmp global-config

Description

The **show snmp global-config** command is used to display SNMP configuration globally.

Syntax

show snmp global-config

Command Mode

Any Configuration Mode

Example

Display SNMP configuration globally:

TP-LINK> show snmp global-config

show snmp view

Description

The **show snmp view** command is used to display the View table.

Syntax

show snmp view

Command Mode

Any Configuration Mode

Example

Display the View table:

```
TP-LINK> show snmp view
```

show snmp group

Description

The **show snmp group** command is used to display the Group table.

Syntax

show snmp group

Command Mode

Any Configuration Mode

Example

Display the Group table:

```
TP-LINK> show snmp group
```

show snmp user

Description

The **show snmp user** command is used to display the User table.

Syntax

show snmp user

Command Mode

Any Configuration Mode

Example

Display the User table:

```
TP-LINK> show snmp user
```

show snmp community

Description

The **show snmp community** command is used to display the Community table.

Syntax

show snmp community

Command Mode

Any Configuration Mode

Example

Display the Community table:

```
TP-LINK> show snmp community
```

show snmp destination-host

Description

The **show snmp destination-host** command is used to display the Notification table.

Syntax

show snmp destination-host

Command Mode

Any Configuration Mode

Example

Display the Notification table:

```
TP-LINK> show snmp destination-host
```

show snmp-rmon history

Description

The **show snmp-rmon history** command is used to display the configuration of the history sample entry.

Syntax

show snmp-rmon history [*index*]

Parameter

index —— The index number of the entry selected to display the configuration, ranging from 1 to 12. You can only select one entry for each command. By default, the configuration of all entries is displayed.

Command Mode

Any Configuration Mode

Example

Display the configuration of all history sample entries:

```
TP-LINK> show snmp-rmon history
```

show snmp-rmon event

Description

The **show snmp-rmon event** command is used to display the configuration of SNMP-RMON Event.

Syntax

show snmp-rmon event [*index*]

Parameter

index —— The index number of the entry selected to display the configuration, ranging from 1 to 12. You can only select one entry for each command. By default, the configuration of all entries is displayed.

Command Mode

Any Configuration Mode

Example

Display the Event configuration of entry 2:

```
TP-LINK> show snmp-rmon event 2
```

show snmp-rmon alarm

Description

The **show snmp-rmon alarm** command is used to display the configuration of the Alarm Management entry.

Syntax

show snmp-rmon alarm [*index*]

Parameter

index —— The index number of the entry selected to display the configuration,

ranging from 1 to 12. You can only select one entry for each command. By default, the configuration of all entries is displayed.

Command Mode

Any Configuration Mode

Example

Display the configuration of all Alarm Management entries:

```
TP-LINK> show snmp-rmon alarm
```

Chapter 28 Cluster Commands

Cluster Management function enables a network administrator to manage the scattered devices in the network via a management device. After a commander switch is configured, management and maintenance operations intended for the member devices in a cluster is implemented by the commander device.

cluster ndp

Description

The **cluster ndp** command is used to configure NDP globally. To return to the default configuration, please use **no cluster ndp** command. NDP (Neighbor Discovery Protocol) is used to discover the information of the directly connected neighbor devices to support cluster establishing. An NDP-enabled device sends NDP packets regularly to neighbor devices as well as receives NDP packets from neighbor devices. An NDP packet carries the aging time, which indicates the period of the receiving devices to keep the NDP packet.

Syntax

cluster ndp [**status** { disable | enable }] [**aging-timer** *aging-timer*] [**hello-timer** *hello-timer*]

no cluster ndp

Parameter

status —— Enable/ Disable NDP function globally. By default, it is enabled.

aging-timer —— Aging Time, which is the period for the neighbor switch to keep the NDP packets from this switch. Aging Time ranges from 5 to 255 in seconds. By default, it is 180.

hello-timer —— Hello Time, which is the interval to send NDP packets. Hello Time ranges from 5 to 254 in seconds. By default, it is 60.

Command Mode

Global Configuration Mode

Example

Enable NDP function globally, and configure Aging Time as 120 seconds, Hello Time as 50 seconds:

```
TP-LINK(config)# cluster ndp status enable aging-timer 120 hello-timer 50
```

cluster ntdp

Description

The **cluster ntdp** command is used to configure NTDP globally. To return to the default configuration, please use **no cluster ntdp** command. NTDP (Neighbor Topology Discovery Protocol) is used to collect the NDP information and neighboring connection information of each device in a specific network range. It provides the commander switch with the information of devices which can join the cluster and collects topology information of devices within the specified hops.

Syntax

cluster ntdp [**status** { disable | enable }] [**interval** *interval*] [**hop** *hop*] [**hop-delay** *hop-delay*] [**port-delay** *port-delay*]

no cluster ntdp

Parameter

status —— Enable/ Disable NTDP function globally. By default, it is enabled.

interval —— NTDP Interval Time, which is the interval to collect topology information. NTDP Interval Time ranges from 0 to 60 in minutes. By default, it is 1.

hop —— NTDP Hops, which is the hop count the switch topology collects. NTDP Hops ranges from 1 to 16. By default, it is 3.

hop-delay —— NTDP Hop Delay, which is the time between the switch receiving NTDP request packets and the switch forwarding NTDP request packets for the first time. NTDP Hop Delay ranges from 1 to 1000 in milliseconds. By default, it is 200.

port-delay —— NTDP Port Delay, which is the time between the port forwarding NTDP request packets and its adjacent port forwarding NTDP request packets over. NTDP Port Delay ranges from 1 to 100 in milliseconds. By default, it is 20.

Command Mode

Global Configuration Mode

Example

Enable NTDP function globally, and specify NTDP Interval Time as 20 minutes, NTDP Hops as 5, NTDP Hop Delay as 300 milliseconds, and NTDP Port Delay as 50 milliseconds:

TP-LINK(config)# cluster ntdp status enable interval 20 **hop** 5 **hop-delay** 300 **port-delay** 50

cluster explore

Description

The **cluster explore** command is used to enable the topology information collecting function manually.

Syntax

cluster explore

Command Mode

Global Configuration Mode

Example

Enable the topology information collecting function manually:

TP-LINK(config)# cluster explore

cluster

Description

The **cluster** command is used to configure Cluster Port. To disable the cluster function for the port, please use **no cluster** command.

Syntax

cluster [**ndp** { disable | enable }] [**ntdp** { disable | enable }]

no cluster

Parameter

ndp —— Enable/ Disable NDP function for the port. By default, it is enabled.

ntdp —— Enable/ Disable NTDP function for the port. By default, it is enabled.

Command Mode

Interface Configuration Mode（interface ethernet / interface range ethernet）

Example

Enable NDP and NTDP function for port 5:

TP-LINK(config)# interface ethernet 5

TP-LINK(config-if)# cluster ndp enable **ntdp** enable

cluster manage role-change

Description

The **cluster manage role-change** command is used to change the role of the current switch. According to their status and functions, switches in the cluster play different roles. You can specify the role the switch plays appropriate to your needs. A commander switch can recognize and manage the devices in the cluster; a member switch is managed by the commander; a candidate switch does not belong to any cluster through it can be added to a cluster; an individual switch is with the cluster feature disabled.

Syntax

cluster manage role-change { candidate | individual }

Parameter

candidate | individual —— The role you want the switch to play, with candidate and individual options. The role of the switch you can change to is related with the current role. The conversion between Candidate Switch and Individual Switch is: Candidate Switch ⇔ Individual Switch.

Command Mode

Global Configuration Mode

Example

Change the role of the current switch to Candidate Switch:

```
TP-LINK(config)# cluster manage role-change candidate
```

show cluster ndp global

Description

The **show cluster ndp global** command is used to display the global configuration of NDP.

Syntax

show cluster ndp global

Command Mode

Any Configuration Mode

Example

Display the global configuration of NDP:

```
TP-LINK> show cluster ndp global
```

show cluster ndp port-status

Description

The **show cluster ndp port-status** command is used to display NDP configuration of the certain port.

Syntax

show cluster ndp port-status [*port*]

Parameter

port —— The port selected to display the configuration of NDP, ranging from 1 to 10. By default, the configuration of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the NDP configuration of port 2:

```
TP-LINK> show cluster ndp port-status 2
```

show cluster neighbour

Description

The **show cluster neighbour** command is used to display the cluster neighbor information.

Syntax

show cluster neighbour

Command Mode

Any Configuration Mode

Example

Display the cluster neighbor information:

```
TP-LINK> show cluster neighbour
```

show cluster ntdp global

Description

The **show cluster ntdp global** command is used to display the global configuration of NTDP.

Syntax

show cluster ntdp global

Command Mode

Any Configuration Mode

Example

Display the global configuration of NTDP:

```
TP-LINK> show cluster ntdp global
```

show cluster ntdp port-status

Description

The **show cluster ntdp port-status** command is used to display NTDP configuration of the certain port.

Syntax

show cluster ntdp port-status [*port*]

Parameter

port —— The port selected to display the configuration of NTDP, ranging from 1 to 10. By default, the configuration of all ports is displayed.

Command Mode

Any Configuration Mode

Example

Display the NTDP configuration of port 2:

```
TP-LINK> show cluster ntdp port-status 2
```

show cluster ntdp device

Description

The **show cluster ntdp device** command is used to display the device table of NTDP.

Syntax

show cluster ntdp device

Command Mode

Any Configuration Mode

Example

Display the device table of NTDP:

```
TP-LINK> show cluster ntdp device
```

show cluster manage role

Description

The **show cluster manage role** command is used to display the role of the current switch.

Syntax

show cluster manage role

Command Mode

Any Configuration Mode

Example

Display the role of the current switch:

```
TP-LINK> show cluster manage role
```