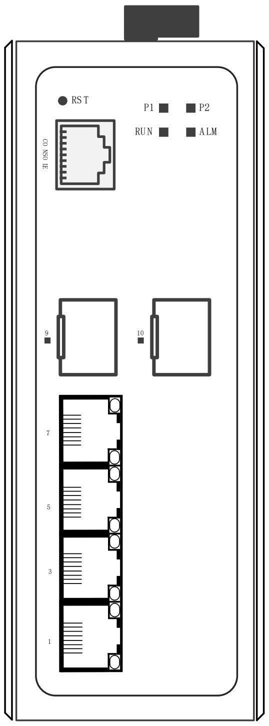
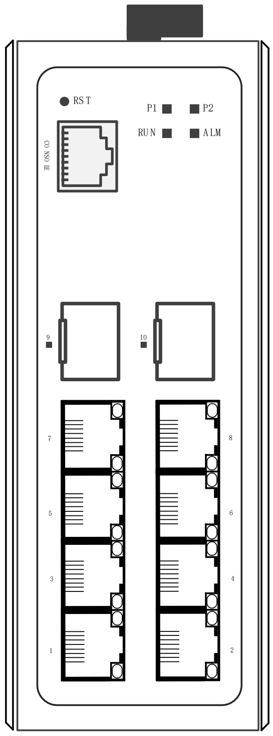
SilverNet

Wireless-Network-Solutions

Series 7 Industrial Gigabit PoE++ Managed BT switches



SIL 73204MP-BT



SIL 73208MP-BT

Configuration Manual

V1.0

www.silvernet.com

TABLE OF CONTENTS

INTRODUCTION

The SilverNet Series 7 Industrial Gigabit PoE+ Managed Switches are reliable, high performance, high specification and cost effective Managed industrial switches suitable for industrial network operations. The SilverNet Industrial Gigabit PoE+ Managed Switches are fully compliant with the IEEE802.3af/at standard, providing Power-over-Ethernet over twisted pair cables. The fibre optics ports feature a modular SFP slot for any kind of MSA-compliant pluggable 1.25Gbps SFP transceiver.

SUPPORT PRODUCTS

This manual covers all 7 Series products listed below:

- 73204MP-BT
- 73208MP-BT

For more information, visit http://www.silvernet.com

SYSTEM REQUIREMENTS

- Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10, Linux, or Mac OS X

- Web Browser: Mozilla Firefox, Apple Safari, Google Chrome, or Microsoft Edge

PACKING LIST

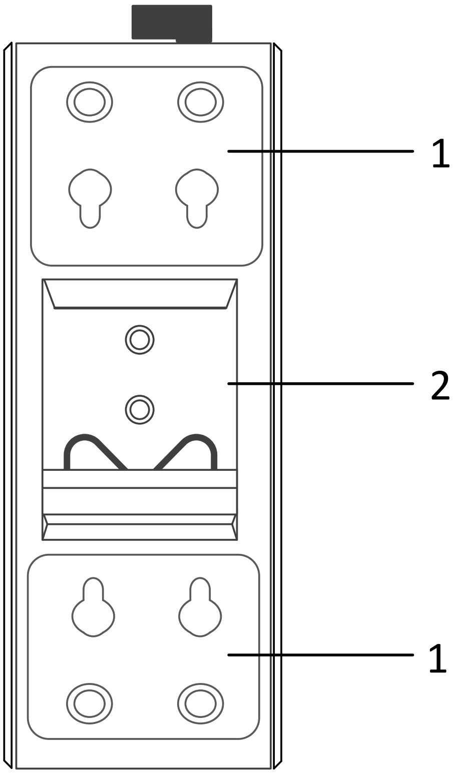
Please check the following items in the package before installing the device

Network Switch	1 piece
Quick Start Guide	1 copy
DIN Rail Mount Kit	1 piece
Wall Mount Kit	1 piece
Serial Cable	1 piece

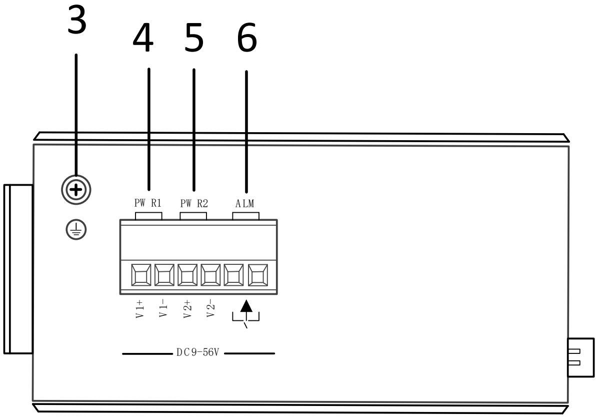
Please contact your distributor immediately for any missing or damaged items.

THE PANELS AND LED INDICATORS

PANEL LAYOUT



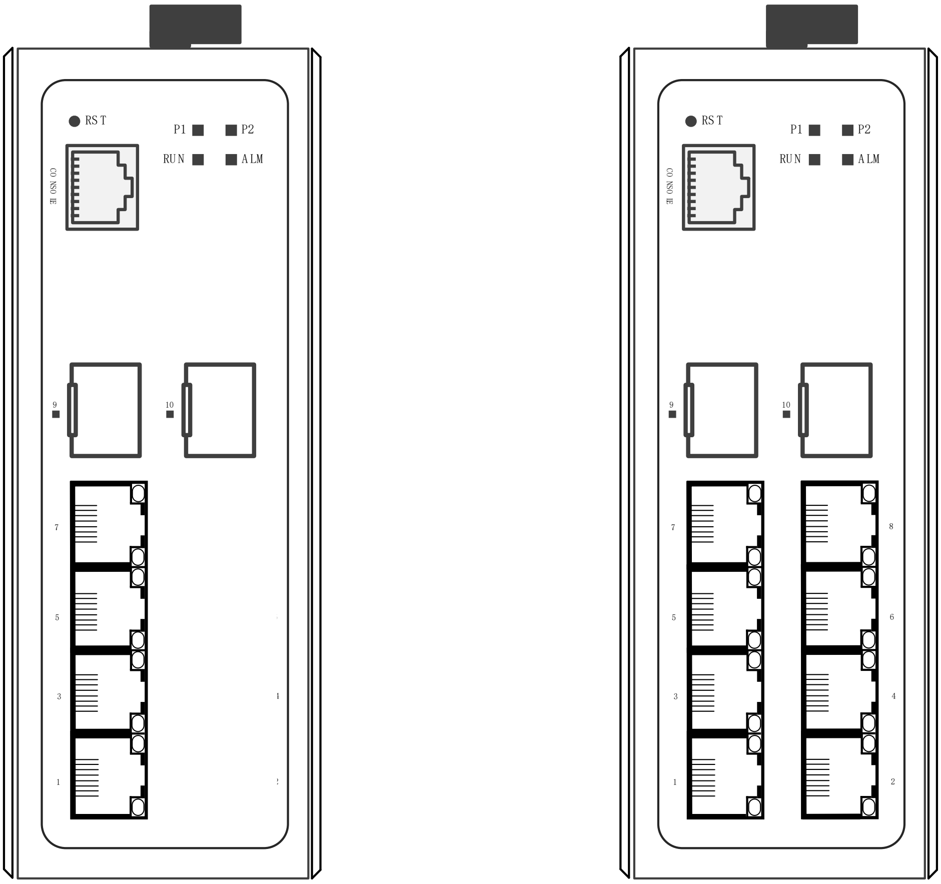
Rear View



Top View

Mark	Name	Description
1	Wall kit	Wall mounting bracket
2	DIN kit	DIN-rail mounting bracket
3	Ground	Grounding screw
4	Terminal block	Power 1 Input Terminal Block
5	Terminal block	Power 2 Input Terminal Block
6	Terminal block	Relay Output Terminal Block

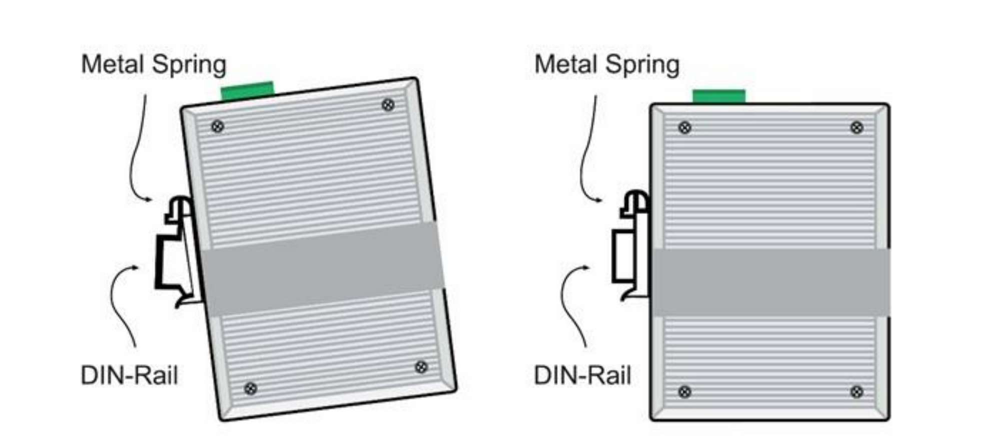
LED INDICATORS



LED	State	Description
P1	Power LED	“On”: Power 1 is on and normal
P2	Power LED	“On”: Power 2 is on and normal
RUN	System LED	“Blinking”: System is on and running normal
ALM	Alarm LED	“On”: Switch has alarm information “Off”: No Alarms
Link/ACT	SFP Port LED	“On”: Fibre connection is present “Blinking”: Data being transmitted “Off”: No connection is present
Link/ACT	RJ45 Ports	Yellow LED “On”: PoE connection is present Yellow LED “Blinking”: Data being transmitted Green LED “On”: Ethernet connected at 1000M Green LED “Off”: Ethernet connected at 10/100M
Console	Console Port	Connection port to access CLI
RST	Reset	Reset button

INSTALLATION

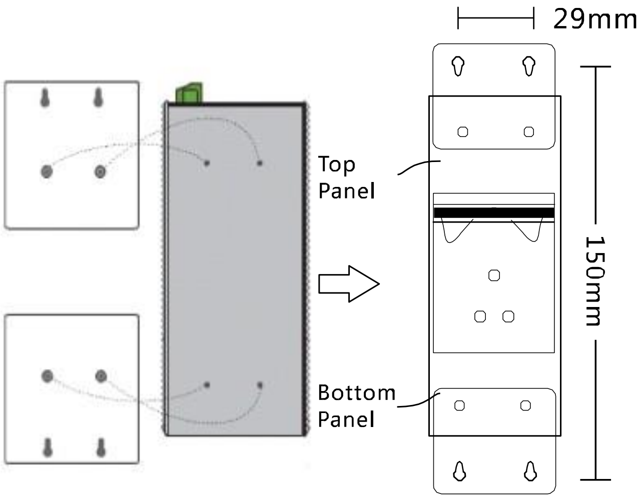
DIN-RAIL INSTALLATION



Pic 1 Pic 2

The DIN-rail installation is based on Pic 1 and Pic 2.

WALL-MOUNTED INSTALLATION



The wall mount kit is fixed to the back of the switch. Remove and re-attach the wall mounting kit as shown in the image above.

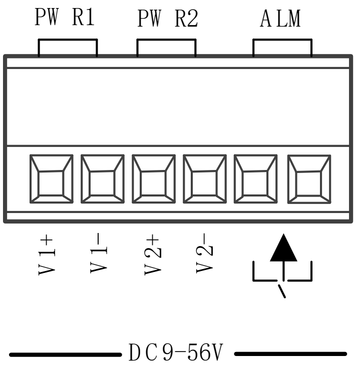
Attach the switch and bracket to the wall using appropriate screws. Do not completely tighten the screws, allow approximately 2mm of space.

Place the screw head through the large holes in the wall bracket then pull down to secure, tighten screws once in place.

POWER

The input terminal of the switch is for 6 PIN plug type terminals, V1+ and V1- is for power supply 1 (PWR1), V2 + and V2- is for power supply 2 (PWR2) and ALM for the Output Relay terminal, as shown in image below.

The input voltage range for power 1 and power 2 is 9VDC ~ 56VDC, V1+ and V2+ are positive, V1- and V2- are negative.



The switch can be powered by two power supplies simultaneously allowing the switch to continue functioning even if one of the power supplies fails.

Note*

For 30W per port on the **SIL 73204MP-BT** you can use power supply **SIL NDR 120-48**

For 30W per port on the **SIL 73208MP-BT** you can use power supply **SIL NDR 240-48**

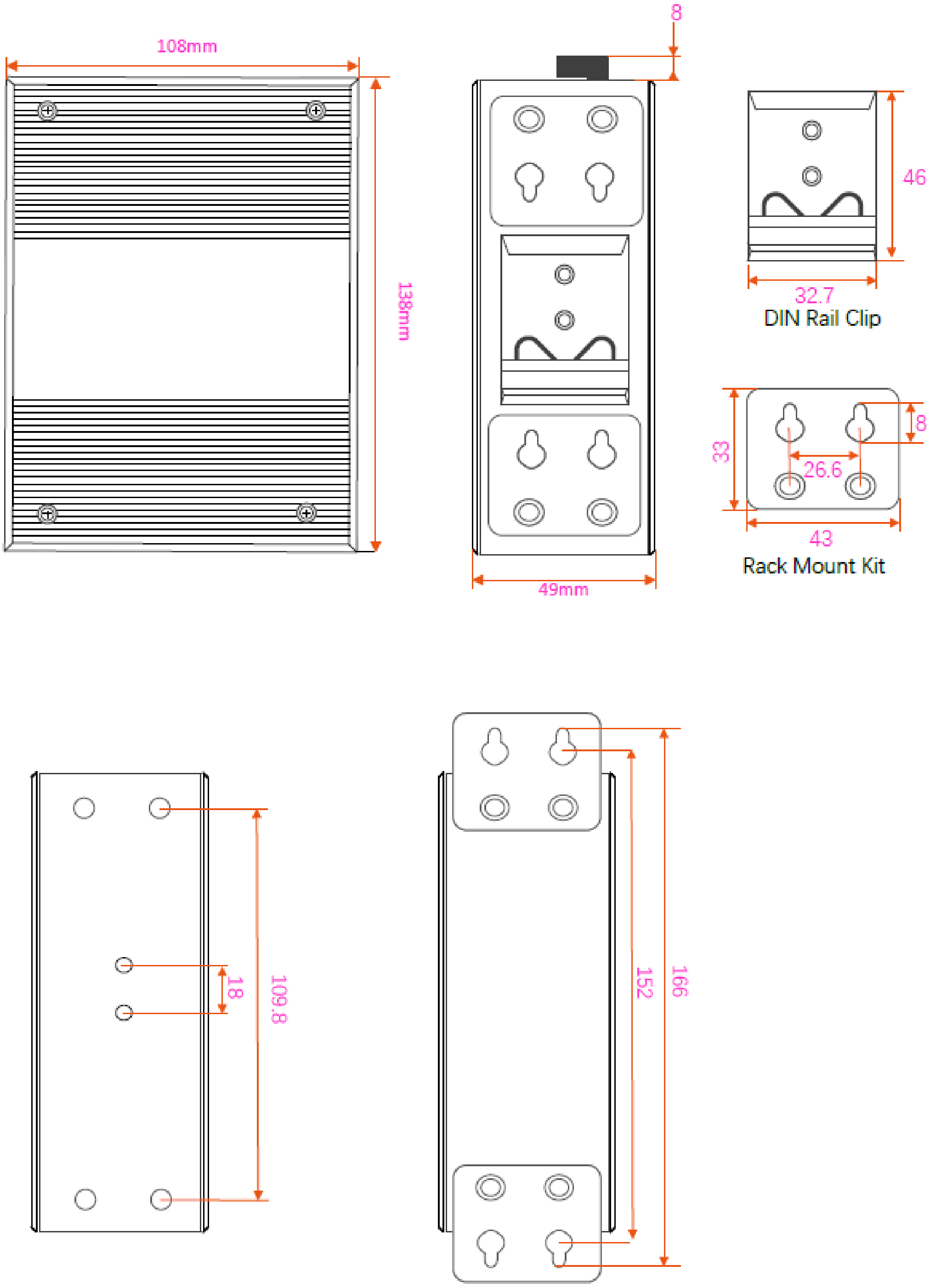
For 60W per port on the **SIL 73204MP-BT** you can use power supply **SIL NDR 240-48**

For 60W per port on the **SIL 73208MP-BT** please use power supply **SIL NDR 480-48**

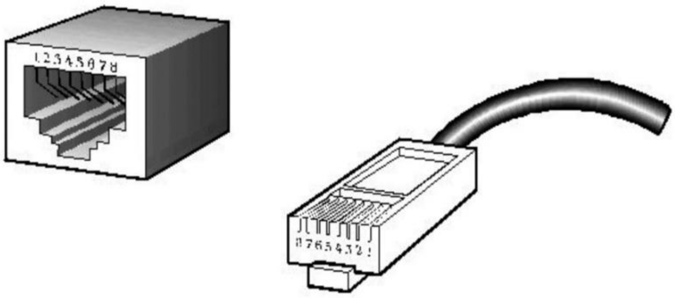
For 90W per port on the **SIL 73204MP-BT** please use power supply **SIL NDR 480-48**

For 90W per port on the **SIL 73208MP-BT** please use power supply **SIL NDR 480-48**

PRODUCT DIMENSION

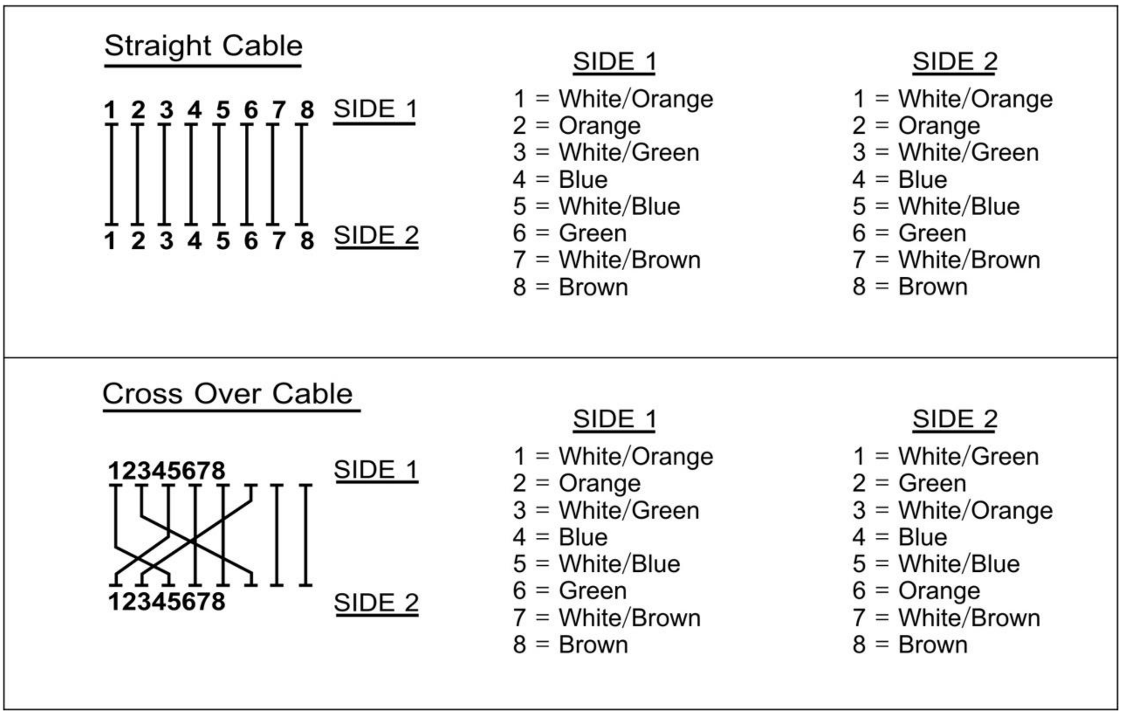


COPPER CABLE CONNECTION



STANDARD RJ45 CONNECTOR

There are 8 wires on a standard UTP/STP cable, and each wire is colour coded. The following shows the pin allocation and colour of a straight through cable and crossover cable:



Straight Cable

1 2 3 4 5 6 7 8 SIDE 1
1 2 3 4 5 6 7 8 SIDE 2

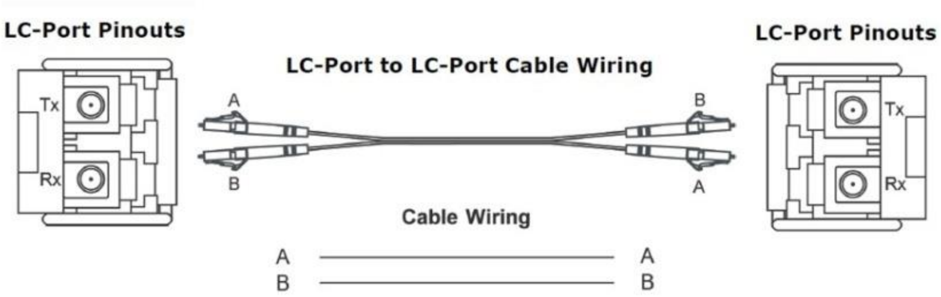
SIDE 1	SIDE 2
1 = White/Orange	1 = White/Orange
2 = Orange	2 = Orange
3 = White/Green	3 = White/Green
4 = Blue	4 = Blue
5 = White/Blue	5 = White/Blue
6 = Green	6 = Green
7 = White/Brown	7 = White/Brown
8 = Brown	8 = Brown

Cross Over Cable

12345678 SIDE 1
12345678 SIDE 2

SIDE 1	SIDE 2
1 = White/Orange	1 = White/Green
2 = Orange	2 = Green
3 = White/Green	3 = White/Orange
4 = Blue	4 = Blue
5 = White/Blue	5 = White/Blue
6 = Green	6 = Orange
7 = White/Brown	7 = White/Brown
8 = Brown	8 = Brown

FIBRE CABLE CONNECTION

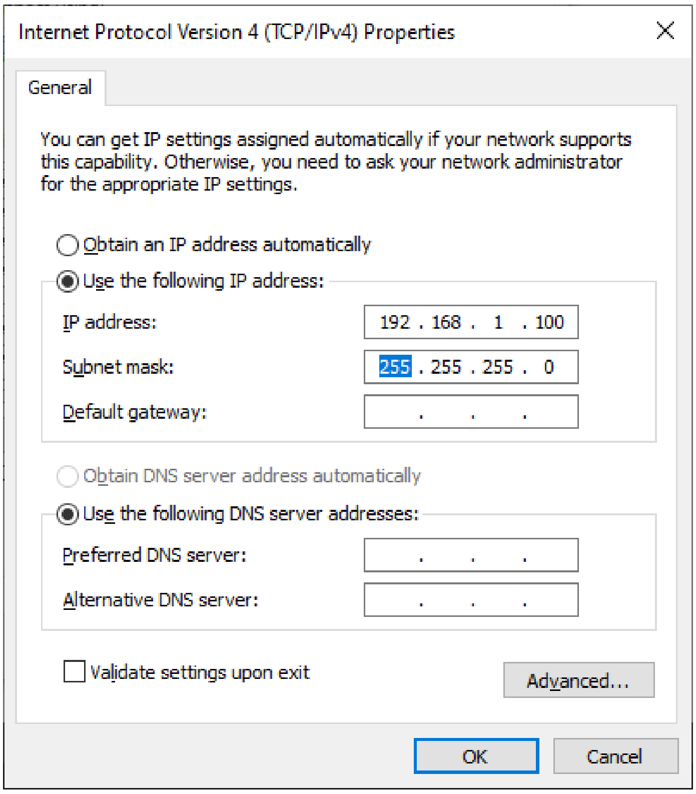


CONFIGURATION

GETTING STARTED

To access the equipment management interface, perform the following steps:

1. Configure the Ethernet adapter on your computer with a static IP address on the 192.168.1.x subnet (for example, IP address: 192.168.1.100 and subnet mask: 255.255.255.0



Internet Protocol Version 4 (TCP/IPv4) Properties

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

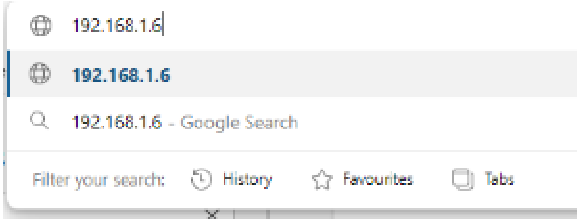
○ Obtain an IP address automatically
● Use the following IP address:
IP address: 192 . 168 . 1 . 100
Subnet mask: 255 . 255 . 255 . 0
Default gateway: . . .

○ Obtain DNS server address automatically
● Use the following DNS server addresses:
Preferred DNS server: . . .
Alternative DNS server: . . .

□ Validate settings upon exit

2. Launch your web browser and enter the default IP address of your device in the address field.

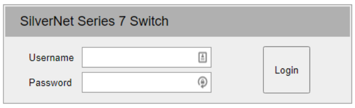
Series 5 and 7 Switches have an IP address of 192.168.1.6



192.168.1.6
192.168.1.6
192.168.1.6 - Google Search

If the unit has been reset, it will go to the default IP address of 192.168.1.6. You will need to change your Ethernet adapter IP address to 192.168.1.x subnet.

3. Enter **admin** in the Username field and **admin** in the Password field and click **Login**.

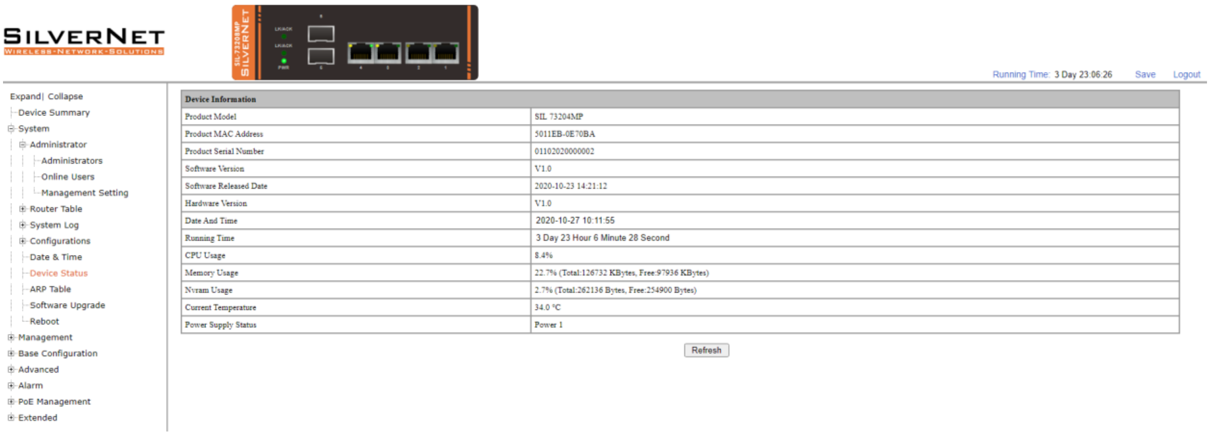


SilverNet Series 7 Switch

Figure 1.1 Login Page

NAVIGATION

The 7 Series management interface contains seven main groups, each with their groups which provide a web-based management page to configure a specific aspect of the SilverNet device:



Device Information	
Product Model	SIL 73204MP
Product MAC Address	5011EB-0E70BA
Product Serial Number	01102020000002
Software Version	V1.0
Software Released Date	2020-10-23 14:21:12
Hardware Version	V1.0
Date And Time	2020-10-27 10:11:55
Running Time	3 Day 23 Hour 6 Minute 28 Second
CPU Usage	8.4%
Memory Usage	22.7% (Total:126732 KBytes, Free:97936 KBytes)
Nvram Usage	2.7% (Total:262136 Bytes, Free:254900 Bytes)
Current Temperature	34.0 °C
Power Supply Status	Power 1

Figure 1.2 Web Management Interface

Please see Table 1.2 for a description of the areas as shown in Figure 1.2

- System The **"System"** group allows configuration of general system-wide settings such as; Administrator Settings, Router Table, System Logs, Configuration Management, Date & Time, Device Status Check, ARP Table, Firmware Upgrade and Reboot.

- Management The **"Management"** group allows configuration of management protocols such as; IP Interfaces, SNMP Configuration and LLDP Configuration.

- Base Configuration The **"Base Configuration"** group allows configuration of general managed switch settings such as; Port Settings and Statistics, VLAN Configuration, QOS, FDB Table, Port Mirroring, Port Isolation, Storm Control.

- Advanced The **"Advanced"** group allows configuration of more advanced network switch settings such as; Port Security, ACL Groups and Rules Settings, DHCP Snooping, DHCP Server Settings, Multicast Options, GMRP Configuration, GVRP Configuration, 802.1X Settings, Link Aggregation, Loopback Settings, STP Settings and ERPS Configuration.

- Alarm The **"Alarm"** group allows configuration of alarm warnings such as; Relay Settings, Temperature Settings, Trap Settings and Power Settings.

- PoE Management The **"PoE Management"** group allows configuration of PoE such as; Port PoE Configurations, Smart Power Configuration, Time Range Configuration, Timing Supply Configuration.

- Extended The **"Extended"** group allows configuration of diagnostics such as; Port Cable Testing and Ping Testing.

Web Management Interface Descriptions Table 1.2

Configuration Interface	**Description**
Navigation Bar	Groups which enable navigation of the web management interface.
Selected Page	The currently selected configuration page.
Device Panel	Displays a quick overview of connectivity for ports on the switch.
Running Time	The uptime of the device since last full reboot.
Device Model	Displays the name of the 7 Series switch.
Common Functions	**Save**: Save the current configuration to the system. This button will blink from blue to amber when there is a configuration which hasn't been committed to memory. Logout: Logout the current user.

DEVICE PANEL

You can view the current connection status of each port interface via the Device Panel, as displayed in Figure 1.3 below.

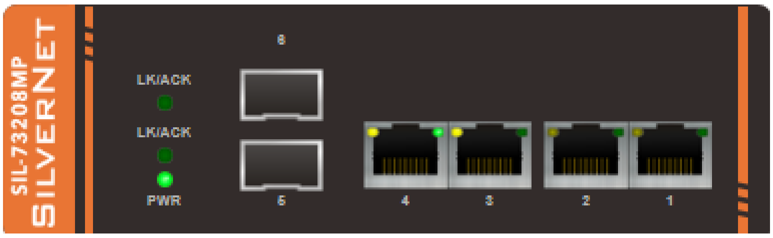


Figure 1.3 Device Panel

See below Table 1.3 for the Device Panel Interface Descriptions.

Table 1.3 Device Panel Interface Description

Port	Instructions
	GREEN and YELLOW LED: Copper Port, Enabled, Connected
	NO LED INDICATOR: Copper Port, Enabled, not Connected
	SFP SLOT IN: Fibre Port, Enabled, Connected
	SFP SLOT OUT: Fibre Port, Enabled, not Connected

Universal Buttons

The 7 Series switch has multiple Universal buttons across the entire management interface.

Please find a description of these buttons on the next page.

Buttons	Instructions
Expand	Expand all groups in the navigation bar.
Collapse	Close all groups in the navigation bar.
Apply	Apply your configuration changes.
Refresh	Refresh the interface information.
Add	Add a new item.
Modify	Modify the selected item.
Delete	Delete the selected item.
Prev	Return to the previous page.

Next	Go to the next page.
Go	Go to the specified page.
First	Navigate to the home page.
Last	Go back to the last page.
Apply	Apply the configuration to the device.
Cancel	Cancel the current configuration changes.
Clean	Clear the specified information.
Save	Save system configuration.
Quit	Logout from the current user.

After you have finished making your configuration changes, click Apply to apply the configuration to the system. However, it is only stored in the memory and not saved in the configuration file. If you do not press Save, the configuration will be lost after the device is powered off or restarted.

After all configurations are complete, click Save. The configuration will be saved to the configuration file and will not be lost after the device is powered off or restarted.

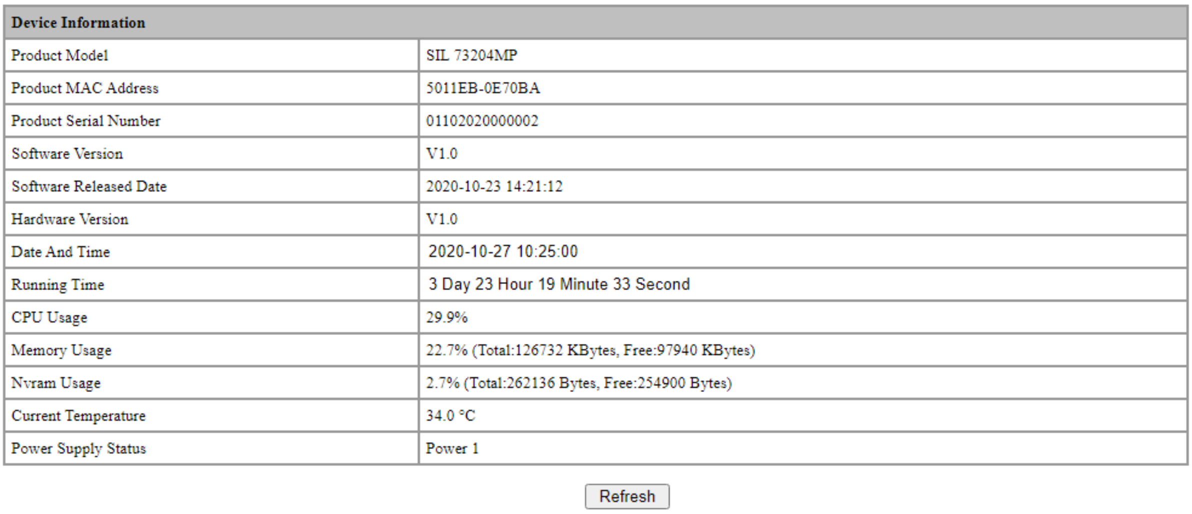
Logout

After completing the configuration on the web interface, press Save first to avoid loss of the configuration. Then click Exit to exit the Web management interface.

Directly closing the browser will not logout the user from Web management interface. If you reopen your browser within the login timeout frame, the user can directly enter the Web configuration interface.

Device Status

Expand the System group and enter the Device Status page to view information regarding your connected network switch. The results here will vary depending on what model of 7 Series switch you have, for example, the Product Model listed as SIL 73208MP. Please see figure 1.4 and Table 1.4 for a view of and descriptions of the Device Status Page.



Device Information	
Product Model	SIL 73204MP
Product MAC Address	5011EB-0E70BA
Product Serial Number	01102020000002
Software Version	V1.0
Software Released Date	2020-10-23 14:21:12
Hardware Version	V1.0
Date And Time	2020-10-27 10:25:00
Running Time	3 Day 23 Hour 19 Minute 33 Second
CPU Usage	29.9%
Memory Usage	22.7% (Total:126732 KBytes, Free:97940 KBytes)
Nvram Usage	2.7% (Total:262136 Bytes, Free:254900 Bytes)
Current Temperature	34.0 °C
Power Supply Status	Power 1

Figure 1.4 – Device Status Interface

Table 1.4 Device Status Descriptions

Item	Description
Product Model	The devices model, For Example: SIL 73208MP.
Product MAC Address	The devices MAC address.
Product Serial Number	The devices serial number.
Software Version	The current software version.
Software Release Date	The release date of your current software.
Hardware Version	The hardware version of the device.
Date and Time	The device system time.
Running Time	The systems running time.
CPU Usage	The systems CPU usage.
Memory Usage	The memory usage of the system.
NVRAM Usage	Configuration space usage of the system.
Current Temperature	Current temperature of the switch.
Power Supply Status	Current terminal block wiring.

PORT CONFIGURATION

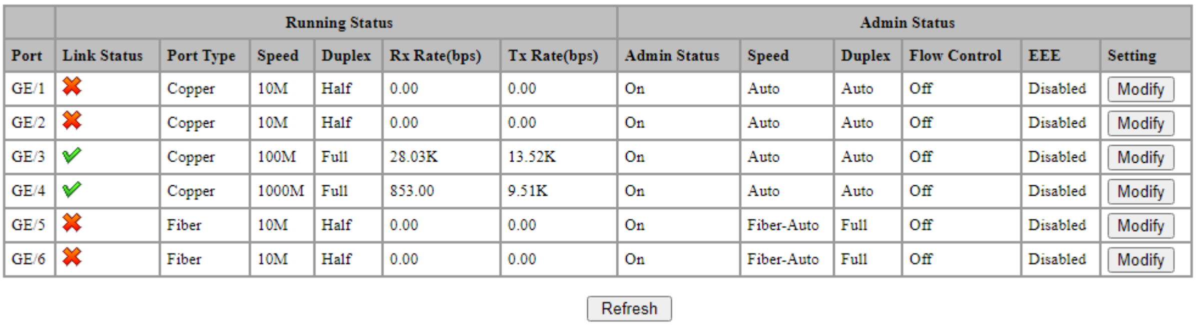
This chapter describes the port configuration in detail, including the following:

- Port Configuration (Admin Status, Copper Mode, Flow Control, EEE)
- Port Statistics (Detailed Statistics, SFP Statistics, Traffic Statistics)

PORT CONFIGURATION

Select Base Configuration / Ports / Status and Setting in the navigation bar to enter the Status and Setting interface.

The Status and Settings interface (Figure 2.1) shows the operating status and configuration information for each port. Table 2.1 Explains this interface.



	Running Status						Admin Status					
Port	Link Status	Port Type	Speed	Duplex	Rx Rate(bps)	Tx Rate(bps)	Admin Status	Speed	Duplex	Flow Control	EEE	Setting
GE/1	✗	Copper	10M	Half	0.00	0.00	On	Auto	Auto	Off	Disabled	Modify
GE/2	✗	Copper	10M	Half	0.00	0.00	On	Auto	Auto	Off	Disabled	Modify
GE/3	✓	Copper	100M	Full	28.03K	13.52K	On	Auto	Auto	Off	Disabled	Modify
GE/4	✓	Copper	1000M	Full	853.00	9.51K	On	Auto	Auto	Off	Disabled	Modify
GE/5	✗	Fiber	10M	Half	0.00	0.00	On	Fiber-Auto	Full	Off	Disabled	Modify
GE/6	✗	Fiber	10M	Half	0.00	0.00	On	Fiber-Auto	Full	Off	Disabled	Modify

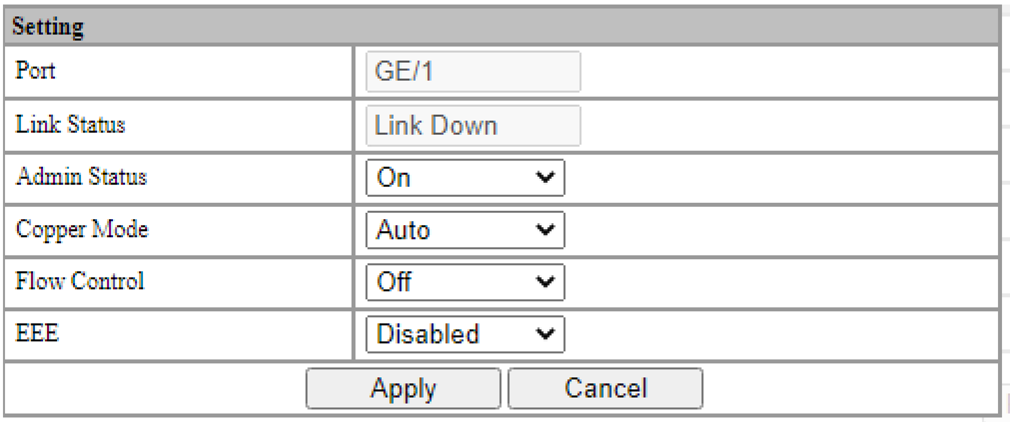
Figure 2.1 Port Status and Settings Interface

Table 2.1 Port Configuration Description

Item	Description
Port	The name and number of the port.
Link Status	**GREEN TICK**: Indicates that the port is connected. **RED CROSS**: Indicates that the port is disconnected.
Port type	Copper or Fibre Port.
Speed	The ports working speed, a disconnected port is always displayed as 10M.
Duplex Mode	The ports duplex mode, a disconnected port always shows half duplex.

Admin Status	Current condition of the Admin Status of the port.
Flow Control	Current status of Flow Control on the port.

Click the modify button to enter the port configuration page as seen in Figure 2.2. Click the Apply button to complete the configuration and click the Cancel button to cancel the configuration.



Setting	
Port	GE/1
Link Status	Link Down
Admin Status	On
Copper Mode	Auto
Flow Control	Off
EEE	Disabled

Figure 2.2 Port Configuration

Table 2.2 Port Configuration Descriptions

Item	Configuration	Description
Admin Status	On Off	Turn the port on or off. When set to Off, the port will be inaccessible until turned back On. Default setting for all ports is On.

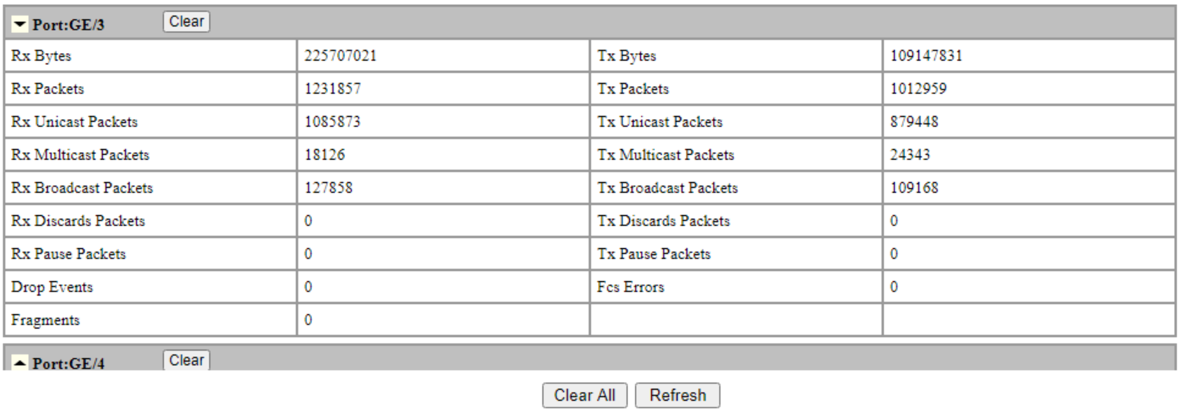
Copper Mode	Auto 10M Half 10M Full 100M Half 100M Full 1000M Full	The configurable duplex and data rate, such as 10M / 100M / 1000M / Auto. Only one communication is permitted in half-duplex mode and simultaneous two-way communication in full-duplex mode. Default setting is Auto.
Flow Control	On Off	The Layer 2 port flow control function can effectively prevent network congestion when turned on. Flow control is a peer-to-peer function. It is implemented by pause frames. When the ports of the PVRP system are enabled, the peer port must be also enabled. Default setting is Disabled.
EEE	Enabled Disabled	Enable Energy-Efficient Ethernet protocol. This will reduce power consumption during periods of low data activity. Default setting is Disabled.

Port Statistics

Select Base Configuration / Ports / Statistics to enter the port Statistics page (as shown in Figure 2.3).

The Statistics shows each ports statistical information. You can expand the corresponding port statistics by clicking the ▲ button and click the Clear button to clear the statistics of the port. Table 2.3 explains this statistical information in more detail.

Click the Refresh button to update the statistics of all ports. Click Clear All to clear the statistics for all ports.



Rx Bytes	225707021	Tx Bytes	109147831
Rx Packets	1231857	Tx Packets	1012959
Rx Unicast Packets	1085873	Tx Unicast Packets	879448
Rx Multicast Packets	18126	Tx Multicast Packets	24343
Rx Broadcast Packets	127858	Tx Broadcast Packets	109168
Rx Discards Packets	0	Tx Discards Packets	0
Rx Pause Packets	0	Tx Pause Packets	0
Drop Events	0	Fcs Errors	0
Fragments	0		

Figure 2.3 Port Statistics Information

Table 2.3 Port Statistics Descriptions

Port Statistics Type	Description
Rx / Tx **Bytes**	Total received / sent bytes.
Rx / Tx Packets	Total received / sent packets.
Rx / Tx Unicast Packets	Total received / sent unicast packets.
Rx / Tx Multicast Packets	Total received / sent multicast packets.
Rx / Tx Broadcast Packets	Total received / sent broadcast packets.
Rx / Tx Discards Packets	Total received / sent discarded packets.
Rx / Tx Pause Packets	Total received / sent flow control packets.
Drop Events	Drop messages (interval sampling).
FCS Errors	FCS error packet.
Fragments	Fragment packets (less than 64 bytes).

FDB Table

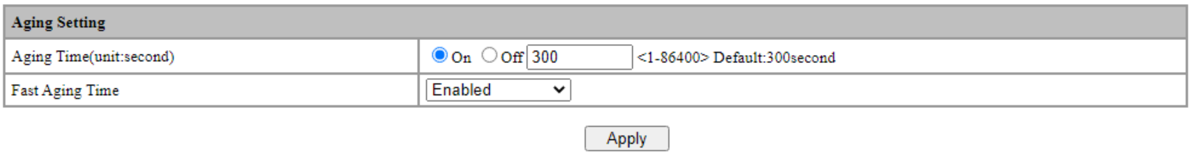
This chapter describes the FDB Table in detail, including the following:

- Base Configuration (Aging Settings, Static MAC Entry, Port Learning Ability)
- FDB Table Information
- Deletion

Aging Time

Select Base Configuration / FDB Table / Configuration / Aging Setting to enter the Aging Setting interface. Table 3.1 explains this setting.

If you need to modify the aging time configuration of the FDB Table, you can modify this in the aging time configuration box and click Apply, as shown in Figure 3.1.



Aging Setting	
Aging Time(unit:second)	● On ○ Off 300 <1-86400> Default:300second
Fast Aging Time	Enabled

Figure 3.1 Aging Time Configuration

Table 3.1 The FDB Table Aging Time Description

Configuration Item	Description
Aging time	The FDB Table Aging Time describes the period dynamic entries are stored in the FDB table based on the last reception of a frame. The FDB Table aging time can be configured as below: **ON**: Aging Time is on. Range 1-86400 seconds, default value 300 seconds before dynamic forwarding entries are discarded. **OFF**: The FDB Table never ages, but the system resetting could clear the dynamic forwarding entries.

Static MAC

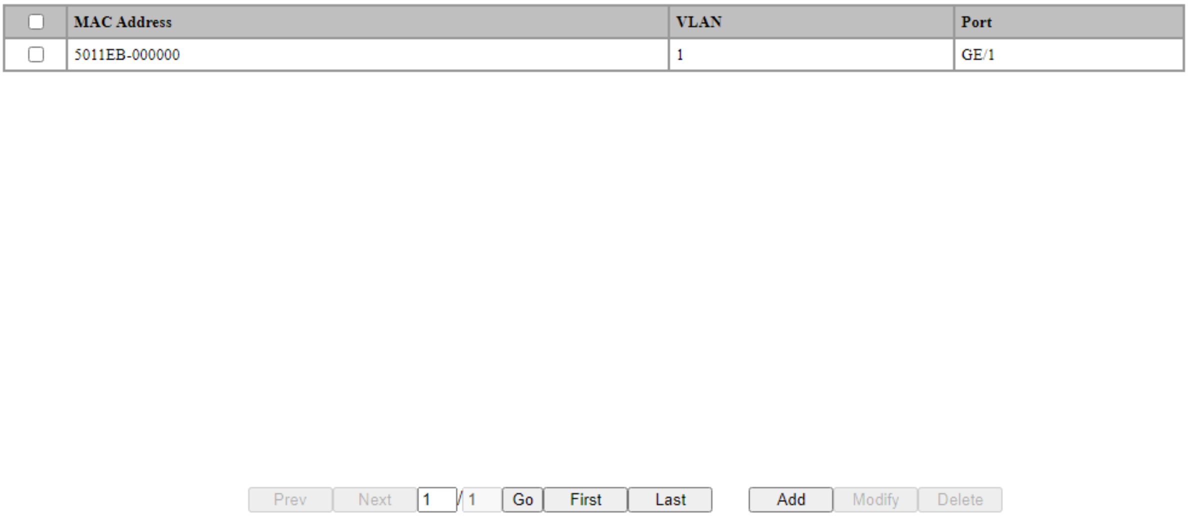
Select Base Configuration / FDB Table / Configuration / Static MAC Entry to enter the Static MAC Entry configuration interface.

On the FDB Table Static MAC Entry interface, you can view the static MAC related configuration information of the FDB Table, as shown in Figure 3.2.

To add a new static MAC address, click Add. Fill in the corresponding configuration items and click Apply to complete. There will be error prompts if the configuration setting is filled in incorrectly. Table 3.2 explains Static MAC Entry in more detail.

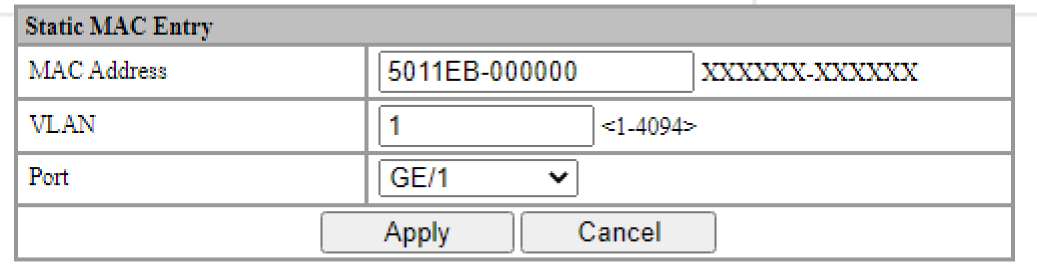
If modifying the static MAC address, click Modify to enter Static MAC Entry interface. Click Apply to complete the configuration. There will be error prompts if the configuration setting is filled in incorrectly.

To delete a static MAC, select the corresponding static MAC and click Delete.



□	MAC Address	VLAN	Port
□	5011EB-000000	1	GE/1

Figure 3.2 Static MAC Interface



Static MAC Entry	
MAC Address	5011EB-000000 XXXXXX-XXXXXX
VLAN	1 <1-4094>
Port	GE/1

Figure 3.2 Static MAC Configuration

Table 3.2 FDB Table Static MAC Description

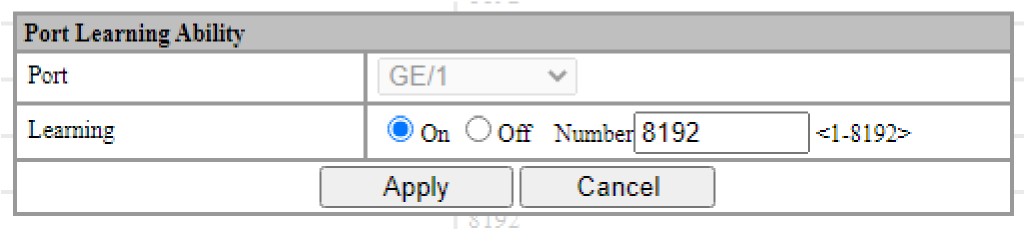
Configuration Item	Description
MAC address	A valid unicast MAC address, format XXXXXX-XXXXXX.
VLAN	A valid VLAN ID, range 1-4094.
Port	Select a port.

Port Learning Ability

Select Base Configuration / FDB Table / Configuration / Port Learning Ability to enter the Port Learning Ability interface.

To modify the Port Learning Ability configuration, click Modify in the corresponding port column to enter the port configuration interface, as shown in Figure 3.3.

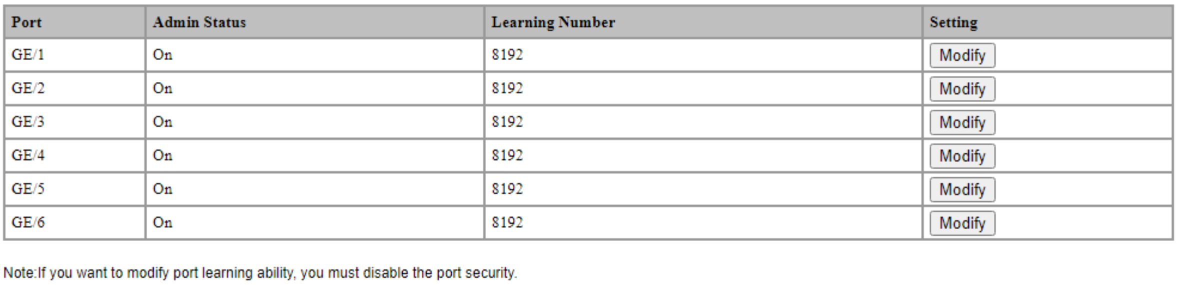
Select or fill in the configuration items that need to be modified and click Apply. There will be prompts if the configuration item is filled in incorrectly. Table 3.3 describes this in more detail.



Port Learning Ability

Port	GE/1
Learning	● On ○ Off Number 8192 <1-8192>

Figure 3.3 Port Learning Ability Configuration



Port	Admin Status	Learning Number	Setting
GE/1	On	8192	Modify
GE/2	On	8192	Modify
GE/3	On	8192	Modify
GE/4	On	8192	Modify
GE/5	On	8192	Modify
GE/6	On	8192	Modify

Note:If you want to modify port learning ability, you must disable the port security.

Figure 3.4 Port Learning Ability Statistics

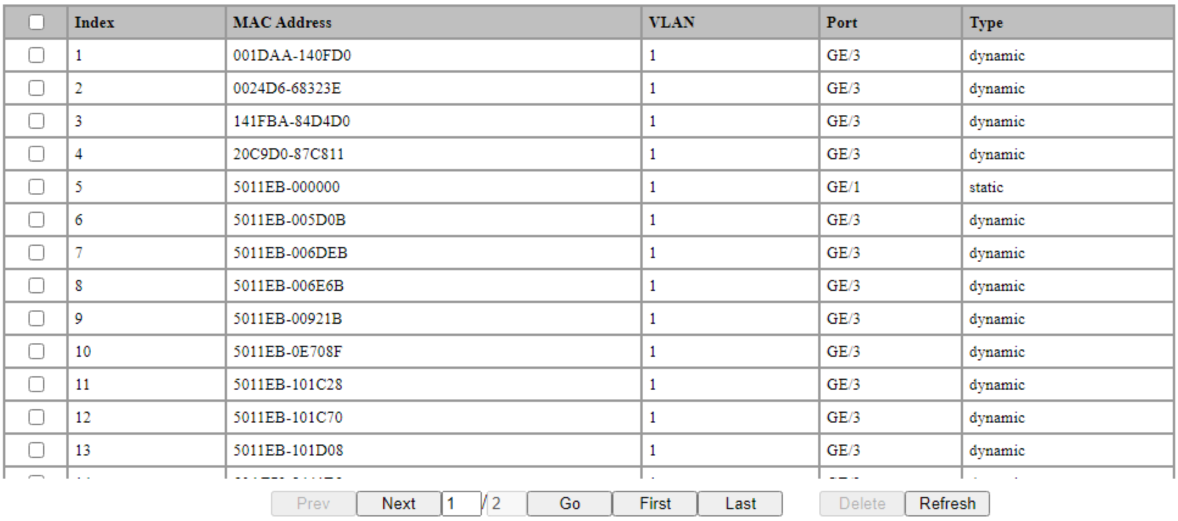
Table 3.3 FDB Table Port Learning Ability Description

Configuration item	Description
Port	Port name, selected modified port.
Learning	Functional configuration of port learning. This allows the Switch to dynamically add learned FDB Entries. **ON**: The Port Learning Ability is on. IS3000 / IS2000 series range is 1-8192; **OFF**: Closes the Port Learning Ability.

Note: The number of address learning is shared by all ports.

FDB Table

Select Base Configuration / FDB Table / FDB Table to enter FDB Table interface as shown in figure 3.5.



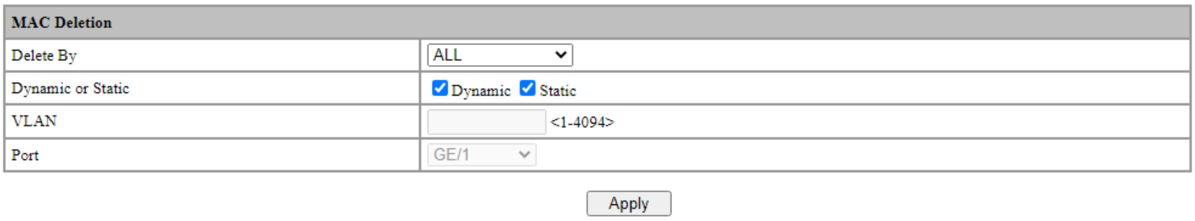
☐	Index	MAC Address	VLAN	Port	Type
☐	1	001DAA-140FD0	1	GE/3	dynamic
☐	2	0024D6-68323E	1	GE/3	dynamic
☐	3	141FBA-84D4D0	1	GE/3	dynamic
☐	4	20C9D0-87C811	1	GE/3	dynamic
☐	5	5011EB-000000	1	GE/1	static
☐	6	5011EB-005D0B	1	GE/3	dynamic
☐	7	5011EB-006DEB	1	GE/3	dynamic
☐	8	5011EB-006E6B	1	GE/3	dynamic
☐	9	5011EB-00921B	1	GE/3	dynamic
☐	10	5011EB-0E708F	1	GE/3	dynamic
☐	11	5011EB-101C28	1	GE/3	dynamic
☐	12	5011EB-101C70	1	GE/3	dynamic
☐	13	5011EB-101D08	1	GE/3	dynamic

Figure 3.5 FDB Table

If deleting a forwarding entry, select the corresponding forwarding entry or select it all and click Delete to delete the entry.

Delete Entries

Select Base Configuration / FDB Table / Delete Entries to enter the Deletion interface. Please see Figure 3.6 and Table 3.4 for an overview of this section.



MAC Deletion	
Delete By	ALL
Dynamic or Static	☑ Dynamic ☑ Static
VLAN	<1-4094>
Port	GE/1

Figure 3.6 FDB Table Deletion

Table 3.4 FDB Table Deletion Description

Configuration Item	Description
Delete By	Select the type of delete operation. **ALL**: Deletes all FDB Table entries. **VLAN Only**: Specifies the VLAN ID to delete FDB Table entries. **Port Only**: Specify the port number to delete FDB Table entries.
Dynamic or static	Select the delete type, dynamic or static: **Dynamic**: Delete the dynamic FDB Table entries that have been learned. **Static**: Delete manually added static FDB Table entries.
VLAN	Delete the forwarding entry of the specified VLAN. The range is 1-4094.
Port	Delete the forwarding entry of the specified port.

VLAN

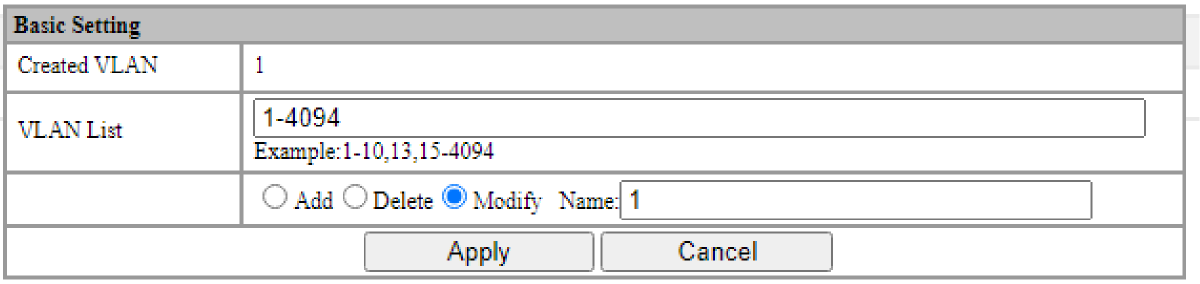
This chapter describes VLAN Configuration, including the following:

- VLAN Port Settings
- Basic VLAN Information

Select Base Configuration / VLAN / Basic Setting to enter the VLAN Basic Setting interface.

On the Basic Setting interface, you can view information of each VLAN. If you want to find information about a specific VLAN ID, select the range of the VLAN ID in the drop-down box, enter the specified VLAN ID in the input box and click Search.

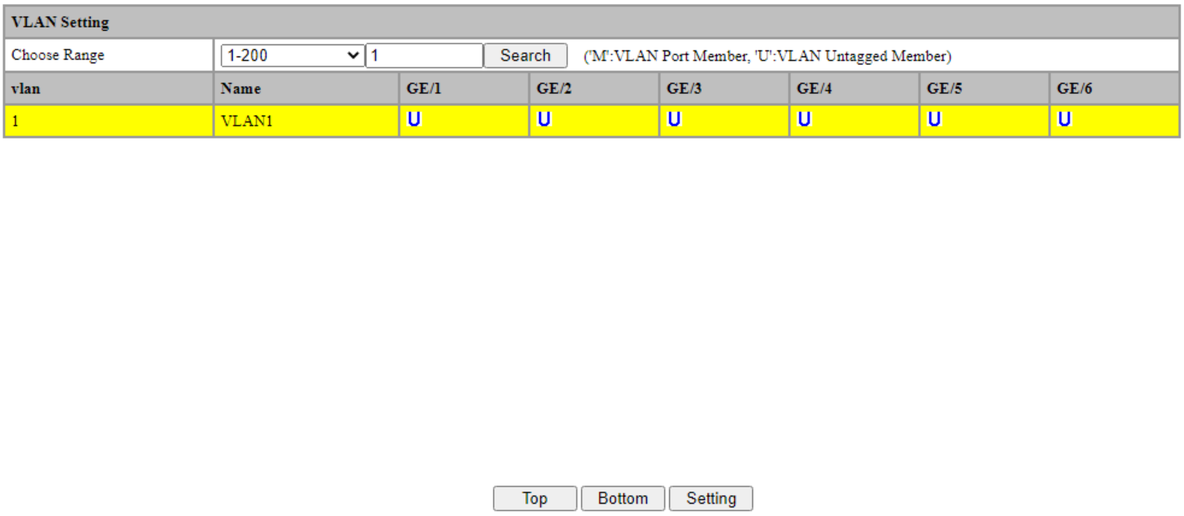
To add, modify, or delete VLANs, click Setting. Enter the VLAN to be added, modified, or deleted in the <VLAN list> box on setup interface. Then select Add, Modify, or Delete. Click Apply. The setting and modification options can only modify the VLAN name, as shown in Figure 4.1. Table 4.1 explains this in more detail.



Basic Setting	
Created VLAN	1
VLAN List	1-4094 Example:1-10,13,15-4094
	○ Add ○ Delete ● Modify Name: 1

Figure 4.1 VLAN Basic Setting

Figure 4.2 VLAN Search Function



VLAN Setting

Choose Range: 1-200 ▾ 1 Search ('M':VLAN Port Member, 'U':VLAN Untagged Member)

vlan	Name	GE/1	GE/2	GE/3	GE/4	GE/5	GE/6
1	VLAN1	U	U	U	U	U	U

Table 4.1 VLAN Basic Setting Configuration

Configuration Item	Description
Search	Search for a VLAN ID. If there is a matching VLAN ID to your search query then it will be highlighted YELLOW, as shown above in Figure 4.2.
Top	Display the first page of VLAN information.
Bottom	Display the last page of VLAN information.
Setting	Enter the VLAN Basic Setting Configuration

Table 4.2 VLAN Basic Setting Description

Configuration item	Instructions
Created VLAN	Used to input a VLAN ID onto the VLAN List, also supports multi-VLAN batch input, such as 1,2,3,4-10.
VLAN List	VLANs to be added, deleted or modified, supports batch input. VLAN 1 is the default VLAN. It already exists and does not need to be created.
Add	Add the selected VLAN into the VLAN list box. VLAN 1 is the default VLAN. It already exists and does not need to be created.
Delete	Delete the selected VLAN in the VLAN list box. VLAN 1 is the default VLAN and cannot be deleted.
Modify	Modify the selected VLAN in the VLAN list box. The VLAN name can be modified. The new name needs to be entered in the name box.

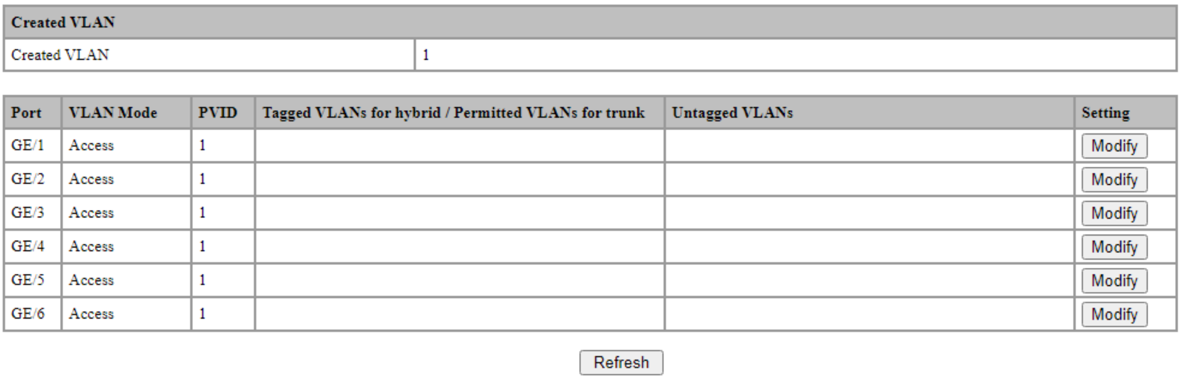
VLAN Port Configuration

Select Base Configuration / VLAN / Port Setting to enter the VLAN Port Setting interface.

On the Port Setting interface, you can view the VLAN related configuration information of each port as shown in Table 4.4

To modify the VLAN configuration of a port, click Modify in the corresponding port display field to enter the port setting interface, as shown in Figure 4.3.

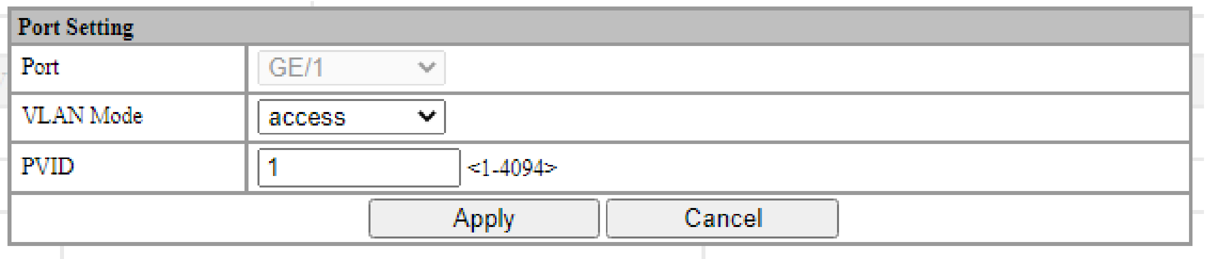
Select or fill in the configuration items that need to be modified and click Apply. There will be prompts if the configuration item is filled in incorrectly.



Created VLAN	
Created VLAN	1

Port	VLAN Mode	PVID	Tagged VLANs for hybrid / Permitted VLANs for trunk	Untagged VLANs	Setting
GE/1	Access	1			Modify
GE/2	Access	1			Modify
GE/3	Access	1			Modify
GE/4	Access	1			Modify
GE/5	Access	1			Modify
GE/6	Access	1			Modify

Figure 4.3 VLAN Port Overview



Port Setting	
Port	GE/1
VLAN Mode	access
PVID	1 <1-4094>

Figure 4.4 VLAN Port Setting

Table 4.3 VLAN Port Setting Configuration

Configuration Item	Description
Modify	Modify the VLAN configuration of the corresponding port.
Refresh	Refresh the VLAN configuration information of all ports.

Table 4.4 Modify Interface Configuration of VLAN Port Setting

Configuration Item	Description
Port	Port name information.
VLAN Mode	Port VLAN Mode: **Access Mode**: Set the port onto Access Mode. This means the port will only communicate on specified VLANS. **Trunk mode**: Set the port to Trunk Mode. This means the port will be able to communicate on all VLANS simultaneously (unless a VLAN has been restricted). **Hybrid mode**: Allow the port to decide between Trunk or Access Mode.

PVID	Port VLAN ID.
Permitted VLANs for Trunk / Tagged VLANs For Hybrid	List of VLANs allowed to pass through the port. It supports batch input of multiple VLANs. For example: 1,2,3,4-10. **Add**: Add the tagged VLAN to the port via the VLAN ID. **Delete**: Delete the VLAN from the tagged VLAN of the port. **Replace**: Replace the original tagged VLAN of the port with a new VLAN ID. **All created VLANs**: All the created VLANs will be added, even if they are created later, they will be automatically added to the tagged VLAN of the port.
Untagged VLAN	Port untagged VLAN list, supports multi-VLAN batch input, such as: "1,2,3,4-10". **Add**: Add a VLAN ID to the untagged VLAN of the port. **Delete**: Delete a VLAN ID from the untagged VLAN of the port. **Replace**: Replace the original untagged VLAN of the port with a new VLAN ID.

QoS

This chapter describes Quality of Service features (QoS), including the following:

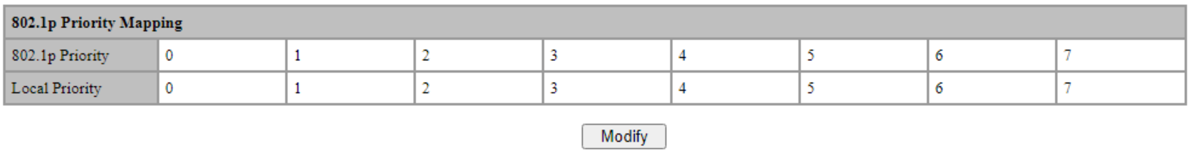
- QoS Mapping Settings
- QoS Port Settings

802.1p Priority (CoS)

Select Base Configuration / QOS / Mapping / 802.1p Priority in the navigation bar to enter the QOS 802.1p Priority interface.

On the QOS 802.1p Priority interface, you can view the mapping from 802.1p priorities to local priorities.

To modify the mapping relationship, click Modify and select the mapped local priority for the corresponding 802.1p priority in drop-down list box, as shown in Figure 5.1.



802.1p Priority Mapping

802.1p Priority	0	1	2	3	4	5	6	7
Local Priority	0	1	2	3	4	5	6	7

Figure 5.1 QOS 802.1p Priority Mapping Setting

Table 5.1 QOS 802.1p Priority Description

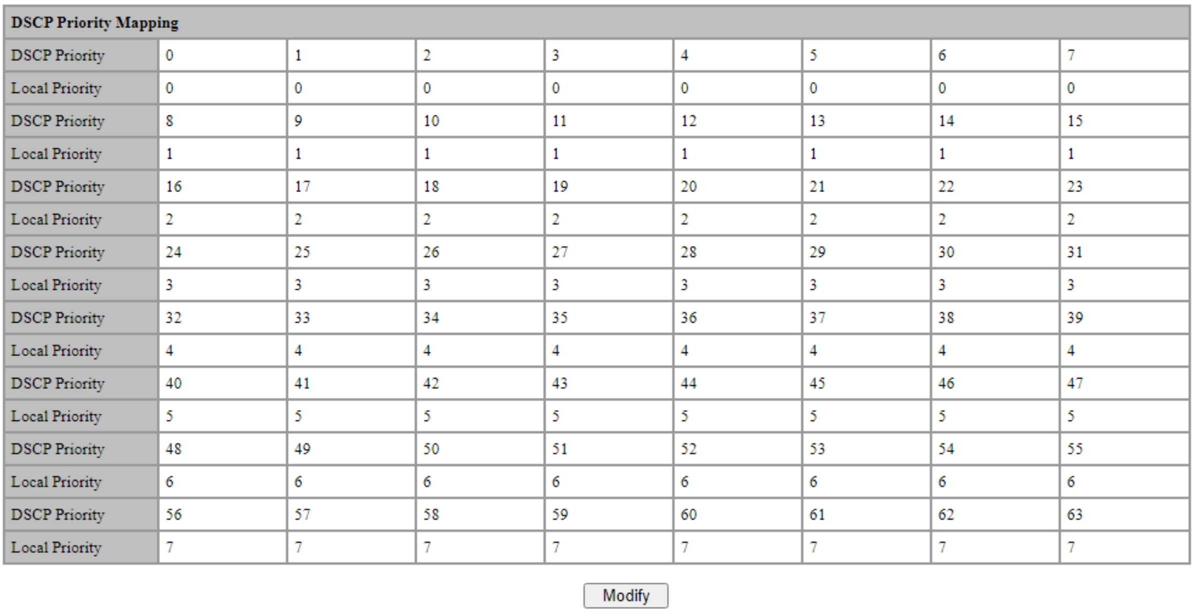
Configuration item	Description
Modify	Modify the mapping between 802.1p priorities and local priorities.

DSCP Priority

Select Base Configuration / QOS / Mapping / DSCP Priority in the navigation bar to enter the QOS DSCP Priority Mapping interface.

On the QOS DSCP Priority interface, you can view the mapping from DSCP priorities to local priorities.

To modify the mapping relationship, click Modify and select the mapped local priority for the corresponding DSCP priority in drop-down list box, as shown in Figure 5.2.



DSCP Priority Mapping								
DSCP Priority	0	1	2	3	4	5	6	7
Local Priority	0	0	0	0	0	0	0	0
DSCP Priority	8	9	10	11	12	13	14	15
Local Priority	1	1	1	1	1	1	1	1
DSCP Priority	16	17	18	19	20	21	22	23
Local Priority	2	2	2	2	2	2	2	2
DSCP Priority	24	25	26	27	28	29	30	31
Local Priority	3	3	3	3	3	3	3	3
DSCP Priority	32	33	34	35	36	37	38	39
Local Priority	4	4	4	4	4	4	4	4
DSCP Priority	40	41	42	43	44	45	46	47
Local Priority	5	5	5	5	5	5	5	5
DSCP Priority	48	49	50	51	52	53	54	55
Local Priority	6	6	6	6	6	6	6	6
DSCP Priority	56	57	58	59	60	61	62	63
Local Priority	7	7	7	7	7	7	7	7

Figure 5.2 QOS DSCP Priority Mapping Setting

Table 5.2 QOS DSCP Priority Description

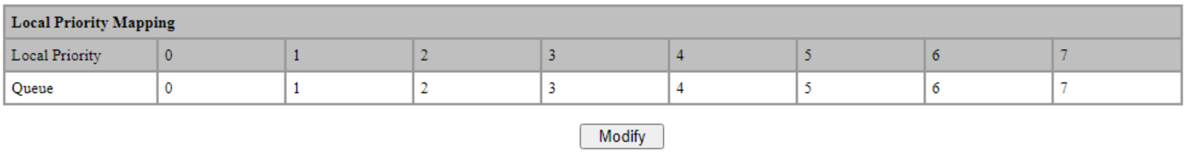
Configuration Item	Instructions
Modify	Modify the mapping between DSCP priorities and local priorities.

Local Priority

Select Base Configuration / QOS / Mapping / Local Priority in the navigation bar to enter the QOS Local Mapping.

You can view the mapping from the local priority to the egress queue on the QOS Local Priority interface.

To modify the mapping relationship, click Modify and select the mapped egress queue for the corresponding local priority in drop-down list box, as shown in Figure 5.3.



Local Priority Mapping

Local Priority	0	1	2	3	4	5	6	7
Queue	0	1	2	3	4	5	6	7

Figure 5.3 QOS Local Priority Mapping Setting

Table 5.3 QOS Local Priority Description

Configuration Item	**Description**
Modify	Modify the mapping relationship between the local precedence and the egress queue

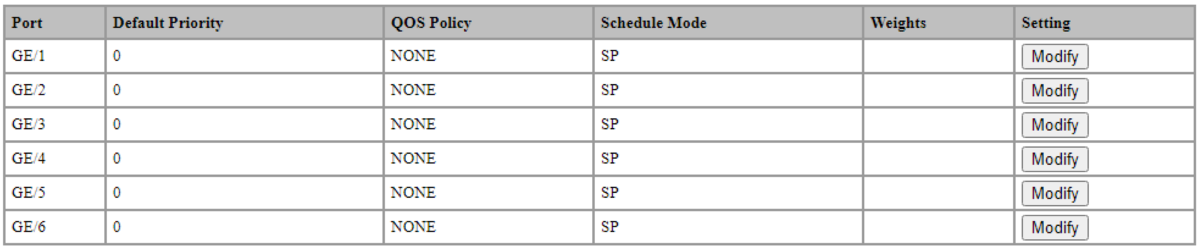
QOS Port Configuration

Port Priority Settings

Select Base Configuration / QOS / Ports / Port Priority in the navigation bar to enter the QOS Port Priority interface.

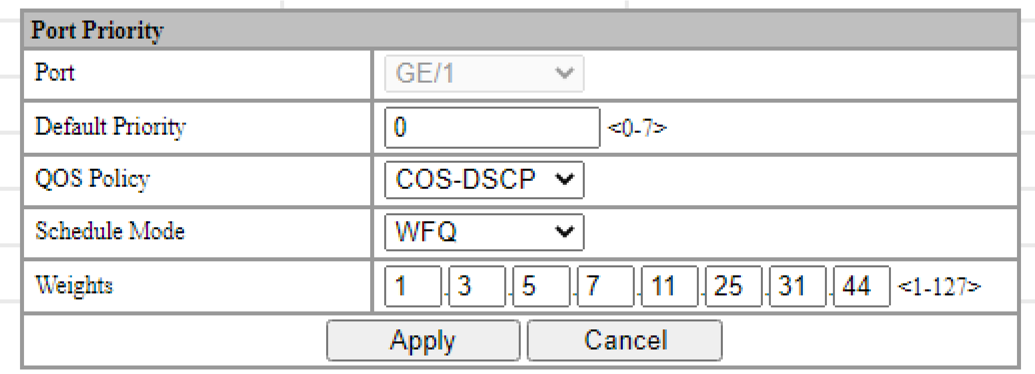
To modify the QOS configuration of a port, click Modify on the corresponding port to enter the port setting interface, as shown in Figure 5.5 and Table 5.4.

Select or fill in the configuration items that need to be modified and click Apply to confirm. There will be prompts if the configuration item is filled in incorrectly.



Port	Default Priority	QOS Policy	Schedule Mode	Weights	Setting
GE/1	0	NONE	SP		Modify
GE/2	0	NONE	SP		Modify
GE/3	0	NONE	SP		Modify
GE/4	0	NONE	SP		Modify
GE/5	0	NONE	SP		Modify
GE/6	0	NONE	SP		Modify

Figure 5.4 QOS Port Overview



Port Priority	
Port	GE/1
Default Priority	0 <0-7>
QOS Policy	COS-DSCP
Schedule Mode	WFQ
Weights	1 3 5 7 11 25 31 44 <1-127>

Figure 5.5 QOS Port Settings

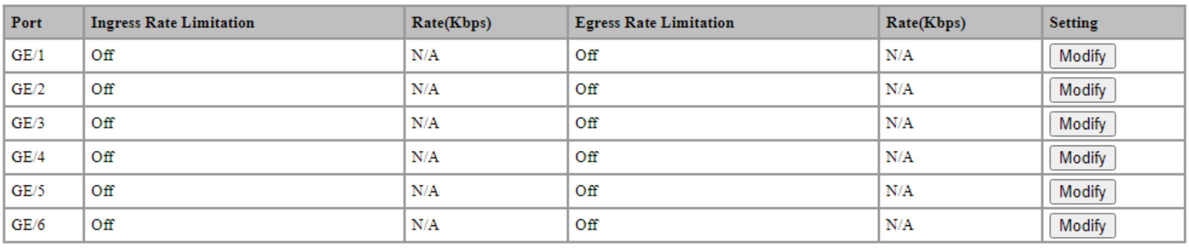
Table 5.4 QOS Port Priority Modifying Description

Configuration Item	Description
Port	Specified Port.
Default Priority	The port with Priority, range <0-7>.
QOS Policy	Port QOS policy: **NONE**: Indicates no policy. The port does not have a policy by default. **COS**: Class Of Service priority policy. This is an algorithm that compares CoS tags to classify packets and to assign to queues of different priority. **DSCP**: Differentiated Services Code Point priority policy. This is used to determine traffic classifications for network data. **COS-DSCP**: Hybrid of both COS-DSCP Priorities.
Schedule Mode	QOS Scheduling strategy: **SP**: Strict Priority scheduling strategy **WRR**: Weighted Round Robin scheduling strategy **WFQ**: Weighted Fair Queue scheduling strategy
Weights	If the selected scheduling mode is WRR or WFQ, you need to configure the weight of each queue, total 8 queues. To set 8 weights, the weight of all queues must be 127.

PORT RATE LIMIT

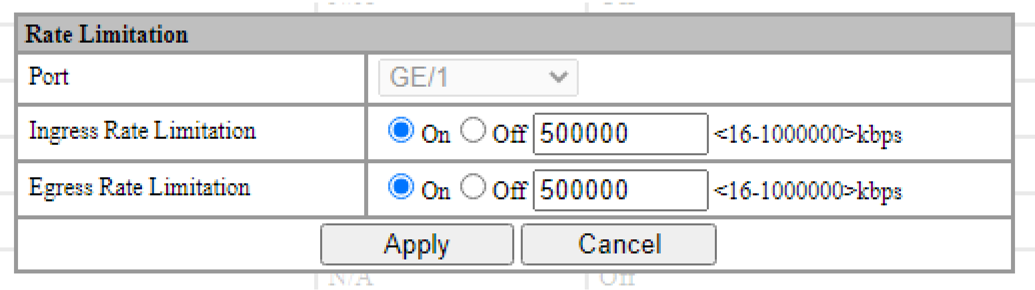
Select Base Configuration / QOS / Port / Rate Limitation in the navigation bar to enter the QOS Rate Limitation interface.

To modify the ports speed limit configuration, click Modify in the port display column to enter the Rate Limitation setting interface, as shown in Figure 5.5.



Port	Ingress Rate Limitation	Rate(Kbps)	Egress Rate Limitation	Rate(Kbps)	Setting
GE/1	Off	N/A	Off	N/A	Modify
GE/2	Off	N/A	Off	N/A	Modify
GE/3	Off	N/A	Off	N/A	Modify
GE/4	Off	N/A	Off	N/A	Modify
GE/5	Off	N/A	Off	N/A	Modify
GE/6	Off	N/A	Off	N/A	Modify

Figure 5.5 QOS Rate Limitation Overview



Rate Limitation	
Port	GE/1
Ingress Rate Limitation	● On ○ Off 500000 <16-1000000>kbps
Egress Rate Limitation	● On ○ Off 500000 <16-1000000>kbps

Figure 5.6 QOS Port Speed Setting

Table 5.7 QOS Port Rate Limit Modifying Description

Configuration Item	Description
Port	Port name information.
Ingress Rate Limitation	Set the ports entry speed limit: **On**: Enables the port to limit the rate of ingress. The rate limit ranges from <16-1000000>kbps. **Disabled**: Close the ports ingress rate limit
Egress Rate Limitation	Set the ports output speed limit: **On**: Enables the port to limit the rate of egress. The rate limit ranges from <16-1000000>kbps. **Disabled**: Close the ports egress rate limit

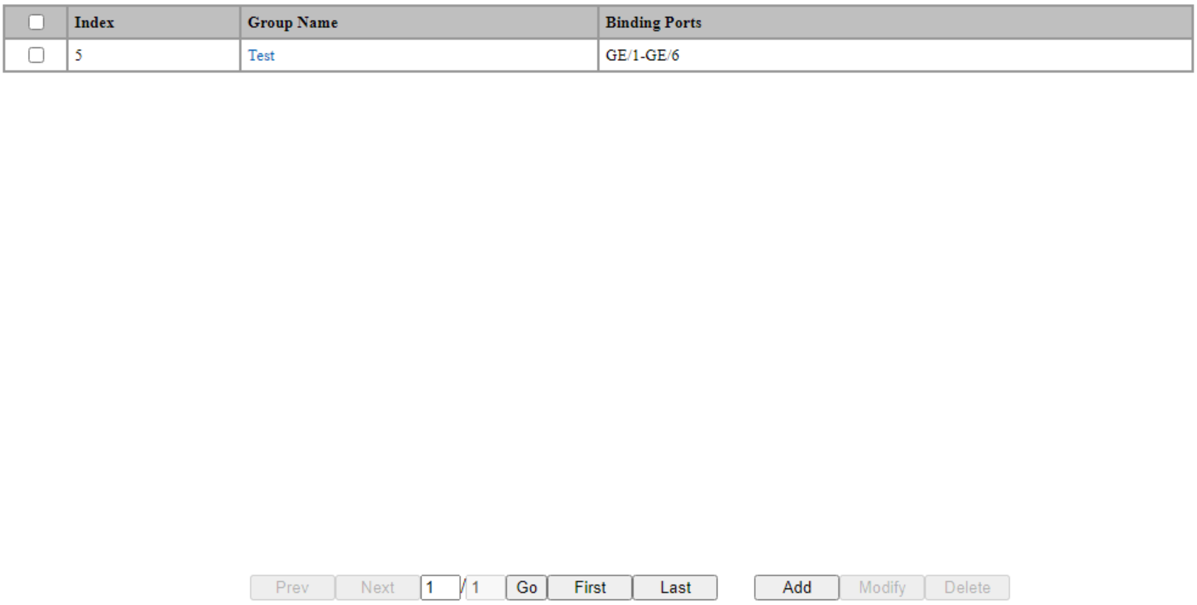
ACL

This chapter describes Access Control List rules which describes the following:

- ACL Filtering Rule Settings
- ACT Group Settings

ACL GROUP SETTING

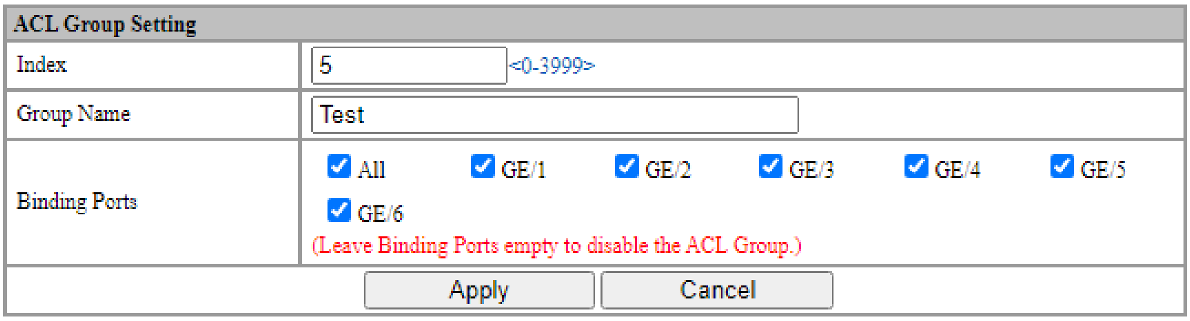
Select Advanced / ACL / ACL Group Setting in the navigation bar to enter the ACL interface.
The ACL information will be added in ACL Group Setting interface, as shown in figure 6.1.



□	Index	Group Name	Binding Ports
□	5	Test	GE/1-GE/6

Figure 6.1 ACL Group Information

Click Add to enter ACL Group Setting interface, as shown in figure 6.2. An ordinal number (0-3999) is assigned to the group. Set a name for the group, non-repeatable, then select the port and bind to the group. It is not workable if port binding is not done. Click Apply to complete the configuration.



ACL Group Setting	
Index	5 <0-3999>
Group Name	Test
Binding Ports	☑ All ☑ GE/1 ☑ GE/2 ☑ GE/3 ☑ GE/4 ☑ GE/5 ☑ GE/6 (Leave Binding Ports empty to disable the ACL Group.)

Figure 6.2 ACL Group Setting

Select an ACL group and click Modify to enter the ACL Group Setting interface. Fill in the required configuration items and click Apply to complete the configuration.

Select an ACL group and click Delete to delete the configuration.

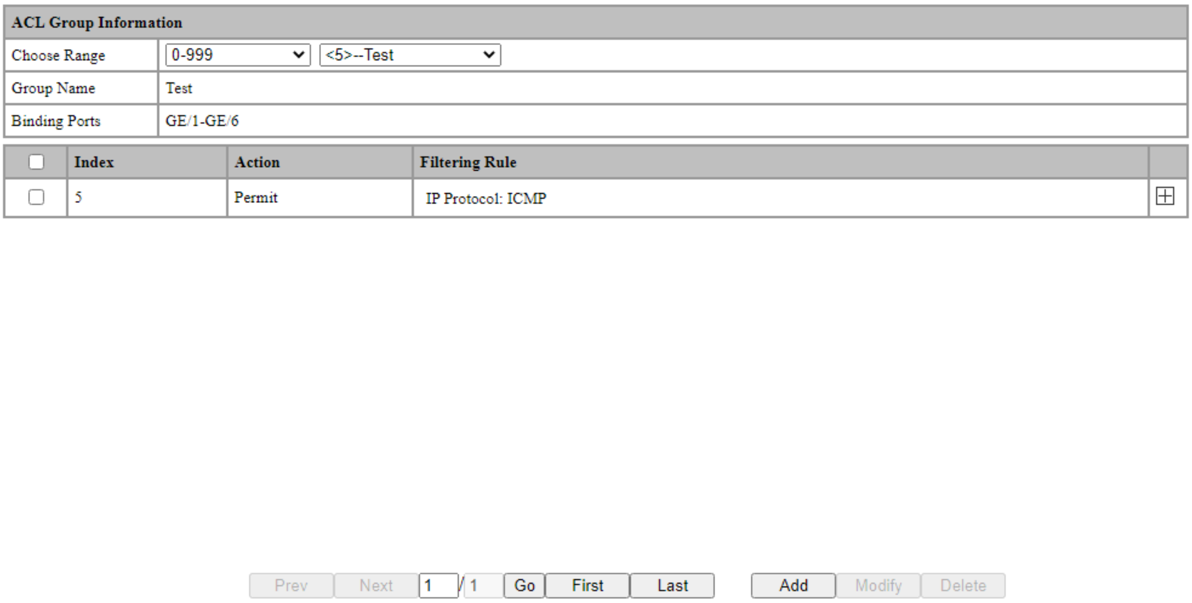
Table 6.1 ACL Group Description

Configuration	Description
Index	ACL group index, range <0-3999>, divided into 4 matching groups L2, L3 / L4, Source L2 / L3 / L4, Destination L2 / L3 / L4. The matching items supported by each matching group are as follows: **L2:** Source MAC, Destination MAC, Ethernet type, VLAN, IP protocol, range 0-999. **L3 / L4:** VLAN, Source IP, Destination IP, Source IP port, Destination IP port, IP protocol, range 1000-1999. **Source L2 / L3 / L4:** Source MAC, Ethernet type, VLAN, Source IP, Source IP port, IP protocol, range 2000-2999. **Destination L2 / L3 / L4:** Destination MAC, Ethernet type, VLAN, Destination IP, Destination IP port, IP protocol, range 3000-3999.
ACL Group Name	The Group name must be unique and string format, ASCII code A-Z, a-z, 0-9, _, no more than 32 characters.
Binding Ports	An ACL is applied to a certain port or some ports, then the bound ACL Port becomes active.

ACL RULES

Select Advanced / ACL / ACL Rule Setting in the navigation bar to enter the ACL Rule view interface, as shown in figure 6.3.

In the Choose Range field, select the range of the group in the first drop-down list and select a specific group within the second drop-down list. The next two lines show the selected group name and the port that the group binds. The table shows the ACL rules that the group has configured. Click the icon ⊞ in the filter rule bar to expand and view the specific content of the filter rule, the icon will change to ⊟ to collapse the group.

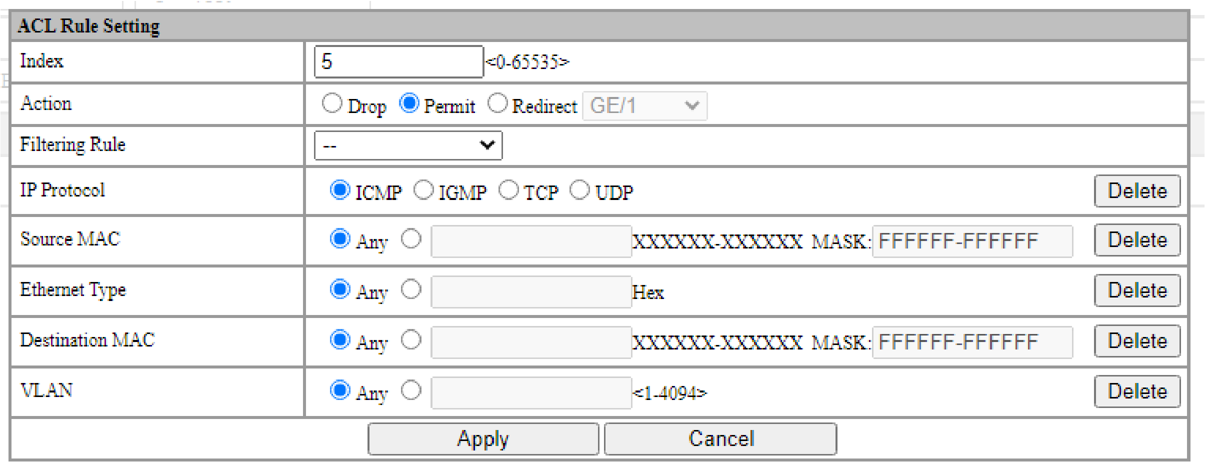


ACL Group Information	
Choose Range	0-999 ⌄ <5>--Test ⌄
Group Name	Test
Binding Ports	GE/1-GE/6

□	Index	Action	Filtering Rule	
□	5	Permit	IP Protocol: ICMP	⊞

Figure 6.3 ACL Rule View

Click Add to enter the ACL rule setting interface. One of the filtering rules can be selected by selecting different filters via the drop-down list, and then the corresponding filtering items will be automatically generated for users to fill in. You can also remove the filter items by the Delete on the right side. Fill in the required configuration items and click Apply to complete the configuration.



ACL Rule Setting		
Index	5 <0-65535>	
Action	○ Drop ● Permit ○ Redirect GE/1 ⌄	
Filtering Rule	-- ⌄	
IP Protocol	● ICMP ○ IGMP ○ TCP ○ UDP	Delete
Source MAC	● Any ○ XXXXXX-XXXXXX MASK: FFFFFF-FFFFFF	Delete
Ethernet Type	● Any ○ Hex	Delete
Destination MAC	● Any ○ XXXXXX-XXXXXX MASK: FFFFFF-FFFFFF	Delete
VLAN	● Any ○ <1-4094>	Delete

Figure 6.4 ACL Rule Setting

Select an ACL and click Modify to enter the ACL Rule Setting interface. Fill in the required configuration items, click Apply to complete the configuration.

Select an ACL and click Delete to delete the configuration.

Table 6.2 ACL Rule Description

Configuration	Description
Index	ACL Rule Index
Action	When the message conforms to the filter rule, the action includes: **Drop**: Drops the traffic. **Permit**: Permits the traffic. **Redirect**: Redirects the traffic to a specified port.
Filtering Rule	ACL filtering rules include: **Source MAC**: Filters based on the source MAC Address. **Destination MAC**: Filters based on the destination MAC Address. **IP Protocol**: Filters based on the type of IP Protocol used. **Ethernet Type**: Filters based on the Ethernet Type used. **VLAN**: Filters based on input VLAN IDs.
Matching Description	**Source MAC**: Format xxxxxx-xxxxxx, default mask ffffff-ffffff. **Destination MAC**: Format xxxxxx-xxxxxx, support the mask, default mask ffffff-ffffff **IP Protocol**: Currently only supports TCP, UDP, ICMP, IGMP. **Ethernet Type**: Hexadecimal format, default mask FFFF. **VLAN**: VLAN ID.

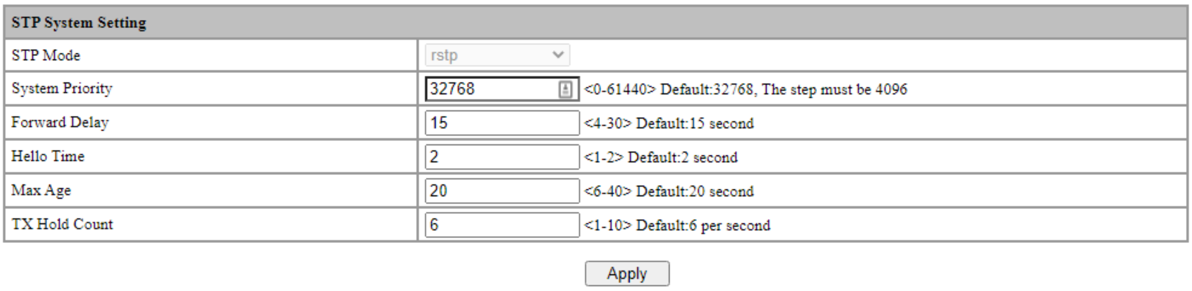
RSTP

This chapter describes Rapid Spanning Tree Protocol (RSTP) which includes the following:

- RSTP Global Configuration
- RSTP Port Configurations
- STP Information
- Port Information

Global Configuration

Select Advanced / STP / Global Setting in the navigation bar to enter the STP Global Setting interface. To modify the configuration, you can enter the values that need to be configured directly in corresponding configuration item, as shown in figure 7.1.



STP System Setting		
STP Mode	rstp	
System Priority	32768	<0-61440> Default:32768, The step must be 4096
Forward Delay	15	<4-30> Default:15 second
Hello Time	2	<1-2> Default:2 second
Max Age	20	<6-40> Default:20 second
TX Hold Count	6	<1-10> Default:6 per second

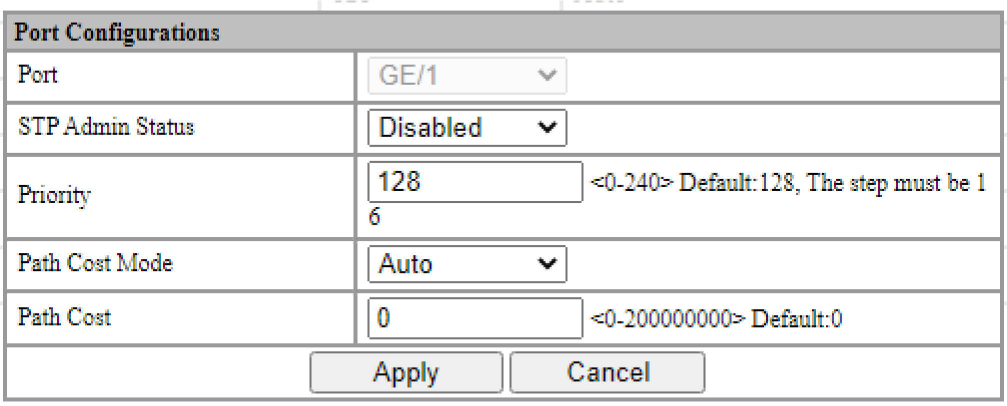
Figure 7.1 STP System Setting

Figure 7.1 STP Global Setting Description

Configuration	Description
STP Mode	Supports RSTP, compatible with STP
System Priority	STP System priority, default is 32768. Increments must increase or decrease by 4096.
Forward Delay	Delay in seconds for port to change its states between disabled / listening / learning / forwarding modes. Default is 15 seconds.
Hello Time	The time interval in seconds sent by STP protocol message in stable state. Default is 2 seconds.
Max Age	The maximum survival time in seconds of the STP protocol packet received by the bridge. If no new protocol packets received at this time, the packet will be discarded. Default is 20 seconds.
TX Hold Count	The maximum number of STP protocol packets sent by Port per second. Default is 6 per second.

PORT CONFIGURATION

Select Advanced / STP / Port Configurations in the navigation bar to enter the STP Port Configurations interface.
To modify the port configuration, you can click Modify on the right side of the corresponding port to enter the port configuration interface of the STP, as shown in figure 7.2.



Port Configurations

Port	GE/1
STP Admin Status	Disabled
Priority	128 <0-240> Default:128, The step must be 1 6
Path Cost Mode	Auto
Path Cost	0 <0-200000000> Default:0

Figure 7.2 STP Port Configurations

Figure 7.2 STP Port Configurations Description

Configuration	Description
Port	Port Name.
STP Admin Status	Disable or Enable, default is Disable.
Priority	STP Priority, default is 128. Increments must be done in 16.
Path Cost Mode	The calculation of STP port path overhead, Auto or Admin, default is Auto.
Path Cost	When the path overhead is calculated in Admin mode, the ports cost overhead takes effect as the configured value. Default is 0.

Path Overhead

The STP BPDU message requires a certain Path overhead for each Root port. The Path overhead of each bridge is cumulative, and this value is called Root Path Cost. To calculate the Path Overhead for RTSP you will need to divide 20Tbits/s by your required bandwidth. Figure 7.3 shows some examples of this calculation:

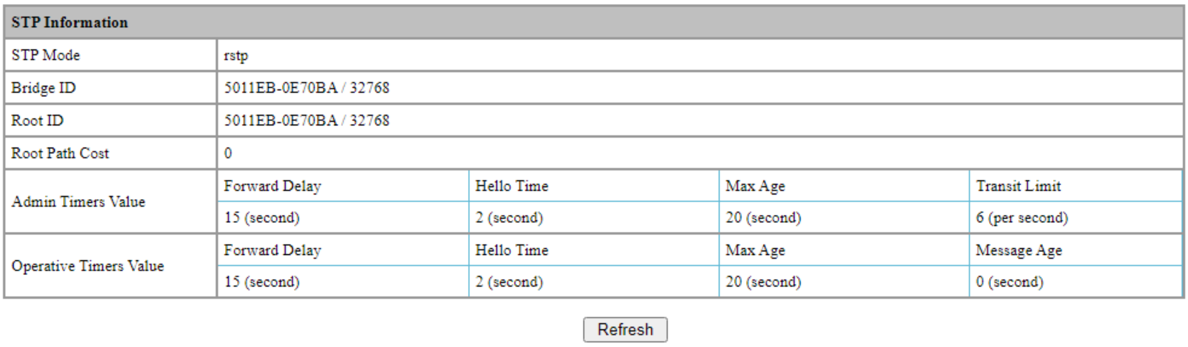
Figure 7.3 Path Overhead of Different Port Rate

Port Rate	Path Overhead
10Mbps	2,000,000
100Mbps	200,000
1000Mbps	20,000

STP Information

Select Advanced / STP / STP Information in the navigation bar and enter the STP information interface as shown in figure 7.3.

Click Refresh to show the latest running information.



STP Information				
STP Mode	rstp			
Bridge ID	5011EB-0E70BA / 32768			
Root ID	5011EB-0E70BA / 32768			
Root Path Cost	0			
Admin Timers Value	Forward Delay	Hello Time	Max Age	Transit Limit
	15 (second)	2 (second)	20 (second)	6 (per second)
Operative Timers Value	Forward Delay	Hello Time	Max Age	Message Age
	15 (second)	2 (second)	20 (second)	0 (second)

Figure 7.3 STP Information Interface

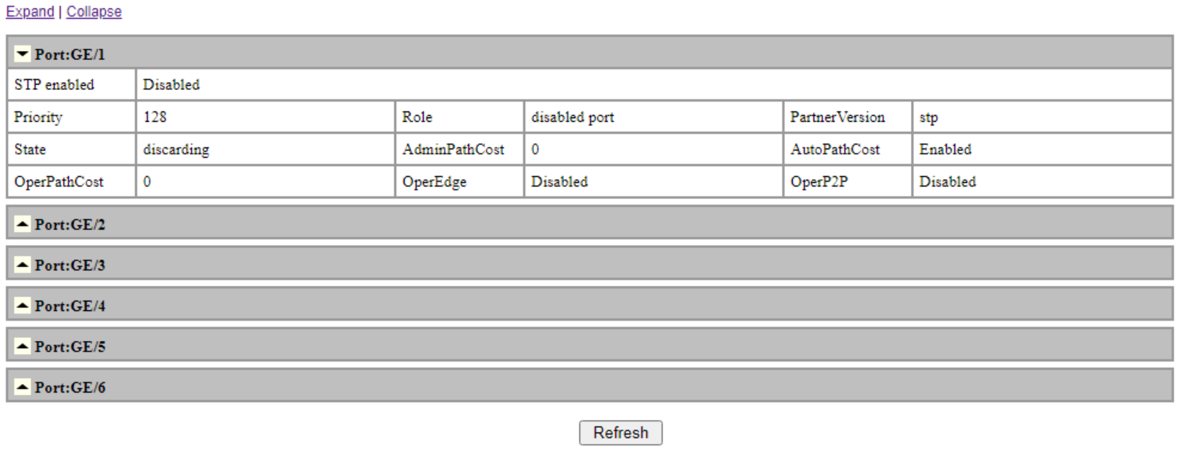
Table 7.4 STP Information Description

Configuration	Description
STP Mode	Current STP mode running.
Bridge ID	Current Bridge ID running.
Root ID	Current Root ID Running.
Root Path Cost	Current cumulative Root Path Cost
Admin Timers Value	Admins statistics on STP configurations, see above Table 7.1 for further explanations.
Operative Timers Value	Users statistics on STP configurations, see above Table 7.1 for further explanations.

Port Information

Select Advanced / STP / Port Information in the navigation bar and enter the STP Port information interface as shown in figure 7.4.

Click Refresh to show the latest running information.



▼ Port:GE/1

STP enabled	Disabled				
Priority	128	Role	disabled port	PartnerVersion	stp
State	discarding	AdminPathCost	0	AutoPathCost	Enabled
OperPathCost	0	OperEdge	Disabled	OperP2P	Disabled

▲ Port:GE/2

▲ Port:GE/3

▲ Port:GE/4

▲ Port:GE/5

▲ Port:GE/6

Figure 7.4 RSTP Port Information Interface

Table 7.5 RSTP Port Information Description

STP Port Information	Description
STP Enabled	**Disabled**: STP is currently disabled on the port. **Enabled**: STP is currently enabled on the port.
Priority	Port Priority for STP.
Role	**Root Port**: Connect the Root Bridge Port, provide lowest path cost. **Designated Port**: Connect with the Root Port, provide lowest path cost. **Disable Port**: Disabled Port. Not responsible for message forwarding/blocking status. **Alternate Port**: Provides an alternate path for the current Root Port to the Root Bridge **Backup Port**: Provides a backup path for the designated port.
Partner Version	STP Mode: STP / RSTP.
State	Forwarding or Block.
Admin Path Cost	Path cost configuration values.
Auto Path Cost	Disable automatic computing path cost. Enable automatic computing path cost.
Operate Path Cost	Operate Path Cost.
Operate Edge	Disable non-edge port. Enable edge port.
Operate P2P	Disable non-point-to-point mode. Enable point-to-point mode.

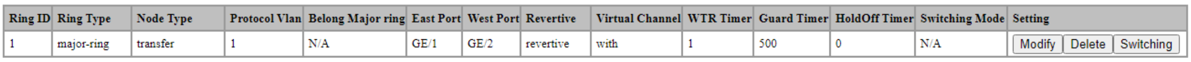
ERPS

This chapter describes Ethernet Ring Protection Switching (ERPS) in detail, including the following:

- ERPS Configuration
- ERPS Information

ERPS Setting

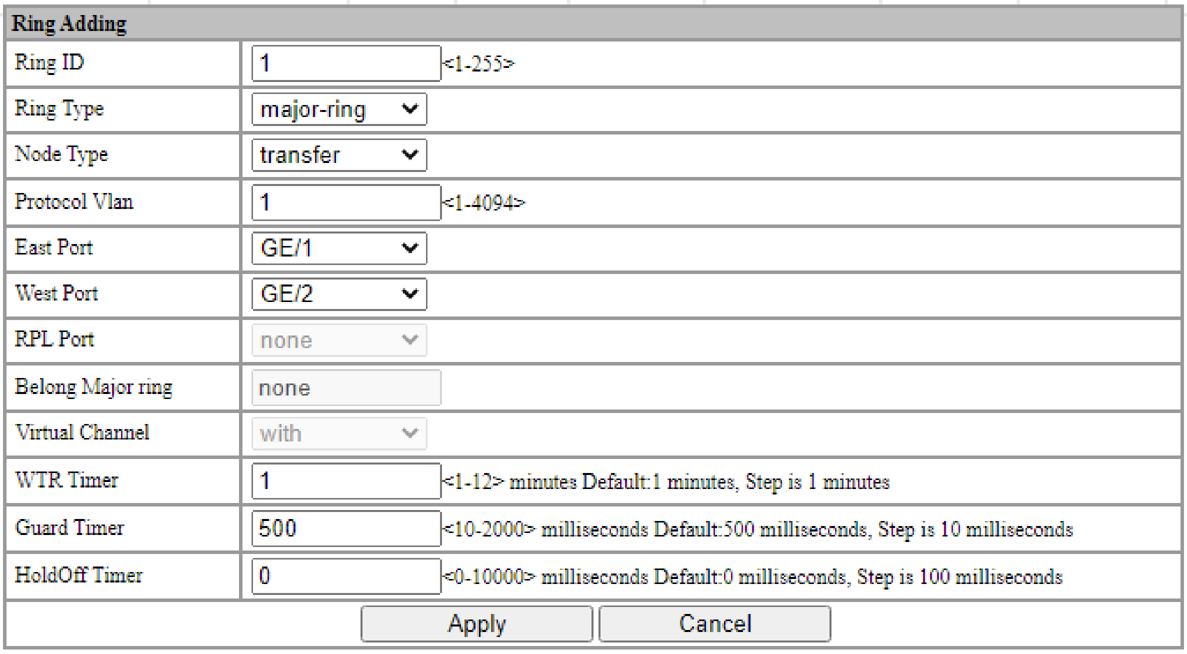
Select Advanced / ERPS / Ring Setting in the navigation bar and enter the ERPS Ring Setting interface, as shown in Figure 8.1



Ring ID	Ring Type	Node Type	Protocol Vlan	Belong Major ring	East Port	West Port	Revertive	Virtual Channel	WTR Timer	Guard Timer	HoldOff Timer	Switching Mode	Setting
1	major-ring	transfer	1	N/A	GE/1	GE/2	revertive	with	1	500	0	N/A	Modify Delete Switching

Figure 8.1 ERPS Setting

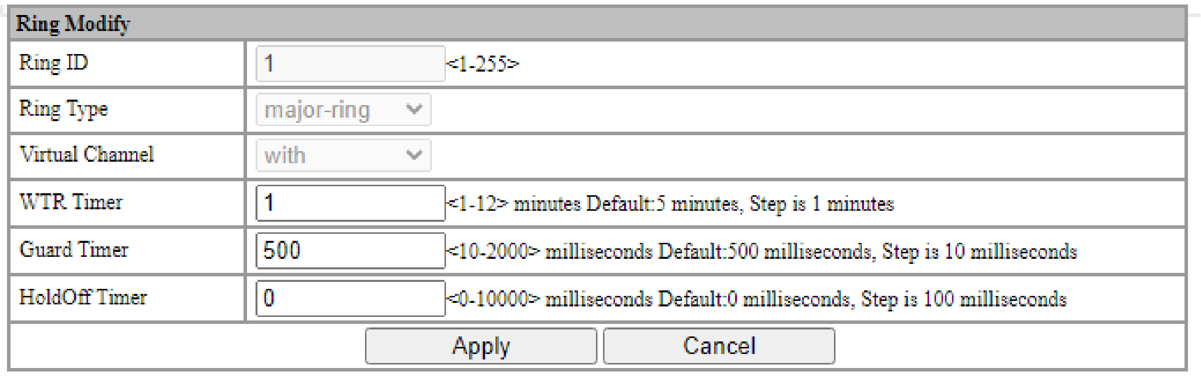
Click the Add button, enter the Ring Adding interface as shown in figure 8.2, enter a valid configuration parameter and click Apply to submit the changes. Click Cancel to discard the modification.



Ring Adding	
Ring ID	1 <1-255>
Ring Type	major-ring
Node Type	transfer
Protocol Vlan	1 <1-4094>
East Port	GE/1
West Port	GE/2
RPL Port	none
Belong Major ring	none
Virtual Channel	with
WTR Timer	1 <1-12> minutes Default:1 minutes, Step is 1 minutes
Guard Timer	500 <10-2000> milliseconds Default:500 milliseconds, Step is 10 milliseconds
HoldOff Timer	0 <0-10000> milliseconds Default:0 milliseconds, Step is 100 milliseconds

Figure 8.2 ERPS Ring Adding

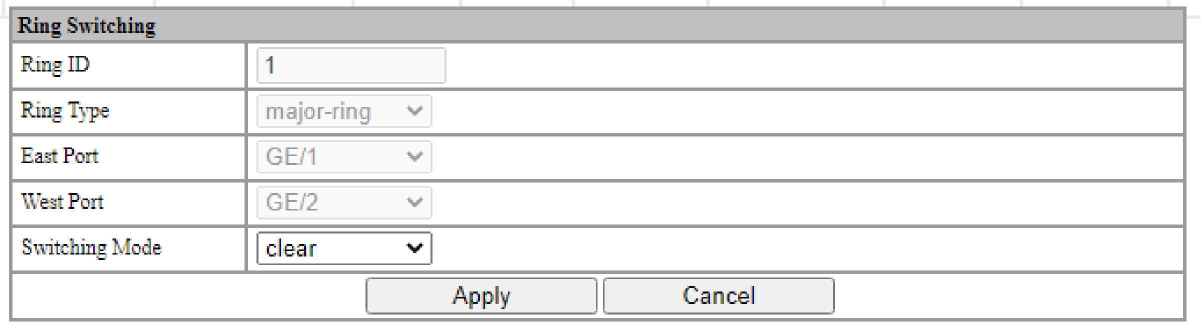
Click Modify , enter the Ring Modification interface, as shown in figure 8.3



Ring Modify	
Ring ID	1 <1-255>
Ring Type	major-ring
Virtual Channel	with
WTR Timer	1 <1-12> minutes Default:5 minutes, Step is 1 minutes
Guard Timer	500 <10-2000> milliseconds Default:500 milliseconds, Step is 10 milliseconds
HoldOff Timer	0 <0-10000> milliseconds Default:0 milliseconds, Step is 100 milliseconds

Figure 8.3 ERPS Ring Modification

Click Switching button to enter Ring Flow Switching Configuration Interface, as shown in Figure 8.4



Ring Switching	
Ring ID	1
Ring Type	major-ring
East Port	GE/1
West Port	GE/2
Switching Mode	clear

Figure 8.4 ERPS Flow Switching Configuration

Click the Delete button to delete the corresponding Ring

Figure 8.1 ERPS Ring Setting Ring Description

Configuration	Description
Ring ID	Input new Ring ID.
Ring Type	Select the type of Ring protocol. **Major-Ring:** Set the current Ring ID as a fully closed topology of at least 2 Nodes. **Sub-Ring:** Set the current Ring ID as a partial ring either connected to a major-ring or another sub-ring.
Node Type	Select the role of the Node within the ring. **Transfer:** The node will transfer data between links. **RPL-Owner:** Set the node to RPL-Owner Mode. This means traffic will not flow into the selected RPL-Owner Port. **RPL-Neighbour:** Set the node to RPL-Neighbour Mode. This means traffic will not flow out of the selected RPL-Neighbour Port.

Protocol VLAN	Select the VLAN ID associated with the new Ring ID.
East Port	Select the port you with to use for the East Interface.
West Port	Select the port you with to use for the West Interface.
RPL Port	Select the Port which you would like the Node Type setting to apply to.
Belong Major Ring	Does the setting belong to a major ring.
Virtual Channel	To transmit sub-ring protocol information in the main ring you will need to configure use of a VLAN Virtual Channel.
WTR Timer	Configure the value of WTR Timer. WTR (Wait to Restore) is used to ensure a signal failure is not intermittent. This is only used when the RPL-Owner is trying to restore the ring. Default is 1 Minute.
Guard Timer	Configure the value of Guard Timer. Guard Timer is the amount of time that an ERP instance discards most R-APS (Ring Automatic Protection Switching) messages before being allowed to process them. Default is 0ms. Default is 500ms.
Hold Off Timer	Configure the value of Hold Off Timer. Hold Off Timer allows any other underlying protection schemes to recover before ERPS reacts to its defect, giving time for the ERPS defect to clear.

Table 8.2 ERPS Global Setting Flow Switching Description

Configuration	Description
Ring ID	Current Ring ID
Ring Type	Current Ring type
East Port	Current East Port Ring Interface on this Node.
West Port	Current West Port Ring Interface on this Node.
Switching Mode	FS and MS are commands which result in a block being applied at an Interface (and an unblock on the opposite interface), and an R-APS Forced Switch (FS) message to flow around the ring. MS is nearly identical to FS other than only one MS can be issued on the ring and it has lower priority than FS. **Clear**: Clear any FS or MS messages on the Ring. **FS East Port**: Force the Node to switch on the East Port. **FS West Port**: Force the Node to switch on the West Port.

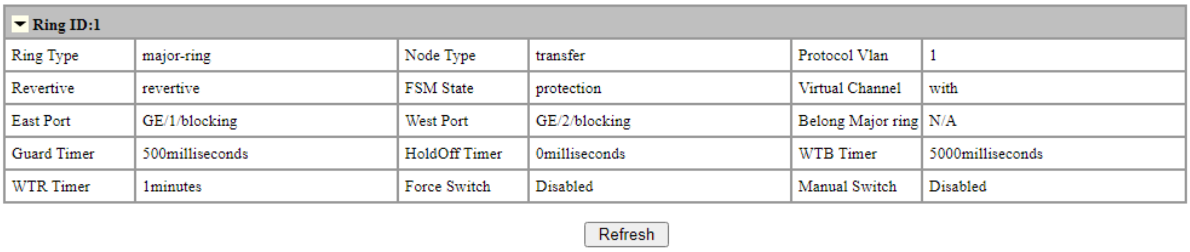
	MS East Port: Manually force the Node to switch on the East Port. **MS West Port**: Manually force the Node to switch on the West Port.

Ring Information

Select Advanced / ERPS / Ring Information in the navigation bar to enter the interface of ERPS Ring Network Information.

The ERPS current running information can be viewed in the Ring Information interface, as shown in figure 8.5.

Click Refresh to show the latest running information.



Ring ID:1

Ring Type	major-ring	Node Type	transfer	Protocol Vlan	1
Revertive	revertive	FSM State	protection	Virtual Channel	with
East Port	GE/1/blocking	West Port	GE/2/blocking	Belong Major ring	N/A
Guard Timer	500milliseconds	HoldOff Timer	0milliseconds	WTB Timer	5000milliseconds
WTR Timer	1minutes	Force Switch	Disabled	Manual Switch	Disabled

Figure 8.5 ERPS Information

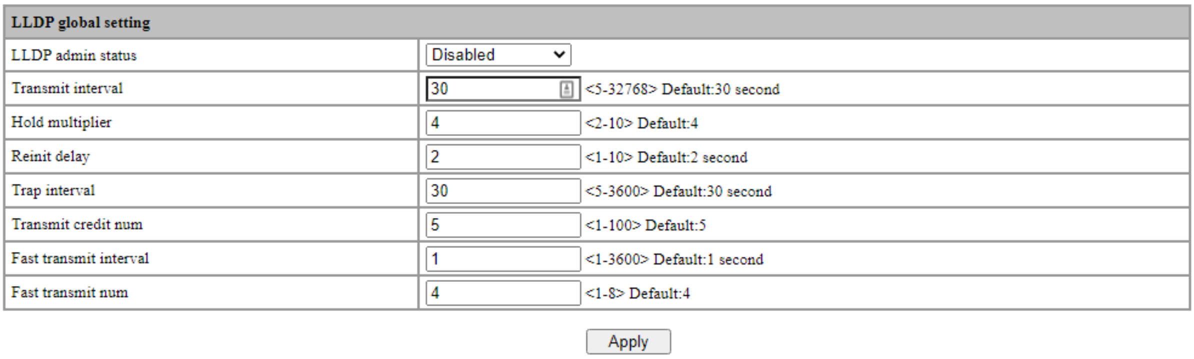
LLDP

This chapter discusses Link Layer Discovery Protocol (LLDP) in detail, including the following:

- LLDP Global Configuration
- LLDP Port Configuration

LLDP Global Setting

Select Management / LLDP / Global Setting in the navigation bar to enter the LLDP Global Setting interface as shown in Figure 9.1.
Modify the corresponding LLDP configuration in the LLDP Global Setting interface, and then click Apply.



LLDP global setting

LLDP admin status	Disabled
Transmit interval	30 <5-32768> Default:30 second
Hold multiplier	4 <2-10> Default:4
Reinit delay	2 <1-10> Default:2 second
Trap interval	30 <5-3600> Default:30 second
Transmit credit num	5 <1-100> Default:5
Fast transmit interval	1 <1-3600> Default:1 second
Fast transmit num	4 <1-8> Default:4

Figure 9.1 LLDP Global Setting

Table 9.1 LLDP Global Setting Description

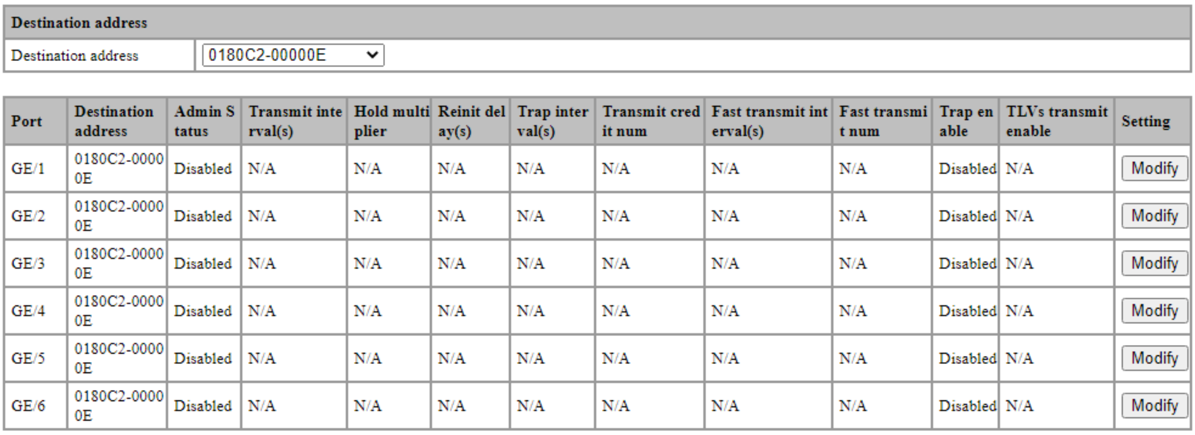
Configuration	**Description**
LLDP Admin Status	LLDP is a protocol used by devices to advertise their identity, capabilities and neighbours on a LAN network. **Enable**: Enable LLDP function. **Disable**: Disable LLDP function.
Transmit Interval	LLDP transmit period in seconds. Range is 0-32768, default is 30 seconds.
Hold Multiplier	LLDP Holding Multiplier. Range is 2-10, default is 4.
Reinit Delay	LLDP Reinit Delay, Range is 1-10, default is 2 seconds.
Trap Interval	LLDP Trap Interval in seconds, Range is 5-3600, default is 30 seconds.
Transmit Credit Num	LLDP transmit volume, range 1-100, default is 5
Fast Transmit Interval	LLDP fast transmit interval, range 1-3600, default 1 second.
Fast Transmit Num	LLDP fast transmit number, range 1-8, default 4

LLDP Port Configuration

Select Management / LLDP / Port Configuration in the navigation bar to enter the LLDP Port Configuration interface as shown in Figure 9.3.

Choose the LLDP configuration of all ports corresponding to any destination address 0180C2-00000E, 0180C2-000003, 0180C2-000000 in the LLDP Port Configuration interface, as shown in figure 9.2

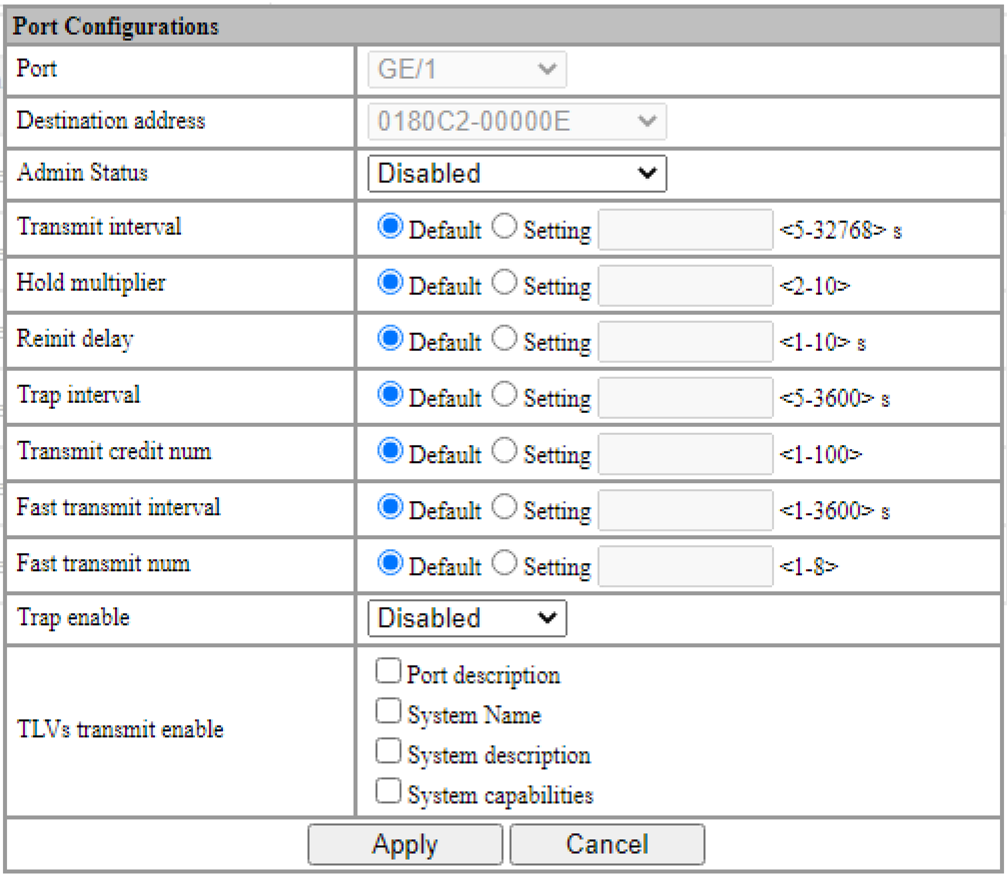
Select or fill out the configuration items that need to be modified and click Apply to make effective. There will be a corresponding prompt if the configuration item is incorrectly filled.



Destination address	
Destination address	0180C2-00000E

Port	Destination address	Admin Status	Transmit interval(s)	Hold multiplier	Reinit delay(s)	Trap interval(s)	Transmit credit num	Fast transmit interval(s)	Fast transmit num	Trap enable	TLVs transmit enable	Setting
GE/1	0180C2-00000E	Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Modify
GE/2	0180C2-00000E	Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Modify
GE/3	0180C2-00000E	Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Modify
GE/4	0180C2-00000E	Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Modify
GE/5	0180C2-00000E	Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Modify
GE/6	0180C2-00000E	Disabled	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Disabled	N/A	Modify

Figure 9.2 LLDP Destination Address



Port Configurations

Port	GE/1
Destination address	0180C2-00000E
Admin Status	Disabled
Transmit interval	● Default ○ Setting <5-32768> s
Hold multiplier	● Default ○ Setting <2-10>
Reinit delay	● Default ○ Setting <1-10> s
Trap interval	● Default ○ Setting <5-3600> s
Transmit credit num	● Default ○ Setting <1-100>
Fast transmit interval	● Default ○ Setting <1-3600> s
Fast transmit num	● Default ○ Setting <1-8>
Trap enable	Disabled
TLVs transmit enable	□ Port description □ System Name □ System description □ System capabilities

Figure 9.3 LLDP Port Configuration

Figure 9.2 LLDP Port Description

Configuration	Description
Port	Port name information
Destination Address	LLDP destination address 0180C2-00000E, 0180C2-000003, 0180C2-000000
Admin Status	LLDP Port Status **Transmit Only**: Enable LLDP port transmit function **Receive Only**: Enable LLDP port receive function **Transmit and Receive**: Enable LLDP port transmit and receive function **Disable**: Disable LLDP port transmit and receive function
Transmit Interval	**Default**: Use Global Setting transmit Interval **Setting**: Set transmit period range 5-32768 in seconds.
Hold Multiplier	Port Multiplier **Default**: Use Global Setting neighbour aging coefficient **Setting**: Neighbour aging coefficient, range 2-10
Reinit Delay	Port Reboot Delay Time **Default**: Use Global Setting reboot delay time **Setting**: Set reboot delay time, range 1-10
Trap Interval	Port Warning Period **Default**: Use Global Setting warning period **Setting**: Set warning period range 5-3600
Transmit Credit Num	Port Transmit Volume **Default**: Use Global Setting transmit volume **Setting**: Set transmit volume range 1-100
Fast Transmit Interval	Port Quick Transmit Period **Default**: Use Global Setting quick transmit period **Setting**: Set quick transmit period range 1-3600
Fast Transmit Num	Port Quick Transmit Quantity

	Default: Use Global Setting quick transmit quantity **Setting**: Set quick transmit quantity range 1-8
Trap Enable	Port Warning Enable **Enable**: Enable LLDP port warning function **Disable**: Disable LLDP port warning function
TLVs Transmit Enable	Support one or more TLVs transmit enable selection of port description, system name, system description and system capability

802.1X

This chapter describes the IEEE 802.1X Standard, including the following:

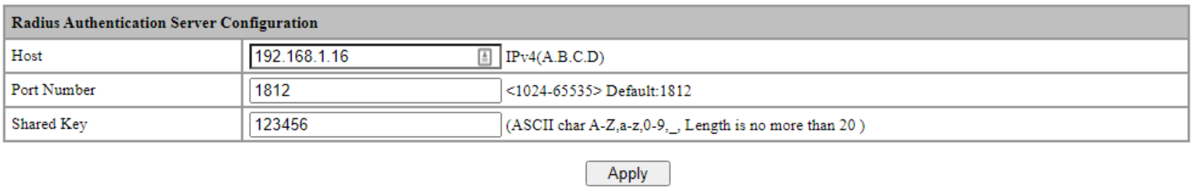
- 802.1X Server Configuration
- 802.1X Port Configuration

IEEE 802.1X is an IEEE Standard for port-based Network Access Control. It provides an authentication mechanism to devices wishing to attach to a LAN or WLAN.

Authentication Server

Select Advanced / 802.1X / Authentication Server in the navigation bar to enter Radius Authentication Server Configuration.

To modify the Authentication Server configuration, click Modify in the Authentication Server configuration box, as shown in Figure 10.1



Radius Authentication Server Configuration		
Host	192.168.1.16	IPv4(A.B.C.D)
Port Number	1812	<1024-65535> Default:1812
Shared Key	123456	(ASCII char A-Z,a-z,0-9,_, Length is no more than 20)

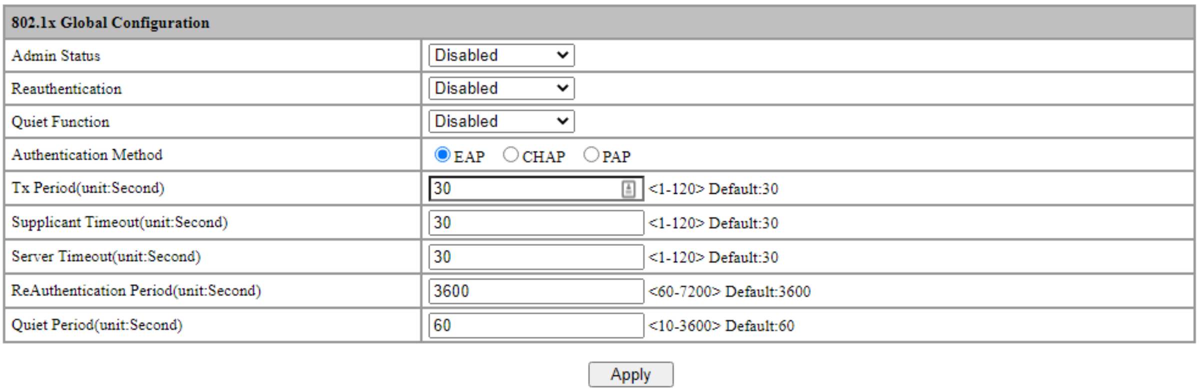
Figure 10.1 Radius Authentication Server Configuration

Table 10.1 802.1X Authentication Server Description

Configuration Item	Description
Host	The IP of Radius Authentication Server, IPv4 and Dotted decimal format.
Port Number	The port of Radius Authentication Server, range <1024-65535>
Shared Key	Shared key used to access the server. Must be consistent with Radius server, otherwise it cannot pass authentication. String format, only contain letters, numbers, underscores, and the length cannot be more than 20 bytes.

GLOBAL SETTINGS

Select Advanced / 802.1X / Global Setting in the navigation bar to enter the Global Setting interface. To modify the global configuration in the Global Configuration box, click Apply as shown in Figure 10.2



802.1x Global Configuration

Admin Status	Disabled
Reauthentication	Disabled
Quiet Function	Disabled
Authentication Method	● EAP ○ CHAP ○ PAP
Tx Period(unit:Second)	30 <1-120> Default:30
Supplicant Timeout(unit:Second)	30 <1-120> Default:30
Server Timeout(unit:Second)	30 <1-120> Default:30
ReAuthentication Period(unit:Second)	3600 <60-7200> Default:3600
Quiet Period(unit:Second)	60 <10-3600> Default:60

Figure 10.2 802.1x Global Configuration

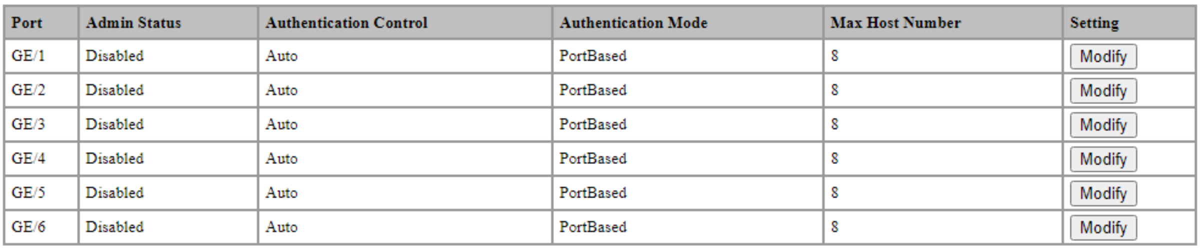
Table 10.2 802.1X Description

Configuration Item	Description
Admin Status	**Disable**: Prohibit Global 802.1X **Enable**: Enable Global 802.1X
Reauthentication	**Disable**: Prohibit reauthentication to the server. **Enable**: Enable reauthentication to the server.
Quiet Function	**Disable**: Prohibit the silent function. **Enable**: Enables the silent function.
Authentication Method	Check the respective box to select the type of Authentication Method used for 802.1x

	EAP: Extensible Authentication Protocol (EAP) is an authentication framework frequently used in network and internet connections. EAP is an authentication framework, not a specific authentication mechanism. It provides some common functions and negotiation of authentication methods called EAP methods **PAP**: Password Authentication Protocol (PAP) is a password-based authentication protocol used by Point to Point Protocol (PPP) to validate users. PAP authentication is only done at the time of the initial link establishment and verifies the identity of the client using a two-way handshake. Client sends username and password. This is sent repeatedly until a response is received from the server. Server sends authentication-ack (if credentials are OK) or authentication-nak (otherwise). **CHAP**: CHAP is an authentication scheme used by Point-to-Point Protocol (PPP) servers to validate the identity of remote clients. CHAP periodically verifies the identity of the client by using a three-way handshake. This happens at the time of establishing the initial link (LCP), and may happen again at any time afterwards. The verification is based on a shared secret (such as the client's password). After the completion of the link establishment phase, the authenticator sends a "challenge" message to the peer. The peer responds with a value calculated using a one-way hash function on the challenge and the secret combined. The authenticator checks the response against its own calculation of the expected hash value. If the values match, the authenticator acknowledges the authentication; otherwise it should terminate the connection. At random intervals the authenticator sends a new challenge to the peer and repeats steps 1 through 3.
Tx Period (unit:Second)	Integer 1-120, default 30
Supplicant Timeout (unit:Second)	Integer 1-120, default 30
Server-Timeout (unit:Second)	Integer 1-120, default 30
Re-authentication Period	Integer 60-7200, default 3600
Quiet Period (unit:Second)	Integer 10-3600, default 60

Port Configuration

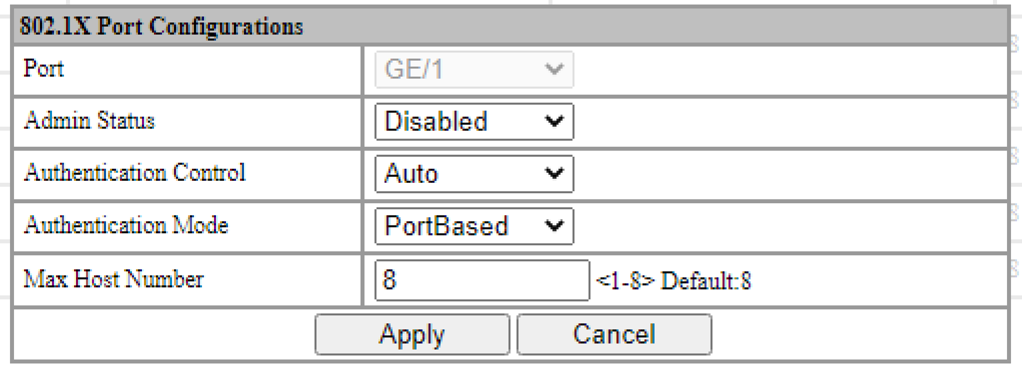
Select Advanced / 802.1X / Port Configurations in the navigation bar to enter the Port Configurations interface as shown in Figure 10.3.



Port	Admin Status	Authentication Control	Authentication Mode	Max Host Number	Setting
GE/1	Disabled	Auto	PortBased	8	Modify
GE/2	Disabled	Auto	PortBased	8	Modify
GE/3	Disabled	Auto	PortBased	8	Modify
GE/4	Disabled	Auto	PortBased	8	Modify
GE/5	Disabled	Auto	PortBased	8	Modify
GE/6	Disabled	Auto	PortBased	8	Modify

Figure 10.3 802.1X Port Configuration

To modify the configuration of a port, simply click the Edit in corresponding entry to enter modification interface, as shown in Figure 10.4. Modify the corresponding configuration item, click the Apply to complete the modification, and click the Cancel to cancel the modification.



802.1X Port Configurations

Port	GE/1
Admin Status	Disabled
Authentication Control	Auto
Authentication Mode	PortBased
Max Host Number	8 <1-8> Default:8

Figure 10.4 802.1X802.1X Port Configuration

Precautions: When the 802.1X port is configured to authentication mode, all authenticated users will go offline, and re-authentication is required to access the network.

Table 10.3 802.1X Port Description

Item	Description
Admin Status	**Disabled**: Disable 802.1x on the port **Enabled**: Enable 802.1x on the port
Authentication Control	**Automatic**: You cannot access the network before authentication. You can access the network after passing the authentication. **Forced Authorization**: Always have access to the network **Forced-Unauthorization**: Always cannot access the network
Authentication Mode	**Port-based**: After a user is authenticated on a specific port, all users will be able to access on the same port. **MAC-Based**: All users need to be authenticated individually to access the network.

Max Host Number	There is maximum number of authenticated hosts supported by the port. Authentication will fail if this number is exceeded. Integer 1-8, default 8

User Authentication Information

Select Advanced / 802.1X / User Authentication Information in the navigation bar to enter the User Authentication Information interface.

Click Expand in the upper left corner to expand the user authentication information for all ports and click Close to close the user authentication information for all ports. Click the ⊞icon to expand the user authentication information for the corresponding port and click the ⊟icon to close the user authentication information for the corresponding port.

The authentication information of the user can be viewed on this interface: username, client MAC address, and the time the authentication passed.

Click Refresh to refresh the current user authentication information.

Loopback

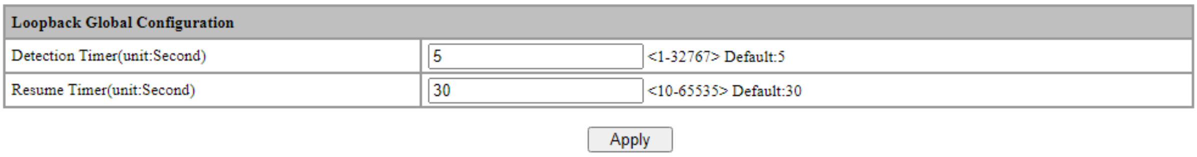
This chapter describes Loopback configuration, including the following:

- Loopback Global Configuration
- Loopback Port Configuration

Loopback is the routing of electronic signals, digital data streams, or flows of items back to their source without intentional processing or modification. It is primarily a means of testing the communications infrastructure.

Select Advanced / Loopback / Global Setting in the navigation bar to enter Global Setting interface.

To modify the global configuration, modify the corresponding configuration in the Global Configuration box and click Apply, as shown in Figure 11.1.



Loopback Global Configuration	
Detection Timer(unit:Second)	5 <1-32767> Default:5
Resume Timer(unit:Second)	30 <10-65535> Default:30

Figure 11.1 Loopback Global Configuration

Table 11.1 Loopback Global Item Description

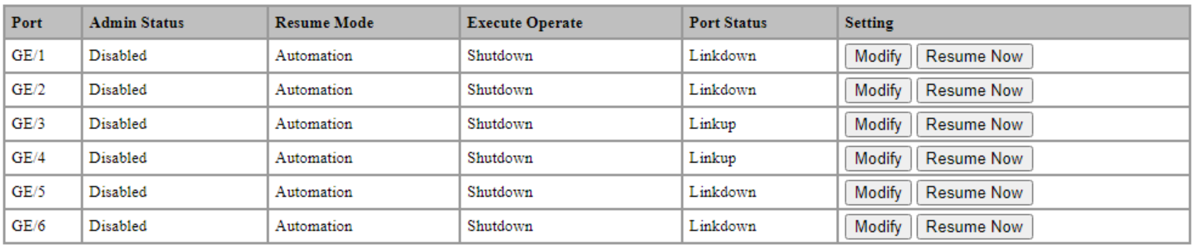
Item	Description
Detection Timer(unit:Second)	Loop detection packet sending interval, range <1-32767>. The default value is 5
Resume Timer(unit:Second)	Port auto recovery period, range <10-65535>, must not be less than 2x detection timer

PORT CONFIGURATIONS

Select Advanced / Loopback / Port Configuration in the navigation bar to enter the Port Configuration interface as shown in Figure 11.2.

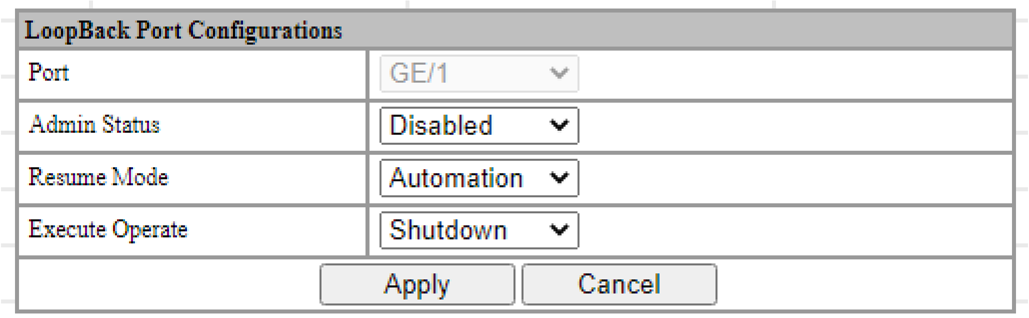
To modify the configuration of a port, simply click the Edit on the right side of the corresponding entry to enter the modification interface, as shown in Figure 11.3. Modify the corresponding configuration item, click the Apply to complete the modification, and click the Cancel to cancel the modification.

After a loop occurs on a port and the port is shut down or blocked by a specified action, if you want to restore it immediately, you can click the Restore Now on the right side of the corresponding entry.



Port	Admin Status	Resume Mode	Execute Operate	Port Status	Setting
GE/1	Disabled	Automation	Shutdown	Linkdown	Modify Resume Now
GE/2	Disabled	Automation	Shutdown	Linkdown	Modify Resume Now
GE/3	Disabled	Automation	Shutdown	Linkup	Modify Resume Now
GE/4	Disabled	Automation	Shutdown	Linkup	Modify Resume Now
GE/5	Disabled	Automation	Shutdown	Linkdown	Modify Resume Now
GE/6	Disabled	Automation	Shutdown	Linkdown	Modify Resume Now

Figure 11.2 Loopback Port Configuration and Operating Status



LoopBack Port Configurations

Port	GE/1
Admin Status	Disabled
Resume Mode	Automation
Execute Operate	Shutdown

Figure 11.3 Loopback Port Configuration

Table 11.2 Loopback Port Description

Item	Description
Admin Status	**Disabled**: Disable loop detection **Enabled**: Enable loop detection
Resume Mode	Select the mode of resumption after loopback completes. **Automatic**: After the loop occurs, the port is closed or blocked, and the port automatically recovers. **Manual**: After a loop occurs, the port is closed or blocked, need to manually restore the port.
Execute Operate	Select the action of the loopback operation. **Shutdown**: After the loopback occurs, the port is shutdown. **Block**: After a loopback occurs, the port is blocked.

MULTICAST MANAGEMENT

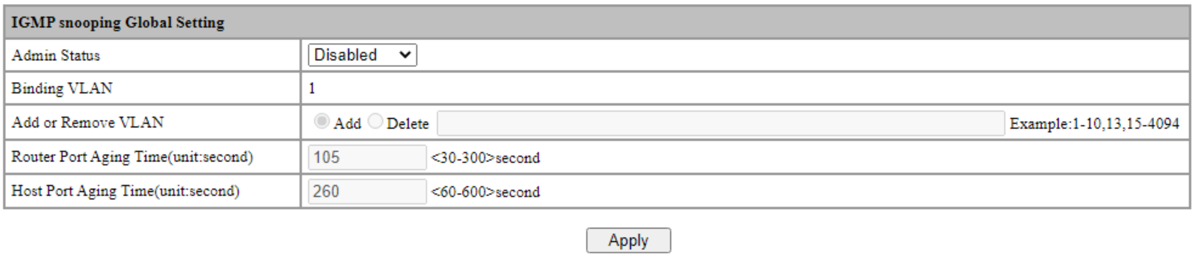
This chapter describes Multicast Management, including the following:

- IGMP Snooping
- Multicast Table
- Multicast Manual Address Setting

Multicast is group communication where data transmission is addressed to a group of destination computers simultaneously. Multicast can be one-to-many or many-to-many distribution.

Select Advanced / Multicast / IGMP snooping / Global Setting in the navigation bar to enter the Global Setting.

If you need to modify the global configuration of IGMP snooping, you can modify the corresponding configuration in the configuration box, and then click Apply, as shown in Figure 12.3.



IGMP snooping Global Setting	
Admin Status	Disabled
Binding VLAN	1
Add or Remove VLAN	○ Add ○ Delete Example:1-10,13,15-4094
Router Port Aging Time(unit:second)	105 <30-300>second
Host Port Aging Time(unit:second)	260 <60-600>second

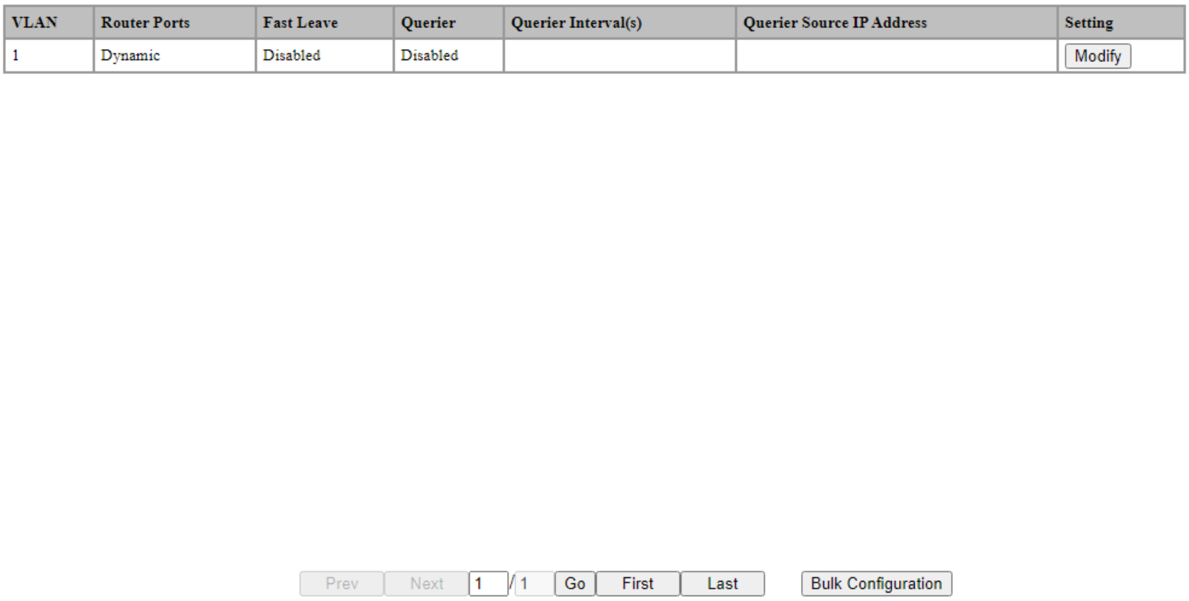
Figure 12.1 IGMP Snooping Global Settings

Table 12.1 IGMP Snooping Global Settings Description

Item	Description
Admin status	IGMP snooping is the process of listening to Internet Group Management Protocol (IGMP) network traffic to control delivery of IP multicasts. Network switches with IGMP snooping listen in on the IGMP conversation between hosts and routers and maintain a map of which links need which IP multicast transmission. Multicasts may be filtered from the links which do not need them, conserving bandwidth on those links. Select the global enable state of IGMP Snooping: **Enabled**: Enable the IGMP snooping function. **Disabled**: Disable IGMP snooping.
Binding VLAN	List of VLANs to be bound.
Add or Remove VLANs	Select the operation for the VLAN and enter the list of VLANs to add or remove: **Add**: Add a VLAN. The format is as follows: 1-10,13,15-4094; **Delete**: Delete the VLAN. The format is as follows: 1-10,13,15-4094.
Router Port Aging Time	Valid aging time of routed ports, range 30-300. The default is 105. The unit is seconds.
Host Port Aging Time	Effective host port aging time, range 60-600. The default is 260. The unit is second

VLAN SETTINGS

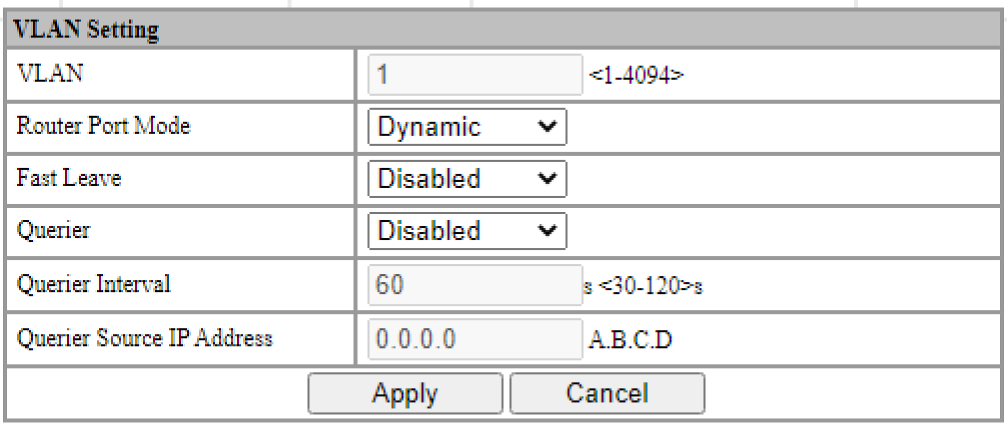
Select Advanced / IGMP Snooping / VLAN Settings to enter the VLAN Settings, as shown in Figure 12.2.



VLAN	Router Ports	Fast Leave	Querier	Querier Interval(s)	Querier Source IP Address	Setting
1	Dynamic	Disabled	Disabled			Modify

Figure 12.2 IGMP Snooping VLAN Setting

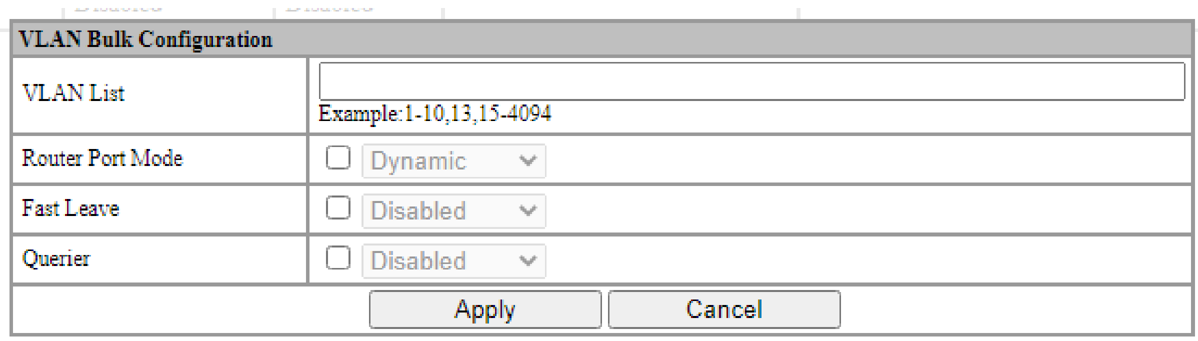
Modify individual bound VLAN configuration information. After entering the VLAN Settings interface, click the Modify to enter the modification interface, as shown in Figure 12.2. Enter valid configuration parameters and click Apply to submit the modification. Click Cancel to abandon the modification.



VLAN Setting	
VLAN	1 <1-4094>
Router Port Mode	Dynamic
Fast Leave	Disabled
Querier	Disabled
Querier Interval	60 s <30-120>s
Querier Source IP Address	0.0.0.0 A.B.C.D

Figure 12.2 IGMP Snooping VLAN Configuration

Bind VLAN configuration information in batches. After entering the VLAN Setting, click the Bulk Configuration at the bottom of the page to enter the VLAN Bulk Configuration, as shown in Figure 12.3. Enter valid configuration parameters and click Apply to submit the modification. Click Cancel to abandon the modification.



VLAN Bulk Configuration

VLAN List	Example:1-10,13,15-4094
Router Port Mode	□ Dynamic
Fast Leave	□ Disabled
Querier	□ Disabled

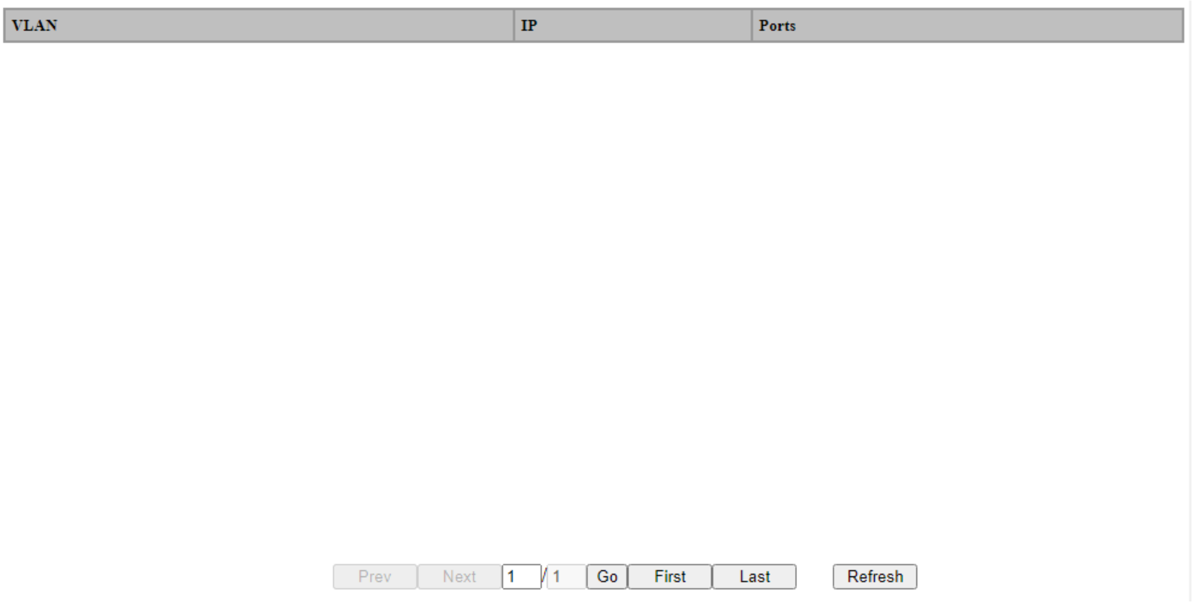
Figure 12.3 IGMP Snooping VLAN Bulk Configuration

Table 12.3 Configuration Items on IGMP Snooping

Item	Description
VLAN	VLAN ID configured.
Router Port Mode	Select the mode of the routed port in this VLAN. Use the drop-down box to modify it. **Dynamic:** This will dynamically select routing ports. **Static**: If you choose the static routing port mode, you still need to select specific routing ports.
Fast Leave	Select whether to enable the quick leave mode under this VLAN.
Querier	Select whether to enable the querier function in this VLAN. Use the drop-down box to modify it. **Disabled:** Disable the querier function. **Enabled**: If the querier is enabled, you need to set the corresponding querier interval and query source IP address.
Querier Interval	The query interval of the querier is 30-120 seconds.
Querier Source IP Address	Set the source IP address of the query message sent by the querier. The valid unicast address is “192.168.1.11”. "0.0.0.0" is also available

IP GROUP

Select Advanced / IGMP snooping / IP Group in the navigation bar to enter the IP Group interface, as shown in Figure 12.4.



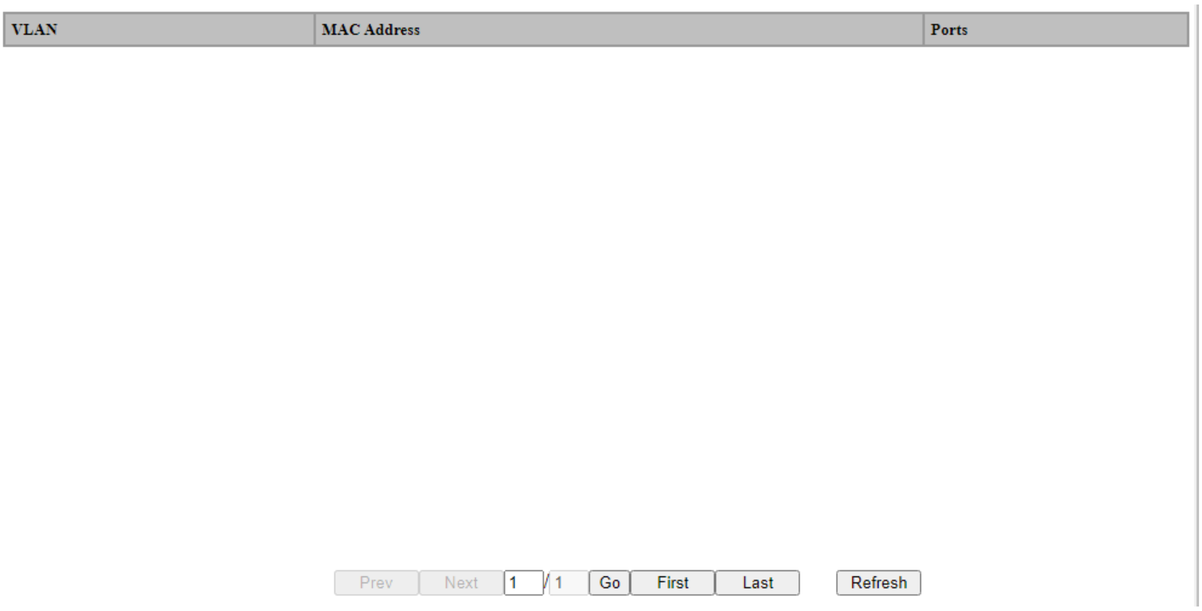
VLAN	IP	Ports

Figure 12.4 IGMP Snooping IP Group

The IGMP snooping IP group interface displays the IP group information maintained by IGMP Snooping and can be refreshed by clicking Refresh.

MAC Groups

Select Advanced / IGMP Snooping / MAC Group in the navigation bar to enter the MAC Group interface, as shown in Figure 12.5.



VLAN	MAC Address	Ports

Figure 12.5 IGMP snooping MAC group interface

The IGMP snooping MAC Group interface displays the MAC group information maintained by IGMP Snooping. Click the Refresh button to refresh.

STORM FILTERING

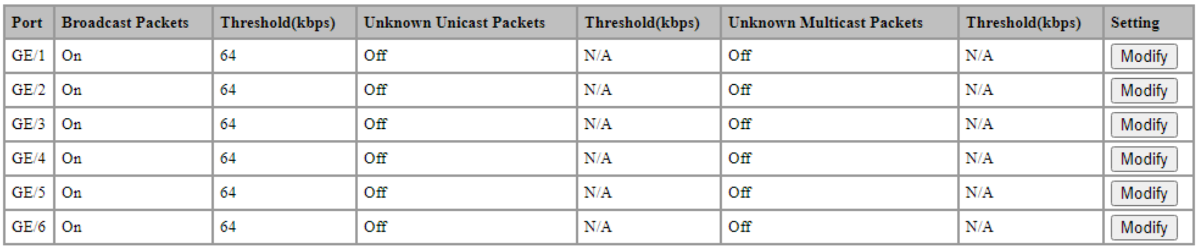
This chapter describes Storm Filtering, including the following:

- Storm Filter Configuration

Broadcast Storm is the accumulation of broadcast and multicast traffic on a computer network. Extreme amounts of broadcast traffic constitute a broadcast storm. A broadcast storm can consume sufficient network resources so as to render the network unable to transport normal traffic.

STORM FILTER SETTINGS

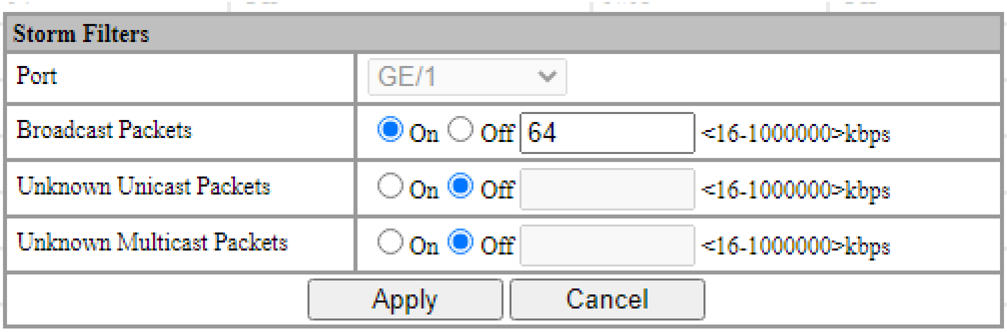
Select Base Configuration / Storm Filters in the navigation bar to enter Storm Filters configuration interface, as shown in Figure 13.1.



Port	Broadcast Packets	Threshold(kbps)	Unknown Unicast Packets	Threshold(kbps)	Unknown Multicast Packets	Threshold(kbps)	Setting
GE/1	On	64	Off	N/A	Off	N/A	Modify
GE/2	On	64	Off	N/A	Off	N/A	Modify
GE/3	On	64	Off	N/A	Off	N/A	Modify
GE/4	On	64	Off	N/A	Off	N/A	Modify
GE/5	On	64	Off	N/A	Off	N/A	Modify
GE/6	On	64	Off	N/A	Off	N/A	Modify

Figure 13.1 Storm Filter

To modify the port storm filtering configuration information, click the Modify as shown in Figure 13.2. Enter valid configuration parameters and click Apply to submit the changes. Click Cancel to cancel the modification



Storm Filters

Port	GE/1
Broadcast Packets	● On ○ Off 64 <16-1000000>kbps
Unknown Unicast Packets	○ On ● Off <16-1000000>kbps
Unknown Multicast Packets	○ On ● Off <16-1000000>kbps

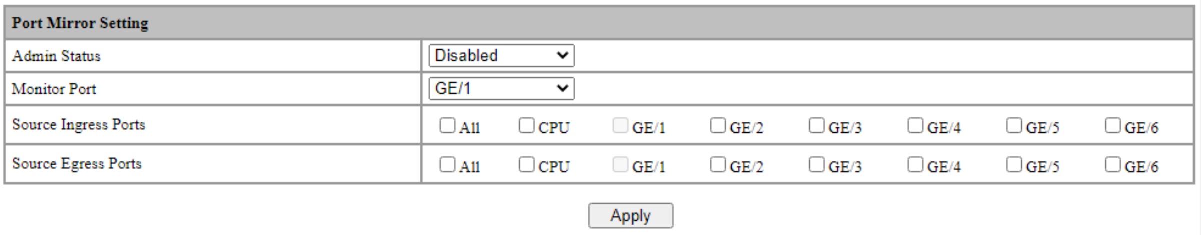
Figure 13.2 Storm Filter Modify

Table 13.1 Storm Filters Description

Item	Description
Port	The currently selected port.
Broadcast Packets	Select whether to enable rate suppression on broadcast packets, selected by radio button. **ON**: If you choose to enable, enter the corresponding rate suppression value, <16-1000000>, and enter 16, unit is kbps **OFF**: Turn off Rate Suppression of Broadcast Packets.
Unknown Unicast Packets	Select whether to enable rate suppression for unknown unicast packets, selected by radio button. **ON**: If you choose to enable, enter the corresponding rate suppression value, <16-1000000>, enter 16, unit is kbps **OFF**: Turn off Rate Suppression of Unknown Unicast Packets
Unknown Multicast Packet	Select whether to enable rate suppression for unknown multicast packets, selected by radio button. **ON**: If you choose to enable, enter the corresponding rate suppression value, <16-1000000>, enter 16, unit is kbps **OFF**: Turn off Rate Suppression for Unknown Multicast Packets

PORT MIRRORING

Select Base Configuration / Port Mirror in the navigation bar to enter the Port Mirror configuration interface, as shown in Figure 13.3.



Port Mirror Setting	
Admin Status	Disabled
Monitor Port	GE/1
Source Ingress Ports	☐ All ☐ CPU ☐ GE/1 ☐ GE/2 ☐ GE/3 ☐ GE/4 ☐ GE/5 ☐ GE/6
Source Egress Ports	☐ All ☐ CPU ☐ GE/1 ☐ GE/2 ☐ GE/3 ☐ GE/4 ☐ GE/5 ☐ GE/6

Figure 13.3 Port Mirror Setting

Modify the port mirroring configuration information. Pull down and select to disable or enable mirroring, select the mirroring destination port, check the ingress port and egress port, the ingress or egress cannot contain the destination port, and click apply to submit the modification

Table 13.2 Port Mirroring Description

Item	Description
Admin Status	Select whether to enable or disable port mirroring.
Monitor Port	Select the destination port for port mirroring.
Source Ingress Port	Select the source port list in the ingress direction. It can be selected with the check button. (The source port list cannot contain the destination port).
Source Egress Port	Select the source port list in the egress direction. It can be selected with the check button. (The source port list cannot contain the destination port).

LINK AGGREGATION

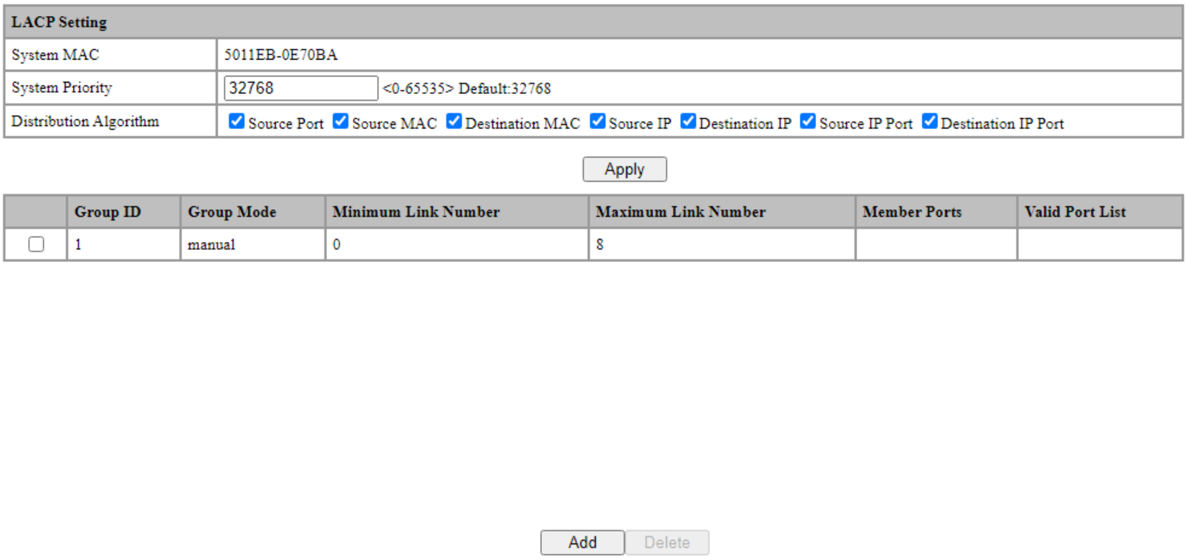
This chapter describes Link Aggregation, including the following:

- Link Aggregation Global Settings
- Link Aggregation Port Settings
- Link Aggregate Information

Link Aggregation refers to various methods of combining (aggregating) multiple network connections in parallel in order to increase throughput beyond what a single connection could sustain, and to provide redundancy in case one of the links should fail. A link aggregation group (LAG) is the collection of physical ports combined together.

Select Advanced / Link Aggregation / Global Setting in the navigation bar to enter the Link Aggregation / Global Setting interface.

To modify the global configuration of link aggregation, modify the corresponding configuration in the LACP (Link Aggregation Control Protocol) configuration box, and then click Apply, as shown in figure 14.1.

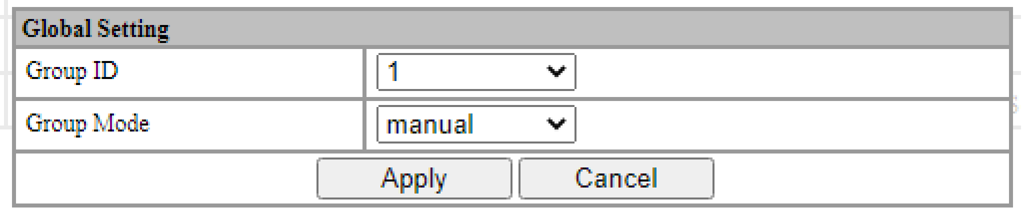


LACP Setting	
System MAC	5011EB-0E70BA
System Priority	32768 <0-65535> Default:32768
Distribution Algorithm	☑ Source Port ☑ Source MAC ☑ Destination MAC ☑ Source IP ☑ Destination IP ☑ Source IP Port ☑ Destination IP Port

	Group ID	Group Mode	Minimum Link Number	Maximum Link Number	Member Ports	Valid Port List
□	1	manual	0	8		

Figure 14.1 LACP Global Setting

If you want to add an aggregation group, click set, as shown in figure 14.2. click Apply.



Global Setting	
Group ID	1
Group Mode	manual

Figure 14.2 Add Aggregation Group

Table 14.1 Link Aggregation Global Setting Description

Item	Description
System MAC	The current system MAC Address.
System Priority	Set the link aggregation system priority, range 0-65535, default value 32768, the smaller the better.
Distribution Algorithm	The system supports one or more to compute the load ports according to the source port, source MAC, destination MAC, source IP, destination IP, source IP port and destination IP port in the message.

Table 14.2 Link Aggregation Global Setting Description

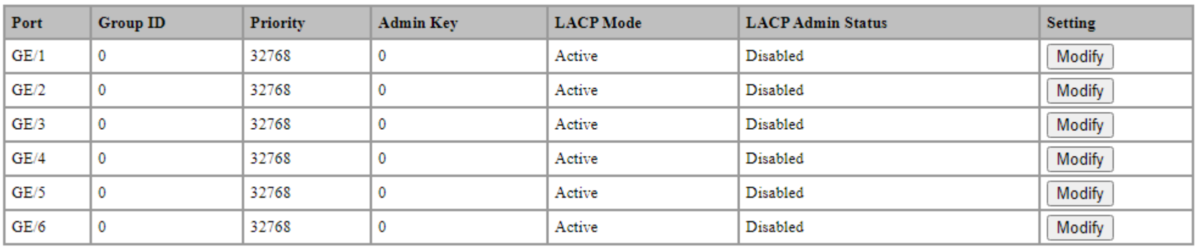
Item	Description
Aggregation Group ID	Aggregation Group ID information
Aggregation Group Mode	Set Aggregation Group Mode: **Manual**: Manual mode, the port of the aggregation group member is manually configured and the port LACP protocol is closed. **Static**: Static mode, the port of the aggregation group member is manually configured and the port LACP protocol is on.
Minimum Port	The active ports minimum number of aggregation group configuration, ranging <0-8>, and the value cannot exceed the maximum number of links.
Maximum Port	The active ports maximum number of aggregation group configuration, ranging <0-8>, and the value cannot be less than the minimum number of links.
Member Port List	Member port of aggregation group configuration

LINK AGGREGATION PORT SETTING

Select Advanced / Link Aggregation / Port Configurations in the navigation bar to enter the link aggregation Port Configurations interface, as shown in figure 14.3.

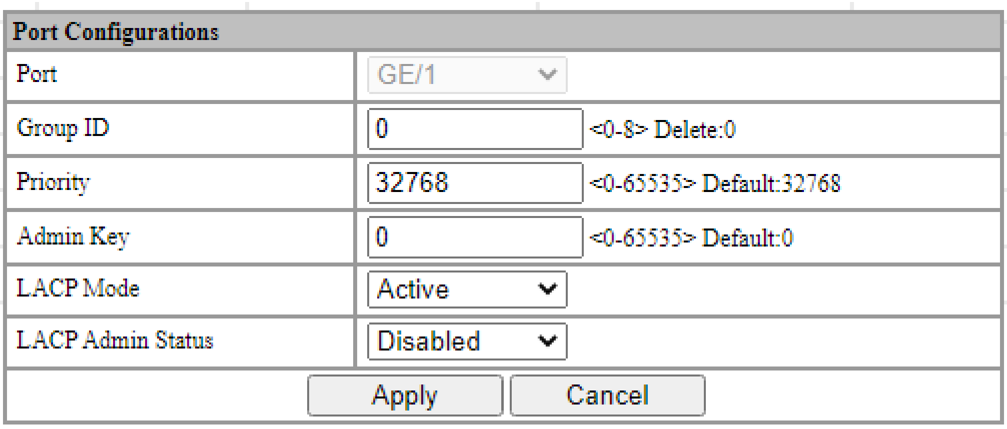
If the link aggregation configuration of the port needs to be modified, click the Modify to enter the port configuration interface, as shown in figure 14.4.

Select or fill in the configuration items that need to be modified and click Apply to make effective. If the configuration items are incorrectly filled, there will be corresponding prompts.



Port	Group ID	Priority	Admin Key	LACP Mode	LACP Admin Status	Setting
GE/1	0	32768	0	Active	Disabled	Modify
GE/2	0	32768	0	Active	Disabled	Modify
GE/3	0	32768	0	Active	Disabled	Modify
GE/4	0	32768	0	Active	Disabled	Modify
GE/5	0	32768	0	Active	Disabled	Modify
GE/6	0	32768	0	Active	Disabled	Modify

Figure 14.3 Link Aggregation Port Information



Port Configurations	
Port	GE/1
Group ID	0 <0-8> Delete:0
Priority	32768 <0-65535> Default:32768
Admin Key	0 <0-65535> Default:0
LACP Mode	Active
LACP Admin Status	Disabled

Figure 14.4 Link Aggregation Port Configuration

Table 14.3 Link Aggregation Port Description

Item	Description
Modify	Modify the port configuration of link aggregation

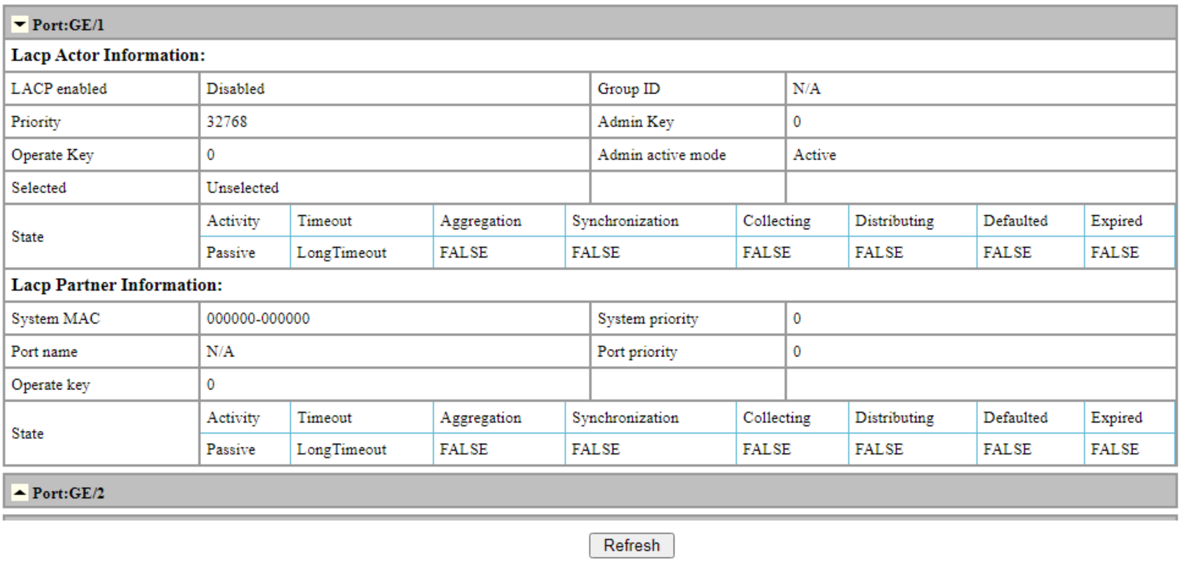
Table 14.4 Link Aggregation Port Description

Item	Description
Port	Port name
Aggregation Group ID	The port ID of aggregation group
Priority	Port link aggregation priority, range <0-65535>, default value 32768, the smaller the better
Admin Key	Select Admin Key numeric, range is 0-65535, default is 0.
LACP Port Mode	Port master-slave mode in LACP protocol **Active**: Active mode, the port sends protocol messages automatically when LACP protocol enabled. **Passive**: Passive mode, the port will not send protocol messages automatically, but only send when received protocol messages.
LACP Mode	Port timeout mode in LACP protocol **Active**: Quick timeout mode, timeout 1 second **Passive**: Slow timeout mode, timeout 30 seconds

LACP Enable Status	Port LACP Enable Status **Enabled**: Turn on port LACP **Disabled**: Close port LACP

Link Aggregation Information

Select Advanced / Link Aggregation / Aggregatee Information in the navigation bar to enter the Link Aggregation / Aggregation Information interface.
In the link aggregation Aggregate Information interface, all port link aggregation related information can be viewed as shown in figure 14.4.
Click Refresh to see the latest aggregation information for each port.



Lacp Actor Information:

LACP enabled	Disabled	Group ID	N/A
Priority	32768	Admin Key	0
Operate Key	0	Admin active mode	Active
Selected	Unselected		

State	Activity	Timeout	Aggregation	Synchronization	Collecting	Distributing	Defaulted	Expired
	Passive	LongTimeout	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

Lacp Partner Information:

System MAC	000000-000000	System priority	0
Port name	N/A	Port priority	0
Operate key	0		

State	Activity	Timeout	Aggregation	Synchronization	Collecting	Distributing	Defaulted	Expired
	Passive	LongTimeout	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

Figure 14.5 Port Aggregation Information

ALARM

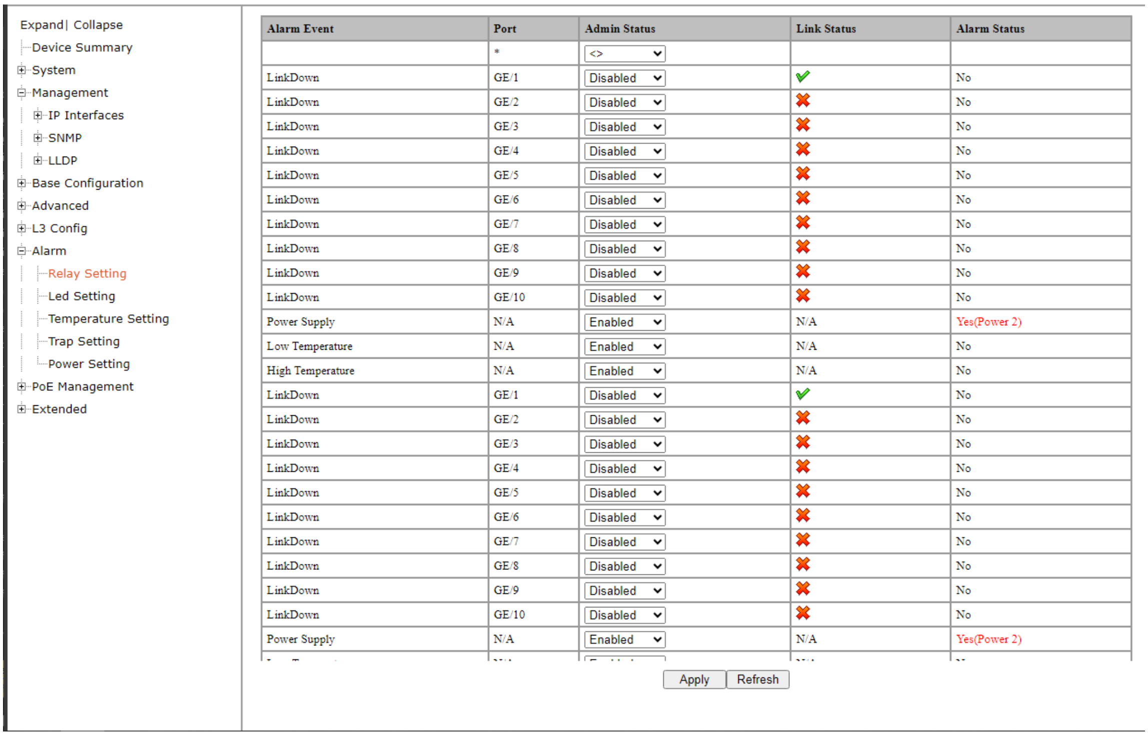
This chapter describes Alarm Settings, including the following:

- Relay Setting (N/O)
- LED Setting
- Temperature Setting
- Trap Setting
- Power Setting

Once the Alarm has been enabled, the alarm will trigger once the condition has been met.

For Example, if you are monitoring an Ethernet port and the cable in unplugged the contacts will close as it is in alarm condition. Once the Alarm condition has been rectified, the Relay contacts will open.

RELAY SETTING



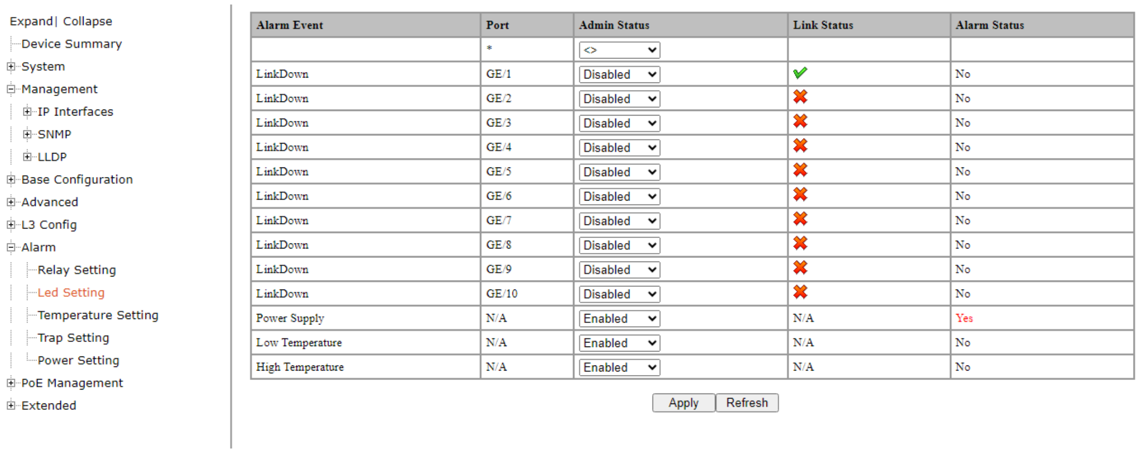
Alarm Event	Port	Admin Status	Link Status	Alarm Status
	*	<>		
LinkDown	GE/1	Disabled	✓	No
LinkDown	GE/2	Disabled	✗	No
LinkDown	GE/3	Disabled	✗	No
LinkDown	GE/4	Disabled	✗	No
LinkDown	GE/5	Disabled	✗	No
LinkDown	GE/6	Disabled	✗	No
LinkDown	GE/7	Disabled	✗	No
LinkDown	GE/8	Disabled	✗	No
LinkDown	GE/9	Disabled	✗	No
LinkDown	GE/10	Disabled	✗	No
Power Supply	N/A	Enabled	N/A	Yes(Power 2)
Low Temperature	N/A	Enabled	N/A	No
High Temperature	N/A	Enabled	N/A	No
LinkDown	GE/1	Disabled	✓	No
LinkDown	GE/2	Disabled	✗	No
LinkDown	GE/3	Disabled	✗	No
LinkDown	GE/4	Disabled	✗	No
LinkDown	GE/5	Disabled	✗	No
LinkDown	GE/6	Disabled	✗	No
LinkDown	GE/7	Disabled	✗	No
LinkDown	GE/8	Disabled	✗	No
LinkDown	GE/9	Disabled	✗	No
LinkDown	GE/10	Disabled	✗	No
Power Supply	N/A	Enabled	N/A	Yes(Power 2)

Configuration

1. Select Alarm/Relay Setting from the navigation bar to enter the Relay Setting page.
2. Here you can view the Alarm Event, Admin Status, Link Status and Alarm Status.
3. Enable/Disable the Admin Status by selecting the relevant option from the drop-down menu and clicking Apply.
4. Click Refresh to show the latest Alarm information.

LED SETTING

The LED settings relate to the Alarm LED on the front of the switch.



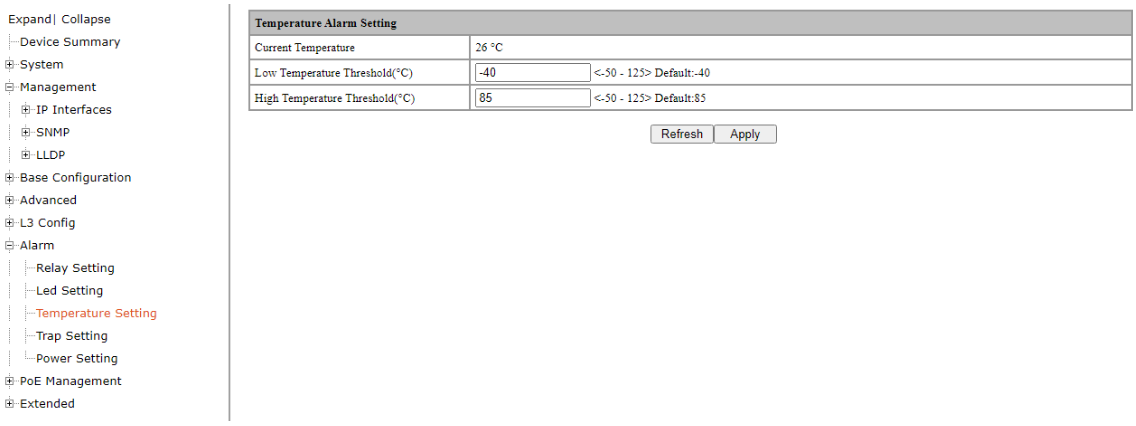
Alarm Event	Port	Admin Status	Link Status	Alarm Status
	*	<>		
LinkDown	GE/1	Disabled	✓	No
LinkDown	GE/2	Disabled	✗	No
LinkDown	GE/3	Disabled	✗	No
LinkDown	GE/4	Disabled	✗	No
LinkDown	GE/5	Disabled	✗	No
LinkDown	GE/6	Disabled	✗	No
LinkDown	GE/7	Disabled	✗	No
LinkDown	GE/8	Disabled	✗	No
LinkDown	GE/9	Disabled	✗	No
LinkDown	GE/10	Disabled	✗	No
Power Supply	N/A	Enabled	N/A	Yes
Low Temperature	N/A	Enabled	N/A	No
High Temperature	N/A	Enabled	N/A	No

Configuration

1. Select Alarm/LED Setting from the navigation bar to enter the LED Setting page.
2. Here you can view the Alarm Event, Admin Status, Link Status and Alarm Status.
3. Enable/Disable the Admin Status by selecting the relevant option from the drop-down menu and clicking Apply.
4. Click Refresh to show the latest Alarm information.

TEMPERATURE SETTING

If the temperature limits are exceeded then the Alarm condition will occur.



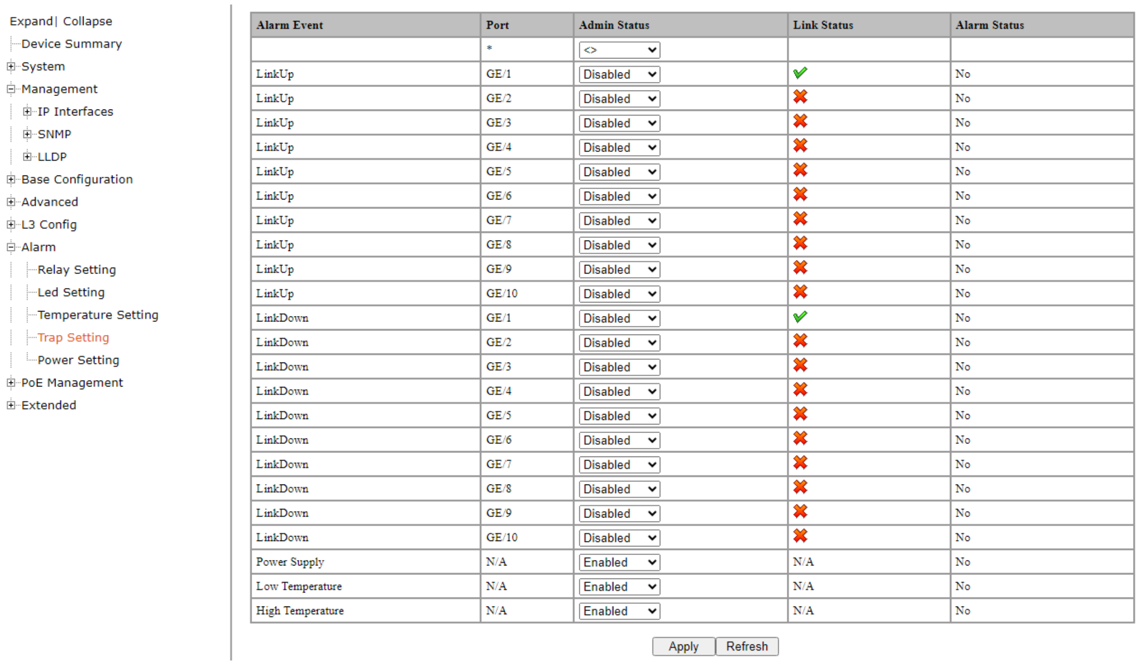
Temperature Alarm Setting	
Current Temperature	26 °C
Low Temperature Threshold(°C)	-40 <-50 - 125> Default:-40
High Temperature Threshold(°C)	85 <-50 - 125> Default:85

Configuration

1. Select Alarm/Temperature Setting from the navigation bar to enter the Temperature Setting page.
2. Here you can view the current temperature thresholds.
3. Enter the required temperature values and click Apply.
4. Click Refresh to show the latest Temperature information.

TRAP SETTING

This is for sending Alarm condition to your SNMP server. See SNMP settings for information on this.

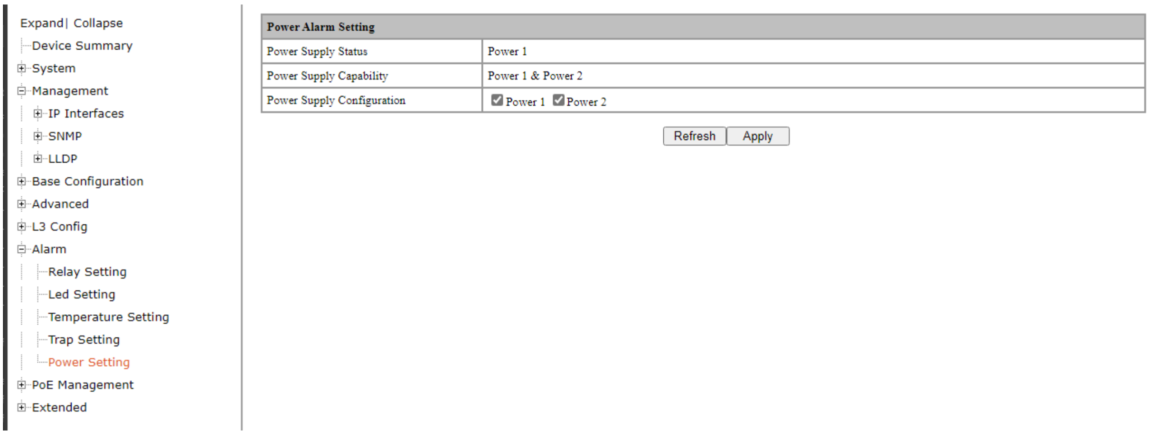


Alarm Event	Port	Admin Status	Link Status	Alarm Status
	*	<>		
LinkUp	GE/1	Disabled	✓	No
LinkUp	GE/2	Disabled	✗	No
LinkUp	GE/3	Disabled	✗	No
LinkUp	GE/4	Disabled	✗	No
LinkUp	GE/5	Disabled	✗	No
LinkUp	GE/6	Disabled	✗	No
LinkUp	GE/7	Disabled	✗	No
LinkUp	GE/8	Disabled	✗	No
LinkUp	GE/9	Disabled	✗	No
LinkUp	GE/10	Disabled	✗	No
LinkDown	GE/1	Disabled	✓	No
LinkDown	GE/2	Disabled	✗	No
LinkDown	GE/3	Disabled	✗	No
LinkDown	GE/4	Disabled	✗	No
LinkDown	GE/5	Disabled	✗	No
LinkDown	GE/6	Disabled	✗	No
LinkDown	GE/7	Disabled	✗	No
LinkDown	GE/8	Disabled	✗	No
LinkDown	GE/9	Disabled	✗	No
LinkDown	GE/10	Disabled	✗	No
Power Supply	N/A	Enabled	N/A	No
Low Temperature	N/A	Enabled	N/A	No
High Temperature	N/A	Enabled	N/A	No

Configuration

1. Select Alarm/Trap Setting from the navigation bar to enter the Trap Setting page.
2. Here you can view the Alarm Event, Admin Status, Link Status and Alarm Status.
3. Enable/Disable the Admin Status by selecting the relevant option from the drop-down menu and clicking Apply.
4. Click Refresh to show the latest Alarm information.

POWER SETTING



Power Alarm Setting	
Power Supply Status	Power 1
Power Supply Capability	Power 1 & Power 2
Power Supply Configuration	☑ Power 1 ☑ Power 2

Configuration

1. Select Alarm/Power Setting from the navigation bar to enter the Power Setting page.
2. Here you can view the Power Supply Status, Power Supply Capability, and Power Supply Configuration.
3. Enable/Disable Power 1 or Power 2 Alarm by ticking/un-ticking the relevant option and clicking Apply.
4. Click Refresh to show the latest Alarm information.

SNMP

This chapter covers SNMP in detail, including the following:

- SNMP Configuration (V1 / V2 / V3 Setting)
- Trap Setting

Simple Network Management Protocol (SNMP) is an Internet Standard protocol for collecting and organizing information about managed devices on IP networks and for modifying that information to change device behaviour. Devices that typically support SNMP include cable modems, routers, switches, servers, workstations, printers, and more.

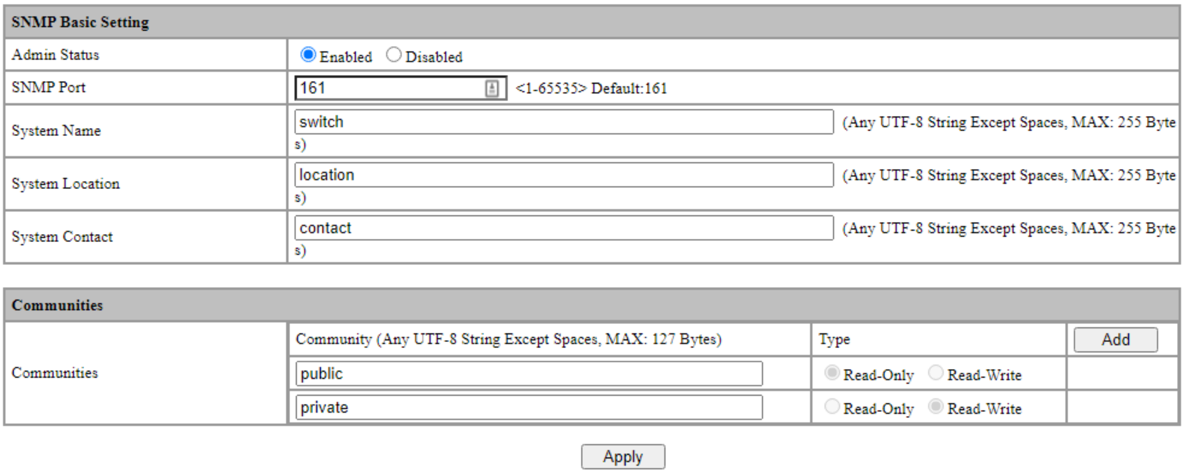
Base Configuration

Select Management / SNMP / V1/V2 Setting in the navigation bar to enter the SNMP Base Setting interface.

To modify the Base Configuration, modify the corresponding configuration in the configuration box, and then click Apply to make effective, as shown in figure 15.1.

If you want to add a group word, click Add and a group word is added to set the group word name and type. The system supports up to eight group characters, with the first and second being the default, so you can add up to six more. Click Apply to make effective.

To delete a group word, click Delete on the right corresponding entry (the first and second are the system default, cannot be deleted), and click Apply to make effective.



SNMP Basic Setting	
Admin Status	● Enabled ○ Disabled
SNMP Port	161 <1-65535> Default:161
System Name	switch (Any UTF-8 String Except Spaces, MAX: 255 Bytes)
System Location	location (Any UTF-8 String Except Spaces, MAX: 255 Bytes)
System Contact	contact (Any UTF-8 String Except Spaces, MAX: 255 Bytes)

Communities			
Communities	Community (Any UTF-8 String Except Spaces, MAX: 127 Bytes)	Type	Add
	public	● Read-Only ○ Read-Write	
	private	○ Read-Only ● Read-Write	

Figure 15.2 SNMP Base Configuration

Table 15.2 SNMP Description

Item	Description
Admin Status	SNMP Global Enable Status: **Enabled**: Enable SNMP function **Disabled**: Disable SNMP function
SNMP Port	SNMP port with range <1-65535>, default 161.
System Name	System name, any legal character other than a space can be entered with a maximum length of 255.
System Location Information	System location information, any legal character other than a space can be entered with a maximum length of 255.
System Contact	System contact information, any legal character other than a space can be entered with a maximum length of 255.
Communities	SNMP Communities: Name: Any legal character other than a space can be entered with a maximum length of 127 Type: Read and write Note: The system supports a maximum of 8 group characters and requires at least two group characters. The default two group characters can only change the group name, cannot change the type or delete. Click Add to add a group character, add a group character can change the name and type, and delete.

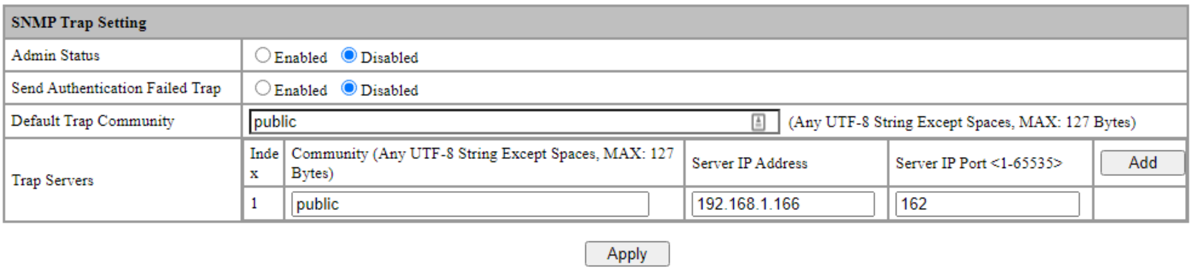
Trap Setting

Select Management / SNMP / Trap Setting in the navigation bar and enter the SNMP Trap Setting interface.

If you need to modify the Trap Setting, modify the corresponding configuration in the configuration box, and then click Apply, as shown in figure 15.3.

If you want to add a Trap server, click Add and the Trap server entry will occur. The system supports up to 4 groups of Trap servers, the first group is the default of the system and cannot be deleted, so you can add up to 3 groups of Trap servers.

If you want to delete the Trap server, click Delete on the right of the corresponding entry (group 1 is the default of the system and cannot be deleted), and click Apply.



SNMP Trap Setting

Admin Status	○ Enabled ● Disabled				
Send Authentication Failed Trap	○ Enabled ● Disabled				
Default Trap Community	public (Any UTF-8 String Except Spaces, MAX: 127 Bytes)				
Trap Servers	Index	Community (Any UTF-8 String Except Spaces, MAX: 127 Bytes)	Server IP Address	Server IP Port <1-65535>	Add
	1	public	192.168.1.166	162	

Apply

Figure 15.3 SNMP Trap Setting

Table 15.3 SNMP Trap Setting Description

Item	Description
Admin Status	Trap Global Enable Status: **Enabled**: Turn on Trap function **Disabled**: Close Trap function
Trap Version	Trap version support V1 and V2
Send Authentication Failed Trap	Enable or Disable the Sending SNMP Authentication Failed Trap: **Enabled**: Enable the Sending SNMP Authentication Failed Trap **Disabled**: Close the Sending SNMP Authentication Failed Trap
Default Trap Community	Default trap group characters, any legal character other than a space can be entered with a maximum length of 127.
Trap Server	Set Trap Server: **Group Characters**: Any legal character other than a space can be entered with a maximum length of 127 **Server IP Address**: The IP address of trap server, IPv4, dot decimal format. **Server IP Port**: The IP port of trap server, range <1-65535>, default 162 **Note**: The system supports up to 4 servers. Click the Add to add. The system default server number: 1, group character: public, IP address: 192.168.1.200, IP port: 162. The default server cannot be deleted, but the added server can be deleted.

IP INTERFACE

This chapter describes the IP interface in detail, mainly including the following contents:

- IP Address
- DHCP Client Configuration

IP ADDRESS

IP (Internet Protocol Address) is short for IP Address. IP address is a unified address format provided by the IP protocol, which assigns a logical address to each network and host on the Internet to mask physical address differences.

IP address consists of two parts: network address (Net-id) and Host address (Host-id).

Network address is to distinguish between different networks, and host address is to distinguish between different hosts within a network.

IP address is classified into five categories, as detailed in the following table:

IP Address Type	IP Address Range	Description
A	0.0.0.0-127.255.255.255	The IP address 0.0.0.0 is only used for temporary communication between the host and the current host when the system is started. 127.0.0.1 to 127.255.255.255 is used for loop testing. Groups sent to this address are not output to the link and are treated internally as input groups.
B	128.0.0.0-191.255.255.255	-
C	192.0.0.0-223.255.255.255	It is for small scale LAN, and each network can only contain 254 computers at most.
D	224.0.0.0-239.255.255.255	Multicast address.
E	240.0.0.0-255.255.255.255	255.255.255.255 is for broadcast address, other address is reserved for future use.

Some IP addresses are reserved for special purposes.

Users cannot configure IP interfaces as host addresses: The address with each byte being 0 ("0.0.0.0") corresponds to the current host; Each IP address that is 1 ("255.255.255.255") is the broadcast address of the current subnet;

Any class E IP address starting with 11110 shall be reserved for future and experimental use; An IP address cannot begin with a decimal 127. Change the address number 127.0.0.1 to 127.255.255.255 is for loop testing, such as: 127.0.0.1 can represent the local IP address, and http://127.0.0.1 can be used to test the local Web server.

The first 8-bit group network ID cannot be fully set to 0, 0 indicates the address; In IP network, the same network address can be directly communicated, while the address of different networks cannot.

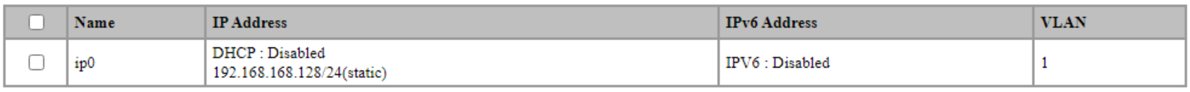
Base Configuration

Select Management / IP Interface / Setting in the navigation bar to enter the IP interface Setting as shown in figure 16.1.

To add a new IP interface, click Add, then fill in the relevant configuration, and click Apply, as shown in figure 16.2.

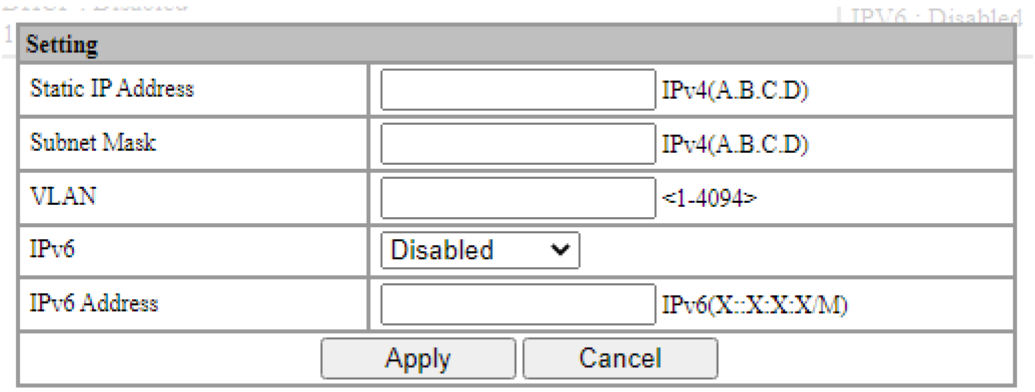
To modify an IP interface, check the corresponding IP interface, click modify, then modify the configuration, and click Apply, the IP interface is shown in figure 16.2.

To delete an IP interface, check the appropriate IP interface and click Delete.



□	Name	IP Address	IPv6 Address	VLAN
□	ip0	DHCP : Disabled 192.168.168.128/24(static)	IPV6 : Disabled	1

Figure 16.1 IP Interface Viewing



Setting		
Static IP Address		IPv4(A.B.C.D)
Subnet Mask		IPv4(A.B.C.D)
VLAN		<1-4094>
IPv6	Disabled	
IPv6 Address		IPv6(X::X:X:X/M)

Figure 16.2 IP Interface Setting

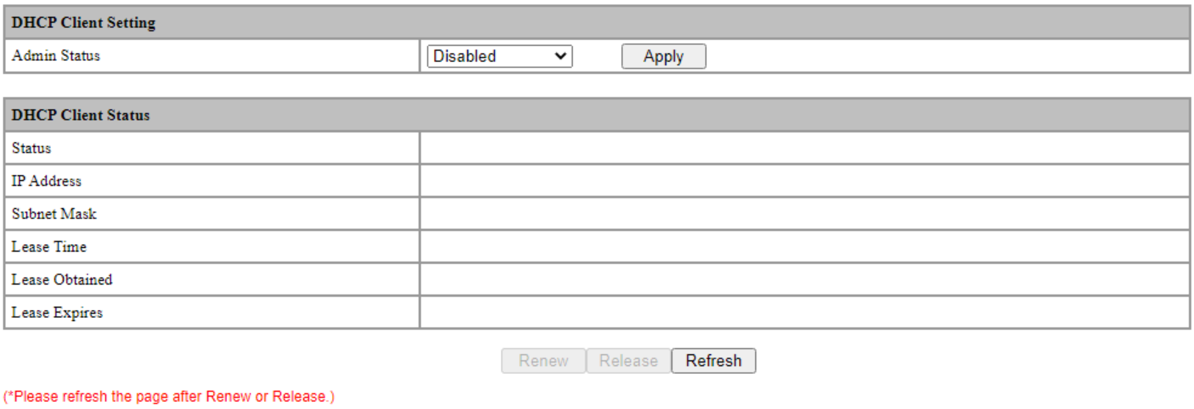
Table 16.1 IP Interface Setting Description

Item	Description
Static IP Address	Static IPv4 address, the format is dot decimal system, each interface IPv4 address cannot be in the same network segment.
Subnet Mask	Subdivision of IP address network.
VLAN	VLAN bound by assigned IP interface.
IPv6	Enable or Disable IPv6 Addressing
IPv6 Address	Input valid static IPv6 address. Format is hexadecimal.

DHCP Client Configuration

Note: DHCP functions are described in detail in the next chapter.

Select Management / IP Interface / DHCP Client in the navigation bar to enter the DHCP Client interface.



DHCP Client Setting		
Admin Status	Disabled	Apply

DHCP Client Status	
Status	
IP Address	
Subnet Mask	
Lease Time	
Lease Obtained	
Lease Expires	

(*Please refresh the page after Renew or Release.)

Figure 16.3 DHCP Client Configuration

Table 16.2 DHCP Client Description

Item	Description
Admin Status	Enable or Prohibit DHCP Client **Enabled**: Enable DHCP Client **Disabled**: Prohibit DHCP Client
Renew	DHCP Client renews the configuration.
Release	DHCP Client releases the current configuration.

DHCP

This chapter discusses Dynamic Host Configuration Protocol in detail, including the following:

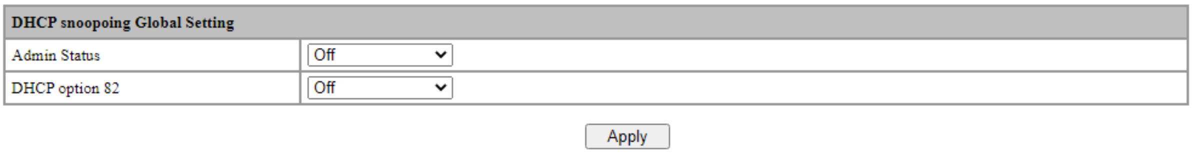
- DHCP Snooping
- DHCP Configuration
- DHCP Information

The Dynamic Host Configuration Protocol (DHCP) is a network management protocol used on Internet Protocol (IP) networks, whereby a DHCP server dynamically assigns an IP address and other network configuration parameters to each device on the network, so they can communicate with other IP networks. A DHCP server enables computers to request IP addresses and networking parameters automatically from the Internet service provider (ISP), reducing the need for a network administrator or a user to manually assign IP addresses to all network devices.

Global Setting

Select Advanced / DHCP Snooping / Global Setting in the navigation bar to enter the Global Setting interface of DHCP snooping.

To modify the global configuration of DHCP snooping in the DHCP snooping global configuration box, click Apply, as shown in figure 17.1.



DHCP snoopoing Global Setting	
Admin Status	Off
DHCP option 82	Off

Figure 17.1 DHCP Snooping Global Setting

Table 17.1 DHCP Snooping Global Setting Description

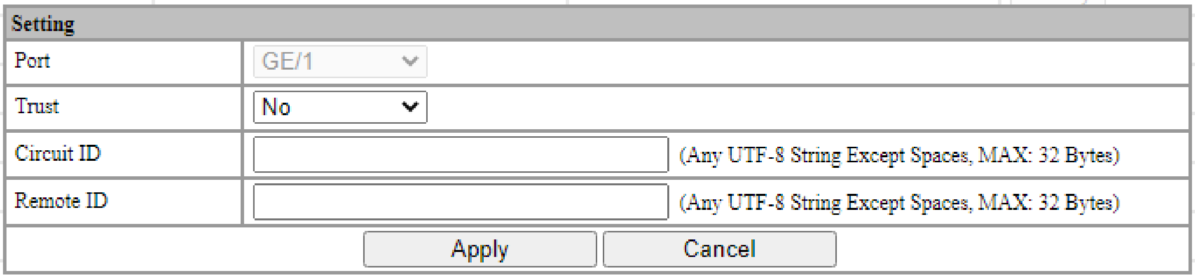
Item	Description
Management Status	DHCP Snooping Global Enable Switch **ON**: Enable DHCP snooping function **OFF**: Disable DHCP snooping function
DHCP Option 82	DHCP Option 82 is organized as a single DHCP option that contains information known by the relay agent. This feature provides additional security when DHCP is used to allocate network addresses, and enables the switch to act as a DHCP relay agent to prevent DHCP client requests from untrusted sources.

PORT SETTING

Select Advanced / DHCP Snooping / Port Setting in the navigation bar to enter the DHCP snooping Port Setting interface.

To modify the DHCP snooping configuration for a port, click the modify to enter the port configuration interface, as shown in figure 17.2.

Select or fill in the configuration items that need to be modified and click Apply to make effective. There will be prompts if the configuration items are incorrectly filled.



Setting

Port	GE/1
Trust	No
Circuit ID	(Any UTF-8 String Except Spaces, MAX: 32 Bytes)
Remote ID	(Any UTF-8 String Except Spaces, MAX: 32 Bytes)

Figure 17.2 DHCP Snooping Port Setting

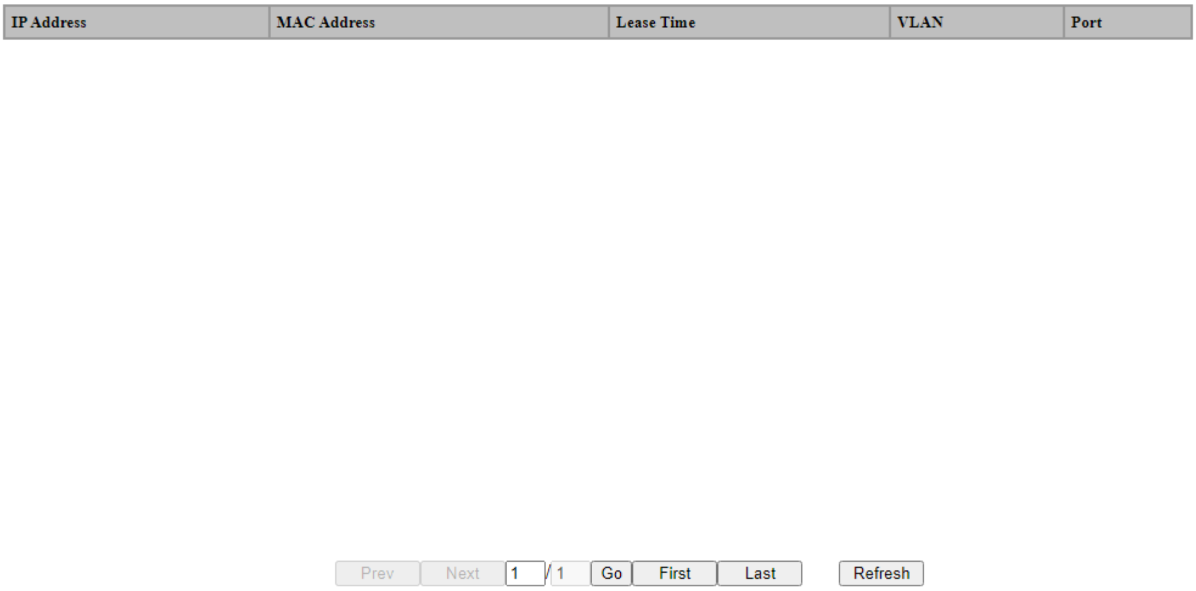
Table 17.2 DHCP Snooping Port Setting Description

Item	**Description**
Port	Currently selected port.
Trust	Port Trust: **YES**: Set as trusted port to avoid DHCP Snooping. **NO**: Set as non-trusted port.
Circuit ID	Default by global agent circuit ID
Remote ID	Default by global agent remote ID

BINDING TABLE

Select Advanced / DHCP Snooping / Binding Table in the navigation bar to enter the DHCP snooping Binding Table interface as shown in figure 17.3.

Click Refresh to update all DHCP snooping bind list information



IP Address	MAC Address	Lease Time	VLAN	Port

Figure 17.3 DHCP Snooping Binding Table

ADMINISTRATION

This chapter describes Administration in detail, including the following:

- User Management
- Online User
- Login Timeout Setting

USER MANAGEMENT

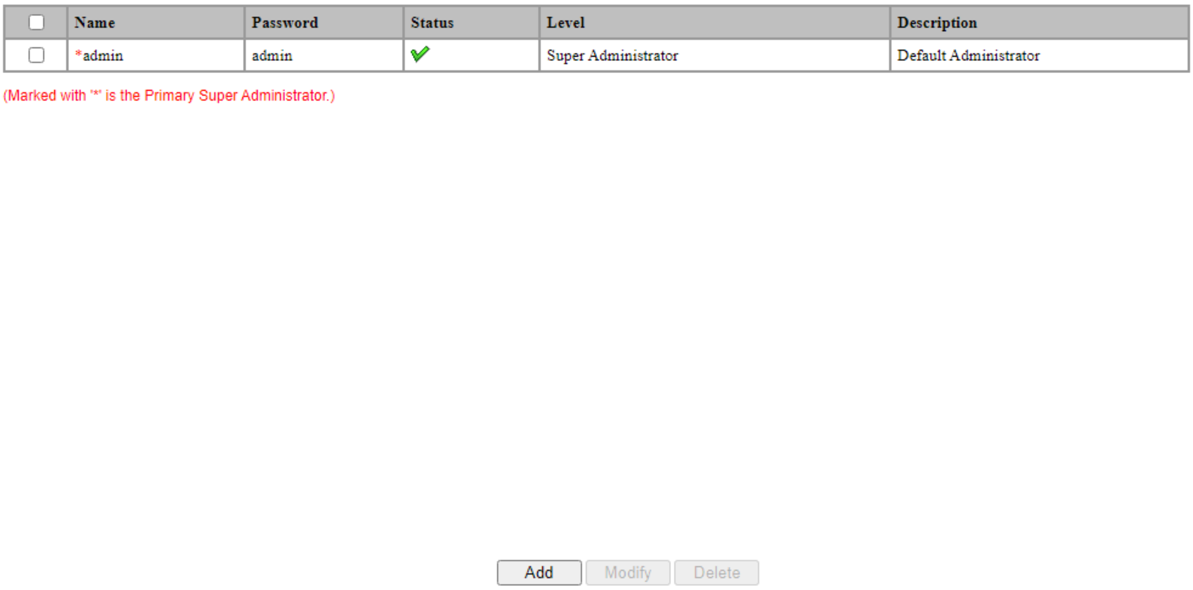
Select System / Administrator / Administrators in the navigation bar to enter the Administrators interface.

The current user configuration information can be viewed in the Administrators interface, as shown in figure 18.1.

To add a new user, click Add to enter the administrator configuration interface, fill in the corresponding configuration items, click Apply to finish adding the user, and add the user interface as shown in Figure 18.2.

If need to modify the user information, select the corresponding user firstly, and then click Modify to enter the user configuration modification interface and modify the corresponding configuration item. Click Apply to complete the configuration modification and modify the user interface as shown in Figure 18.3

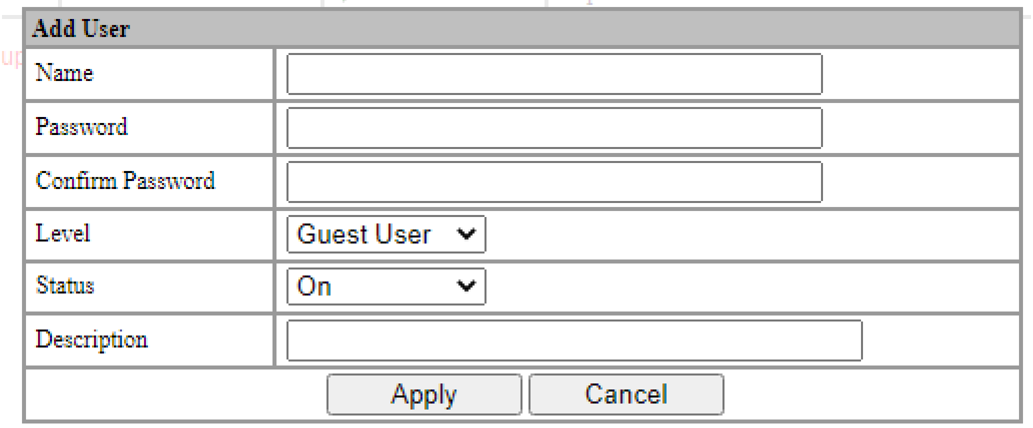
To delete a user, firstly select the corresponding user and click Delete to delete the user.



□	Name	Password	Status	Level	Description
□	*admin	admin	✓	Super Administrator	Default Administrator

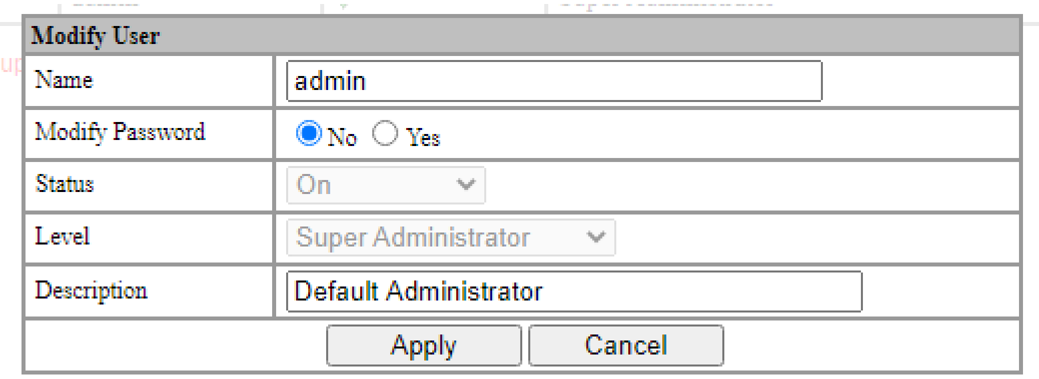
(Marked with '*' is the Primary Super Administrator.)

Figure 18.1 Administration



Add User	
Name	
Password	
Confirm Password	
Level	Guest User
Status	On
Description	

Figure 18.2 Add a User



Modify User	
Name	admin
Modify Password	● No ○ Yes
Status	On
Level	Super Administrator
Description	Default Administrator

Figure 18.3 Modify User Interface

Table 18.1 Administration Description

Item	Description
Username	Username information.
Password	User password.
Status	User activation status: **Green Tick**: Active **Red Cross:** Inactive By default, new users are activated.
Level	User level: Super Administrator, Senior Administrator, Junior Administrator, Guest User.
Description	User description.

Table 18.2 User Management Description

Item	Description
Username	Username information, valid characters A-Z, a-z, 0-9, _, length 1-32 bytes
Password	User login password, any printable ASCII characters, length 1-16 bytes.
Confirm Password	Re-enter the login password to confirm.
Level	Set the users level, including: **Super Administrator**: User has complete control over every aspect of the managed switch. **Senior Administrator**: User has most control over the management, however, user is unable to remove or supersede the Super Administrator. **Junior Administrator**: User has control over some aspects of the management, cannot supersede the Senior Administrator. **Guest users**: User can view management settings but is unable to change anything.
Status	User activation status, including **On**: Active **Off**: Inactive

Description	User description information, any printable ASCII character, length 1-128 bytes.

Table 18.3 User Management Description

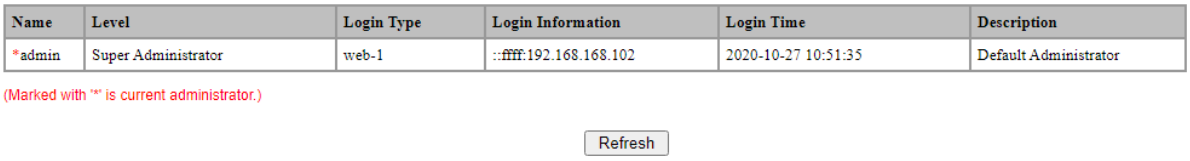
Item	Description
Username	Username information, valid characters A-Z, a-z, 0-9, _, length 1-32 bytes.
Old Password	The password for the user to log in to the web interface.
Password	New password set by the user, any printable ASCII character, length 1-16 bytes.
Confirm Password	Re-enter the new password set by the user and confirm the password.
Level	Set the users level, (see table 18.2 for detailed descriptions on user levels) including: **Super administrator** **Senior Administrator** **Junior Administrator** **Guest users**
Status	User activation status, including ON and OFF.
Description	User description information, any printable ASCII character, length 1-128 bytes.

The device has a super administrator (username admin) by default and cannot be deleted. The user level cannot be changed. Extra 15 users can be added in addition to this user.

ONLINE USER

Select System / Administrator / Online Users in the navigation bar to enter the Online Users interface.

In the interface of Online Users, you can view the user information of the current logged in device



Name	Level	Login Type	Login Information	Login Time	Description
*admin	Super Administrator	web-1	::ffff:192.168.168.102	2020-10-27 10:51:35	Default Administrator

(Marked with '*' is current administrator.)

Figure 18.4 Online User Information

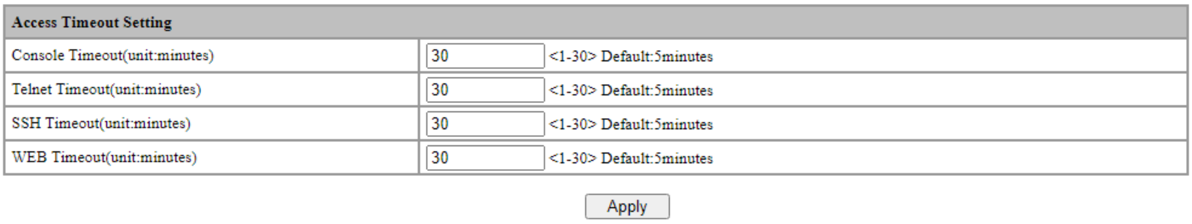
Table 18.4 Online User Description

Item	Description
Username	Username information
Level	User level, including: Super Administrator, Senior Administrator, Junior Administrator, Guest User.
Description	User description information.
Login Method	Web, console, telnet.
Login IP Address	The client IP address of user login, except the console mode login.
Login Time	The time that the user logs in to the device.

LOGIN TIMEOUT SETTING

Select System / Administrator / Management Setting in the navigation bar to enter the Login Timeout Setting interface.

To change the login timeout period, fill in the timeout period of the corresponding login mode and click Apply to complete the configuration modification, as shown in Figure 18.5.



Access Timeout Setting	
Console Timeout(unit:minutes)	30 <1-30> Default:5minutes
Telnet Timeout(unit:minutes)	30 <1-30> Default:5minutes
SSH Timeout(unit:minutes)	30 <1-30> Default:5minutes
WEB Timeout(unit:minutes)	30 <1-30> Default:5minutes

Figure 18.5 Login Timeout Setting

Table 18.5 Login Timeout Description

Item	Description
Console Timeout	The login timeout period via console port, range 1 to 30. The default value is 5 and the unit is in minutes.
Telnet Timeout	The login timeout period via telnet, range 1 to 30. The default value is 5 and the unit is in minutes.
SSH Timeout	The login timeout period via SSH, range 1 to 30. The default value Is 5 and the unit is in minutes.

Web Timeout	The login timeout period via web, range 1 to 30. The default value is 5 and the unit is in minutes.

The setting can only take effect in next login after setting the timeout period for different login methods.

SYSTEM CONFIGURATION

This chapter describes the system configuration in detail, including the following:

- System Log
- Configurations
- Date and Time
- Software Upgrade
- Software Restart

After the device is configured, you need to save the configuration information to the device. The newly saved configuration information will overwrite the original configuration information. After the configuration is complete, if you do not perform the save operation, the new configuration will be lost when the device is restarted, and the original configuration will continue to be executed.

When the device fails, you can try to solve the problem by restarting the device according to the actual situation. In system configuration, you can manage the configuration of the system, including erasing the configuration, saving the configuration, and restarting the device. Users can also view and configure the corresponding system start-up management according to needs.

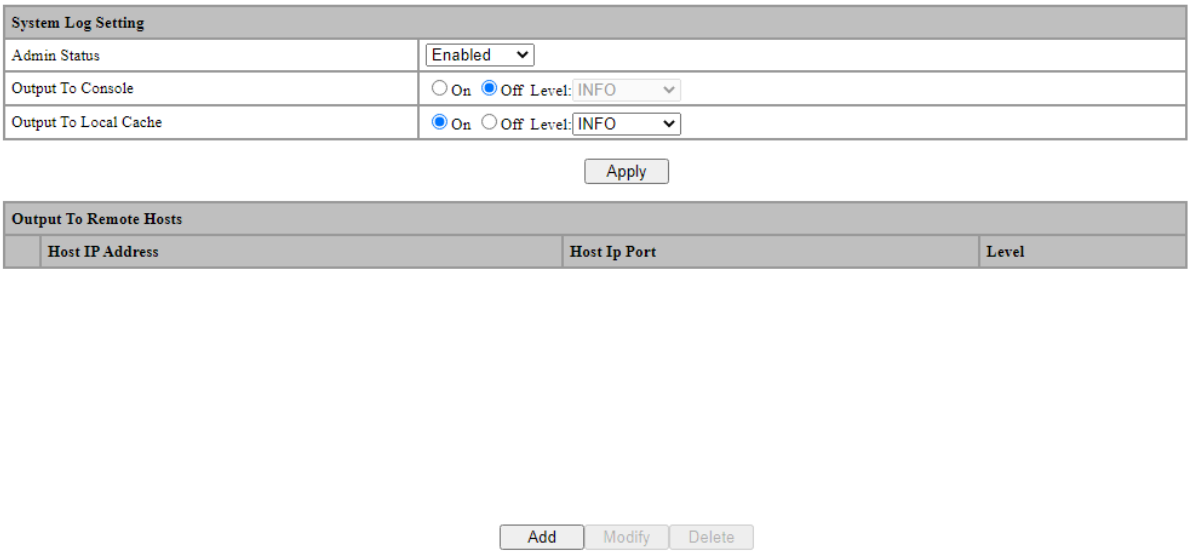
SYSTEM LOG

Select System / System Log / Setting in the navigation bar to enter the System Log Setting interface as shown in Figure 19.1.

To modify the system log configuration, set the corresponding configuration in the System Log Settings box and click Apply to complete the configuration, as shown in Figure 19.1.

To add a remote log server, click Add, fill in the corresponding configuration items in the Remote Log Server Setting interface and click Apply to complete the configuration. Maximum 4 remote servers can be added.

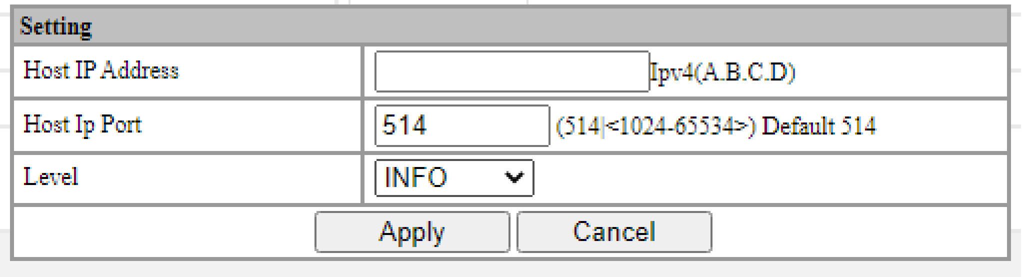
To modify the remote log server, first select the corresponding remote log server, and then click Modify to enter the remote log server setting interface. Modify the corresponding configuration item and click Apply to complete the configuration modification.
To delete a remote log server, first select the corresponding remote log server and click Delete to delete the remote log server.



System Log Setting	
Admin Status	Enabled
Output To Console	○ On ● Off Level: INFO
Output To Local Cache	● On ○ Off Level: INFO

Output To Remote Hosts			
	Host IP Address	Host Ip Port	Level

Figure 19.1 System Log Setting



Setting	
Host IP Address	Ipv4(A.B.C.D)
Host Ip Port	514 (514|<1024-65534>) Default 514
Level	INFO

Figure 19.2 Remote Log Server Setting

Table 19.1 System Log Setting Configuration Description

Item	Description
Admin Status	Turn ON / OFF the System Logging Status.
Output to Console	Turn ON / OFF logging output to the console port.
Output to Local Cache	Turn ON / OFF logging output to the Local Cache.
Output to Remote Host	System log output to remote log server.
Level	System log level divided into 8 levels according to severity. **EMERG**: level 0, system cannot be used. **ALERT** : Level 1, need to be processed immediately. **CRIT**: Level 2, Severe State. **ERR** : Level 3, Error Status.

	WARNING : Level 4, Warning Status. **NOTICE** : Level 5, normal but important state. **INFO** : Level 6, Notification Event. **DEBUG** : Level 7, debugging information.

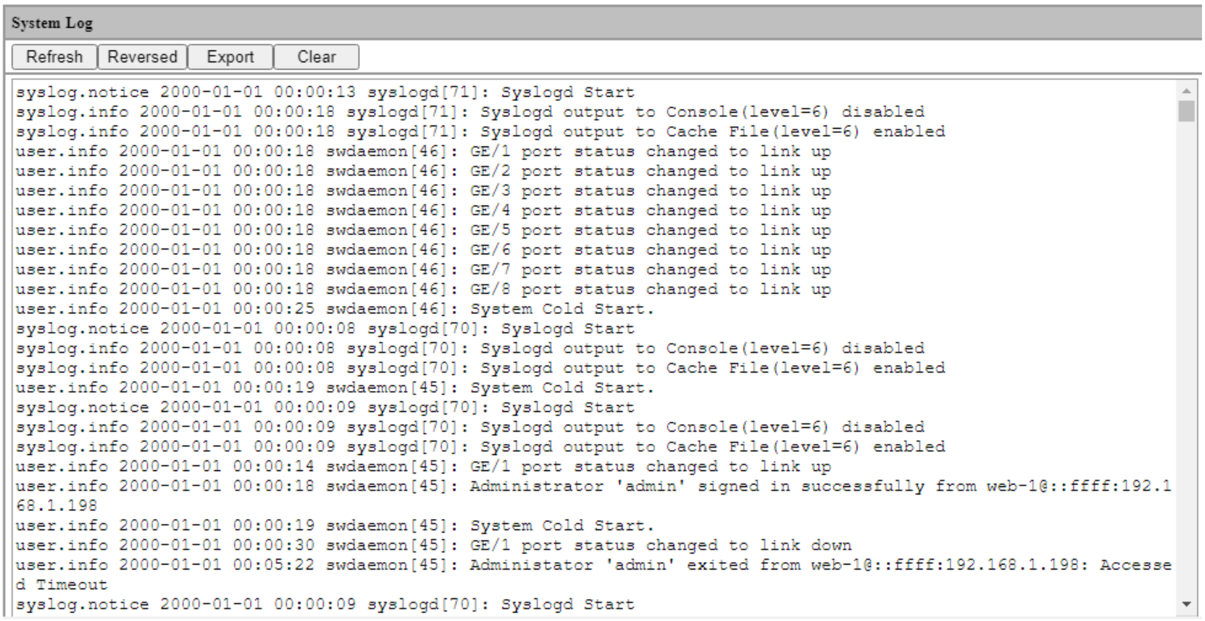
Table 19.2 Remote Log Server Description

Item	Description
Host IP address	Remote log host IP address, in dotted decimal format, valid host IP address, up to 4 groups.
Host IP port	Remote log host port, range 514, 1024-65534, default is 514.
Level	System log level, divided into 8 levels according to severity **EMERG**: level 0, system cannot be used **ALERT** : Level 1, need to be processed immediately **CRIT**: Level 2, severe status **ERR** : Level 3, error Status **WARNING** : Level 4, warning status **NOTICE** : Level 5, normal but important status **INFO** : Level 6, notification event **DEBUG** : Level 7, debugging information

The smaller the log level value, the higher the level. Only logs with a level equal to or greater than the set level will be output. For example, if you set the logging level to the console to 5 (NOTICE), only logs with level 0 to 5 will be output to the console.

View Logs

Select System / System Log / View in the navigation bar to enter the system log View interface as shown in Figure 19.3.



```
syslog.notice 2000-01-01 00:00:13 syslogd[71]: Syslogd Start
syslog.info 2000-01-01 00:00:18 syslogd[71]: Syslogd output to Console(level=6) disabled
syslog.info 2000-01-01 00:00:18 syslogd[71]: Syslogd output to Cache File(level=6) enabled
user.info 2000-01-01 00:00:18 swdaemon[46]: GE/1 port status changed to link up
user.info 2000-01-01 00:00:18 swdaemon[46]: GE/2 port status changed to link up
user.info 2000-01-01 00:00:18 swdaemon[46]: GE/3 port status changed to link up
user.info 2000-01-01 00:00:18 swdaemon[46]: GE/4 port status changed to link up
user.info 2000-01-01 00:00:18 swdaemon[46]: GE/5 port status changed to link up
user.info 2000-01-01 00:00:18 swdaemon[46]: GE/6 port status changed to link up
user.info 2000-01-01 00:00:18 swdaemon[46]: GE/7 port status changed to link up
user.info 2000-01-01 00:00:18 swdaemon[46]: GE/8 port status changed to link up
user.info 2000-01-01 00:00:25 swdaemon[46]: System Cold Start.
syslog.notice 2000-01-01 00:00:08 syslogd[70]: Syslogd Start
syslog.info 2000-01-01 00:00:08 syslogd[70]: Syslogd output to Console(level=6) disabled
syslog.info 2000-01-01 00:00:08 syslogd[70]: Syslogd output to Cache File(level=6) enabled
user.info 2000-01-01 00:00:19 swdaemon[45]: System Cold Start.
syslog.notice 2000-01-01 00:00:09 syslogd[70]: Syslogd Start
syslog.info 2000-01-01 00:00:09 syslogd[70]: Syslogd output to Console(level=6) disabled
syslog.info 2000-01-01 00:00:09 syslogd[70]: Syslogd output to Cache File(level=6) enabled
user.info 2000-01-01 00:00:14 swdaemon[45]: GE/1 port status changed to link up
user.info 2000-01-01 00:00:18 swdaemon[45]: Administrator 'admin' signed in successfully from web-1@::ffff:192.1
68.1.198
user.info 2000-01-01 00:00:19 swdaemon[45]: System Cold Start.
user.info 2000-01-01 00:00:30 swdaemon[45]: GE/1 port status changed to link down
user.info 2000-01-01 00:05:22 swdaemon[45]: Administator 'admin' exited from web-1@::ffff:192.168.1.198: Accesse
d Timeout
syslog.notice 2000-01-01 00:00:09 syslogd[70]: Syslogd Start
```

Figure 19.3 System Log View

Table 19.3 System Log View Description

Item	Description
Refresh	Refresh the system log content.
Ordinal	Display in chronological order.
Reversed	New to old display in chronological order.
Export	Export the contents of the system log
Clear	Clear the contents of the system log.

CONFIGURATIONS

Select System / Configurations / View in the navigation bar to enter the View interface.

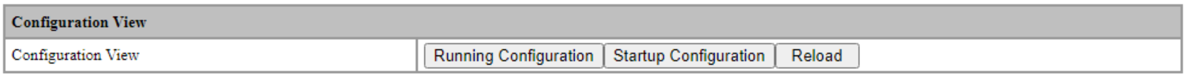


Table 19.4 Configurations View Description

Item	Description
Running Configuration	View system running configuration file, text style
Startup Configuration	Check the system startup configuration file, text style.
Reload	Reload the running or startup configuration file.

IMPORT CONFIGURATION

Select System / Configurations / Import in the navigation bar to enter the Import interface of Configurations, as shown in Figure 19.4.

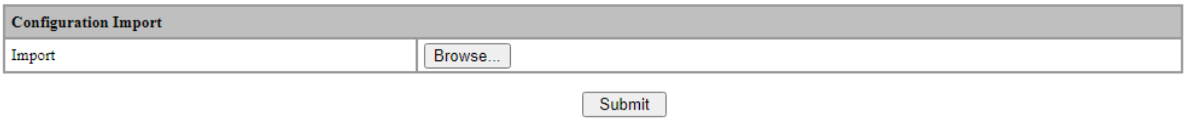


Figure 19.4 Configurations Import

In the Configurations Import interface, click Browse, select the configuration file to import, and click Submit to start the import.

EXPORT CONFIGURATION

Select System / Configurations / Export in the navigation bar to enter the Configurations Export interface, as shown in Figure 19.5.

Export configuration is divided into startup configuration and running configuration. Click Export in the corresponding project to prompt up the "File Save" dialog box (different browsers may differ, here take the IE11 browser as an example), click Save to export the corresponding configuration file to the local.

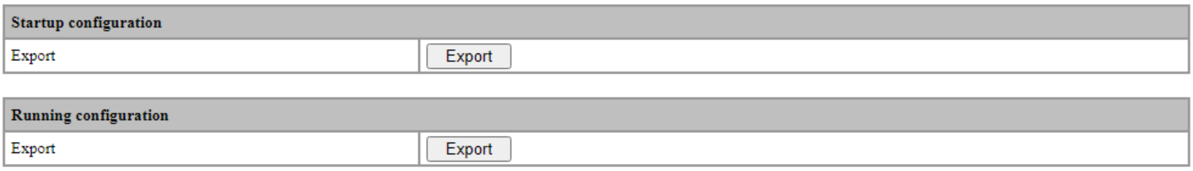
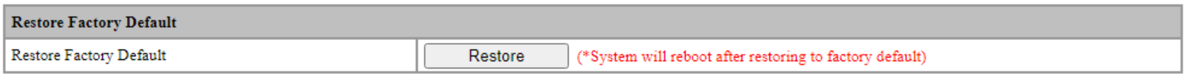


Figure 19.5 Export Configuration

Restore Factory Configuration

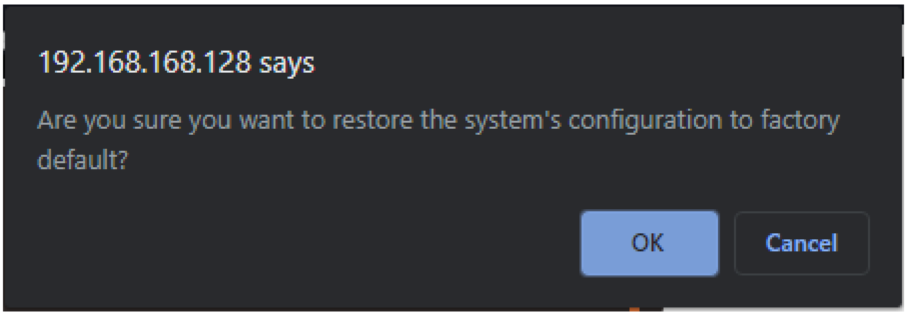
Select System / Configurations / Restore Factory Default in the navigation bar to enter the Restore Factory Default interface, as shown in Figure 19.6.



Restore Factory Default		
Restore Factory Default	Restore	(*System will reboot after restoring to factory default)

Figure 19.6 Restore Factory Setting

Click Restore and then click OK in the confirmation dialog box to restore the factory configuration. Click Cancel to cancel the factory configuration restoration. After a successful factory reset, the system automatically restarts to take effect to the factory configuration, as shown in Figure 19.7.



192.168.168.128 says

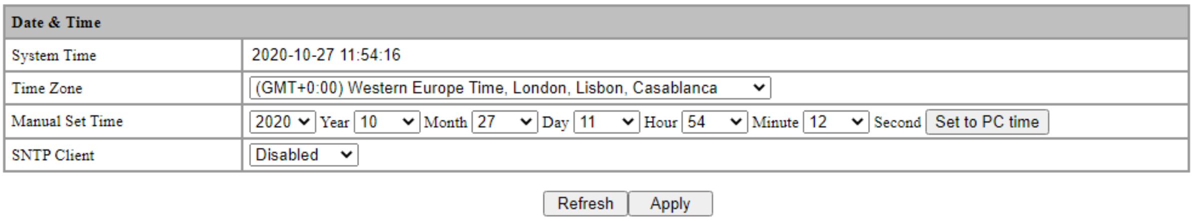
Are you sure you want to restore the system's configuration to factory default?

Figure 19.7 Restore Factory Configuration Confirmation Dialog Box

Date and Time

Select System / Date and Time in the navigation bar to enter the system setting Date and Time interface. The system time can be manually set, or automatically synchronized through the SNTP client.

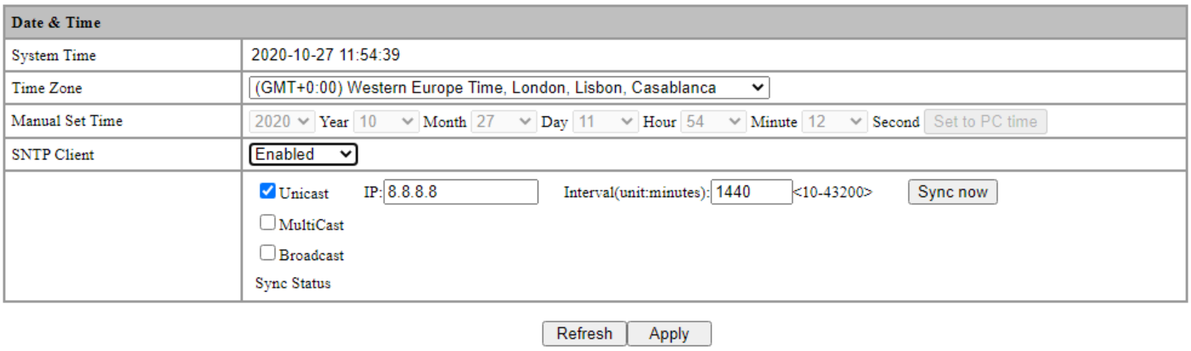
To set the system time manually, the SNTP client must be disabled. Select the corresponding time zone in the Time Zone column and set the system time in the Time Setting column. Click Apply to complete the system time setting, as shown in Figure 19.8.



Date & Time	
System Time	2020-10-27 11:54:16
Time Zone	(GMT+0:00) Western Europe Time, London, Lisbon, Casablanca
Manual Set Time	2020 Year 10 Month 27 Day 11 Hour 54 Minute 12 Second Set to PC time
SNTP Client	Disabled

Figure 19.8 System Time Setting by Manual

Synchronize system time automatically via SNTP client. The SNTP client time synchronization mode is divided into unicast, multicast, and broadcast. These three modes can be selected, but at least one mode must be selected. When the unicast mode is selected, the IP address of the time server (8.8.8.8 by default) and the synchronization interval (1440 minutes by default) must also be set. Sync Now button means SNTP client requests time synchronization immediately, otherwise it will be synchronized once at the set synchronization interval. Click Apply to complete the SNTP client time synchronization setting, as shown in Figure 19.9.



Date & Time

System Time	2020-10-27 11:54:39
Time Zone	(GMT+0:00) Western Europe Time, London, Lisbon, Casablanca
Manual Set Time	2020 Year 10 Month 27 Day 11 Hour 54 Minute 12 Second Set to PC time
SNTP Client	Enabled
	☑ Unicast IP: 8.8.8.8 Interval(unit:minutes): 1440 <10-43200> Sync now ☐ MultiCast ☐ Broadcast Sync Status

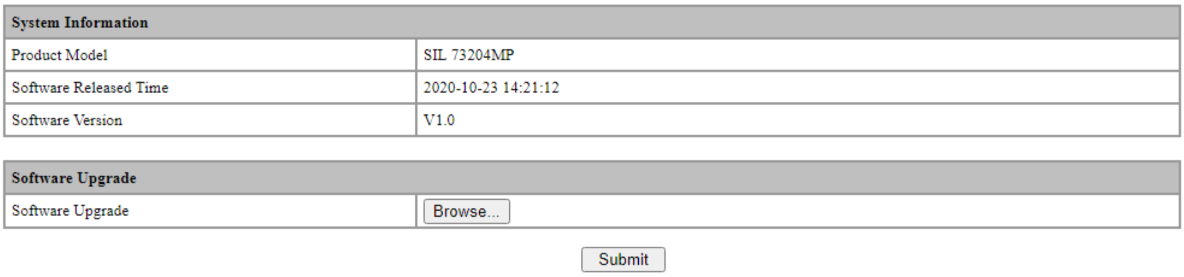
Figure 19.9 SNTP client setting interface

Table 19.5 Date and Time Description

Item	Description
System Time	Displays the actual effective system time.
Time Zone	System time zone setting, select any time zone from the drop-down list.
Time Setting	It can be set after the SNTP client is disabled. The year range is 1970-2037. Others are the same as the common settings.
SNTP Client	Turn ON / OFF the SNTP Client function.
Synchronous Mode	The SNTP client synchronization mode is divided into: **Unicast Mode**: default IP address 8.8.8.8; interval range 10-43200, and default value 1440. **Multicast Mode**: **Broadcast Mode**: These three modes are multi-selectable, but at least one must be selected.
IP	IP address of SNTP server, only for unicast mode.
Interval	SNTP client time synchronization interval, only for unicast mode.
Synchronize	SNTP client immediate synchronizes time, only for unicast mode.

Software Upgrade

Select System / Software Upgrade in the navigation bar to enter the Software Upgrade interface, as shown in Figure 19.10.



System Information	
Product Model	SIL 73204MP
Software Released Time	2020-10-23 14:21:12
Software Version	V1.0

Software Upgrade	
Software Upgrade	Browse...

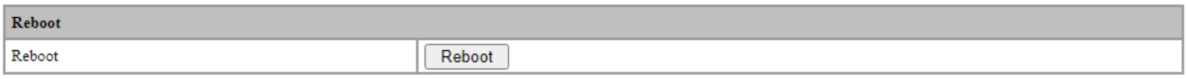
Figure 19.10 Software Upgrade

On the Software Upgrade interface, click Browse to select the upgrade file to be imported. (The upgrade files are generally of the form .ub and .urk. Marked with "b" for BOOT files and "r" for "File System". The file is marked with k for the file with the kernel. Click Submit. The system starts uploading the upgrade file. After the upload is complete, the device automatically restarts to update the software after the upgrade is complete.

Note: During the software upgrade, make sure that the device is powered up until the upgrade is completed.

Software Restart

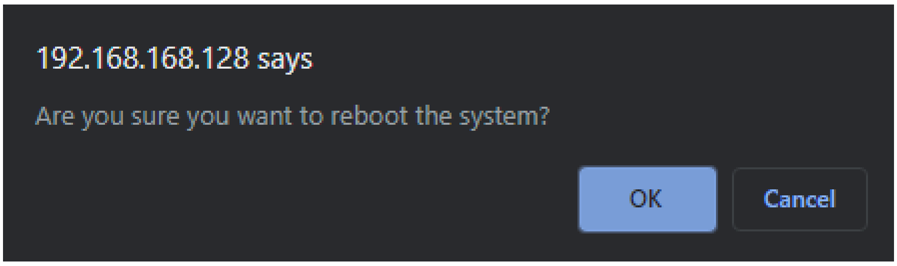
Select System / Reboot in the navigation bar to enter the Reboot interface, as shown in Figure 19.11.



Reboot	
Reboot	Reboot

Figure 19.11 Restart

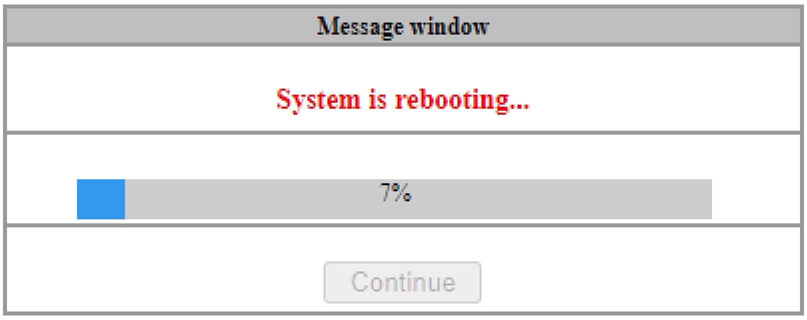
Click Reboot and the Confirm Restart dialog box will pop up. Click OK to restart the device. A restart progress bar is displayed. Click Cancel to cancel the restart of the device. The restart confirmation is shown in Figure 19.12, and the restart progress is shown in Figure 19.13.



192.168.168.128 says

Are you sure you want to reboot the system?

Figure 19.12 Restart Confirmation



Message window

System is rebooting...

Figure 19.13 Restart Progress

Accessories

1Gbps Fibre transmission

Part Code	Description
SIL-SFP0-01-25-X850-0-5D	1G Multimode 850nm SFP, 550m
SIL-SFP0-01-25-X131-10XD	1G Singlemode 1310nm SFP, 10km
SIL-SFP0-01-25-X131-40XD	1G Singlemode 1310nm SFP, 40km
SIL-SFP0-01-25-X155-80XD	1G Singlemode 1550nm SFP, 80km
1Gbps BiDi	
SIL-SFP0-01-25-B131-10XD	1G SM 1310nm TX FP 10km with DDM, 1550nm RX
SIL-SFP0-01-25-B155-10XD	1G SM 1550nm TX FP 10km with DDM, 1310nm RX
SIL-SFP0-01-25-B139-10XD	1G SM 1310nm TX FP 10km with DDM, 1490nm RX
SIL-SFP0-01-25-B149-10XD	1G SM 1490nm TX FP 10km with DDM, 1310nm RX
SIL-SFP0-01-25-B131-40XD	1G SM 1310nm TX DFB 40km with DDM, 1550nm RX
SIL-SFP0-01-25-B155-40XD	1G SM 1550nm TX DFB 40km with DDM, 1310nm RX
SFP to Ethernet	
SIL-SFP0-01-25-XXXT-0-1	1G RJ45 Copper SFP, 100m

Power supplies

Part Code	Description
SIL NDR-120-48 (48V 2.5A)	120W 48V 2.5A Industrial Din Rail Power Supply
SIL NDR-240-48 (48V 5A)	240W 48V 5A Industrial Din Rail Power Supply
SIL NDR-480-48 (48V 10A)	480W 48V 10A Industrial Din Rail Power Supply

TECHNICAL PARAMETERS

Power supply

Input voltage: 12V～56V (redundant dual power)

PSE Power: 0～30W

POE Pin: 1/2+，3/6-

Copper Port

Connector: RJ-45 connector

Data Rate: 10/100MbpsAuto, 10/100/1000Mbps Auto

Twisted Pair cable: Cat5 UTP cable

Transmission distance: 100 metres

Fibre Port

Connector: SC (default), FC/ST/SFP (optional)

Data Rate: 155Mbps，1.25Gbps

Fibre Type: SM 9/125μm，MM 50/125μm、62.5/125μm

Transmission distance: 20km ~ 120km

Environment

Storage temperature: -40~85℃

Operating temperature: -40~75℃

Relative humidity: 5%-90%

Mechanism

Enclosure: IP40, Black, Metal shell

Mounting: DIN-rail, Wall

Agreement

IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x

IEEE 802.3af, IEEE 802.3at

STANDARDS

EMI FCC Part 15 Subpart B Class A

EN61000-4-2（ESD）

EN61000-4-3（RS）

EN61000-4-4（EFT）

EN61000-4-5（Surge）

EN61000-4-6（CS）

EN61000-4-8

EN61000-4-11

IEC60068-2-27

IEC60068-2-32

IEC60068-2-6

EN60950-1

WARNINGS

This product is only suitable for indoor applications.

Ensure that the dust caps are placed over the Fibre interface connectors when not in use.

Do not stare directly into the fibre transmitter as this is very dangerous and can cause serious damage to your eyes.

Optical fibre transceivers must be used in pairs.

Single optical fibre transceivers must be used in pairs (A, B)

A: TX1310/RX1550nm B: TX1550/RX1310nm.

TROUBLESHOOTING

If you have no connection then please check that the corresponding network devices are using the same transfer rate as the Ethernet Switch (10Mbps, 100Mbps or 1000Mbps).

If you have excessive power loss in the fibre, please check and clean the fibre connectors and ports.

RESPONSIBILITY NOTE

1. SilverNet Ltd will repair or replace any product that fails within the terms of the limited warranty in effect at the time of purchase.
2. If the product has been purchased via one of our distribution partners, it should be returned to the place of purchase as their terms may differ from ours.
3. If you use a Power Supply that is not provided by SilverNet and the device is damaged, then this is not covered under the product warranty.
4. Please follow this manual when using our power supply.
5. We will not cover any damage to our equipment or persons that is caused by any changes to this equipment without prior authorisation from us.
6. We will replace any defective equipment which fails within the warranty period.

WARRANTY

The Series 7 industrial gigabit PoE+ managed switches come with a 5-year warranty as standard. For full terms and conditions of warranty please go to **www.silvernet.com/terms-and-conditions/**

CONTACT SILVERNET

Email us at support@silvernet.com
Call our support team on **08712233067**
www.silvernet.com

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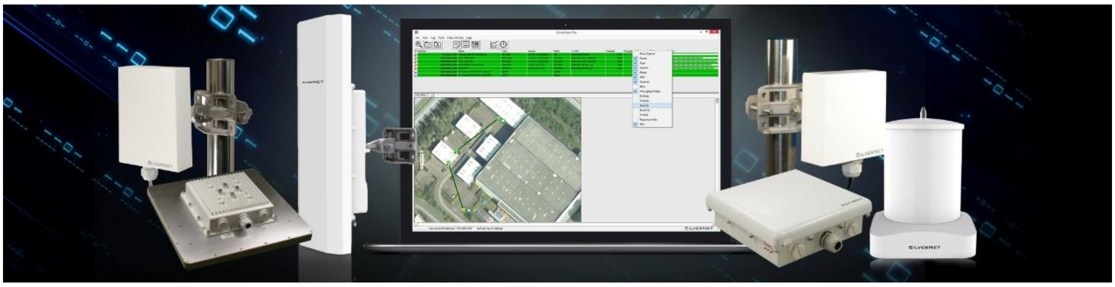
OTHER SILVERNET PRODUCTS

Pro Range



Industrial Network Transmission

Intelligent Wi-Fi Solutions

Industry Leading Technical Support