SZ2G-0416IXSP
16-Port 2.5GBASE-T (PoE++) + 4-Slot 10G SFP+ Managed L2 Switch

User Guide

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Table of Contents

Safety and Regulatory **1**

1. Introduction **2**

1.1. Overview 2

1.2. Package contents 2

1.3. Features 2

1.4. Product Components 3

1.4.1. Ports 3

1.4.2. LED Indicators 4

2. Installation **7**

2.1. Mounting the Switch 7

2.1.1. Placement Tips 7

2.1.2. Rack Mounting 8

3. Getting Started **10**

3.1. Power 10

3.1.1. Connecting to Power 10

3.1.2. Connecting to the Network 11

3.1.3. Power over Ethernet (PoE) Considerations 11

3.1.4. Starting the Web-based Configuration Utility 12

3.1.5. Logging In 14

4. Web-based Switch Configuration **16**

4.1. Status 18

4.1.1. System Information 18

4.1.2. Logging Message 20

4.1.3. Port 20

4.1.3.1. Statistics 20

4.1.3.2. Error Disabled 22

4.1.3.3. Bandwidth Utilization 23

4.1.4. Link Aggregation 24

4.1.5. MAC Address Table 25

4.2. Network 25

4.2.1. IP Address 26

4.2.2. System Time 27

4.3. Port 29

4.3.1. Port Setting 29

4.3.2. Error Disable 31

4.3.3. Link Aggregation 32

4.3.3.1. Group 32

4.3.3.2. Port Setting 34

4.3.3.3. LACP 36

4.3.4. EEE 38
4.3.5. Jumbo Frame 39
4.4. PoE 39
4.4.1. Global Setting 39
4.4.2. Priority Setting 42
4.4.3. Power Limit 42
4.4.4. Power show 43
4.5. VLAN 44
4.5.1. VLAN 44
4.5.1.1. Create VLAN 45
4.5.1.2. VLAN Configuration 46
4.5.1.3. Membership 47
4.5.1.4. Port Setting 48
4.5.2. Voice VLAN 50
4.5.2.1. Property 50
4.5.2.2. Voice OUI 52
4.5.3. Protocol VLAN 53
4.5.3.1. Protocol Group 53
4.5.3.2. Group Binding 54
4.5.4. MAC VLAN 56
4.5.4.1. MAC Group 56
4.5.4.2. Group Binding 57
4.5.5. Surveillance VLAN 58
4.5.5.1. Property 58
4.5.5.2. Surveillance OUI 59
4.5.6. GVRP 60
4.5.6.1. Property 60
4.5.6.2. Membership 61
4.5.6.3. Statistics 62
4.6. MAC Address Table 64
4.6.1. Dynamic Address 64
4.6.2. Static Address 65
4.6.3. Filtering Address 65
4.7. Spanning Tree 66
4.7.1. Property 66
4.7.2. Port Setting 68
4.7.3. MST Instance 70
4.7.4. MST Port Setting 71
4.7.5. Statistics 73
4.8. Discovery 74
4.8.1. LLDP 75
4.8.1.1. Property 75
4.8.1.2. Port Setting 76
4.8.1.3. MED Network Policy 77
4.8.1.4. MED Port Setting 78
4.8.1.5. Packet View 79
4.8.1.6. Local Information 81
4.8.1.7. Neighbor 84
4.8.1.8. Statistics 85
4.9. Multicast 87

4.9.1. General 87
4.9.1.1. Property 87
4.9.1.2. Group Address 88
4.9.1.3. Router Port 89
4.9.1.4. Forward All 91
4.9.1.5. Throttling 93
4.9.1.6. Filtering Profile 94
4.9.1.7. Filtering Binding 96
4.9.2. IGMP Snooping 97
4.9.2.1. Property 97
4.9.2.2. Querier 99
4.9.2.3. Statistics 101
4.9.3. MLD Snooping 102
4.9.3.1. Property 102
4.9.3.2. Statistics 105
4.9.4. MVR 107
4.9.4.1. Property 107
4.9.4.2. Port Setting 108
4.9.4.3. Group Address 109
4.10. Security 110
4.10.1. RADIUS 110
4.10.2. TACACS+ 113
4.10.3. AAA 115
4.10.3.1. Method List 115
4.10.3.2. Login Authentication 116
4.10.4. Management Access 117
4.10.4.1. Management VLAN 117
4.10.4.2. Management Service 118
4.10.4.3. Management ACL 119
4.10.4.4. Management ACE 119
4.10.5. Authentication Manager 120
4.10.5.1. Property 120
4.10.5.2. Port Setting 124
4.10.5.3. MAC-Based Local Account 127
4.10.5.4. WEB-Based Local Account 129
4.10.5.5. Sessions 130
4.10.6. Port Security 132
4.10.7. Traffic Segmentation 133
4.10.8. Storm Control 134
4.10.9. DoS 136
4.10.9.1. Property 137
4.10.9.2. Port Setting 138
4.10.10. Dynamic ARP Inspection 139
4.10.10.1. Property 139
4.10.10.2. Statistics 141
4.10.11. DHCP Snooping 141
4.10.11.1. Property 142
4.10.11.2. Statistics 143
4.10.11.3. Option82 Property 144
4.10.11.4. Option82 Circuit ID 145
4.10.12. IP Source Guard 146
4.10.12.1. Port Setting 146

4.10.12.2. IMPV Binding 147
4.10.12.3. Save Database 149
4.11. ACL 150
4.11.1. MAC ACL 150
4.11.2. MAC ACE 150
4.11.3. IPv4 ACL 151
4.11.4. IPv4 ACE 152
4.11.5. IPv6 ACL 152
4.11.6. IPv6 ACE 153
4.11.7. ACL Binding 154
4.12. QoS 155
4.12.1. General 155
4.12.1.1. Property 155
4.12.1.2. Queue Scheduling 157
4.12.1.3. CoS Mapping 158
4.12.1.4. DSCP Mapping 159
4.12.1.5. IP Precedence Mapping 160
4.12.2. Rate Limit 161
4.12.2.1. Ingress/Egress Port 161
4.12.2.2. Egress Queue 163
4.13. Diagnostics 166
4.13.1. Logging 166
4.13.1.1. Property 166
4.13.1.2. Remote Server 167
4.13.2. Mirroring 167
4.13.3. Ping 169
4.13.4. Traceroute 169
4.13.5. Copper Test 170
4.13.6. Fiber Module 171
4.13.7. UDLD 172
4.13.7.1 Property 173
4.13.7.2 Neighbor 174
4.14. Management 174
4.14.1. User Account 174
4.14.2. Firmware 176
4.14.2.1. Upgrade / Backup 176
4.14.2.2. Active Image 179
4.14.3. Configuration 180
4.14.3.1. Upgrade / Backup 180
4.14.3.2. Save Configuration 183
4.14.4. SNMP 184
4.14.4.1. View 184
4.14.4.2. Group 185
4.14.4.3. Community 187
4.14.4.4. User 188
4.14.4.5. Engine ID 190
4.14.4.6. Trap Event 192
4.14.4.7. Notification 193
4.14.5. RMON 196
4.14.5.1. Statistics 196
4.14.5.2. History 198

4.14.5.3. Event 200
4.14.5.4. Alarm 202

4.15. Loop Prevention 206

Safety and Regulatory

Audience

This guide is for the networking professional managing the standalone SZ2G-0416IXSP switch series. It is recommended that only professionals with experience working with Planex Communications Inc. networking devices who are familiar with the Ethernet and local area networking terminology, should service the equipment.

Conventions

The following conventions are used in this manual to convey instructions and information:

- Notes and cautions use the following conventions and symbols:

Note

Means additional information. Notes contain additional useful information or references to material available outside of this document.

Caution

Indicates that the reader must be careful. In a situation where a Caution is listed, a user may cause equipment damage or loss of data.

1. Introduction

Thank you for choosing an WEB Smart Ethernet Switch(PoE) . This device is designed to be operational right out-of-the-box as a standard bridge. In the default configuration, it will forward packets between connecting devices after powered up.

Before you begin installing the switch, make sure you have all the package contents available, and a PC with a web browser for using web-based system management tools.

1.1. Overview

The SZ2G-0416IXSP are L2 Smart PoE switches with 16 2.5-Gigabit PoE+ ports + 4 10Gigabit Fiber ports.

1.2. Package contents

Before using the product, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.

- SZ2G-0416IXSP L2 Smart PoE Switch
- Quick Installation Guide
- Power Cord
- Rack Mount Kit
- Foot pads

1.3. Features

- Supports up to 16 10M/100M/1000M/2.5Gbps Gigabit Ethernet ports and 4 10G SFP slots
- IEEE 802.3af/at/bt PoE compliant to simplify deployment and installation
- Supports PoE up to 90W per port with 240W total power budget
- Automatically detects powered devices (PD) and power consumption levels
- IEEE 802.1Q VLAN allows network segmentation to enhance performance and security
- Supports Access Control List (ACL)

- Switch capacity: SZ2G-0416IXSP: 160Gbps, Forwarding rate: 119.04Mpps
- Supports IGMP Snooping V1 / V2 / V3
- 32K MAC address table and 12K jumbo frames
- 19-inch rack-mountable metal case

1.4. Product Components

1.4.1. Ports

The following view applies to SZ2G-0416IXSP.

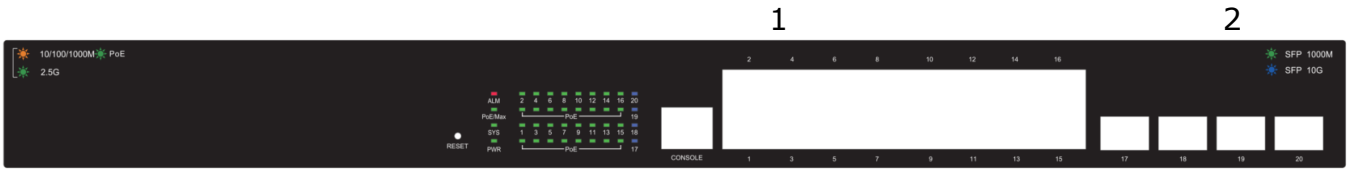


Figure 1 - Front View

No.	Name	Description
1	10M/100M/1000M /2.5Gbps RJ-45 ports (1~16)	Designed to connect to network devices with a bandwidth of 10Mbps, 100Mbps, 1000Mbps or 2.5Gbps. Each has a corresponding 10M/100M/1000M/2.5Gbps LED.
2	SFP(SFP1~SFP4) LNK/ACT ports	SFP ports: Designed to install SFP modules and connect to network devices with a bandwidth of 1000Mbps/10Gbps. Each has a corresponding.

The following view applies to SZ2G-0416IXSP.

Figure 2 - Rear View

No.	Name	Description
1	AC power in	Supports AC 100 – 240V, 50-60Hz.

1.4.2. LED Indicators

The following view applies to SZ2G-0416IXSP.

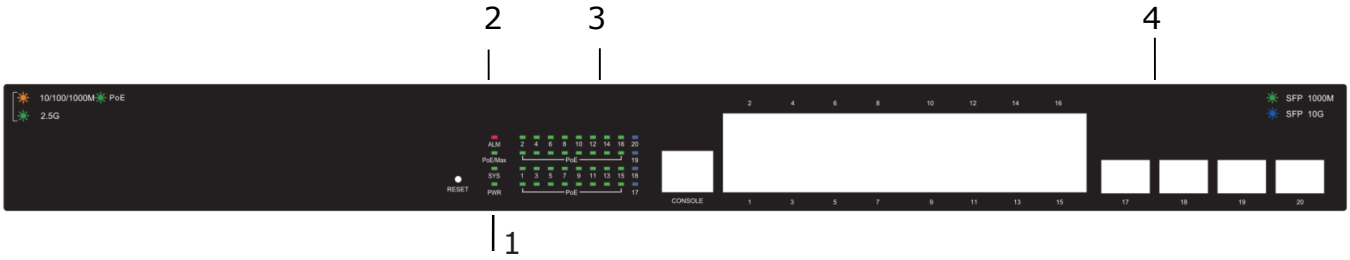


Figure 3 - Front View LED Indicators

No.	Name	Description
1	Power	• Off: power off • On: power on
2	System	• Off: system not ready • On: system ready • Blinking: system boot-up
3	Port LED	LINK/ACT bi-color LED: • Off: port disconnected or link fail • Green on: 2.5Gbps connected, PoE power output on • Amber on: 10/100/1000Mbps connected • Blinking: sending or receiving data
4	SFP LED	• Off: port disconnected or link fail • Green on: 1000Mbps connected • Blue on: 10Gbps connected

2. Installation

This chapter describes how to install and connect your Planex Communications Inc. Switch. Read the following topics and perform the procedures in the correct order. Incorrect installation may cause damage to the product.

2.1. Mounting the Switch

There are two ways to physically set up the switch.

- Place the switch on a flat surface. To place the switch on a desktop, install the four rubber feet (included) on the bottom of the switch.
- Mount the switch in a standard rack (1 rack unit high).

2.1.1. Placement Tips

- Ambient Temperature—To prevent the switch from overheating, do not operate it in an area that exceeds an ambient temperature of 40°C.
- Air Flow—Be sure that there is adequate air flow around the switch.
- Mechanical Loading—Be sure that the switch is level and stable to avoid any hazardous conditions.
- Circuit Overloading—Adding the switch to the power outlet must not overload that circuit.

Follow these guidelines to install the switch securely.

1. Put the switch in a stable place such as a desktop, to avoid it falling.
2. Ensure the switch works in the proper AC input range and matches the voltage labeled.
3. Ensure there is proper heat dissipation from and adequate ventilation around the switch.
4. Ensure the switch’s location can support the weight of the switch and its accessories.

2.1.2. Rack Mounting

You can mount the switch in any standard size, 19-inch (about 48 cm) wide rack. The switch requires 1 rack unit (RU) of space, which is 1.75 inches (44.45 mm) high.

For stability, load the rack from the bottom to the top, with the heaviest devices on the bottom. A top-heavy rack is likely to be unstable and may tip over.

When mounting smaller switch products into a standard 19-inch rack, a pair of extension brackets (sometimes referred to as ears) are needed to adapt the switch to the rack size.

These extension brackets are mounted on the switch using the screws provided in the kit, and have two holes that are used to then screw the switch into the rack.

An example of one type of these extension brackets is shown in the following figure.

A common problem that occurs during rack mounting is the distance between the screw holes on the rack. Some racks are made with a uniform distance between all the holes, and others have the holes organized into groups (see photo on the next page for an example).

When organized into groups, the switch must be placed in the rack so that the holes in the extension brackets line up correctly.

1. Align the mounting brackets with the mounting holes on the switch's side panels and secure the brackets with the screws provided.

2. Secure the switch on the equipment rack with the screws provided.

3. Getting Started

This section introduces the web-based configuration utility, and covers the following topics:

- Powering on the device
- Connecting to the network
- Power over Ethernet (PoE) considerations
- Starting the web-based configuration utility

3.1. Power

3.1.1. Connecting to Power

Power down and disconnect the power cord before servicing or wiring a switch.

Do not disconnect modules or cabling unless the power is first switched off. The device only supports the voltage outlined in the type plate. Do not use any other power components except those specifically designated for the switch.

Disconnect the power cord before installation or cable wiring.

The switch is powered by the AC 100-240 V 50/60Hz internal high-performance power supply. It is recommended to connect the switch with a single-phase three-wire power source with a neutral outlet, or a multifunctional computer professional source.

Connect the AC power connector on the back panel of the switch to the external power source with the included power cord, and check the power LED is on.

Figure 7 - Rear View AC Power Socket

3.1.2. Connecting to the Network

To connect the switch to the network:

1. Connect an Ethernet cable to the Ethernet port of a computer
2. Connect the other end of the Ethernet cable to one of the numbered Ethernet ports of the switch. The LED of the port lights if the device connected is active.
3. Repeat Step 1 and Step 2 for each device to connect to the switch.

We strongly recommend using CAT-5E or better cable to connect network devices. When connecting network devices, do not exceed the maximum cabling distance of 100 meters (328 feet). It can take up to one minute for attached devices or the LAN to be operational after it is connected. This is normal behavior.

Connect the switch to end nodes using a standard Cat 5/5e Ethernet cable (UTP/STP) to connect the switch to end nodes as shown in the illustration below.

Switch ports will automatically adjust to the characteristics (MDI/MDI-X, speed, duplex) of the device to which the switch is connected.

3.1.3. Power over Ethernet (PoE) Considerations

For PoE switch models, consider the following information:

Devices considered a Power Sourcing Equipment (PSE), can support up to 90 Watts per PoE port to a Powered Device (PD).

Mode	Power Dedicated to PoE	PoE Ports	PoE Standard Supported
SZ2G-0416IXSP	240W	1 to 16	IEEE802.3at/af/bt

Ports 1-16 provide PoE power supply functionality with a maximum output power up to 90W each port. This can supply power to PDs such as internet phones, network cameras, wireless access points. Connect the switch PoE port directly to the PD port using a network cable.

When connecting switches capable of supplying PoE, consider the following information:

- Switch models with PoE function are PSEs. These models are capable of supplying DC power to attached PDs, such as VoIP phones, IP cameras, and wireless access points (APs). PoE switches. Additionally, PoE switches are capable of detecting and supplying power to pre-standard legacy PoE Power Devices. Due to the support for legacy PoE, there is a possibility that PoE switches acting as a PSE may inadvertently detect and supply power an attached PSE, including other PoE switches. This false detection may result in a PoE switch operating improperly and unable to supply power to attached PDs.
- The prevention of a false detection can be easily remedied by disabling PoE on the ports that are used to connect PSEs. Another simple practice to prevent a false detection is to first power up a PSE device before connecting it to a PoE switch.
- When a device is falsely detected as a PD, disconnect the device from the PoE port and power recycle the device with AC power before reconnecting it to the PoE port.

3.1.4. Starting the Web-based Configuration Utility

This section describes how to navigate the web-based switch configuration utility.

Be sure to disable any pop-up blocker.

Browser Restrictions

- If you are using older versions of Internet Explorer, you cannot directly use an IPv6 address to access the device. You can, however, use the DNS (Domain Name System) server to create a domain name that contains the IPv6 address, and then use that domain name in the address bar in place of the IPv6 address.
- If you have multiple IPv6 interfaces on your management station, use the IPv6 global address instead of the IPv6 link local address to access the device from your browser.

Launching the Configuration Utility

To open the web-based configuration utility:

1. Open a Web browser.
2. Enter the IP address of the device you are configuring in the address bar on the browser (factory default IP address is 192.168.2.1) and then press Enter.

When the device is using the factory default IP address, its power LED flashes continuously. When the device is using a DHCP assigned IP address or an administrator-configured static IP address, the power LED is lit a solid color. Your computer's IP address must be in the same subnet as the switch. For example, if the switch is using the factory default IP address, your computer's IP address can be in the following range: 192.168.2.x (whereas x is a number from 2 to 254).

After a successful connection, the login window displays.

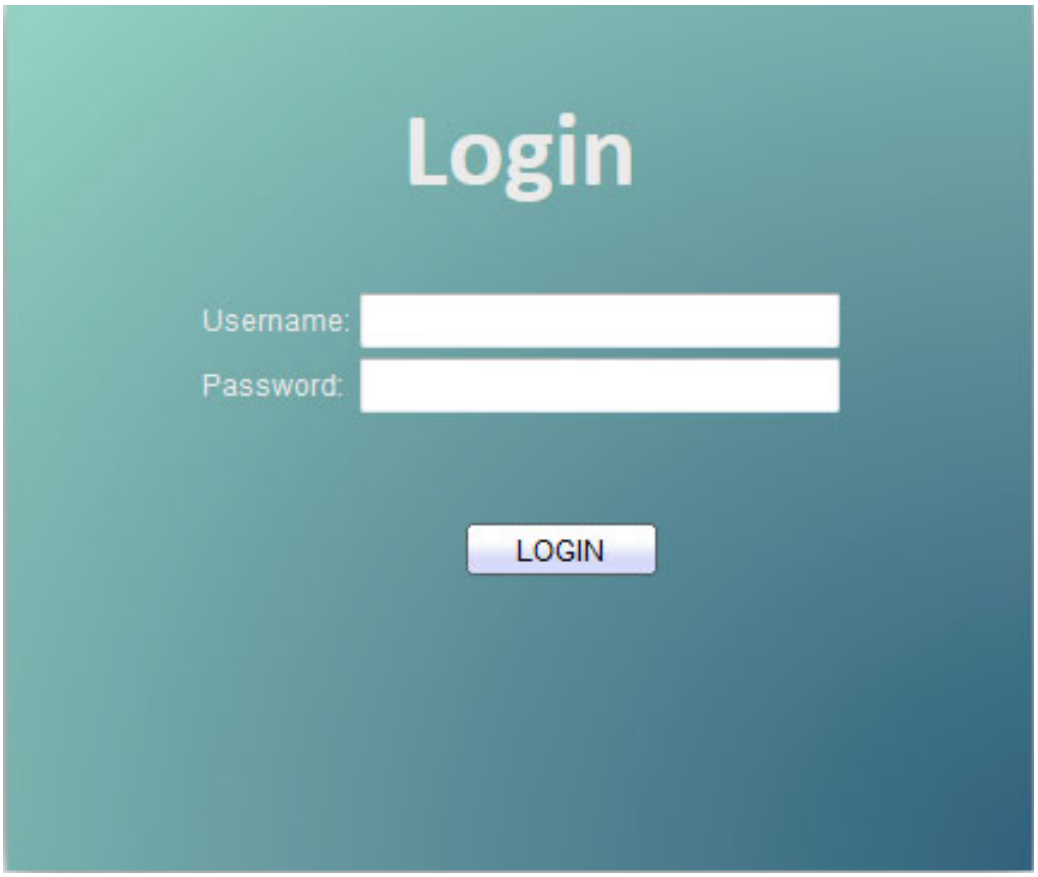


Figure 9 - Login Window

3.1.5. Logging In

The default username is admin and the default password is admin. The first time that you log in with the default username and password, you are required to enter a new password.

To log in to the device configuration utility:

1. Enter the default user ID (admin) and the default password (password).
2. If this is the first time that you logged on with the default user ID (admin) and the default password (password) it is recommended that you change your password immediately. See "4.14.1. User Account" on page 174 for additional information.

When the login attempt is successful, the **System Information** window displays.

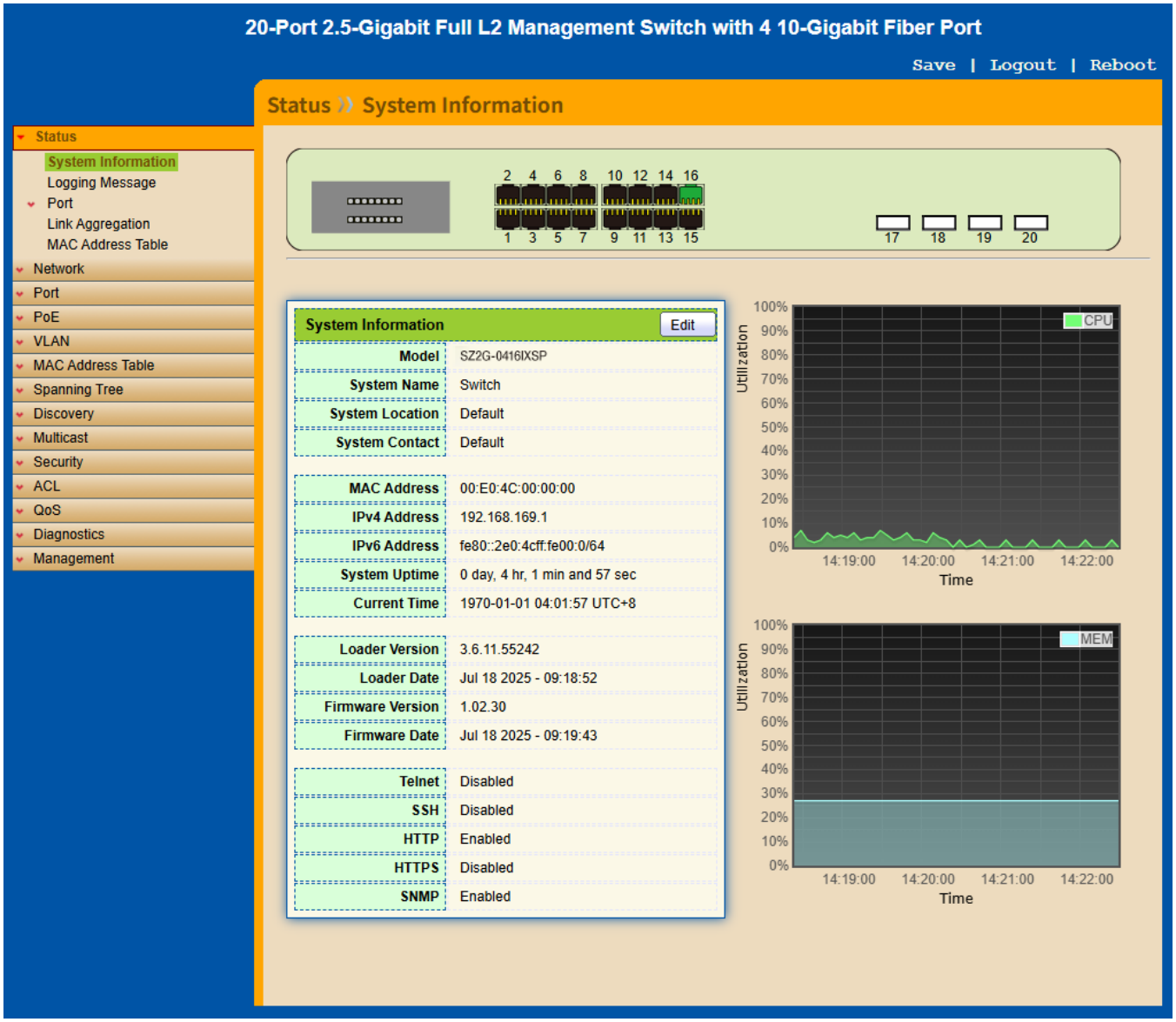


Figure 10 - System Information

If you entered an incorrect username or password, an error message appears and the Login page remains displayed on the window. If you are having problems logging in,

please see the Launching the Configuration Utility Section in the Administration Guide for additional information.

Logging Out

By default, the application logs out after ten minutes of inactivity.

To logout, click Logout in the top right corner of any page. The system logs out of the device.

When a timeout occurs or you intentionally log out of the system, a message appears and the Login page appears, with a message indicating the logged-out state. After you log in, the application returns to the initial page.

4. Web-based Switch Configuration

The PoE smart switch software provides rich Layer 2 functionality for switches in your networks. This chapter describes how to use the web-based management interface (Web UI) to configure the switch's features.

For the purposes of this manual, the user interface is separated into four sections, as shown in the following figure:

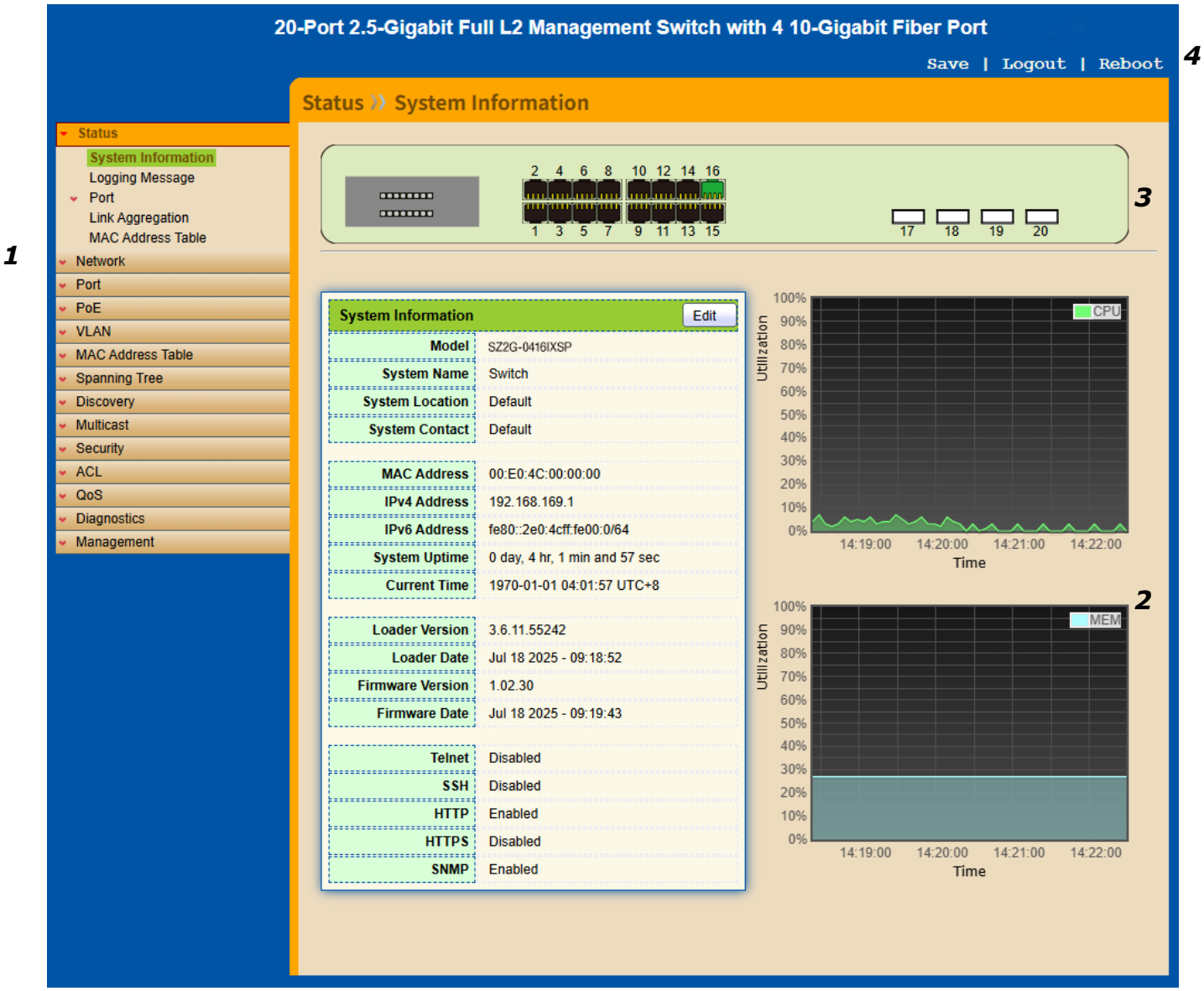


Figure 11 - User Interface

No.	Name	Description
1	Configuration menu	Navigate to locate specific switch functions.

2	Configuration settings	Edit specific function settings.
3	Switch’s current link status	Green squares indicate the port link is up, while black squares indicate the port link is down.
4	Common toolbar	Provides access to frequently used settings.

4.1. Status

Use the Status pages to view system information and status.

4.1.1. System Information

This page shows switch panel, CPU utilization, Memory utilization and other system current information. It also allows user to edit some system information.

To display the Device Information web page, click **Status > System Information**.

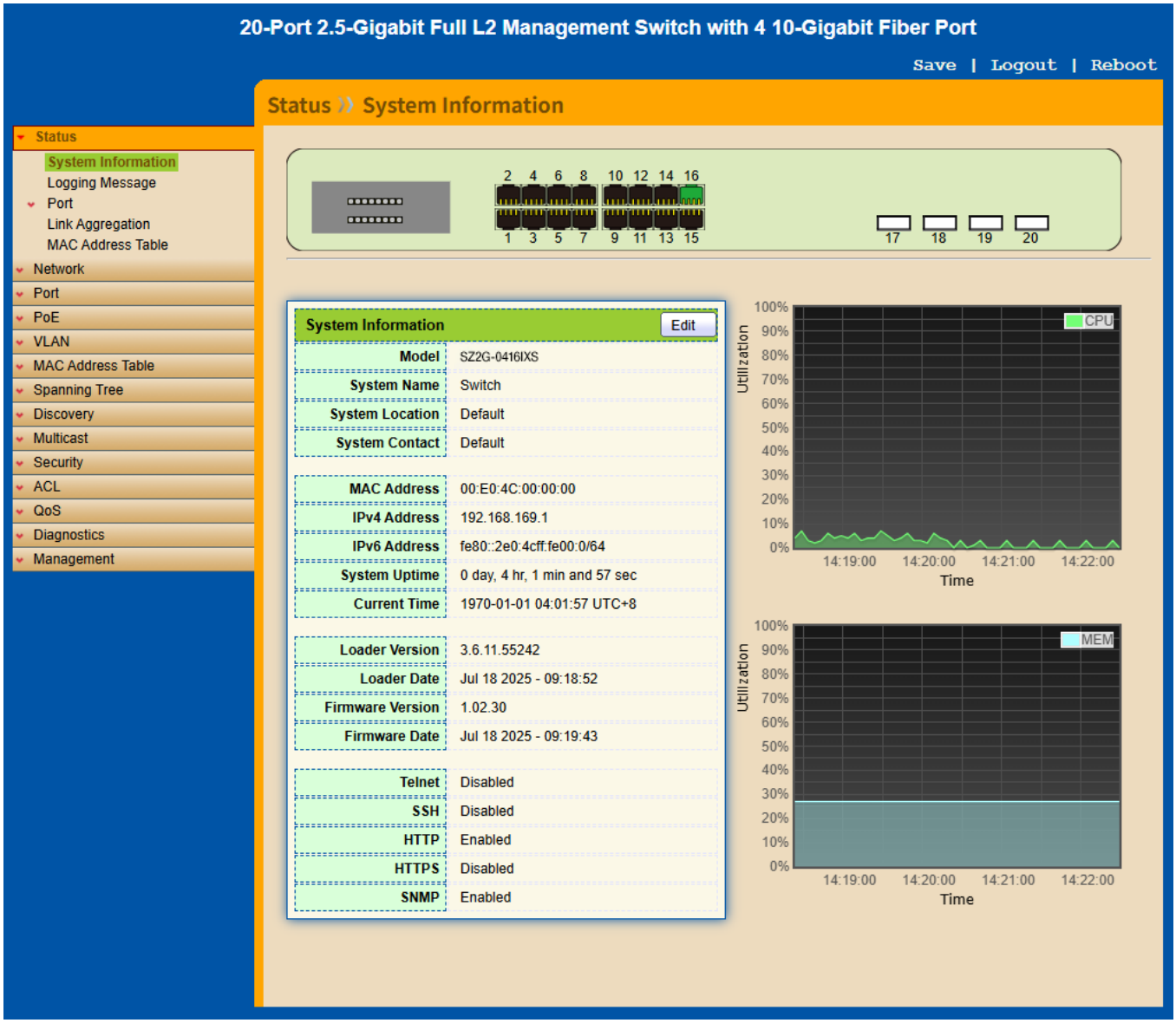


Figure 12 - Status > System Information

Item	Description
Model	Model name of the switch.
System Name	System name of the switch. This name will also use as CLI prefix of each line. (“Switch>” or “Switch#”).

System Location	Location information of the switch.
System Contact	Contact information of the switch.
MAC Address	Base MAC address of the switch.
IPv4 Address	Current system IPv4 address.
IPv6 Address	Current system IPv6 address.
System Uptime	Total elapsed time from booting.
Current Time	Current system time.
Loader Version	Boot loader image version.
Loader Date	Boot loader image build date.
Firmware Version	Current running firmware image version.
Firmware Date	Current running firmware image build date.
Telnet	Current Telnet service enable/disable state.
SSH	Current SSH service enable/disable state.
HTTP	Current HTTP service enable/disable state.
HTTPS	Current HTTPS service enable/disable state.
SNMP	Current SNMP service enable/disable state.

Click "Edit" button on the table title to edit following system information.

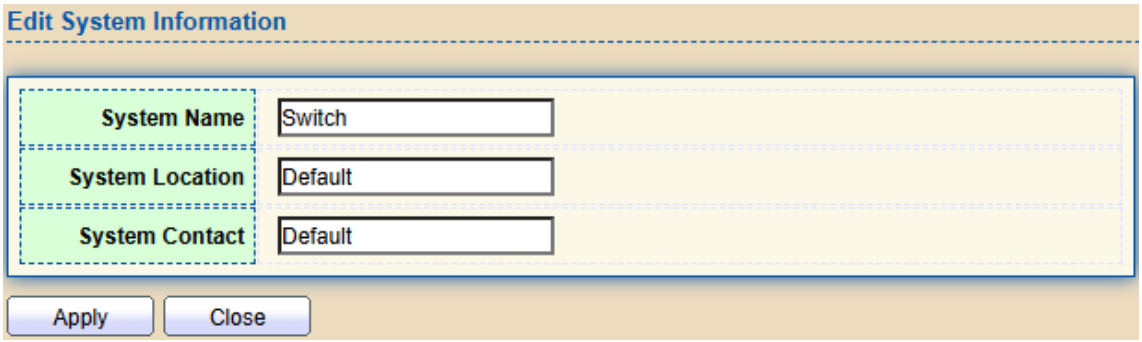


Figure 13 - Status > System Information > Edit System Information

Item	Description
System Name	System name of the switch. This name will also use as CLI prefix of each line. ("Switch>" or "Switch#").
System Location	Location information of the switch.
System Contact	Contact information of the switch.

4.1.2. Logging Message

To view the logging messages stored on the RAM and Flash, click **Status > Logging Message**.

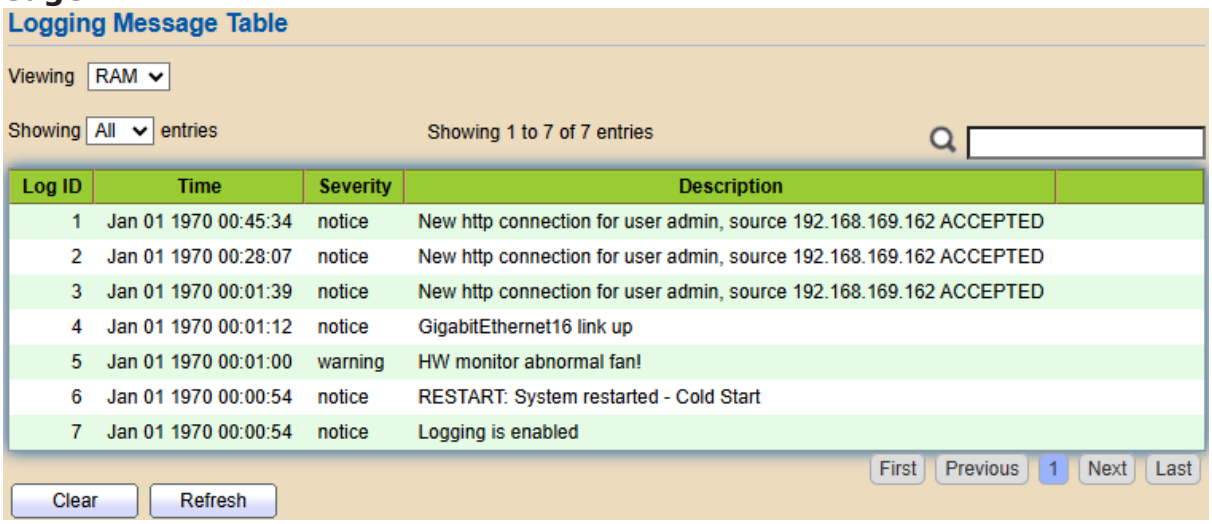


Figure 14 - Status > Logging Message

Item	Description
Log ID	The log identifier.
Time	The time stamp for the logging message.
Severity	The severity for the logging message.
Description	The description of logging message.
Viewing	The logging view including: · • RAM: Show the logging messages stored on the RAM. • Flash: Show the logging messages stored on the Flash.
Clear	Clear the logging messages.
Refresh	Refresh the logging messages.

4.1.3. Port

The Port configuration page displays port summary and status information.

4.1.3.1. Statistics

This page displays standard counters on network traffic form the Interfaces, Ethernet -like and RMONMIB. Interfaces and Ethernet-like counters display errors on the traffic passing through each port. RMON counters provide a total count of different frame types and sizes passing through each port. The “Clear” button will clear MIB counter of current selected port.

To display the Port Flow Chart web page, click **Status > Port > Statistics**.

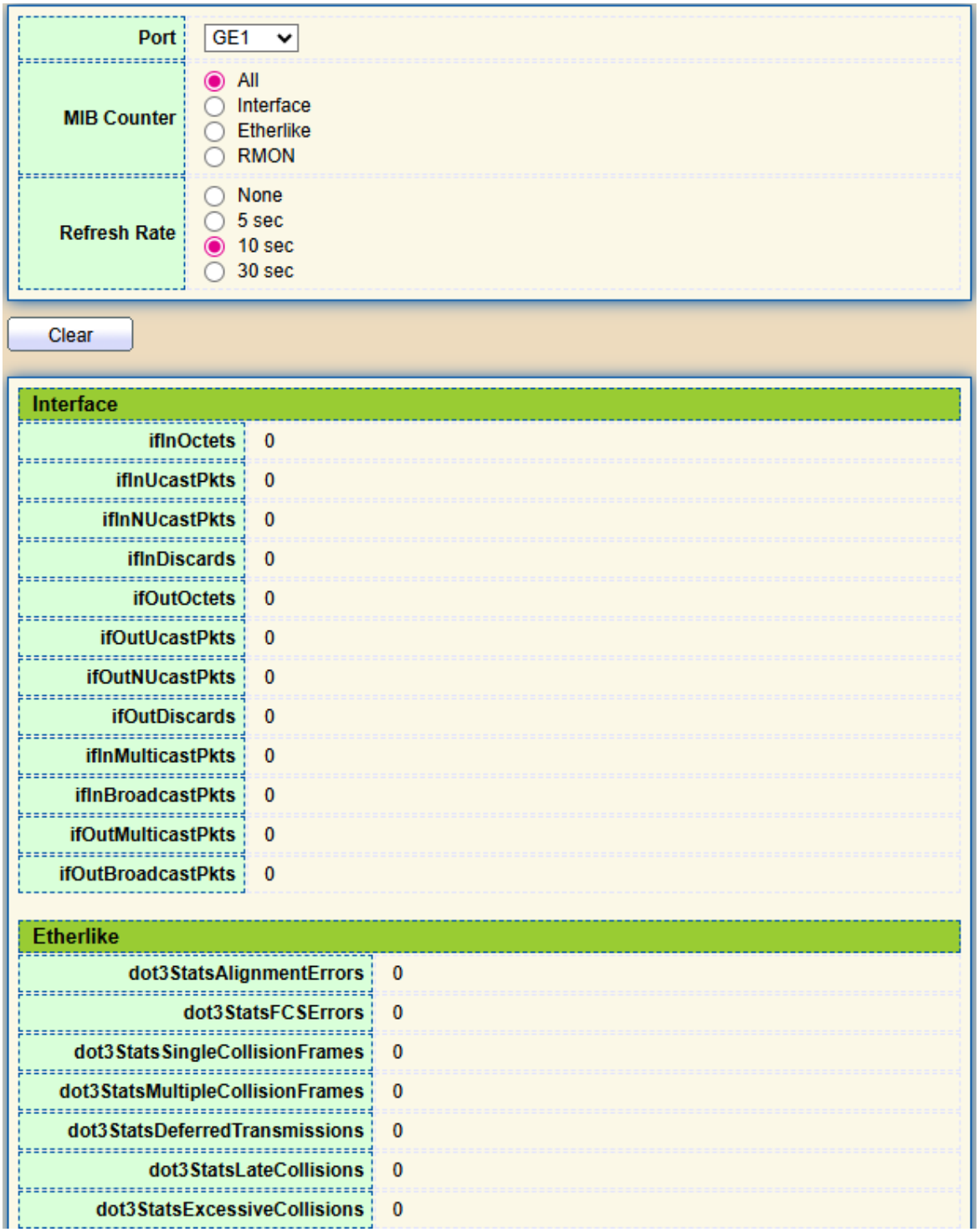

Port
GE1
MIB Counter
All
Interface
Etherlike
RMON
Refresh Rate
None
5 sec
10 sec
30 sec
Clear
Interface
ifInOctets 0
ifInUcastPkts 0
ifInNUcastPkts 0
ifInDiscards 0
ifOutOctets 0
ifOutUcastPkts 0
ifOutNUcastPkts 0
ifOutDiscards 0
ifInMulticastPkts 0
ifInBroadcastPkts 0
ifOutMulticastPkts 0
ifOutBroadcastPkts 0
Etherlike
dot3StatsAlignmentErrors 0
dot3StatsFCSErrors 0
dot3StatsSingleCollisionFrames 0
dot3StatsMultipleCollisionFrames 0
dot3StatsDeferredTransmissions 0
dot3StatsLateCollisions 0
dot3StatsExcessiveCollisions 0

Figure 15 - Status > Port > Statistics

Item	Description
Port	Select one port to show counter statistics.
MIB Counter	Select the MIB counter to show different counter type • All: All counters. • Interface: Interface related MIB counters. • Etherlike: Ethernet-like related MIB counters. • RMON: RMON related MIB counters.
Refresh Rate	Refresh the web page every period of seconds to get new counter of specified port.

4.1.3.2. Error Disabled

To display the Error Disabled web page, click **Status > Port > Error Disabled**.

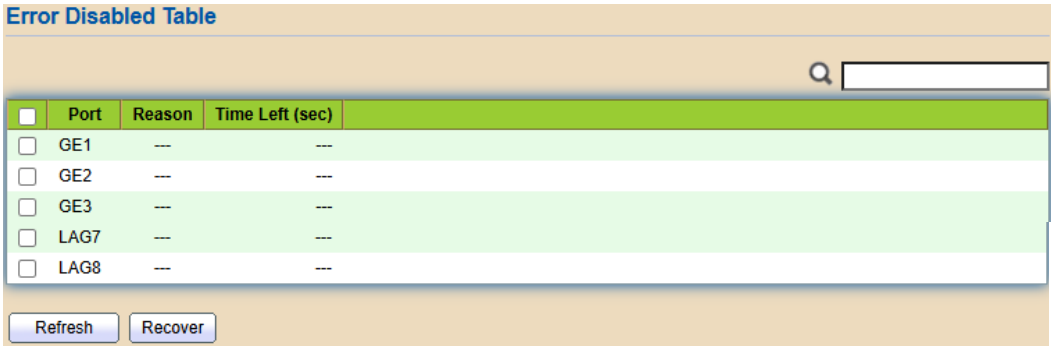


Figure 16 - Status > Port > Error Disabled

Item	Description
☐	Select one or more port to operate.
Port	Interface or port number.
Reason	Port will be disabled by one of the following error reasons: • BPDU Guard • UDLD • Self Loop • Broadcast Flood • Unknown Multicast Flood • Unicast Flood • ACL • Port Security Violation • DHCP rate limit • ARP rate limit
Time Left (sec)	The time left in second for the error recovery.
Refresh	Refresh the current page.
Recover	Recover the selected port status.

4.1.3.3. Bandwidth Utilization

This page allow user to browse ports' bandwidth utilization in real time. This page will refresh automatically in every refresh period.

To display Bandwidth Utilization web page, click **Status > Port > Bandwidth Utilization.**

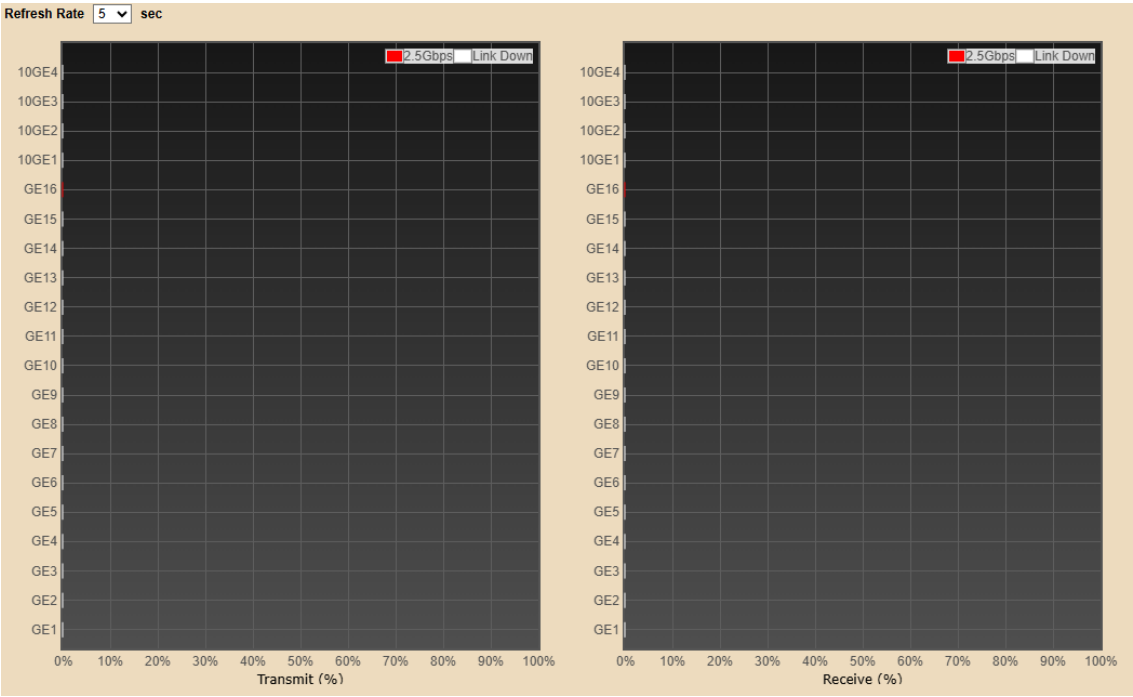


Figure 17 - Status > Port > Bandwidth Utilization

Item	Description
Refresh Rate	Refresh the web page every period of seconds to get new bandwidth utilization data.

4.1.4. Link Aggregation

To display the Link Aggregation web page, click **Status > Link Aggregation**.

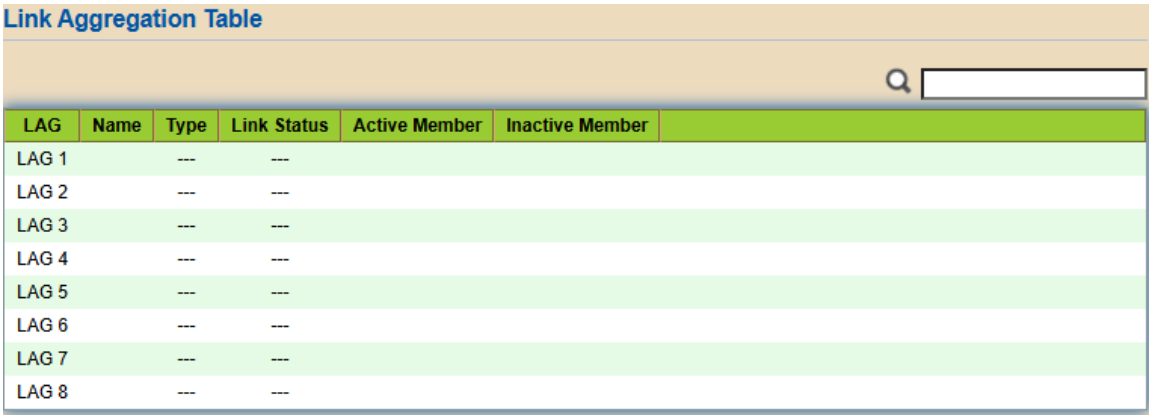


Figure 18 - Status > Link Aggregation

Item	Description
LAG	LAG Name.
Name	LAG port description.

Type	• The type of the LAG. • Static: The group of ports assigned to a static LAG are always active members. • LACP: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports.
Link Status	LAG port link status.
Active Member	Active member ports of the LAG.
Inactive Member	Inactive member ports of the LAG.

4.1.5. MAC Address Table

The MAC address table page displays all MAC address entries on the switch including static MAC address created by administrator or auto learned from hardware. The "Clear" button will clear all dynamic entries and "Refresh" button will retrieve latest MAC address entries and show them on page.

To display the MAC Address Table web page, click **Status > MAC Address Table**.

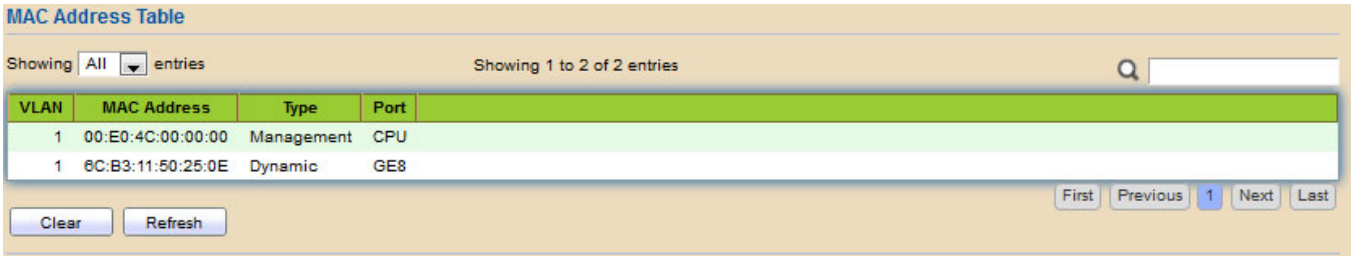


Figure 19 - Status > MAC Address Table

Item	Description
VLAN	VLAN ID of the mac address.
MAC Address	MAC address.
Type	The type of MAC address • Management: DUT's base mac address for management Purpose. • Static: Manually configured by administrator • Dynamic: Auto learned by hardware.
Port	The type of Port • CPU: DUT's CPU port for management purpose. • Other: Normal switch port.

4.2. Network

Use the Network pages to configure settings for the switch network interface and how the switch connects to a remote server to get services.

4.2.1. IP Address

This section allows you to edit the IP address, Netmask, Gateway and DNS server of the switch.

To view the IP Address menu, navigate to **Network > IP Address**.

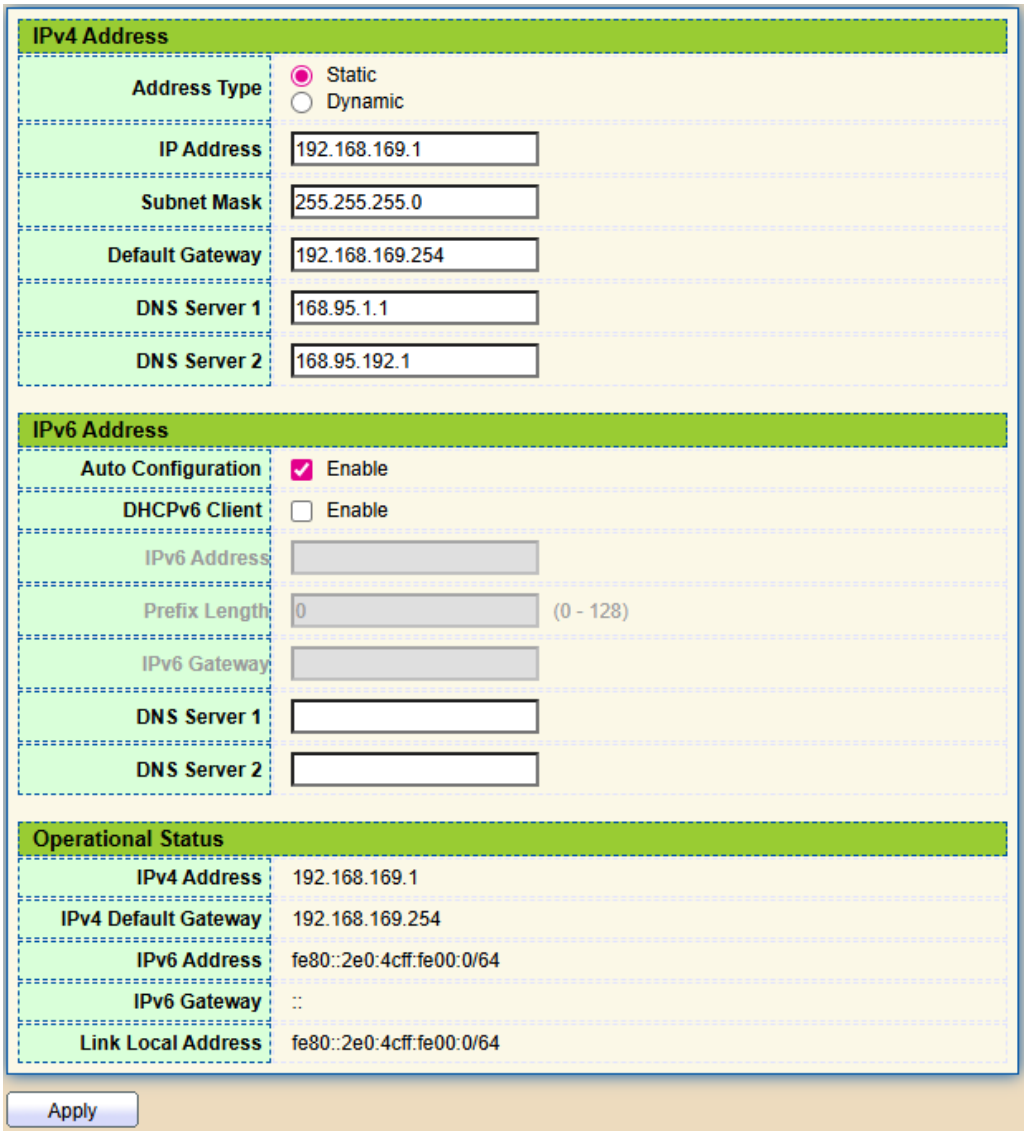


Figure 20 - Network > IP Address

Item	Description
Address Type	The address type of switch IP configuration including • **Static**: Static IP configured by users will be used. • **Dynamic**: Enable the DHCP to obtain the IP address from a DHCP server.
IP Address	Specify the switch static IP address on the static configuration.

Subnet Mask	Specify the switch subnet mask on the static configuration.
Default Gateway	Specify the default gateway on the static configuration. The default gateway must be in the same subnet with switch IP address configuration.
DNS Server 1	Specify the primary user-defined IPv4 DNS server configuration.
DNS Server 2	Specify the secondary user-defined IPv4 DNS server configuration.
Table 3-2: IPv6 Address fields	
IPv4 Address	The operational IPv4 address of the switch.
IPv4 Gateway	The operational IPv4 gateway of the switch.
IPv6 Address v6	The operational IPv6 address of the switch.
IPv6 Gateway	The operational IPv6 gateway of the switch.
Link Local Address	The IPv6 link local address for the switch.

4.2.2. System Time

This page allow user to set time source, static time, time zone and daylight saving settings. Time zone and daylight saving takes effect both static time or time from SNTP server.

To display System Time page, click **Network > System Time**

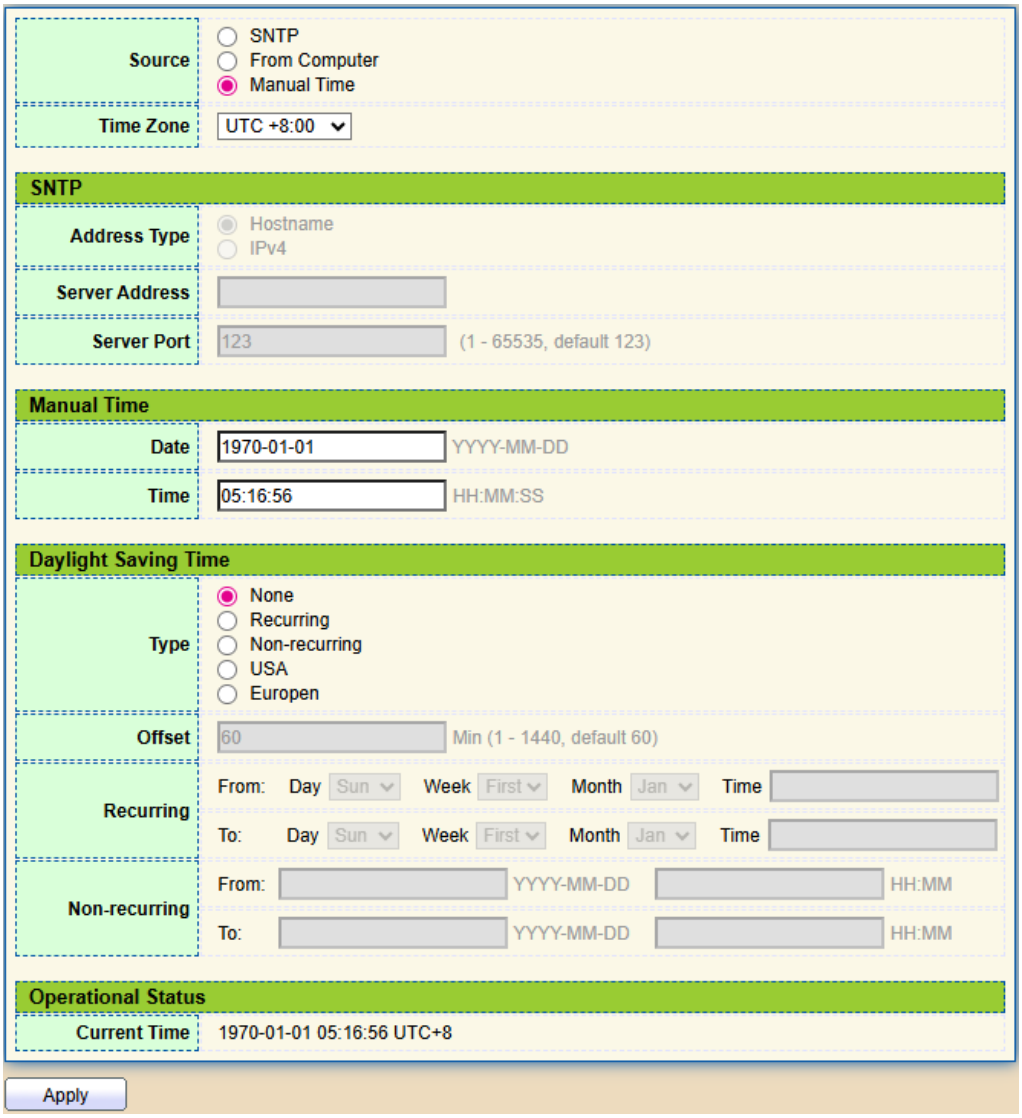


Figure 21 - Network > System Time

Item	Description
Source	Select the time source. • SNTP: Time sync from NTP server. • From Computer: Time set from browser host. • Manual Time: Time set by manually configure.
Time Zone	Select a time zone difference from listing district.
SNTP	
Address Type	Select the address type of NTP server. This is enabled when time source is SNTP.
Server Address	Input IPv4 address or hostname for NTP server. This is enabled when time source is SNTP.
Server Port	Input NTP port for NTP server. Default is 123. This is enabled when time source is SNTP.
Manual Time	

Date	Input manual date. This is enabled when time source is manual.
Time	Input manual time. This is enabled when time source is manual.
Daylight Saving Time	
Type	Select the mode of daylight saving time. • Disable: Disable daylight saving time. • Recurring: Using recurring mode of daylight saving time. • Non-Recurring: Using non-recurring mode of daylight saving time. • USA: Using daylight saving time in the United States that starts on the second Sunday of March and ends on the first Sunday of November. • European: Using daylight saving time in the Europe that starts on the last Sunday in March and ending on the last Sunday in October.
Offset	Specify the adjust offset of daylight saving time.
Recurring From	Specify the starting time of recurring daylight saving time. This field available when selecting “Recurring” mode.
Recurring To	Specify the ending time of recurring daylight saving time. This field available when selecting “Recurring” mode.
Non-recurring From	Specify the starting time of non-recurring daylight saving time. This field available when selecting “Non-recurring” mode.
Non-recurring To	Specify the ending time of recurring daylight saving time. This field available when selecting “Non-recurring”

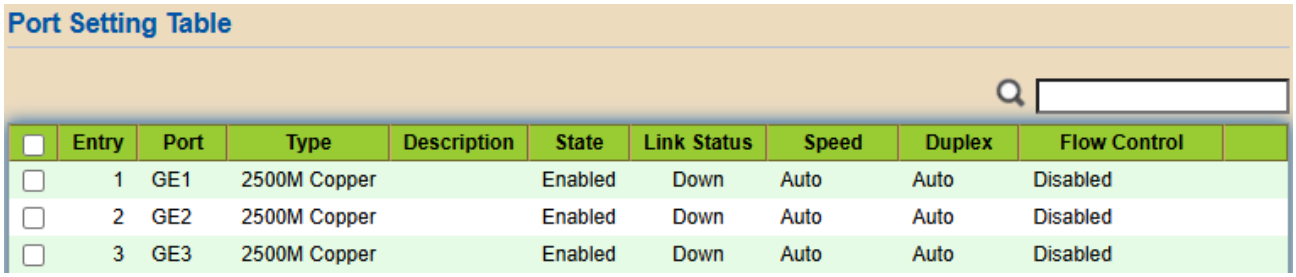
4.3. Port

Use the Port pages to configure settings for switch port related features.

4.3.1. Port Setting

This page shows port current status and allow user to edit port configurations. Select port entry and click “Edit” button to edit port configurations.

To display Port Setting web page, click **Port > Port Setting**



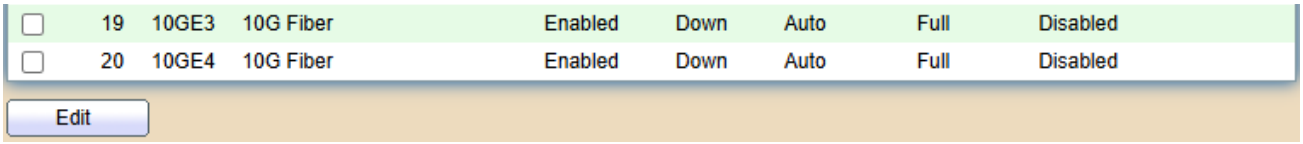


Figure 22 - Port > Port Setting

Item	Description
Port	Port Name.
Type	Port media type.
Description	Port Description.
State	Port admin state • Enabled: Enable the port. • Disabled: Disable the port.
Link Status	Current port link status • Up: Port is link up. • Down: Port is link down.
Speed	Current port speed configuration and link speed status.
Duplex	Current port duplex configuration and link duplex status.
Flow Control	Current port flow control configuration and link flow control status.

Click "Edit" button to edit Port Setting menu,

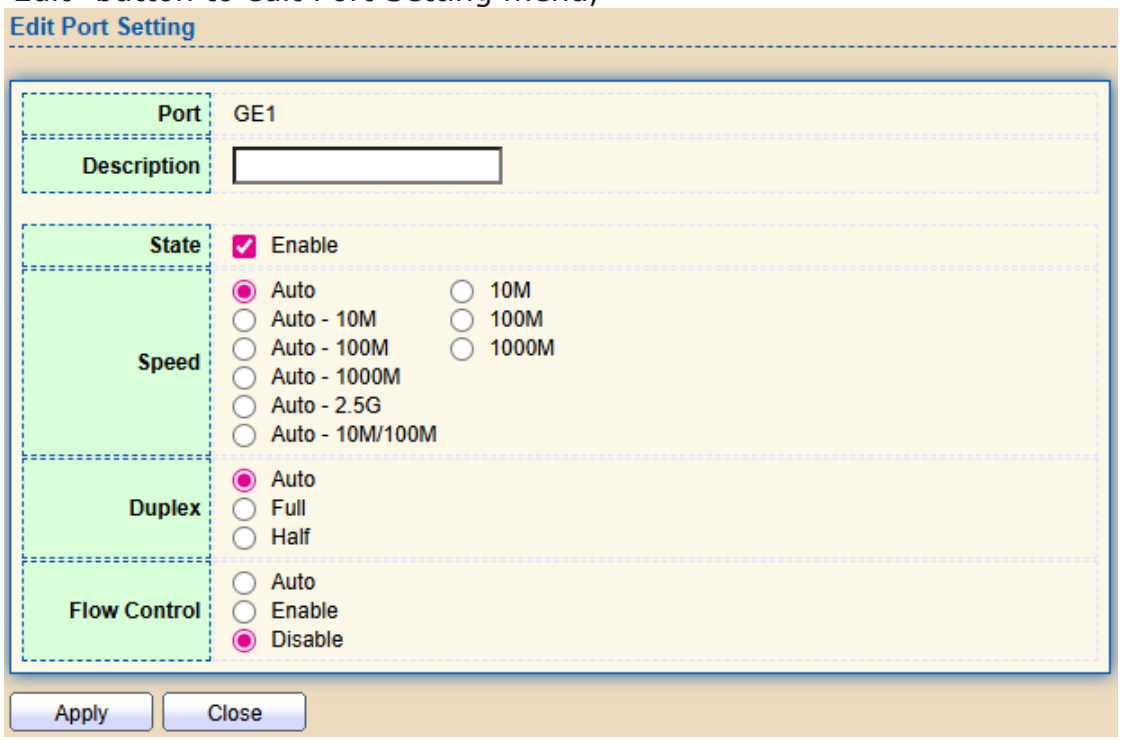


Figure 23 - Port > Port Setting > Port Setting

Item	Description

Port	Selected Port list.
Description	Port media type.
State	Port admin state. • Enabled: Enable the port. • Disabled: Disable the port.
Speed	Port speed capabilities. • Auto: Auto speed with all capabilities. • Auto-10M: Auto speed with 10M ability only. • Auto-100M: Auto speed with 100M ability only. • Auto-1000M: Auto speed with 1000M ability only. • Auto-2.5G: Auto speed with 2.5G ability. • Auto-10M/100M: Auto speed with 10M/100M abilities. • 10M: Force speed with 10M ability. • 100M: Force speed with 100M ability. • 1000M: Force speed with 1000M ability.
Duplex	Port duplex capabilities. • Auto: Auto duplex with all capabilities. • Half: Auto speed with 10M and 100M ability only. • Full: Auto speed with 10M/100M/1000M ability only.
Flow Control	Port flow control. • Auto: Auto flow control by negotiation. • Enabled: Enable flow control ability. • Disabled: Disable flow control ability.

4.3.2. Error Disable

To display Error Disabled web page, click **Port > Error Disabled**

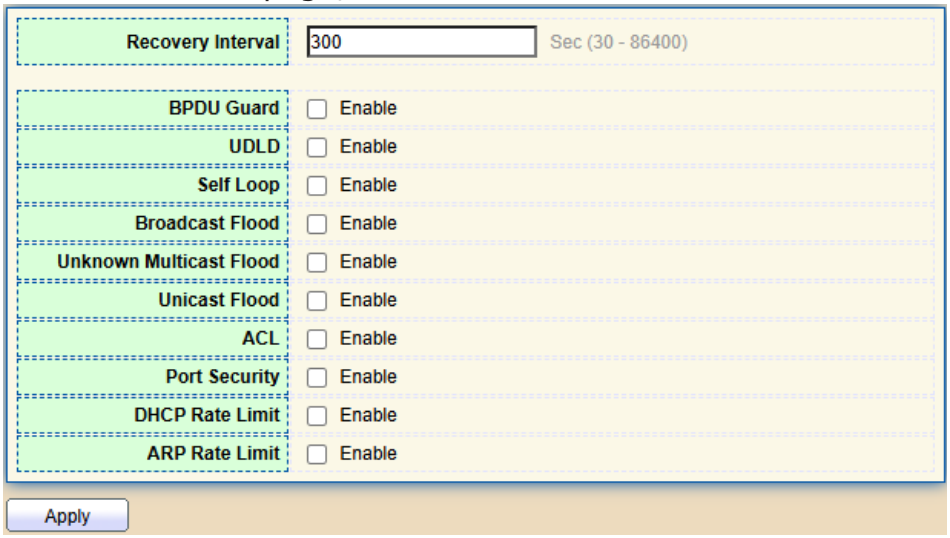


Figure 24 - Port > Error disable

Item	Description
Recover Interval	Auto recovery after this interval for error disabled port.
BPDU Guard	Enabled to auto shutdown port when BPDU Guard reason occur. This reason caused by STP BPDU Guard mechanism.
UDLD	Enabled to auto shutdown port when UDLD violation occur.
Self Loop	Enabled to auto shutdown port when Self Loop reason occur.
Broadcast Flood	Enabled to auto shutdown port when Broadcast Flood reason occur. This reason caused by broadcast rate exceed broadcast storm control rate.
Unknown Multicast Flood	Enabled to auto shutdown port when Unknown Multicast Flood reason occur. This reason caused by unknown multicast rate exceed unknown multicast storm control rate.
Unicast Flood	Enabled to auto shutdown port when Unicast Flood reason occur. This reason caused by unicast rate exceed unicast storm control rate.
ACL	Enabled to auto shutdown port when ACL shutdown port reason occur. This reason caused packet match the ACL shutdown port action.
Port Security	Enabled to auto shutdown port when Port Security Violation reason occur. This reason caused by violation port security rules.
DHCP rate limit	Enabled to auto shutdown port when DHCP rate limit reason occurs. This reason caused by DHCP packet rate exceed DHCP rate limit.
ARP rate limit	Enabled to auto shutdown port when ARP rate limit reason occur. This reason caused by DHCP packet rate exceed ARP rate limit.

4.3.3. Link Aggregation

4.3.3.1. Group

This page allow user to configure link aggregation group load balance algorithm and group member.

To view the Group menu, navigate to **Port > Link Aggregation > Group**.

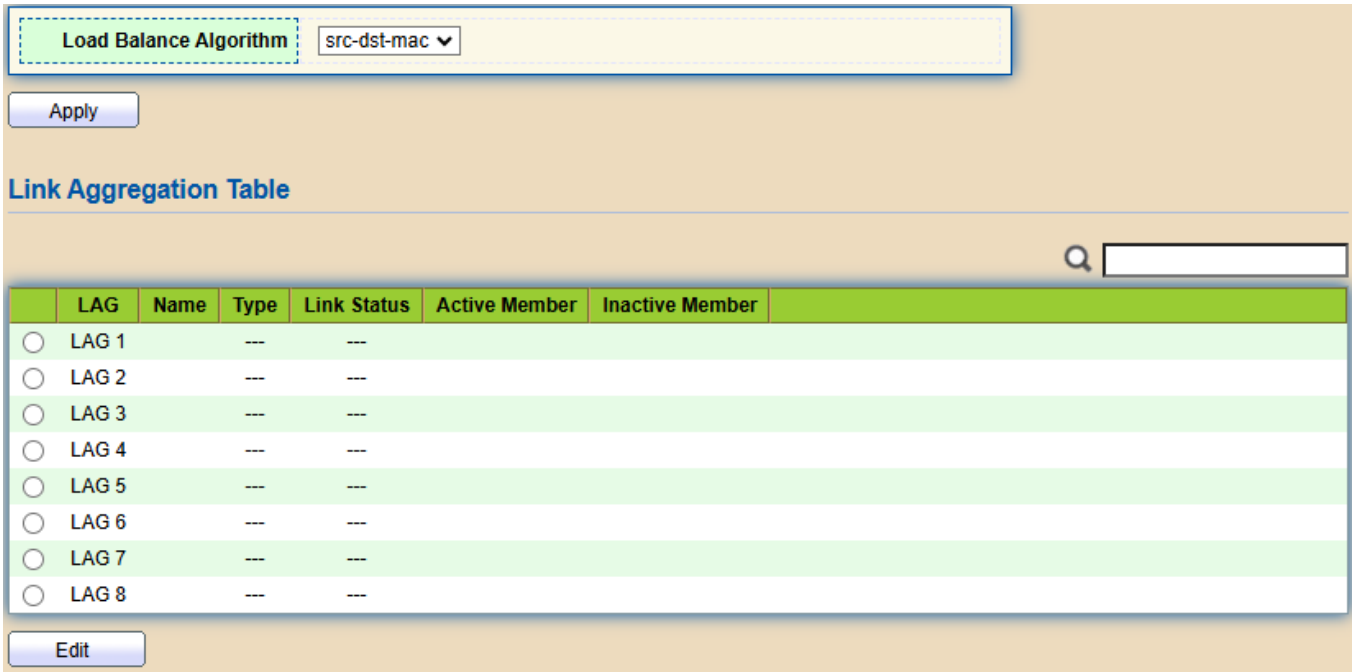


Figure 25 - Port > Link Aggregation > Group

Item	Description
Load Balance Algorithm	LAG load balance distribution algorithm • src-mac: Based on Source MAC address. • dst-mac: Based on Destination MAC address. • src-dst-mac: Based on Source or Destination MAC address. • src-ip: Based on Source IP address • dst-ip: Based on Destination IP address • src-dst-ip: Based on Source or Destination IP address.
LAG	LAG Name.
Name	LAG port description.
Type	The type of the LAG • Static: The group of ports assigned to a static LAG are always active members. • LACP: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports.
Link Status	LAG port link status
Active Member	Active member ports of the LAG.
Inactive Member	Inactive member ports of the LAG.

Click "Edit" to edit Link Aggregation Group menu.

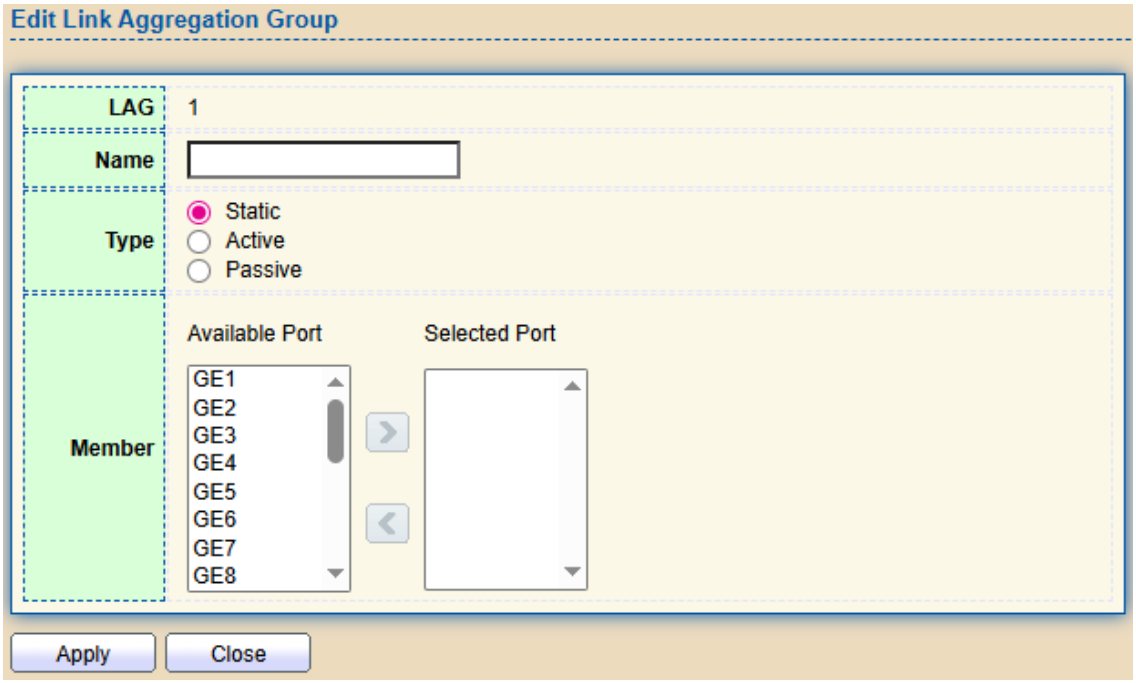


Figure 26 - Port > Link Aggregation > Group > Edit Link Aggregation Group

Item	Description
LAG	Selected LAG group ID.
Name	LAG port description.
Type	The type of the LAG • Static: The group of ports assigned to a static LAG are always active members. • Active: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports. • Passive: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are passive member ports.
Member	Select available port to be LAG group member port.

4.3.3.2. Port Setting

This page shows LAG port current status and allow user to edit LAG port configurations. Select LAG entry and click “Edit” button to edit LAG port configurations.

To display LAG Port Setting web page, click **Port > Link Aggregation > Port Setting.**

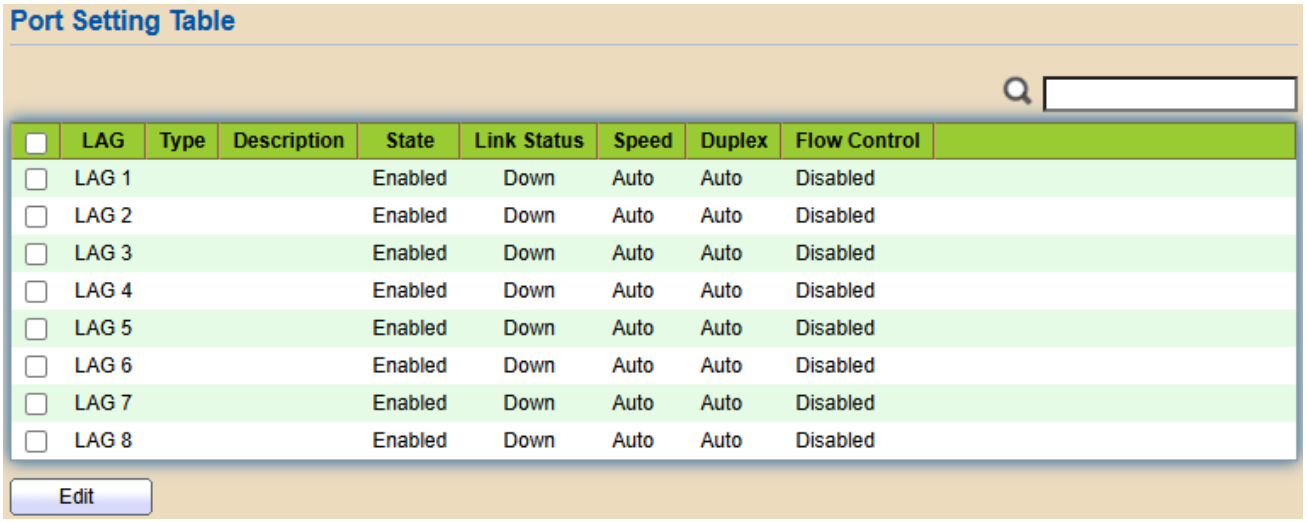


Figure 27 - Port > Link Aggregation > Port Setting

Item	Description
LAG	LAG Port Name.
Type	LAG Port media type.
Description	LAG Port description.
State	LAG Port admin state • Enabled: Enable the port. • Disabled: Disable the port.
Link Status	Current LAG port link status • Up: Port is link up. • Down: Port is link down.
Speed	Current LAG port speed configuration and link speed status.
Duplex	Current LAG port duplex configuration and link duplex status.
Flow Control	Current LAG port flow control configuration and link flow control status.

Click "Edit" to view Edit Port Setting menu.

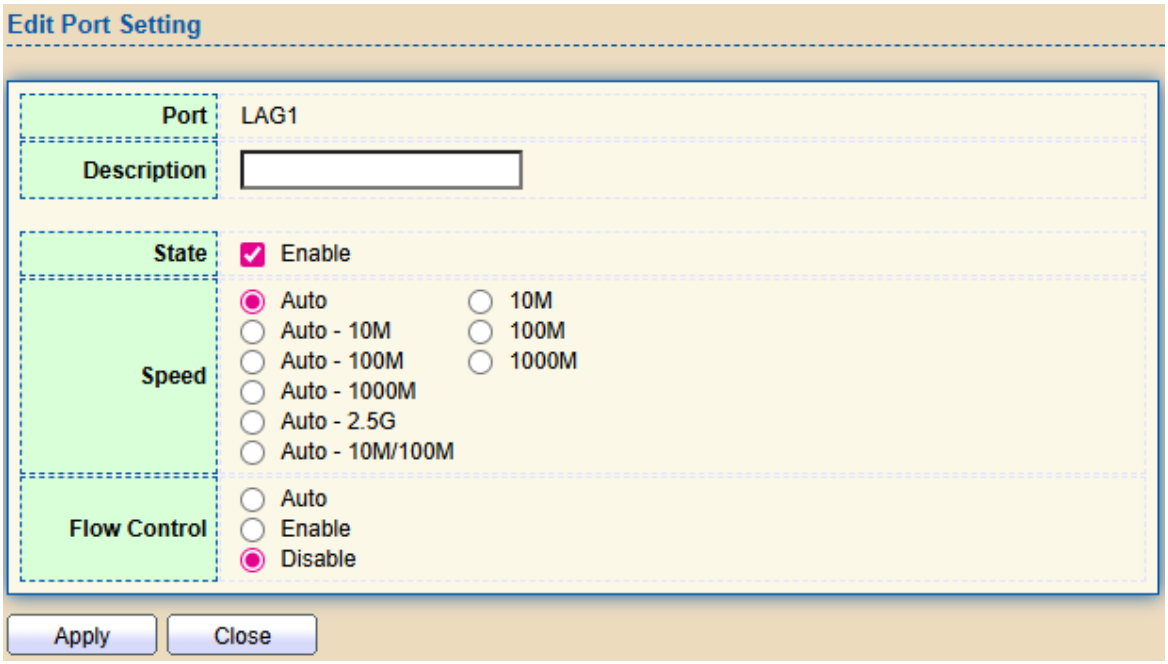


Figure 28 - Port > Link Aggregation > Port Setting > Edit Port Setting

Item	Description
Port	Selected Port list.
Description	Port description.
State	Port admin state • Enabled: Enable the port. • Disabled: Disable the port.
Speed	Port speed capabilities • Auto: Auto speed with all capabilities. • Auto-10M: Auto speed with 10M ability only. • Auto-100M: Auto speed with 100M ability only. • Auto-1000M: Auto speed with 1000M ability only. • Auto-2.5G: Auto speed with 2.5G ability only. • Auto-10M/100M: Auto speed with 10M/100M abilities. • 10M: Force speed with 10M ability. • 100M: Force speed with 100M ability. • 1000M: Force speed with 1000M ability.
Flow Control	Port flow control • Auto: Auto flow control by negotiation. • Enabled: Enable flow control ability. • Disabled: Disable flow control ability.

4.3.3.3. LACP

This page allow user to configure LACP global and port configurations. Select ports and click “Edit” button to edit port configuration.

To display the LACP Setting web page, click **Port > Link Aggregation > LACP**.

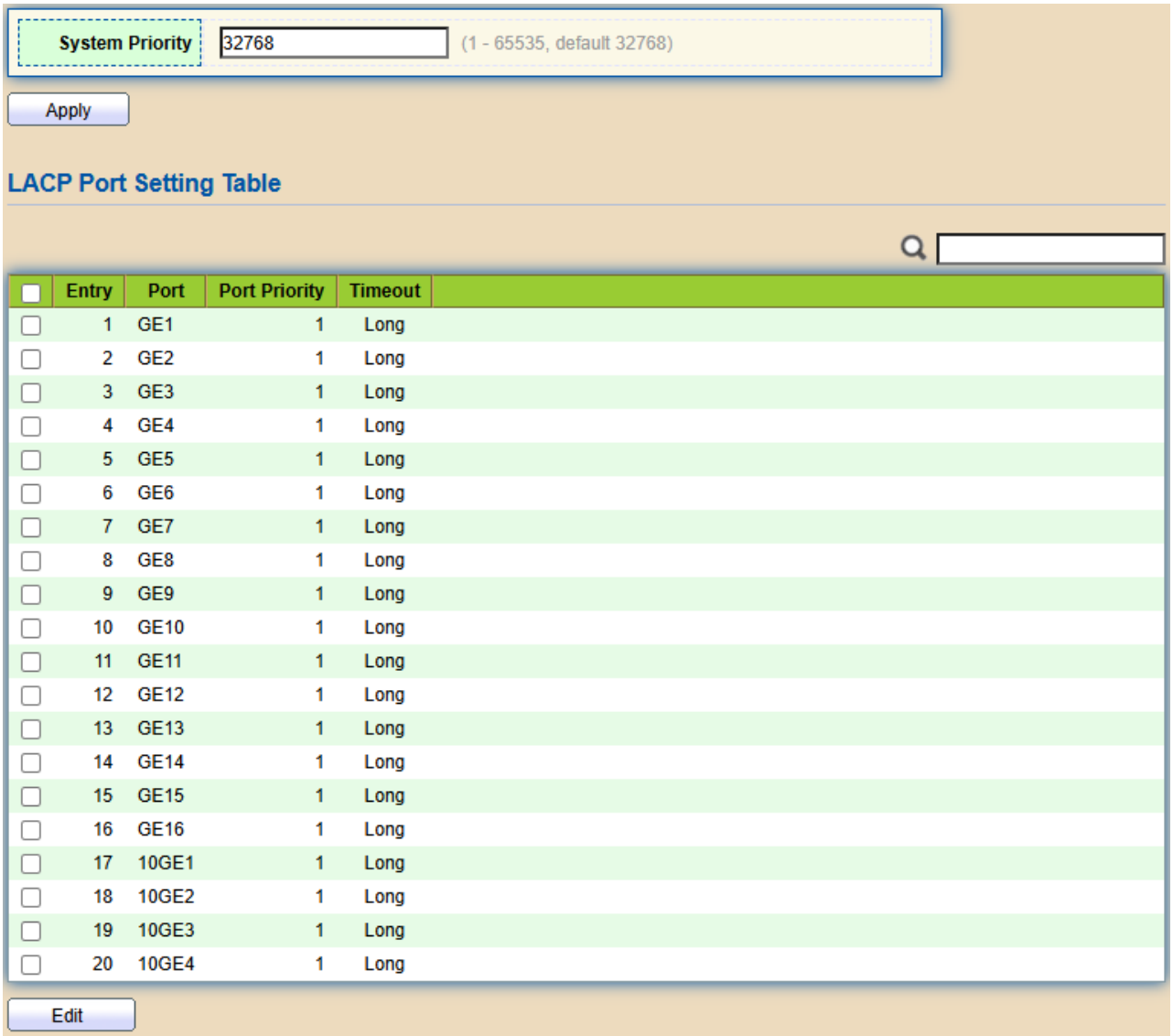


Figure 29 - Port > Link Aggregation > LACP

Item	Description
System Priority	Configure the system priority of LACP. This decides the system priority field in LACP PDU.
Port	Port Name.
Port Priority	LACP priority value of the port.
Timeout	The periodic transmissions type of LACP PDUs. • Long: Transmit LACP PDU with slow periodic (30s). • Short: Transmit LACPP DU with fast periodic (1s).

Click "Edit" button to view Edit LACP Port Setting menu.

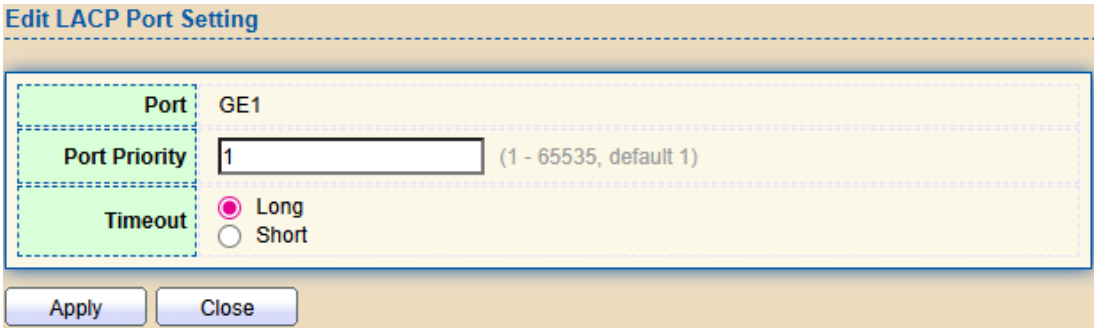


Figure 30 - Port > Link Aggregation > LACP > Edit LACP Port Setting

Item	Description
Port	Selected port list.
Port Priority	Enter the LACP priority value of the port
Timeout	The periodic transmissions type of LACP PDUs. • Long: Transmit LACP PDU with slow periodic (30s). • Short: Transmit LACP PDU with fast periodic (1s).

4.3.4. EEE

This page allow user to configure Energy Efficient Ethernet settings.

To display the EEE web page, click **Port > EEE**.

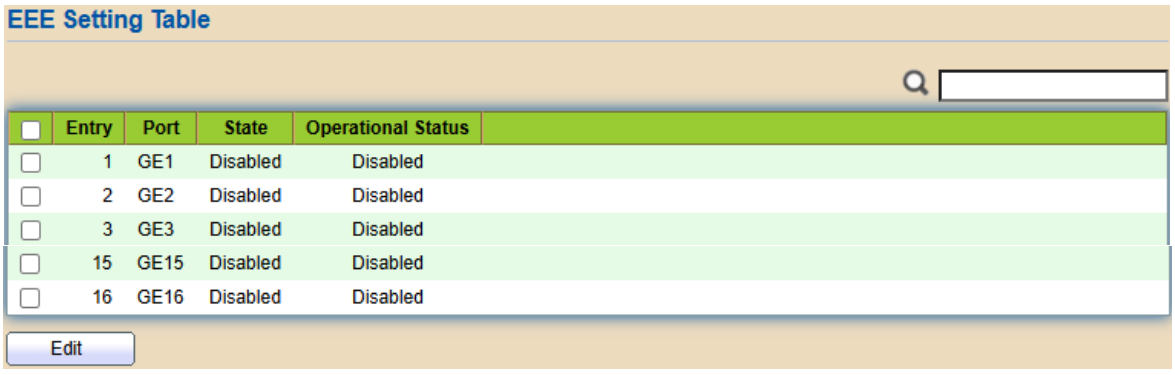


Figure 31 - Port > EEE

Item	Description
Port	Port Name.
State	Port EEE admin state • Enabled: EEE is enabled. • Disabled: EEE is disabled.

Operational Status	Port EEE operational status • Enabled: EEE is operating. • Disabled: EEE is no operating.

Click "**Edit**" to edit the EEE menu.

Figure 32 - Port > EEE > Edit EEE Setting

Item	Description
Port	Port Name
State	Port EEE admin state • Enabled: EEE is enabled. • Disabled: EEE is disabled.

4.3.5. Jumbo Frame

This page allow user to configure switch jumbo frame size.

To display Jumbo Frame web page, click **Port > Jumbo Frame**

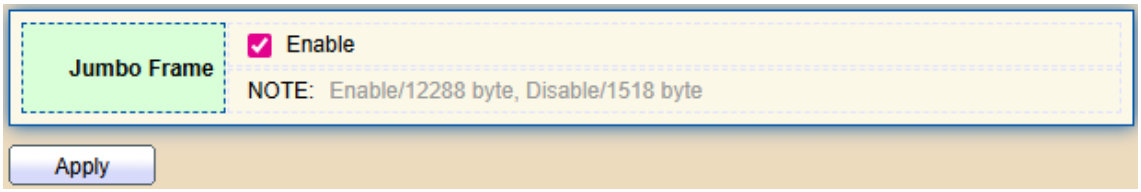


Figure 33 - Port > Jumbo Frame

Item	Description
Jumbo Frame	Enable or disable jumbo frame. When jumbo frame is enabled, switch max frame size is allowed to configure. When jumbo frame is disabled, default frame size 1522 will be used.

4.4. PoE

Port security can set port isolation and specific behavior.

4.4.1. Global Setting

To display the Global web page, click **PoE > Global Setting**.

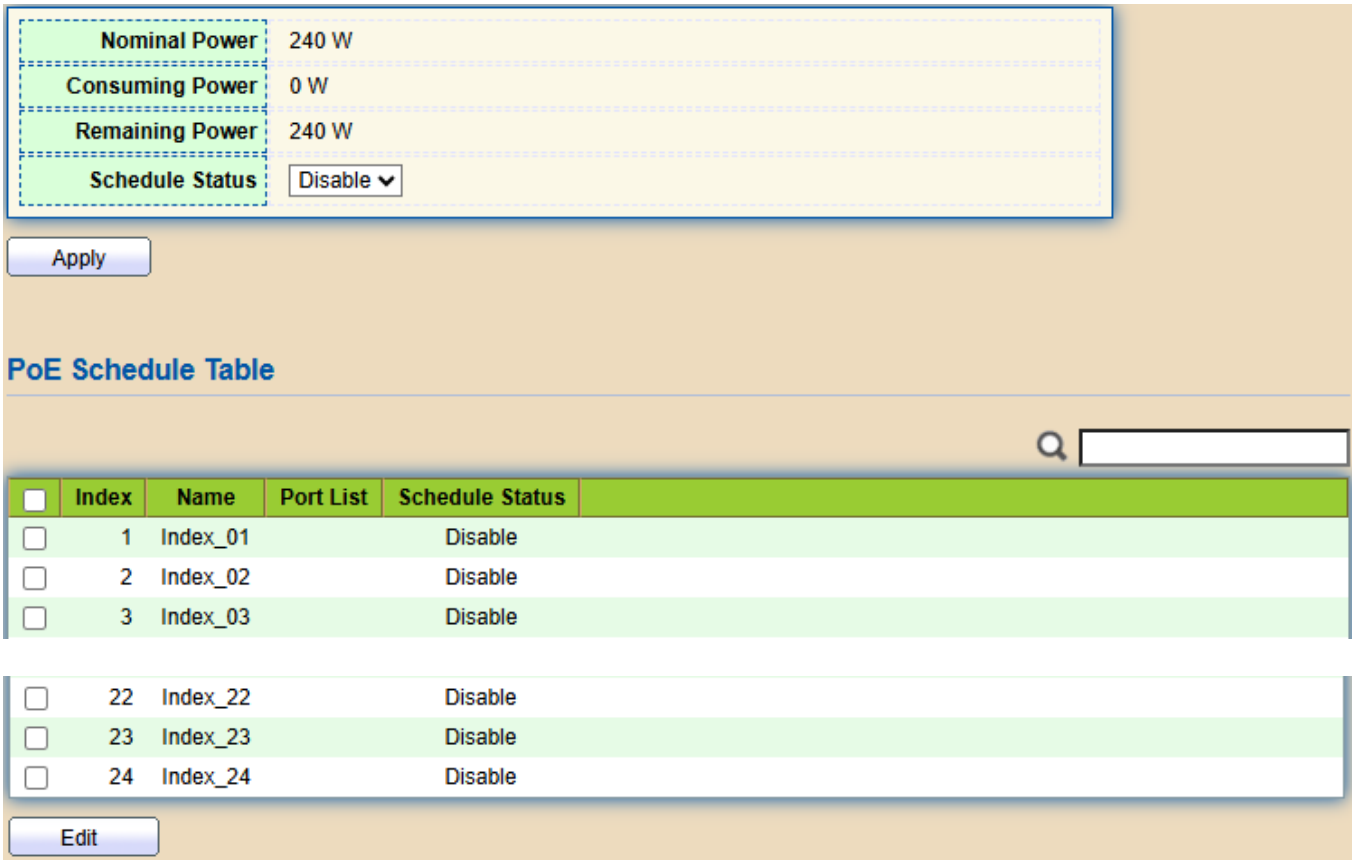


Figure 34 - PoE > Global Setting

Item	Description
Nominal Power	Maximum supply power.
Consuming Power	Current consumed power.
Remaining Power	Remaining available power.
Schedule Status	Schedule status global switch.
Name	PoE Schedule Name.
Port List	The ports provide power in designated schedule index.
Schedule Status	The current schedule status.

Click "Edit" to view PoE Schedule List menu.

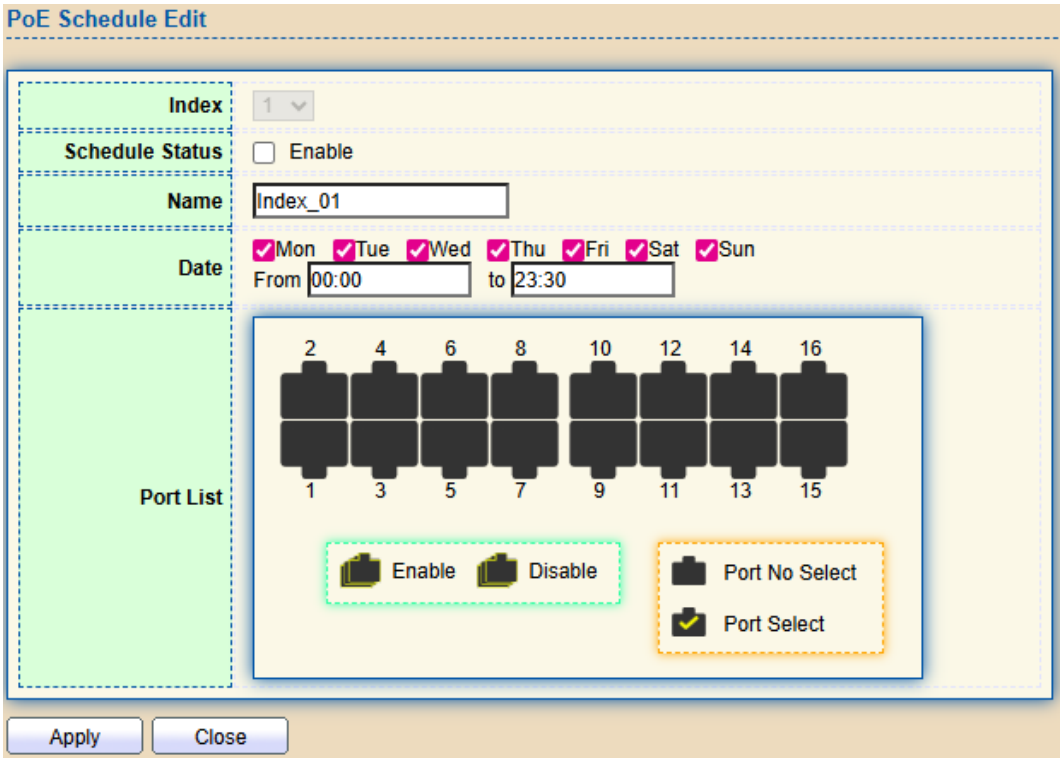


Figure 35 - PoE > Priority Setting > Edit PoE Schedule Edit

Item	Description
Index	The serial number of schedule list.
Schedule Status	Schedule Status • Checked: Schedule status is enabled. • Unchecked: Schedule status is disabled.
Name	Enter the PoE schedule name.
Date	Select a valid time for this schedule.
Port List	Select the port provide power.

4.4.2. Priority Setting

Use this section to set the power supply priority of PoE ports. Individual ports can be assigned critical, high, or low power supply priority.

To display the Priority Setting web page, click **PoE > Priority Setting**.

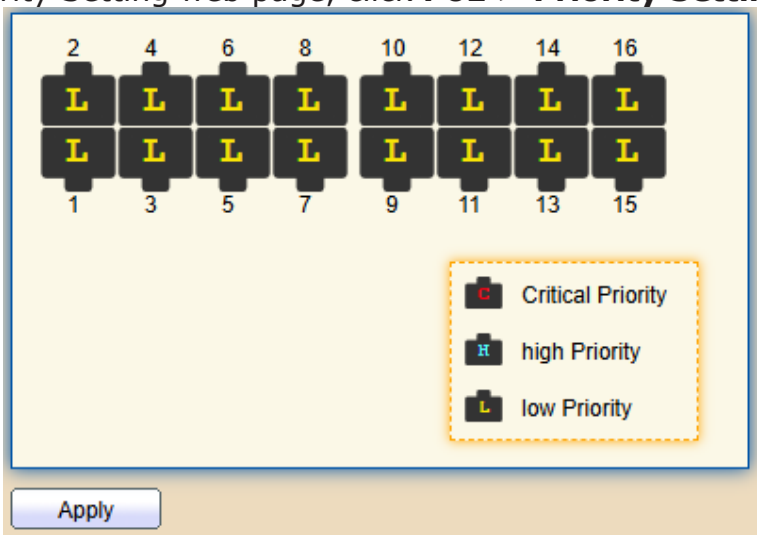


Figure 36 - PoE > Priority Setting

Item	Description
"L" is lower priority, "H" is high priority and "C" is Critical priority. Click the port to change its priority status.	

4.4.3. Power Limit

To display the Power Limit web page, click **PoE > Power Limit**.

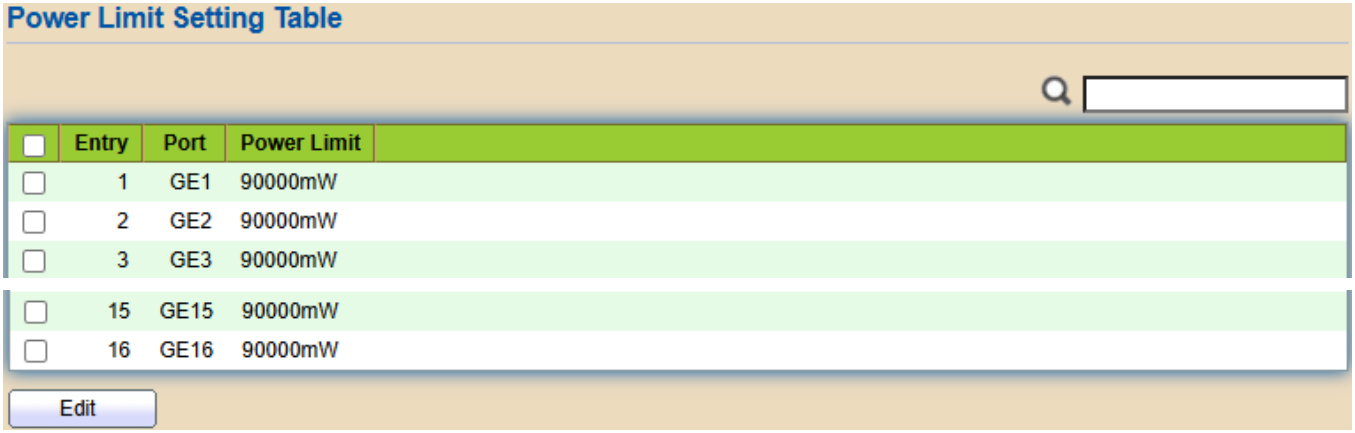


Figure 37 - PoE > Power Limit

Item	Description
Port	Port name.
Power Limit	The max supply power for this port.

Click "Edit" to view Power Limit Setting menu.

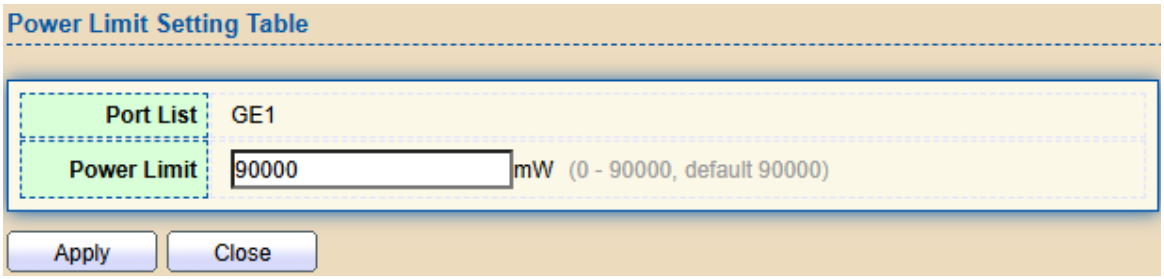


Figure 38 - PoE > Power Setting > Power Limit Setting Table

Item	Description
Port List	Selected port list.
Power Limit	Enter max supply power value for the selected port list.

4.4.4. Power show

To display the Power Show web page, click **PoE > Power Show**.

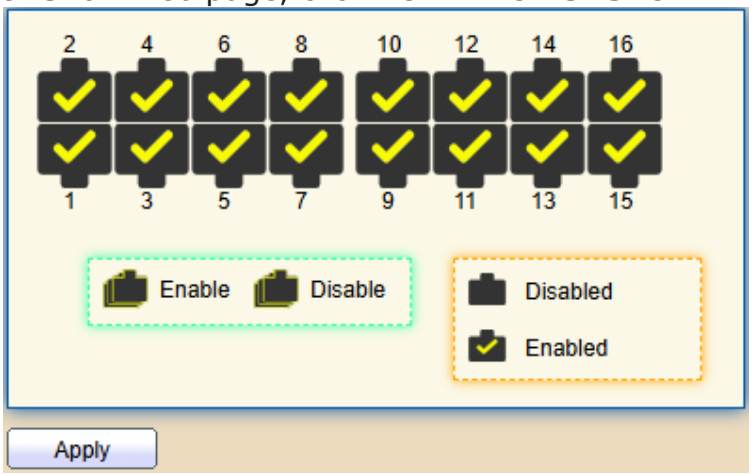
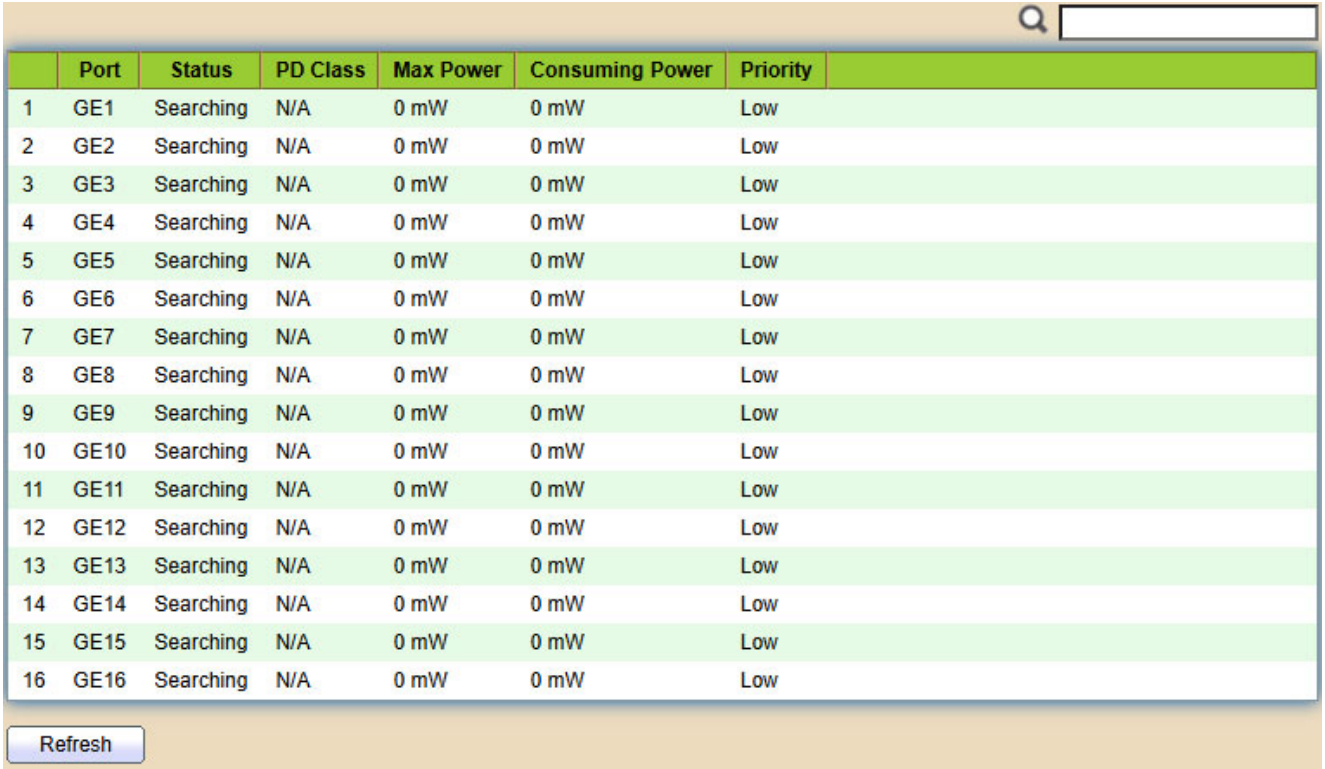


Figure 39 - PoE > Power Show

Item	Description
Per Port PoE Status • Checked: Port PoE status is enabled. • Unchecked: Port PoE status is disabled.	



	Port	Status	PD Class	Max Power	Consuming Power	Priority
1	GE1	Searching	N/A	0 mW	0 mW	Low
2	GE2	Searching	N/A	0 mW	0 mW	Low
3	GE3	Searching	N/A	0 mW	0 mW	Low
4	GE4	Searching	N/A	0 mW	0 mW	Low
5	GE5	Searching	N/A	0 mW	0 mW	Low
6	GE6	Searching	N/A	0 mW	0 mW	Low
7	GE7	Searching	N/A	0 mW	0 mW	Low
8	GE8	Searching	N/A	0 mW	0 mW	Low
9	GE9	Searching	N/A	0 mW	0 mW	Low
10	GE10	Searching	N/A	0 mW	0 mW	Low
11	GE11	Searching	N/A	0 mW	0 mW	Low
12	GE12	Searching	N/A	0 mW	0 mW	Low
13	GE13	Searching	N/A	0 mW	0 mW	Low
14	GE14	Searching	N/A	0 mW	0 mW	Low
15	GE15	Searching	N/A	0 mW	0 mW	Low
16	GE16	Searching	N/A	0 mW	0 mW	Low

Refresh

Figure 40 - PoE > Power Show

Item	Description
Port	Port name.
Status	Check port PoE status.
PD Class	Display the class of the port, each corresponding to a different power range.
Max Power	Display the maximum power supply for this port.
Consuming Power	Current port consumed power.
Priority	“Low” is lower priority, “High” is high priority and “Critical” is Critical priority.

4.5. VLAN

A virtual local area network, virtual LAN or VLAN, is a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location. A VLAN has the same attributes as a physical local area network (LAN), but it allows for end stations to be grouped together even if they are not located on the same network switch. VLAN membership can be configured through software instead of physically relocating devices or connections.

4.5.1. VLAN

Use the VLAN pages to configure settings of VLAN.

4.5.1.1. Create VLAN

This page allows user to add or delete VLAN ID entries and browser all VLAN entries that add statically or dynamic learned by GVRP. Each VLAN entry has a unique name, user can edit VLAN name in edit page.

To display Create VLAN page, click **VLAN > VLAN > Create VLAN**

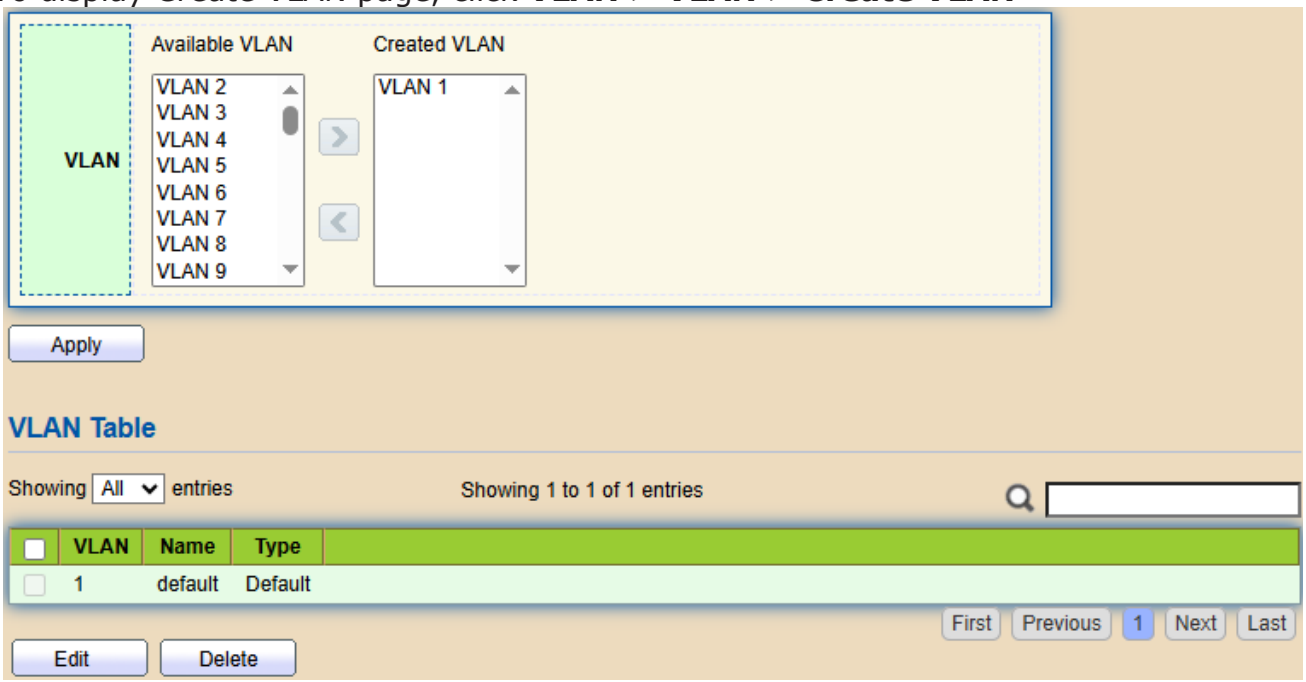


Figure 41 - VLAN > VLAN > Create VLAN

Item	Description
Available VLAN	VLAN has not created yet. Select available VLANs from left box then move to right box to add.
Created VLAN	VLAN had been created. Select created VLANs from right box then move to left box to delete
VLAN	The VLAN ID.
Name	The VLAN Name.
Type	The VLAN Type. Static: Port base VLAN. Dynamic:802.1q VLAN。

Click “Edit” button to view Edit VLAN Name menu.

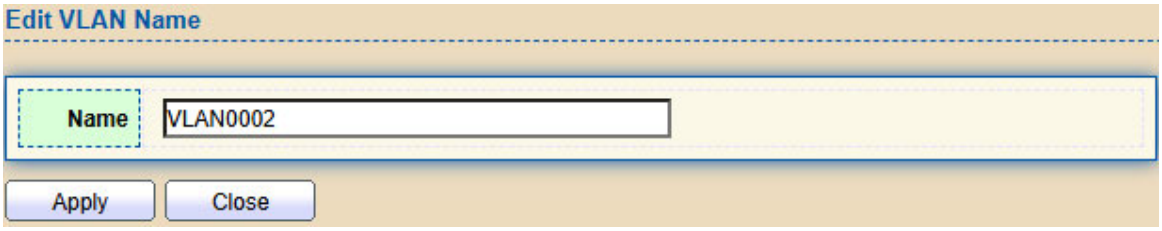


Figure 42 - VLAN > VLAN > Create VLAN > Edit VLAN Name

Item	Description
Name	Input VLAN name.

4.5.1.2. VLAN Configuration

This page allow user to configure the membership for each port of selected VLAN.

To display VLAN Configuration page, click **VLAN > VLAN > VLAN Configuration.**

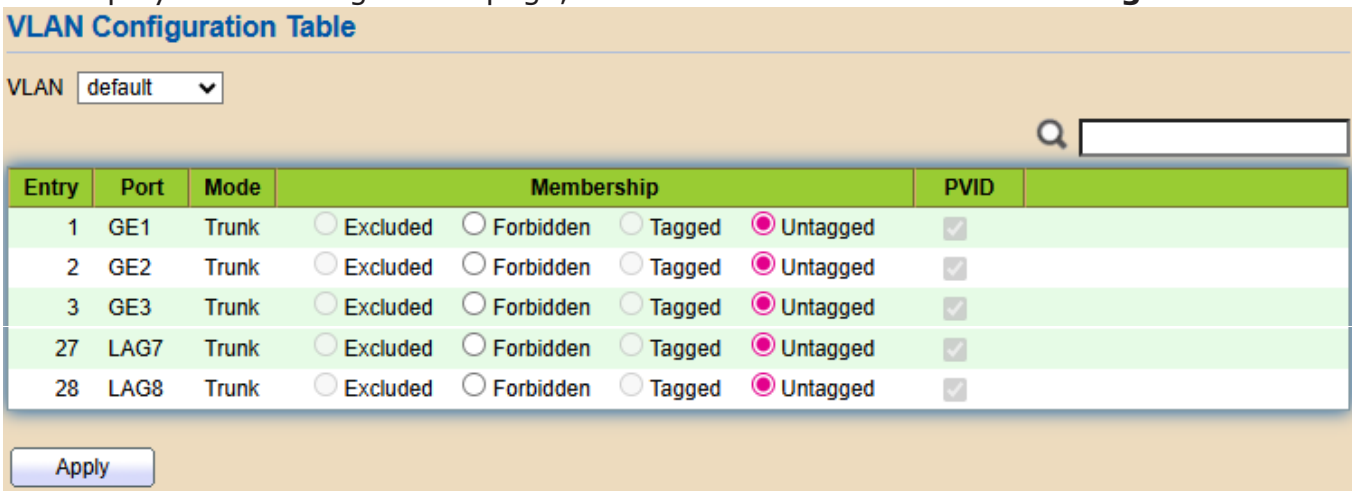


Figure 43 - VLAN > VLAN > VLAN Configuration

Item	Description
VLAN	Select specified VLAN ID to configure VLAN configuration.
Port	Display the interface of port entry.
Mode	Display the interface VLAN mode of port.

Membership	Select the membership for this port of the specified VLAN ID. • Forbidden: Specify the port is forbidden in the VLAN. • Excluded: Specify the port is excluded in the VLAN. • Tagged: Specify the port is tagged member in the VLAN. • Untagged: Specify the port is untagged member in the VLAN.
PVID	Display if it is PVID of interface.

4.5.1.3. Membership

This page allow user to view membership information for each port and edit membership for specified interface.

To display Membership page, click **VLAN > VLAN > Membership**

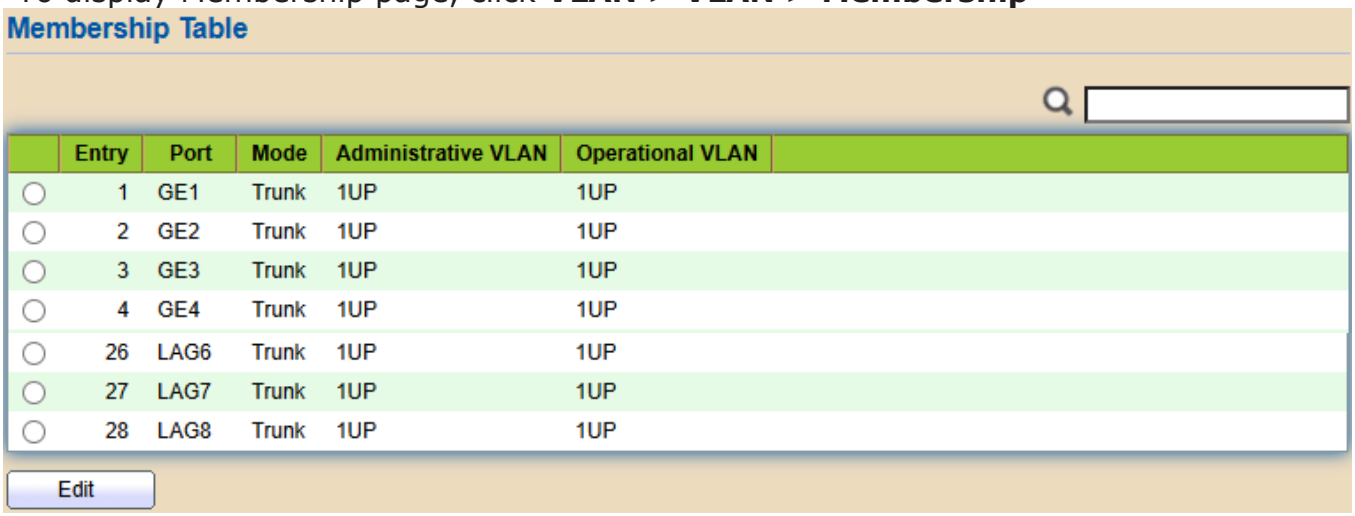


Figure 44 - VLAN > VLAN > Membership

Item	Description
Port	Display the interface of port entry.
Mode	Display the interface VLAN mode of port.
Administrative VLAN	Display the administrative VLAN list of this port.
Operational VLAN	Display the operational VLAN list of this port. Operational VLAN means the VLAN status that really runs in device. It may different to administrative VLAN.

Click "Edit" button to view the Edit Port Setting menu

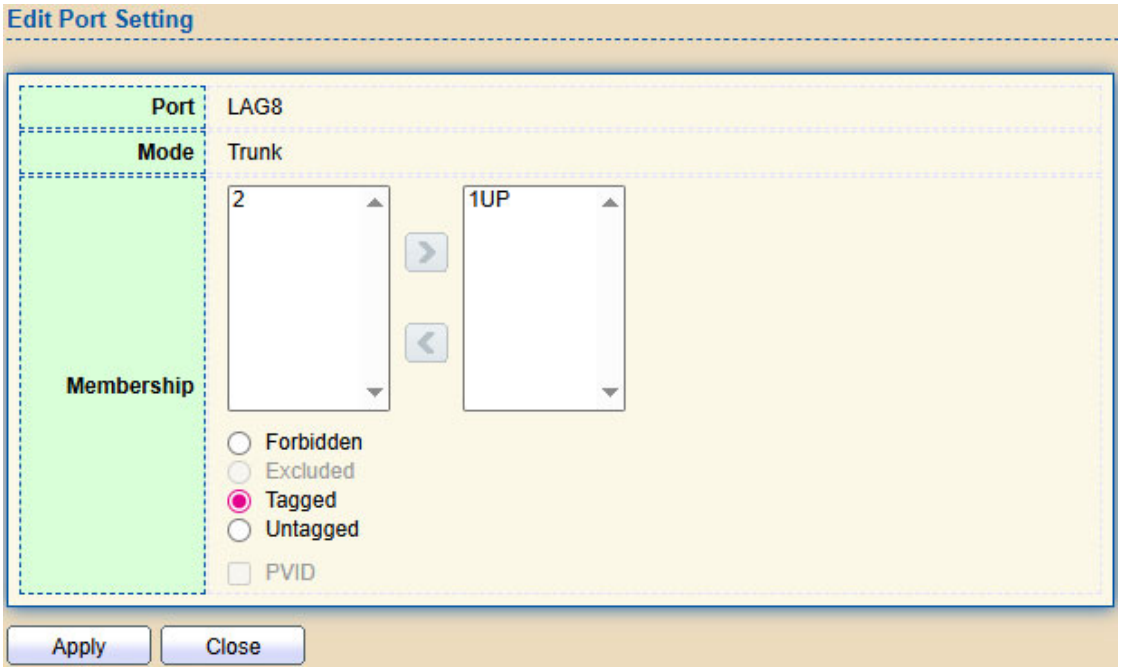


Figure 45 - VLAN > VLAN > Membership > Edit Port Setting

Item	Description
Port	Display the interface.
Mode	Display the VLAN mode of interface.
Membership	Select VLANs of left box and select one of following membership then move to right box to add membership. Select VLANs of right box then move to left box to remove membership. Tagging membership may not choose in differ VLAN port mode. Select the time source. • Forbidden: Set VLAN as forbidden VLAN. • Excluded: This option is always disabled. • Tagged: Set VLAN as tagged VLAN. • Untagged: Set VLAN as untagged VLAN. • PVID: Check this checkbox to select the VLAN ID to be the port-based VLAN ID for this port. PVID may auto select or can't select in differ settings.

4.5.1.4. Port Setting

This page allow user to configure ports VLAN settings such as VLAN port mode, PVID etc…The attributes depend on different VLAN port mode.

To display Port Setting page, click **VLAN > VLAN > Port Setting**

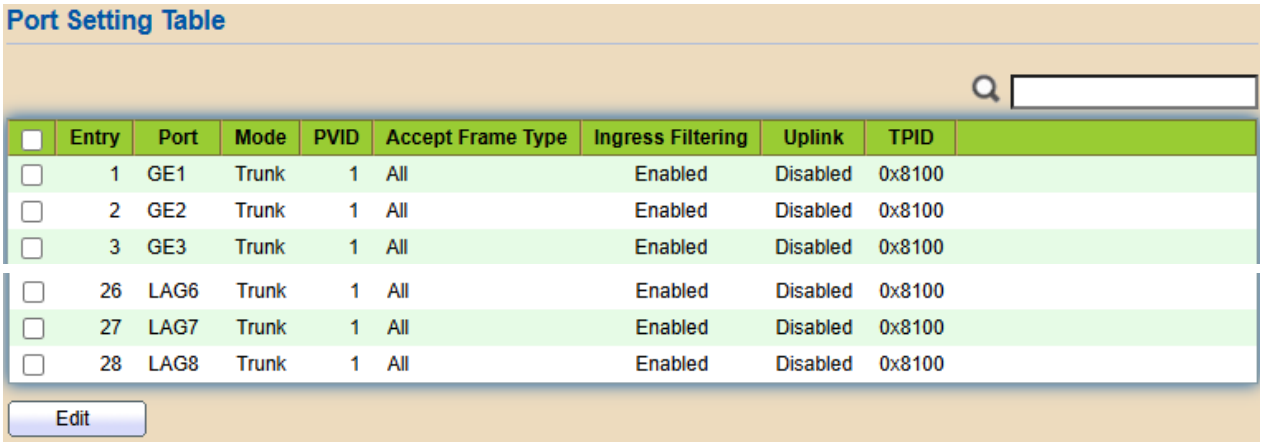


Figure 46 - VLAN > VLAN > Port Setting

Item	Description
Port	Display the interface.
Mode	Display the VLAN mode of interface.
PVID	Display the Port-based VLAN ID of port.
Accept Frame Type	Display accepts frame type of port.
Ingress Filtering	Display ingress filter status of port.
Uplink	Display uplink status.
TPID	Display TPID used of interface.

Click "Edit" button to Edit Port Setting menu.

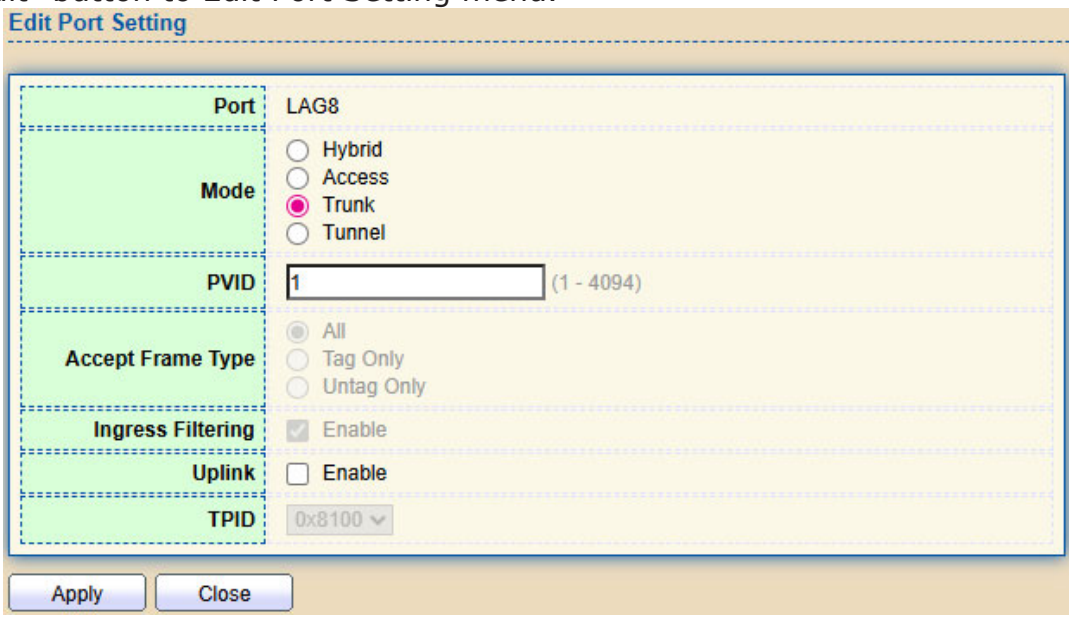


Figure 47 - VLAN > VLAN > Port Setting > Edit Port Setting

Item	Description
Port	Display selected port to be edited.

Mode	Select the VLAN mode of the interface. • Hybrid: Support all functions as defined in IEEE 802.1Q specification. • Access: Accepts only untagged frames and join an untagged VLAN. • Trunk: An untagged member of one VLAN at most, and is a tagged member of zero or more VLANs. • Tunnel：Tunnel is the same as QinQ. The basic principle of QinQ implementation is to encapsulate the VLAN tag of an operator network before the user message enters the operator network. The original VLAN tag in the user message is taken as data to make the packet cross the operator network with two layers of VLAN tags. The equipment must support 802.1Q protocol.
PVID	Specify the port-based VLAN ID (1-4094). It's only available with Hybrid and Trunk mode.
Accepted Frame Type	Specify the acceptable-frame-type of the specified interfaces. It's only available with Hybrid mode.
Ingress Filtering	Set checkbox to enable/disable ingress filtering. It's only available with Hybrid mode.
Uplink	Set checkbox to enable/disable uplink mode. It's only available with trunk mode.
TPID	Select TPID used of interface. It's only available with trunk mode.

4.5.2. Voice VLAN

Use the Voice VLAN pages to configure settings of Voice VLAN.

4.5.2.1. Property

This page allow user to configure global and per interface settings of voice VLAN.

To display Property Web page, click **VLAN> Voice VLAN> Property**

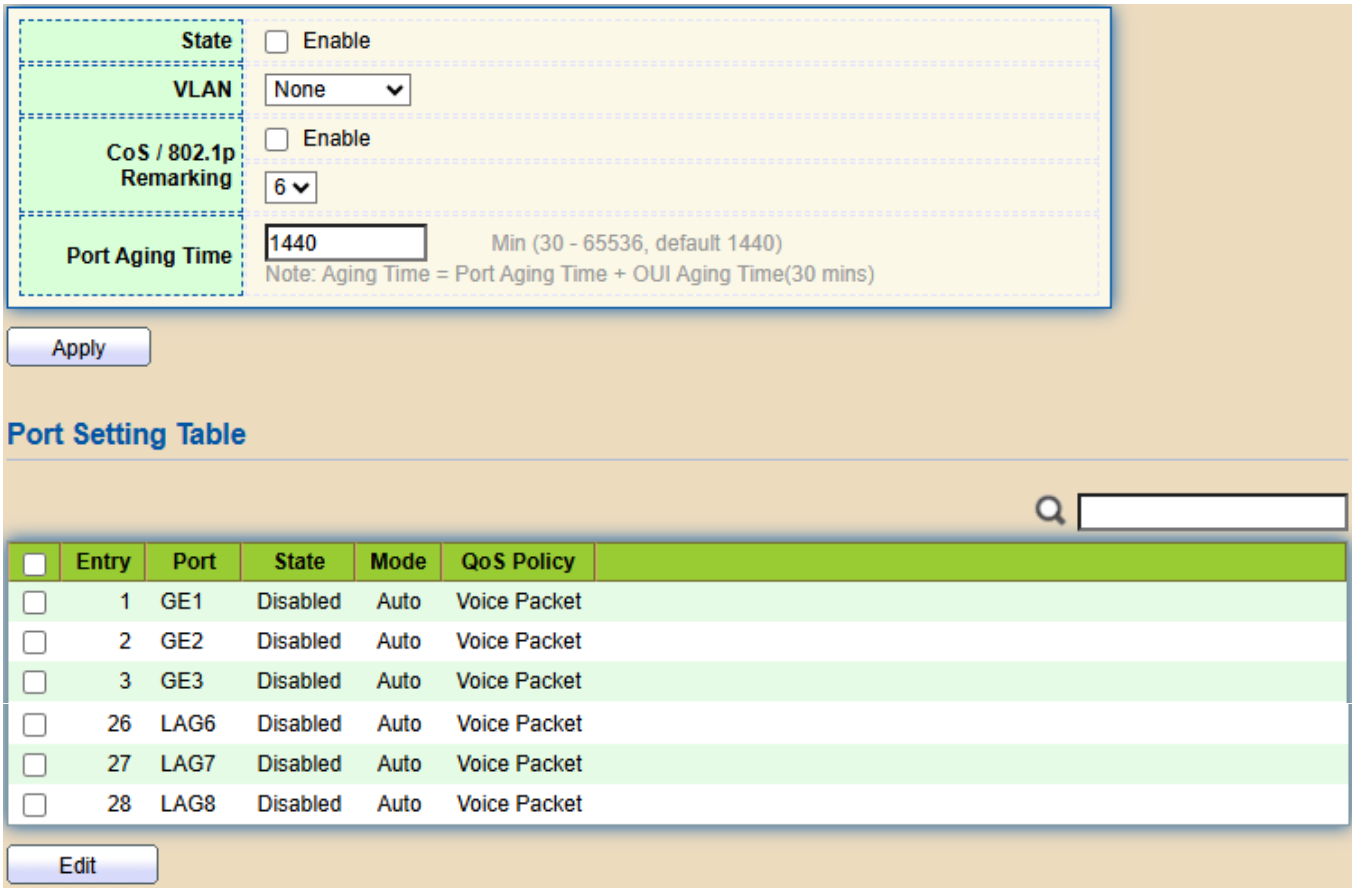


Figure 48 - VLAN > Voice VLAN > Property

Item	Description
State	Set checkbox to enable or disable voice VLAN function.
VLAN	Select Voice VLAN ID. Voice VLAN ID cannot be default VLAN.
Cos/802.1p	Select a value of VPT. Qualified packets will use this VPT value as inner priority.
Remarking	Set checkbox to enable or disable 1p remarking. If enabled, qualified packets will be remark by this value.
Port Aging Time	Input value of aging time. Default is 1440 minutes. A voice VLAN entry will be age out after this time if without any packet pass through.
Port Setting Table	
Port	Display port entry.
State	Display enable/disabled status of interface.
Mode	Display voice VLAN mode.
QoS Policy	Display voice VLAN remark will affect which kind of packet.

Click "Edit" button to view Edit Port Setting menu.

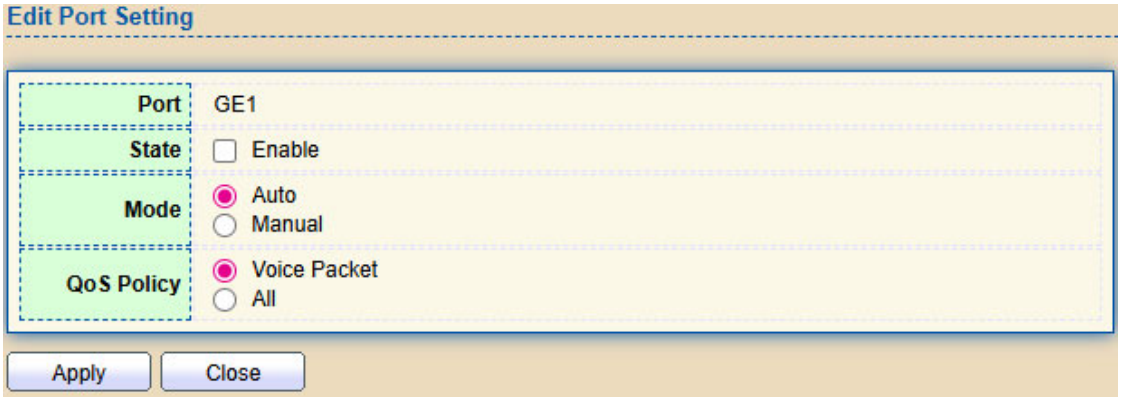


Figure 49 - VLAN > Voice VLAN > Property > Edit Port Setting

Item	Description
Port	Display selected port to be edited.
State	Set checkbox to enable/disabled voice VLAN function of interface.
Mode	Select port voice VLAN mode • Auto: Voice VLAN auto detect packets that match OUI table and add received port into voice VLAN ID tagged member. • Manual: User need add interface to VLAN ID tagged member manually.
QoS Policy	Select port QoS Policy mode • Voice Packet: QoS attributes are applied to packets with OUIs in the source MAC address. • All: QoS attributes are applied to packets that are classified to the Voice VLAN.

4.5.2.2. Voice OUI

This page allow user to add, edit or delete OUI MAC addresses. Default has 8 pre-defined OUI MAC.

To display the Voice OUI Web page, click **VLAN > Voice VLAN > Voice OUI**.

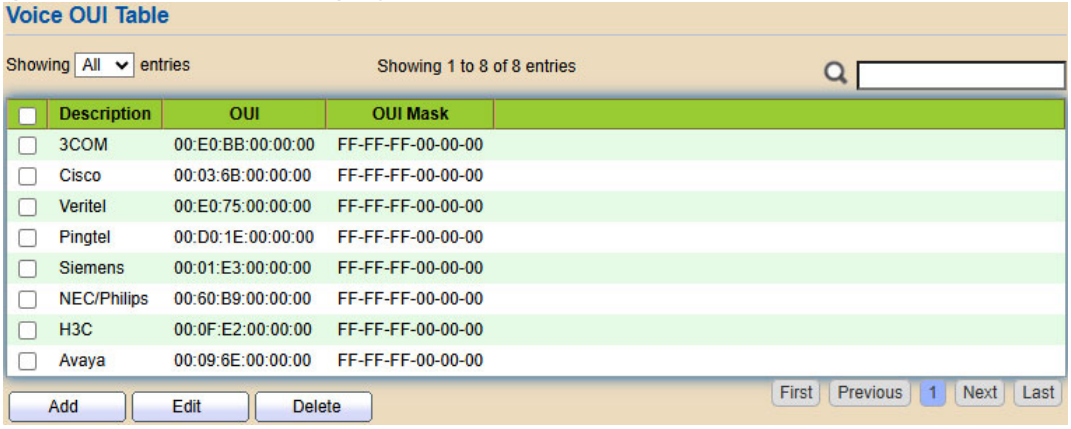


Figure 50 - VLAN > Voice VLAN > Voice OUI

Item	Description
OUI	Display OUI MAC address.
Description	Display description of OUI entry.

Click "Add" or "Edit" button to Add/Edit Voice OUI menu.

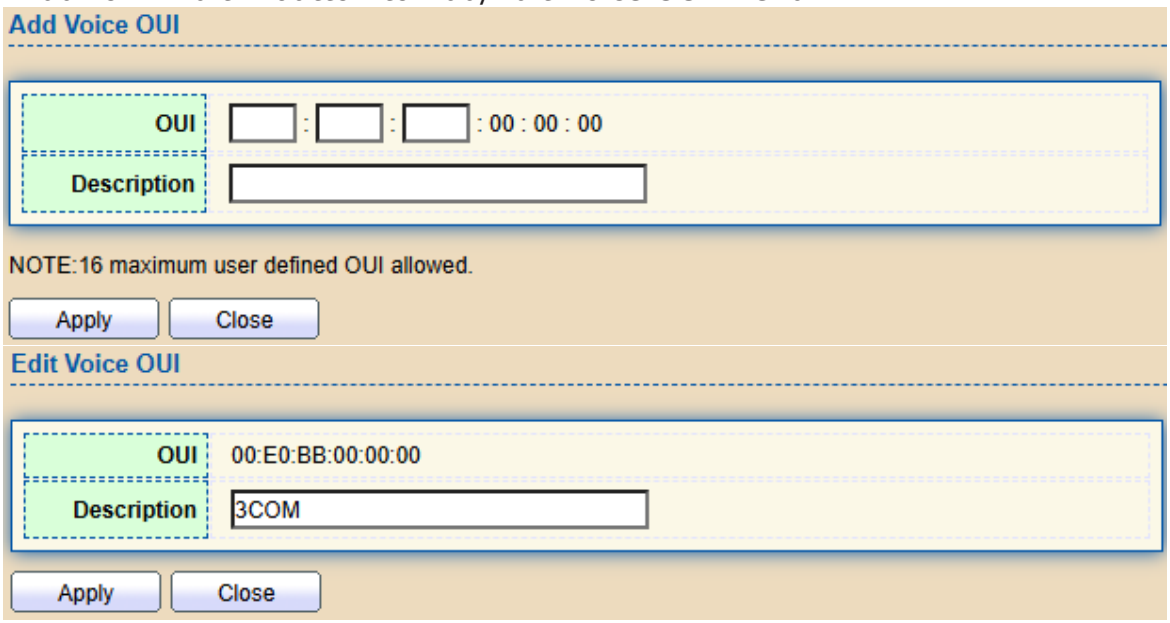


Figure 51 - VLAN > Voice VLAN > Voice OUI > Add/Edit Voice OUI

Item	Description
OUI	Input OUI MAC address. Can't be edited in edit dialog.
Description	Input description of the specified MAC address to the voice VLAN OUI table.

4.5.3. Protocol VLAN

Use the Protocol VLAN pages to configure settings of Protocol VLAN.

4.5.3.1. Protocol Group

To display Protocol Group page, click **VLAN > Protocol VLAN > Protocol Group**.

This page allow user to add or edit groups settings of protocol VLAN.

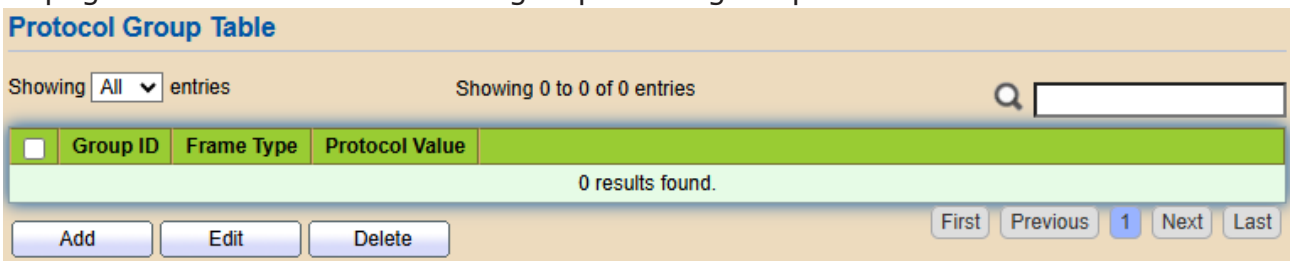


Figure 52 - VLAN > Protocol VLAN > Protocol Group

Item	Description
Group ID	Display group ID of entry.
Frame Type	Display frame type of entry.
Protocol Value	Display protocol value of entry.

Click "Add" or "Edit" button to Add/Edit Protocol Group menu.

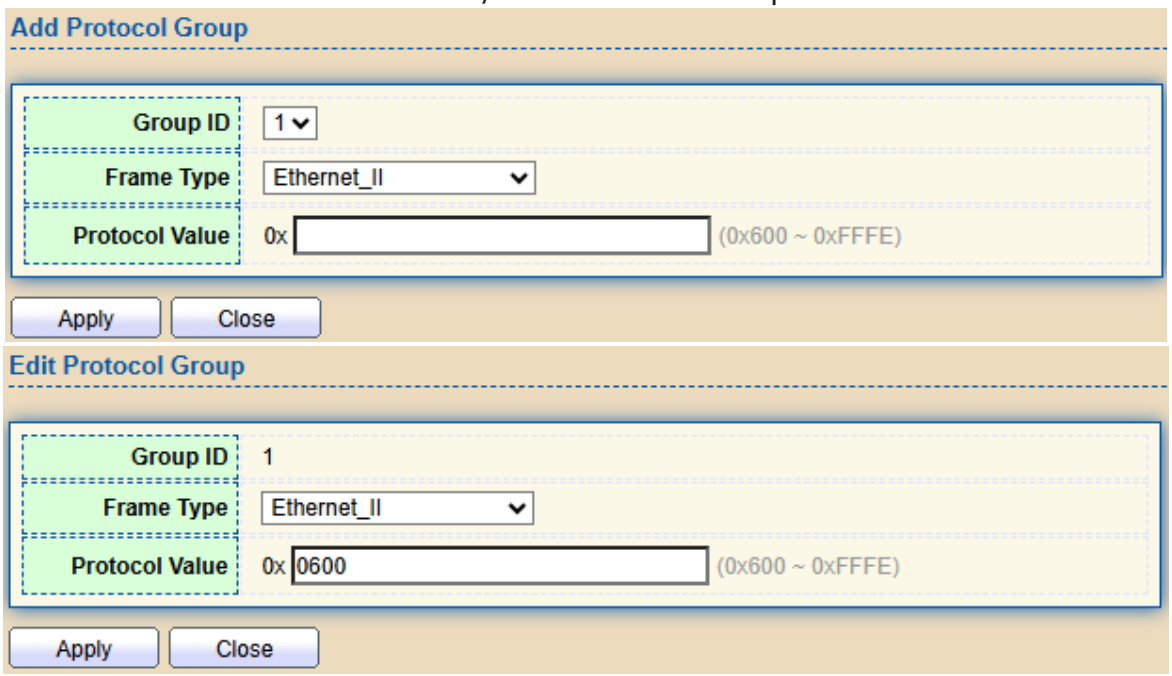


Figure 53 - VLAN > Protocol VLAN > Add Protocol Group

Item	Description
Group ID	Select group ID of list. The range from 1 to 8.
Frame Type	Select frame type of list that maps packets to protocol-defined VLANs by examining the type octet within the packet header to discover the type of protocol associated with it. ● Ethernet_II: packet type is Ethernet version 2. ● IEEE802.3_LLC_Other: packet type is 802.3 packet with LLC Other header. ● RFC_1042: packet type is RFC 1042 packet
Protocol Value	Input protocol value of the target protocol. Packets match this protocol value classified to specified VLAN ID.

4.5.3.2. Group Binding

This page allow user to bind protocol VLAN group to each port with VLAN ID.

To display Group Binding page, click **VLAN> Protocol VLAN > Group Binding**

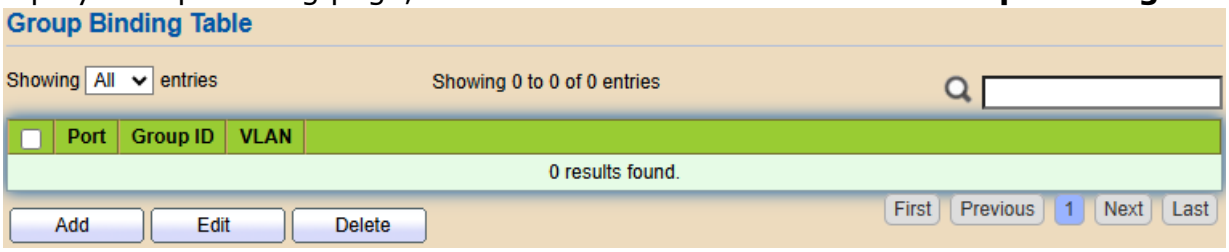


Figure 54 - VLAN > Protocol VLAN > Group Binding

Item	Description
Port	Display port ID that binding with protocol group entry
Group ID	Display group ID that port binding with
VLAN	Display VLAN ID that assign to packets which match protocol group

Click "Add" or "Edit" button to Add/Edit Group Binding menu.

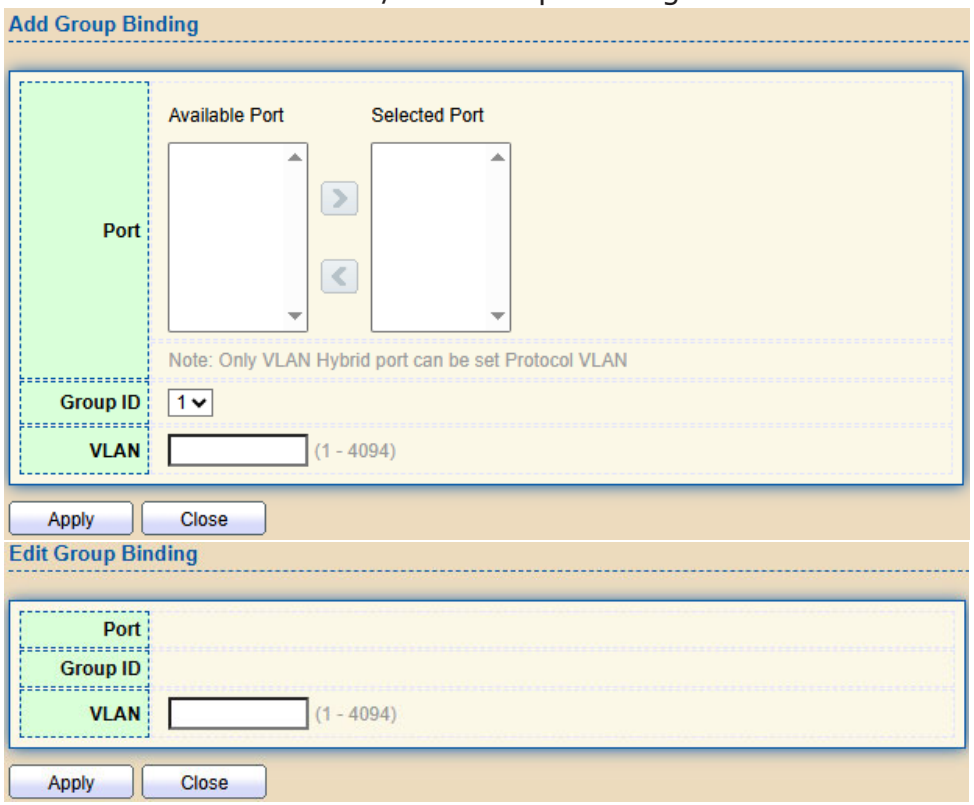


Figure 55 - VLAN > Protocol VLAN > Add/Edit Group Binding

Item	Description
Port	Select ports in left box then move to right to binding with protocol group. Or select ports in right box then move to left to unbind with protocol group. Only interface has hybrid VLAN mode can be selected and bound with protocol group. Only available on Add dialog.

Group ID	Select a Group ID to associate with port. Only available on Add dialog.
VLAN	Input VLAN ID that will assign to packets which match protocol group

4.5.4. MAC VLAN

Use the MAC VLAN pages to configure settings of MAC VLAN.

4.5.4.1. MAC Group

This page allow user to add or edit groups settings of MAC VLAN.

To display the MAC page, click **VLAN > MAC VLAN > MAC Group**.

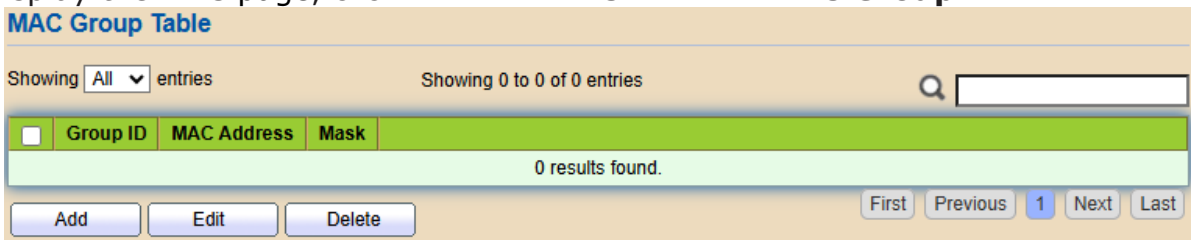


Figure 56 - VLAN > MAC VLAN > MAC Group

Item	Description
Group ID	Display group ID of entry.
MAC Address	Display mac address of entry.
Mask	Display mask of mac address for classified packet.

Click “Add” button or "Edit" button to view Add/Edit MAC menu.

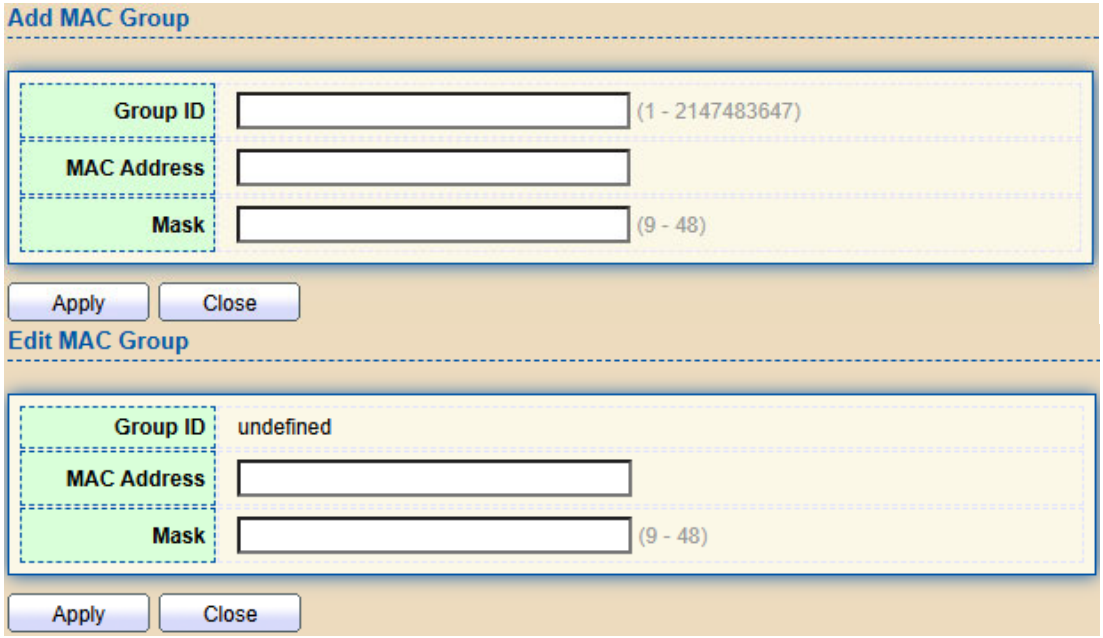


Figure 57 - VLAN > MAC VLAN > MAC Group > Add/Edit MAC

Item	Description
Group ID	Input group ID that is a unique ID of mac group entry. The range from 1 to 2147483647. Only available on Add Dialog.
MAC Address	Input mac address for classifying packets.
Mask	Input mask of mac address.

4.5.4.2. Group Binding

This page allow user to bind MAC VLAN group to each port with VLAN ID.

To display Group Binding page, click **VLAN> MAC VLAN > Group Binding**

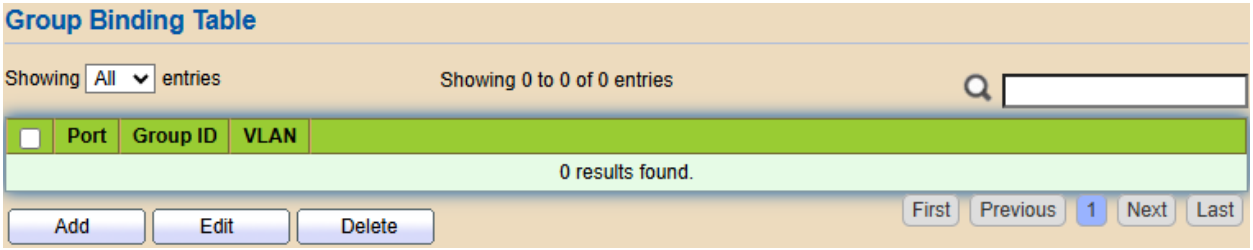


Figure 58 - VLAN > MAC VLAN > Group Binding

Item	Description
Port	Display port ID that binding with MAC group entry.
Group ID	Display group ID that port binding with.
VLAN	Display VLAN ID that assign to packets which match MAC group.

Click "Add" button to view the Add Group Binding menu.

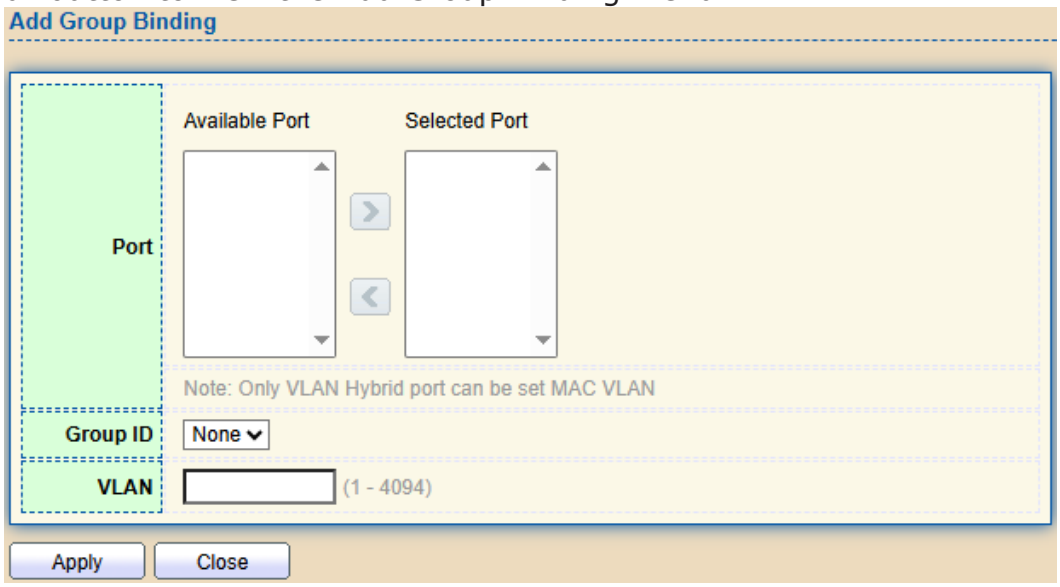


Figure 59 - VLAN > MAC VLAN > Group Binding

Item	Description
Port	Select ports in left box then move to right to binding with MAC group. Or select ports in right box then move to left to unbind with MAC group. Only interface has hybrid VLAN mode can be selected and bound with protocol group. Only available on Add dialog.
Group ID	Select a Group ID to associate with port. Only available on Add dialog.
VLAN	Input VLAN ID that will assign to packets which match MAC group.

4.5.5. Surveillance VLAN

Use the Surveillance VLAN pages to configure settings of Surveillance VLAN.

4.5.5.1. Property

To display Property page, click **VLAN> Surveillance VLAN> Property**

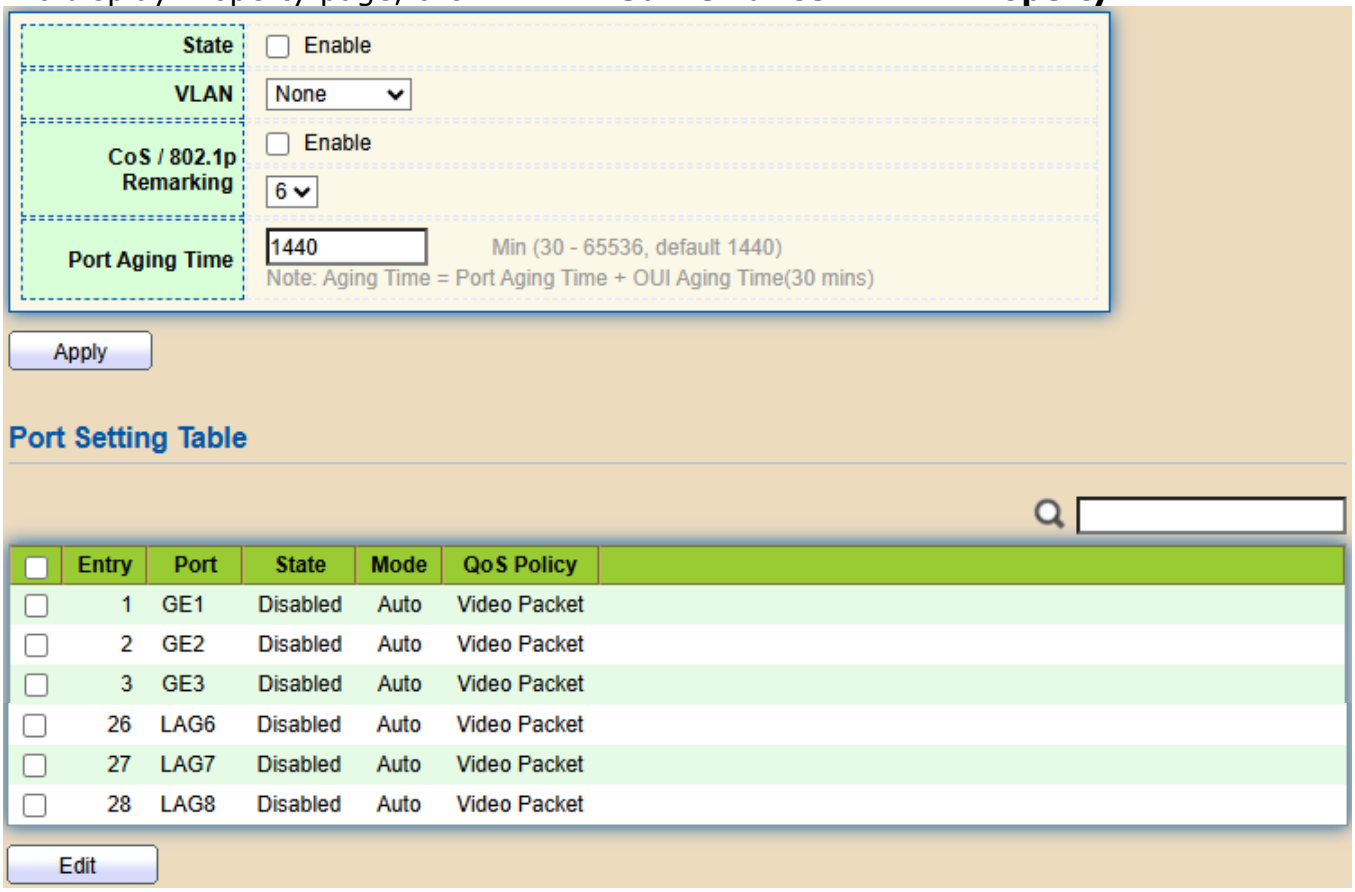


Figure 60 - VLAN > Surveillance VLAN > Property

Item	Description
State	Set checkbox to enable or disable Surveillance VLAN function.

VLAN	Select Surveillance VLAN ID. Surveillance VLAN ID cannot be default VLAN.
COS/802.1P	Select a value of VPT. Qualified packets will use this VPT value as inner priority.
Remarking	Set checkbox to enable or disable 1p remarking. If enabled, qualified packets will be remark by this value.
Port Aging Time	Input value of aging time. Default is 1440 minutes. A video VLAN entry will be age out after this time if without any packet pass through.
Port Setting Table	
Port	Display port entry.
State	Display enable/disabled status of interface.
Mode	Display voice VLAN mode.
QoS Policy	Display Surveillance VLAN remark will affect which kind of packet.

4.5.5.2. Surveillance OUI

This page allow user to add, edit or delete OUI MAC addresses.

To display Surveillance OUI web page, click **VLAN> Surveillance VLAN> Surveillance OUI.**

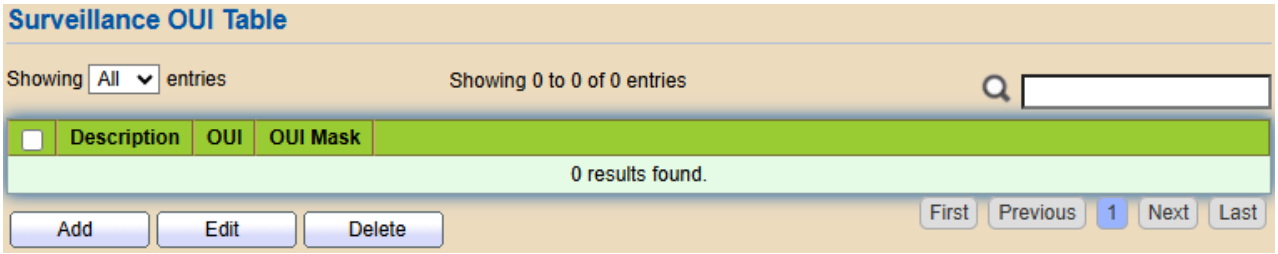
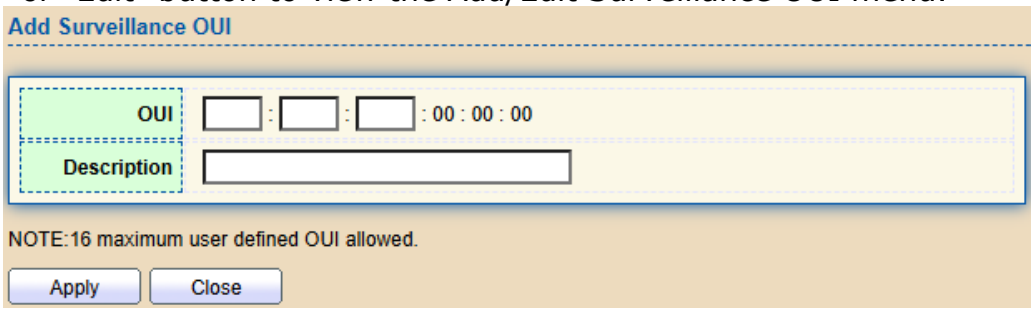


Figure 61 - VLAN > Surveillance VLAN > Surveillance OUI

Item	Description
OUI	Display OUI MAC address.
Description	Display description of OUI entry.

Click "Add" or "Edit" button to view the Add/Edit Surveillance OUI menu.



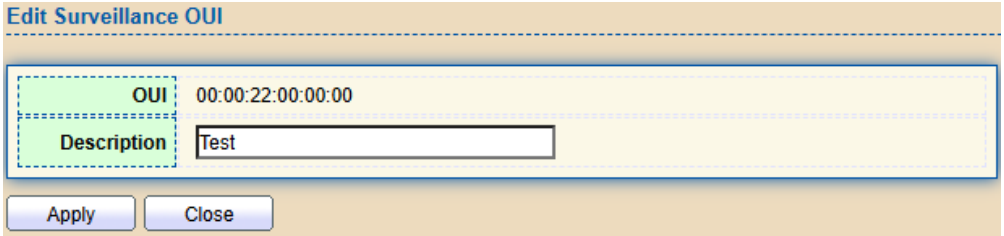


Figure 62 - VLAN >Surveillance VLAN >Surveillance OUI>Add/Edit Surveillance OUI

Item	Description
OUI	Input OUI MAC address. Can't be edited in edit dialog.
Description	Input description of the specified MAC address to the Surveillance VLAN OUI table.

4.5.6. GVRP

4.5.6.1. Property

This page allow user to enable or disable GVRP function and GVRP port setting.

To display GVRP Global and Port Setting web page, click **VLAN> GVRP> Property**.

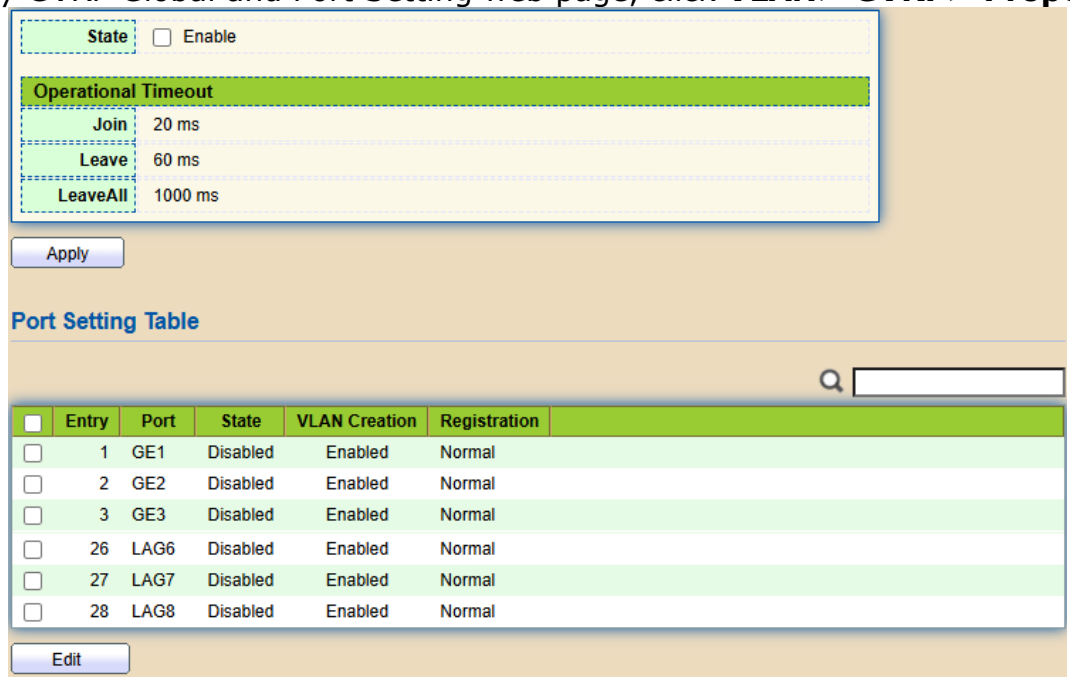


Figure 63 - VLAN > GVRP > Property

Item	Description
State	Set the enabling status of GVRP functionality.
Operational Timeout	
Join	GVRP Join time out.
Leave	GVRP leave time out.

Leave All	GVRP leave all time out.
Port Setting Table	
Entry	Entry of number
Port	Port Name
State	Display port GVRP state
VLAN Creation	Display port GVRP creation VLAN state
Registration	Display port GVRP registration mode

Click "Edit" button to view the Edit Port Setting menu.

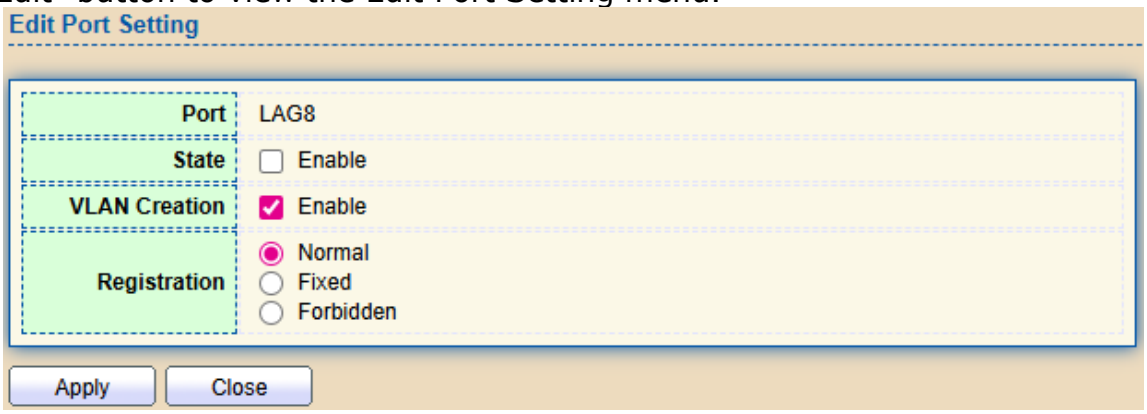


Figure 64 - VLAN > GVRP > Property> Edit Port Setting

Item	Description
Port	Port Display the selected port list
State	Set the enabling status of GVRP port • Enable: Enable/Disable port of GVRP state
VLAN Creation	Set the enabling status of GVRP port create VLAN • Enable: Enable/Disable port create dynamic VLAN.
Registration	Set the register mode of GVRP port • Normal: Normal mode. • Fixed: The port will not learn any dynamic VLAN. Only send static VLAN information to neighbor and allow static VLAN packet pass. • Forbidden: The port will not learn any dynamic VLAN and only allow default VLAN packet pass.

4.5.6.2. Membership

This page allow user to browser all VLAN member settings that learned by GVRP protocol or configure by user.

To display GVRP VLAN database web page, click **VLAN> GVRP> Membership**

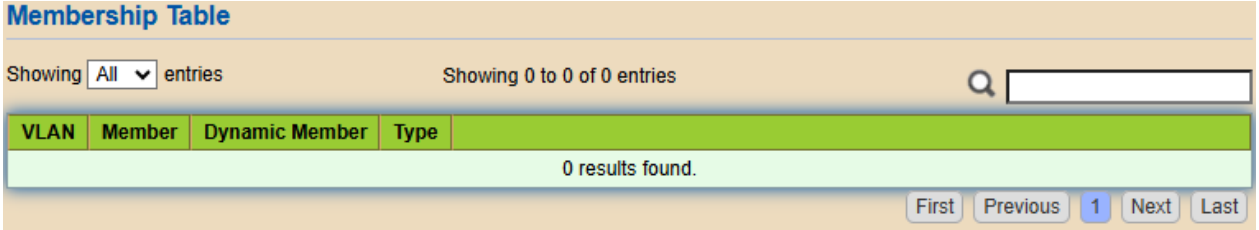


Figure 65 - VLAN > GVRP > Membership

Item	Description
VLAN	VLAN ID
Member	VLAN port members include static and dynamic member
Dynamic Member	GVRP learned dynamic ports
VLAN Type	The type of VLAN is static or dynamic.

4.5.6.3. Statistics

This page allow user to display GVRP port statics by type and clear GVRP port statistics by port.

To display GVRP port statistics web page, click **VLAN> GVRP> Statistics**

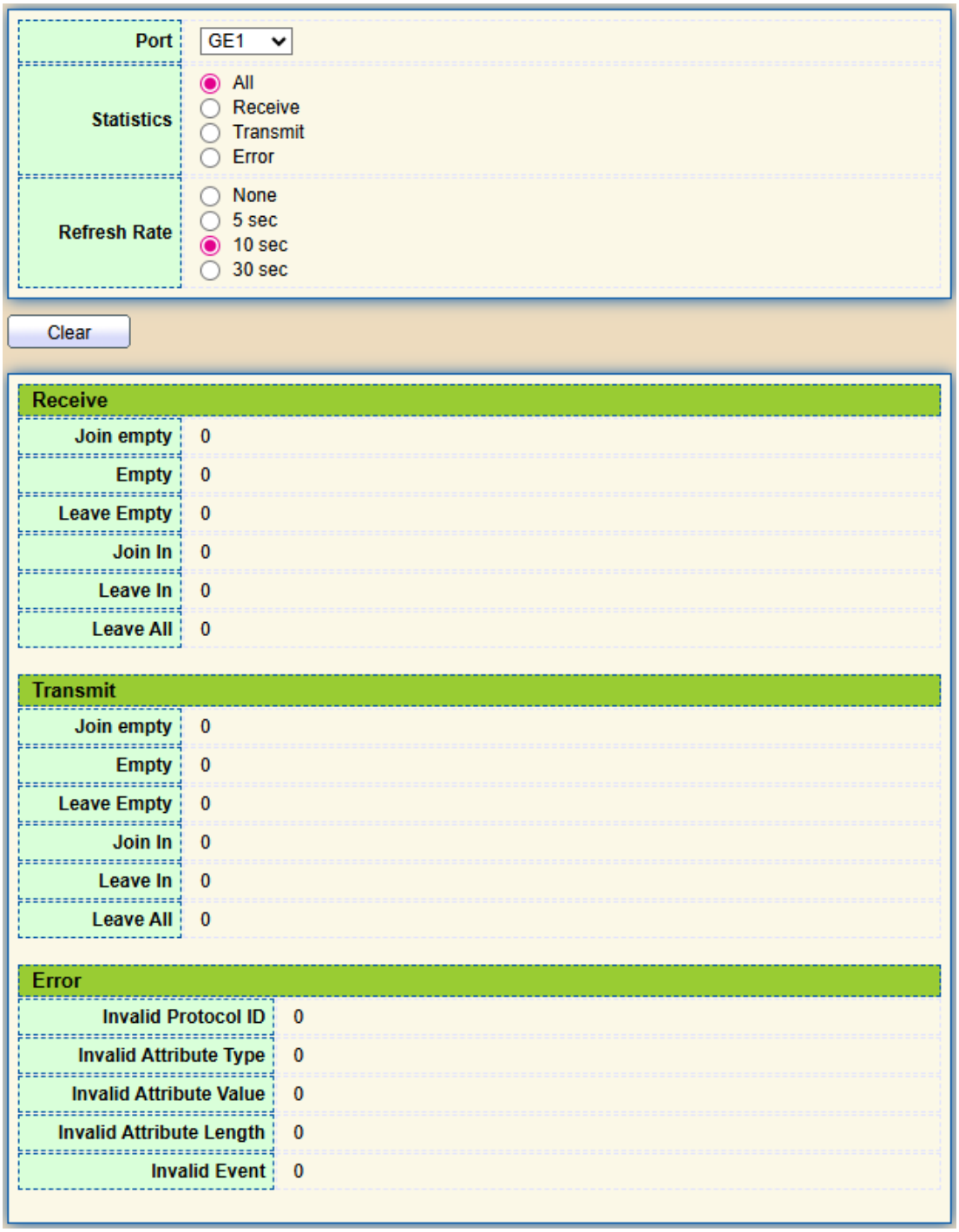


Figure 66 - VLAN > GVRP > Statistics

Item	Description
Port	Port ID
Statistics	Type of statistics ● All: Display Receiver, Transmit and Error port statistics ● Receive: Display Receive port statistics ● Transmit: Display Transmit port statistics ● Error: Display Error port statistics

Refresh Rate	Web refresh rate ● None: Not auto refresh display port statistics ● 5 sec: Refresh display port statistics per 5 seconds ● 10 sec: Refresh display port statistics per 10 seconds ● 30 sec: Refresh display port statistics per 30 seconds
Receive	
Join empty	The number of Receive or Transmit Join empty attribute value.
Empty	Empty The number of Receive or Transmit Empty attribute value.
Leave Empty	Leave Empty The number of Receive or Transmit Leave Empty attribute value.
Join in	Join In The number of Receive or Transmit Join In attribute value.
Leave in	The number of Receive or Transmit Leave In empty attribute value.
Leave All	Leave All The number of Receive or Transmit Leave All attribute value.
Error	
Invalid Protocol ID	The number of Receive Invalid Protocol ID
Invalid Attribute Type	The number of Receive Invalid Attribute Type
Invalid Attribute Value	The number of Receive Invalid Attribute value
Invalid Attribute Length	The number of Receive Invalid Attribute Length.
Invalid Event	The number of Receive Invalid Event.

4.6. MAC Address Table

Use the MAC Address Table pages to show dynamic MAC table and configure settings for static MAC entries.

4.6.1. Dynamic Address

To display the Dynamic Address web page, click **MAC Address Table > Dynamic Address.**

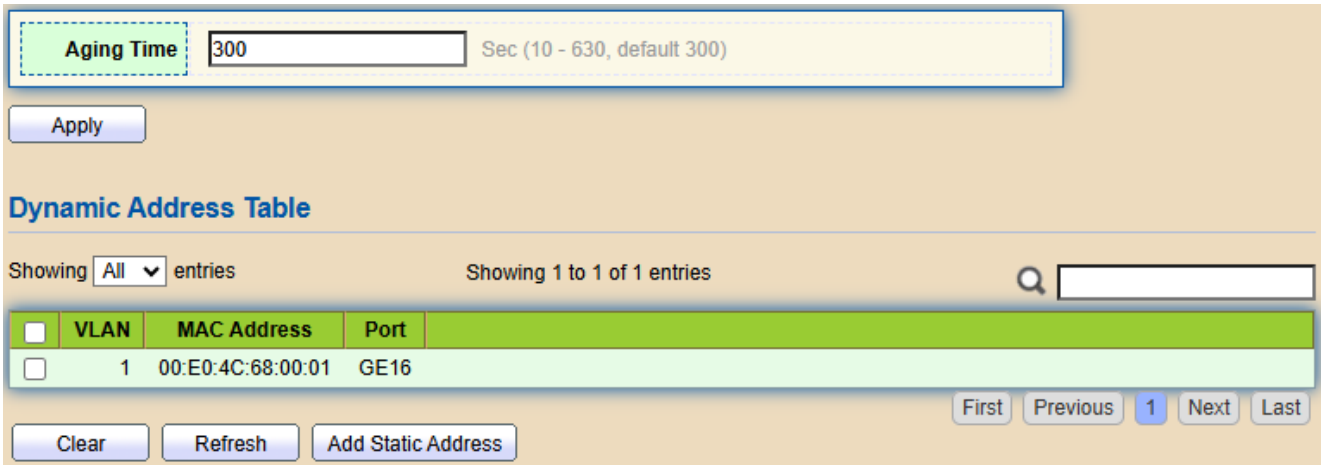


Figure 67 - MAC Address Table > Dynamic Address

Item	Description
Aging Time	The time in seconds that an entry remains in the MAC address table. Its valid range is from 10 to 630 seconds, and the default value is 300 seconds.

4.6.2. Static Address

To display the Static Address web page, click **MAC Address Table > Static Address**.

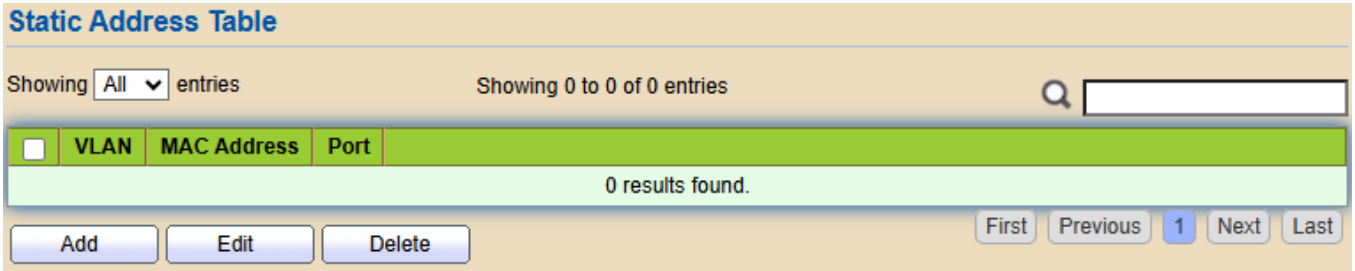


Figure 68 - MAC Address Table > Static Address.

Item	Description
MAC Address	The MAC address to which packets will be statically forwarded.
VLAN	Specify the VLAN to show or clear MAC entries.
Port	Interface or port number.

4.6.3. Filtering Address

To display the Filtering Address web page, click **MAC Address Table > Filtering Address.**

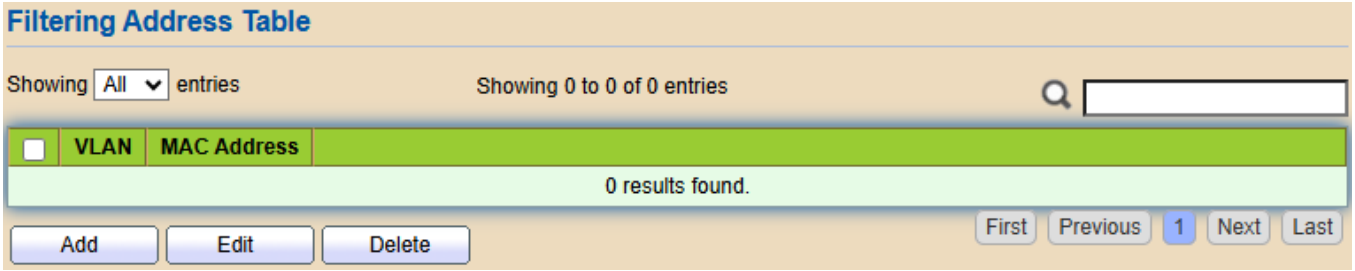


Figure 69 - MAC Address Table > Filtering Address.

Item	Description
MAC Address	Specify unicast MAC address in the packets to be dropped.
VLAN	Specify the VLAN to show or clear MAC entries.

4.7. Spanning Tree

The Spanning Tree Protocol (STP) is a network protocol that ensures a loop-free topology for any bridged Ethernet local area network.

4.7.1. Property

To display the Property web page, click **Spanning Tree > Property**.

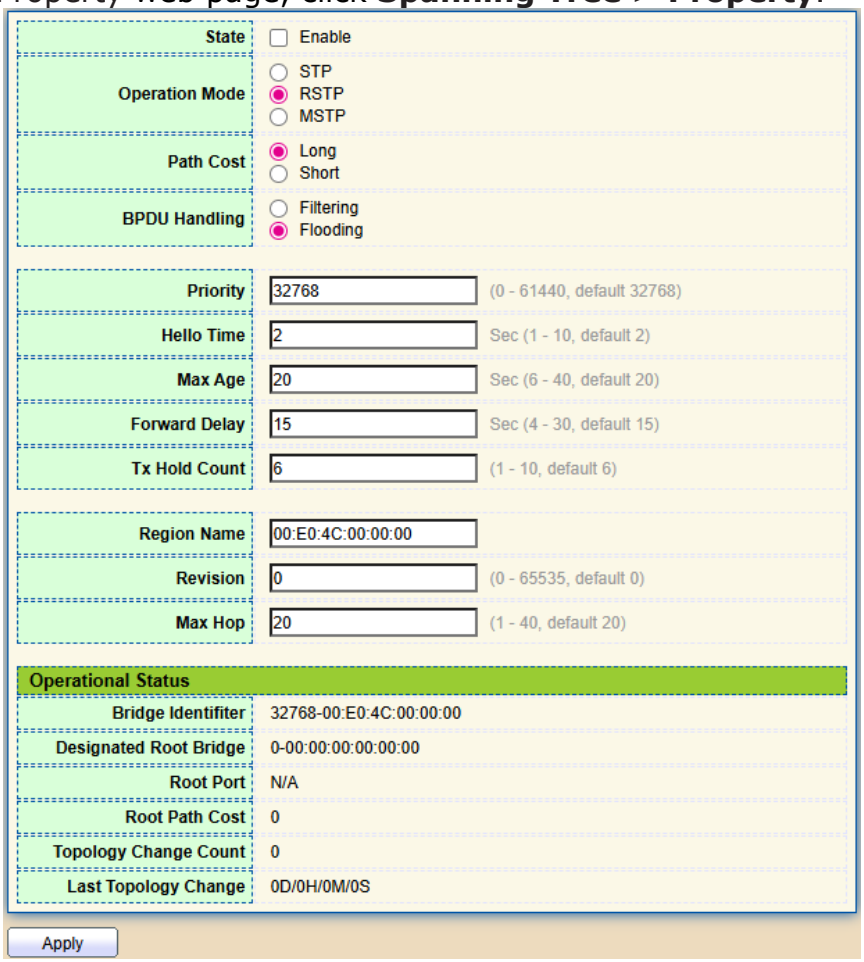


Figure 70 - Spanning Tree > Property

Item	Description
State	Enable/disable the STP on the switch.
Operation Mode	Specify the STP operation mode. • STP: Enable the Spanning Tree (STP) operation. • RSTP: Enable the Rapid Spanning Tree (RSTP) operation. • MSTP: Enable the Multiple Spanning Tree (MSTP) operation.
Path Cost	Specify the path cost method. • Long: Specifies that the default port path costs are within the range:1-200,000,000. • Short: Specifies that the default port path costs are within the range:1-65,535.
BPDU Handling	Specify the BPDU forward method when the STP is disabled. • Filtering: Filter the BPDU when STP is disabled. • Flooding: Flood the BPDU when STP is disabled.
Priority	Specify the bridge priority. The valid range is from 0 to 61440, and the value should be the multiple of 4096. It ensures the probability that the switch is selected as the root bridge, and the lower value has the higher priority for the switch to be selected as the root bridge of the topology.
Hello Time	Specify the STP hello time in second to broadcast its hello message to other bridges by Designated Ports. Its valid range is from 1 to 10 seconds.
Max Age	Specify the time interval in seconds for a switch to wait the configuration messages, without attempting to redefine its own configuration.
Forward Delay	Specify the STP forward delay time, which is the amount of time that a port remains in the Listening and Learning states before it enters the Forwarding state. Its valid range is from 4 to 10 seconds.
TX Hold Count	Specify the Tx-hold-count used to limit the maximum numbers of packets transmission per second. The valid range is from 1 to 10.
Region Name	The MSTP instance name. Its maximum length is 32 characters. The default value is the MAC address of the switch.
Revision	The MSTP revision number. Its valid rage is from 0 to 65535.
Max Hop	Specify the number of hops in an MSTP region before the BPDU is discarded. The valid range is 1 to 40.

Operational Status	
Bridge Identifier	Bridge identifier of the switch.
Designated Root Bridge	Bridge identifier of the designated root bridge.
Root Port	Operational root port of the switch.
Root Path Cost	Operational root path cost.
Topology Change Count	Numbers of the topology changes.
Last Topology Change	The last time for the topology change.

4.7.2. Port Setting

To configure and display the STP port settings, click **STP > Port Setting**.

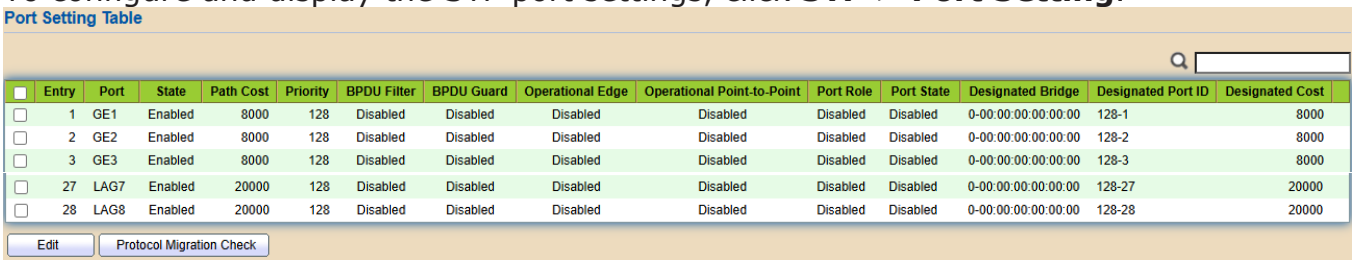


Figure 71 - Spanning Tree > Port Setting

Item	Description
Port	Specify the interface ID or the list of interface IDs.
State	The operational state on the specified port.
Path Cost	STP path cost on the specified port.
Priority	STP priority on the specified port.
BPDU Filter	The states of BPDU filter on the specified port.
BPDU Guard	The states of BPDU guard on the specified port.
Operational Edge	The operational edge port status on the specified port.
Operational Point-to-Point	The operational point-to-point status on the specified port.
Port Role	The current port role on the specified port. The possible values are: “Disabled”, “Master”, “Root”, “Designated”, “Alternative”, and “Backup”.
Port State	The current port state on the specified port. The possible values are: “Disabled”, “Discarding”, “Learning”, and “Forwarding”.
Designated Bridge	The bridge ID of the designated bridge.
Designated Port ID	The designated port ID on the switch.

Designated Cost	The path cost of the designated port on the switch.
Protocol Migration Check	Restart the Spanning Tree Protocol (STP) migration process (re-negotiate with its neighborhood) on the specific interface.

Click "Edit" button to view Edit Port Setting menu.

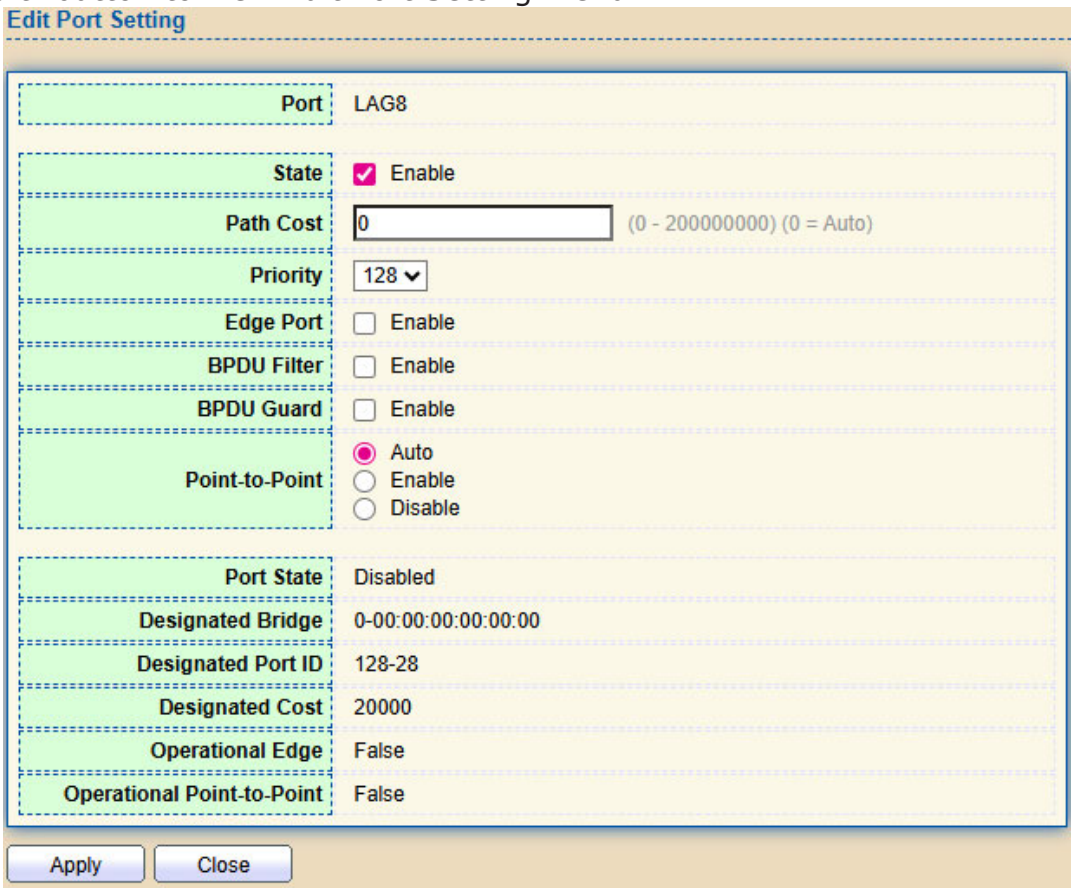


Figure 72 - Spanning Tree > Port Setting > Edit Port Setting

Item	Description
Port	Selected port ID.
State	Enable/Disable the STP on the specified port.
Path Cost	Specify the STP path cost on the specified port.
Priority	Specify the STP path cost on the specified port.
Edge Port	Specify the edge mode. • Enable: Force to true state (as link to a host). • Disable: Force to false state (as link to a bridge). In the edge mode, the interface would be put into the Forwarding state immediately upon link up. If the edge mode is enabled for the interface and there are BPDUs received on the interface, the loop might be occurred in the short time before the STP state change.

BPDU Filter	The BPDU Filter configuration avoids receiving / transmitting BPDU from the specified ports. • Enable: Enable BPDU filter function. • Disable: Disable BPDU filter function.
BPDU Guard	The BPDU Guard configuration to drop the received BPDU directly. • Enable: Enable BPDU guard function. • Disable: Disable BPDU guard function.
Point-to-Point	Specify the Point-to-Point port configuration: • Auto: The state is depended on the duplex setting of the port • Enable: Force to true state. • Disable: Force to false state

4.7.3. MST Instance

To configure MST instance setting, click **STP > MST Instance**.

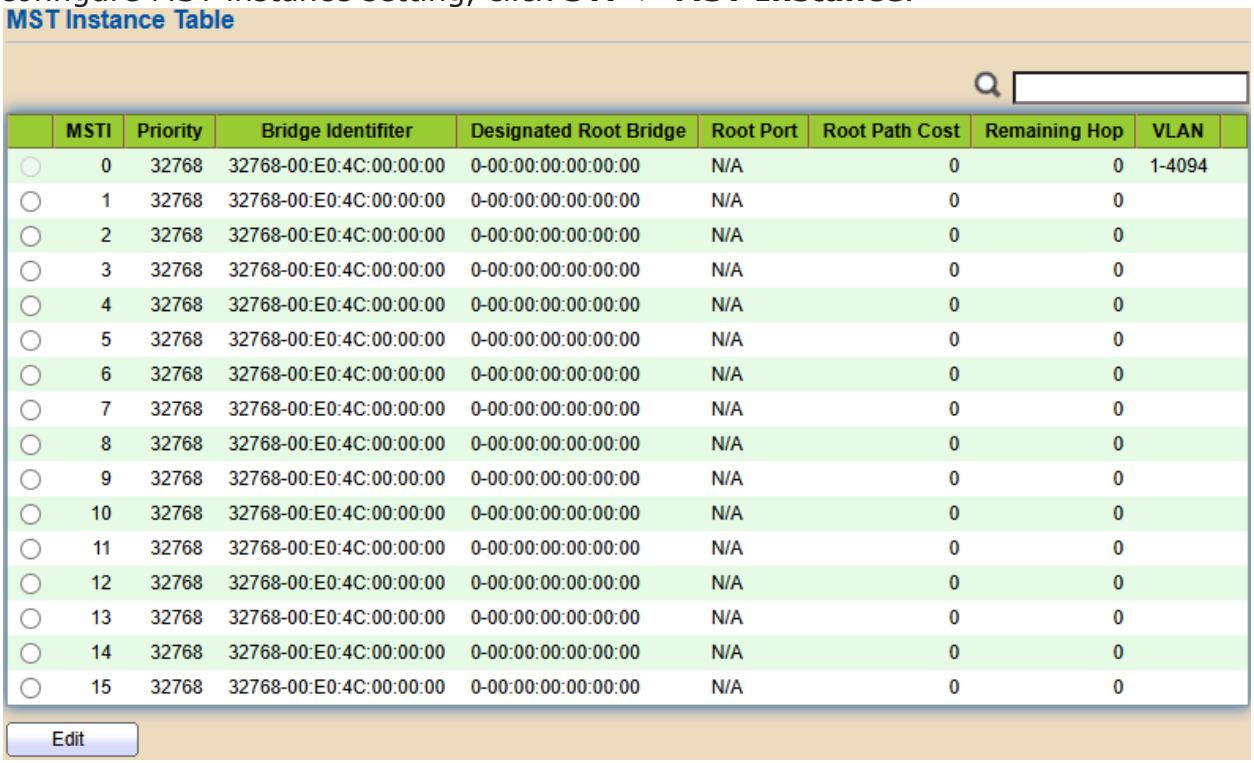


Figure 73 - Spanning Tree > MST Instance

Item	Description
MSTI	Designated port number.
Priority	The bridge priority on the specified MSTI.
Bridge Identifier	The bridge identifier on the specified MSTI.

Designated Root Bridge	The designated root bridge identifier on the specified MSTI.
Root Port	The designated root port on the specified MSTI.
Root Path Cost	The designated root path cost on the specified MSTI.
Remaining Hop	The configuration of remaining hop on the specified MSTI.
VLAN	The VLAN configuration on the specified MSTI.

Click "Edit" button to view Edit MST Instance menu.

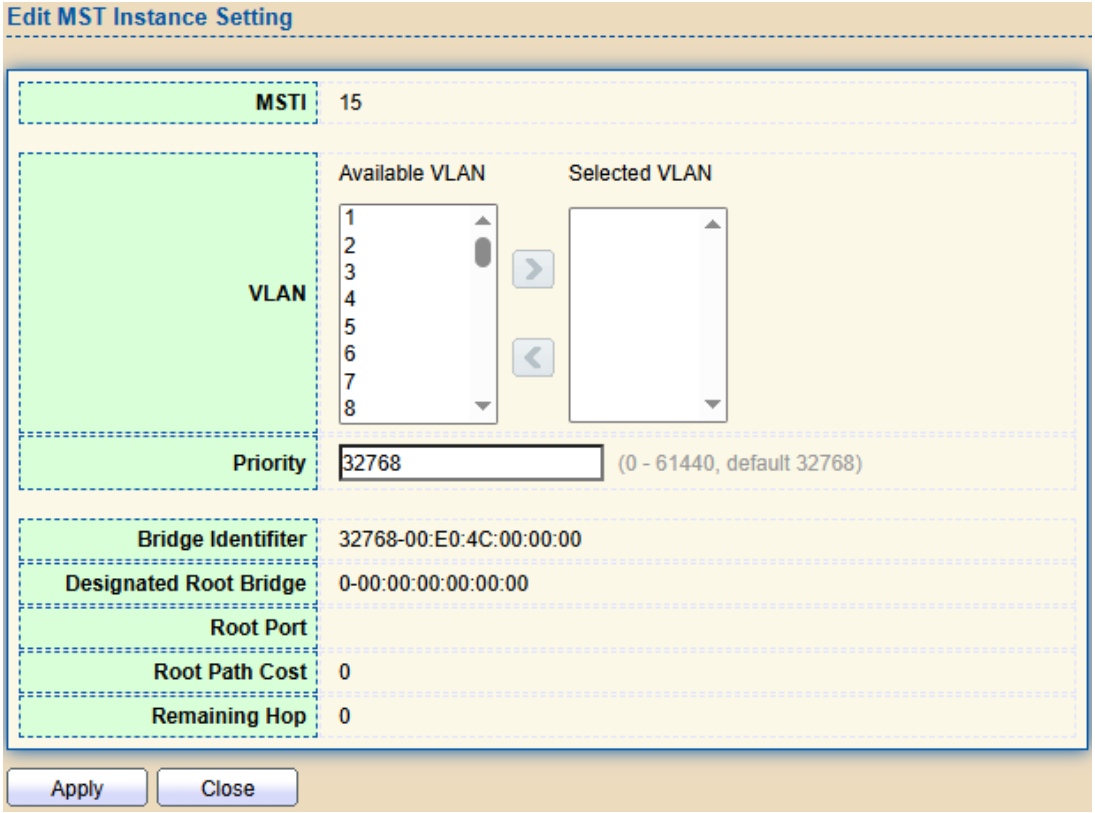


Figure 74 - Spanning Tree > MST Instance > Edit MST Instance Setting

Item	Description
VLAN	Select the VLAN list for the specified MSTI.
Priority	Specify the bridge priority on the specified MSTI. The valid range is from 0 to 61440, and the value must be the multiple of 4096. It ensures the probability that the switch is selected as the root bridge, and the lower values has the higher priority for the switch to be selected as the root bridge of the STP topology.

4.7.4. MST Port Setting

To configure and display MST port setting, click **STP > MST Port Setting**.

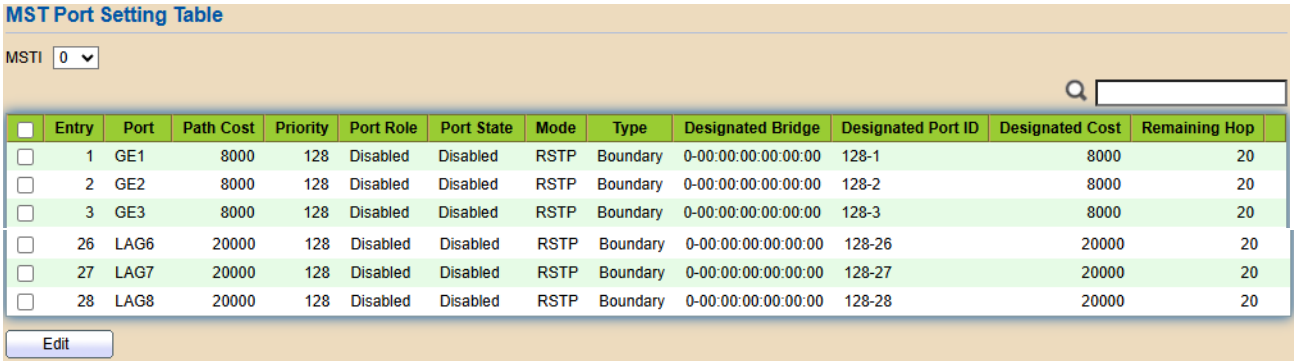


Figure 75 - Spanning Tree > MST Port Setting

Item	Description
MSTI	Specify the port setting on the specified MSTI.
Port	Specify the interface ID or the list of interface IDs.
Path Cost	The port path cost on the specified MSTI.
Priority	The port priority on the specified MSTI.
Port Role	The current port role on the specified port. The possible values are: “Disabled”, “Master”, “Root”, “Designated”, “Alternative”, and “Backup”.
Port State	The current port state on the specified port. The possible values are: “Disabled”, “Discarding”, “Learning”, and “Forwarding”.
Mode	The operational STP mode on the specified port.
Type	The possible value for the port type are: • Boundary: The port attaching an MST Bridge to a LAN that is not in the same region. • Internal: The port attaching an MST Bridge to a LAN that is not in the same region.
Designated Bridge	The bridge ID of the designated bridge.
Designated Port ID	The designated port ID on the switch.
Designated Cost	The path cost of the designated port on the switch.
Remaining Hop	The remaining hops count on the specified port.

Click "Edit" button to view Edit MST Port Setting menu.

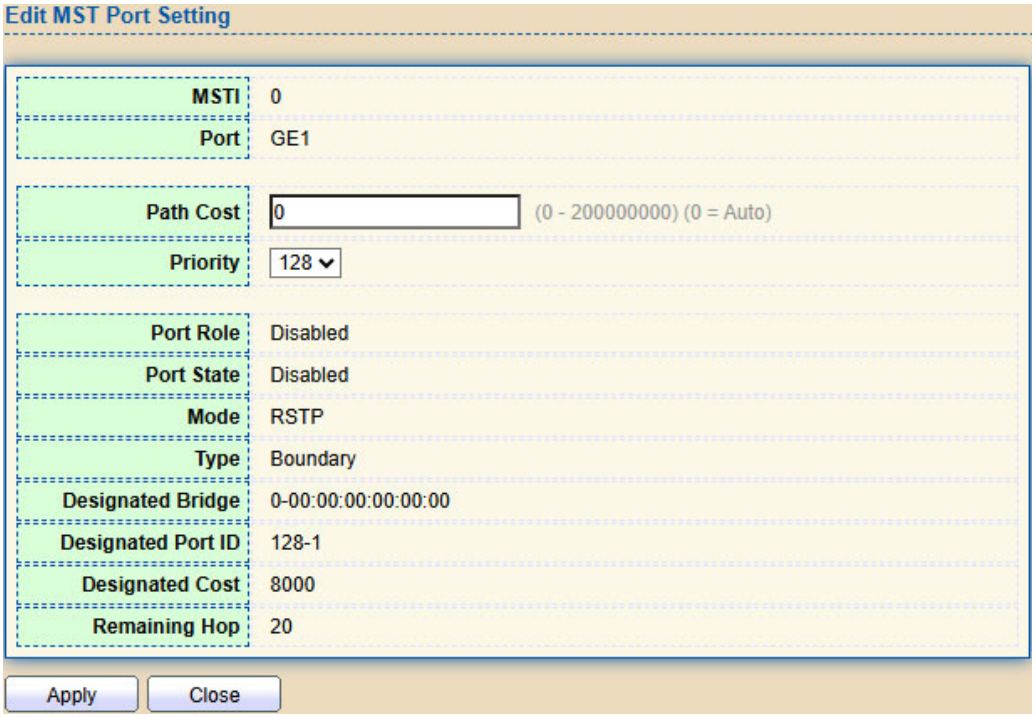


Figure 76 - Spanning Tree > MST Port Setting > Edit MST Port Setting

Item	Description
Path Cost	Specify the STP port path cost on the specified MSTI.
Priority	Specify the STP port priority on the specified MSTI.

4.7.5. Statistics

To display the STP statistics, click **STP > Statistics**.

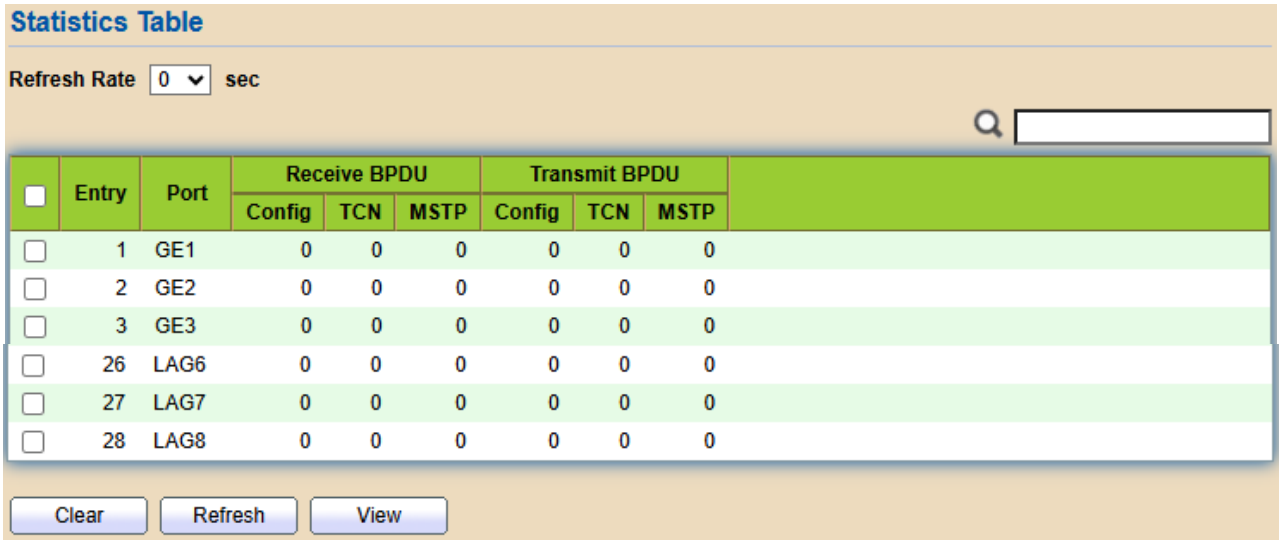


Figure 77 - Spanning Tree > Statistics

Item	Description
Refresh Rate	The option to refresh the statistics automatically.

Receive BPDU (Config)	The counts of the received CONFIG BPDU.
Receive BPDU (TCN)	The counts of the received TCN BPDU.
Receive BPDU (MSTP)	The counts of the received MSTP BPDU.
Transmit BPDU (Config)	The counts of the transmitted CONFIG BPDU.
Transmit BPDU (TCN)	The counts of the transmitted TCN BPDU.
Transmit BPDU (MSTP)	The counts of the transmitted MSTP BPDU.
Clear	Clear the statistics for the selected interfaces
View	View the statistics for the interface.

Click "View" button to view the STP Port Statistic menu.

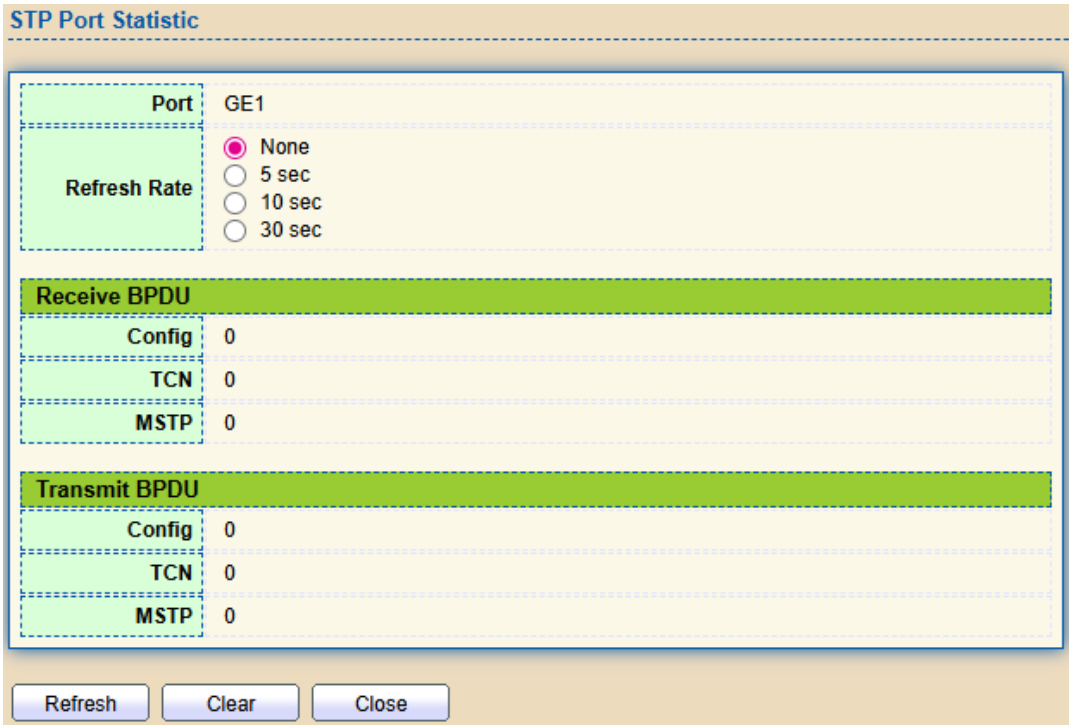


Figure 78 - Spanning Tree > Statistics > STP Port Statistic

Item	Description
Refresh Rate	The option to refresh the statistics automatically.
Clear	Clear the statistics for the selected interfaces.

4.8. Discovery

Use this section to configure LLDP.

4.8.1. LLDP

LLDP is a one-way protocol; there are no request/response sequences. Information is advertised by stations implementing the transmit function, and is received and processed by stations implementing the receive function. The LLDP category contains LLDP and LLDP-MED pages.

4.8.1.1. Property

To display LLDP Property Setting web page, click **Discovery > LLDP > Property**.

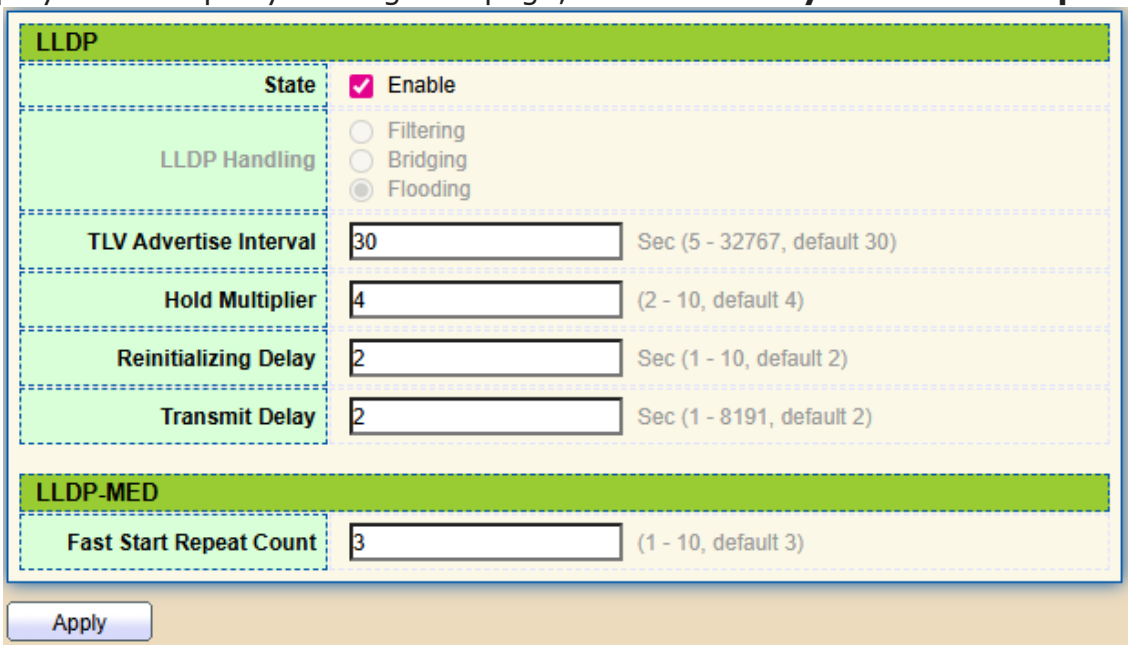


Figure 79 - Discovery > LLDP > Property

Item	Description
State	Enable/ Disable LLDP protocol on this switch.
LLDP Handling	Select LLDP PDU handling action to be filtered, bridging or flooded when LLDP is globally disabled. • Filtering: Deletes the packet. • Bridging: (VLAN-aware flooding) Forwards the packet to all VLAN members. • Flooding: Forwards the packet to all ports
TLV Advertise Interval	Select the interval at which frames are transmitted. The default is 30 seconds, and the valid range is 5-32767 seconds.
Hold Multiplier	Select the multiplier on the transmit interval to assign to TTL (range 2-10, default = 4).
Reinitialization Delay	Select the delay before a re-initialization (range 1-10 seconds, default = 2).

Transmit Delay	Select the delay after an LLDP frame is sent (range 1-8191 seconds, default = 2).
Fast Start Repeat Count	Select fast start repeat count when port link up (range 1-10, default = 3).

4.8.1.2. Port Setting

To display LLDP Port Setting, click **Discovery > LLDP > Port Setting**.

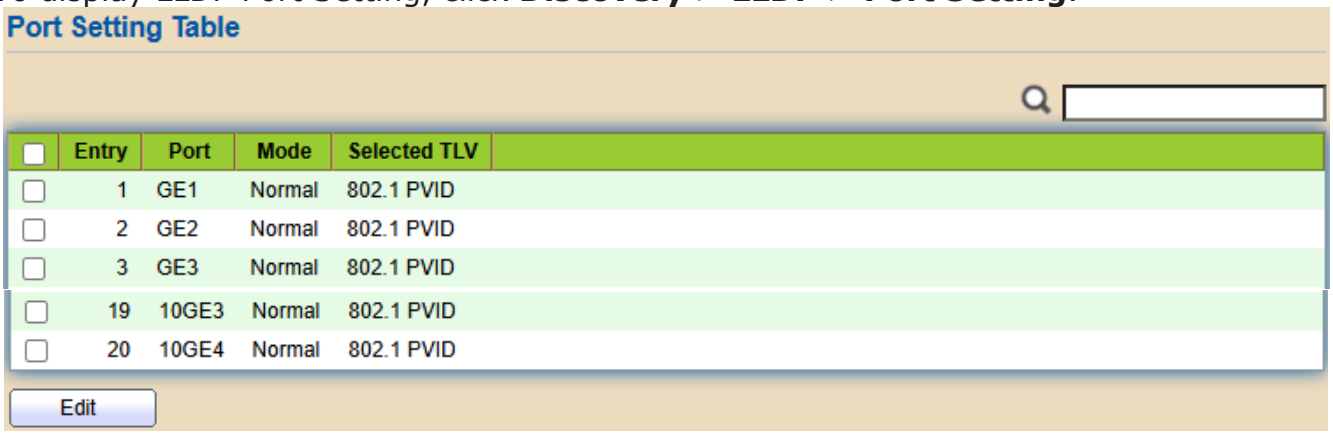


Figure 80 - Discovery > LLDP > Port Setting

Item	Description
Port	Port Name.
Mode	The port LLDP mode.
Selected TLV	The Selected LLDP TLV.

Click "Edit" button to view Edit Port Setting menu.

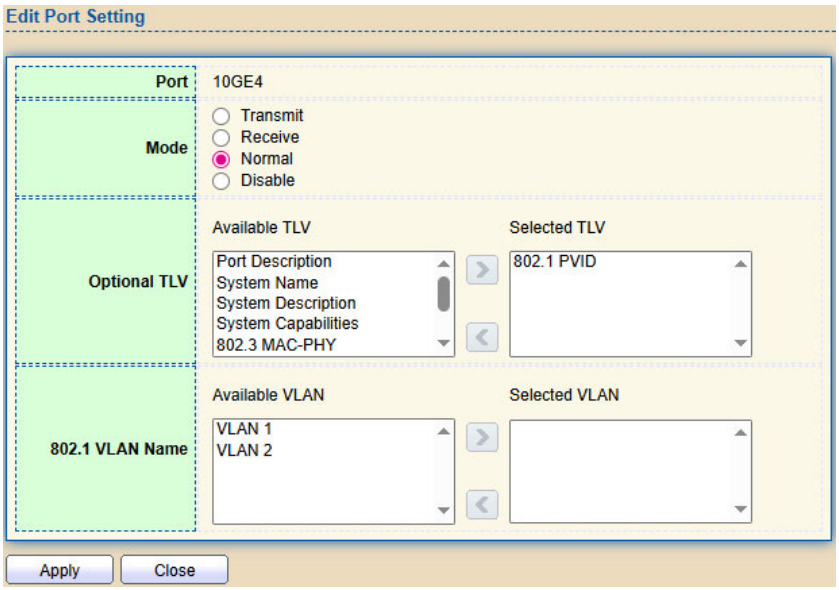


Figure 81 - Discovery > LLDP > Port Setting > Edit Port Setting

Item	Description
Port	Select specified port or all ports to configure LLDP state.
Mode	Select the transmission state of LLDP port interface. • Disable: Disable the transmission of LLDP PDUs. • RX Only: Receive LLDP PDUs only. • TX Only: Transmit LLDP PDUs only. • TX And RX: Transmit and receive LLDP PDUs both.
Optional TLV	Select the LLDP optional TLVs to be carried (multiple selection is allowed). • System Name • Port Description • System Description • System Capability • 802.3 MAC-PHY • 802.3 Link Aggregation • 802.3 Maximum Frame Size • Management Address • 802.1 PVID.
802.1 VLAN Name	Select the VLAN Name ID to be carried (multiple selection is allowed).

4.8.1.3. MED Network Policy

To display LLDP MED Network Policy Setting, click **Discovery > LLDP > MED Network Policy.**

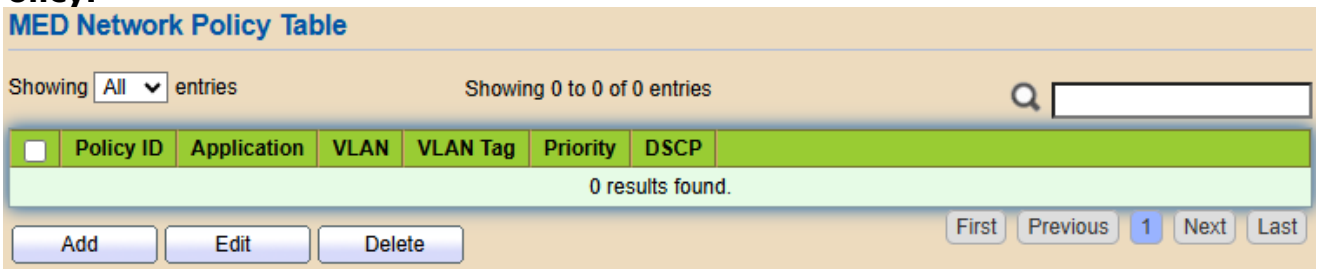


Figure 82 - Discovery > LLDP > Port Setting > MED Network Policy

Click "Add" button to view Edit Add MED Network Policy menu.

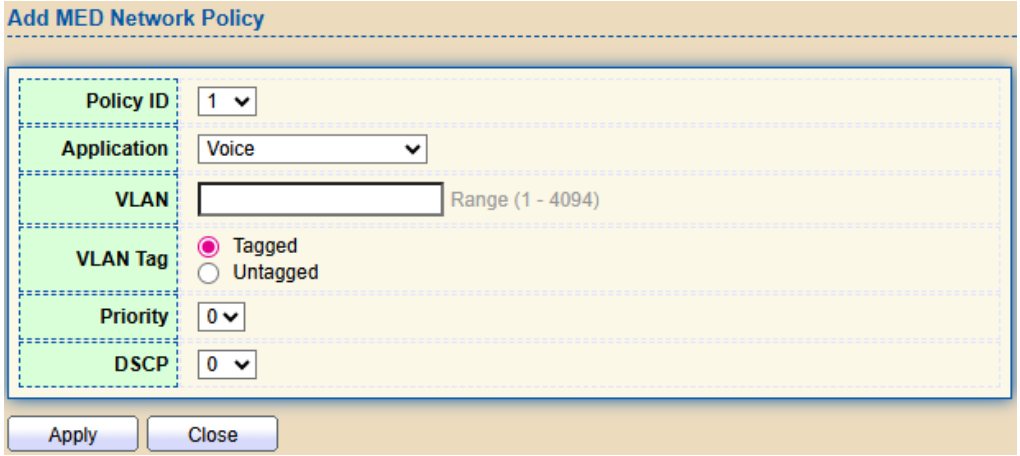


Figure 83 - Discovery > LLDP > Port Setting > Add MED Network Policy

Item	Description
MED Network Policy Voice Auto Mode	Set checkbox to enable or disable MED Network Policy Voice Auto Mode.
Policy ID	Select specified network policy ID to configure.
Application	Select the network policy application type. · ● Voice · ● Voice Signaling · ● Guest Voice · ● Guest Voice Signaling · ● Softphone Voice ·
	● Video Conferencing · ● App Streaming Video · ● Video Signaling
VLAN	Set the VLAN ID, range from 1 to 4094.
VLAN Tag	Set the VLAN tag status. · ● Tagged: Traffic is tagged. · ● Untagged: Traffic is untagged
Priority	Set the L2 priority, range from 0 to 7.
DSCP	Set the DSCP value, range from 0 to 63.

4.8.1.4. MED Port Setting

To display LLDP MED Port Setting, click **Discovery > LLDP > MED Port Setting**.

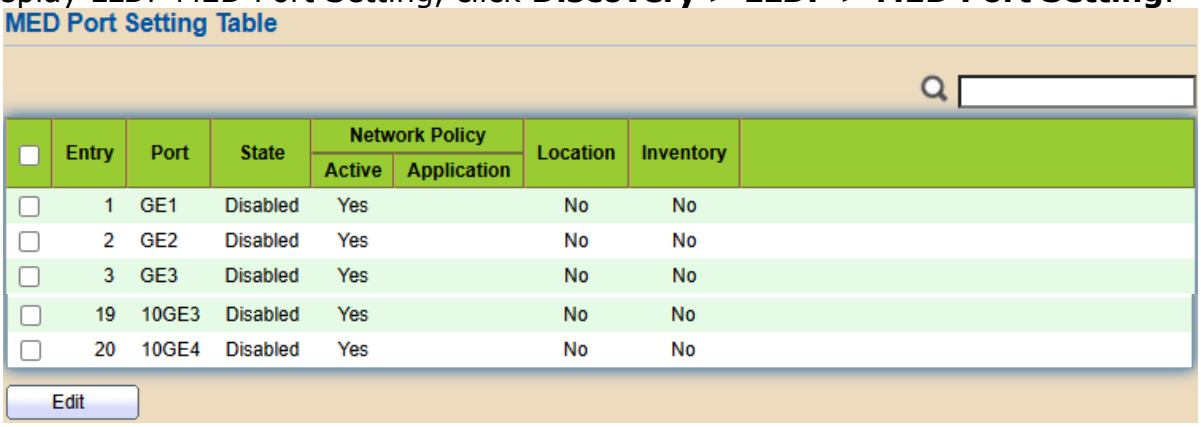


Figure 84 - Discovery > LLDP > MED Port Setting

Click "Edit" button to view Edit Add MED Port Setting menu.

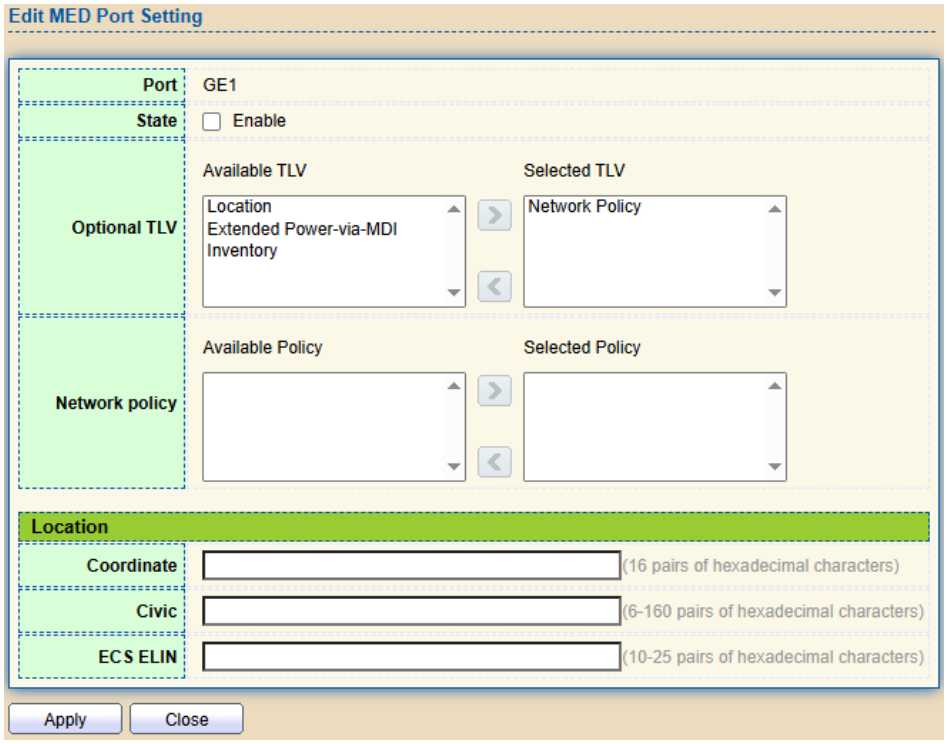
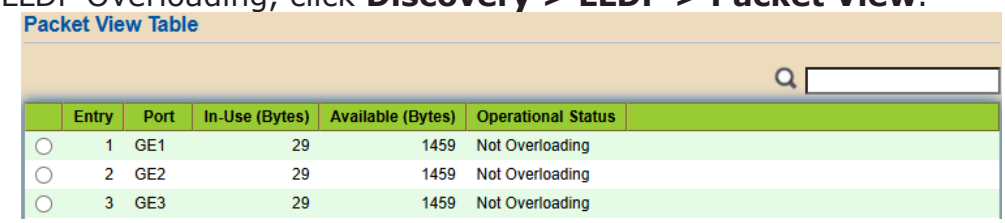


Figure 85 - Discovery > LLDP > Add MED Port Setting

Item	Description
Port	Select specified port or all ports to configure LLDP MED.
State	Select LLDP MED enable status.
Optional TLV	Select LLDP MED optional TLVs (multiple selection is allowed) ● Network Policy ☐ ● Location ☐ ● Inventory
Network Policy	Select the network policy IDs to be bound to ports. The network policy should be created in MED Network Policy page at first.
Coordinate	Set Coordinate
Civic	Set Civic
ECS ELIN	Set ECS ELIN

4.8.1.5. Packet View

To display LLDP Overloading, click **Discovery > LLDP > Packet View**.



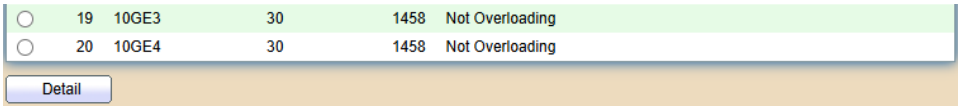


Figure 86 - Discovery > LLDP > Packet View

Item	Description
Port	Port Name.
In-Use (Bytes)	Total number of bytes of LLDP information in each packet.
Available (Bytes)	Total number of available bytes left for additional LLDP information in each packet.
Operational Status	Overloading or not.

Click "Detail" button to view Packet View Detail menu.

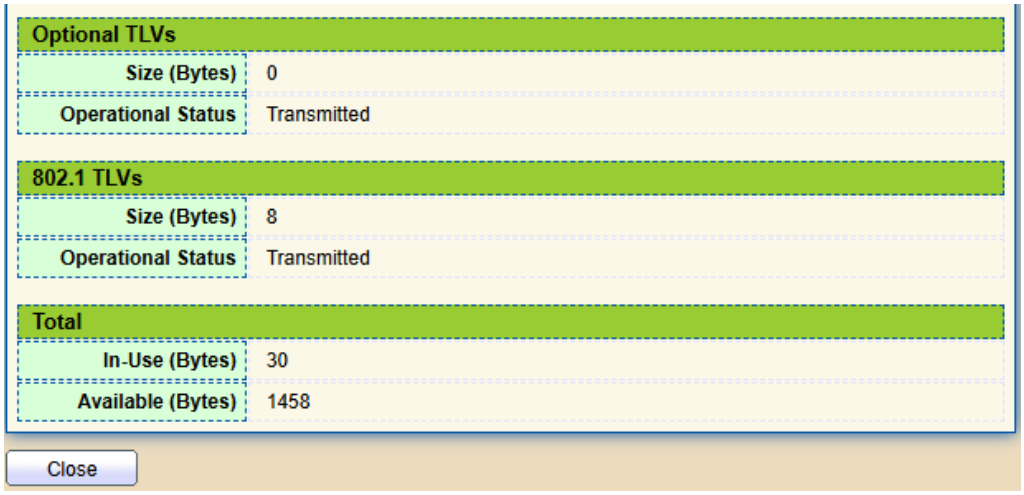


Figure 87 - Discovery > LLDP > Packet View > Packet View Detail

Item	Description
Port	Port Name.
Mandatory TLVs	Total mandatory TLV byte size. Status is sent or overloading.
MED Capabilities	Total MED Capabilities TLV byte size. Status is sent or overloading.
MED Location	Total MED Location byte size. Status is sent or overloading.
MED Network Policy	Total MED Network Policy byte size. Status is sent or overloading.
MED Inventory	Total MED Inventory byte size. Status is sent or overloading
MED Extended Power via MDI	Total MED Extended Power via MDI byte size. Status is sent or overloading.
802.3 TLVs	Total 802.3 TLVs byte size. Status is sent or overloading.
Optional TLVs	Total Optional TLV byte size. Status is sent or overloading.
802.1 TLVs	Total 802.1 TLVs byte size. Status is sent or overloading.
Total	Total number of bytes of LLDP information in each packet.

4.8.1.6. Local Information

Use the LLDP Local Information to view LLDP local device information.

To display LLDP Local Device, click **Discovery > LLDP > Local Information**.

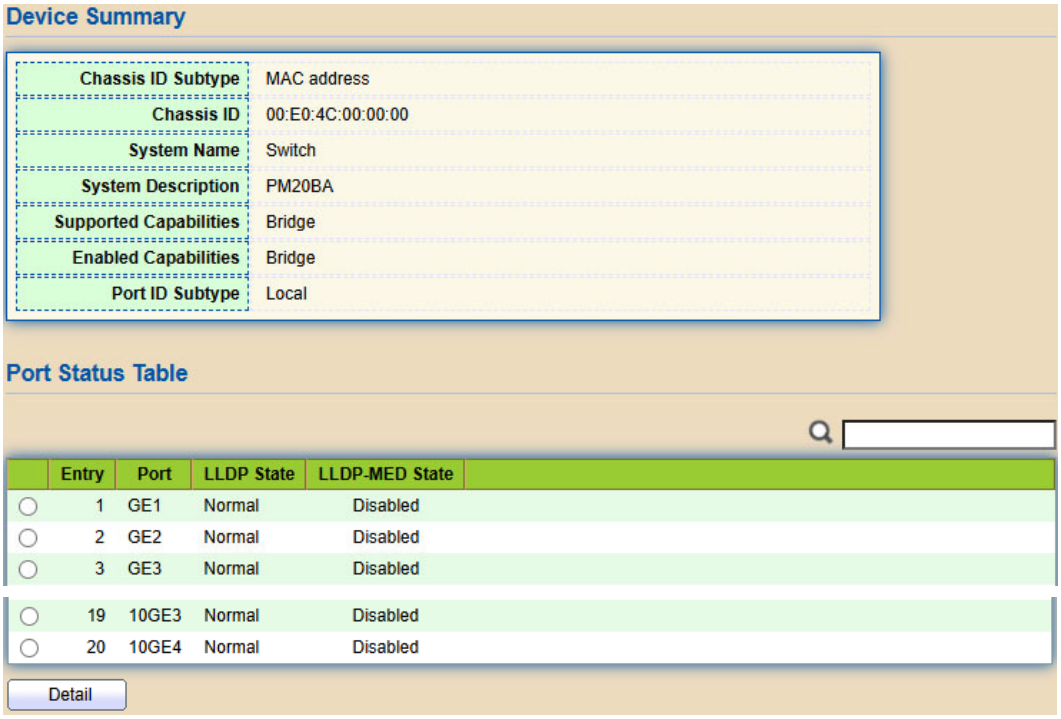


Figure 88 - Discovery > LLDP > Local Information

Item	Description
Chassis ID Subtype	Type of chassis ID, such as the MAC address.
Chassis ID	Identifier of chassis. Where the chassis ID subtype is a MAC address, the MAC address of the switch is displayed.
System Name	Name of switch.
System Description	Description of the switch.
Supported Capabilities	Primary functions of the device, such as Bridge, WLAN AP, or Router.
Enabled Capabilities	Primary enabled functions of the device.
Port ID Subtype	Type of the port identifier that is shown.
LLDP State	LLDP Tx and Rx abilities.
LLDP-MED State	LLDP MED enable state.

Click “Detail” button on the page to view detail information of the selected port.

Local Information Detail
Chassis ID Subtype
MAC address
Chassis ID
00:E0:4C:00:00:00
System Name
Switch
System Description
SZ2G-0416IXSP
Supported Capabilities
Bridge
Enabled Capabilities
Bridge
Port ID
10GE4
Port ID Subtype
Local
Port Description
Management Address Table
Address Subtype
Address
Interface Subtype
Interface Number
0 results found.
MAC/PHY Detail
Auto-Negotiation Supported
N/A
Auto-Negotiation Enabled
N/A
Auto-Negotiation Advertised Capabilities
N/A
Operational MAU Type
N/A
802.3 Detail
802.3 Maximum Frame Size
N/A
802.3 Link Aggregation
Aggregation Capability
N/A
Aggregation Status
N/A
Aggregation Port ID
N/A
MED Detail
Capabilities Supported
N/A
Current Capabilities
N/A
Device Class
N/A
PoE Device Type
N/A
PoE Power Source
N/A
PoE Power Priority
N/A
PoE Power Value
N/A
Hardware Revision
N/A
Firmware Revision
N/A
Software Revision
N/A
Serial Number
N/A
Manufacturer Name
N/A
Model Name
N/A
Asset ID
N/A
Location Information
Civic
N/A
Coordinate
N/A
ECS ELIN
N/A
Network Policy Table
Application Type
VLAN
VLAN Type
Priority
DSCP
0 results found.
Close

Figure 89 - Discovery > LLDP > Local Information > Detail

4.8.1.7. Neighbor

Use the LLDP Neighbor page to view LLDP neighbor information.

To display LLDP Remote Device, click **Discovery > LLDP > Neighbor**.

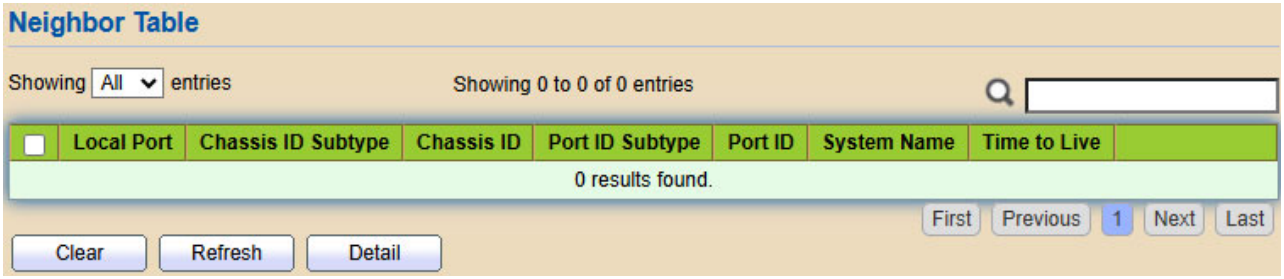


Figure 90 - Discovery > LLDP > Neighbor

Item	Description
Local Port	Number of the local port to which the neighbor is connected.
Chassis ID Subtype	Type of chassis ID (for example, MAC address).
Port ID Subtype	Type of the port identifier that is shown.
Port ID	Identifier of port.
System Name	Published name of the switch.
Time to Live	Time interval in seconds after which the information for this neighbor is deleted.

Click “detail” to view selected neighbor detail information

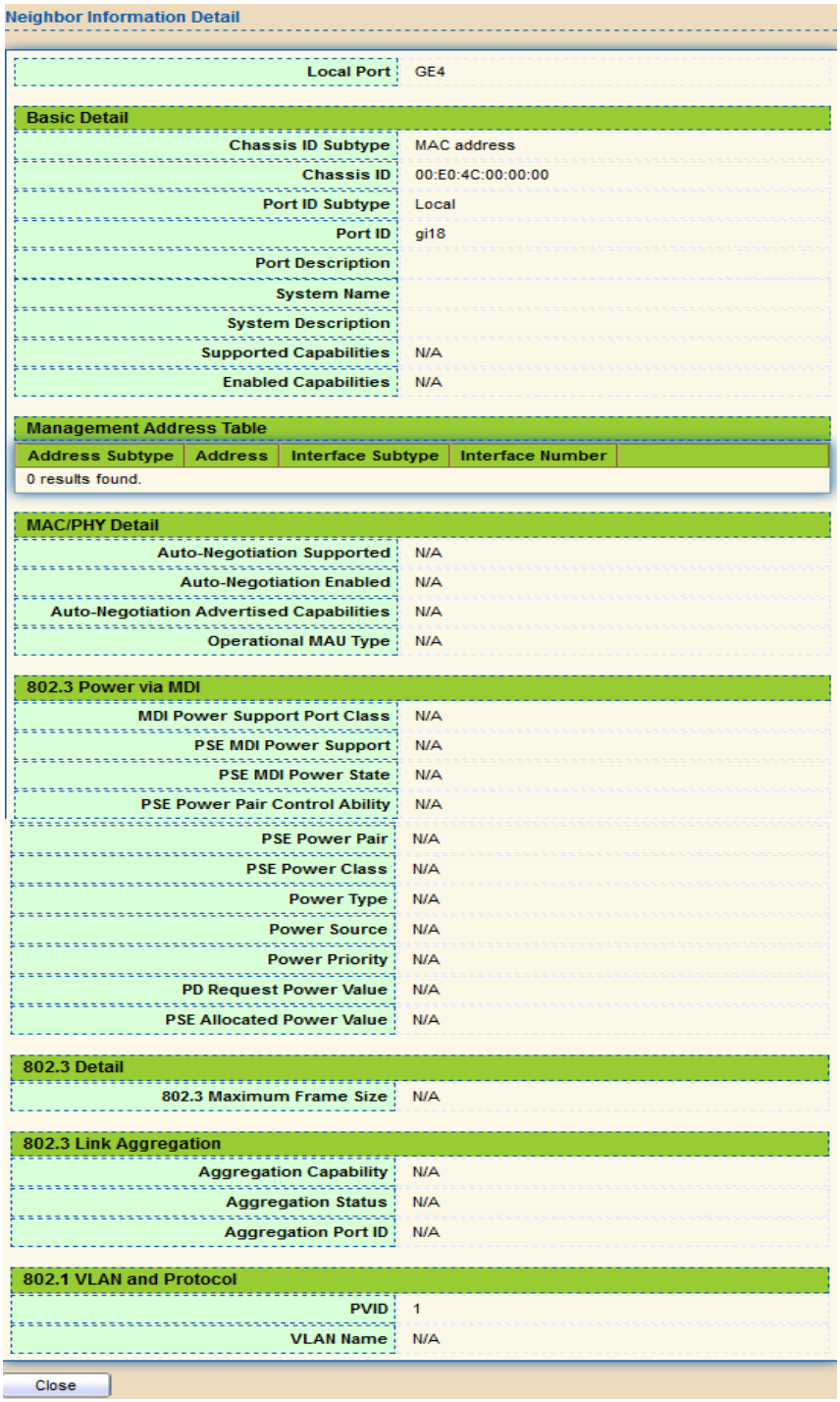


Figure 91-LLDP Neighbor Detail Page

4.8.1.8. Statistics

The Link Layer Discovery Protocol (LLDP) Statistics page displays summary and per-port information for LLDP frames transmitted and received on the switch.

To display LLDP Statistics status, click **Discovery > LLDP > Statistics**.

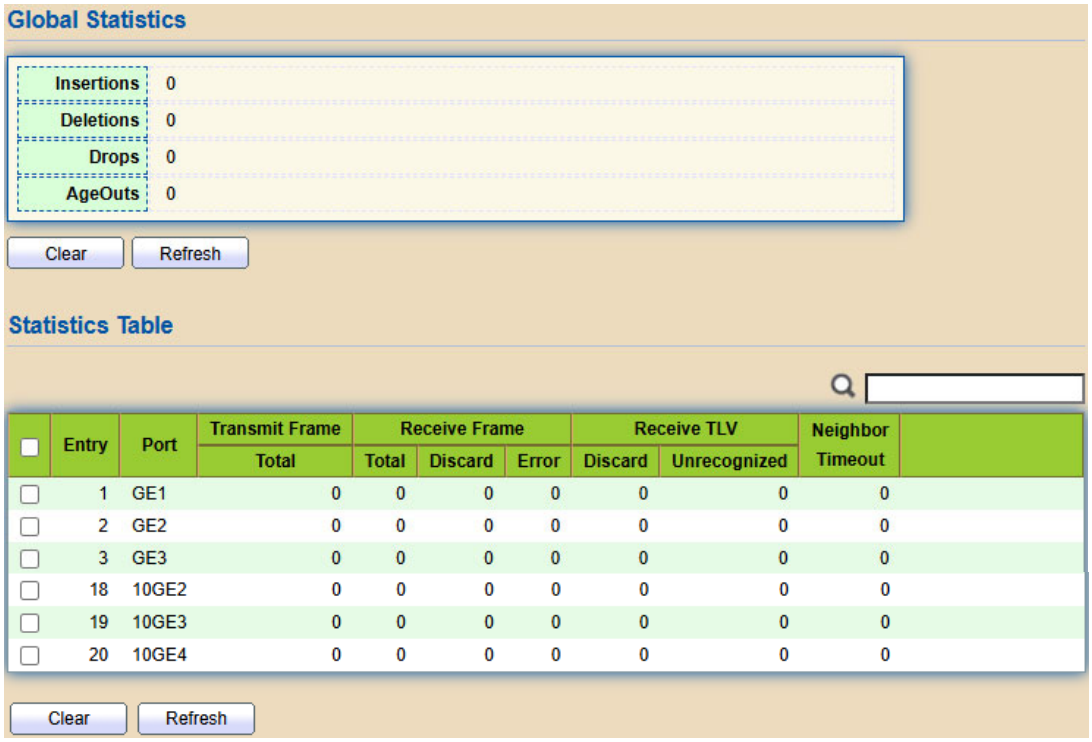


Figure 92 - Discovery > LLDP > Statistics

Item	Description
Insertions	The number of times the complete set of information advertised by a particular MAC Service Access Point (MSAP) has been inserted into tables associated with the remote systems.
Deletions	The number of times the complete set of information advertised by MSAP has been deleted from tables associated with the remote systems.
Drops	The number of times the complete set of information advertised by MSAP could not be entered into tables associated with the remote systems because of insufficient resources.
Age Outs	The number of times the complete set of information advertised by MSAP has been deleted from tables associated with the remote systems because the information timeliness interval has expired.
Statistics Table	
Port	Interface or port number.
Transmit Frame Total	Number of LLDP frames transmitted on the corresponding port.
Receive Frame Total	Number of LLDP frames received by this LLDP agent on the corresponding port, while the LLDP agent is enabled.
Receive Frame Discard	Number of LLDP frames discarded for any reason by the LLDP agent on the corresponding port.

Receive Frame Error	Number of invalid LLDP frames received by the LLDP agent on the corresponding port, while the LLDP agent is enabled.
Receive TLV Discard	Number of TLVs of LLDP frames discarded for any reason by the LLDP agent on the corresponding port.
Receive TLV Unrecognized	Number of TLVs of LLDP frames that are unrecognized while the LLDP agent is enabled.
Neighbor Timeout	Number of age out LLDP frames.

4.9. Multicast

Use this section to configure Multicast.

4.9.1. General

Use the General pages to configure settings of IGMP and MLD common function.

4.9.1.1. Property

To display multicast general property Setting web page, click **Multicast> General> Property**

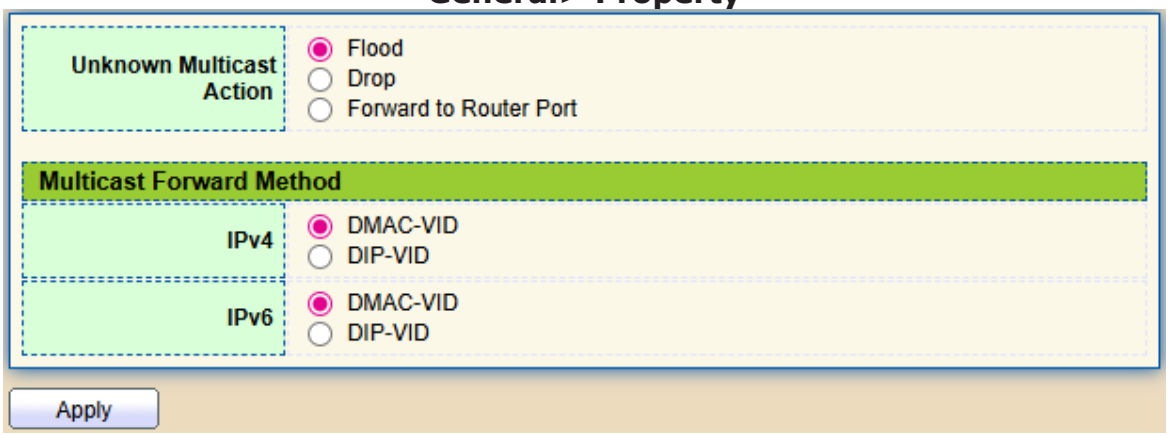


Figure 93 - Multicast > General > Property

Item	Description
Unknown Multicast Action	Set the unknown multicast action • Flood: flood the unknown multicast data. • Drop: drop the unknown multicast data. • Router port: forward the unknown multicast data to router port.
IPv4	Set the ipv4 multicast forward method. • MAC-VID: forward method DMAC+VID. • DIP-VID: forward method DIP+VID.

IPv6	Set the ipv6 multicast forward method. · • MAC-VID: forward method DMAC+VID. · • DIP-VID: forward method DIP+VIP (DIP is ipv6 low 32 bit).

4.9.1.2. Group Address

This page allow user to browse all multicast groups that dynamic learned or statically added.

To display Multicast General Group web page, click **Multicast> General> Group Address**

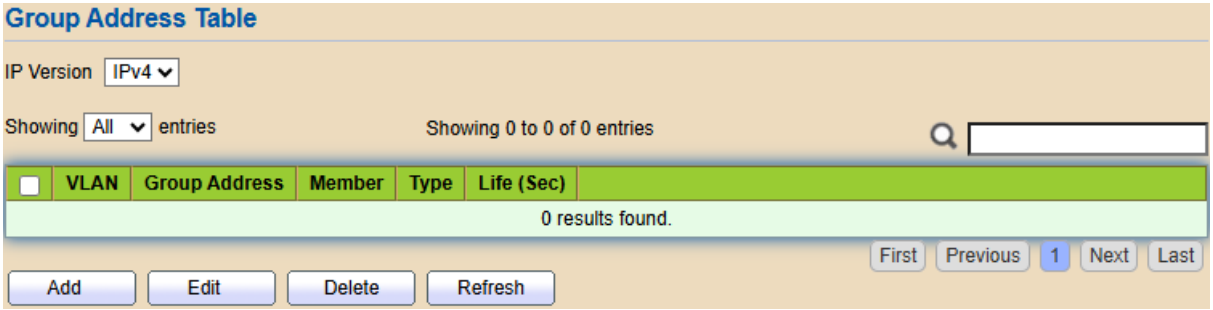


Figure 94 - Multicast > General > Group Address

Item	Description
IP Version	IP Version • IPv4: ipv4 multicast group • IPv6: ipv6 multicast group
VLAN	The VLAN ID of group.
Group Address	The group IP address.
Member	The member ports of group.
Type	The type of group. Static or Dynamic.
Life (Sec)	The life time of this dynamic group.

Click "Add" or "Edit" button to view Add or Edit Group Address menu.

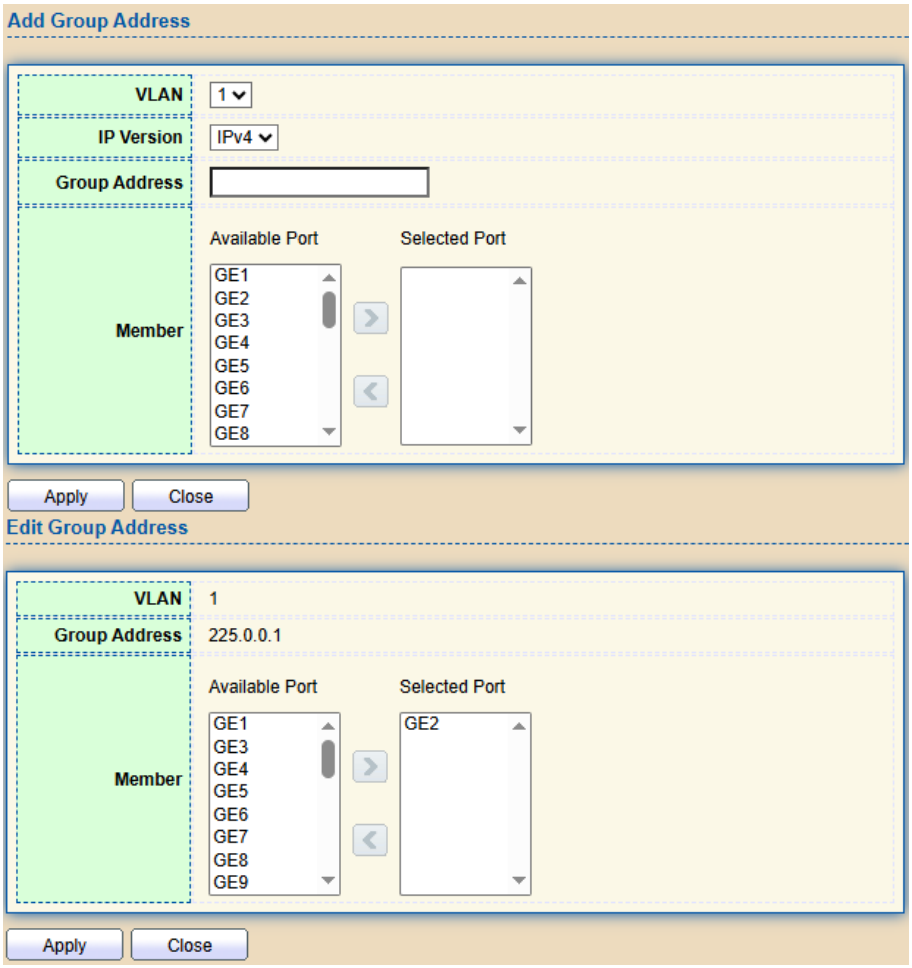


Figure 95 - Multicast > General > Group Address > Add/Edit Group Address

Item	Description
VLAN	The VLAN ID of group.
IP Version	IP Version • IPv4: ipv4 multicast group • IPv6: ipv6 multicast group
Group Address	The group IP address.
Member	The member ports of group. • Available Port: Optional port member • Selected Port: Selected port member

4.9.1.3. Router Port

This page allow user to browse all router port information. The static and forbidden router port can set by user.

To display multicast router port table web page, click **Multicast> General> Router Port**

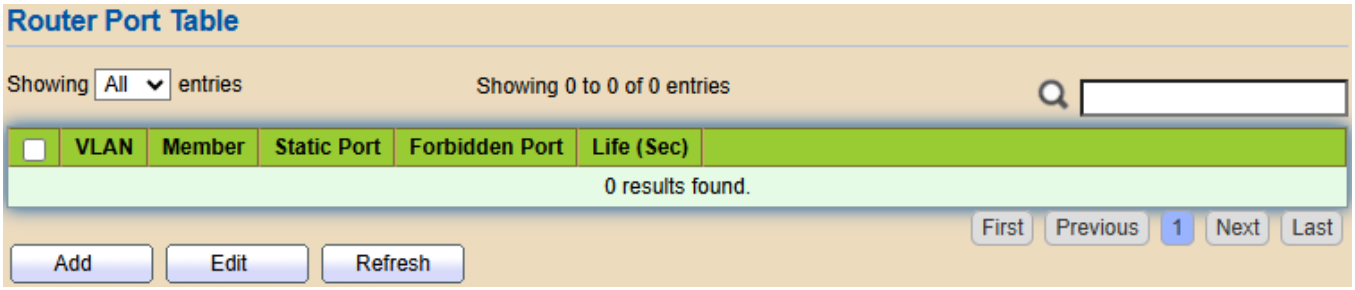
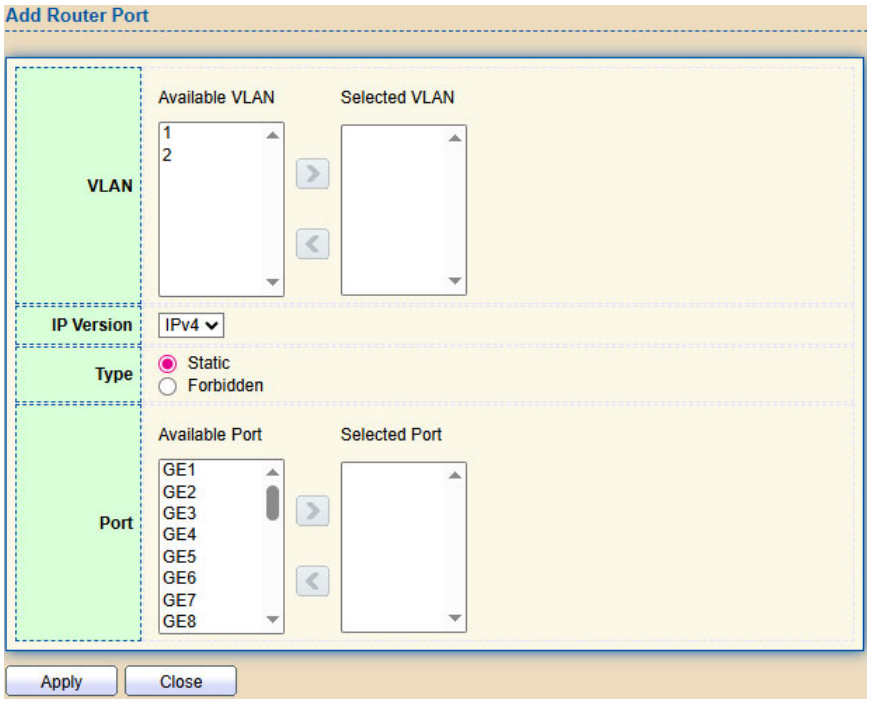


Figure 96 - Multicast > General > Router Port

Item	Description
IP Version	IP Version • IPv4: ipv4 multicast router • IPv6: ipv6 multicast router
VLAN	The VLAN ID router entry.
Member	Router Port member (include static and learned port member).
Static Port	Static router port member.
Forbidden Port	Forbidden router port member.
Life (Sec)	The expiry time of the router entry.

Click "Add" or “Edit” button to view Add/Edit Router Port menu.



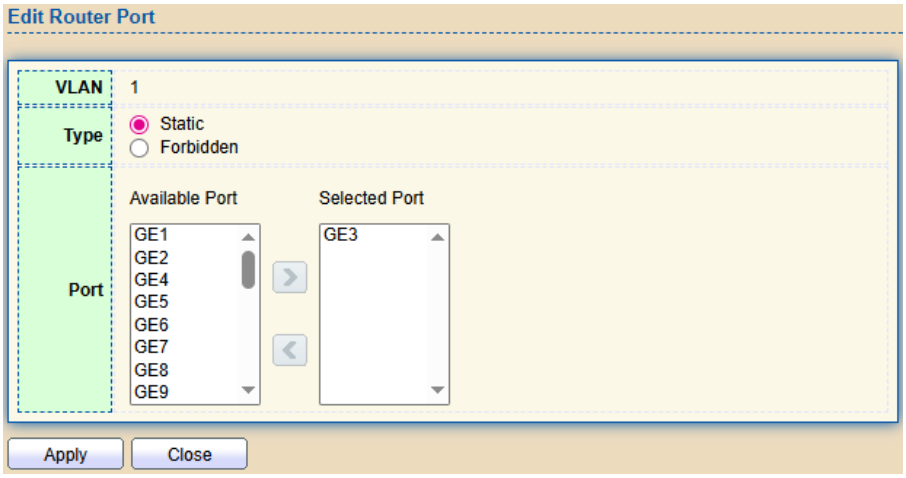


Figure 97 - Multicast > General > Router Port > Add/Edit Router Port

Item	Description
VLAN	The VLAN ID for router entry • Available VLAN: Optional VLAN member • Selected VLAN: Selected VLAN member.
IP Version	IP Version • IPv4: ipv4 multicast router • IPv6: ipv6 multicast router
Type	The router port type • Static: static router port • Forbidden: forbidden router port, can’ t learn dynamic router port member
Port	The member ports of router entry. • Available Port: Optional router port member • Selected Port: Selected router port member

4.9.1.4. Forward All

This page allow user to add and edit forward all entry.

To display Multicast Forward All web page, click **Multicast> General> Forward All**

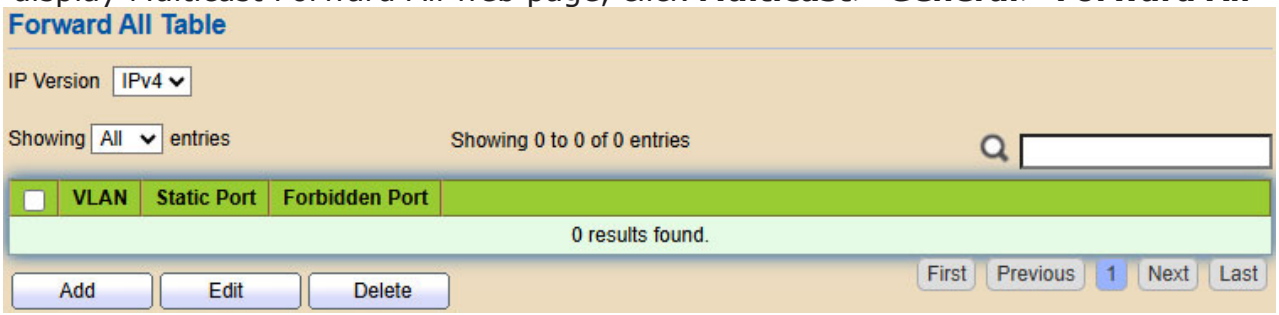


Figure 98 - Multicast > General > Forward All

Item	Description
IP Version	IP Version ・ ● IPv4: ipv4 multicast forward all ・ ● IPv6: ipv6 multicast forward all
VLAN	VLAN ID of forward all entry
Static Port	Known multicast group always forward port member
Forbidden Port	Known multicast group always not forward port member

Click "Add" or “Edit” button to view Add/Edit Forward All menu.

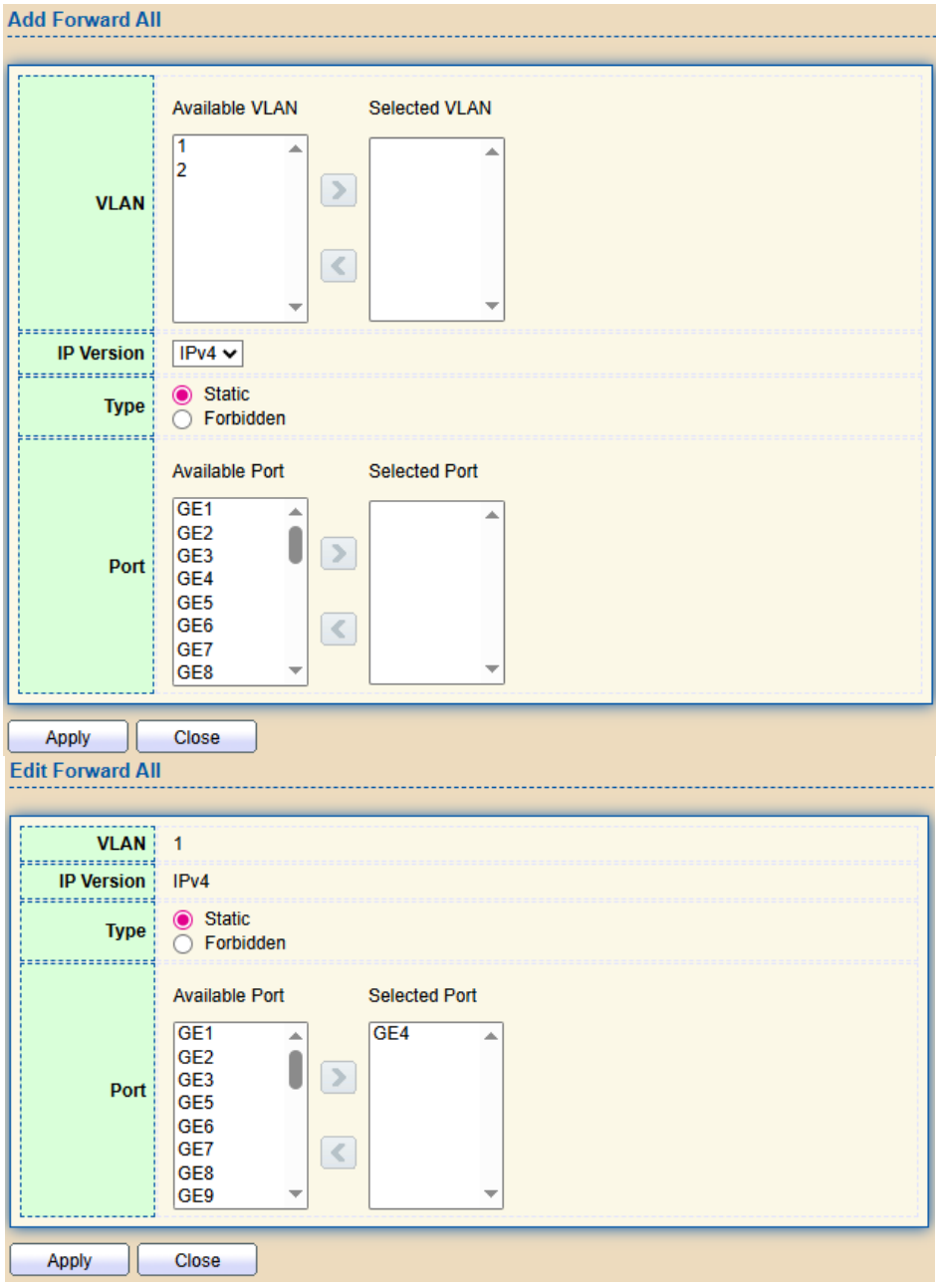


Figure 99 - Multicast > General > Add/Edit Forward All

Item	Description
VLAN	The VLAN ID for forward all entry ・ ● Available VLAN: Optional VLAN member ・ ● Selected VLAN: Selected VLAN member
IP Version	IP Version ・ ● IPv4: ipv4 multicast forward all ・ ● IPv6: ipv6 multicast forward all
Type	The forward all port type ・ ● Static: static forward all port ・ ● Forbidden: forbidden forward all port
Port	The member ports of router entry. ・ ● Available Port: Optional router port member ・ ● Selected Port: Selected router port member

4.9.1.5. Throttling

This page allow user to configure port can learned max group number and if port group number arrived max group number action

To display multicast max-group number and action setting web page, click **Multicast> General> Throttling**

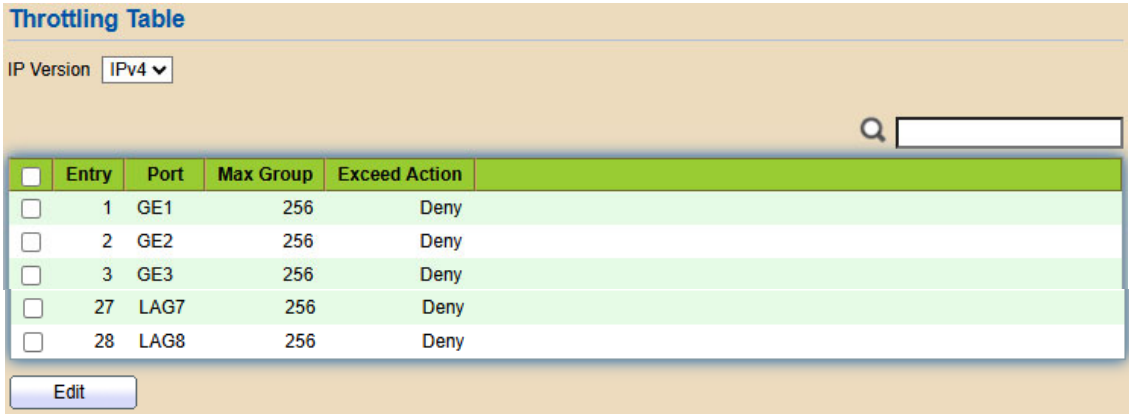


Figure 100 - Multicast > General > Throttling

Item	Description
IP Version	IP Version ・ ● IPv4: ipv4 for IGMP snooping throttling ・ ● IPv6: ipv6 for MLD snooping throttling
Entry	Entry of number
Port	Port Name
Max Group	Max number of group for port

Exceed Action	Display the port exceed max number group learning group action

Click "Edit" button to view Edit Throttling menu.

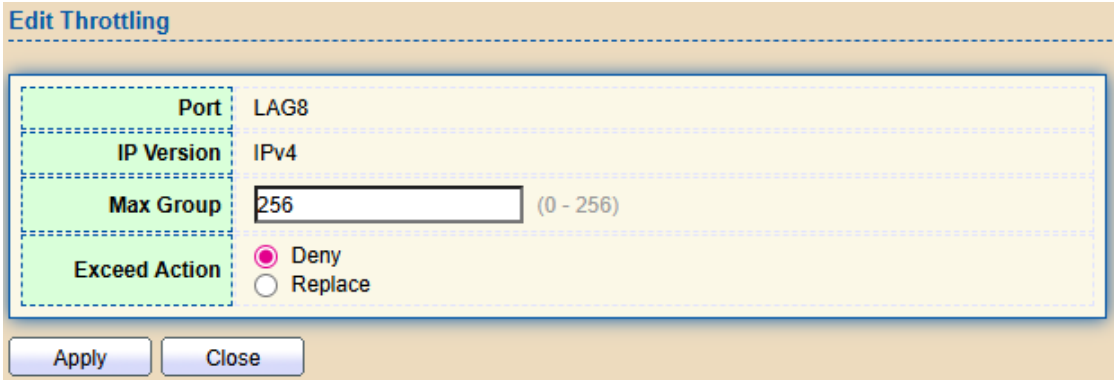


Figure 101 - Multicast > General > Edit Throttling

Item	Description
Port	Display the selected port list
IP Version	Display the selected IP version
Max Group	Max number of group for port
Exceed Action	Excess Max number of port learning group action · ● Deny: do not learning group. · ● Replace: random replace one exist group

4.9.1.6. Filtering Profile

This page allow user to add, edit or delete profile for IGMP or MLD snooping.

To display Multicast Profile Setting web page, click **Multicast> General> Filtering Profile**

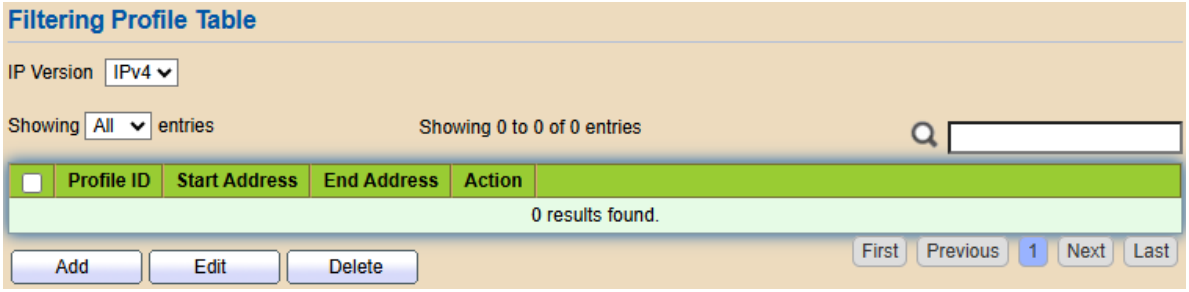


Figure 102 - Multicast > General > Filtering Profile

Item	Description
IP Version	IP version: · ● IPv4: IGMP snooping profile · ● IPv6: MLD snooping profile

Profile ID	profile ID
Start Address	The start group address of profile Display
End Address	The end group address of profile
Action	Display profile action

Click "Add" or “Edit” button to view Add/Edit profile menu.

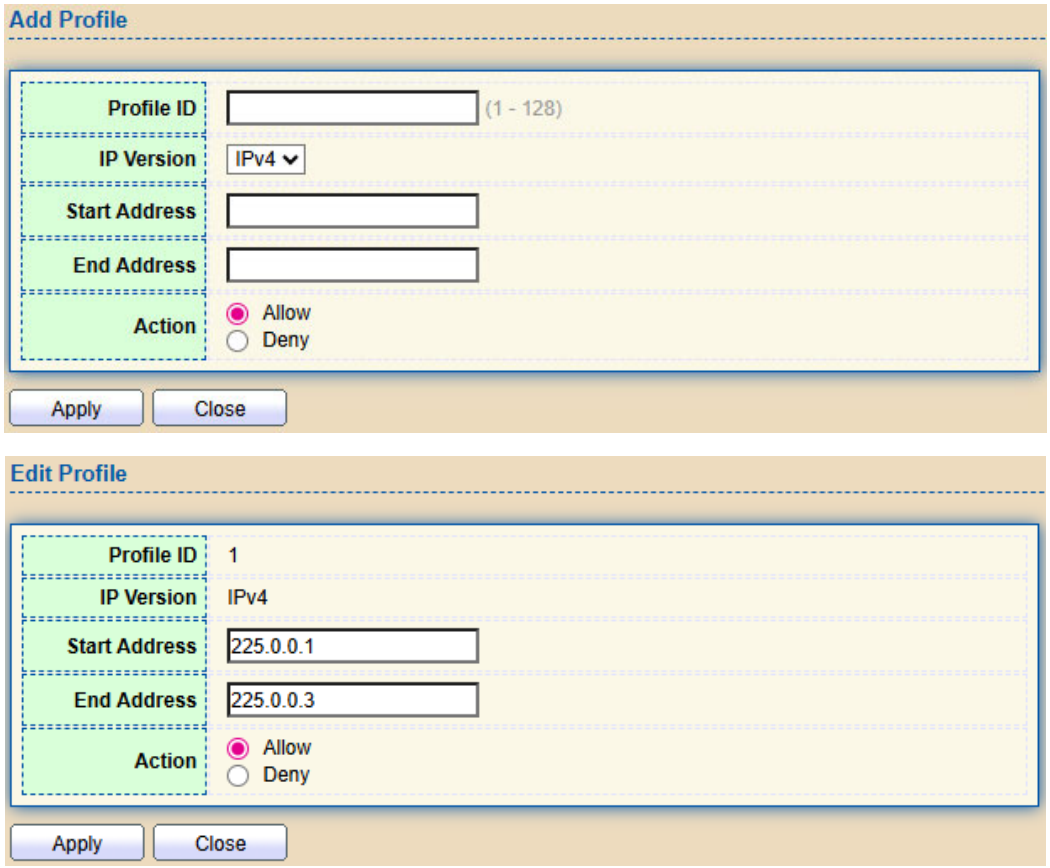


Figure 103 - Multicast > General > Add/Edit Filtering Profile

Item	Description
Profile ID	profile ID
IP Version	IP version: ・ ● IPv4: IGMP snooping profile ・ ● IPv6: MLD snooping profile
Start Address	The start group address of profile Display
End Address	The end group address of profile
Action	The action of profile: ・ ● Allow: permit all packets that match the profile. ・ ● Deny: deny all packets that match the profile.

4.9.1.7. Filtering Binding

This page allow user to bind/remove profile for each port.

To display Multicast port filter binding profile web page, click **Multicast> General> Filtering Binding**

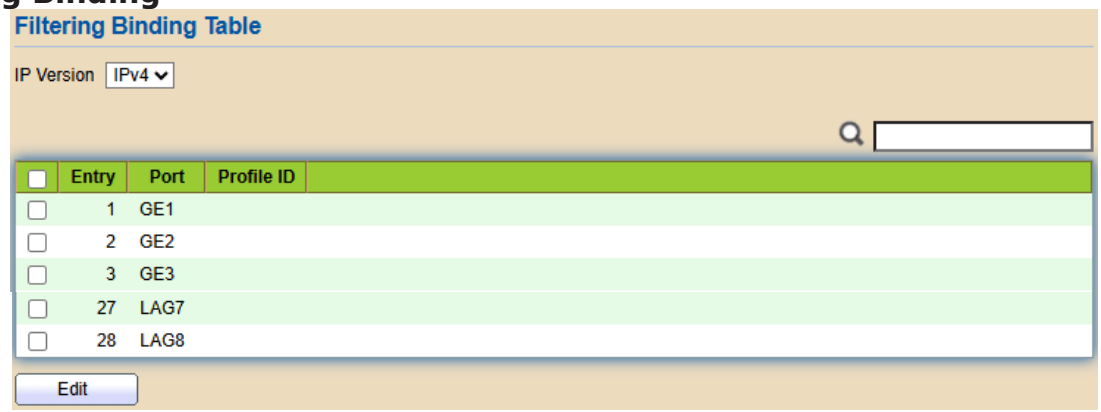


Figure 104 - Multicast > General > Filtering Profile Binding

Item	Description
IP Version	IP version: ・ ● IPv4: IGMP snooping profile ・ ● IPv6: MLD snooping profile
Entry	Entry of number
Port	Port Name
Profile ID	Port binding Profile ID

Click "Edit" button to view Edit profile Binding menu.

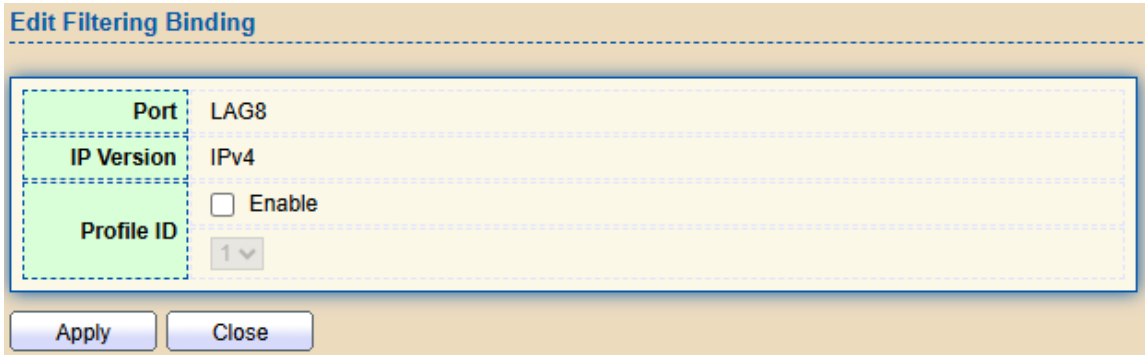


Figure 105 - Multicast > General > Edit Filtering Profile Binding

Item	Description
Port	Selected Port List
IP Version	Display Selected Port filtering IP version

Profile ID	If check Enable, can select or change profile ID, Else it will delete port filter profile binding

4.9.2. IGMP Snooping

Use the IGMP Snooping pages to configure settings of IGMP snooping function.

4.9.2.1. Property

This page allow user to configure global settings of IGMP snooping and configure specific VLAN settings of IGMP Snooping.

To display IGMP Snooping global setting and VLAN Setting web page, click **Multicast> IGMP Snooping> Property**

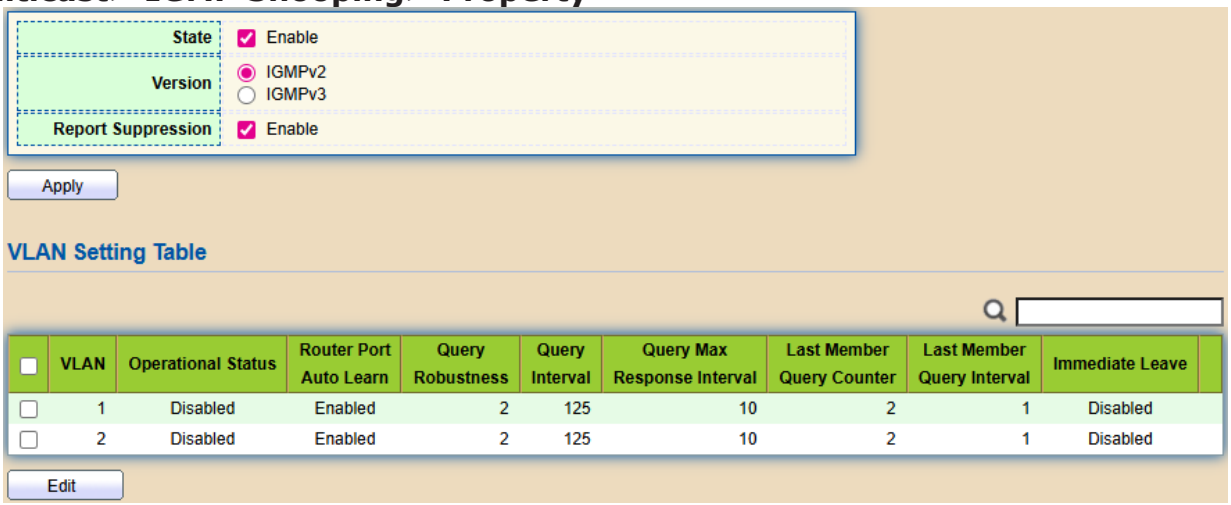


Figure 106 - Multicast > IGMP Snooping > Property

Item	Description
State	Set the enabling status of IGMP Snooping functionality • Enable: If Checked Enable IGMP Snooping, else is Disabled IGMP Snooping.
Version	Set the IGMP snooping version • IGMPv2: Only support process IGMP v2 packet. • IGMPv3: Support v3 basic and v2.
Report Suppression	Set the enabling status of IGMP v2 report suppression • Enable: If Checked Enable IGMP Snooping v2 report suppression, else Disable the report suppression function.
VLAN	The IGMP entry VLAN ID.
Operation Status	The enable status of IGMP snooping VLAN functionality.
Router Port Auto Learn	The enabling status of IGMP snooping router port auto learning.
Query Robustness	The Query Robustness allows tuning for the expected packet loss on a subnet.
Query Interval	The interval of querier to send general query.

Query Max Response Interval	In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second.
Last Member Query count	The count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.
Last Member Query Interval	The interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.
Immediate leave	The immediate leave status of the group will immediately leave when receive IGMP Leave message.

Click "Edit" button to Edit VLAN Setting menu.

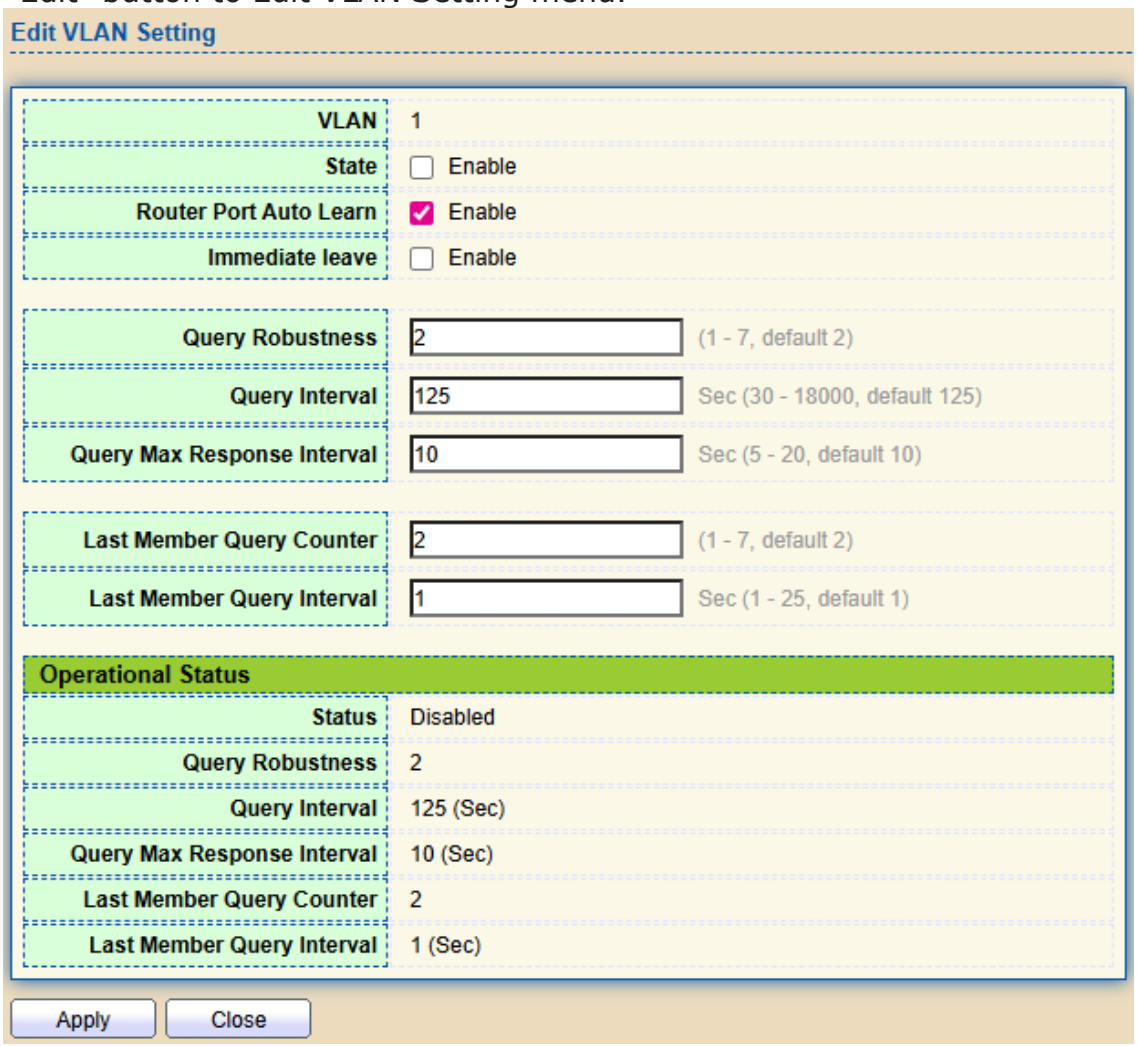


Figure 107 - Multicast > IGMP Snooping > Property >Edit VLAN Setting

Item	Description
VLAN	The selected VLAN List.

State	Set the enabling status of IGMP Snooping VLAN functionality • Enable: If Checked Enable IGMP Snooping VLAN, else is Disabled IGMP Snooping VLAN.
Router Port Auto Learn	Set the enabling status of IGMP Snooping router port learning • Enable: If checked Enable learning router port by query and PIM, DVRMP, else Disable the learning router port.
Immediate leave	Immediate Leave the group when receive IGMP Leave message. • Enable: If checked Enable immediate leave, else disable immediate leave.
Query Robustness	The Admin Query Robustness allows tuning for the expected packet loss on a subnet.
Query Interval	The admin interval of querier to send general query.
Query Max Response Interval	The admin query max response interval, In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second.
Last Member Query Counter	The admin last member query count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.
Last Member Query Interval	The admin last member query interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.
Operational Status	
Status	Operational IGMP snooping status, must both IGMP snooping global and IGMP snooping enable the status will be enable.
Query Robustness	Operational Query Robustness.
Query Interval	Operational Query Interval.
Query Max Response Interval	Operational Query Max Response Interval
Last Member Query Counter	Operational Last Member Query Count.
Last Member Query Interval	Operational Last Member Query Interval.

4.9.2.2. Querier

This page allow user to configure querier settings on specific VLAN of IGMP Snooping.

To display IGMP Snooping Querier Setting web page, click **Multicast> IGMP Snooping> Querier**

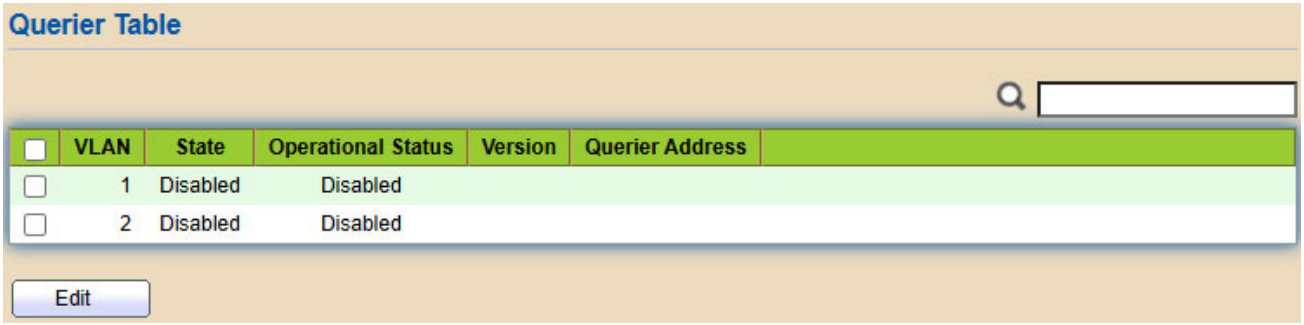


Figure 108 - Multicast > IGMP Snooping > Querier

Item	Description
VLAN	IGMP Snooping querier entry VLAN ID.
State	The IGMP Snooping querier Admin State.
Operational Status	The IGMP Snooping querier operational status.
Querier Version	The IGMP Snooping querier operational version.
Querier Address	The operational Querier IP address on the VLAN.

Click "Edit" button to view Edit Querier menu.

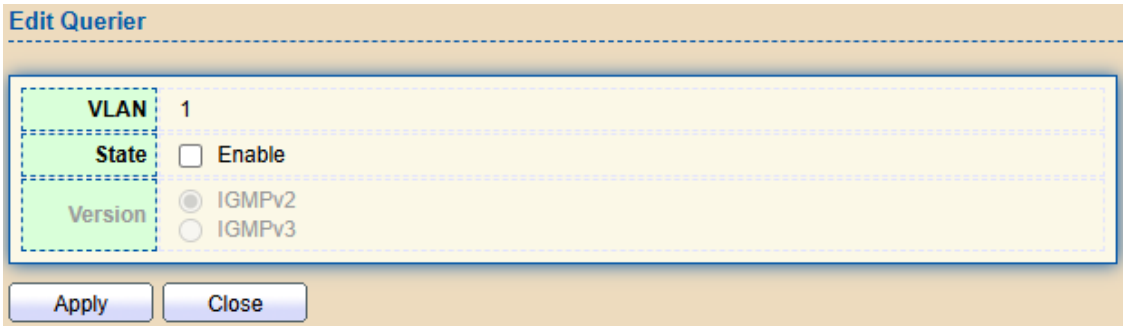


Figure 109 - Multicast > IGMP Snooping > Querier > Edit Querier

Item	Description
VLAN	The Selected Edit IGMP Snooping querier VLAN List.
State	Set the enabling status of IGMP Querier Election on the chose VLANs • Enabled: if checked Enable IGMP Querier else Disable IGMP Querier.

Version	Set the query version of IGMP Querier Election on the chose VLANs • IGMPv2: Querier version 2. • IGMPv3: Querier version 3. (IGMP Snooping version should be IGMPv3)

4.9.2.3. Statistics

This page allow user to clear IGMP snooping statics.

To display IGMP Snooping Statistics, click **Multicast> IGMP Snooping> Statistics**

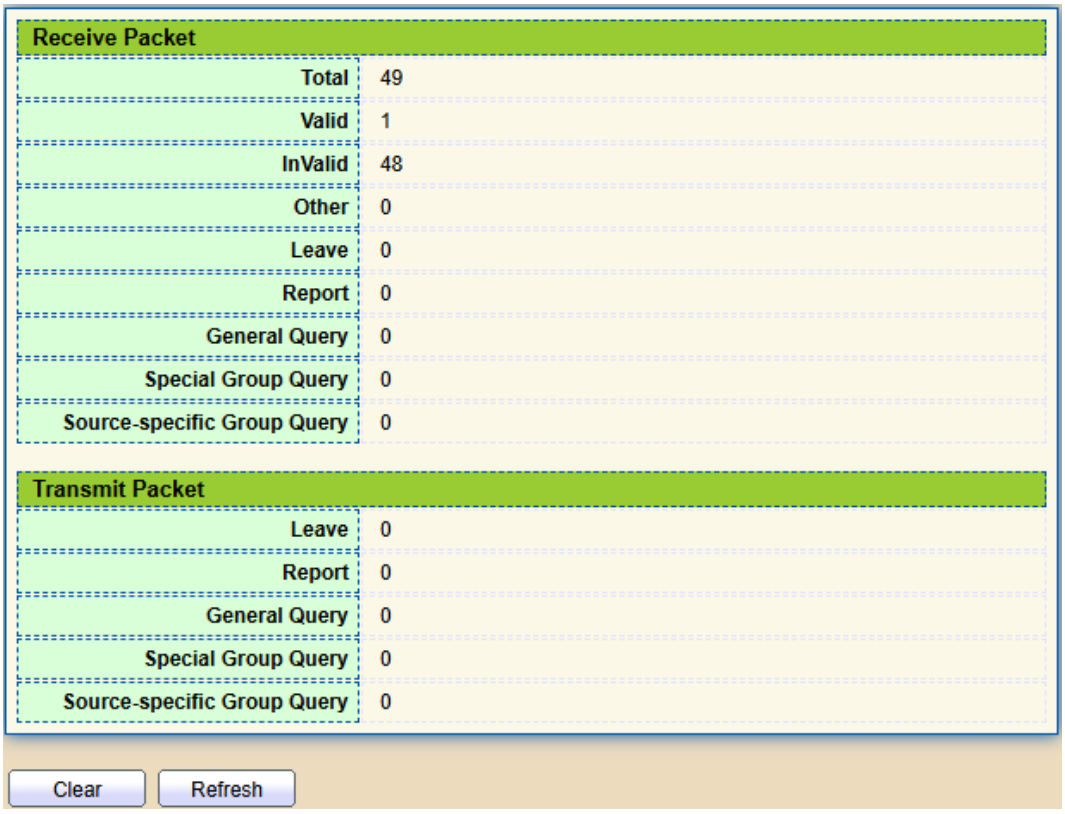


Figure 110 - Multicast > IGMP Snooping > Statistics

Item	Description
Receive Packet	
Total	Total RX IGMP packet, include ipv4 multicast data to CPU.
Valid	The valid IGMP snooping process packet.
InValid	The invalid IGMP snooping process packet.
Other	The ICMP protocol is not 2, and is not ipv4 multicast data packet.
Leave	IGMP leave packet.
Report	IGMP join and report packet.
General Query	IGMP General Query packet.

Special Group Query	IGMP Special Group General Query packet.
Source-specific Group Query	IGMP Special Source and Group General Query packet.
Transmit Packet	
Leave	IGMP leave packet
Report	IGMP join and report packet
General Query	IGMP general query packet include querier transmit general query packet.
Special Group Query	IGMP special group query packet include querier transmit special group query packet.
Source-specific Group Query	IGMP Special Source and Group General Query packet.

4.9.3. MLD Snooping

Use the MLD Snooping pages to configure settings of MLD snooping function.

4.9.3.1. Property

This page allow user to configure global settings of MLD snooping and configure specific VLAN settings of MLD Snooping.

To display MLD Snooping global setting and VLAN Setting web page, click **Multicast> MLD Snooping> Property**

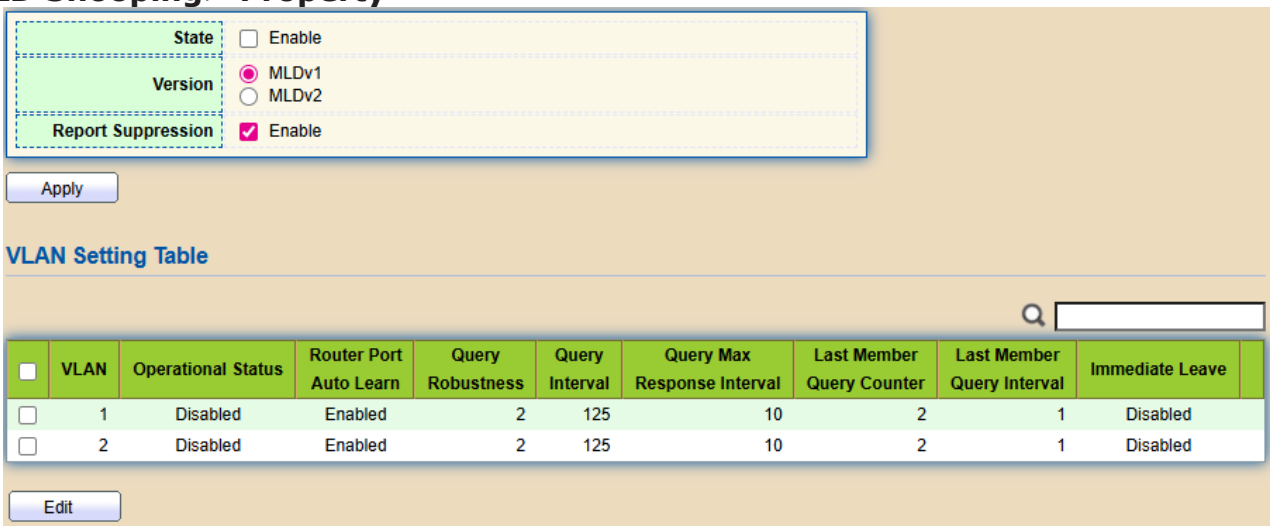


Figure 111 - Multicast > MLD snooping > Property

Item	Description

State	Set the enabling status of IGMP Snooping functionality ● Enable: If Checked Enable IGMP Snooping, else is Disabled IGMP Snooping.
Version	Set the MLD snooping version · ● MLDv1: Only support process MLD v1 packet. · ● MLDv2: Support v2 basic and v1
Report Suppression	Set the enabling status of MLD v1 report suppression ● Enable: If Checked Enable MLD Snooping v1 report suppression, else Disable the report suppression function
VLAN	The MLD entry VLAN ID
Operation Status	The enable status of MLD snooping VLAN functionality
Router Port Auto Learn	The enabling status of MLD snooping router port auto learning.
Query Robustness	The Query Robustness allows tuning for the expected packet loss on a subnet.
Query Interval	The interval of querier to send general query.
Query Max Response Interval	In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second.
Last Member Query count	The count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.
Last Member Query Interval	The interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.
Immediate leave	The immediate leave status of the group will immediately leave when receive MLD Leave message.

Click "Edit" button to view Edit VLAN Setting menu.

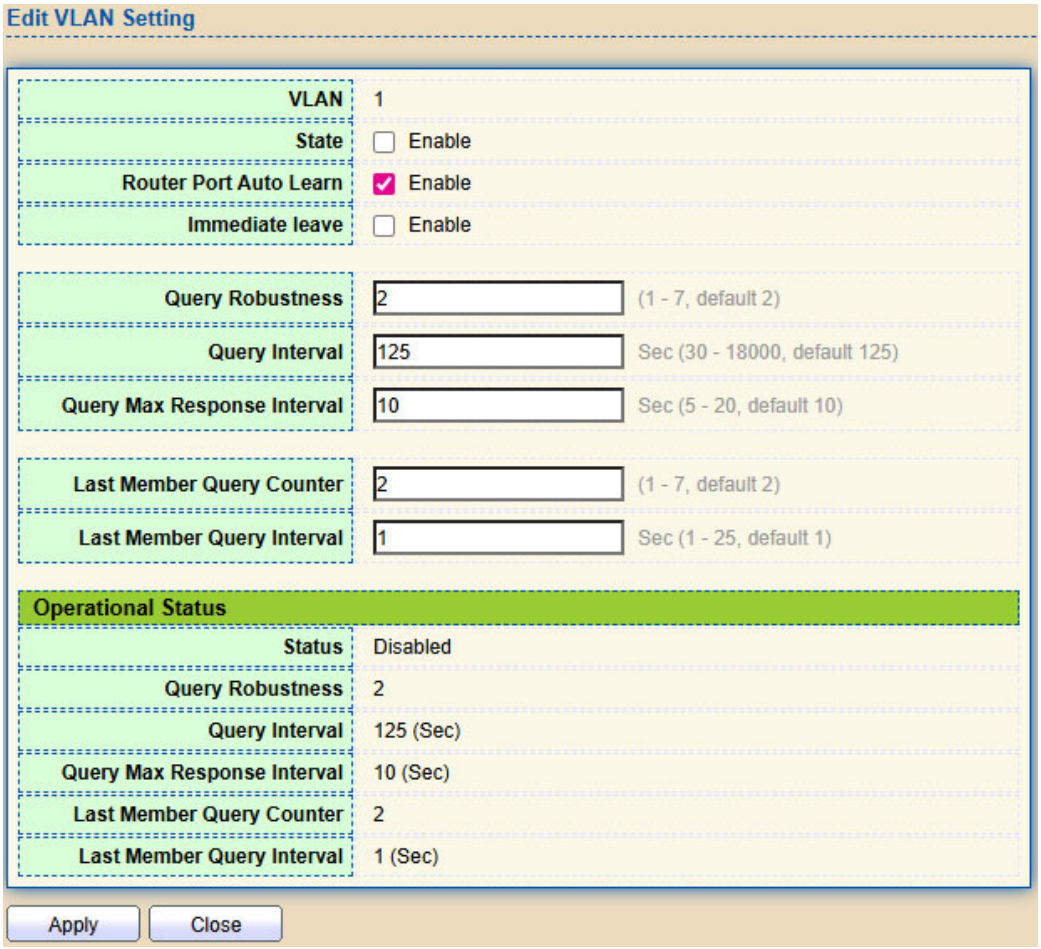


Figure 112 - Multicast > MLD snooping > Edit VLAN Setting

Item	Description
VLAN	The selected VLAN List
State	Set the enabling status of MLD Snooping VLAN functionality · ● Enable: If Checked Enable MLD Snooping VLAN, else is Disabled MLD Snooping VLAN.
Router Port Auto Learn	Set the enabling status of MLD Snooping router port learning · ● Enable: If checked Enable learning router port by query and PIM, DVRMP, else Disable the learning router port.
Immediate leave	Immediate Leave the group when receive MLD Leave message. · ● Enable: If checked Enable immediate leave, else disable immediate leave Immediate leave.
Query Robustness	The Admin Query Robustness allows tuning for the expected packet loss on a subnet.
Query Interval	The admin interval of querier to send general query.

Query Max Response Interval	The Admin query max response interval， In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second.
Last Member Query Counter	The admin last member query count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.
Last Member Query Interval	The admin last member query interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.
Operational Status	
Status	Operational MLD snooping status, must both MLD snooping global and MLD snooping enable the status will be enable.
Query Robustness	Operational Query Robustness.
Query Interval	Operational Query Interval.
Query Max Response Interval	Operational Query Max Response Interval.
Last Member Query Counter	Operational Last Member Query Count.
Last Member Query Interval	Operational Last Member Query Interval.

4.9.3.2. Statistics

This page allow user to clear MLD snooping statics.

To display MLD Snooping Statistics, click **Multicast> MLD Snooping> Statistics**

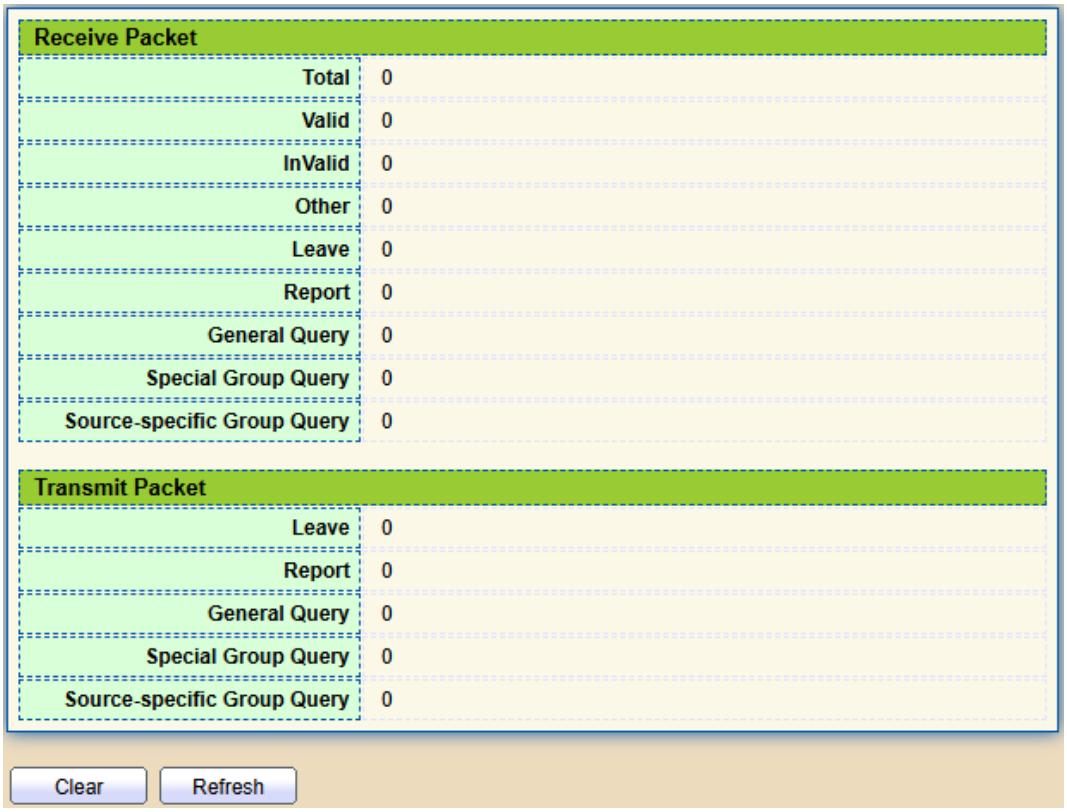


Figure 113 - Multicast > MLD snooping > Statistics

Item	Description
Receive Packet	
Total	Total RX MLD packet, include ipv4 multicast data to CPU.
Valid	The valid MLD snooping process packet.
In Valid	The invalid MLD snooping process packet.
Other	The ICMPV6 type is not MLD, and is not ipv6 multicast data packet, and is not IPV6 router protocol.
Leave	MLD leave packet.
Report	MLD join and report packet.
General Query	MLD General Query packet.
Special Group Query	MLD Special Group General Query packet
Source-specific Group Query	MLD Special Source and Group General Query packet
Transmit Packet	
Leave	MLD leave packet.
Report	MLD join and report packet.
General Query	MLD general query packet.

Special Group Query	MLD special group query packet.
Source-specific Group Query	MLD Special Source and Group General Query packet.

4.9.4. MVR

Use the MVR pages to configure settings of MVR function.

4.9.4.1. Property

To display multicast MVR property Setting web page, click **Multicast> MVR> Property**

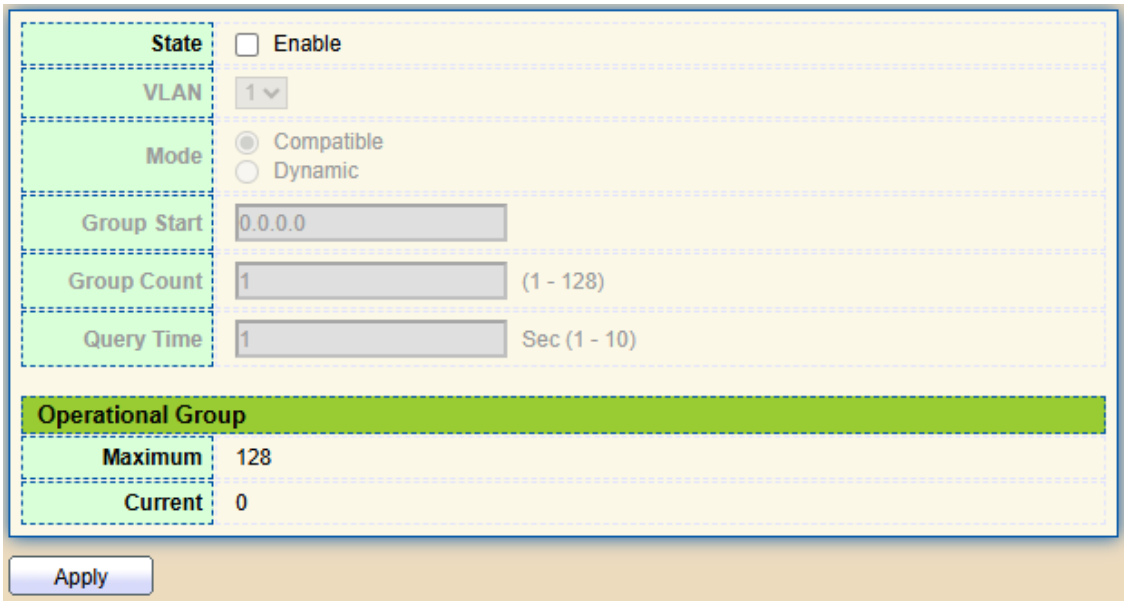


Figure 114 - Multicast > MVR > Property

Item	Description
State	• Enable: if checked enable the MVR state, else disable the MVR state.
VLAN	The MVR VLAN ID.
Mode	Set the MVR mode • Compatible: compatible mode. • Dynamic: dynamic mode, will learn group member on source port.
Group Start	MVR group range start.
Group Count	MVR group continue count.
Query Time	MVR query time when receive MVR leave MVR group packet.
Maximum	The max number of MVR group database.

Current	The learned MVR group current time

4.9.4.2. Port Setting

This page allow user to configure port role and port immediate leave.

To display MVR port role and immediate leave state setting web page, click **Multicast> MVR> Port Setting**

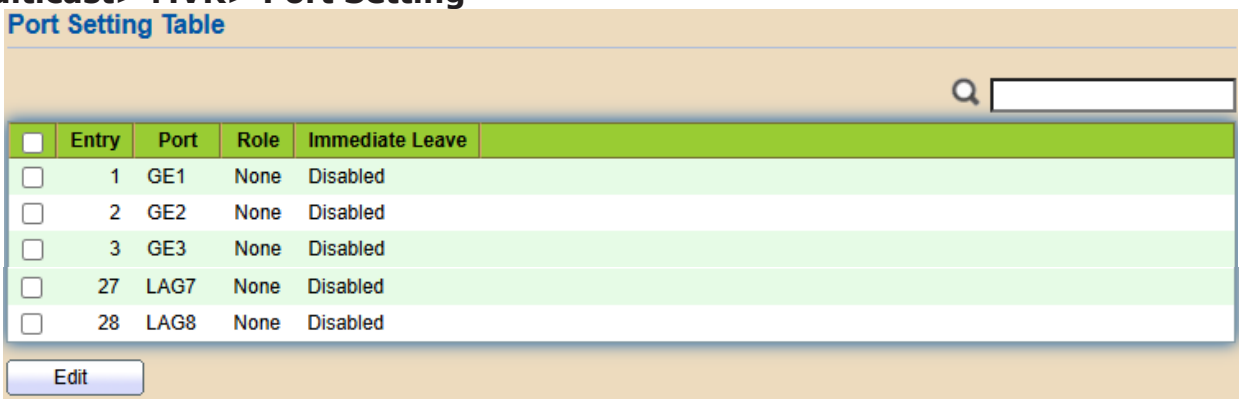


Figure 115 - Multicast > MVR > Port Setting

Item	Description
Entry	Entry of number.
Port	Port Name.
Role	Port Role for MVR, the type is None/Receiver/Source.
Immediate Leave	Status of immediate leave.

Click "Edit" button to view Edit Port Setting menu.

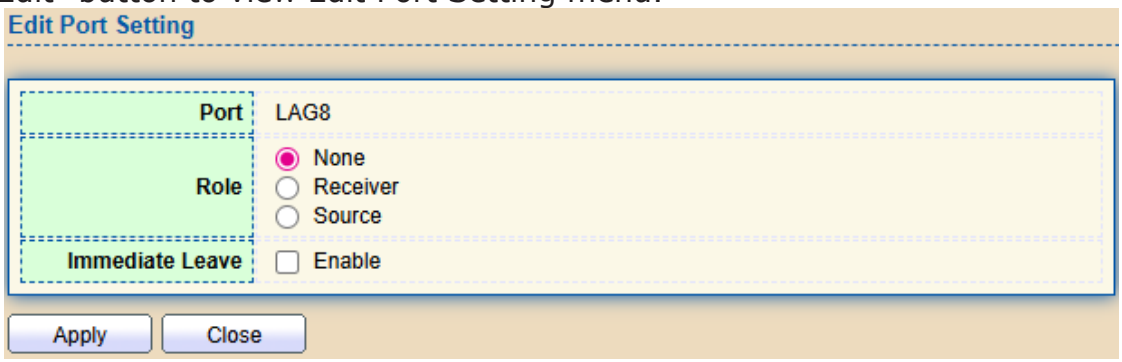


Figure 116 - Multicast > MVR > Port Setting > Edit Port Setting

Item	Description
Port	Display the selected port list.
Role	MVR port role • None: port role is none. • Receiver: port role is receiver. • Source: port role is source.

Immediate Leave	MVR Port immediate leave • Enable: if checked is enable immediate leave, else disable immediate leave.

4.9.4.3. Group Address

This page allow user to browse all multicast MVR groups that dynamic learned or statically added.

To display Multicast MVR Group web page, click **Multicast> MVR> Group Address**

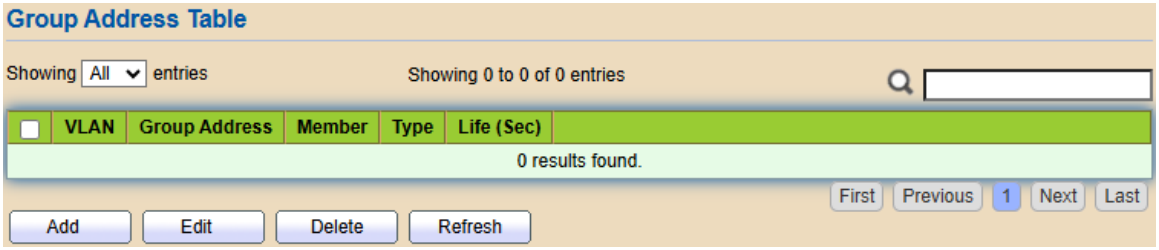


Figure 117 - Multicast > MVR > Group Address

Item	Description
VLAN	The VLAN ID of MVR group.
Group Address	The MVR group IP address.
Member	The member ports of MVR group.
Type	The type of MVR group. Static or Dynamic.
Life (Sec)	The life time of this dynamic MVR group.

Click "Add" button to view Add/Edit Group Address Table menu.

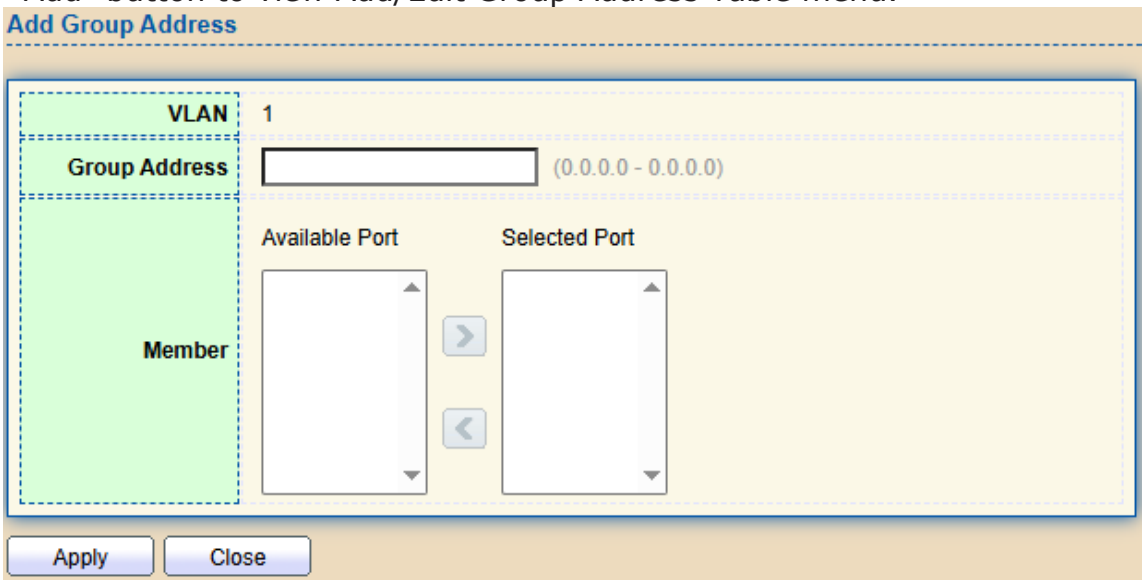


Figure 118 - Multicast > MVR > Group Address > Add Group Address

Item	Description
VLAN	The VLAN ID of MVR group.
Group Address	The MVR group IP address.
Member	The member ports of MVR group. • Available Port: Optional port member, it is only receiver port when MVR mode is compatible, it includes source port when mode is dynamic. • Selected Port: Selected port member

4.10. Security

Use the Security pages to configure settings for the switch security features.

4.10.1. RADIUS

This page allow user to add, edit or delete RADIUS server settings and modify default parameter of RADIUS server.

To display RADIUS web page, click **Security > RADIUS**

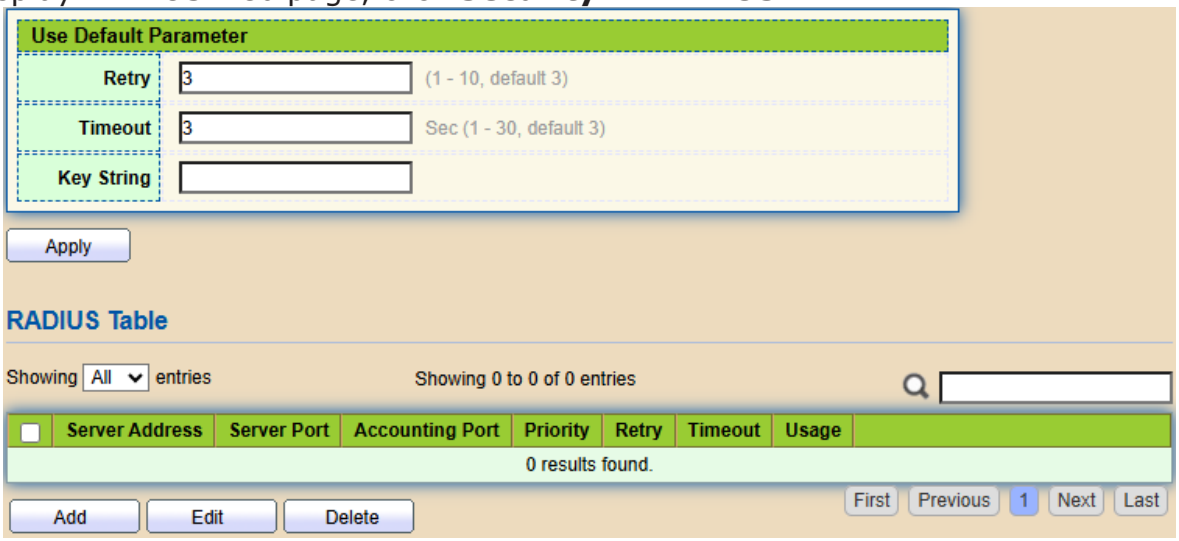
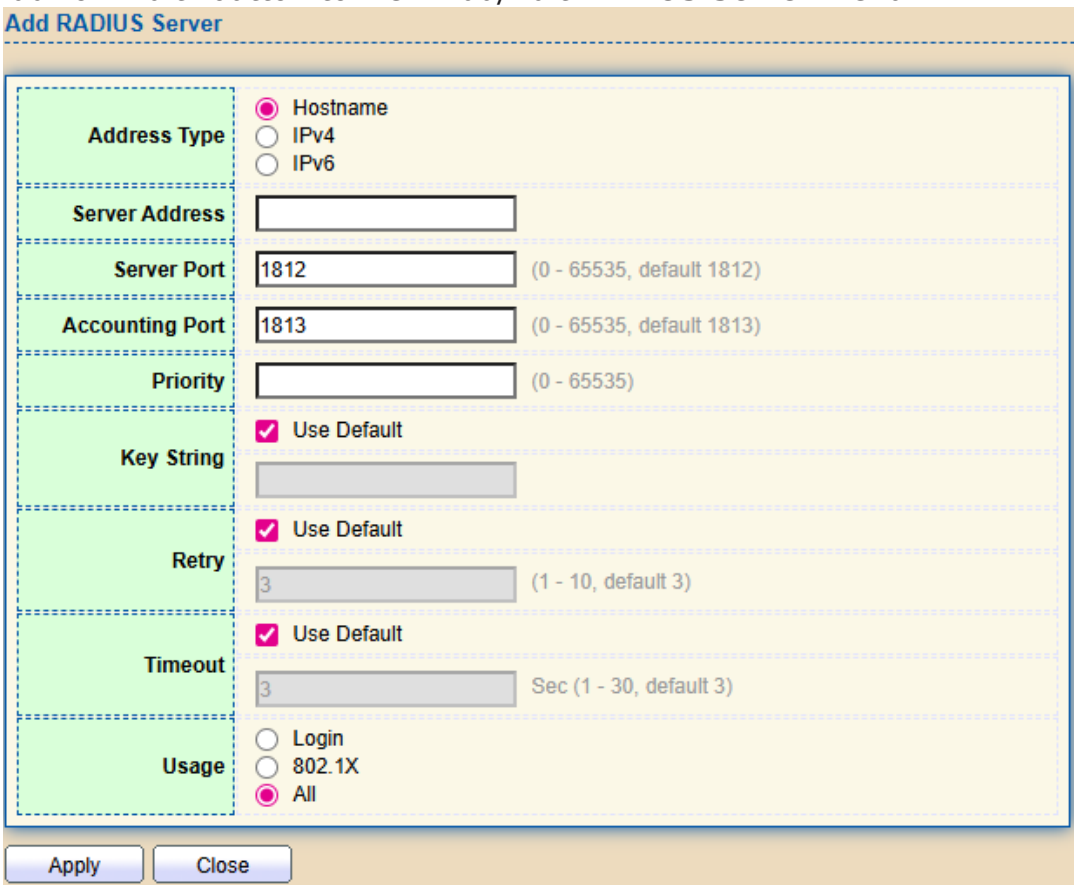


Figure 119 - Security > RADIUS

Item	Description
Retry	Set default retry number.
Timeout	Set default timeout value.
Key String	Set default RADIUS key string
RADIUS Table	
Server Address	RADIUS server address.
Server Port	RADIUS server port.

Priority	RADIUS server priority (smaller value has higher priority). RADIUS session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority.
Retry	RADIUS server retry value. If it is failed to connect to server, it will keep trying until timeout with retry times.
Timeout	RADIUS server timeout value. If it is failed to connect to server, it will keep trying until timeout.
Usage	RADIUS server usage type • Login: For login authentication. • 802.1x: For 802.1x authentication. • All: For all types.

Click "Add" or “Edit” button to view Add/Edit RADIUS Server menu.



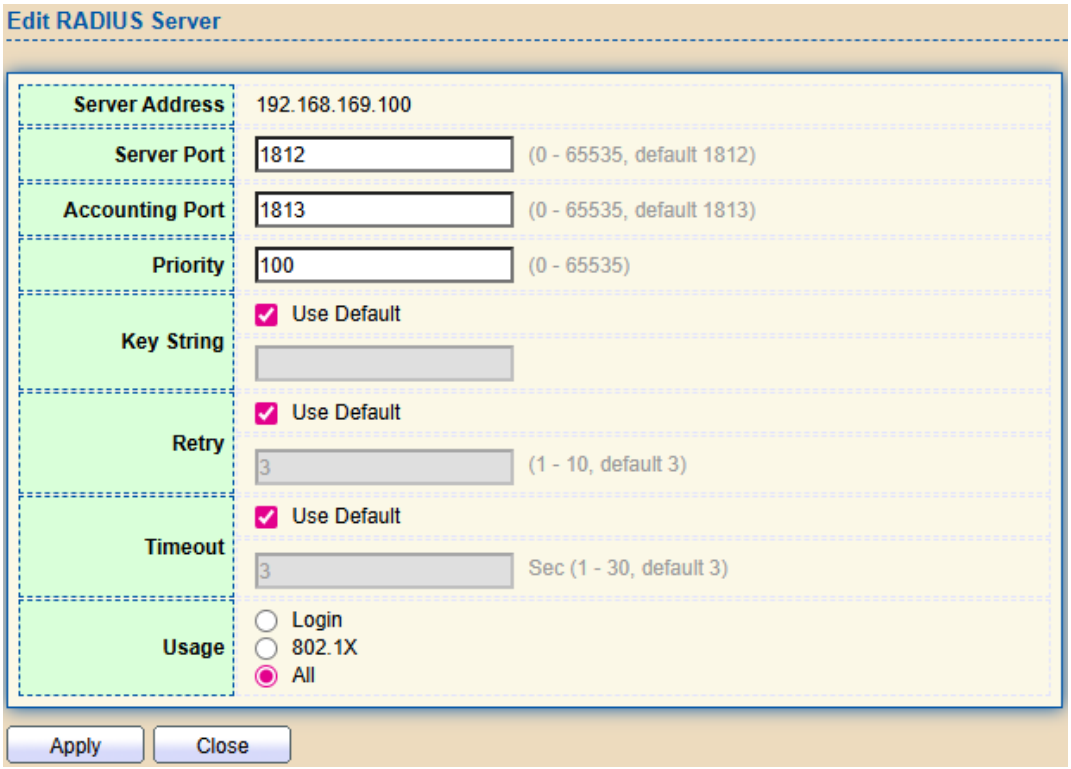


Figure 120 - Security > RADIUS > Add/Edit RADIUS Server

Item	Description
Address Type	In add dialog, user need to specify server Address Type • Hostname: Use domain name as server address. • IPv4: Use IPv4 as server address. • IPv6: Use IPv6 as server address.
Server Address	In add dialog, user need to input server address based on address type. In edit dialog, it shows current edit server address.
Server Port	Set RADIUS server port.
Accounting	Set RADIUS accounting port.
Priority	Set RADIUS server priority (smaller value has higher priority). RADIUS session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority.
Key String	Set RADIUS key string
Retry	Set RADIUS server retry value. If it is failed to connect to server, it will keep trying until timeout with retry times.
Timeout	Set RADIUS server timeout value. If it is failed to connect to server, it will keep trying until timeout.
Usage	Set RADIUS server usage type • Login: For login authentication. • 802.1x: For 802.1x authentication. • All: For all types.

4.10.2. TACACS+

This page allow user to add, edit or delete TACACS+ server settings and modify default parameter of TACACS+ server.

To display TACACS+ web page, click **Security > TACACS+**

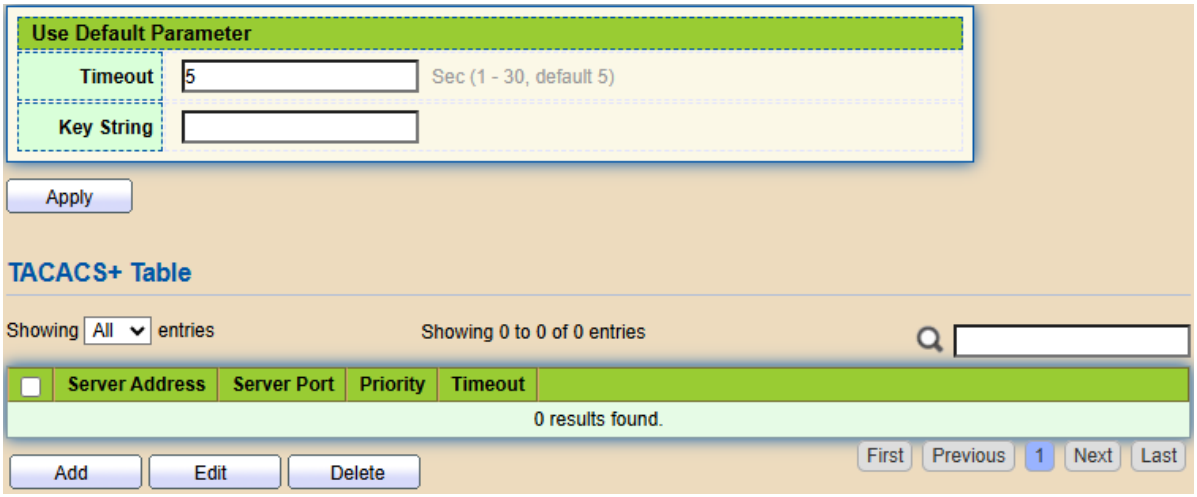


Figure 121 - Security > TACACS+

Item	Description
Timeout	Set default timeout value.
Key String	Set default TACACS+ key string.
Server Address	TACACS+ server address.
Server Port	TACACS+ server port.
Priority	TACACS+ server priority (smaller value has higher priority). TACACS+ session will try to establish with the
Timeout	TACACS+ server timeout value. If it is failed to connect to server, it will keep trying until timeout.

Click "Add" or “Edit” button to view Add/Edit TACAS+ Server menu.

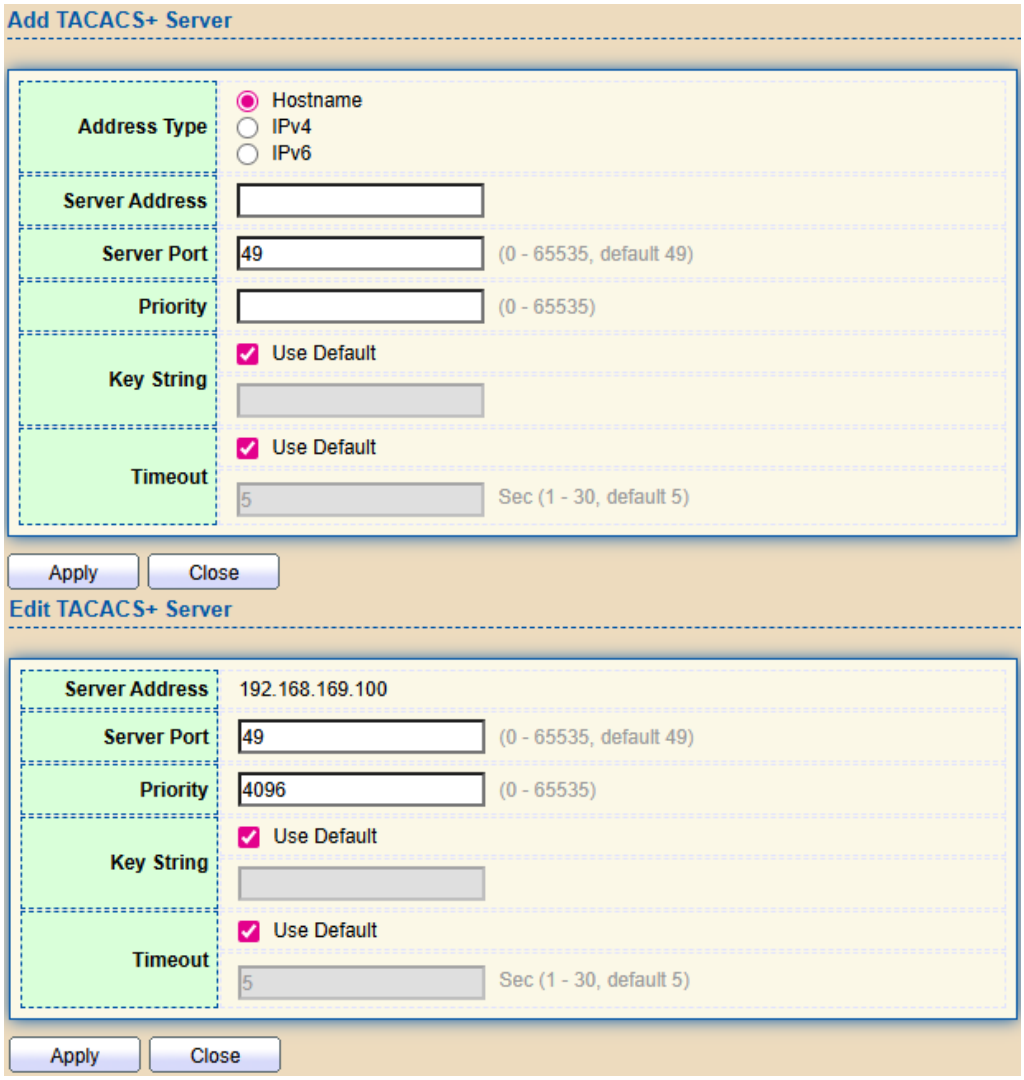


Figure 122 - Security > TACACS+>Add/Edit TACACS Server

Item	Description
Address Type	In add dialog, user need to specify server Address Type ● Hostname: Use domain name as server address ● IPv4: Use IPv4 as server address · ● IPv6: Use IPv6 as server address
Server Address	In add dialog, user need to input server address based on address type. In edit dialog, it shows current edit server address.
Server Port	Set TACACS+ server port
Priority	Set TACACS+ server priority (smaller value has higher priority). TACACS+ session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority
Key String	Set TACACS+ key string.

Timeout	Set TACACS+ server timeout value. If it is fail to connect to server, it will keep trying until timeout.

4.10.3. AAA

4.10.3.1. Method List

This page allow user to add, edit or delete login authentication list settings (The “default” list cannot be deleted.). The line combined to this list will authenticate login user by methods in this list. If the first method is failed, it will try to use the next priority method to authenticate if it exists.

With RADIUS and TACACS+ methods, the failed means connecting to server fail. With Local method, the failed means cannot find the user in local database.

To display Method List web page, click **Security > AAA > Method List**

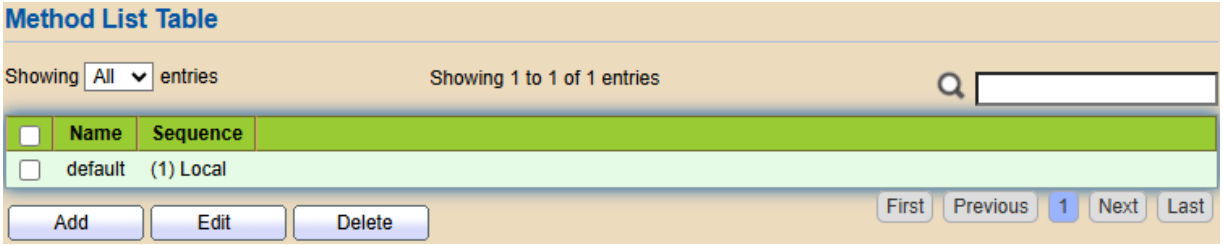


Figure 123 - Security > TACACS+>AAA> Method List

Item	Description
Name	Login authentication list name. This name should be different from other existing lists.
Sequence	Priority of login authentication method. ・ ● None: Authenticated with any condition. ・ ● Local: Use local accounts database to authenticate ● TACACS+: Use remote TACACS+ server to authenticate. ● RADIUS: Use remote Radius server to authenticate. ● Enable: Use local enable password to authenticate.

Click "Add" or “Edit” button to view Add/Edit Method List menu.

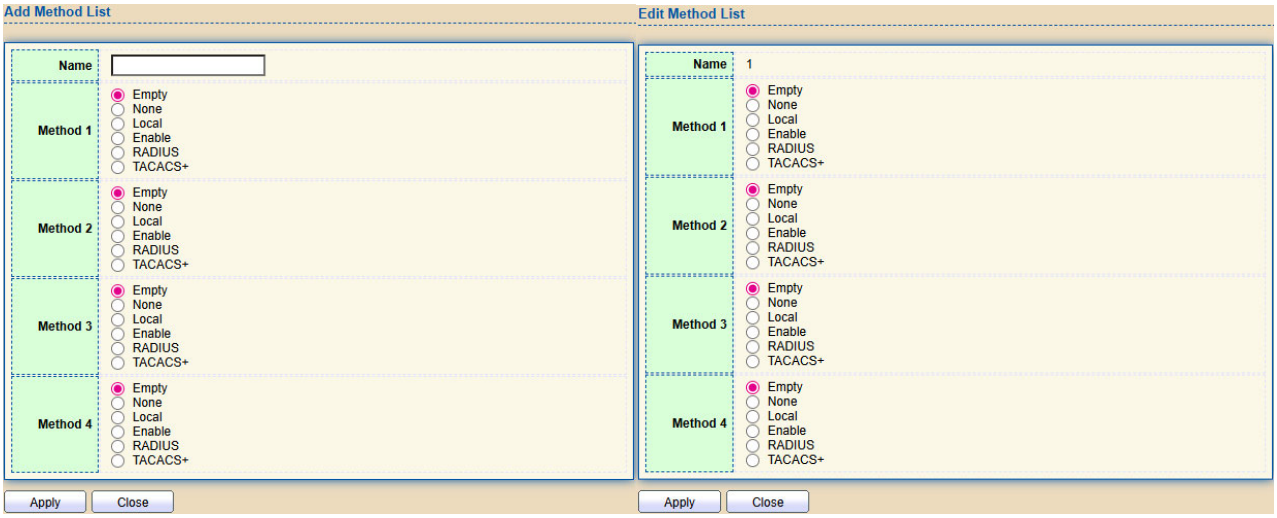


Figure 124 - Security > TACACS+>AAA> Add/Edit Method List

Item	Description
Name	Login authentication list name. This name should be different from other existing lists.
Method 1	Select first priority of login authentication method. ● None: Authenticated with any condition. · ● Local: Use local accounts database to authenticate ● TACACS+: Use remote TACACS+ server to authenticate. ● RADIUS: Use remote Radius server to authenticate. ● Enable: Use local enable password to authenticate
Method 2	Select second priority of login authentication method · ● None: Authenticated with any condition ● Local: Use local accounts database to authenticate ● TACACS+: Use remote TACACS+ server to authenticate. ● RADIUS: Use remote Radius server to authenticate ● Enable: Use local enable password to authenticate
Method 3	Select third priority of login authentication method. · ● None: Authenticated with any condition. · ● Local: Use local accounts database to authenticate ● TACACS+: Use remote TACACS+ server to authenticate. ● RADIUS: Use remote Radius server to authenticate. ● Enable: Use local enable password to authenticate
Method 4	Select fourth priority of login authentication method. · ● None: Authenticated with any condition. · ● Local: Use local accounts database to authenticate ● TACACS+: Use remote TACACS+ server to authenticate. ● RADIUS: Use remote Radius server to authenticate. ● Enable: Use local enable password to authenticate

4.10.3.2. Login Authentication

This page allow user to combine AAA login authentication list to all management

interfaces.

To display the login authentication combined web page, click **Security > AAA > Login Authentication.**

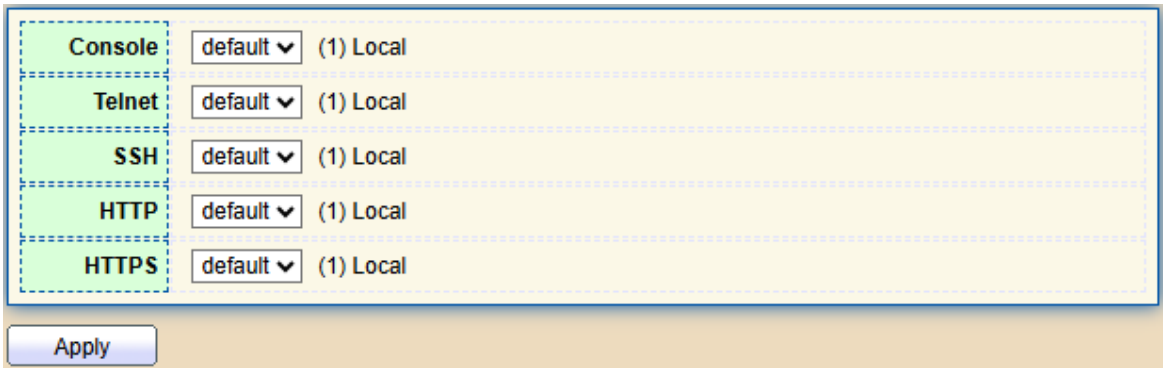


Figure 125 - Security > TACACS+>AAA> login authentication

Item	Description
Console	Specify login authentication list combined on console.
Telnet	Specify login authentication list combined on Telnet.
SSH	Specify login authentication list combined on SSH.
HTTP	Specify login authentication list combined on HTTP.
HTTPS	Specify login authentication list combined on HTTPS.

4.10.4. Management Access

Use the Management Access pages to configure settings of management access.

4.10.4.1. Management VLAN

This page allow user to change management VLAN.

To display Management VLAN page, click **Security > Management Access > Management VLAN**

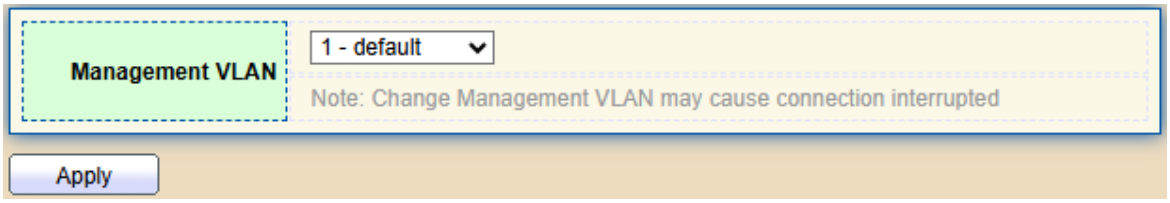


Figure 126 - Security > Management Access > Management VLAN

Item	Description
Management VLAN	Select management VLAN in option list. Management connection, such as http, https, SNMP etc.., has the same VLAN of management VLAN are allow connecting to device. Others will be dropped.

4.10.4.2. Management Service

This page allow user to change management services related configurations.

To display Management Service, click **Security > Management Access > Management Service**

Figure 127 - Security > Management Access > Management Service

Item	Description
Management Service	Management service admin state. • Telnet: Connect CLI through telnet. • SSH: Connect CLI through SSH. • HTTP: Connect WEBUI through HTTP. • HTTPS: Connect WEBUI through HTTPS. • SNMP: Manage switch trough SNMP.
Session Timeout	Set session timeout minutes for user access to user interface. 0 minutes means never timeout.

Password Retry Count	Retry count is the number which CLI password input error tolerance count. After input error password exceeds this count, the CLI will freeze after silent time.
Silent Time	After input error password exceeds password retry count, the CLI will freeze after silent time.

4.10.4.3. Management ACL

This page allow user to add or delete management ACL rule. A rule cannot be deleted if under active.

To display Management ACL page, click **Security > Management Access > Management ACL**

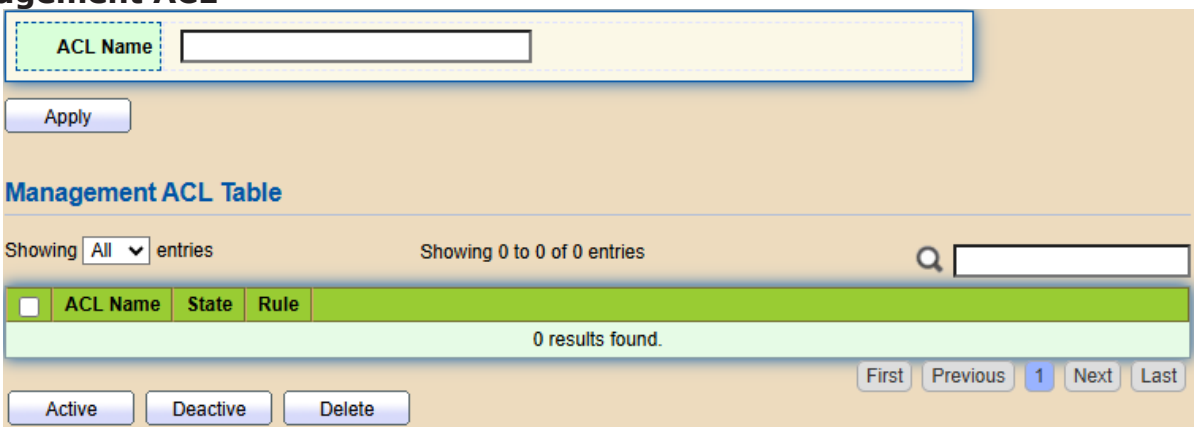


Figure 128 - Security > Management Access > Management ACL

Item	Description
ACL Name	Input MAC ACL name.
Management ACL	
ACL Name	Display Management ACL name.
State	Display Management ACL whether active.
Rule	Display the number Management ACE rule of ACL.

4.10.4.4. Management ACE

This page allow user to add, edit or delete ACE rule. An ACE rule cannot be edited or deleted if ACL under active. New ACE cannot be added if ACL under active

To display Management ACE page, click **Security > Management Access > Management ACE**

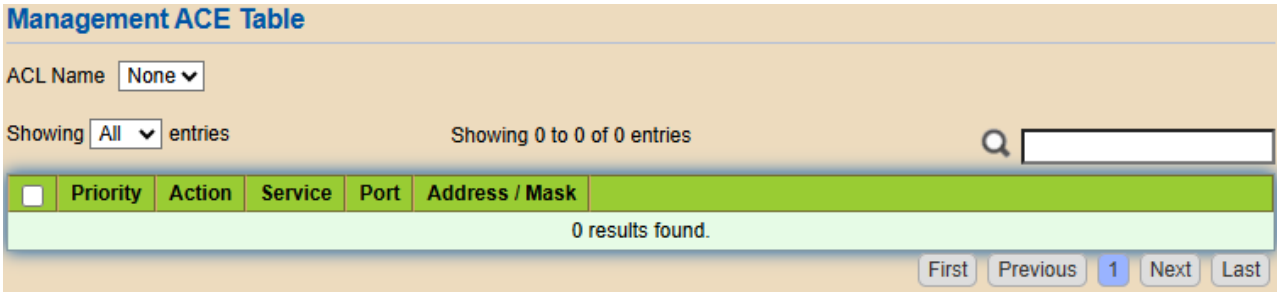


Figure 129 - Security > Management Access > Management ACE

Item	Description
ACL Name	Select the ACL name to which an ACE is being added.
Priority	Display the priority of ACE.
Action	Display the action of ACE.
Service	Display the service ACE
Port	Display the port list of ACES
Address / Mask	Display the source IP address and mask of ACE.

4.10.5. Authentication Manager

4.10.5.1. Property

This page allow user to edit authentication global settings and some port mods' configurations.

To display authentication manager Property web page, click **Security > Authentication Manager > Property.**

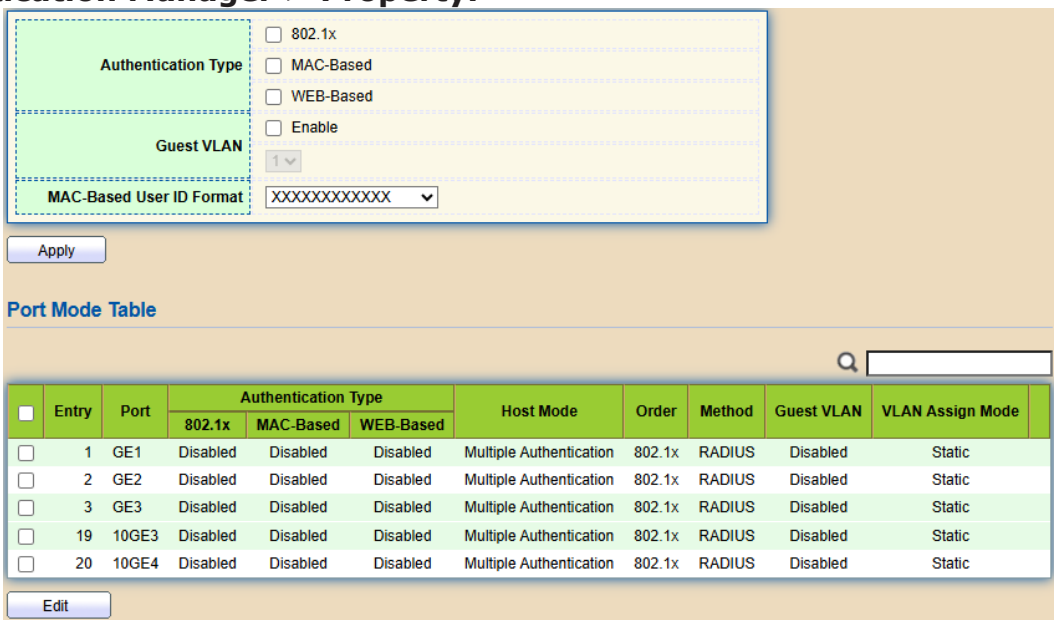


Figure 130 - Security > Authentication Manager > Property

Item	Description

Authentication Type	Set checkbox to enable/disable following authentication types • 802.1x: Use IEEE 802.1x to do authentication • MAC-Based: Use MAC address to do authentication • WEB-Based: Prompt authentication web page for user to do authentication
Guest VLAN	Set checkbox to enable/disable guest VLAN, if guest VLAN is enabled, you need to select one available VLAN ID to be guest VID.
MAC-Based User ID Format	Select mac-based authentication RADIUS username/password ID format. • XXXXXXXXXXXX • xxxxxxxxxxxx • XX:XX:XX:XX:XX:XX • xx:xx:xx:xx:xx:xx • XX-XX-XX-XX-XX-XX • xx-xx-xx-xx-xx-xx • XX.XX.XX.XX.XX.XX • xx.xx.xx.xx.xx.xx • XXXX:XXXX:XXXX • xxxx:xxxx:xxxx
Port Mode Table	
Port	Port Name.
Authentication Type (802.1X)	802.1X authentication type state • Enabled: 802.1X is enabled. • Disabled: 802.1X is disabled.
Authentication Type (MAC-Based)	MAC-Based authentication type state • Enabled: MAC-Based authentication is enabled • Disabled: MAC-Based authentication is disabled
Authentication Type (WEB-Based)	WEB-Based authentication type state • Enabled: WEB-Based authentication is enabled • Disabled: WEB-Based authentication is disabled
Host Mode	Authenticating host mode • Multiple Authentication: In this mode, every client needs to pass authenticate procedure individually. • Multiple Hosts: In this mode, only one client need to be authenticated and other clients will get the same access accessibility. Web-auth cannot be enabled in this mode. • Single Host: In this mode, only one host is allowed to be authenticated. It is the same as Multiple-auth mode with max hosts number configure to be 1.

Order	Support following authentication type order combinations. Web Authentication should always be the last type. The authentication manager will go to next type if current type is not enabled or authenticated fail. ・ • 802.1x ・ • MAC-Based ・ • WEB-Based ・ • 802.1x MAC-Based ・ • 802.1x WEB-Based ・ • MAC-Based 802.1x ・ • WEB-Based 802.1x ・ • 802.1x MAC-Based WEB-Based ・ • 802.1x WEB-Based MAC-Based
Method	Support following authentication method order combinations. These orders only available on MAC-Based authentication and WEB-Based authentication. 802.1x only support Radius method. • Local: Use DUT’s local database to do authentication • Radius: Use remote RADIUS server to do authentication • Local Radius • Radius Local
Guest VLAN	Port guest VLAN enable state • Enabled: Guest VLAN is enabled on port. • Disabled: Guest VLAN is disabled on port.
VLAN Assign Mode	Support following VLAN assign mode and only apply when source is RADIUS • Disable: Ignore the VLAN authorization result and keep original VLAN of host. • Reject: If get VLAN authorized information, just use it. However, if there is no VLAN authorized information, reject the host and make it unauthorized. • Static: If get VLAN authorized information, just use it. If there is no VLAN authorized information, keep original VLAN of host.

Click “Edit” button to view the Edit Port Mode menu.

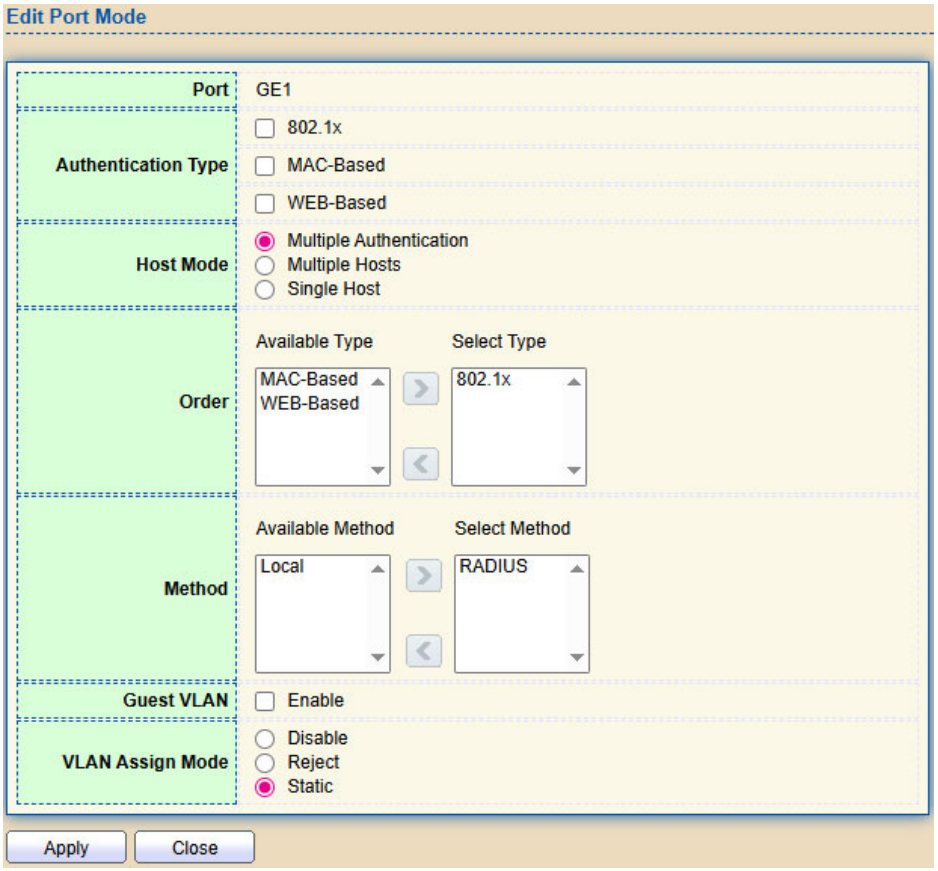


Figure 131 - Security > Authentication Manager > Property > Edit Port Mode

Item	Descriptio
Port	Selected port list.
Authentication Type	Set checkbox to enable/disable authentication types.
Host Mode	Select authenticating host mode • Multiple Authentication: In this mode, every client needs to pass authenticate procedure individually. • Multiple Hosts: In this mode, only one client need to be authenticated and other clients will get the same access accessibility. Web-auth cannot be enabled in this mode. • Single Host: In this mode, only one host is allowed to be authenticated. It is the same as Multiple-auth mode with max hosts number configure to be 1.

Order	Support following authentication type order combinations. Web Authentication should always be the last type. The authentication manager will go to next type if current type is not enabled or authenticated fail. ・ • 802.1x ・ • MAC-Based ・ • WEB-Based ・ • 802.1x MAC-Based ・ • 802.1x WEB-Based ・ • MAC-Based 802.1x ・ • WEB-Based 802.1x ・ • 802.1x MAC-Based WEB-Based ・ • 802.1x WEB-Based MAC-Based
Method	Support following authentication method order combinations. • These orders only available on MAC-Based authentication and WEB-Based authentication. 802.1x only support Radius method. • Local: Use DUT’s local database to do authentication. • Radius: Use remote RADIUS server to do authentication. • Local Radius. • Radius Local.
Guest VLAN	Set checkbox to enable/disable guest VLAN.
VLAN Assign Mode	Support following VLAN assign mode and only apply when source is RADIUS • Disable: Ignore the VLAN authorization result and keep original VLAN of host. • Reject: If get VLAN authorized information, just use it. However, if there is no VLAN authorized information, reject the host and make it unauthorized. • Static: If get VLAN authorized information, just use it. If there is no VLAN authorized information, keep original VLAN of host.

4.10.5.2. Port Setting

This page allow user to configure authentication manger port settings

To display the authentication manager Port Setting web page, click **Security > Authentication Manager > Port Setting.**

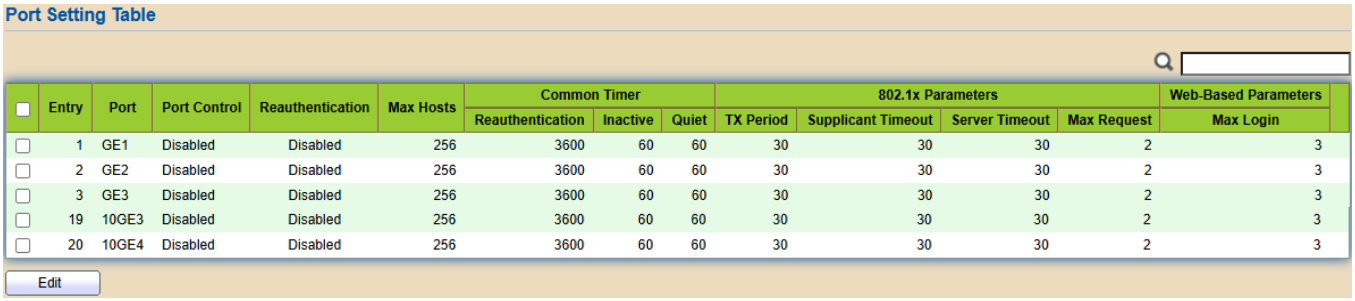


Figure 132 - Security > Authentication Manager > Port Setting

Item	Description
Port	Port
Port Control	Support following authentication port control types. • Disable: Disable authentication function and all clients have network accessibility. • Force Authorized: Port is force authorized and all clients have network accessibility. • Force Unauthorized: Port is force unauthorized and all clients have no network accessibility. • Auto: Need passing authentication procedure to get network accessibility.
Reauthentication	Reauthenticate state • Enabled: Host will be reauthenticated after reauthentication period. • Disabled: Host will not be reauthenticated after reauthentication period.
Max Hosts	In Multiple Authentication mode, total host number cannot not exceed max host number.
Common Timer (Reauthentication)	After re-authenticate period, host will return to initial state and need to pass authentication procedure again.
Common Timer (Inactive)	If no packet from the authenticated host, the inactive timer will increase. After inactive timeout, the host will be unauthorized and corresponding session will be deleted. In multi-host mode, the packet is counting on the authorized host only.
Common Timer (Quiet)	When port is in Locked state after authenticating fail several times, the host will be locked in quiet period. After this quiet period, the host is allowed to authenticate again.
802.1X Params (TX Period)	Number of seconds that the device waits for a response to an Extensible Authentication Protocol (EAP) request/identity frame from the supplicant (client) before resending the request.

802.1X Params (Supplicant Timeout)	The maximum number of EAP requests that can be sent. If a response is not received after the defined period (supplicant timeout), the authentication process is restarted.
802.1X Params (Server Timeout)	Number of seconds that lapses before EAP requests are resent to the supplicant.
802.1X Params (Max Request)	Number of seconds that lapses before the device resends a request to the authentication server.
Web-Based Parameters (Max Login)	Allow user login fail number. After login fail number exceed, the host will enter Lock state and is not able to authenticate until quiet period exceed.

Click "Edit" button to view Edit Port Setting menu.

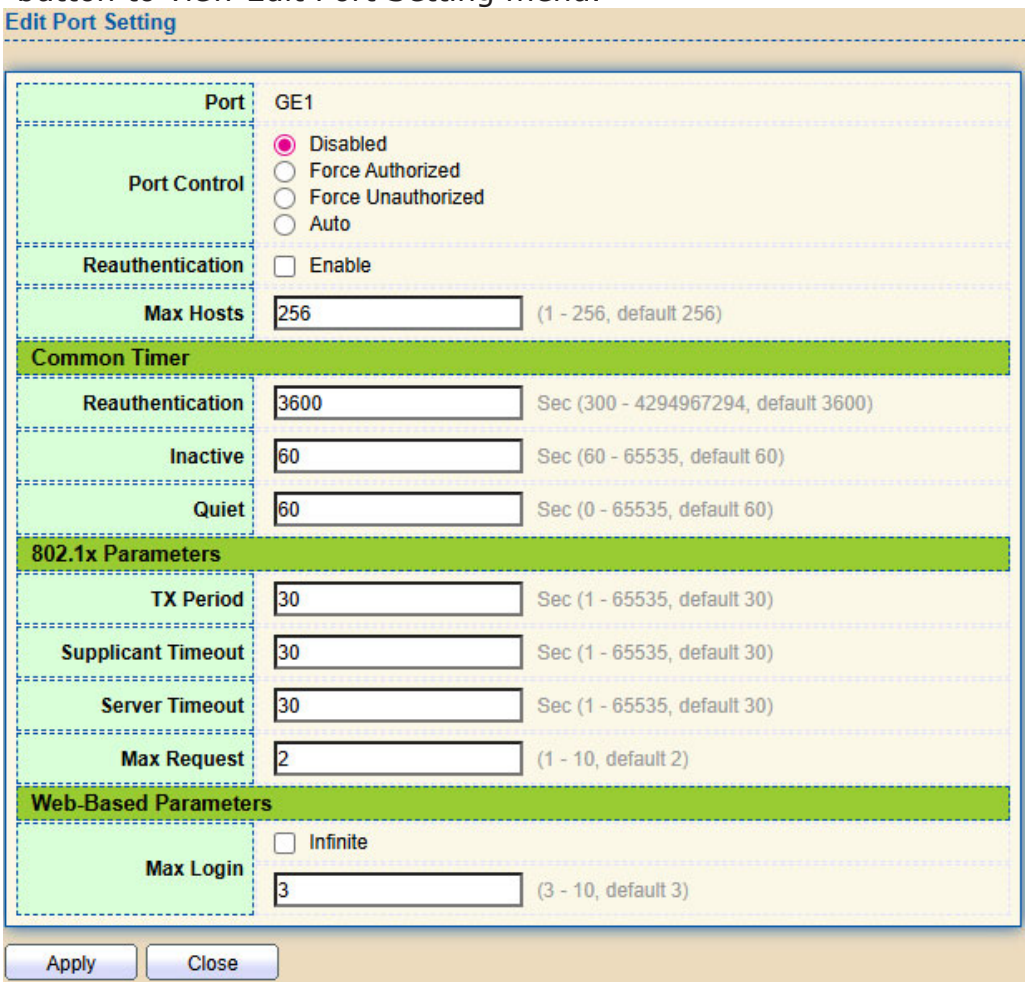


Figure 133 - Security > Authentication Manager > Port Setting > Edit Port Setting

Item	Description
Port	Port Name.

Port Control	Support following authentication port control types. • Disable: Disable authentication function and all clients have network accessibility. Force Authorized: Port is force authorized and all clients have network accessibility. • Force Unauthorized: Port is force unauthorized and all clients have no network accessibility. • Auto: Need passing authentication procedure to get network accessibility.
Reauthentication	Set checkbox to enable/disable reauthentication.
Max Hosts	In Multiple Authentication mode, total host number cannot not exceed max host number.
Common Timer	
Reauthentication	After re-authenticate period, host will return to initial state and need to pass authentication procedure again.
Inactive	If no packet from the authenticated host, the inactive timer will increase. After inactive timeout, the host will be unauthorized and corresponding session will be deleted. In multi-host mode, the packet is counting on the authorized host only and not all packets on the port.
Quiet	When port is in Locked state after authenticating fail several times, the host will be locked in quiet period. After this quiet period, the host is allowed to authenticate again.
802.1X Parameters	
TX Period	Number of seconds that the device waits for a response to an Extensible Authentication Protocol (EAP) request/identity frame from the supplicant (client) before resending the request.
Supplicant Timeout	The maximum number of EAP requests that can be sent. If a response is not received after the defined period (supplicant timeout), the authentication process is restarted.
Server Timeout	Number of seconds that lapses before EAP requests are resent to the supplicant.
Max Request	Number of seconds that lapses before the device resends a request to the authentication server.
Web-Based Param	
Max Login	Set checkbox to set max login number to be infinite or specify max login number.

4.10.5.3. MAC-Based Local Account

This page allow user to add/edit/delete MAC-Based authentication local accounts.

To display MAC-Based Local Account web page, click **Security > Authentication Manger > MAC-Based Local Account**

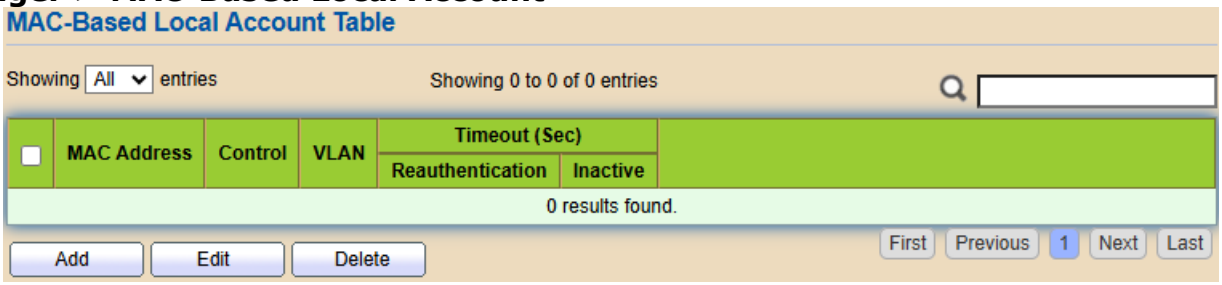


Figure 134 - Security > Authentication Manager > MAC-Based Local Account

Item	Description
MAC Address	Authenticated host MAC address, and each MAC allow only one entry in local database.
Control	Control Type ・ • Force Authorized: Host will be force authorized ・ • Force Unauthorized: Host will be force unauthorized
VLAN	Assigned VLAN ID for the authenticated host.
Timeout (Reauthentication)	Assigned reauthentication period for the authenticated host. the service ACE.
Timeout (Inactive)	Assigned inactive timeout for the authenticated host.

Click "Add" button to view Add MAC-Base Local Account menu.

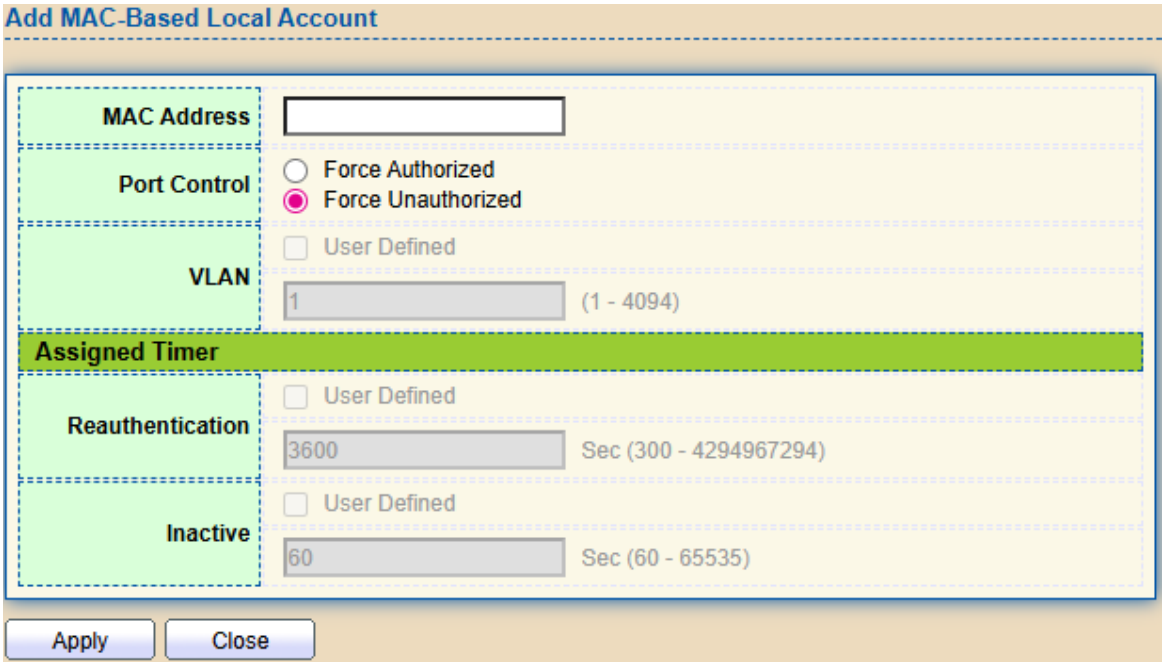


Figure 135 - Security > Authentication Manager > Add MAC-Based Local Account

Item	Description

MAC Address	Authenticated host MAC address, and each MAC allow only one entry in local database.
Port Control	Control Type ・ • Force Authorized: Host will be force authorized ・ • Force Unauthorized: Host will be force unauthorized
VLAN	Assigned VLAN ID for the authenticated host.
Timeout (Reauthentication)	Assigned reauthentication period for the authenticated host.
Timeout	Assigned inactive timeout for the authenticated host.

4.10.5.4. WEB-Based Local Account

This page allow user to add/edit/delete WEB-Based authentication local accounts.
To display WEB-Based Local Account web page, click **Security > Authentication Manger > WEB-Based Local Account**

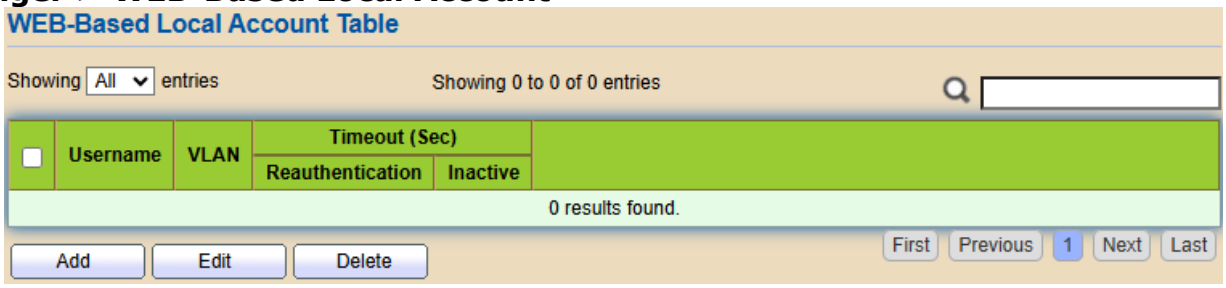


Figure 136 - Security > Authentication Manager > WEB-Based Local Account

Item	Description
Username	Authenticating account user name
VLAN	Assigned VLAN ID for the authenticated host
Timeout (Reauthentication)	Assigned reauthentication period for the authenticated host.
Timeout (Inactive)	Assigned inactive timeout for the authenticated host.

Click “Add" or “Edit” button to view Add/Edit WEB-Base Local Account menu.

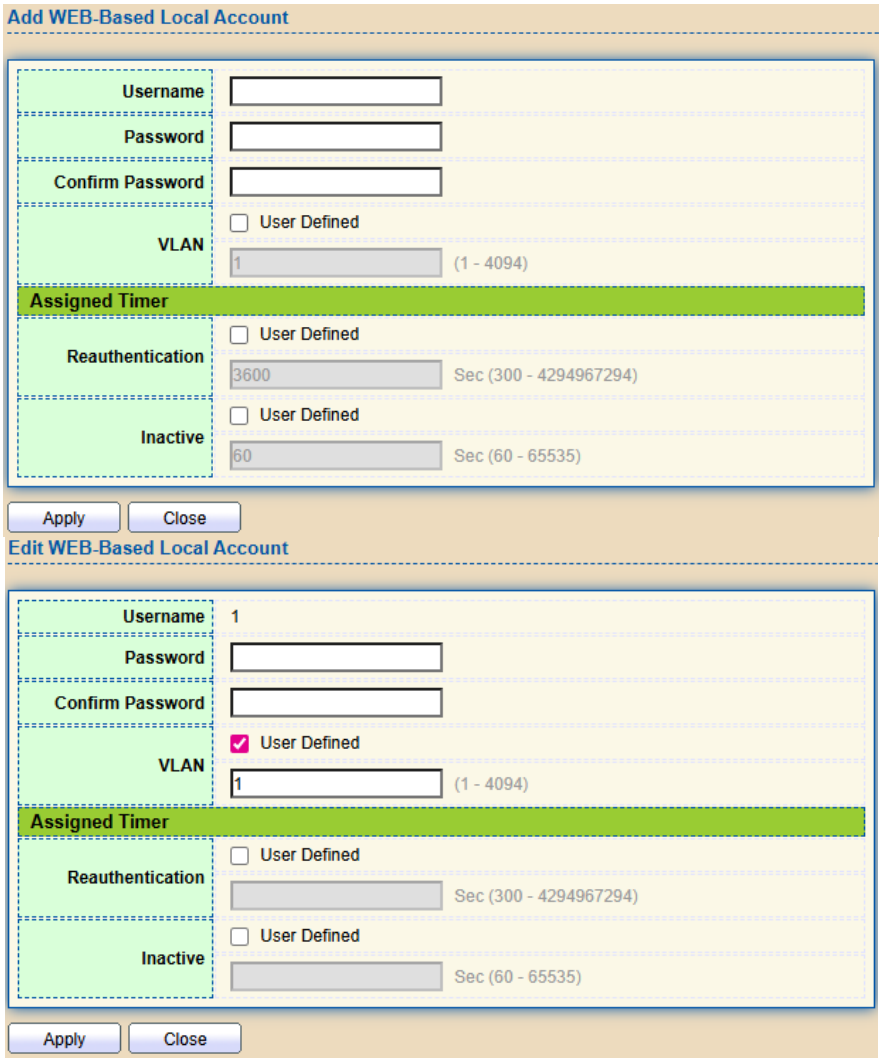


Figure 137 - Security > Authentication Manager > Add/Edit WEB-Based Local Account

Item	Description
Username	Authenticating account user name.
Password	Authenticating account password.
Confirm Password	Confirm authenticating account password.
VLAN	Assigned VLAN ID for the authenticated host.
Timeout (Reauthentication)	Assigned reauthentication period for the authenticated host.
Timeout (Inactive)	Assigned inactive timeout for the authenticated host.

4.10.5.5. Sessions

This page shows all detail information of authentication sessions and allow user to select specific session to delete by clicking “Clear” button.

To display Sessions web page, click **Security > Authentication Manger > Sessions**

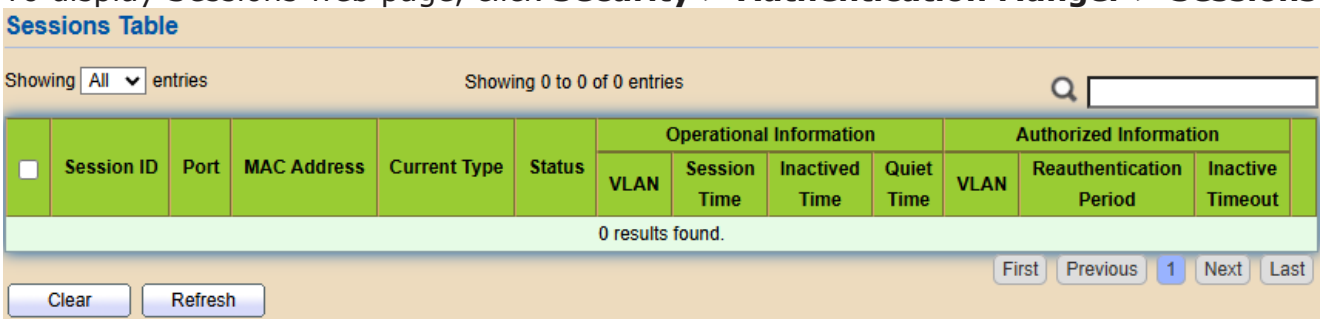


Figure 138 - Security > Authentication Manager > Sessions

Item	Description
Session ID	Session ID is unique of each session.
Port	Port name which the host located.
MAC Address	Host MAC address.
Current Type	Show current authenticating type • 802.1x: Use IEEE 802.1X to do authenticating • MAC-Based: Use MAC-Based authentication to do authenticating. • WEB-Based: Use WEB-Based authentication to do authenticating.
Status	Show host authentication session status • IP version (IPv4, IPv6) • Disable: This session is ready to be deleted • Running: Authentication process is running • Authorized: Authentication is passed and getting network accessibility. • Unauthorized: Authentication is not passed and not getting network accessibility. • Locked: Host is locked and do not allow to do
	• authenticating until quiet period. • Guest: Host is in the guest VLAN.
Operational(VLAN)	Show host operational VLAN ID.
Operational (Session Time)	In “Authorized” state, it shows total time after authorized.
Operational (Inactived Time)	In “Authorized” state, it shows how long the host do not send any packet.
Operational (Quiet Time)	In “Locked” state, it shows total time after locked.
Authorized (VLAN)	Shows VLAN ID given from authorized procedure.

Authorized (Reauthentication Period)	Shows reauthentication period given from authorized procedure.
Authorized (Inactive Timeout)	Shows inactive timeout given from authorized procedure.

4.10.6. Port Security

This page allow user to configure port security settings for each interface. When port security is enabled on interface, action will be perform once learned MAC address over limitation.

To display Port Security web page, click **Security > Port Security**

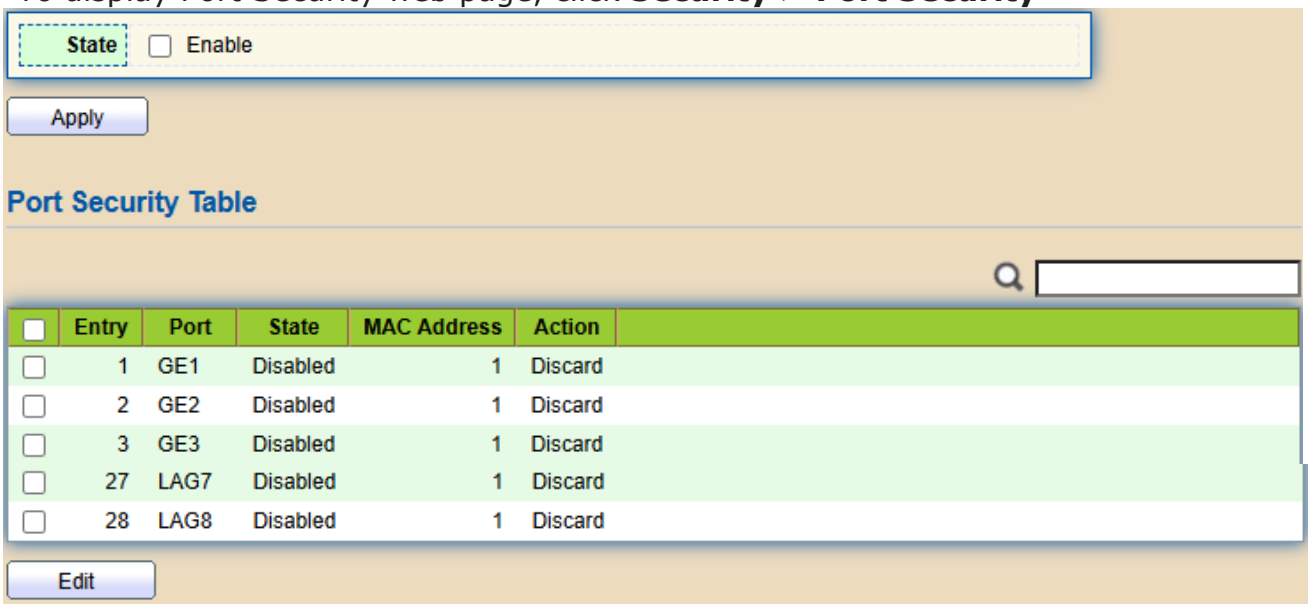


Figure 139 - Security > Port Security

Item	Description
State	Enable/Disable the port security function.
Port	Select one or multiple ports to configure.
State	Select the status of port security • Disable: Disable port security function. • Enable: Enable port security function.
MAC Address	Specify the number of how many mac addresses can be learned.

Action	Select the action if learned mac addresses • Forward: Forward this packet whose SMAC is new to system and exceed the learning-limit number. • Discard: Discard this packet whose SMAC is new to system and exceed the learning-limit number. • Shutdown: Shutdown this port when receives a packet whose SMAC is new to system and exceed the learning limit number.

Click "Edit" button to view Edit Port Security menu.

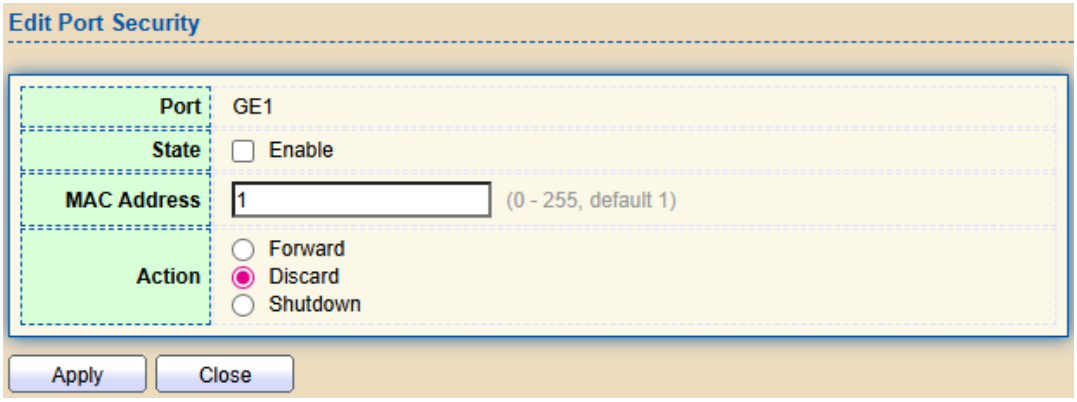


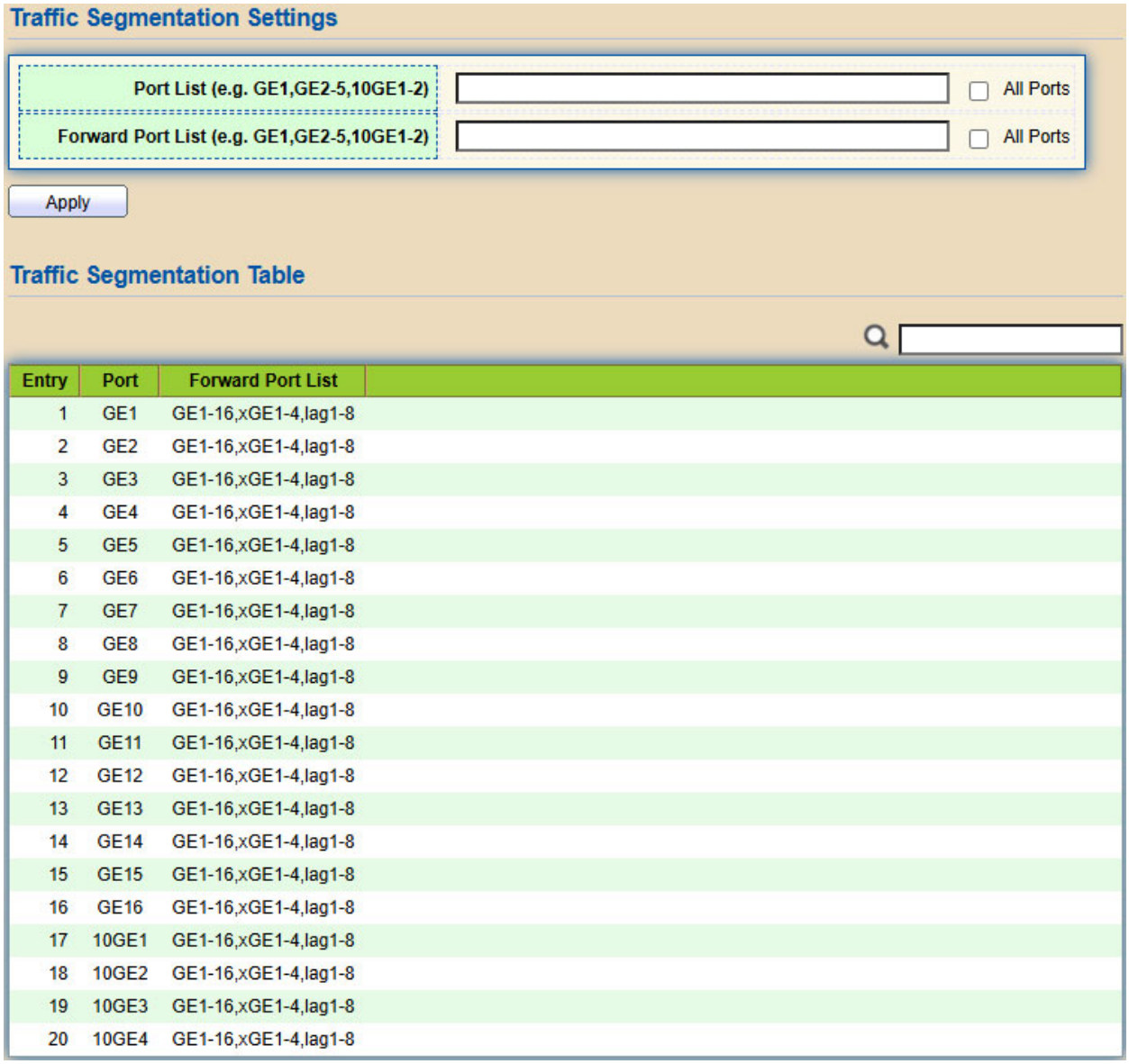
Figure 140 - Security > Port Security > Edd Port Security

Item	Description
Port	Select one or multiple ports to configure.
State	Select the status of port security • Disable: Disable port security function. • Enable: Enable port security function.
MAC Address	Specify the number of how many mac addresses can be learned.
Action	Select the action if learned mac addresses • Forward: Forward this packet whose SMAC is new to system and exceed the learning-limit number. • Discard: Discard this packet whose SMAC is new to system and exceed the learning-limit number. • Shutdown: Shutdown this port when receives a packet whose SMAC is new to system and exceed the learning limit number.

4.10.7. Traffic Segmentation

Traffic segmentation is a network traffic segmentation technique that aims to classify and process network traffic according to different needs and policies, in order to improve network performance and security.

To display Traffic Segmentation web page, click **Security > Traffic Segmentation**



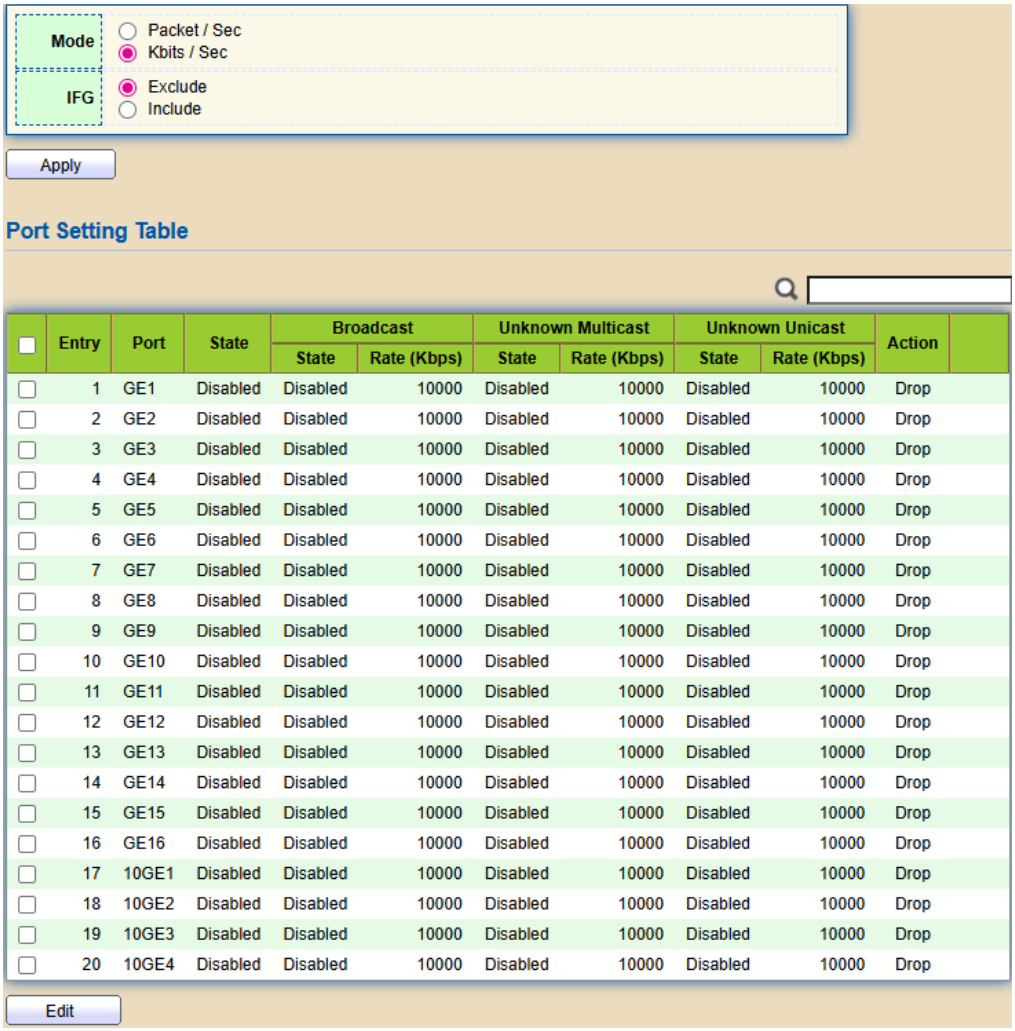
Entry	Port	Forward Port List
1	GE1	GE1-16,xGE1-4,lag1-8
2	GE2	GE1-16,xGE1-4,lag1-8
3	GE3	GE1-16,xGE1-4,lag1-8
4	GE4	GE1-16,xGE1-4,lag1-8
5	GE5	GE1-16,xGE1-4,lag1-8
6	GE6	GE1-16,xGE1-4,lag1-8
7	GE7	GE1-16,xGE1-4,lag1-8
8	GE8	GE1-16,xGE1-4,lag1-8
9	GE9	GE1-16,xGE1-4,lag1-8
10	GE10	GE1-16,xGE1-4,lag1-8
11	GE11	GE1-16,xGE1-4,lag1-8
12	GE12	GE1-16,xGE1-4,lag1-8
13	GE13	GE1-16,xGE1-4,lag1-8
14	GE14	GE1-16,xGE1-4,lag1-8
15	GE15	GE1-16,xGE1-4,lag1-8
16	GE16	GE1-16,xGE1-4,lag1-8
17	10GE1	GE1-16,xGE1-4,lag1-8
18	10GE2	GE1-16,xGE1-4,lag1-8
19	10GE3	GE1-16,xGE1-4,lag1-8
20	10GE4	GE1-16,xGE1-4,lag1-8

Figure 141 - Security > Traffic Segmentation

Item	Description
Port List	Select a single port/all ports.
Forward Port List	Select a single port/all ports.

4.10.8. Storm Control

To display Storm Control global setting web page, click **Security > Storm Control**



Entry	Port	State	Broadcast		Unknown Multicast		Unknown Unicast		Action
			State	Rate (Kbps)	State	Rate (Kbps)	State	Rate (Kbps)	
1	GE1	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
2	GE2	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
3	GE3	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
4	GE4	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
5	GE5	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
6	GE6	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
7	GE7	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
8	GE8	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
9	GE9	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
10	GE10	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
11	GE11	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
12	GE12	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
13	GE13	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
14	GE14	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
15	GE15	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
16	GE16	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
17	10GE1	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
18	10GE2	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
19	10GE3	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
20	10GE4	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop

Figure 142 - Security > Storm Control

Item	Description
Mode (Unit)	Select the unit of storm control • Packet / Sec: storm control rate calculates by packet-based • Kbits / Sec: storm control rate calculates by octet-based.
IFG	Select the rate calculates w/o preamble & IFG (20 bytes) • Exclude: exclude preamble & IFG (20 bytes) when count ingress storm control rate. • Include: include preamble & IFG (20 bytes) when count ingress storm control rate.

Click "Edit" button to view Edit Port Setting menu.

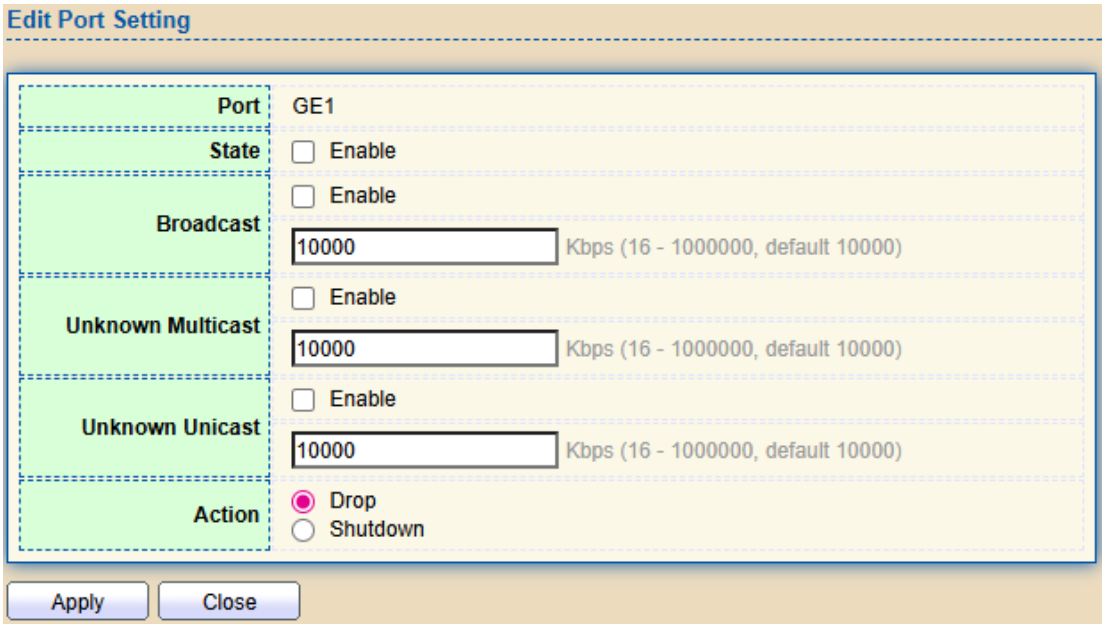


Figure 143 - Security > Storm Control > Edit Port Setting

Item	Description
Port	Select the setting ports.
State	Select the state of setting • Enable: Enable the storm control function.
Broadcast	Enable: Enable the storm control function of Broadcast packet. Value of storm control rate, Unit: pps (packet per-second, range 1- 262143) or Kbps (Kbits per-second, range16 - 1000000) depends on global mode setting.
Unknown Multicast	Enable: Enable the storm control function of Unknown multicast packet. Value of storm control rate, Unit: pps (packet per-second, range 1- 262143) or Kbps (Kbits per-second, range16 - 1000000) depends on global mode setting.
Unknown Unicast	Enable: Enable the storm control function of Unknown unicast packet. Value of storm control rate, Unit: pps (packet per-second, range 1 - 262143) or Kbps (Kbits per-second, range16 - 1000000) depends on global mode setting.
Action	Select the state of setting • Drop: Packets exceed storm control rate will be dropped. • Shutdown: Port will be shutdown when packets exceed storm control rate.

4.10.9. DoS

A Denial of Service (DoS) attack is a hacker attempt to make a device unavailable to its users. DoS attacks saturate the device with external communication requests, so

that it cannot respond to legitimate traffic. These attacks usually lead to a device CPU overload.

The DoS protection feature is a set of predefined rules that protect the network from malicious attacks. The DoS Security Suite Settings enables activating the security suite.

4.10.9.1. Property

To display Dos Global Setting web page, click **Security > Dos > Property**

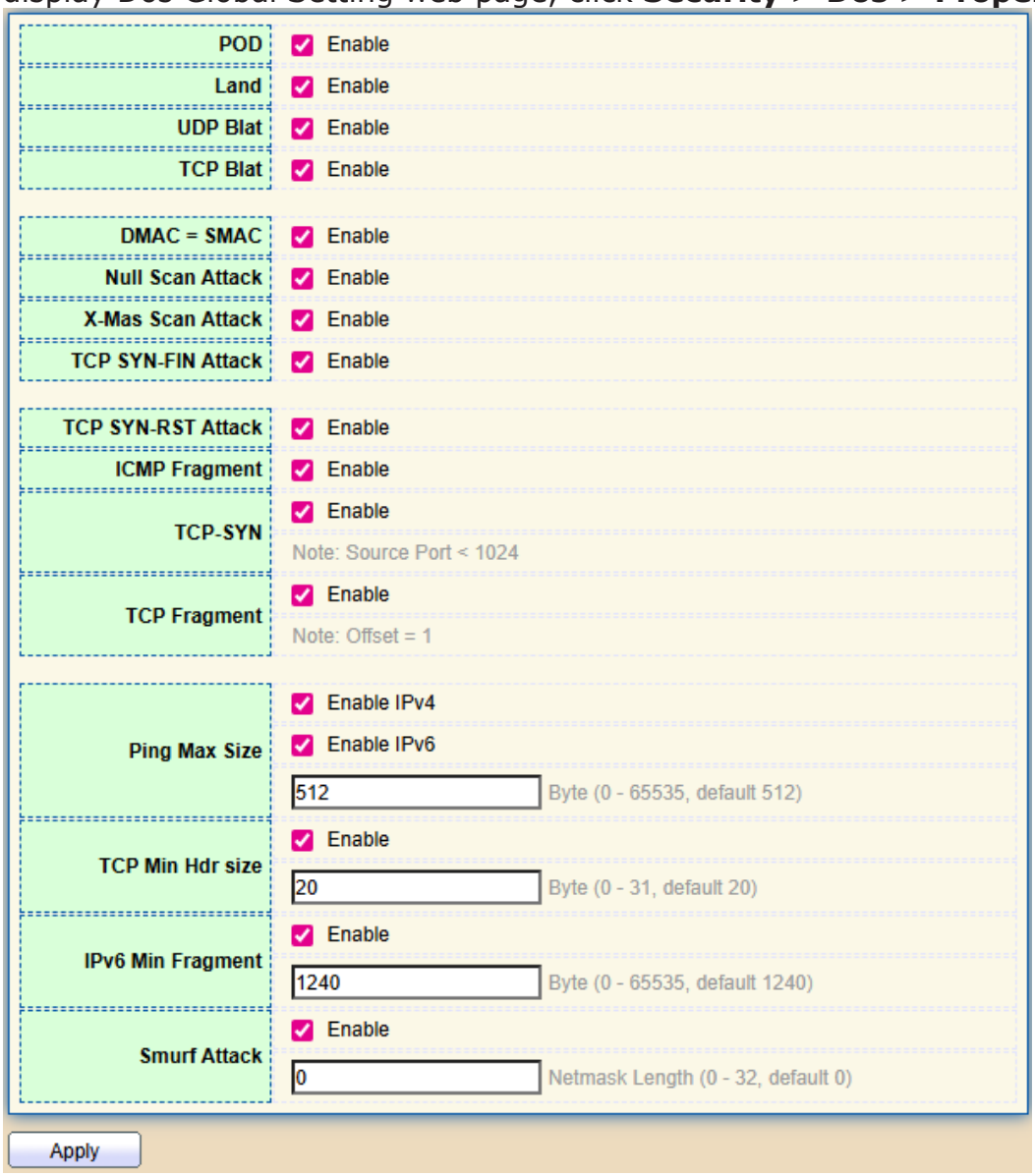


Figure 144 - Security > DoS > Property

Item	Description
POD	Avoids ping of death attack.
Land	Drops the packets if the source IP address is equal to the destination IP address.

UDP Blat	Drops the packets if the UDP source port equals to the UDP destination port.
TCP Blat	Drops the packages if the TCP source port is equal to the TCP destination port.
DMAC = SMAC	Drops the packets if the destination MAC address is equal to the source MAC address.
Null Scan Attack	Drops the packets with NULL scan.
X-Mas Scan Attack	Drops the packets if the sequence number is zero, and the FIN, URG and PSH bits are set.
TCP SYN-FIN Attack	Drops the packets with SYN and FIN bits set.
TCP SYN-RST Attack	Drops the packets with SYN and RST bits set
ICMP Fragment	Drops the fragmented ICMP packets.
TCP SYN (SPORT<1024)	Drops SYN packets with sport less than 1024.
TCP Fragment (Offset = 1)	Drops the TCP fragment packets with offset equals to one.
Ping Max Size	Specify the maximum size of the ICMPv4/ICMPv6 ping packets. The valid range is from 0 to 65535 bytes, and the default value is 512 bytes.
IPv6 Min Fragment	Checks the minimum size of IPv6 fragments, and drops the packets smaller than the minimum size. The valid range is from 0 to 65535 bytes, and default value is 1240 bytes.
Smurf Attack	Avoids Smurf attack. The length range of the netmask is from 0 to 323 bytes, and default length is 0 bytes.

4.10.9.2. Port Setting

To configure and display the state of DoS protection for interfaces, click **Security > DoS > Port Setting.**

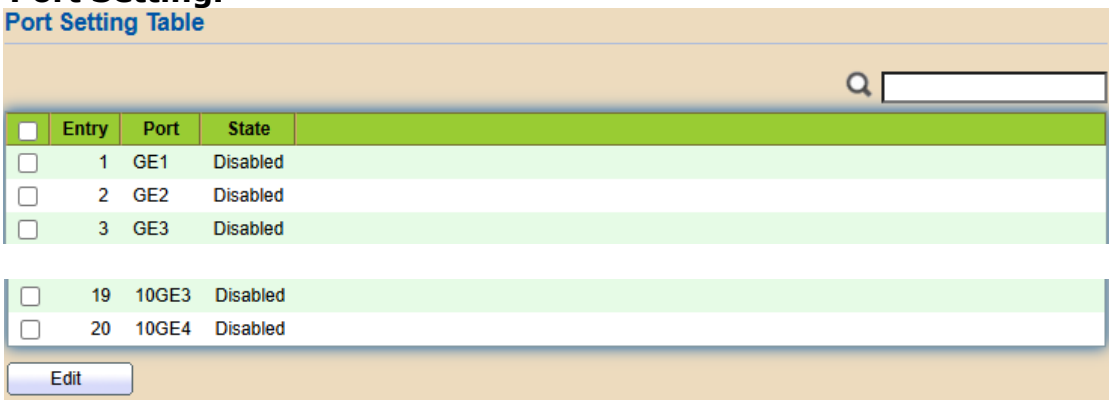


Figure 145 - Security > DoS > Port Setting

Item	Description
Port	Interface or port number.
State	Enable/Disable the DoS protection on the interface.

4.10.10. Dynamic ARP Inspection

Use the Dynamic ARP Inspection pages to configure settings of Dynamic ARP Inspection

4.10.10.1. Property

This page allow user to configure global and per interface settings of Dynamic ARP Inspection.

To display property page, click **Security > Dynamic ARP Inspection > Property**

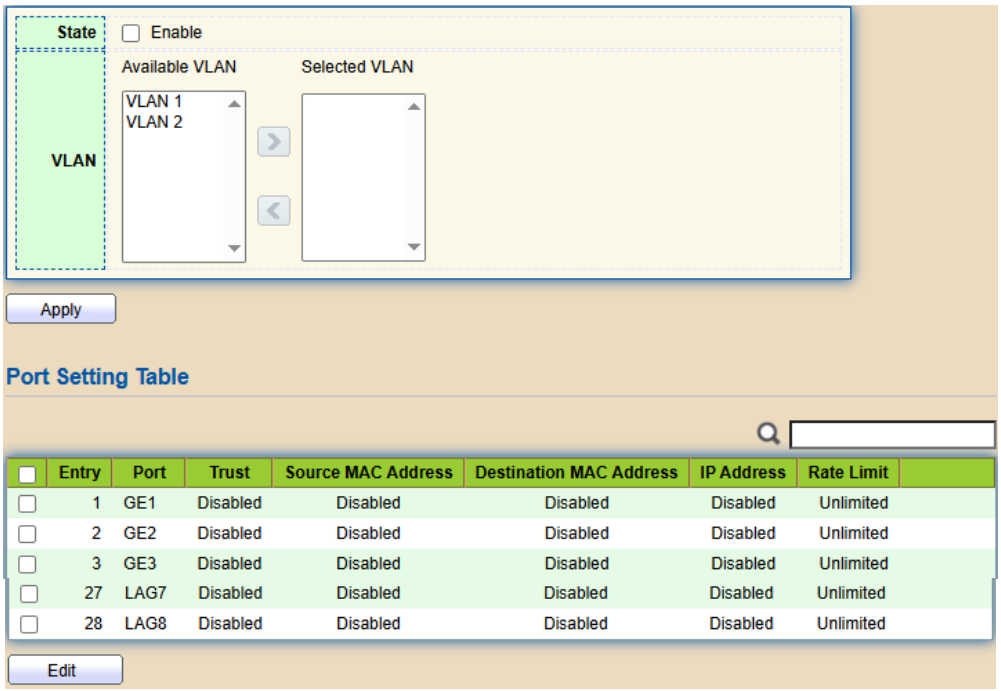


Figure 146 - Security > Dynamic ARP Inspection > Property

Item	Description
State	Set checkbox to enable/disable Dynamic ARP Inspection function.
VLAN	Select VLANs in left box then move to right to enable Dynamic ARP Inspection. Or select VLANs in right box then move to left to disable Dynamic ARP Inspection.
Port	Display port ID.
Trust	Display enable/disabled trust attribute of interface.

Source MAC Address	Display enable/disabled source mac address validation attribute of interface.
Destination MAC Address	Display enable/disabled destination mac address validation attribute of interface.
IP Address	Display enable/disabled IP address validation attribute of interface. Allow zero which means allow 0.0.0.0 IP address.
Rate Limit	Display rate limitation value of interface.

Click "Edit" button to view Edit Port Setting menu.

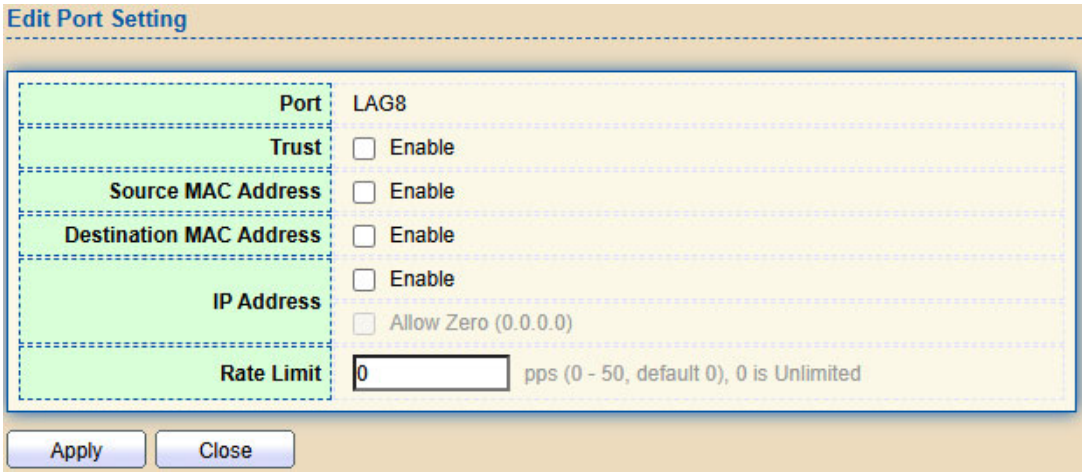


Figure 147 - Security > Dynamic ARP Inspection > Property>Edit Port Setting

Item	Description
Port	Display selected port to be edited.
Trust	Set checkbox to enable/disabled trust of interface. All ARP packet will be forward directly if enable trust. Default is disabled.
Source MAC Address	Set checkbox to enable or disable source mac address validation of interface. All ARP packets will be checked whether sender mac is same as source mac in Ethernet header if enable source mac address validation. Default is disabled.
Destination MAC Address	Set checkbox to enable or disable destination mac address validation of interface. All ARP packets will be checked whether target mac is same as destination mac in Ethernet header if enable destination mac address validation. Default is disabled.
IP Address	Set checkbox to enable or disable IP address validation of interface. All ARP packets will be checked whether IP address is 0.0.0.0, 255.255.255.255 or multicast address. Default is disabled.

IP Address - Allow Zero	Set checkbox to enable or disable allow zero of IP address validation. 0.0.0.0 IP address is valid if allow zero enable. Default is disabled.
Rate Limit	Input rate limitation of ARP packets. The unit is pps. 0 means unlimited. Default is unlimited.

4.10.10.2. Statistics

This page allow user to browse all statistics that recorded by Dynamic ARP Inspection function.

To display Statistics page, click **Security > Dynamic ARP Inspection > Statistics**

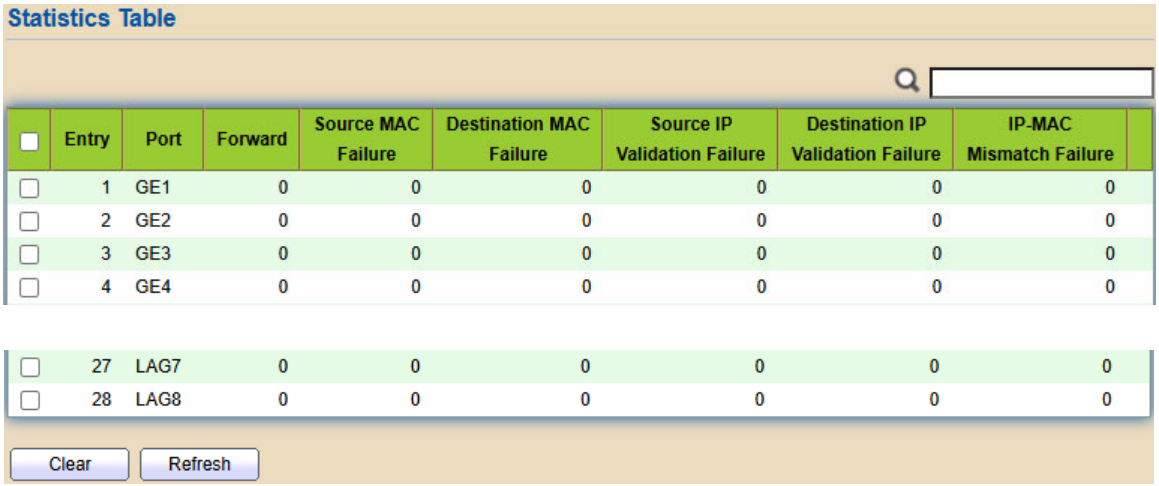


Figure 148 - Security > Dynamic ARP Inspection > statistics

Item	Description
Port	Display port ID.
Forward	Display how many packets forwarded normally.
Source MAC Failure	Display how many packets dropped by source MAC validation.
Destination MAC Failure	Display how many packets dropped by destination MAC validation.
Source IP Validation Failure	Display how many packets dropped by source IP validation.
Destination IP Validation Failure	Display how many packets dropped by destination IP validation.
IP-MAC Mismatch Failure	Display how many packets dropped by IP-MAC doesn't match in IP Source Guard binding table.

4.10.11. DHCP Snooping

Use the DHCP Snooping pages to configure settings of DHCP Snooping

4.10.11.1. Property

This page allow user to configure global and per interface settings of DHCP Snooping.

To display property page, click **Security > DHCP Snooping > Property**

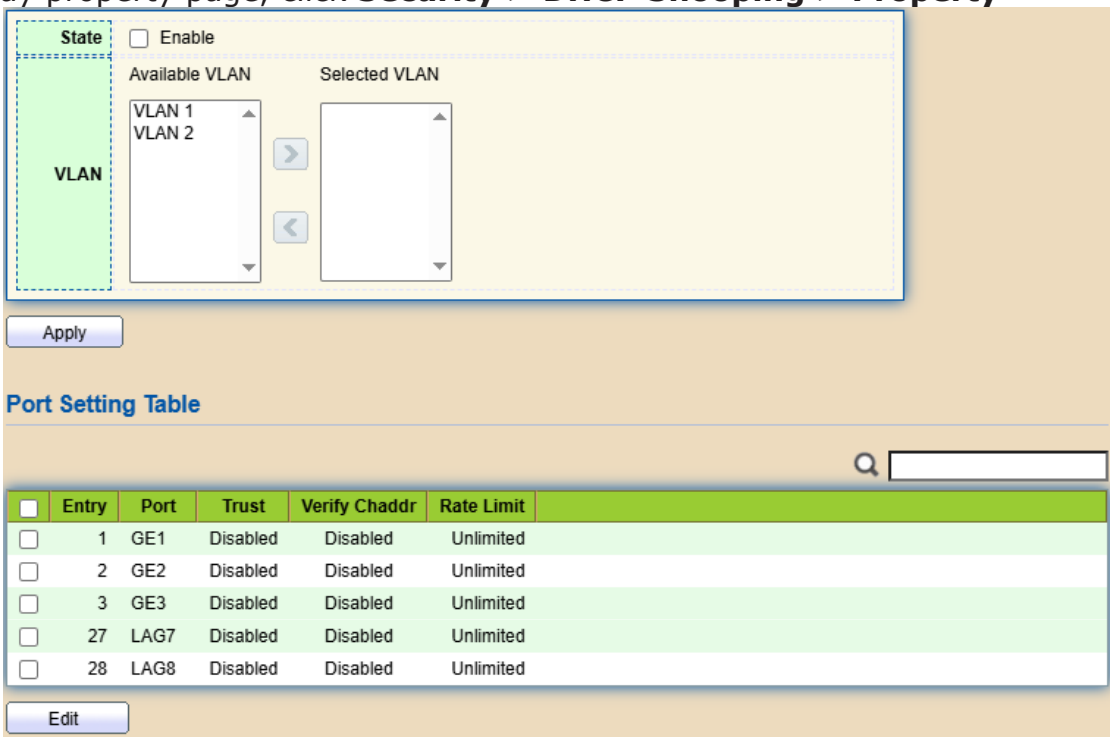


Figure 149 - Security > DHCP Snooping > Property

Item	Description
State	Set checkbox to enable/disable DHCP Snooping function.
VLAN	Select VLANs in left box then move to right to enable DHCP Snooping. Or select VLANs in right box then move to left to disable DHCP Snooping.
Port Setting Table	
Port	Display port ID.
Trust	Display enable/disabled trust attribute of interface.
Verify Chaddr	Display enable/disabled chaddr validation attribute of interface.
Rate Limit	Display rate limitation value of interface.

Click "Edit" button to view Edit Port Setting menu.

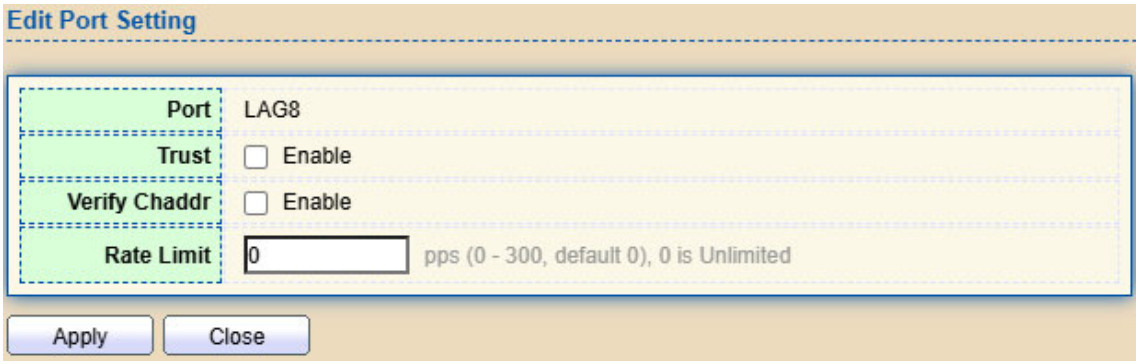


Figure 150 - Security > DHCP Snooping > Property > Edit Port Setting

Item	Description
Port	Display selected port to be edited
Trust	Set checkbox to enable/disabled trust of interface. All DHCP packet will be forward directly if enable trust. Default is disabled.
Verify Chaddr	Set checkbox to enable or disable chaddr validation of interface. All DHCP packets will be checked whether client hardware mac address is same as source mac in Ethernet header if enable chaddr validation. Default is disabled.
Rate Limit	Input rate limitation of DHCP packets. The unit is pps. 0 means unlimited. Default is unlimited.

4.10.11.2. Statistics

This page allow user to browse all statistics that recorded by DHCP snooping function.

To view the Statistics menu, navigate to Security > DHCP Snooping > Statistics.

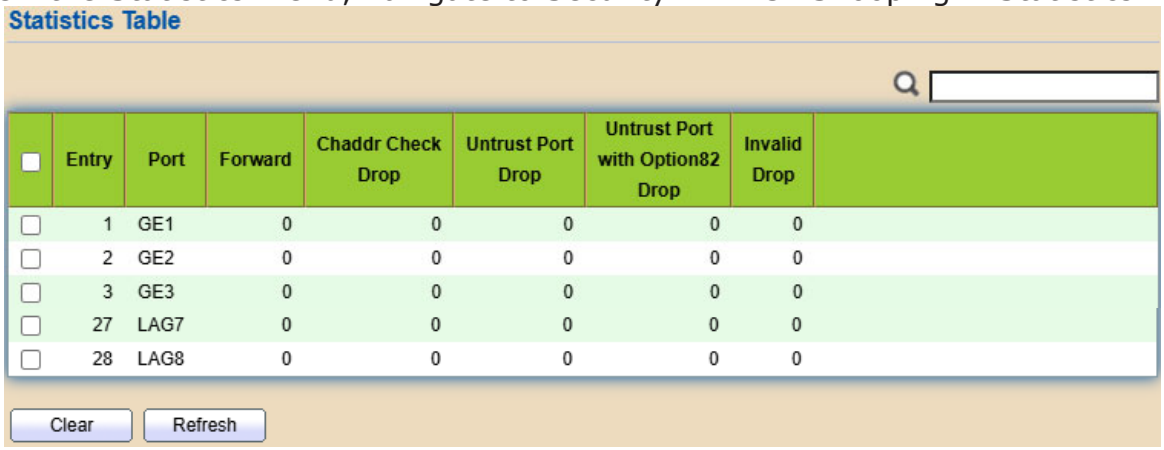


Figure 151 - Security > DHCP Snooping > Statistics

Item	Description
Port	Display port ID.
Forwarded	Display how many packets forwarded normally.

Chaddr Check Drop	Display how many packets dropped by chaddr validation.
Untrust Port Drop	Display how many DHCP server packets that are received by untrusted port dropped.
Untrust Port with Option82	Display how many packets dropped by untrusted port with option82 checking.
Invalid Drop	Display how many packets dropped by invalid checking.

4.10.11.3. Option82 Property

This page allow user to set string of DHCP option82 remote ID filed. The string will attach in option82 if option inserted.

To display Option82 Property page, click **Security > DHCP Snooping > Option82 Property**

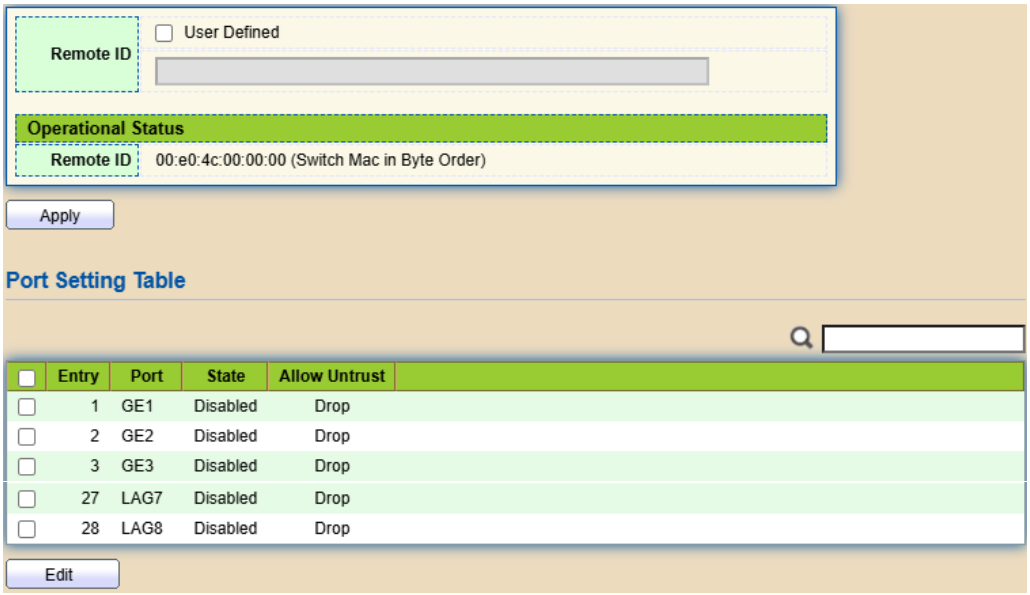


Figure 152 - Security > DHCP Snooping > Option82 Property

Item	Description
User Defined	Set checkbox to enable user-defined remote-ID. By default, remote ID is switch mac in byte order.
Remote ID	Input user-defined remote ID. Only available when enable user-define remote ID.
Port Setting Table	
Port	Display port ID.
State	Display option82 enable/disable status of interface.
Allow untrusted	Display allow untrusted action of interface.

Click "Edit" button to view Edit Port Setting menu.

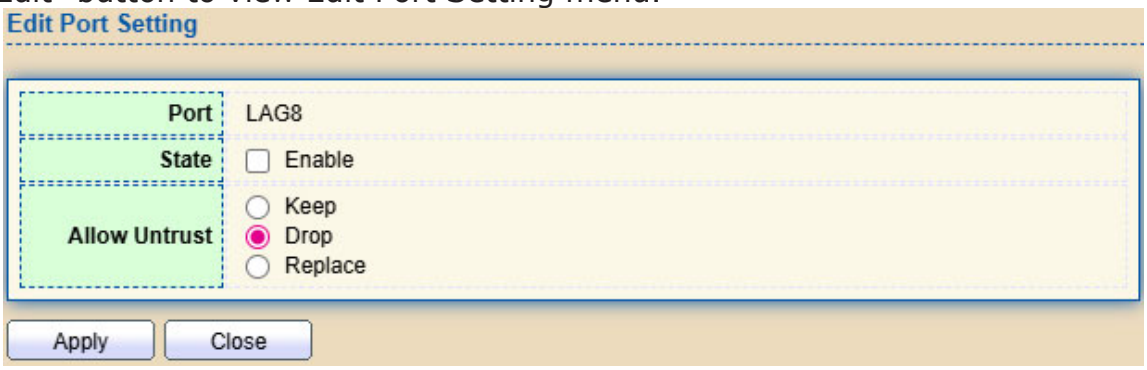


Figure 153 - Security > DHCP Snooping > Option82 Property > Edit Port Setting

Item	Description
Port	Display selected port to be edited
State	Set checkbox to enable/disable option82 function of interface.
Allow untrust	Select the action perform when untrusted port receive DHCP packet has option82 filed. Default is drop. • Keep: Keep original option82 content. • Replace: Replace option82 content by switch setting • Drop: Drop packets with option82

4.10.11.4. Option82 Circuit ID

This page allow user to set string of DHCP option82 circuit ID filed. The string will attach in option82 if option inserted.

To display Option82 Circuit ID page, click **Security > DHCP Snooping > Option82 Circuit ID**

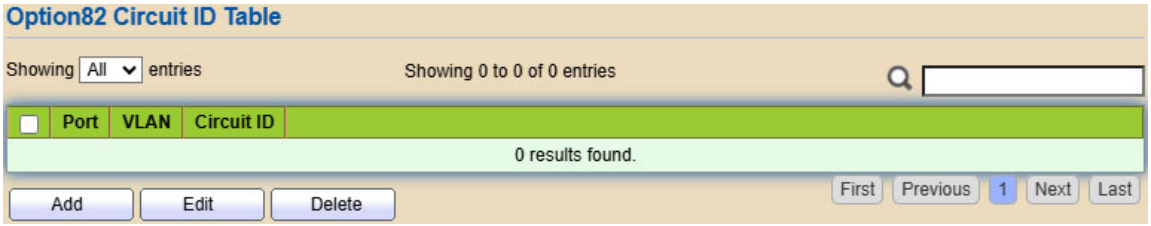


Figure 154 - Security > DHCP Snooping > Option82 Circuit ID

Item	Description
Port	Display port ID of entry.
VLAN	Display associate VLAN of entry.
Circuit ID	Display circuit ID string of entry.

Click “Add” button or "Edit" button to view the Add/Edit Option82 Circuit ID menu.

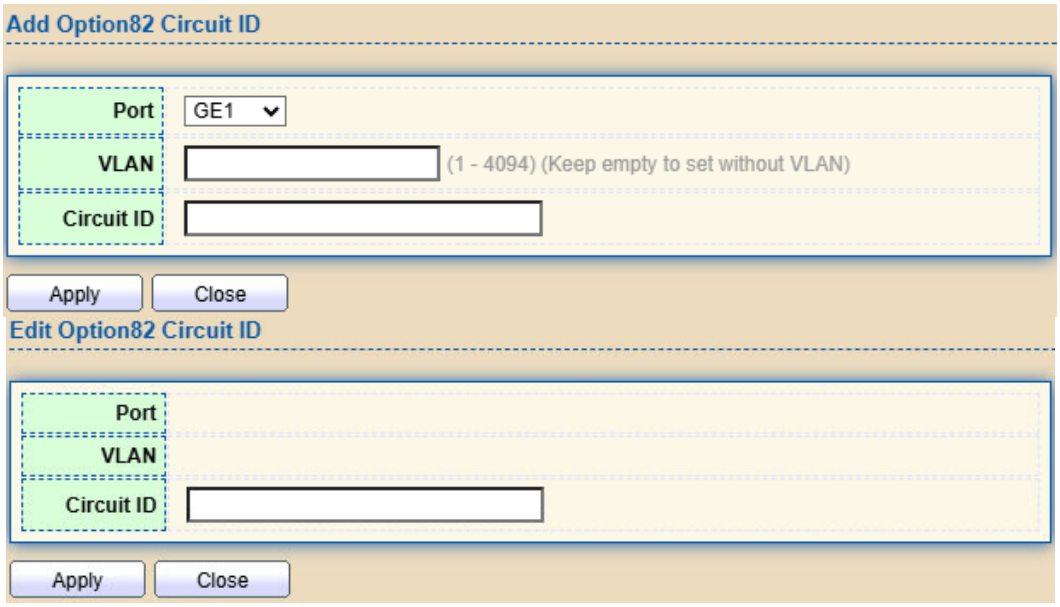


Figure 155 - Security > DHCP Snooping > Option82 Circuit ID > Add/Edit Option82 Circuit ID

Item	Description
Port	Select port from list to associate to CID entry. Only available on Add dialog.
VLAN	Input VLAN ID to associate to circuit ID entry. VLAN ID is not mandatory. Only available on Add dialog.
Circuit ID	Input String as circuit ID. Packets match port and VLAN will be inserted circuit ID.

4.10.12. IP Source Guard

Use the IP Source Guard pages to configure settings of IP Source Guard.

4.10.12.1. Port Setting

Use the IP Source Guard pages to configure settings of IP Source Guard.
To display Port Setting page, click **Security > IP Source Guard > Port Setting**

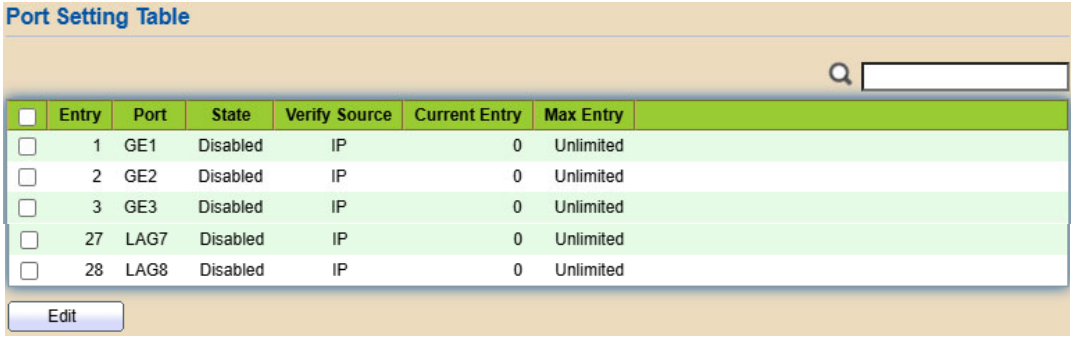


Figure 156 - Security > IP Source Guard > Port Setting

Item	Description
Port	Display port ID.
State	Display IP Source Guard enable/disable status of interface.
Verify Source	Display mode of IP Source Guard verification
Current Entry	Display current binding entries of an interface.
Max Entry	Display the number of maximum binding entry of interface.

Click "Edit" button to view the Edit Port Setting menu.

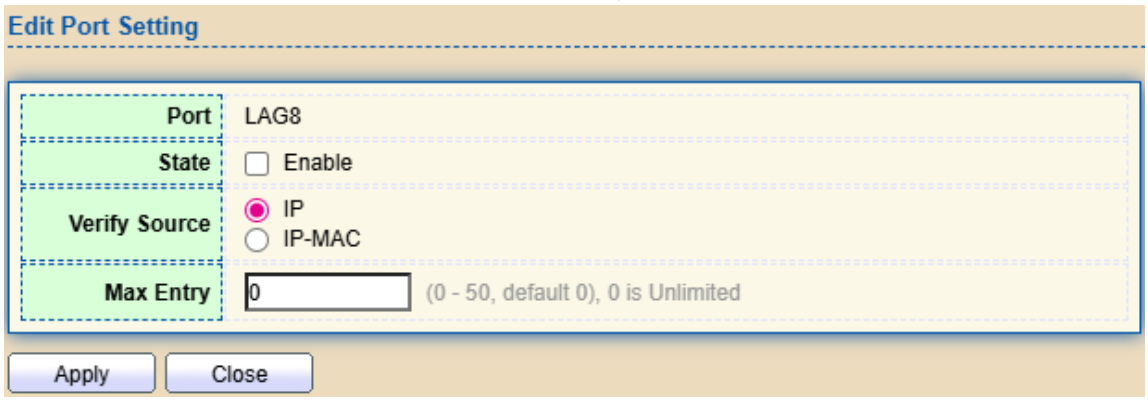


Figure 157 - Security > IP Source Guard > Port Setting > Edit Port Setting

Item	Description
Port	Display selected port to be edited.
Status	Set checkbox to enable or disable IP Source Guard function. Default is disabled.
Verify Source	Select the mode of IP Source Guard verification • IP: Only verify source IP address of packet. • IP-MAC: Verify source IP and source MAC address of packet.
Max Entry	Input the maximum number of entries that a port can be bounded. Default is un-limited on all ports. No entry will be bound if limitation reached.

4.10.12.2. IMPV Binding

This page allow user to add static IP source guard entry and browse all IP source guard entries that learned by DHCP snooping or statically create by user.

To display IPMV Binding page, click **Security > IP Source Guard > IMPV Binding**

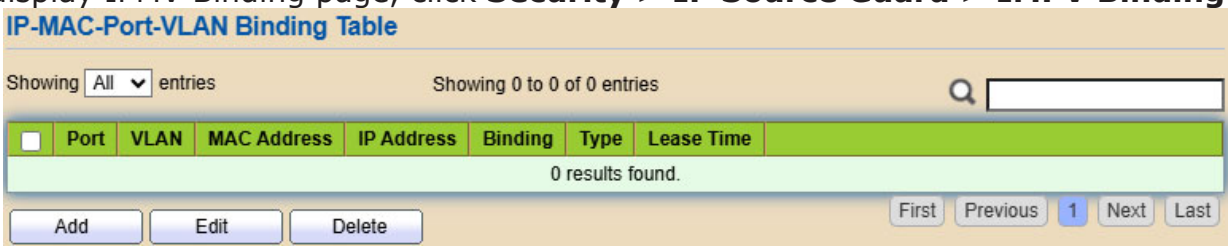


Figure 158 - Security > IP Source Guard > IMPV Binding

Item	Description
Port	Display port ID of entry.
VLAN	Display VLAN ID of entry.
MAC Address	Display MAC address of entry. Only available of IP-MAC binding entry.
IP Address	Display IP address of entry. Mask always to be 255.255.255.255 for IP-MAC binding. IP binding entry display user input.
Binding	Display binding type of entry.
Type	Type of existing binding entry • Static: Entry added by user. • Dynamic: Entry learned by DHCP snooping.
Lease Time	Lease time of DHCP Snooping learned entry. After lease time entry will be deleted. Only available of dynamic entry.

Click "Add" or “Edit” button to view the Add/Edit IP-MAC-Port-VLAN Binding menu.

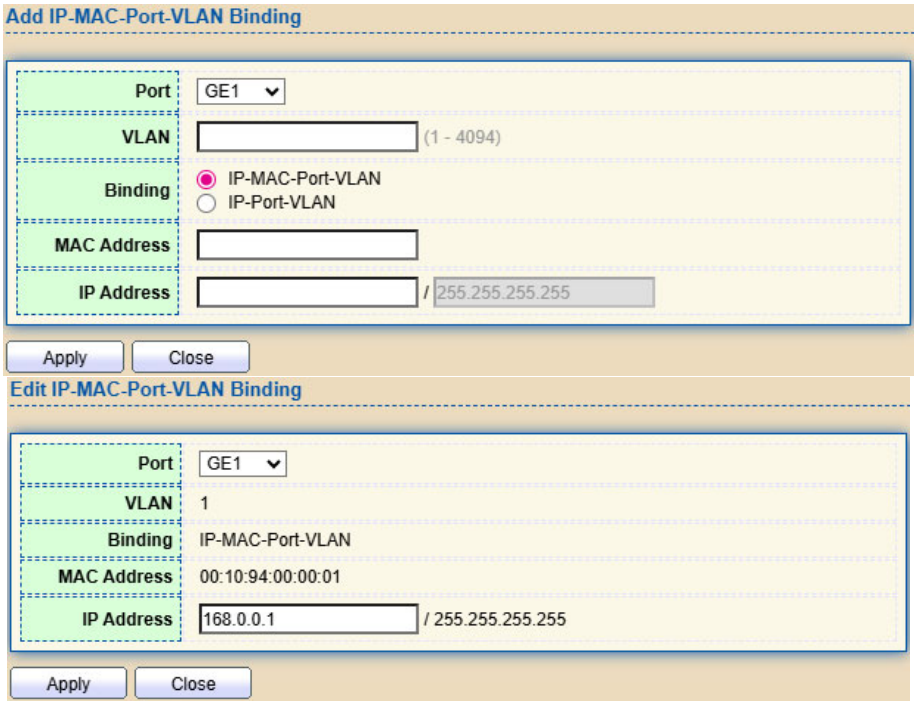


Figure 159 - Security > IP Source Guard > Add/Edit IP-MAC-Port-VLAN Binding

Item	Description
Port	Select port from list of a binding entry.
VLAN	Specify a VLAN ID of a binding entry.
Binding	Select matching mode of binding entry • IP-MAC-Port-VLAN: packet must match IP address、MAC address、Port and VLAN ID. • IP-Port-VLAN: packet must match IP address or subnet、Port and VLAN ID.
MAC Address	Input MAC address. Only available on IP-MAC-Port-VLAN mode.
IP Address	Input IP address and mask. Mask only available on IP-MAC-Port mode.

4.10.12.3. Save Database

This page allow user to configure DHCP snooping database which can backup and restore dynamic DHCP snooping entries.

To display Save Database page, click **Security > DHCP Snooping > Save Database**.

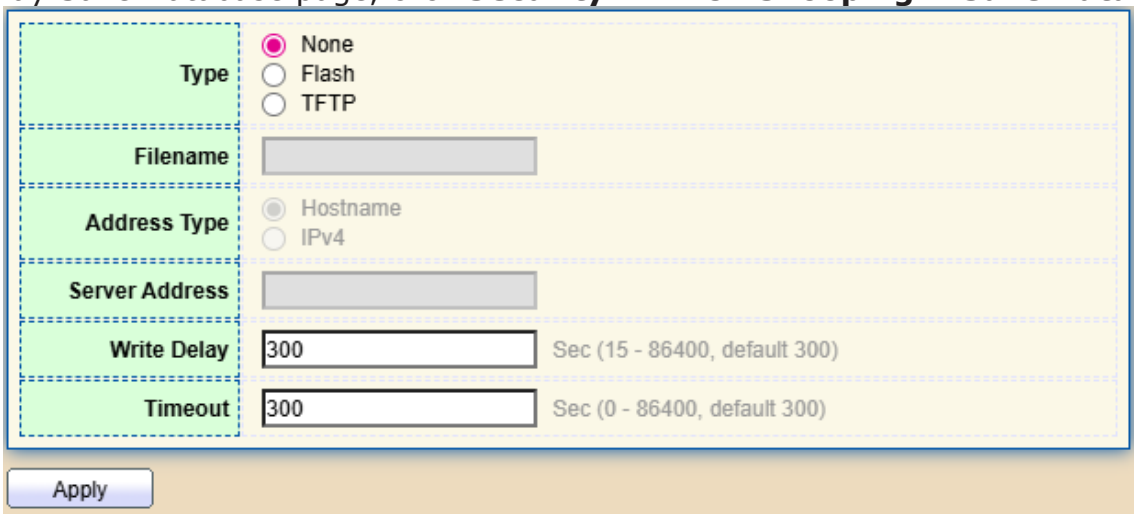


Figure 160 - Security > IP Source Guard > Save Database

Item	Description
Type	Select the type of database agent. • None: Disable database agent service. • Flash: Save DHCP dynamic binding entries to flash. • TFTP: Save DHCP dynamic binding entries to remote TFTP server.

Filename	Input filename for backup file. Only available when selecting type “flash” and “TFTP”.
Address Type	Select the type of TFTP server. • Hostname: TFTP server address is hostname. • IPv4: TFTP server address is IPv4 address
Server Address	Input remote TFTP server hostname or IP address. Only available when selecting type “TFTP”
Write Delay	Input delay timer for doing backup after change happened. Default is 300 seconds.
Timeout	Input aborts timeout for doing backup failure. Default is 300 seconds.

4.11. ACL

Use the ACL pages to configure settings for the switch ACL features.

4.11.1. MAC ACL

This page allow user to add or delete ACL rule. A rule cannot be deleted if under binding.

To display MAC ACL page, click **ACL > MAC ACL**

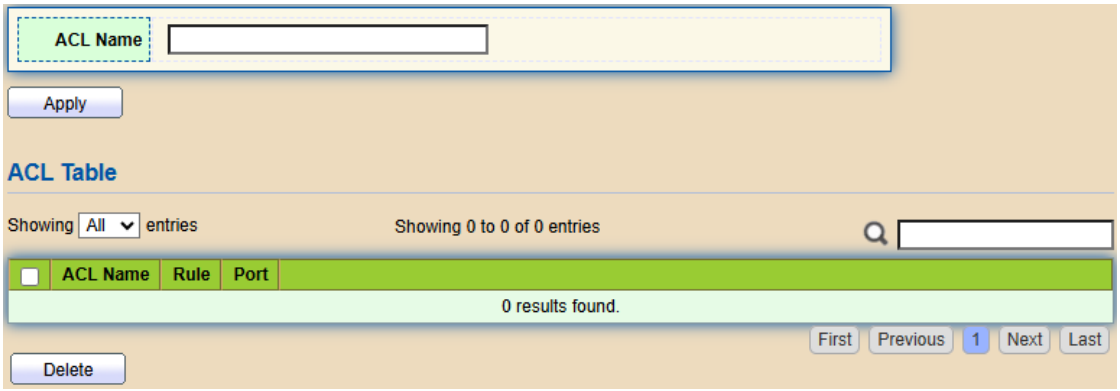


Figure 161 - ACL > MAC ACL

Item	Description
ACL Name	Input MAC ACL name.
ACL Name	Display MAC ACL name.
Rule	Display the number ACE rule of ACL.
Port	Display the port list that bind this ACL.

4.11.2. MAC ACE

This page allow user to add, edit or delete ACE rule. An ACE rule cannot be edited

or deleted if ACL under binding. New ACE cannot be added if ACL under binding.

To display MAC ACE page, click **ACL > MAC ACE**

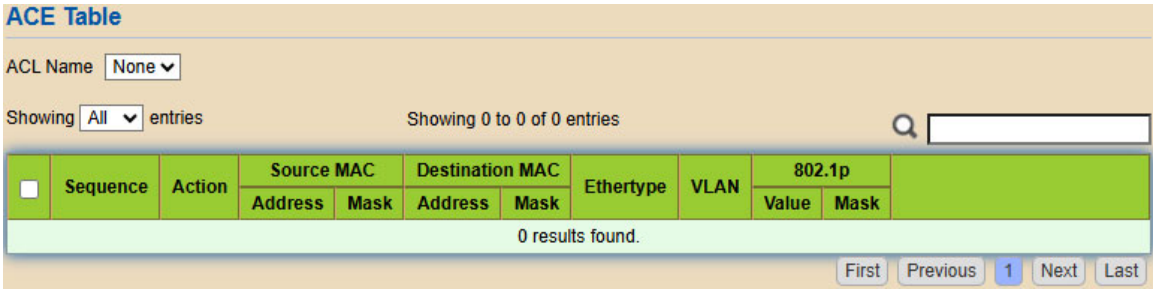


Figure 162 - ACL > MAC ACE

Item	Description
ACL Name	Select the ACL name to which an ACE is being added.
Sequence	Display the sequence of ACE.
Action	Display the action of ACE.
Source MAC	Display the source MAC address and mask of ACE.
Destination MAC	Display the destination MAC address and mask of ACE.
Ethertype	Display the Ethernet frame type of ACE.
VLAN ID	Display the VLAN ID of ACE.
802.1p Value	Display the 802.1p value of ACE.
802.1p Mask	Display the 802.1p mask of ACE.

4.11.3. IPv4 ACL

This page allow user to add or delete IPv4 ACL rule. A rule cannot be deleted if under binding.

To display IPv4 ACL page, click **ACL > IPv4 ACL**

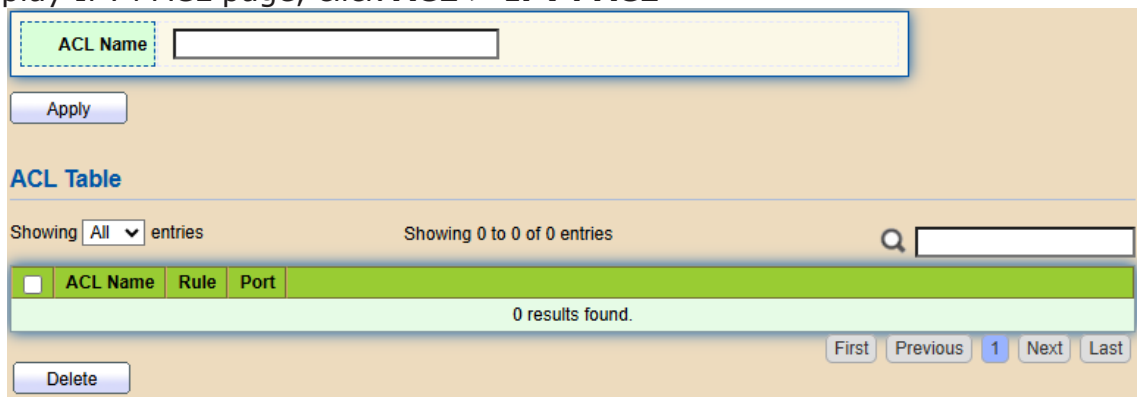


Figure 163 - ACL > IPv4 ACL

Item	Description
ACL Name	Input IPv4 ACL name.

ACL Name	Display IPv4 ACL name.
Rule	Display the number ACE rule of ACL.
Port	Display the port list that bind this ACL.

4.11.4. IPv4 ACE

This page allow user to add, edit or delete ACE rule. An ACE rule cannot be edited or deleted if ACL under binding. New ACE cannot be added if ACL under binding.

To display IPv4 ACE page, click **ACL > IPv4 ACE**

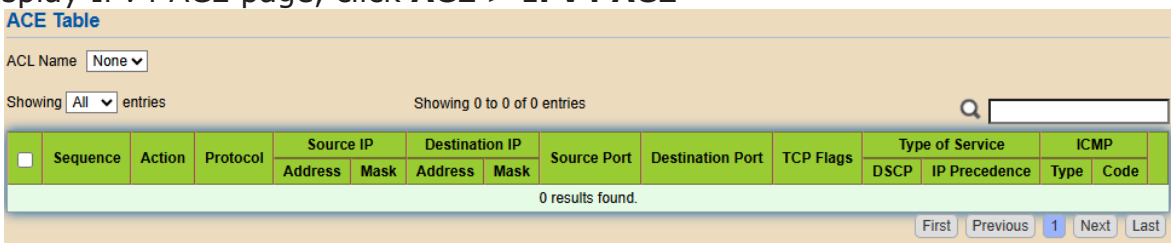


Figure 164 - ACL > IPv4 ACE

Item	Description
ACL Name	Select the ACL name to which an ACE is being added.
Sequence	Display the sequence of ACE.
Action	Display the action of ACE.
Protocol	Display the protocol value of ACE.
Source IP	Display the source IP address and mask of ACE.
Destination IP	Display the destination IP address and mask of ACE.
Source Port	Display single source port or a range of source ports of ACE. Only available when protocol is TCP or UDP.
Destination Port	Display single destination port or a range of destination ports of ACE. Only available when protocol is TCP or UDP.
TCP Flags	Display the TCP flag value if ACE. Only available when protocol is TCP.
Type of Service	Display the ToS value of ACE which could be DSCP or IP Precedence.
ICMP	Display the ICMP type and code of ACE. Only available when protocol is ICMP.

4.11.5. IPv6 ACL

This page allow user to add or delete Ipv6 ACL rule. A rule cannot be deleted if under binding.

To display IPv6 ACL page, click **ACL > IPv6 ACL**

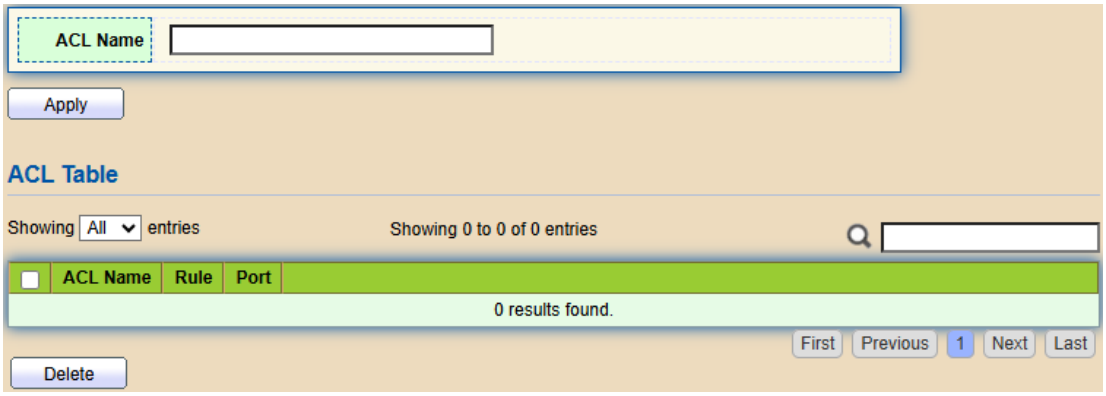


Figure 165 - ACL > IPv6 ACL

Item	Description
ACL Name	Input IPv6 ACL name.
ACL Name	Display IPv6 ACL name.
Rule	Display the number ACE rule of ACL.
Port	Display the port list that bind this ACL.

4.11.6. IPv6 ACE

This page allow user to add, edit or delete ACE rule. An ACE rule cannot be edited or deleted if ACL under binding. New ACE cannot be added if ACL under binding.

To display IPv6 ACE page, click ACL > IPv6 ACE

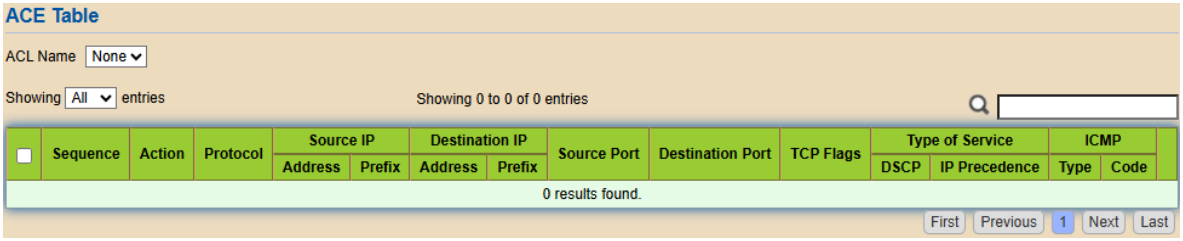


Figure 166 - ACL > IPv6 ACE

Item	Description
ACL Name	Select the ACL name to which an ACE is being added.
Sequence	Display the sequence of ACE.
Action	Display the action of ACE.
Protocol	Display the protocol value of ACE.
Source IP	Display the source IP address and mask of ACE.
Destination IP	Display the destination IP address and mask of ACE.
Source Port	Display single source port or a range of source ports of ACE. Only available when protocol is TCP or UDP.

Destination Port	Display single destination port or a range of destination ports of ACE. Only available when protocol is TCP or UDP.
TCP Flags	Display the TCP flag value if ACE. Only available when protocol is TCP.
Type of Service	Display the ToS value of ACE which could be DSCP or IP Precedence.
ICMP	Display the ICMP type and code of ACE. Only available when protocol is ICMP.

4.11.7. ACL Binding

This page allow user to bind or unbind ACL rule to or from interface. IPv4 and Ipv6 ACL cannot be bound to the same port simultaneously.

To display ACL Binding page, click **ACL > ACL Binding**

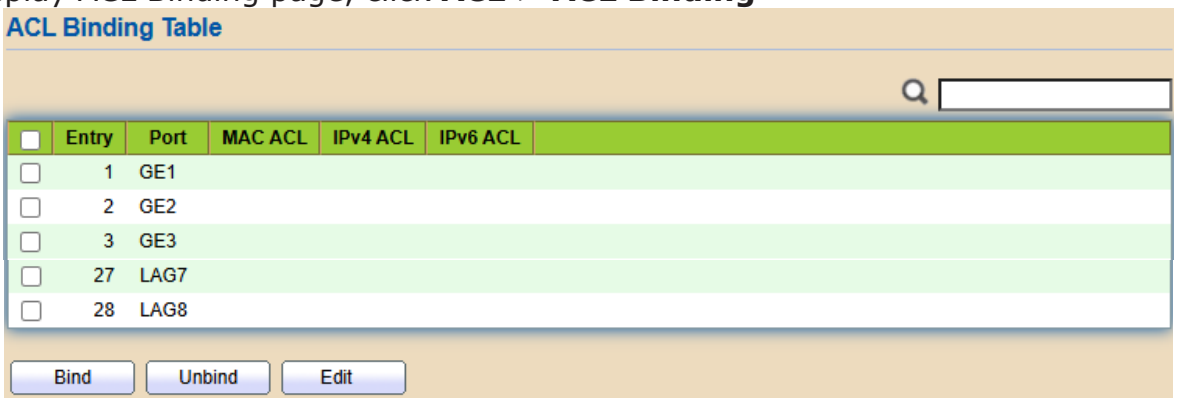


Figure 167 - ACL > ACL Binding

Item	Description
Port	Display port entry ID.
MAC ACL	Display mac ACL name that bound of interface. Empty means no rule bound.
IPv4 ACL	Display ipv4 ACL name that bound of interface. Empty means no rule bound.
IPv6 ACL	Display ipv6 ACL name that bound of interface. Empty means no rule bound.

Click “Edit” button to view the Edit ACL Binding menu.

Figure 168 - ACL > Edit ACL Binding

Item	Description
Port	Display port entry ID.
MAC ACL	Select mac ACL name from list to bind.
IPv4 ACL	Select IPv4 ACL name from list to bind.
IPv6 ACL	Select IPv6 ACL name from list to bind.

4.12. QoS

Use the QoS pages to configure settings for the switch QoS interface.

4.12.1. General

Use the QoS general pages to configure settings for general purpose.

4.12.1.1. Property

To display Property web page, click **QoS > General > Property**

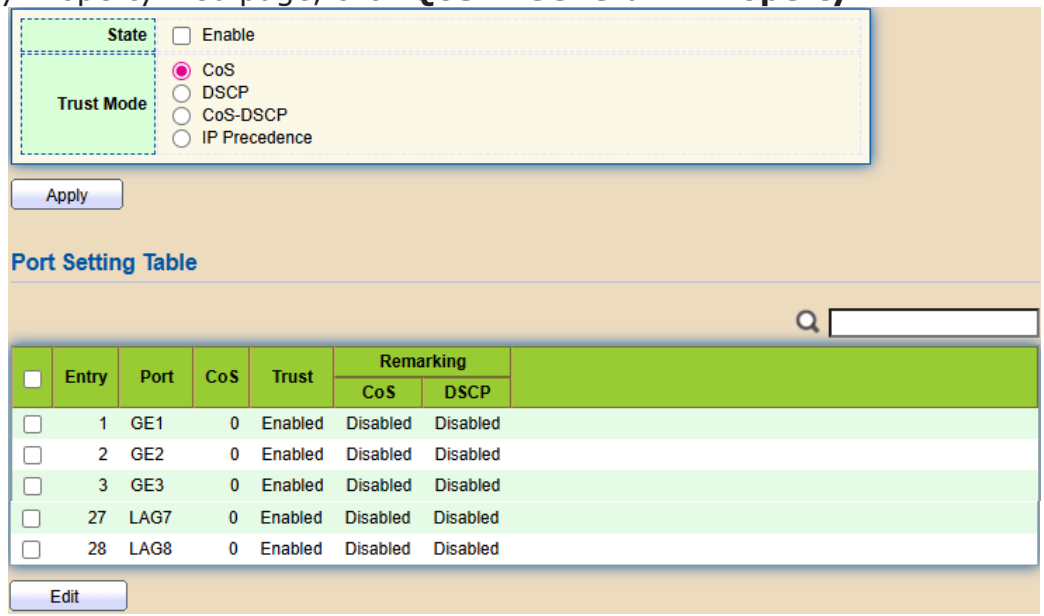


Figure 169 - QoS > General > Property

Item	Description
State	Set checkbox to enable/disable QoS.
Trust	Select QoS trust mode • CoS: Traffic is mapped to queues based on the CoS field in the VLAN tag, or based on the per-port default CoS value (if there is no VLAN tag on the incoming packet), the actual mapping of the CoS to queue can be configured on port setting dialog. • DSCP: Traffic is mapped to queues based on the DSCP. The actual mapping of the DSCP to queue can be configured on the DSCP mapping • CoS-DSCP: Uses the trust CoS mode for non-IP traffic and trust DSCP mode for IP traffic. • IP Precedence: Traffic is mapped to queues based on the IP precedence. The actual mapping of the IP precedence to queue can be configured on the IP Precedence mapping page.
Port Setting Table	
Port	Port name
CoS	Port default CoS priority value for the selected ports.
Trust	Port trust state • Enabled: Traffic will follow trust mode in global setting • Disabled: Traffic will always use best efforts
Remarking (CoS)	Set checkbox to enable/disable port CoS remarking. • Enabled: CoS remarking is enabled • Disabled: CoS remarking is disabled
Remarking (DSCP)	Set checkbox to enable/disable port DSCP remarking. • Enabled: DSCP remarking is enabled • Disable: DSCP remarking is disabled
Remarking (IP Precedence)	Set checkbox to enable/disable port IP Precedence remarking. • Enabled: IP Precedence remarking is enabled • Disabled: IP Precedence remarking is disabled

Click "Edit" button to view the Edit Port Setting menu.

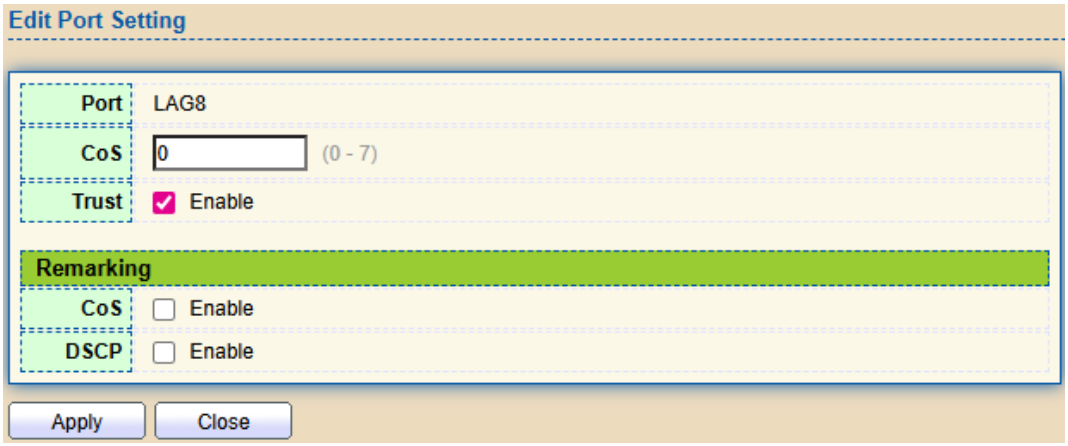


Figure 170 - QoS > General > Property

Item	Description
Port	Selected port list.
CoS	Set default CoS/802.1p priority value for the selected
Trust	Set checkbox to enable/disable port trust state.
Remarking (CoS)	Set checkbox to enable/disable port CoS remarking.
Remarking (DSCP)	Set checkbox to enable/disable port DSCP remarking.
Remarking (IP Precedence)	Set checkbox to enable/disable port IP Precedence remarking.

4.12.1.2. Queue Scheduling

The switch supports eight queues for each interface. Queue number 8 is the highest priority queue.

Queue number 1 is the lowest priority queue. There are two ways of determining how traffic in queues is handled, Strict Priority (SP) and Weighted Round Robin (WRR).

· Strict Priority (SP)–Egress traffic from the highest priority queue is transmitted first. Traffic from the lower queues is processed only after the highest queue has been transmitted, which provide the highest level of priority of traffic to the highest numbered queue.

· Weighted Round Robin (WRR)–In WRR mode the number of packets sent from the queue is proportional to the weight of the queue (the higher the weight, the more frames are sent).

The queuing modes can be selected on the Queue page. When the queuing mode is by Strict Priority, the priority sets the order in which queues are serviced, starting with queue_8 (the highest priority queue) and going to the next lower queue when each queue is completed.

When the queuing mode is Weighted Round Robin, queues are serviced until their quota has been used up and then another queue is serviced. It is also possible to assign some of the lower queues to WRR, while keeping some of the higher queues in Strict Priority. In this case traffic for the SP queues is always sent before

traffic from the WRR queues. After the SP queues have been emptied, traffic from the WRR queues is forwarded. (The relative portion from each WRR queue depends on its weight).

To display Queue Scheduling web page, click **QoS > General > Queue Scheduling**

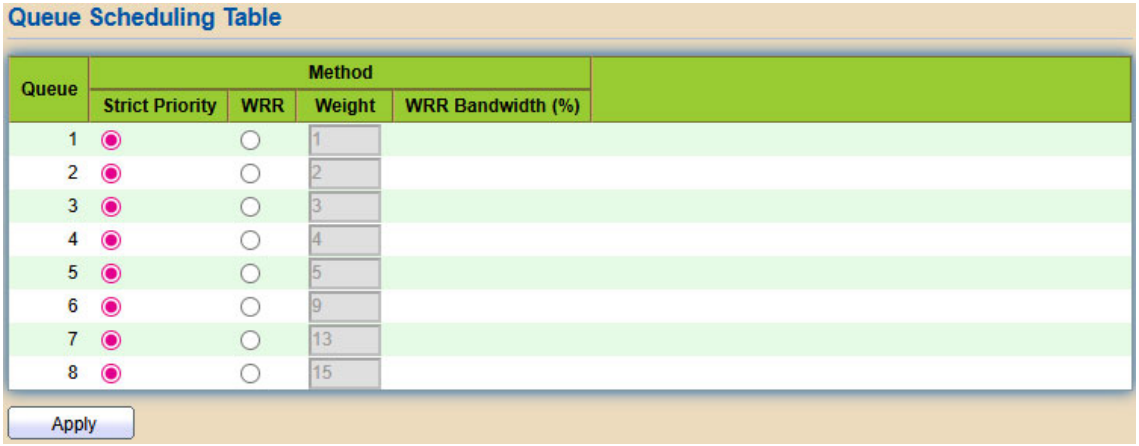


Figure 171 - QoS > General > Queue Scheduling

Item	Description
Queue	Queue ID to configure.
Strict Priority	Set queue to strict priority type.
WRR	Set queue to Weight round robin type.
Weight	If the queue type is WRR, set the queue weight for the queue.
WRR Bandwidth	Percentage of WRR queue bandwidth.

4.12.1.3. CoS Mapping

The CoS to Queue table determines the egress queues of the incoming packets based on the 802.1p priority in their VLAN tags. For incoming untagged packets, the 802.1p priority will be the default CoS/802.1p priority assigned to the ingress ports. Use the Queues to CoS table to remark the CoS/802.1p priority for egress traffic from each queue.

To display CoS Mapping web page, click **QoS > General > CoS Mapping**

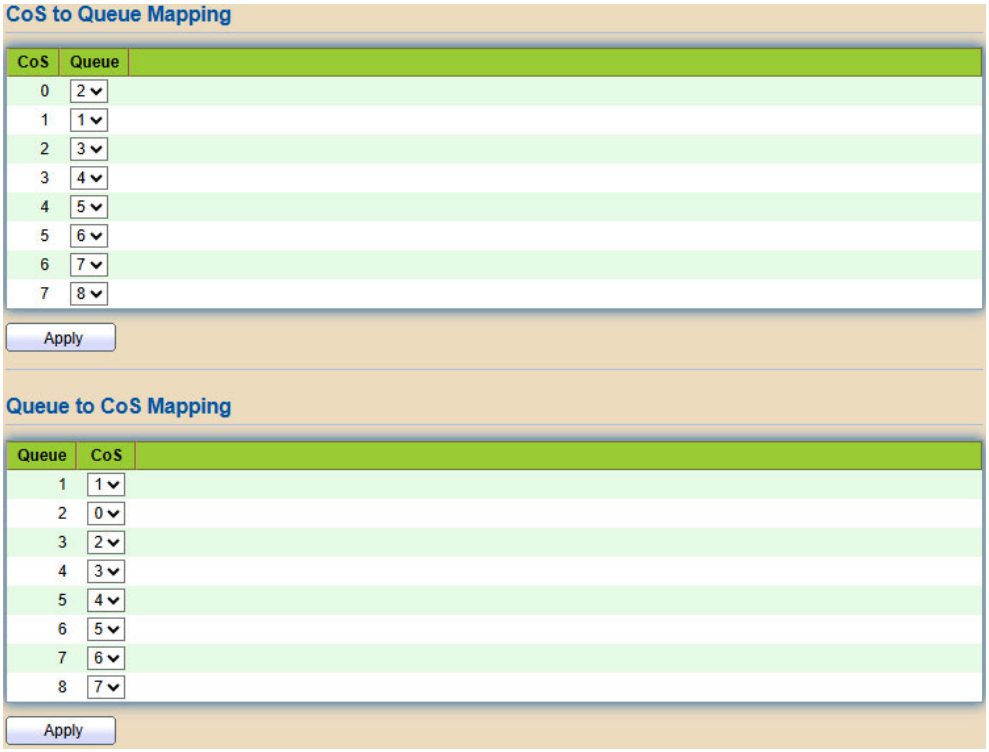


Figure 172 - QoS > General > Cos Mapping

Item	Description
CoS to Queue Mapping	
CoS	CoS value.
Queue	Select queue id for the CoS value.
Queue to CoS Mapping	
Queue	Queue ID
CoS	Select CoS value for the queue id.

4.12.1.4. DSCP Mapping

The DSCP to Queue table determines the egress queues of the incoming IP packets based on their DSCP values. The original VLAN Priority Tag (VPT) of the packet is unchanged. Use the Queues to DSCP page to remark DSCP value for egress traffic from each queue.

To display DSCP Mapping web page, click **QoS > General > DSCP Mapping**

Figure 173 - QoS > General > DSCP Mapping

Item	Description
DSCP to Queue Mapping	
DSCP	DSCP value
Queue	Select queue id for DSCP value
Queue to DSCP Mapping	
Queue	Queue ID.
DSCP	Select DSCP value for queue ID.

4.12.1.5. IP Precedence Mapping

This page allow user to configure IP Precedence to Queue mapping and Queue to IP Precedence mapping.

To display IP Precedence Mapping web page, click **QoS > General > IP Precedence Mapping**

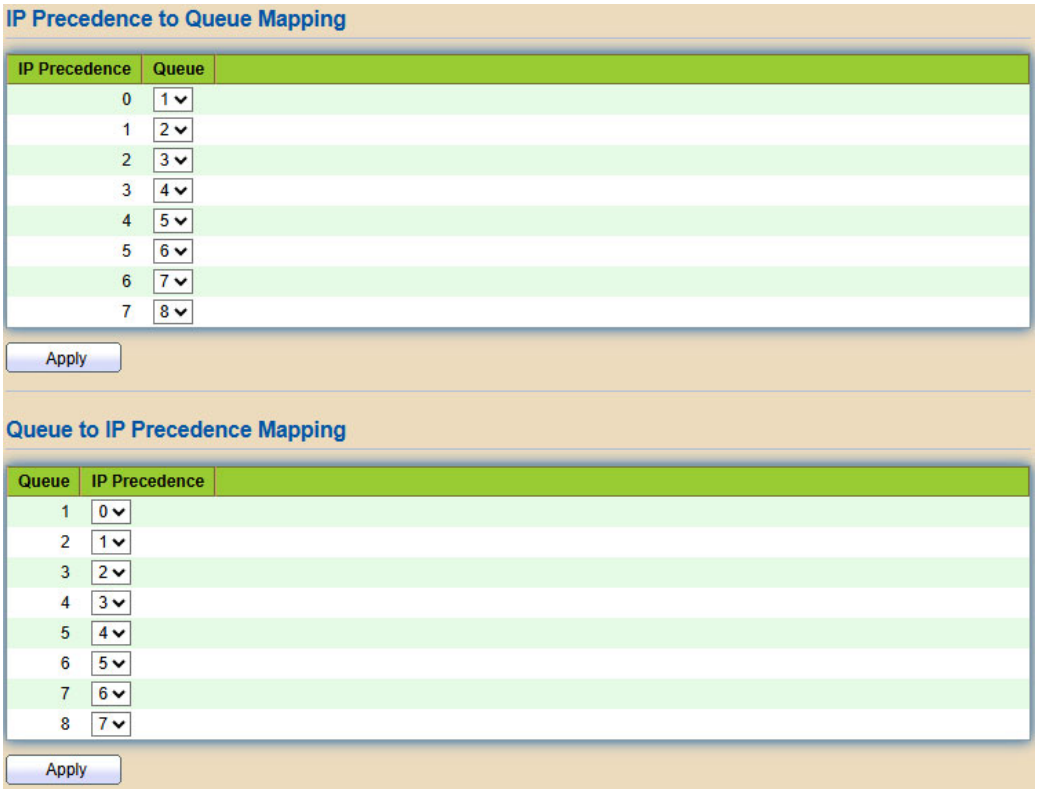


Figure 174 - QoS > General > IP Precedence Mapping

Item	Description
IP Precedence to Queue Mapping	
IP Precedence	IP Precedence value.
Queue	Queue value which IP Precedence is mapped.
Queue to IP Precedence Mapping	
Queue	Queue ID.
IP Precedence	IP Precedence value which queue is mapped.

4.12.2. Rate Limit

Use the Rate Limit pages to define values that determine how much traffic the switch can receive and send on specific port or queue.

4.12.2.1. Ingress/Egress Port

This page allow user to configure ingress port rate limit and egress port rate limit. The ingress rate limit is the number of bits per second that can be received from the ingress interface. Excess bandwidth above this limit is discarded.

To display Ingress / Egress Port web page, click **QoS > Rate Limit > Ingress / Egress Port**

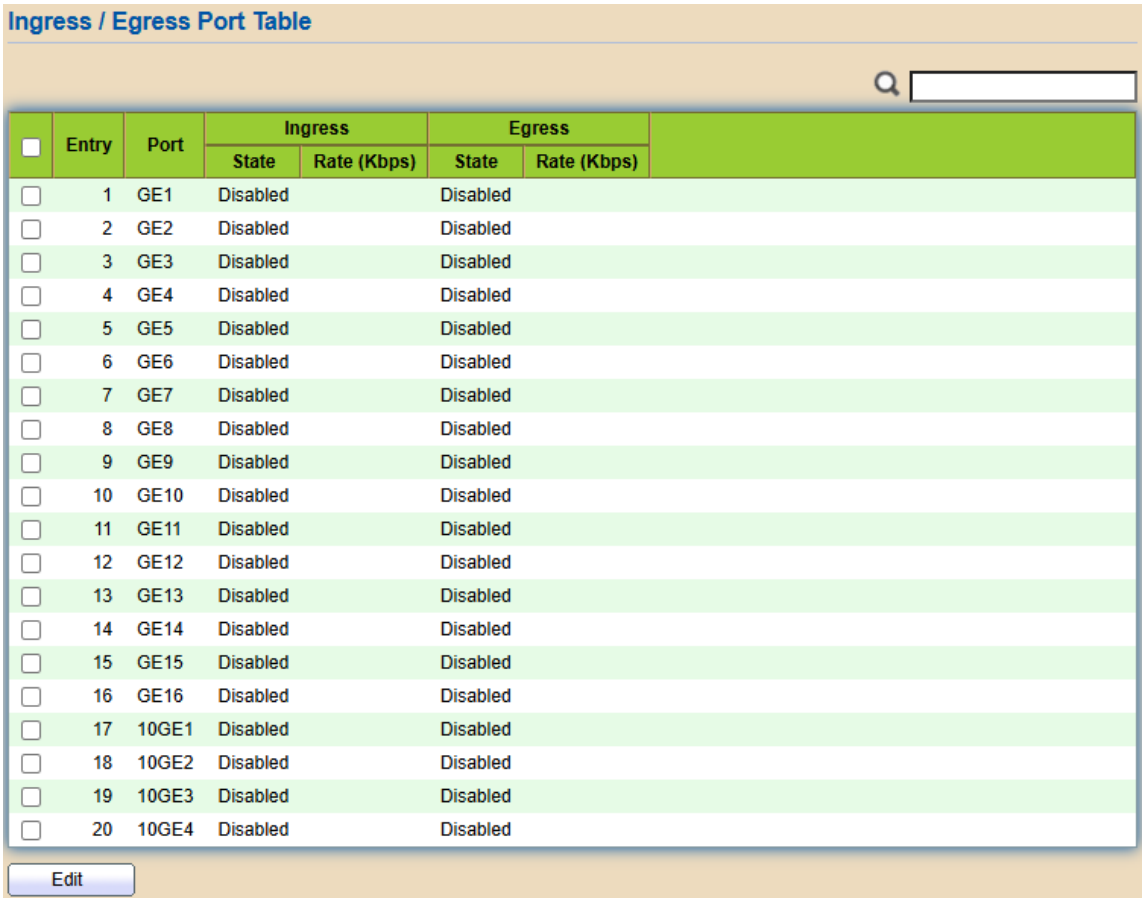


Figure 175 - QoS > Rate Limit > Ingress / Egress Port

Item	Description
Port	Port name.
Ingress (State)	Port ingress rate limit state • Enabled: Ingress rate limit is enabled • Disabled: Ingress rate limit is disabled
Ingress (Rate)	Port ingress rate limit value if ingress rate state is enabled.
Egress (State)	Port egress rate limit state • Enabled: Egress rate limit is enabled • Disabled: Egress rate limit is disabled
Egress (Rate)	Port egress rate limit value if egress rate state is enabled.

Click "Edit" button to view the Ingress / Egress Port menu.

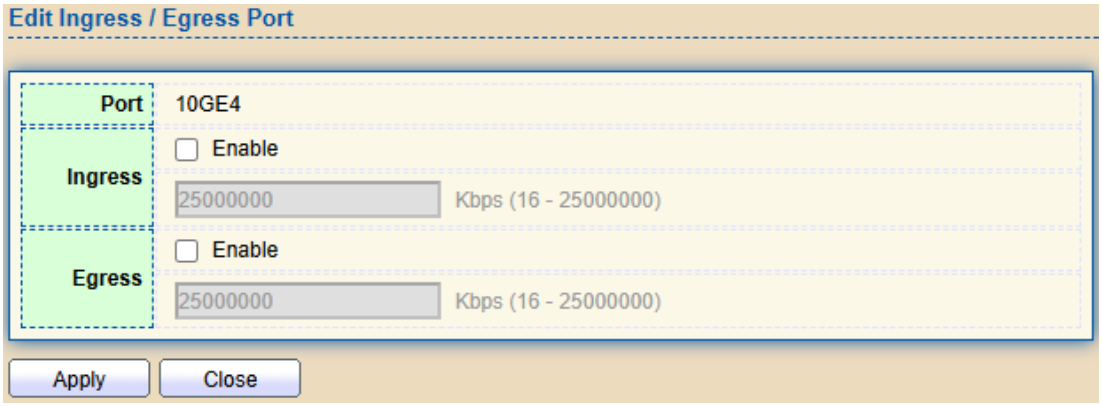


Figure 176 - QoS > Rate Limit > Ingress / Egress Port

Item	Description
Port	Select port list.
Ingress	Set checkbox to enable/disable ingress rate limit. If ingress rate limit is enabled, rate limit value needs to be assigned.
Egress	Set checkbox to enable/disable egress rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.

4.12.2.2. Egress Queue

Egress rate limiting is performed by shaping the output load.

To display Egress Queue web page, click **QoS > Rate Limit > Egress Queue**.

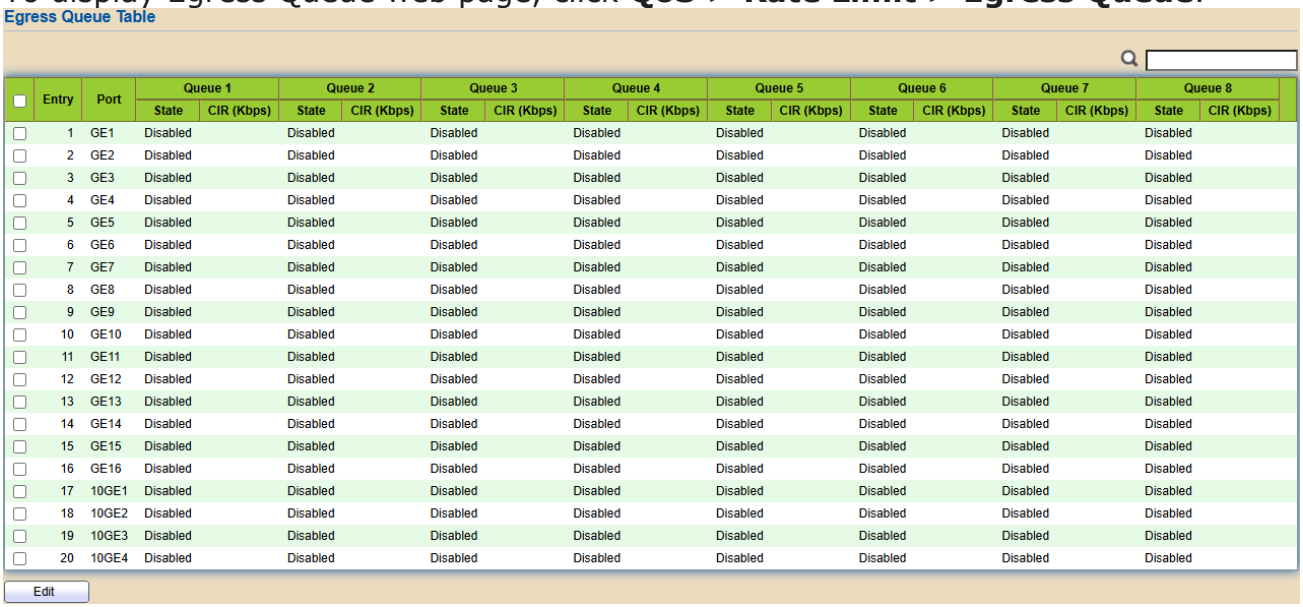


Figure 177 - QoS > Rate Limit > Egress Queue

Item	Description
Port	Port name.

Queue 1 (State)	Port egress queue 1 rate limit state. · ● Enabled: Egress queue rate limit is enabled. · ● Disabled: Egress queue rate limit is disabled.
Queue 1 (CIR)	Queue 1 egress committed information rate.
Queue 2 (State)	Port egress queue 2 rate limit state. · ● Enabled: Egress queue rate limit is enabled. · ● Disabled: Egress queue rate limit is disabled.
Queue 2 (CIR)	Queue 2 egress committed information rate
Queue 3 (State)	Port egress queue 3 rate limit state. · ● Enabled: Egress queue rate limit is enabled. · ● Disabled: Egress queue rate limit is disabled.
Queue 3 (CIR)	Queue 3 egress committed information rate.
Queue 4 (State)	Port egress queue 4 rate limit state. · ● Enabled: Egress queue rate limit is enabled. · ● Disabled: Egress queue rate limit is disabled.
Queue 4 (CIR)	Queue 4 egress committed information rate.
Queue 5 (State)	Port egress queue 5 rate limit state. · ● Enabled: Egress queue rate limit is enabled. · Disabled: Egress queue rate limit is disabled.
Queue 5 (CIR)	Queue 5 egress committed information rate.
Queue 6 (State)	Port egress queue 6 rate limit state. · ● Enabled: Egress queue rate limit is enabled. · ● Disabled: Egress queue rate limit is disabled.
Queue 6 (CIR)	Queue 6 egress committed information rate.
Queue 7 (State)	Port egress queue 7 rate limit state. · ● Enabled: Egress queue rate limit is enabled. ● Disabled: Egress queue rate limit is disabled.
Queue 7 (CIR)	Queue 7 egress committed information rate.
Queue 8 (State)	Port egress queue 8 rate limit state. · ● Enabled: Egress queue rate limit is enabled. ● Disabled: Egress queue rate limit is disabled.
Queue 8 (CIR)	Queue 8 egress committed information rate.

Click "Edit" button to view the Edit Egress Queue menu.

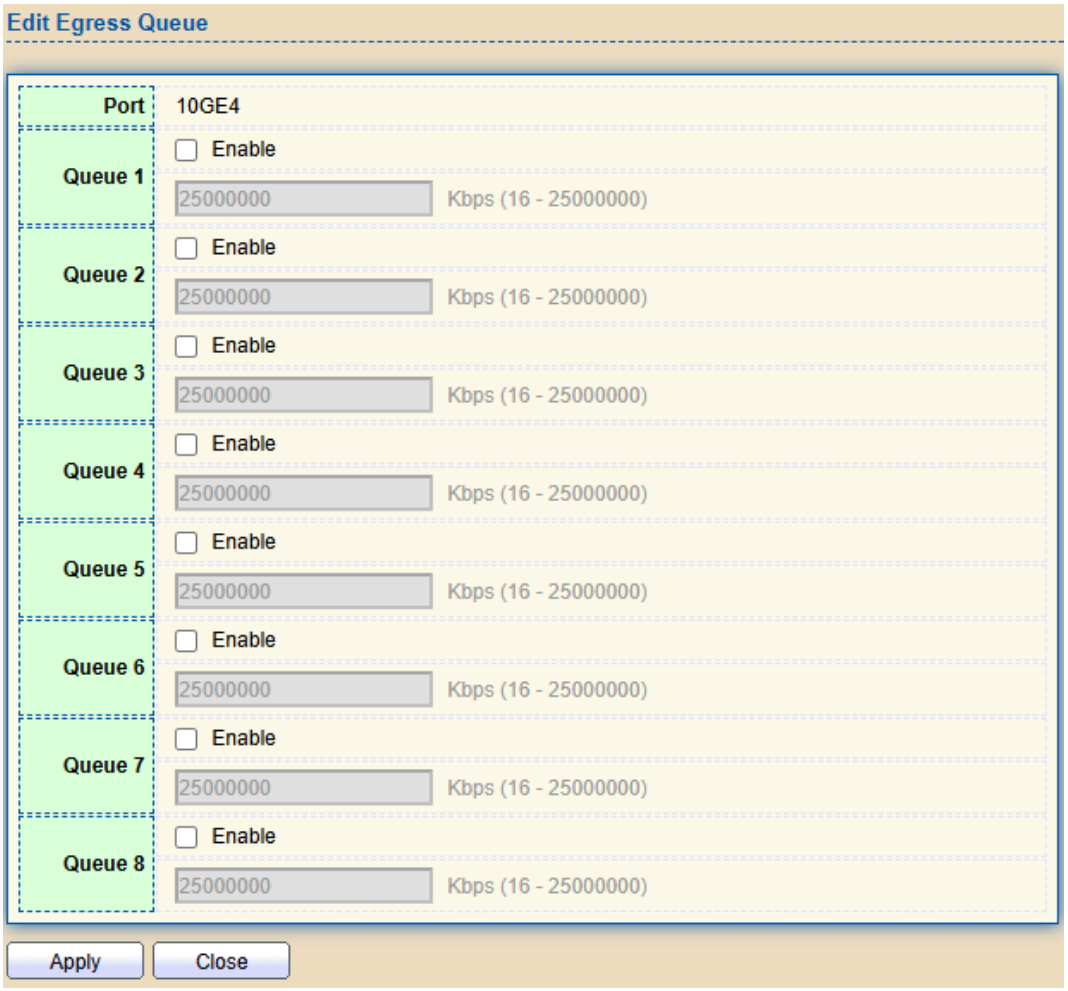


Figure 178 - QoS > Rate Limit > Edit Egress Queue

Item	Description
Queue 1	Set checkbox to enable/disable egress queue 1 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.
Queue 2	Set checkbox to enable/disable egress queue 2 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.
Queue 3	Set checkbox to enable/disable egress queue 3 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.
Queue 4	Set checkbox to enable/disable egress queue 4 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.
Queue 5	Set checkbox to enable/disable egress queue 5 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.
Queue 6	Set checkbox to enable/disable egress queue 6 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.
Queue 7	Set checkbox to enable/disable egress queue 7 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.

Queue 8	Set checkbox to enable/disable egress queue 8 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.

4.13. Diagnostics

Use the Diagnostics pages to configure settings for the switch diagnostics feature or operating diagnostic utilities.

4.13.1. Logging

4.13.1.1. Property

To enable/disable the logging service, click **Diagnostics > Logging > Property**.

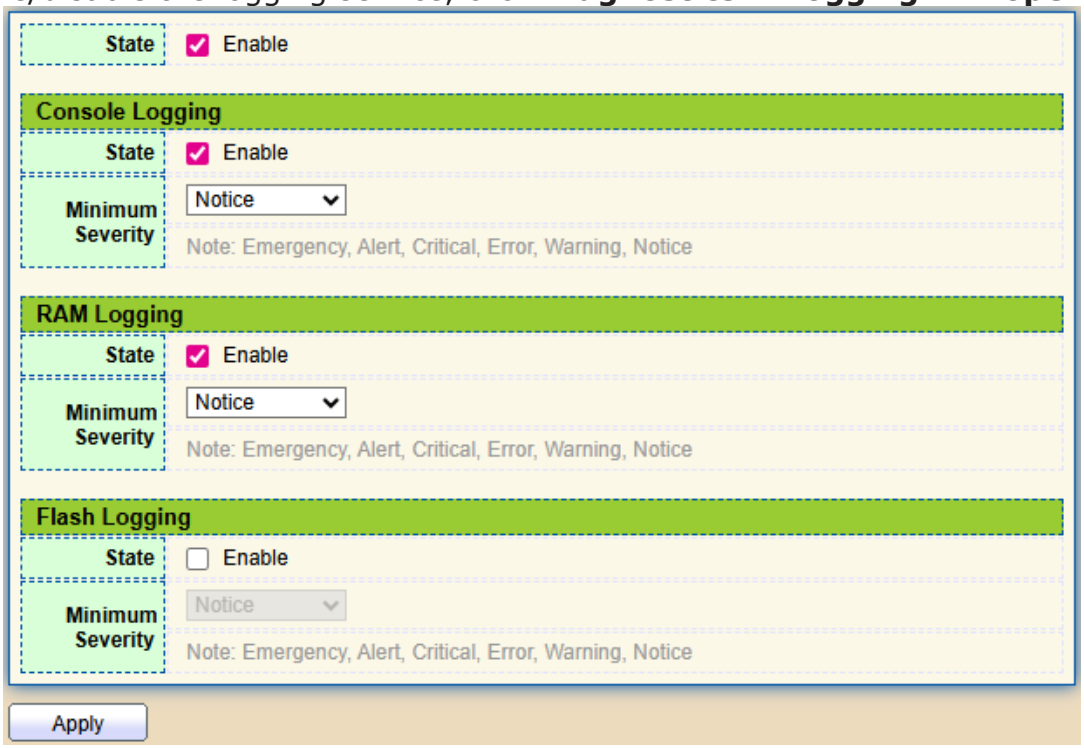


Figure 179 - Diagnostics > Logging > Property

Item	Description
State	Enable/Disable the global logging services. When the logging service is enabled, logging configuration of each destination rule can be individually configured. If the logging service is disabled, no messages will be sent to these destinations.
Console Logging	
State	Enable/Disable the console logging service
Minimum Severity	The minimum severity for the console logging.
RAM Logging	
State	Enable/Disable the RAM logging service.
Minimum Severity	The minimum severity for the RAM logging.

Flash Logging	
State	Enable/Disable the flash logging service.
Minimum Severity	The minimum severity for the flash login.

4.13.1.2. Remote Server

To configure the remote logging server, click **Diagnostics > Logging > Remote Server**.

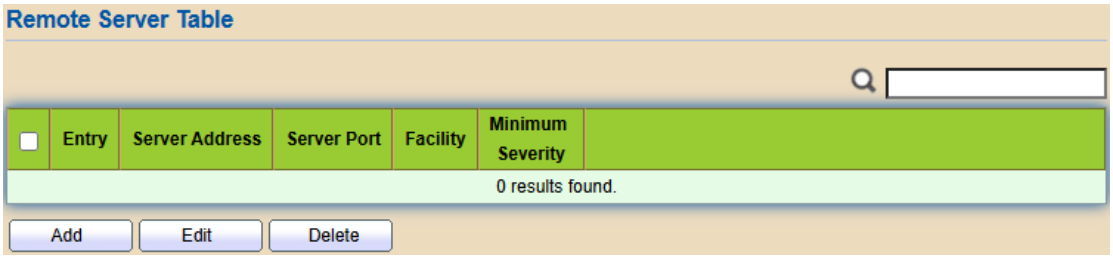


Figure 180 - Diagnostics > Logging > Remote Server

Item	Description
Server Address	The IP address of the remote logging server.
Server Ports	The port number of the remote logging server.
Facility	The facility of the logging messages. It can be one of the following values: local0, local1, local2, local3, local4, local5, local6, and local7.
Severity	The minimum severity. • Emergence: System is not usable. • Alert: Immediate action is needed. • Critical: System is in the critical condition. • Error: System is in error condition • Warning: System warning has occurred • Notice: System is functioning properly, but a system notice has occurred. • Informational: Device information. • Debug: Provides detailed information about an event.

4.13.2. Mirroring

To display Port Mirroring web page, click **Diagnostics > Mirroring**

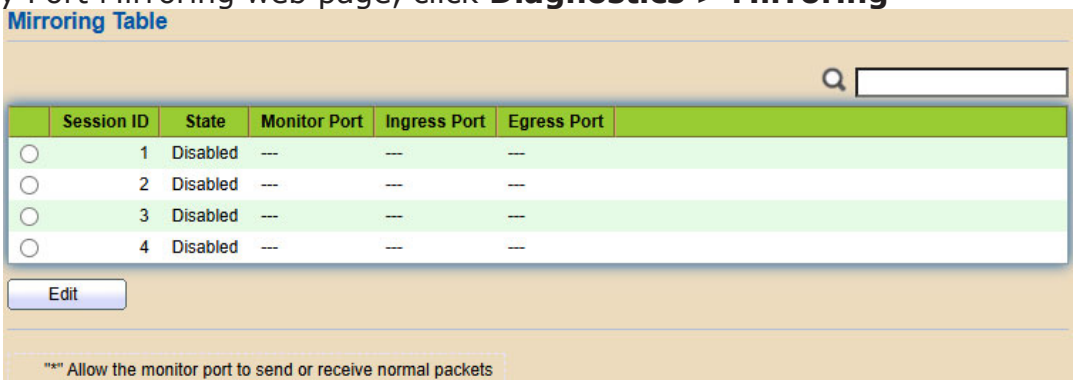


Figure 181 - Diagnostics > Mirroring

Item	Description
Session ID	Select mirror session ID.
State	Select mirror session state: port-base mirror or disable • Enabled: Enable port-based mirror • Disabled: Disable mirror.
Monitor Port	Select mirror session monitor port, and select whether normal packet could be sent or received by monitor port.
Ingress port	Select mirror session source RX ports.
Egress port	Select mirror session source TX ports.

Click "Edit" button to view the Edit Mirroring menu.

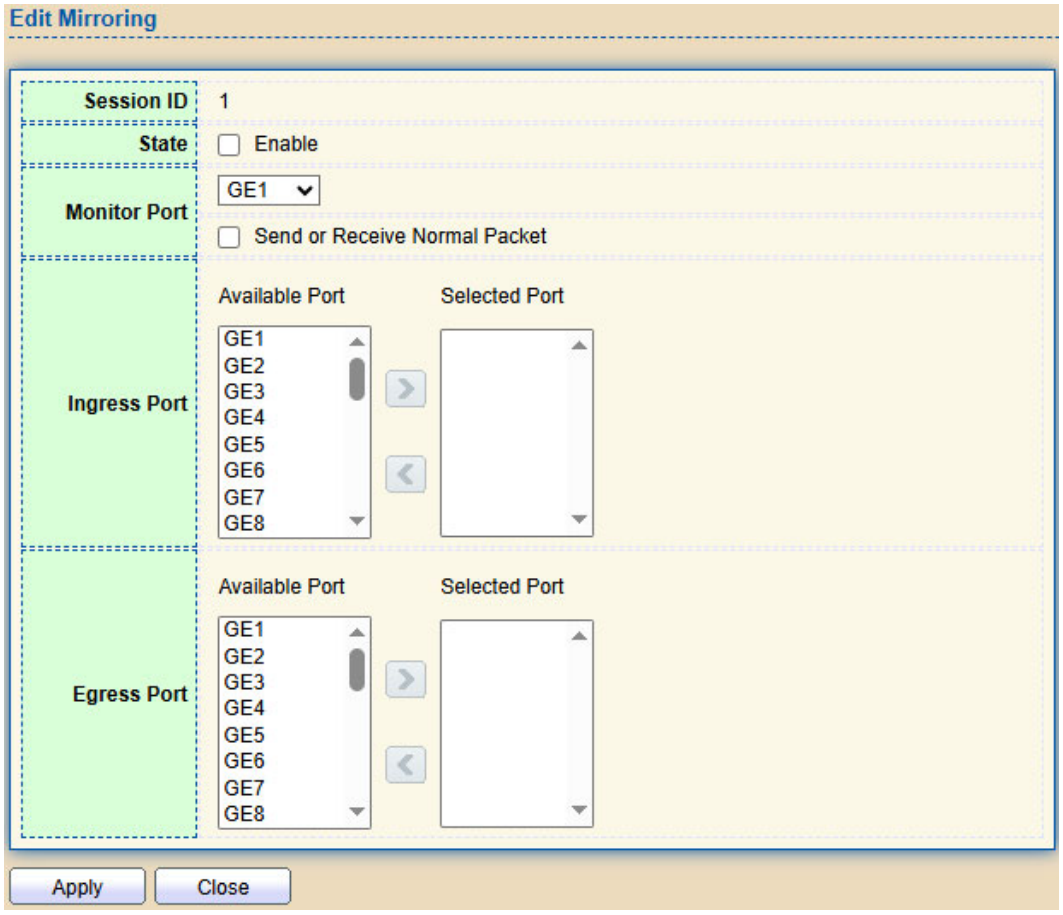


Figure 182 - Diagnostics > Mirroring > Edit Mirroring

Item	Description
Session ID	Selected mirror session ID.

State	Select mirror session state: port-base mirror or disable • Enabled: Enable port-based mirror • Disabled: Disable mirror.
Monitor Port	Select mirror session monitor port, and select whether
Ingress port	Select mirror session source RX ports.
Egress port	Select mirror session source TX ports.

4.13.3. Ping

For the ping functionality, click **Diagnostics > Ping**

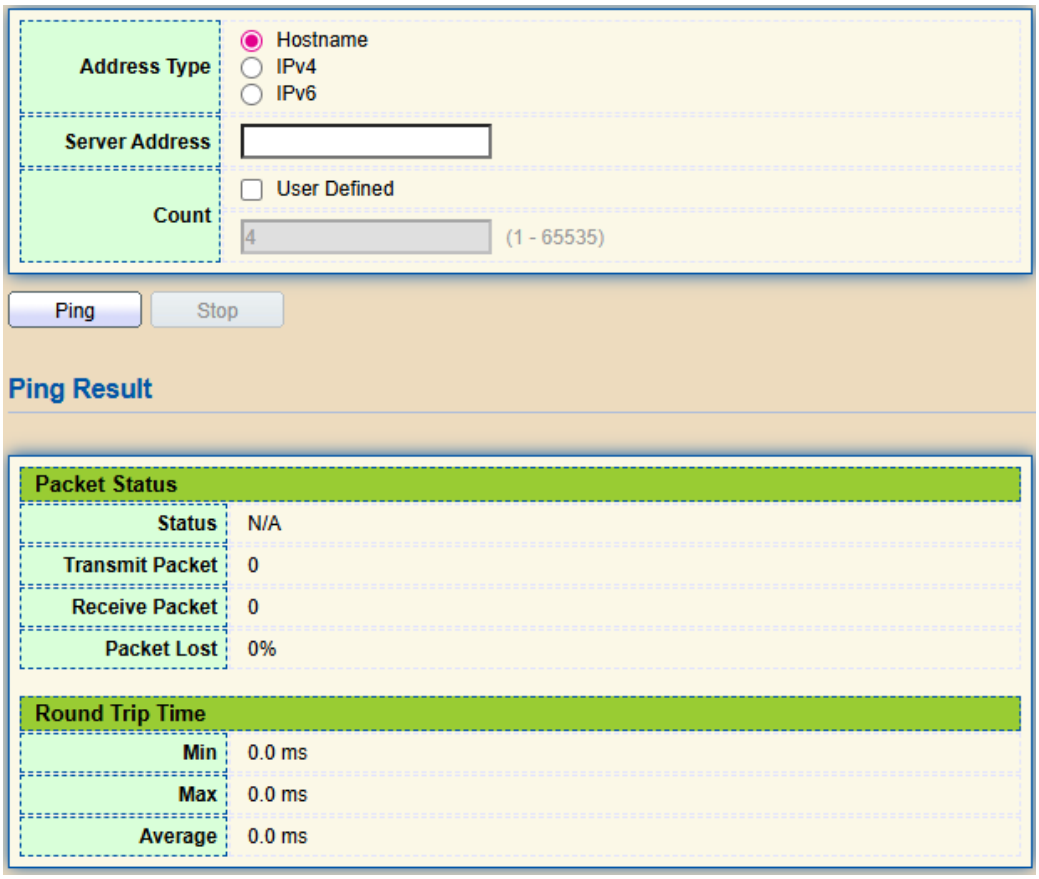


Figure 183 - Diagnostics > Ping

Item	Description
Address Type	Specify the address type to “Hostname” or “IPv4” .
Server Address	Specify the Hostname/IPv4 address for the remote logging server.
Count	Specify the numbers of each ICMP ping request.

4.13.4. Traceroute

For trace route functionality, click **Diagnostics > Traceroute**.

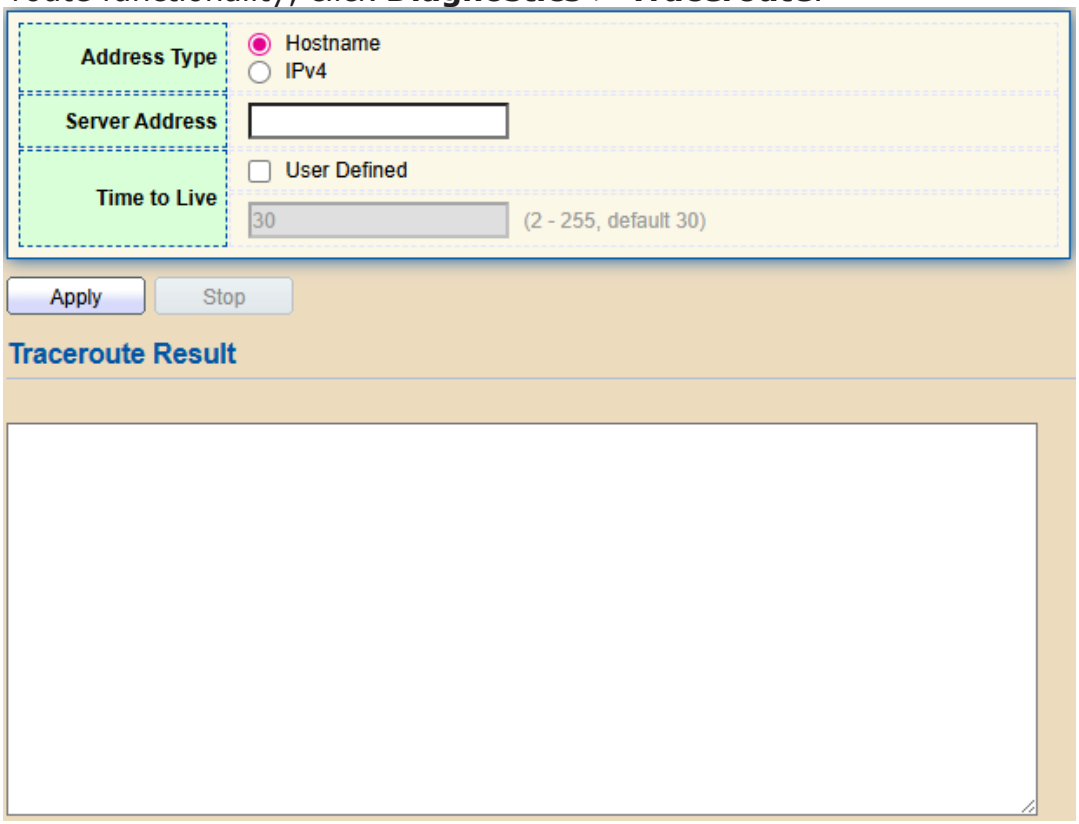


Figure 184 - Diagnostics > Traceroute

Item	Description
Address Type	Specify the address type to “Hostname” or “IPv4” .
Server Address	Specify the Hostname/IPv4 address for the remote logging server.
Time to Live	Specify the max hops of hosts for traceroute.

4.13.5. Copper Test

For copper length diagnostic, click **Diagnostics > Copper Test**.

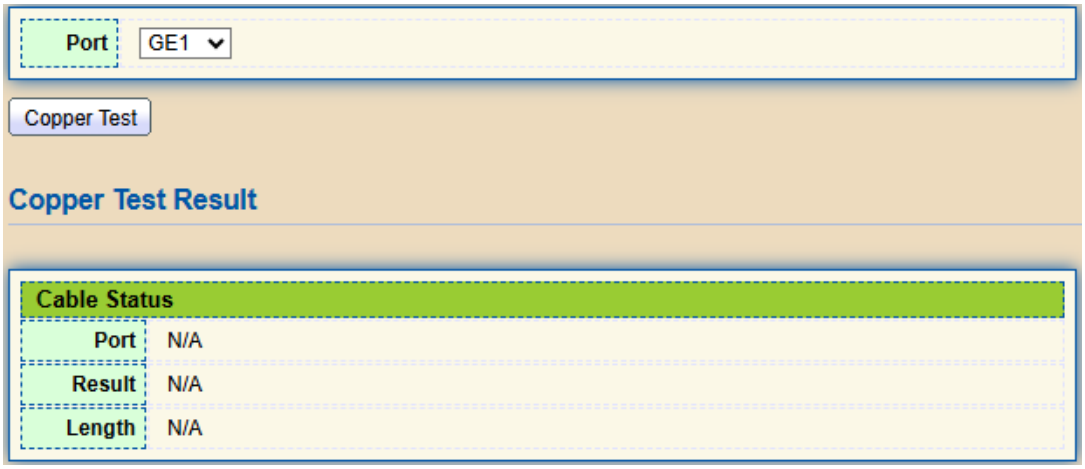


Figure 185 - Diagnostics > Copper Test

Item	Description
Port	Specify the interface for the copper test.
Copper Test Result	
Port	The interface for the copper test.
Result	The status of copper test. It include: ・ ● OK: Correctly terminated pair. ・ ● Short Cable: Shorted pair. ・ ● Open Cable: Open pair, no link partner. ・ ● Impedance Mismatch: Terminating impedance is not in the reference range. ・
Length	Distance in meter from the port to the location on the cable where the fault was discovered.

4.13.6. Fiber Module

The Optical Module Status page displays the operational information reported by the Small Form-factor Pluggable (SFP) transceiver. Some information may not be available for SFPs without the supports of digital diagnostic monitoring standard SFF-8472.

To display the Optical Module Diagnostic page, click **Diagnostics > Fiber Module**.

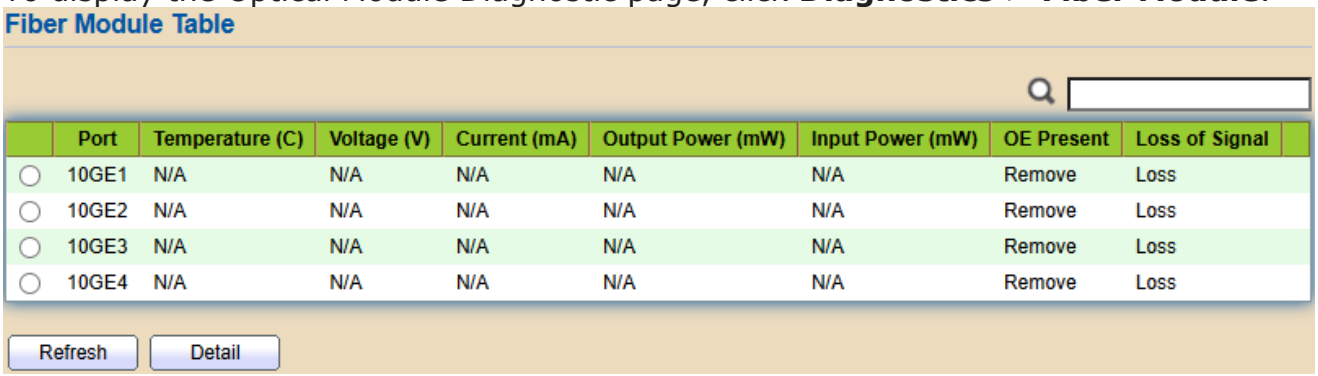


Figure 186 - Diagnostics > Fiber Module

Item	Description
Port	Interface or port number.
Temperature	Internally measured transceiver temperature.
Voltage	Internally measured supply voltage.
Current	Measured TX bias current.
Output Power	Measured TX output power in milliwatts.
Input Power	Measured RX received power in milliwatts.
OE Present	Indicate transceiver has achieved power up and data is
Loss of Signal	Loss of signal.
Refresh	Refresh the page.
Detail	The detail information on the specified port.

Click "Detail" button to view the Fiber Module Status menu

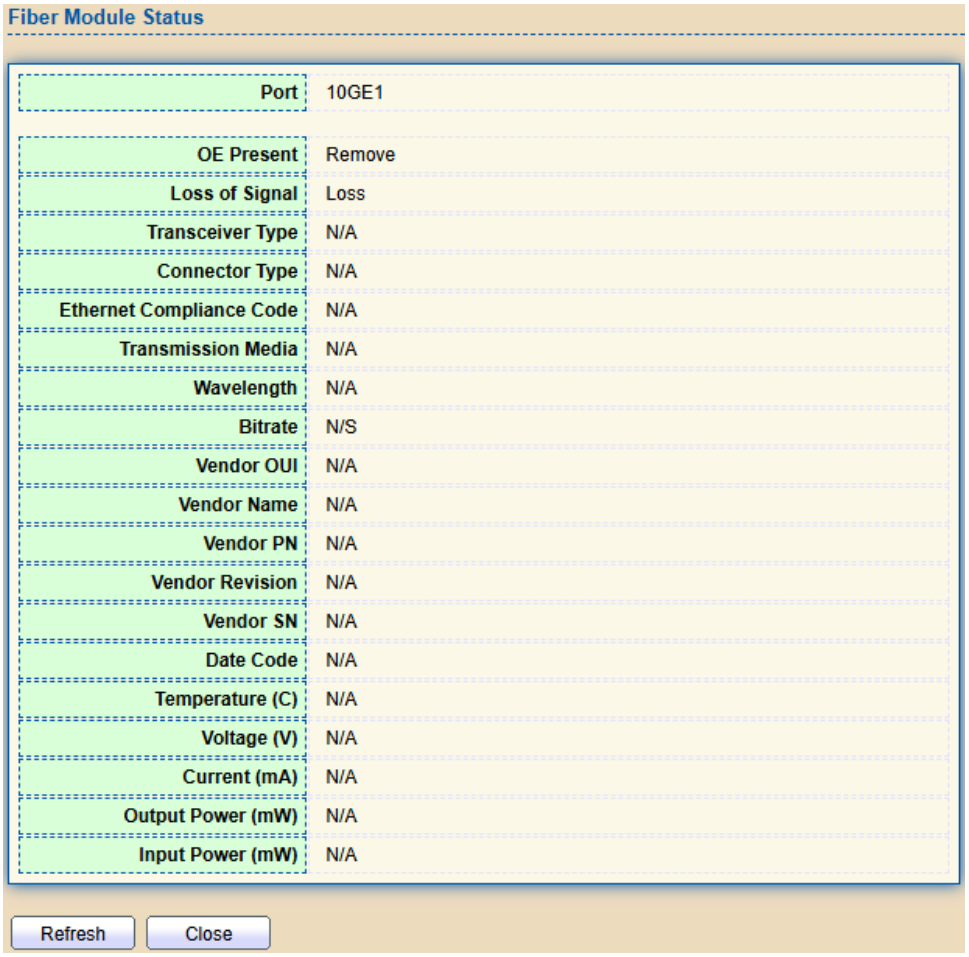


Figure 187 - Diagnostics >Fiber Module>Fiber Module Status

4.13.7. UDLD

Use the UDLD pages to configure settings of UDLD function.

4.13.7.1 Property

This page allow user to configure global and per interface settings of UDLD.

To display Property page, click **Diagnostics > UDLD > Property**.

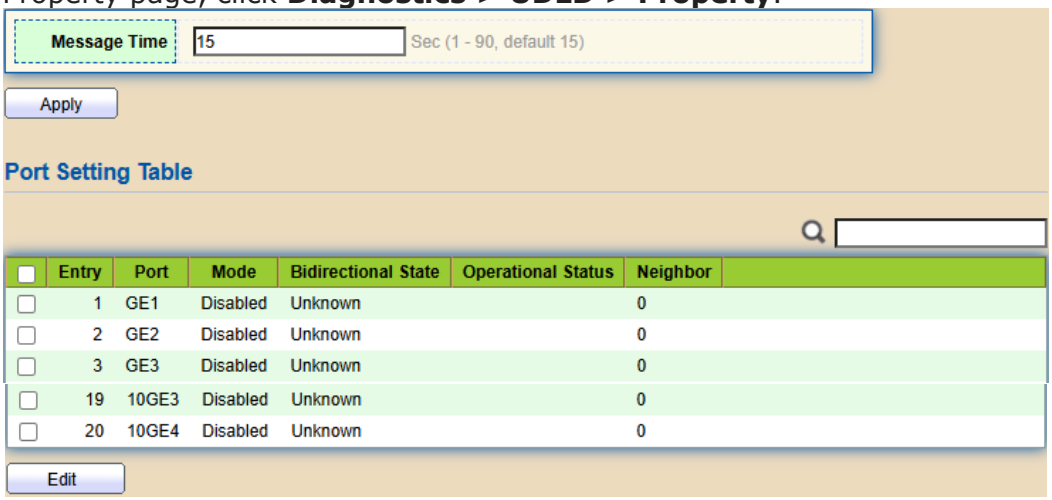


Figure 188 - Diagnostics > UDLD>Property

Item	Description
Message Time	Input the interval for sending message. Range is 1 -90 seconds.
Port	Display port ID of entry.
Mode	Display UDLD running mode of interface.
Bidirectional State	Display bidirectional state of interface.
Operational Status	Display operational status of interface.
Neighbor	Display the number of neighbors of interface.

Click "Edit" button to view the Fiber Module Status menu

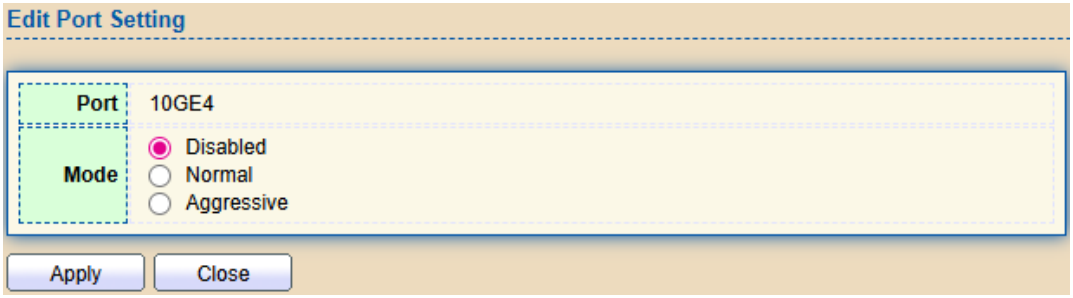


Figure 189 - Diagnostics > UDLD>Property>Edit

Item	Description
Port	Display selected port to be edited.

Mode	Select UDLD running mode of interface. · • Disabled: Disable UDLD function. · • Normal: Running on normal mode that port goes to Link Up One phase after last neighbor ages out. · • Aggressive: Running on aggressive mode that port goes to Re-Establish phase after last neighbor ages out.

4.13.7.2 Neighbor

To display Neighbor page, click **Diagnostics > UDLD > Neighbor**

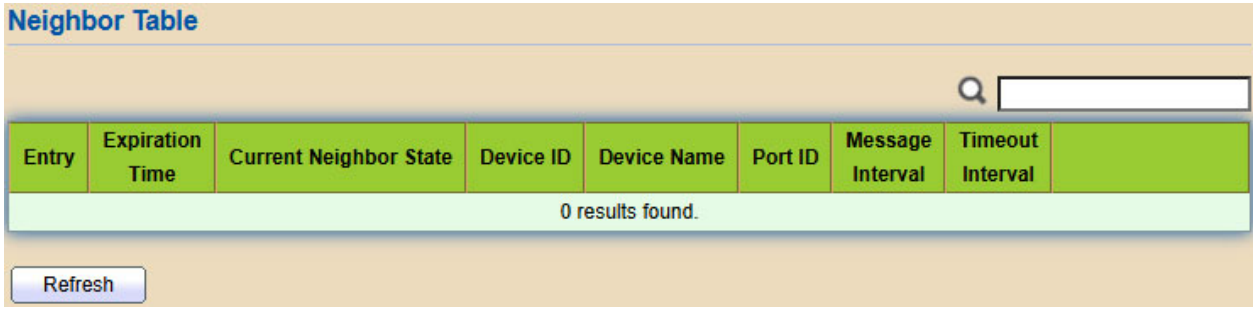


Figure 190- Diagnostics > UDLD> Neighbor

Item	Description
Entry	Display entry index.
Expiration Time	Display expiration time before age out.
Current Neighbor	Display neighbor current state.
Device ID	Display neighbor device ID.
Device Name	Display neighbor device name.
Port ID	Display neighbor port ID that connected.
Message Interval	Display neighbor message interval.
Timeout Interval	Display neighbor timeout interval.

4.14. Management

Use the Management pages to configure settings for the switch management features.

4.14.1. User Account

The default username/password is admin/password. And default account is not able to be deleted.

Use this page to add additional users that are permitted to manage the switch or to change the passwords of existing users.

To display User Account web page, click **Management > User Account**

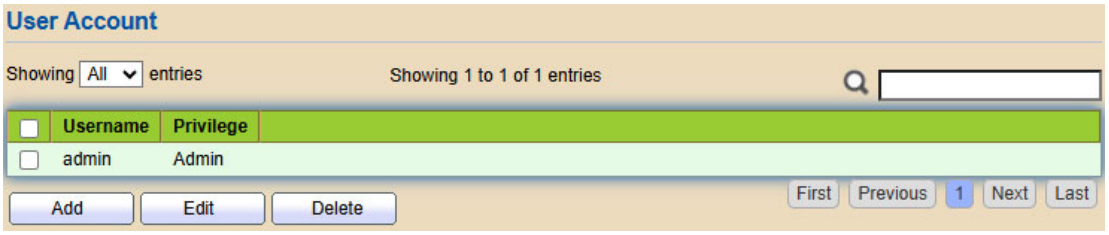


Figure 191 - Management > User Account

Item	Description
Username	User name of the account.
Privilege	Select privilege level for new account. • Admin: Allow to change switch settings. Privilege value equals to 15. • User: See switch settings only. Not allow to change it. Privilege level equals to 1.

Click "Add" or "Edit" button to view the Add/Edit User Account menu.

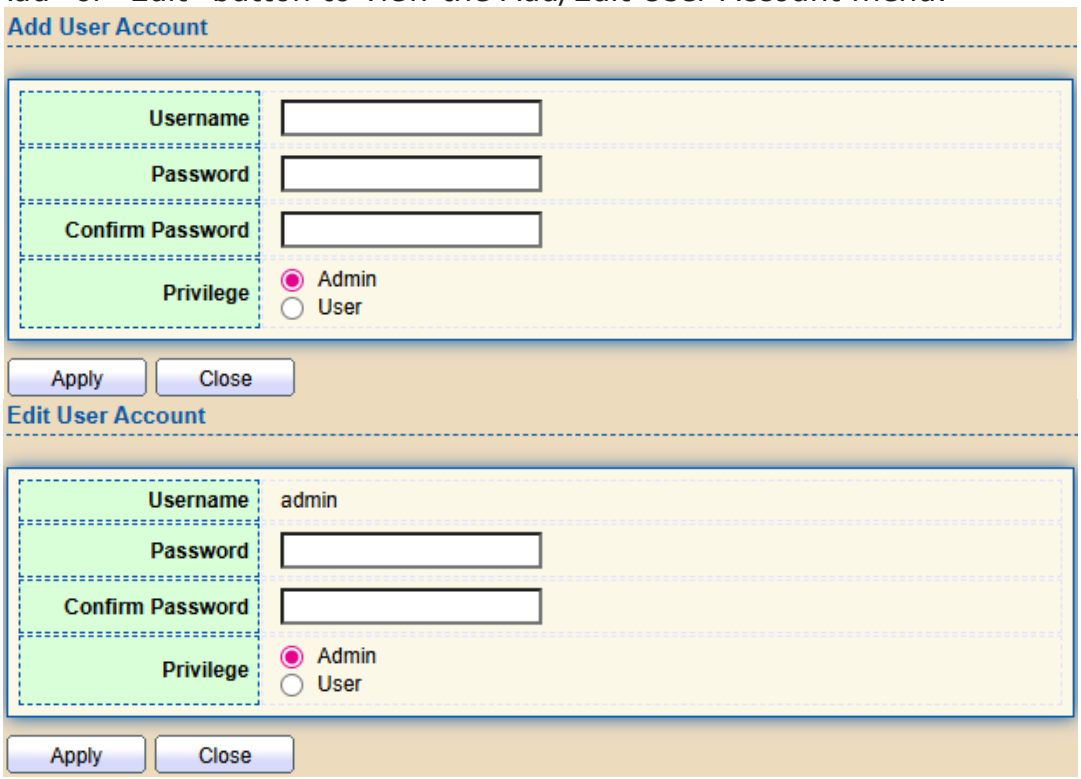


Figure 192 - Management > User Account > Add/Edit User Account

Item	Description
Username	User name of the account.
Password	Set password of the account.

Confirm Password	Set the same password of the account as in “Password” field.
Privilege	Select privilege level for new account. • Admin: Allow to change switch settings. Privilege value equals to 15. • User: See switch settings only. Not allow to change it. Privilege level equals to 1.

4.14.2. Firmware

4.14.2.1. Upgrade / Backup

This page allow user to upgrade or backup firmware image through HTTP or TFTP server.

To display firmware upgrade or backup web page, click **Management > Firmware > Upgrade/Backup**

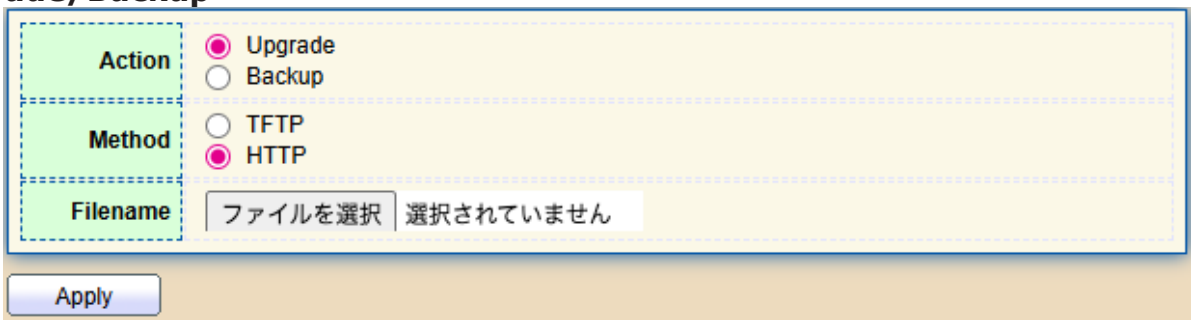


Figure 193 - Management > Firmware > Upgrade/Backup

Item	Description
Action	Firmware operations • Upgrade: Upgrade firmware from remote host to DUT. • Backup: Backup firmware image from DUT to remote host.
Method	Firmware upgrade / backup method. • TFTP: Using TFTP to upgrade/backup firmware. • HTTP: Using WEB browser to upgrade/backup firmware.
Filename	Use browser to upgrade firmware, you should select firmware image file on your host PC.

To display firmware upgrade or backup web page, click **Management > Firmware > Upgrade/Backup**

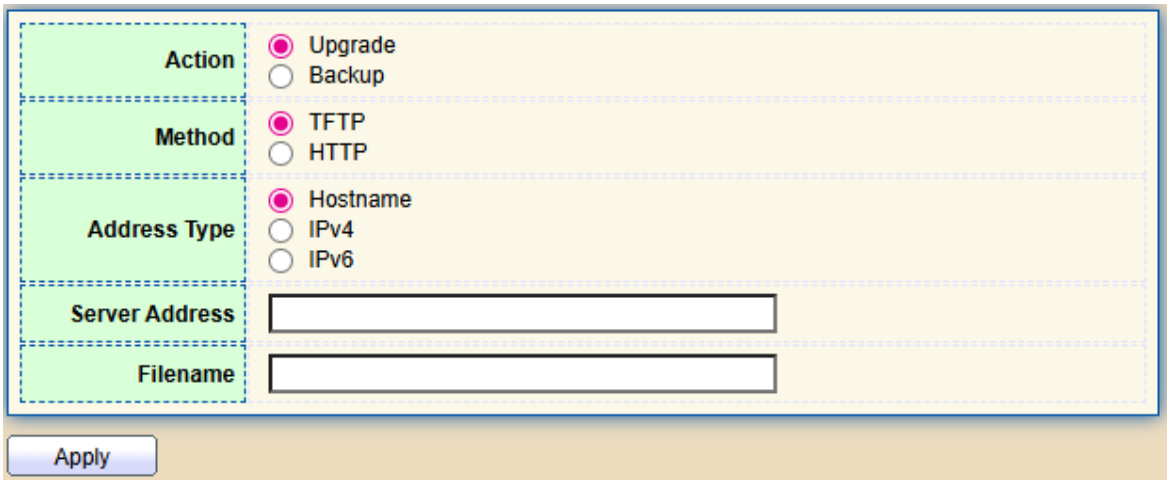


Figure 194 - Management > Firmware > Upgrade/Backup

Item	Description
Action	Firmware operations • Upgrade: Upgrade firmware from remote host to DUT • Backup: Backup firmware image from DUT to remote host
Method	Firmware upgrade / backup method • TFTP: Using TFTP to upgrade/backup firmware. • HTTP: Using WEB browser to upgrade/backup firmware.
Address Type	Specify TFTP server address type • Hostname: Use domain name as server address • IPv4: Use IPv4 as server address • IPv6: Use IPv6 as server address
Server Address	Specify TFTP server address.
Filename	Firmware image file name on remote TFTP server

To display firmware upgrade or backup web page, click **Management > Firmware > Upgrade/Backup**

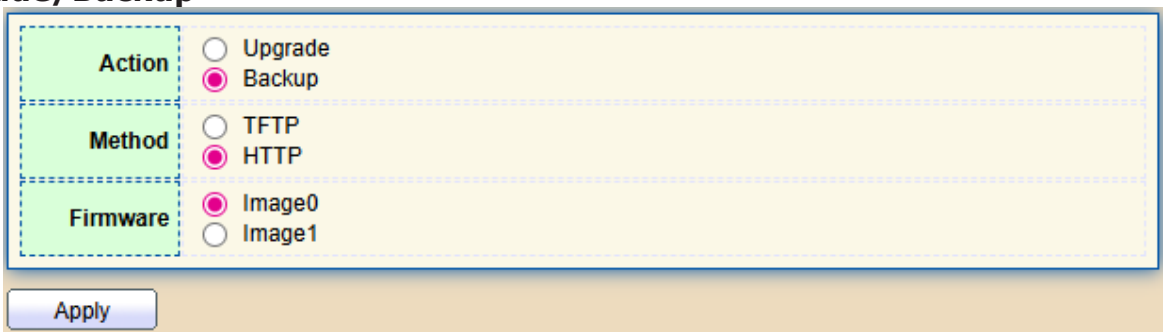


Figure 195 - Management > Firmware > Upgrade/Backup

Item	Description
Action	Firmware operations • Upgrade: Upgrade firmware from remote host to DUT • Backup: Backup firmware image from DUT to remote host
Method	Firmware upgrade / backup method • TFTP: Using TFTP to upgrade/backup firmware. • HTTP: Using WEB browser to upgrade/backup firmware.
Firmware	Firmware partition need to backup • Image0: Firmware image in flash partition 0 • Image1: Firmware image in flash partition 1

To view the Firmware Upgrade/Backup menu, navigate to **Management > Firmware > Upgrade/Backup**.

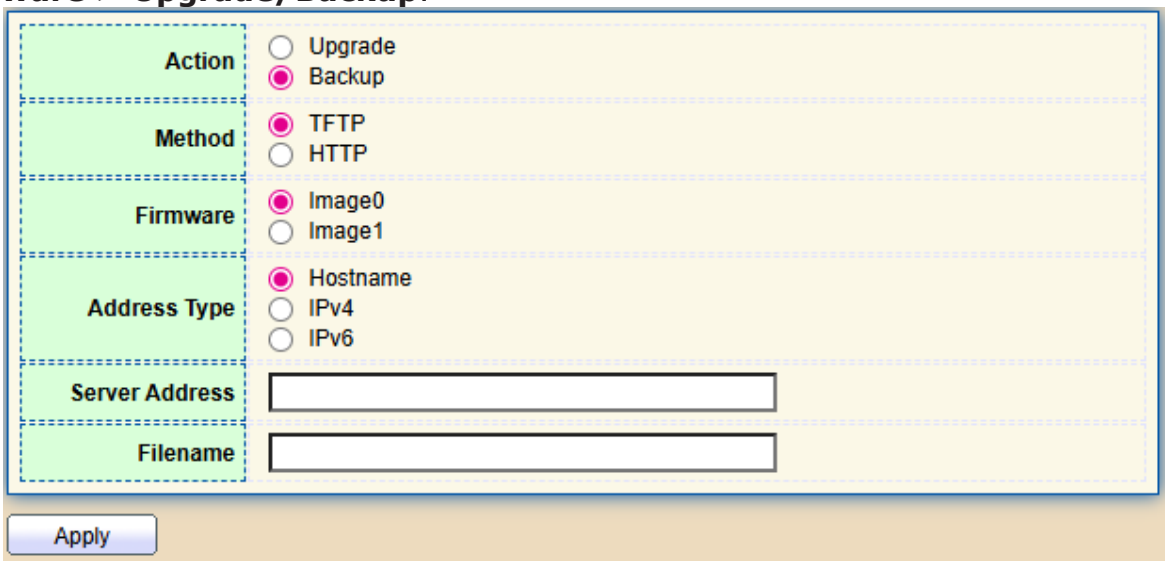


Figure 196 - Management > Firmware >Upgrade/Backup

Item	Description
Action	Firmware operations • Upgrade: Upgrade firmware from remote host to DUT • Backup: Backup firmware image from DUT to remote host
Method	Firmware upgrade / backup method • TFTP: Using TFTP to upgrade/backup firmware. • HTTP: Using WEB browser to upgrade/backup firmware.
Firmware	Firmware partition need to backup • Image0: Firmware image in flash partition 0. • Image1: Firmware image in flash partition 1.

Address Type	Specify TFTP server address type • Hostname: Use domain name as server address. • IPv4: Use IPv4 as server address. • IPv6: Use IPv6 as server address.
Server Address	Specify TFTP server address.
Filename	File name saved on remote TFTP server.

4.14.2.2. Active Image

This page allow user to select firmware image on next booting and show firmware information on both flash partitions.

To display the Active Image web page, click **Management > Firmware > Active Image**.

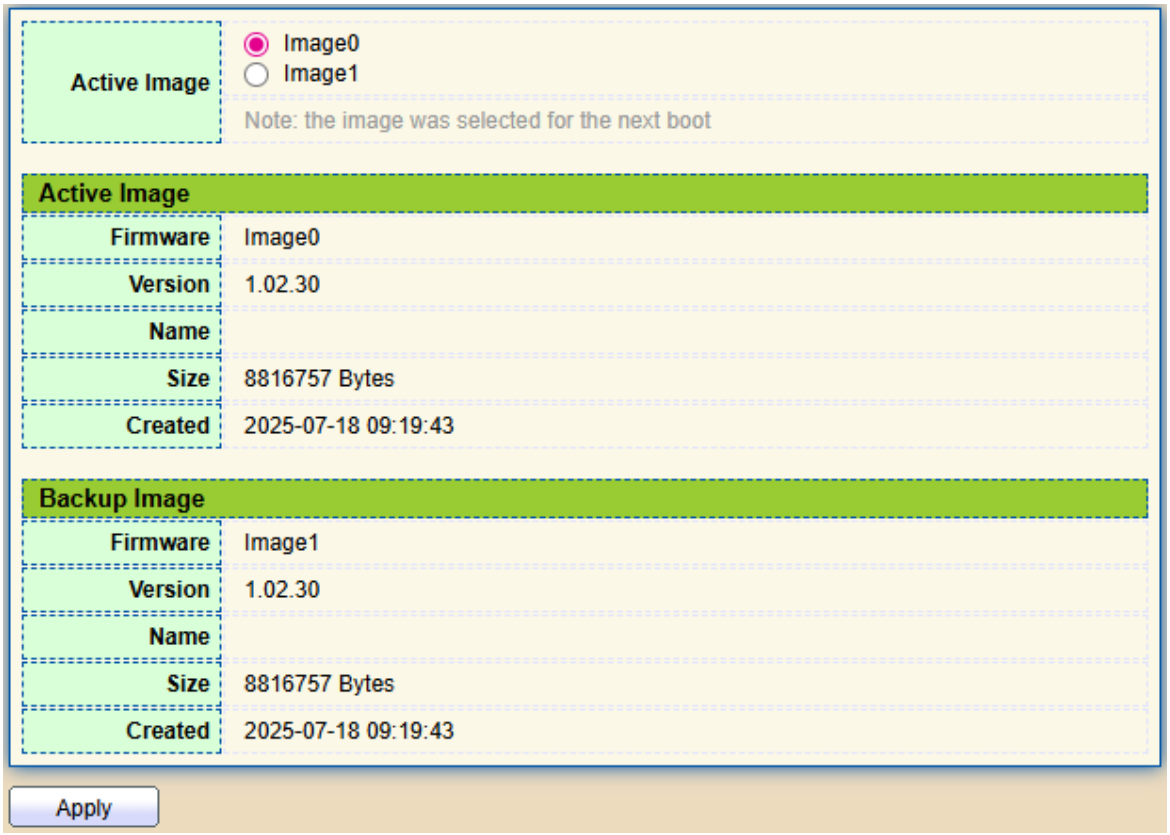


Figure 197 - Management > Firmware > Active Image

Item	Description
Active Image	Select firmware image to use on next booting
Firmware	Firmware flash partition name.
Version	Firmware version.

Name	Firmware name.
Size	Firmware image size.
Created	Firmware image created date.

4.14.3. Configuration

4.14.3.1. Upgrade / Backup

This page allow user to upgrade or backup configuration file through HTTP or TFTP server.

To display firmware upgrade or backup web page, click **Management > Configuration > Upgrade/Backup**

Figure 198 - Management > Configuration > Upgrade/Backup

Item	Description
Action	Configuration operations • Upgrade: Upgrade firmware from remote host to DUT • Backup: Backup firmware image from DUT to remote host
Method	Configuration upgrade / backup method • TFTP: Using TFTP to upgrade/backup firmware • HTTP: Using WEB browser to upgrade/backup firmware
Configuration	Configuration types • Running Configuration: Merge to current running configuration file • Startup Configuraton: Replace startup configuration file • Backup Configuration: Replace backup configuration file
Filename	Use browser to upgrade configuration, you should select configuration file on your host PC.

To display firmware upgrade or backup web page, click **Management > Configuration > Upgrade/Backup**

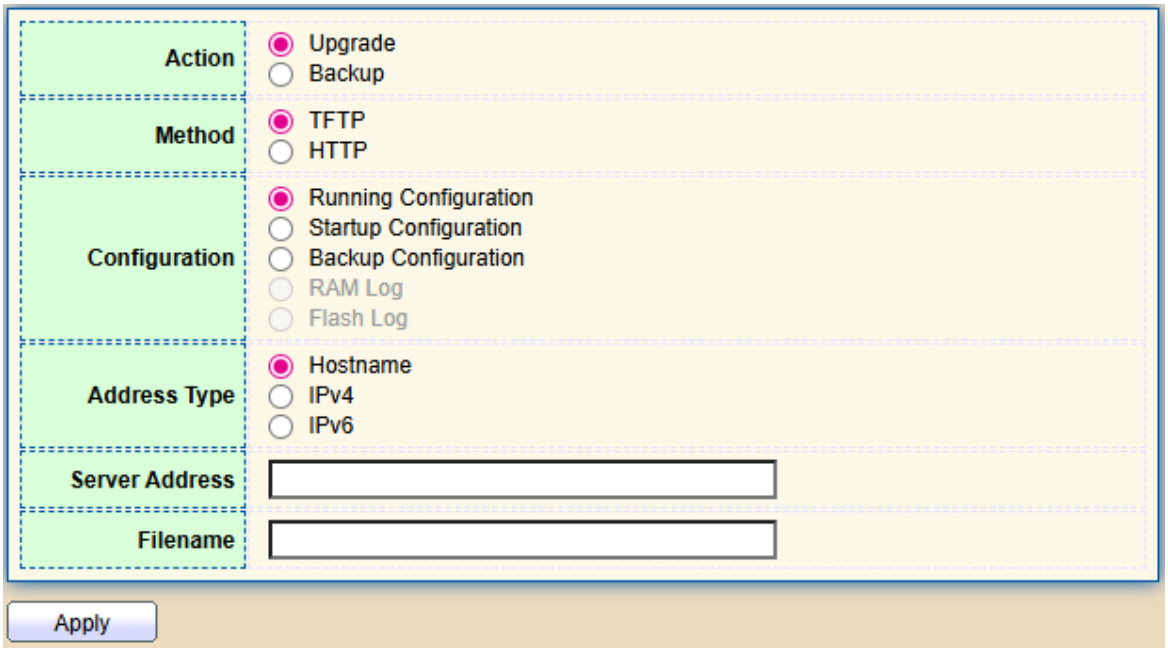


Figure 199 - Management > Configuration > Upgrade/Backup

Item	Description
Action	Configuration operations • Upgrade: Upgrade firmware from remote host to DUT • Backup: Backup firmware image from DUT to remote host
Method	Configuration upgrade / backup method • TFTP: Using TFTP to upgrade/backup firmware • HTTP: Using WEB browser to upgrade/backup firmware
Configuration	Configuration types • Running Configuration: Merge to current running configuration file • Startup Configuration: Replace startup configuration file • Backup Configuration: Replace backup configuration file
Address Type	Specify TFTP server address type • Hostname: Use domain name as server address • IPv4: Use IPv4 as server address • IPv6: Use IPv6 as server address
Server Address	Specify TFTP server address
Filename	File name saved on remote TFTP server

To display firmware upgrade or backup web page, click **Management > Configuration > Upgrade/Backup**

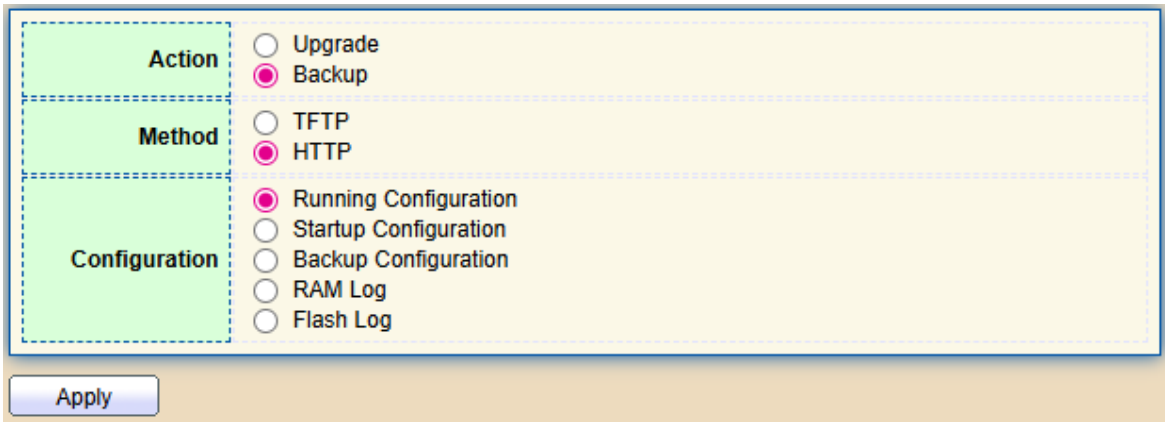


Figure 200 - Management > Configuration > Upgrade/Backup

Item	Description
Action	Configuration operations • Upgrade: Upgrade firmware from remote host to DUT • Backup: Backup firmware image from DUT to remote host
Method	Configuration upgrade / backup method • TFTP: Using TFTP to upgrade/backup firmware • HTTP: Using WEB browser to upgrade/backup firmware
Configuration	Configuration types • Running Configuration: Backup running configuration file. • Startup Configuration: Backup start configuration file. • Backup Configuration: Backup backup configuration file. • RAM Log: Backup log file stored in RAM. • Flash Log: Backup log files store in Flash.

To display firmware upgrade or backup web page, click **Management > Configuration > Upgrade/Backup**

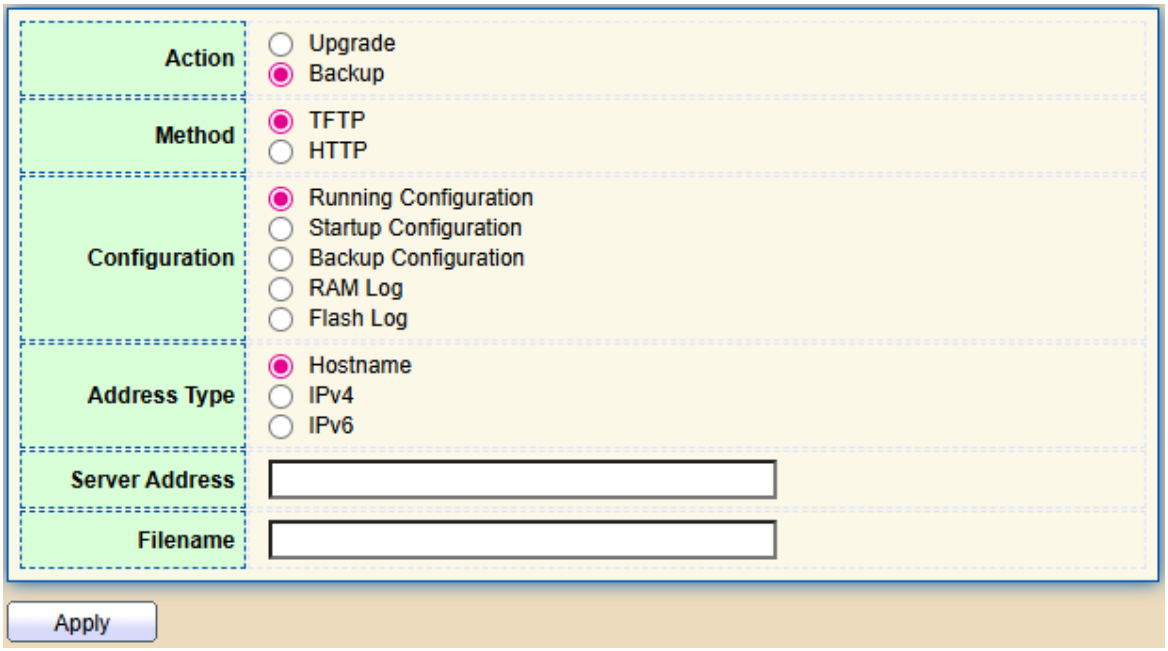


Figure 201 - Management > Configuration > Upgrade/Backup

Item	Description
Action	Configuration operations • Upgrade: Upgrade firmware from remote host to DUT • Backup: Backup firmware image from DUT to remote host
Method	Configuration upgrade / backup method • TFTP: Using TFTP to upgrade/backup firmware • HTTP: Using WEB browser to upgrade/backup firmware
Configuration	Configuration types • Running Configuration: Backup running configuration file. • Startup Configuration: Backup start configuration file. • Backup Configuration: Backup backup configuration file. • RAM Log: Backup log file stored in RAM. • Flash Log: Backup log files store in Flash.
Address Type	Specify TFTP server address type • Hostname: Use domain name as server address • IPv4: Use IPv4 as server address • IPv6: Use IPv6 as server address
Server Address	Specify TFTP server address.
Filename	File name saved on remote TFTP server.

4.14.3.2. Save Configuration

This page allow user to manage configuration file saved on DUT and click

“Restore Factory Default” button to restore factory defaults.

To display the Save Configuration web page, click **Management > Configuration > Save Configuration**

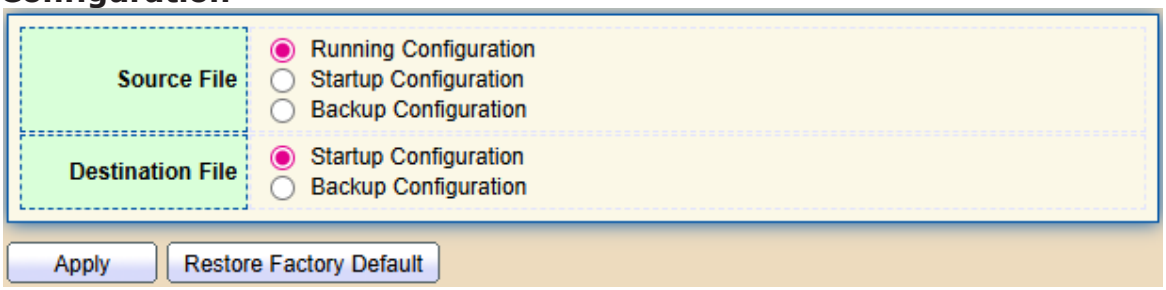


Figure 202 - Management > Configuration > Save Configuration

Item	Description
Source File	Source file types • Running Configuration: Copy running configuration file to destination. • Startup Configuration: Copy startup configuration file to destination.
Destination File	Destination file • Startup Configuration: Save file as startup configuration. • Backup Configuration: Save file as backup configuration.

4.14.4. SNMP

4.14.4.1. View

To configure and display the SNMP view table, click **Management > SNMP > View**.

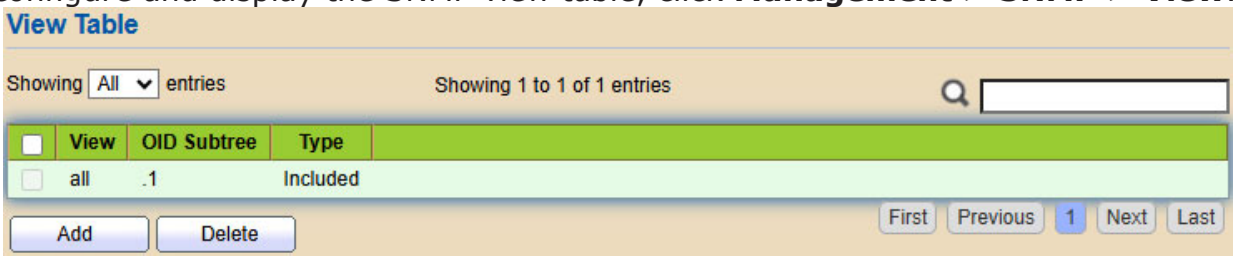


Figure 203 - Management > SNMP > View

Item	Description
View	The SNMP view name. Its maximum length is 30 characters
OID Subtree	Specify the ASN.1 subtree object identifier (OID) to be included or excluded from the SNMP view
Type	Include or exclude the selected MIBs in the view

4.14.4.2. Group

To configure and display the SNMP group settings, click **Management > SNMP > Group**.

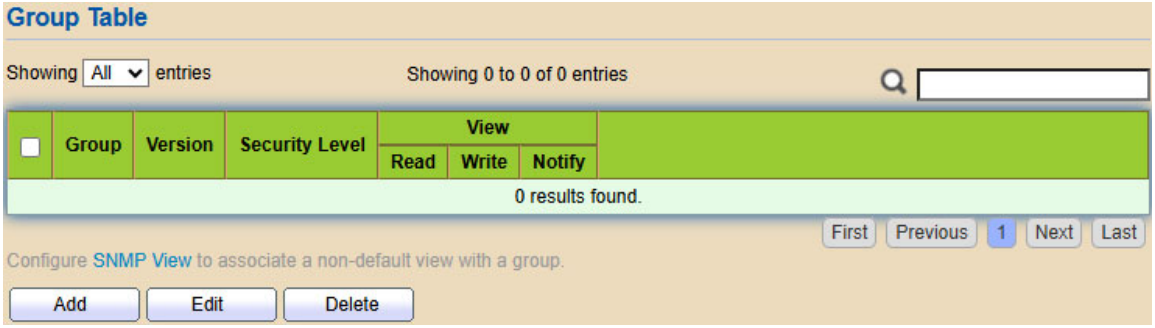


Figure 204 - Management > SNMP > Group

Item	Description
Group	Specify SNMP group name, and the maximum length is 30 characters.
Version	Specify SNMP version • SNMPv1: SNMP Version 1. • SNMPv2: Community-based SNMP Version 2. • SNMPv3: User security model SNMP version 3.
Security Level	Specify SNMP security level • No Security: Specify that no packet authentication is performed. • Authentication: Specify that no packet authentication without encryption is performed. • Authentication and Privacy: Specify that no packet authentication with encryption is performed.
View	
Read	Group read view name.
Write	Group write view name.
Notify	The view name that sends only traps with contents that is included in SNMP view selected for notification.

Click "Add" or “Edit” button to view the Add/Edit Group menu.

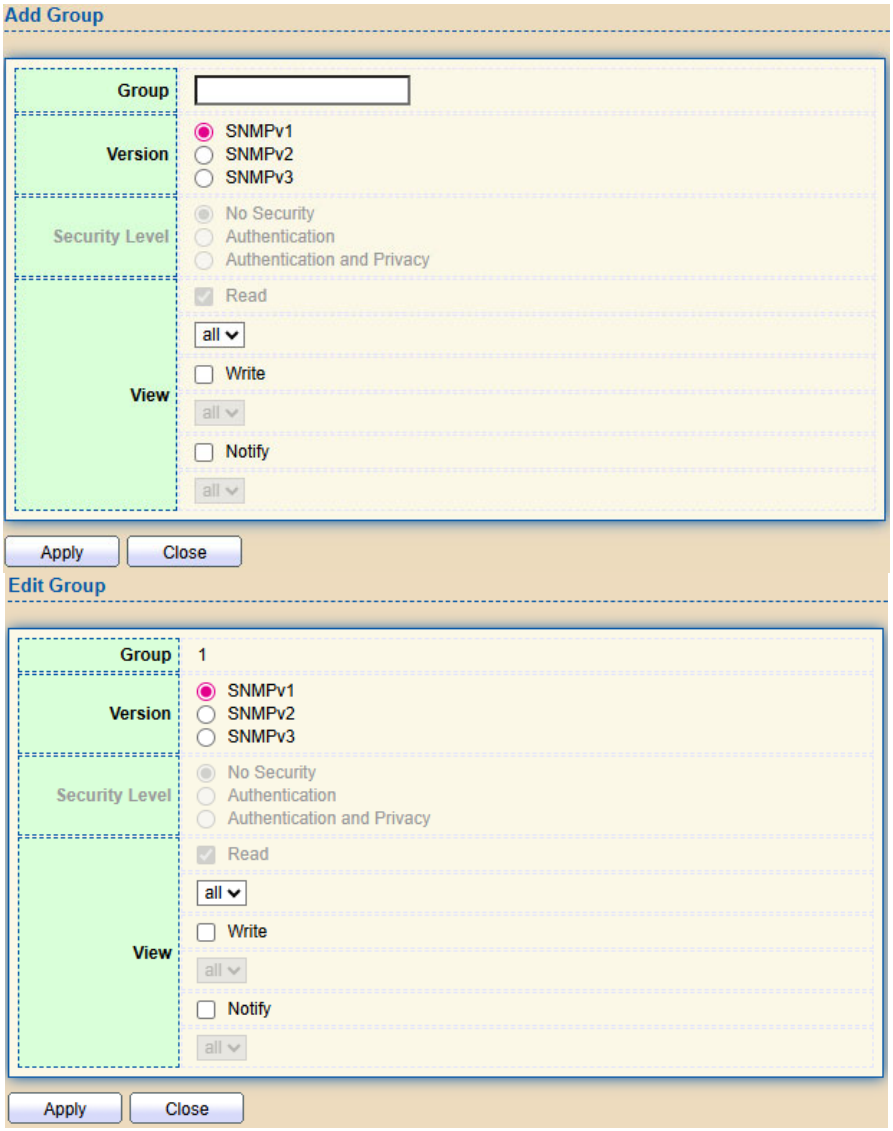


Figure 205 - Management > SNMP > Group > Add/Edit Group

Item	Description
Group	Specify SNMP group name, and the maximum length is 30 characters.
Version	Specify SNMP version • SNMPv1: SNMP Version 1.
Security Level	Specify SNMP security level • No Security: Specify that no packet authentication is
View	
Read	Select read view name if Read is checked.
Write	Select write view name, if Write is checked.
Notify	Select notify view name, if Notify is checked.

4.14.4.3. Community

To configure and display the SNMP community settings, click **Management > SNMP > Community**.

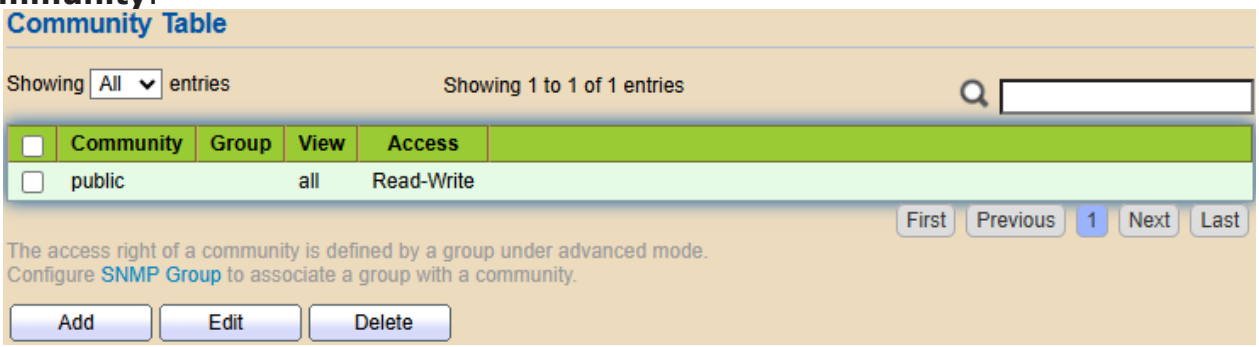


Figure 206 - Management > SNMP > Community

Item	Description
Community	The SNMP community name. Its maximum length is 20 characters.
Group	Specify the SNMP group configured by the command snmp group to define the object available to the community.
View	Specify the SNMP view to define the object available to the community.
Access	SNMP access mode • Read-Only: Read only. • Read-Write: Read and write.

Click "Add" or "Edit" button to view the Add/Edit Community menu.

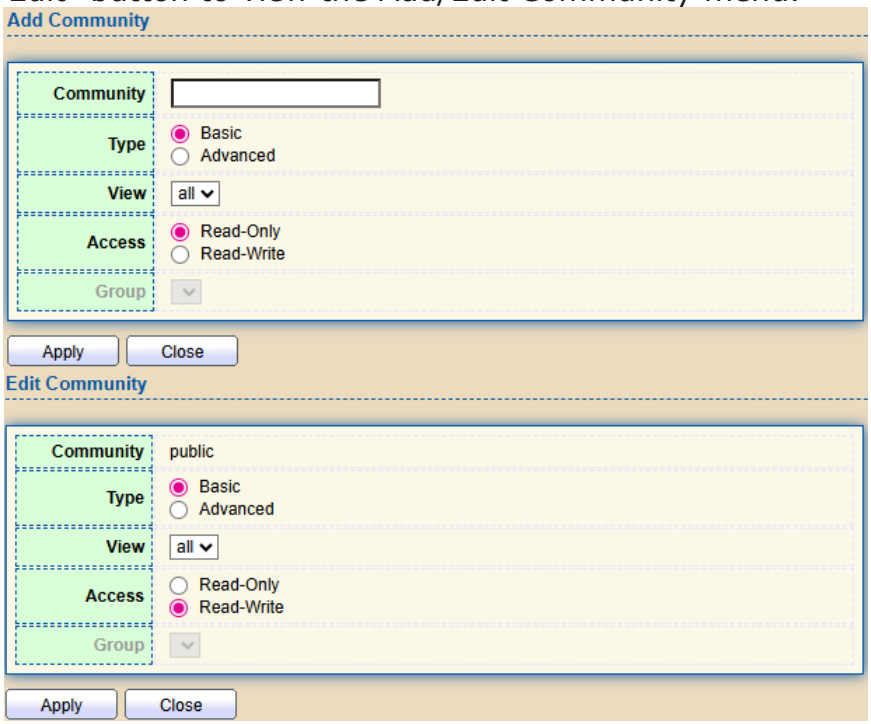


Figure 207 - Management > SNMP > Group > Add/Edit Community

Item	Description
Community	The SNMP community name. Its maximum length is 20 characters.
Type	SNMP Community mode • Basic: SNMP community specifies view and access right. • Advanced: SNMP community specifies group.
View	Specify the SNMP view to define the object available to the community.
Access	SNMP access mode • Read-Only: Read only. • Read-Write: Read and write.
Group	Specify the SNMP group configured by the command SNMP group to define the object available to the community.

4.14.4.4. User

To configure and display the SNMP users, click **Management > SNMP > User**.

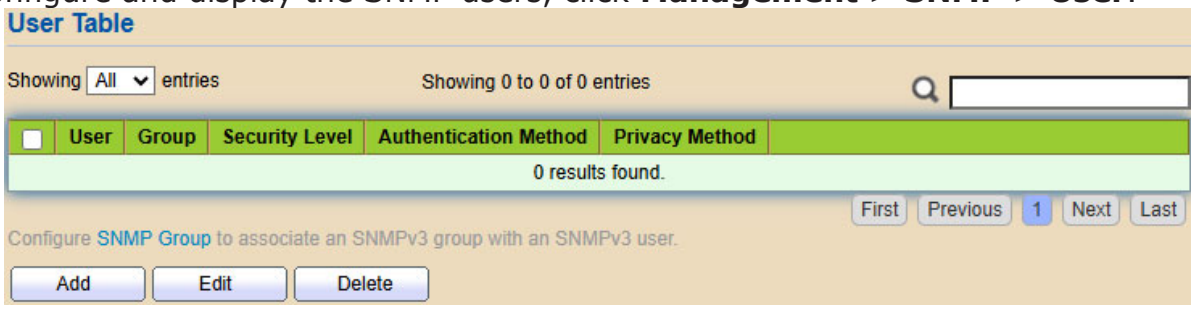


Figure 208 - Management > SNMP > User

Item	Description
User	Specify the SNMP user name on the host that connects to the SNMP agent. The max character is 30 characters. For the SNMP v1 or v2c, the user's name must match the community's name.
Group	Specify the SNMP group to which the SNMP user belongs.
Security Level	SNMP privilege mode • No Security: Specify that no packet authentication is performed. • Authentication: Specify that no packet authentication without encryption is performed. • Authentication and Privacy: Specify that no packet authentication with encryption is performed.

Authentication Method	Authentication Protocol which is available when Privilege Mode is Authentication or Authentication and Privacy. • None: No authentication required. • MD5: Specify the HMAC-MD5-96 authentication protocol. • SHA: Specify the HMAC-SHA-96 authentication protocol
Privacy Method	Encryption Protocol • None: No privacy required. • DES: DES algorithm

Click "Add" or “Edit” button to view Add/Edit User menu.

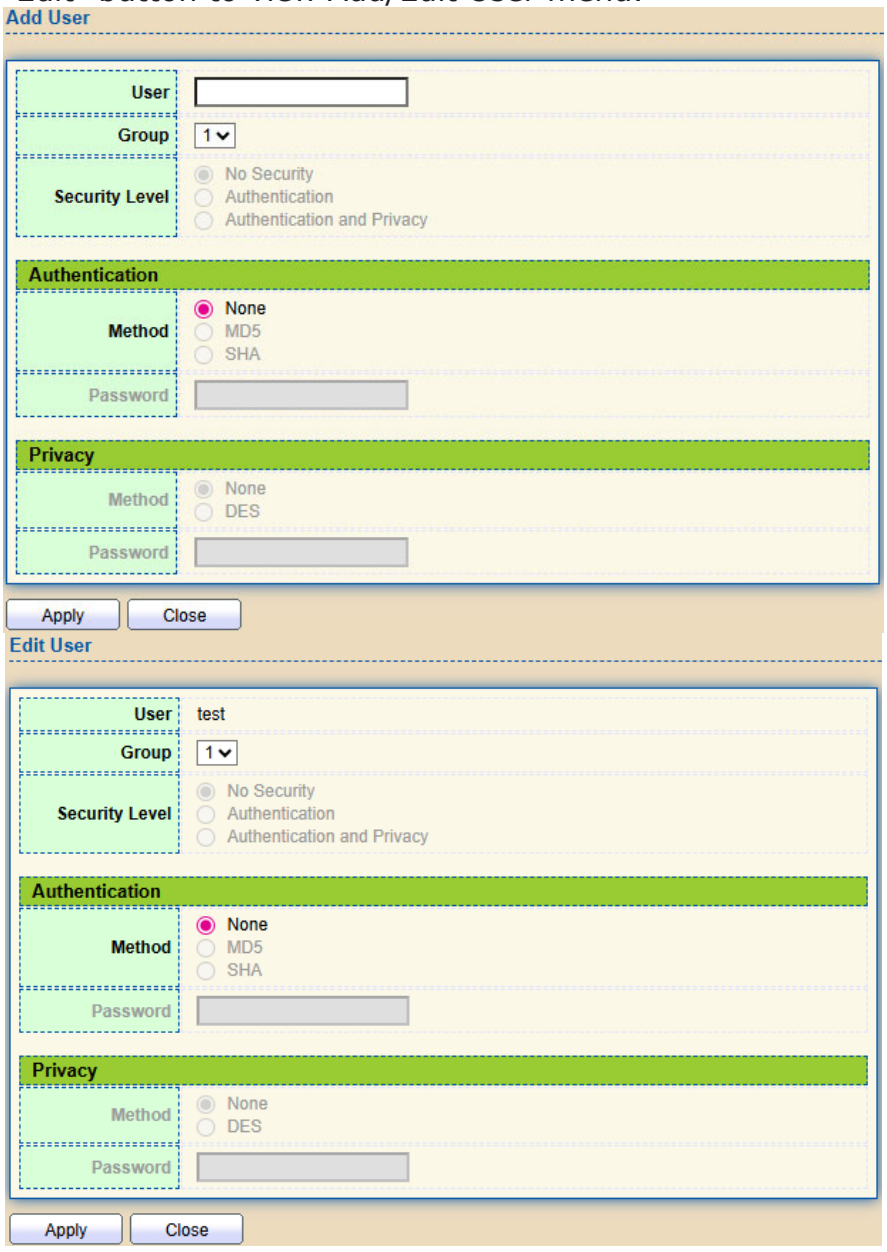


Figure 209 - Management > SNMP > User > Add/Edit User

Item	Description
User	Specify the SNMP user name on the host that connects to the SNMP agent. The max character is 30 characters.
Group	Specify the SNMP group to which the SNMP user belongs.
Security Level	SNMP privilege mode • No Security: Specify that no packet authentication is performed. • Authentication: Specify that no packet authentication without encryption is performed. • Authentication and Privacy: Specify that no packet authentication with encryption is performed.
Authentication	
Method	Authentication Protocol which is available when Privilege Mode is Authentication or Authentication and Privacy. • None: No authentication required. • MD5: Specify the HMAC-MD5-96 authentication protocol. • SHA: Specify the HMAC-SHA-96 authentication protocol.
Password	The authentication password, the number of character range is 8 to 32 characters.
Privacy	
Method	Encryption Protocol • None: No privacy required. • DES: DES algorithm
Password	The privacy password, the number of character range is 8 to 64 characters.

4.14.4.5. Engine ID

To configure and display SNMP local and remote engine ID, click **Management > SNMP > Engine ID**.

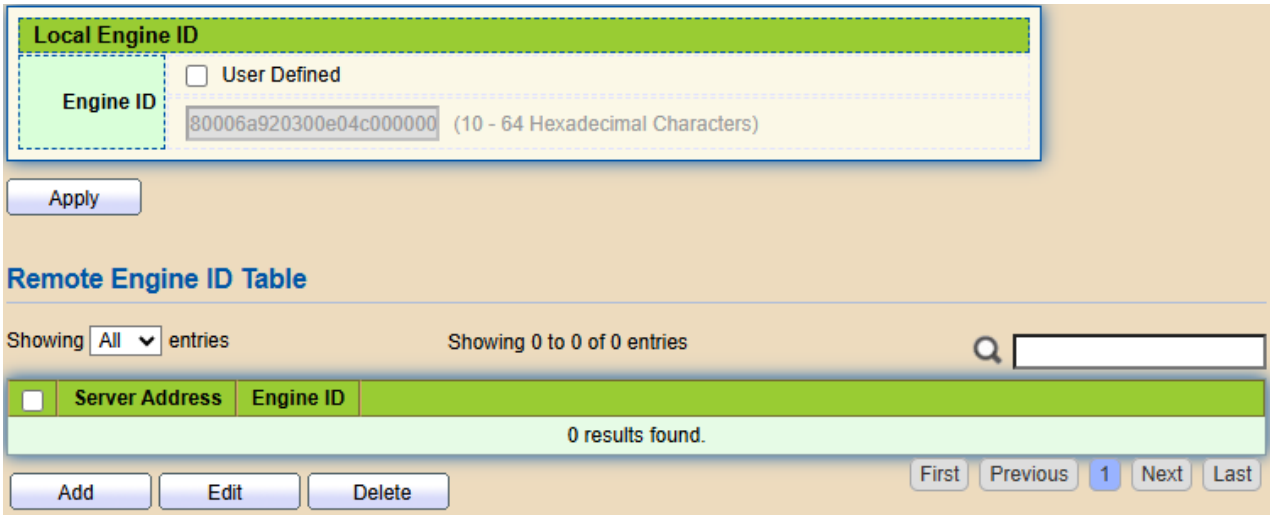


Figure 210 - Management > SNMP > Engine ID

Item	Description
Local Engine ID	
Engine ID	If checked “User Defined”, the local engine ID is configured by user, else use the default Engine ID which is made up of MAC and Enterprise ID. The user defined engine ID is ranging 10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2.
Remote Engine ID Table	
Server Address	Remote host.
Engine ID	Specify Remote SNMP engine ID. The engine ID is range10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2.

Click "Add" button to view Add Remote Engine ID menu.

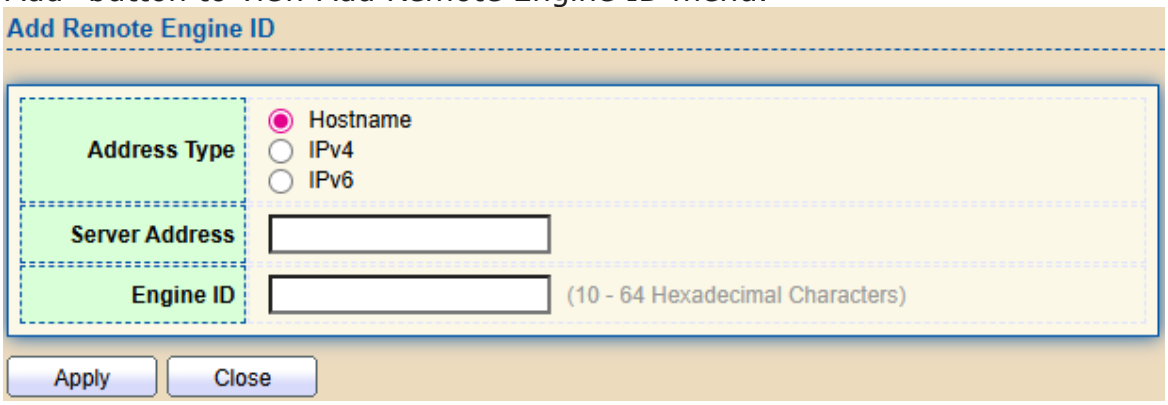


Figure 211 - Management > SNMP > Add Engine ID

Item	Description
Address Type	Remote host address type for Hostname/IPv4/IPv6.

Server Address	Remote host.
Engine ID	Specify Remote SNMP engine ID. The engine ID is range10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2.

Click "Edit" button to view Edit Remote Engine ID menu.

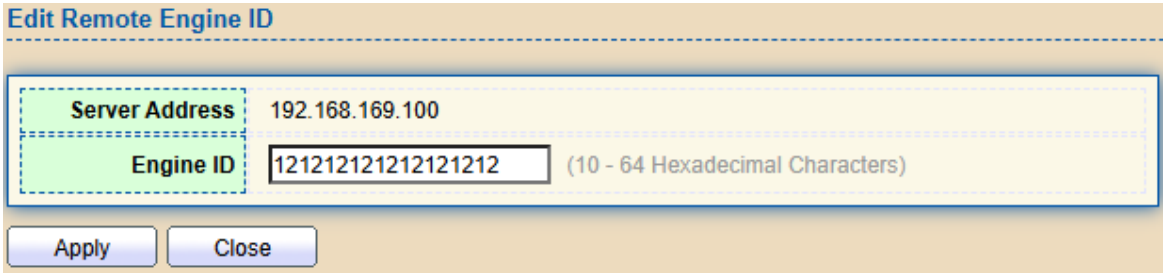


Figure 212 - Management > SNMP > Edit Engine ID

Item	Description
Server Address	Edit Remote host address
Engine ID	Specify Remote SNMP engine ID. The engine ID is range10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2.

4.14.4.6. Trap Event

To configure and display SNMP trap event, click **Management > SNMP > Trap Event**.

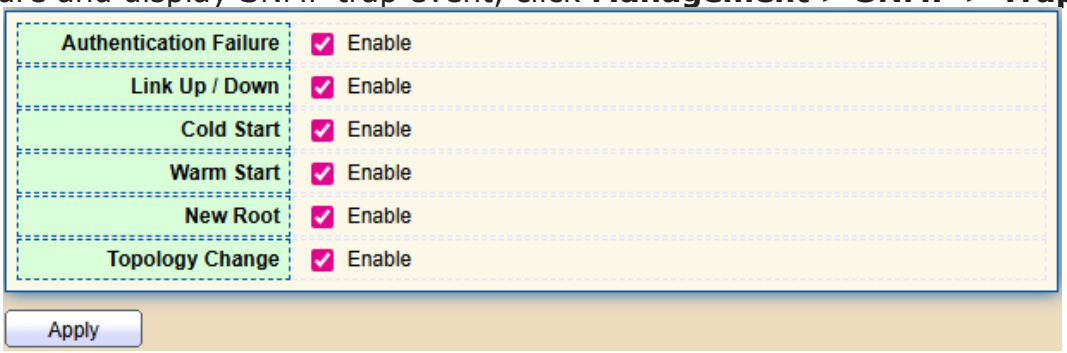


Figure 213 - Management > SNMP > Trap Event

Item	Description
Authentication Failure	SNMP authentication failure trap, when community not match or user authentication password not match.
Link Up/Down	Port link up or down trap.
Cold Start	Device reboot configure by user trap.
Warm Start	Device reboot by power down trap.

New Root	Election of new root trap.
Topology Change	The device has changed the topology map trap.

4.14.4.7. Notification

To configure the hosts to receive SNMPv1/v2/v3 notification, click **Management > SNMP > Notification**.

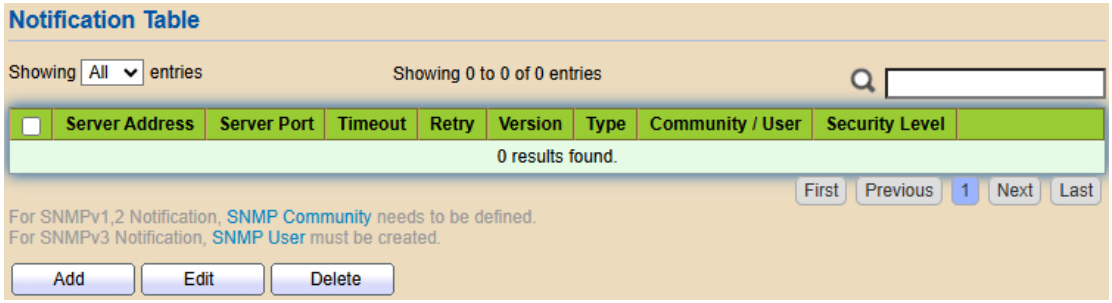


Figure 214 - Management > SNMP > Notification

Item	Description
Server Address	IP address or the hostname of the SNMP trap recipients.
Server Port	Recipient server UDP port number.
Timeout	Specify the SNMP informs timeout.
Retry	Specify the retry counter of the SNMP informs.
Version	Specify SNMP notification version • SNMPv1: SNMP Version 1 notification. • SNMPv2: SNMP Version 2 notification. • SNMPv3: SNMP Version 3 notification.
Type	Notification Type • Trap: Send SNMP traps to the host. • Inform: Send SNMP informs to the host.
Community/User	SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name.
Security Leve	SNMP trap packet security level • No Security: Specify that no packet authentication is performed. • Authentication: Specify that no packet authentication without encryption is performed. • Authentication and Privacy: Specify that no packet authentication with encryption is performed.

Click "Add" button to view the Notification menu.

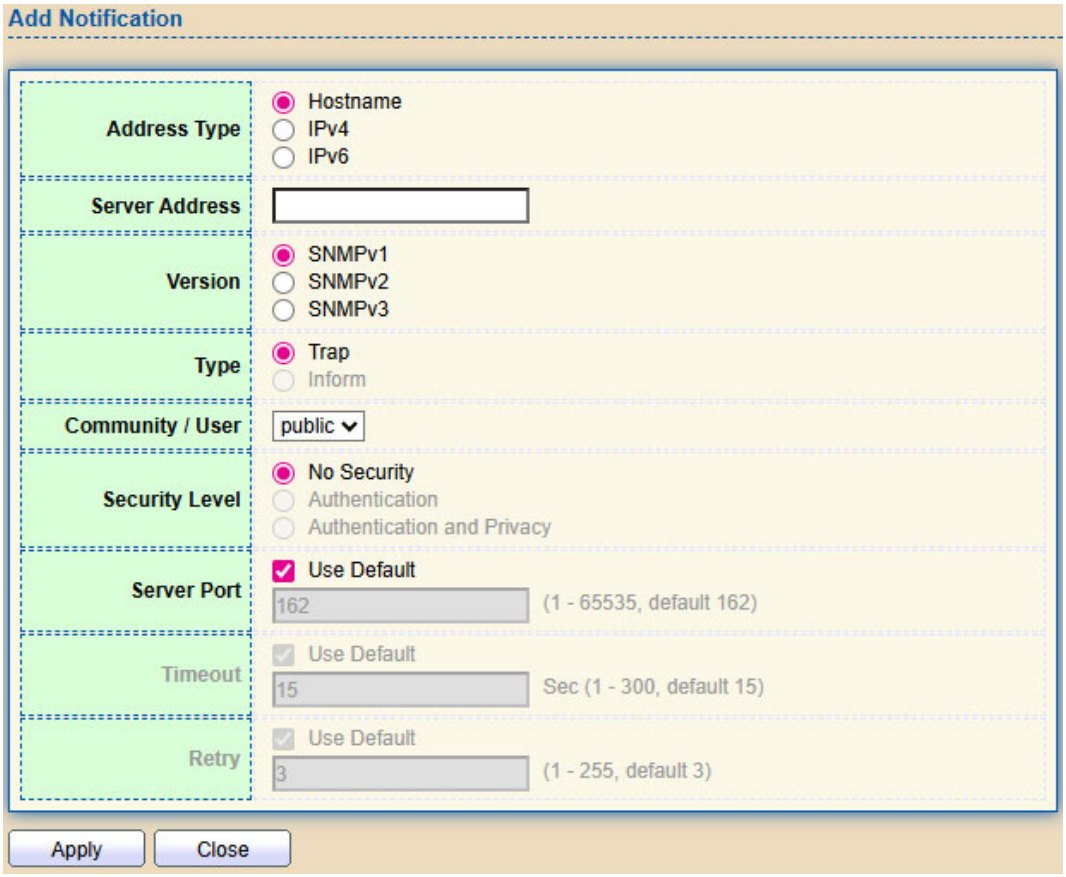


Figure 215 - Management > SNMP > Notification > Add Notification

Item	Description
Address Type	Notify recipients host address type.
Server Address	IP address or the hostname of the SNMP trap recipients.
Version	Specify SNMP notification version • SNMPv1: SNMP Version 1 notification. • SNMPv2: SNMP Version 2 notification. • SNMPv3: SNMP Version 3 notification.
Type	Notification Type • Trap: Send SNMP traps to the host. • Inform: Send SNMP informs to the host. (version 1 have no inform)
Community/User	SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name.

Security Level	SNMP notification packet security level, the security level must less than or equal to the community/user name • No Security: Specify that no packet authentication is performed. • Authentication: Specify that no packet authentication without encryption is performed. • Authentication and Privacy: Specify that no packet authentication with encryption is performed.
Server Port	Recipient server UDP port number, if “use default” checked the value is 162, else user configure.
Timeout	Specify the SNMP informs timeout, if “use default” checked the value is 15, else user configure.
Retry	Specify the SNMP informs retry count, if “use default” checked the value is 3, else user configure.

Click "Edit" button to view the Edit Notification menu.

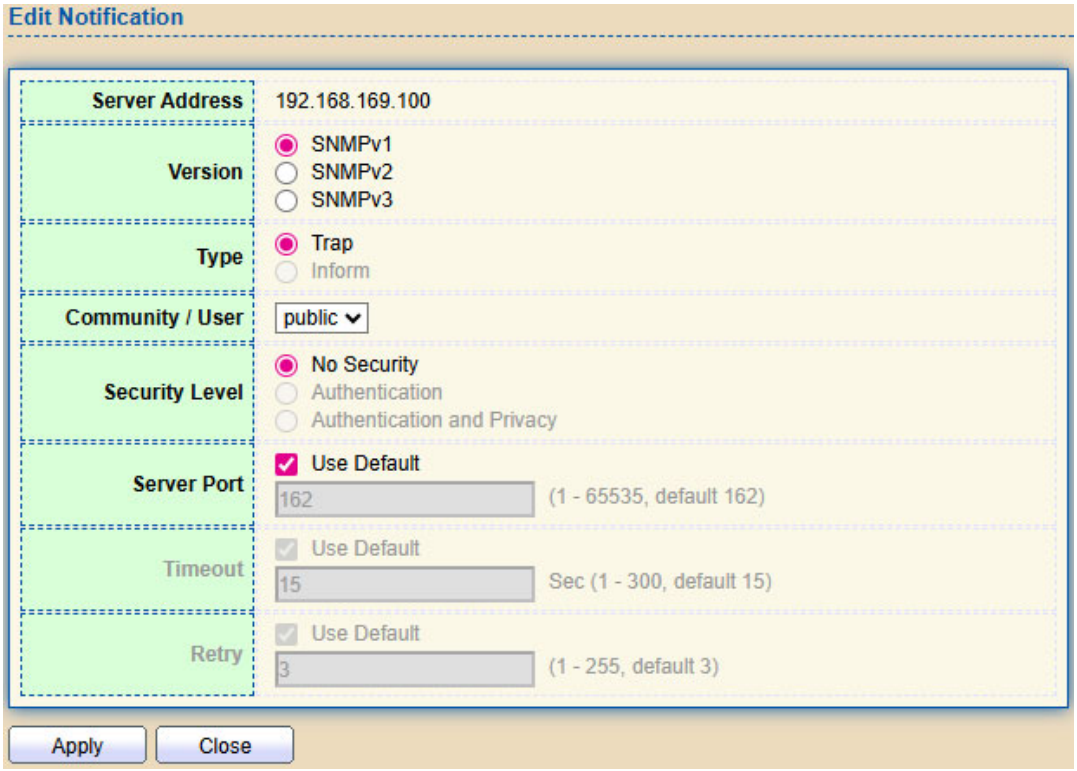


Figure 216 - Management > SNMP > Notification > Edit Notification

Item	Description
Server Address	Edit SNMP notify recipients address

Version	Specify SNMP notification version • SNMPv1: SNMP Version 1 notification. • SNMPv2: SNMP Version 2 notification. • SNMPv3: SNMP Version 3 notification.
Type	Notification Type • Trap: Send SNMP traps to the host. • Inform: Send SNMP informs to the host. (version 1 have no inform)
Community/User	SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name.
Community Level	SNMP notification packet security level, the security level must less than or equal to the community/user name • No Security: Specify that no packet authentication is performed. • Authentication: Specify that no packet authentication without encryption is performed. • Authentication and Privacy: Specify that no packet authentication with encryption is performed.
Server Port	Recipient server UDP port number, if "use default" checked the value is 162, else user configure.
Timeout	Specify the SNMP informs timeout, if "use default" checked the value is 15, else user configure.
Retry	Specify the SNMP informs retry count, if "use default" checked the value is 3, else user configure.

4.14.5. RMON

4.14.5.1. Statistics

To display RMON Statistics, click **Management > RMON > Statistics**.

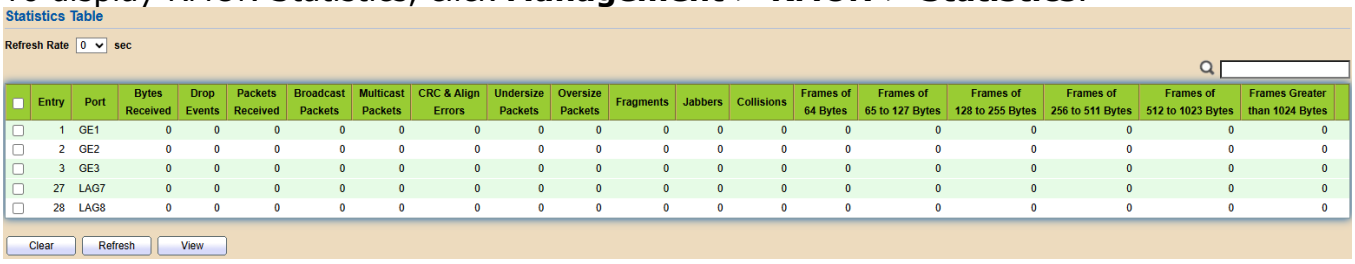


Figure 217 - Management > RMON > Statistics

Item	Description
Port	The port for the RMON statistics.
Bytes Received	Number of octets received, including bad packets and FCS octets, but excluding framing bits.
Drop Events	Number of packets that were dropped.

Packets Received	Number of packets received, including bad packets, Multicast packets, and Broadcast packets.
Broadcast Packets	Number of good Broadcast packets received. This number does not include Multicast packets.
Multicast Packets	Number of good Multicast packets received.
CRC &Align Errors	Number of CRC and Align errors that have occurred.
Undersize Packets	Number of undersized packets (less than 64 octets) received.
Oversize Packets	Number of oversized packets (over 1518 octets) received.
Fragments	Number of fragments (packets with less than 64 octets, excluding framing bits, but including FCS octets) received.
Jabbers	Number of received packets that were longer than 1632 octets. This number excludes frame bits, but includes FCS octets that had either a bad FCS (Frame Check Sequence) with an integral number of octets (FCS Error) or a bad FCS with a non-integral octet (Alignment Error) number. A Jabber packet is defined as an Ethernet frame that satisfies the following criteria: ・ ● Packet data length is greater than MRU. ● Packet has an invalid CRC. ● RX error event has not been detected.
Collisions	Number of collisions received. If Jumbo Frames are enabled, the threshold of Jabber Frames is raised to the maximum size of Jumbo Frames.
Frames of 64 Bytes	Number of frames, containing 64 bytes that were received.
Frames of 65 to 127 Bytes	Number of frames, containing 65 to 127 bytes that were received.
Frames of 128 to 255 Bytes	Number of frames, containing 128 to 255 bytes that were received.
Frames of 256 to 511 Bytes	Number of frames, containing 256 to 511 bytes that were received.
Frames of 512 to 1023 Bytes	Number of frames, containing 512 to 1023 bytes that were received.
Frames Greater than 1024 Bytes	Number of frames, containing 1024 to 1518 bytes that were received.
Clear	Clear the statistics for the selected ports.
Refresh	Refresh the statistics for the selected ports.
View	View the statistics on the specified port.

Click "View" button to view the view Port Statistics menu.

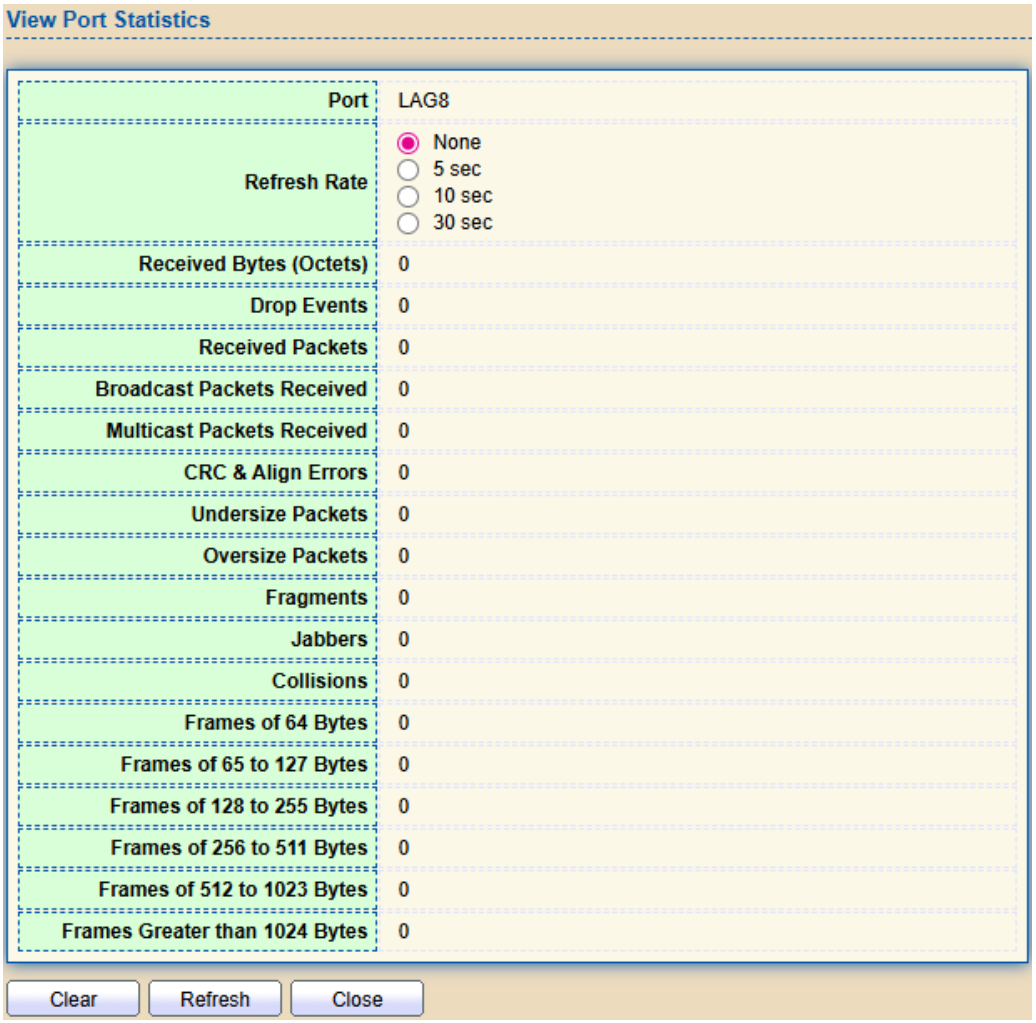


Figure 218 - Management > RMON > Statistics

4.14.5.2. History

For the RMON history, click **Management > RMON > History**.

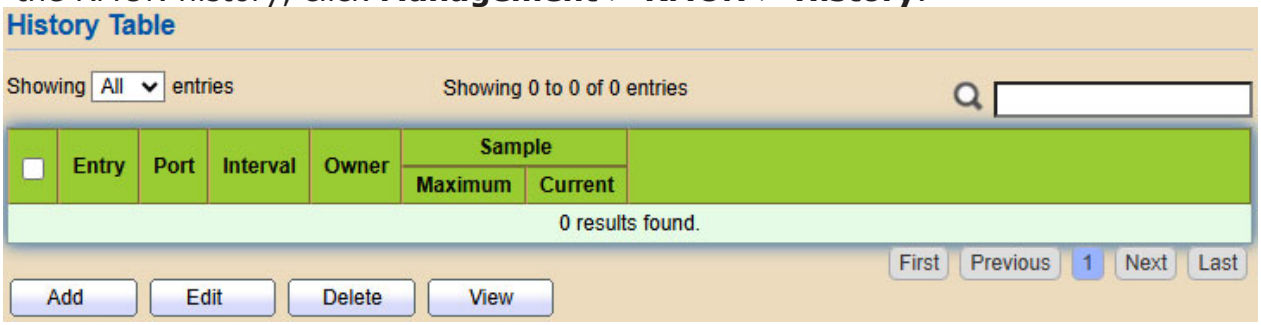


Figure 219 - Management > RMON > History

Item	Description
Port	The port for the RMON history.
Interval	The number of seconds for each sample.
Owner	The owner's name of event (0~31 characters).
Sample Maximum	The maximum number of buckets.

Sample Current	The current number of buckets.
Add	Add the new RMON history entries
Edit	Edit the RMON history
Delete	Delete the RMON histories
View	View the history log.

Click "Add/Edit" button to Add/Edit the History menu.

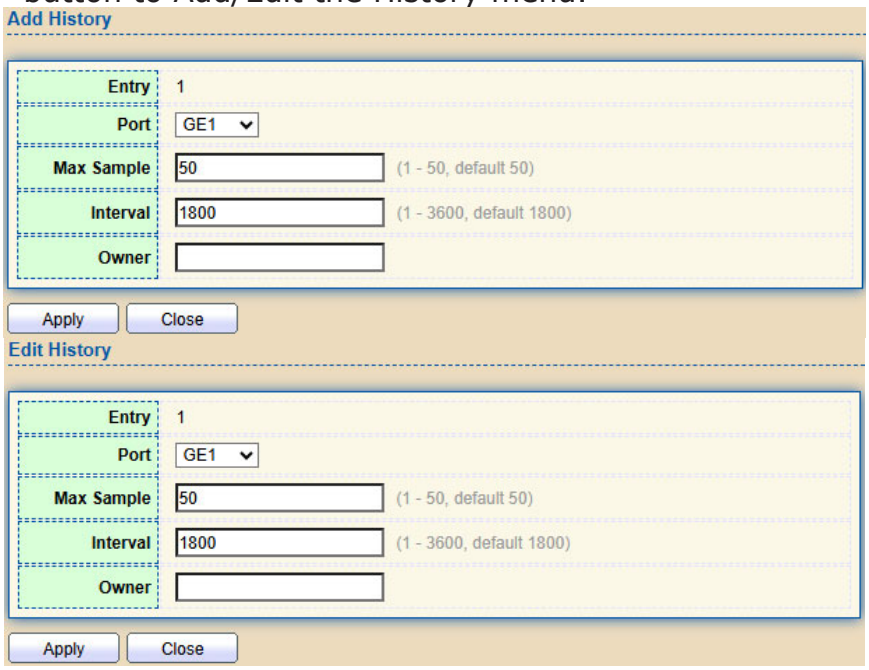


Figure 220 - Management > RMON > Add /Edit History

Item	Description
Port	Specify port for the RMON history.
Max Sample	Specify the maximum number of buckets.
Interval	Specify the number of seconds for each sample.
Owner	Specify the owner's name of event (0~31 characters).

Click "View" button to view the History menu.

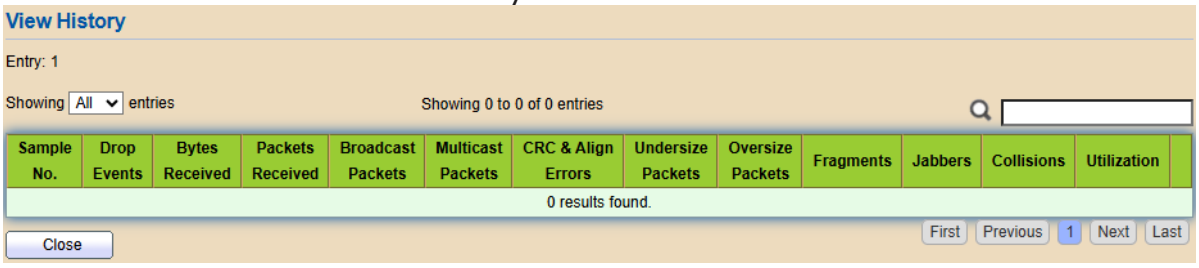


Figure 221 - Management > RMON > View History

Item	Description
Port	The port for the RMON statistics.
Bytes Received	Number of octets received, including bad packets and
Drop Events	Number of packets that were dropped.
Packets Received	Number of packets received, including bad packets, Multicast packets, and Broadcast packets.
Broadcast Packets	Number of good Broadcast packets received. This number does not include Multicast packets.
Multicast Packets	Number of good Multicast packets received.
CRC & Align Errors	Number of CRC and Align errors that have occurred.
Undersize Packages	Number of undersized packets (less than 64 octets) received.
Oversize Packages	Number of oversized packets (over 1518 octets) received.
Fragments	Number of fragments (packets with less than 64 octets, excluding framing bits, but including FCS octets) received.
Jabbers	Number of received packets that were longer than 1632 octets. This number excludes frame bits, but includes FCS octets that had either a bad FCS (Frame Check Sequence) with an integral number of octets (FCS Error) or a bad FCS with a non-integral octet (Alignment Error) number. A Jabber packet is defined as an Ethernet frame that satisfies the following criteria: ☐ ● Packet data length is greater than MRU. ● Packet has an invalid CRC. ● RX error event has not been detected.
Collision	Number of collisions received. If Jumbo Frames are enabled, the threshold of Jabber Frames is raised to the maximum. size of Jumbo Frames.
Utilization	Percentage of current interface traffic compared to the maximum traffic that the interface can handle.

4.14.5.3. Event

For the RMON event, click **Management > RMON > Event**.

Figure 222 - Management > RMON > Event

Item	Description
Community	The SNMP community when the notification type is specified as
Description	The description for the event
Notification	The notification type for the event, and the possible value are: ● None: Nothing for notification. ● Event Log: Logging the event in the RMON Event Log table. ● Trap: Send a SNMP trap. · ● Event Log and Trap: Logging the event and send the SNMP. trap.
Time	The time that the event was triggered.
Owner	The owner for the event.

Click "Add/Edit" button to view the Add/Edit Event menu.

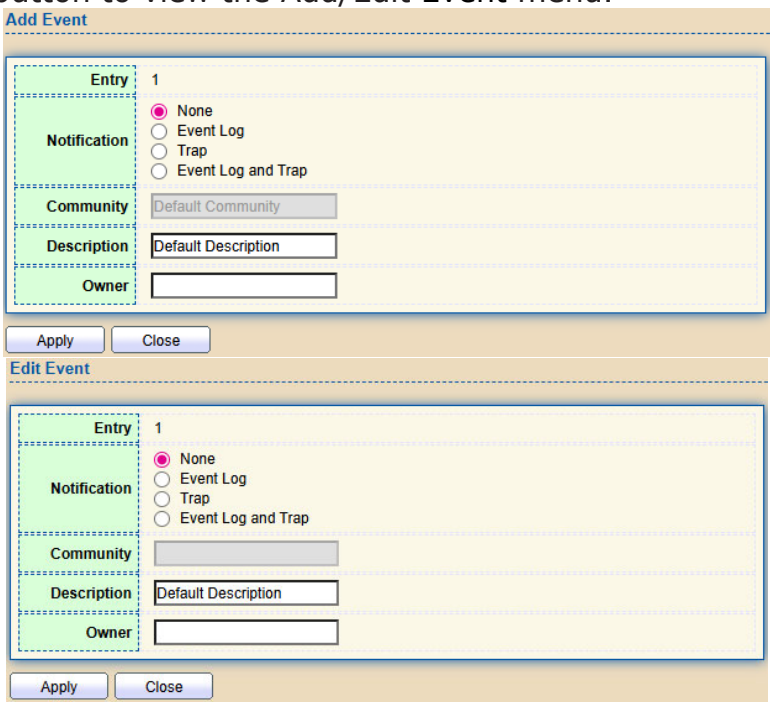


Figure 223 - Management > RMON > Add/Edit Event

Item	Description
Notification	Specify the notification type for the event, and the possible value are: · ● None: Nothing for notification. · ● Event Log: Logging the event in the RMON Event Log table ● Trap: Send a SNMP trap. · ● Event Log and Trap: Logging the event and send the SNMP trap

Community	Specify the SNMP community when the notification type is specified as “Trap” pr “Event Log and Trap”
Description	Specify the description for the event.
Owner	Specify owner for the event.

Click "View" button to view the View Event Log menu.

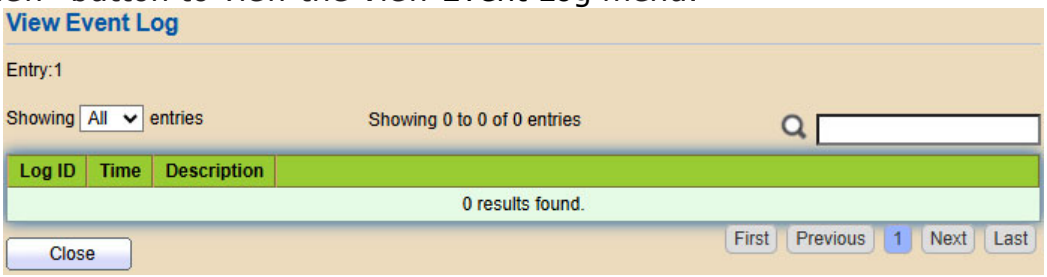


Figure 224 - Management > RMON > View Event Log

Item	Description
Log ID	The log identifier.
Time	The time that the event was triggered.
Description	The description for the event.

4.14.5.4. Alarm

For the RMON Alarm menu, click **Management > RMON > Alarm**.

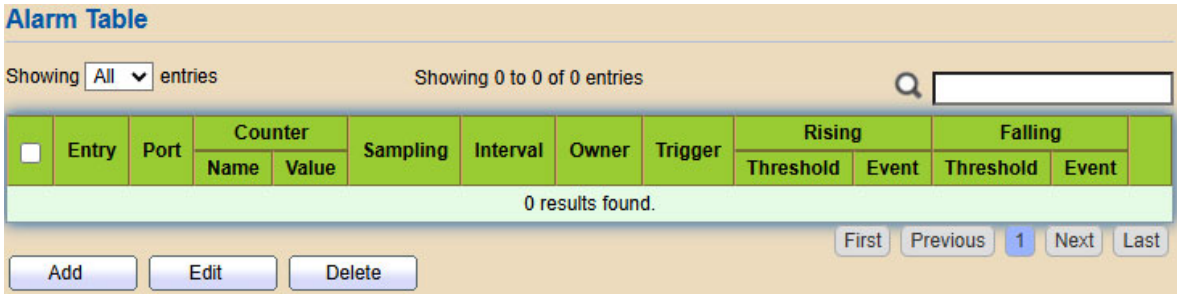


Figure 225 - Management > RMON > Alarm

Item	Description
Port	The port configuration for the RMON alarm.
Counter	The counter for sampling · ● Drop Events (Drop Event): Total number of events received in which the packets were dropped. · ● Octets (Received Bytes): Octets. · ● Pkts (Received Packets): Number of packets.

	● Broadcast Pkts (Broadcast Packets Received): Broadcast packets. · ● Multicast Pkts (Multicast Packets Received): Multicast packets. · ● CRC Align Error (CRC and Align Error): CRC alignment error. · ● Undersize Pkts (Undersize Packets): Number of undersized packets.· ● Oversize Pkts (Oversize Packets): Number of oversized packets. · ● Fragments (Fragments): Total number of packet fragment. · ● Jabbers (Jabbers): Total number of packet jabber. ● Collisions (Collisions): Collision. · ● Pkts64Octetes (Frames of 64 Bytes): Number of packets size 64 octets. · ● Pkts65to127Octetes (Frames of 65 to 127 Bytes): Number of packets size 65 to 127 octets. ● Pkts128to255Octetes (Frames of 128 to 255 Bytes): Number of packets size 128 to 255 octets. ● Pkts256to511Octetes (Frames of 256 to 511 Bytes): Number of packets size 256 to 511 octets. ● Pkts512to1023Octetes (Frames of 512 to 1023 Bytes): Number of packets size 512 to 1023 octets. ● Pkts1024to1518Octets (Frames Greater than 1024 Bytes): Number of packets size 1024 to 1518 octets.
Sampling	The sampling type including: · ● Absolute: The selected variable value is compared directly with the thresholds at the end of the sampling interval. · ● Delta: The selected variable value of the last sample is subtracted from the current value and the difference is compared with the thresholds.
Interval	The number of seconds for each sample.
Owner	The owner for the alarm entry.
Trigger	The type of event triggering.
Rising Threshold	The threshold for firing rising event.
Rising Event	The rising event when alarm was fired.
Falling Threshold	The threshold for firing falling event.
Falling Event	The falling event when alarm was fired.

Click "Add/Edit" button to view the Add/Edit menu.

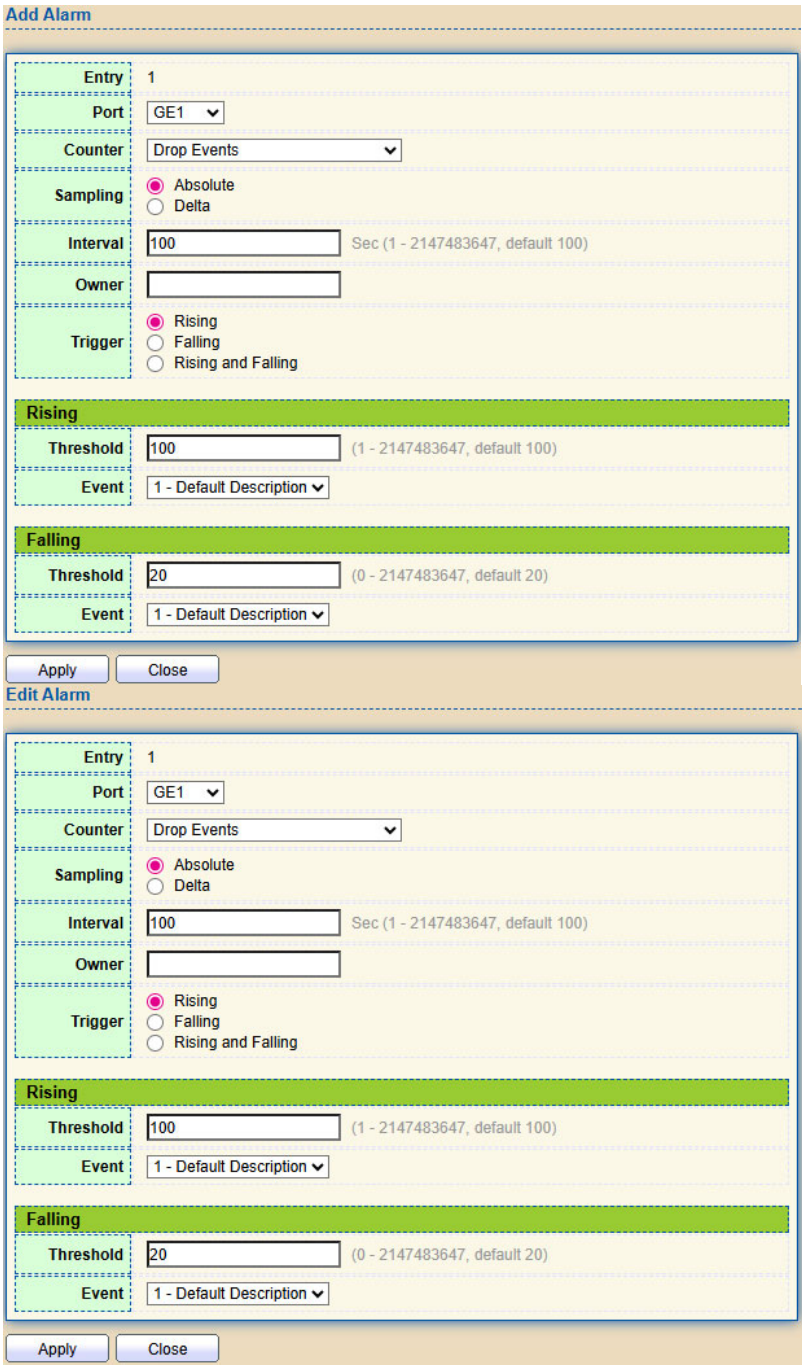


Figure 226 - Management > RMON > Add/Edit Alarm

Item	Description
Port	Specify the port for sampling

Counter	Specify the counter for sampling · ● Drop Event: Total number of events received in which the packets were dropped. · ● Received Bytes (Octets): Octets. ● Received Packets: Number of packets. ● Broadcast Packets Received: Broadcast packets. ● Multicast Packets Received: Multicast packets. ● CRC and Align Error: CRC alignment error. · ● Undersize Packets: Number of undersized packets.
	● Oversize Packets: Number of oversized packets. ● Fragments: Total number of packet fragment. ● Jabbers: Total number of packet jabber. · ● Collisions: Collision. · ● Frames of 64 Bytes: Number of packets size 64 octets. ● Frames of 65 to 127 Bytes: Number of packets size 65 to 127 octets. · ● Frames of 128 to 255 Bytes: Number of packets size 128 to 255 octets. · ● Frames of 256 to 511 Bytes: Number of packets size 256 to 511 octets. · ● Frames of 512 to 1023 Bytes: Number of packets size 512 to 1023 octets. · ● Frames Greater than 1024 Bytes: Number of packets size 1024 to 1518 octets.
Sampling	Specify the sampling type. · ● Absolute: The selected variable value is compared directly with the thresholds at the end of the sampling interval. · ● Delta: The selected variable value of the last sample is subtracted from the current value and the difference is compared with the thresholds.
Interval	Specify the sampling interval.
Owner	Specify the owner for the sampling.
Trigger	Specify the type for the alarm trigger.
RISING	
Threshold	Specify the threshold for firing rising event.
Event	Specify the index of rising event when alarm was fired.
Falling	
Threshold	Specify the threshold for firing falling event.
Event	Specify the index of falling event when alarm was fired.

4.15. Loop Prevention

To configure Loop Prevention setting, click Loop Prevention.

Item	Description
State	Loop Prevention state. ● Enabled: Enable Loop Prevention. ● Disabled: Disable Loop Prevention.