Air Live®
Powered by OvisLink Corp.

SNMP-GSH2804L

24 Port Gigabit + 4-Port UTP/SFP
Web Smart Switch

User Manual

www.airlive.com

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FCC Statement

Federal Communication Commission Interference Statement This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

IMPORTANT NOTE

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Table of Contents

1 Introduction

1.1 Overview

The **SNMP-GSH2804L** Web Smart Switch is a standard switch that meets all IEEE 802.3/u/x/z Gigabit, Fast Ethernet specifications. The switch has 24 10/100/1000Mbps TP ports and 4 Gigabit TP/SFP transceiver slots; it supports http and SNMP interface for switch management. The network administrator can logon the switch to monitor, configure and control each port's activity. In addition, the switch implements the QoS (Quality of Service), VLAN, and Trunking. It is suitable for office application.

Others the switch increase support the Power saving for reduce the power consumption. It could efficient saving the switch power with auto detect the client idle and cable length to provide different power.

In this switch, Port 25, 26, 27, 28 is SFP port;1000Mbps SFP Fiber transceiver is used for high speed connection expansion.

- 1000Mbps LC, Multi-Mode, SFP Fiber transceiver
- 1000Mbps LC, Single-Mode, SFP Fiber transceiver, 10km
- 1000Mbps LC, Single-Mode, SFP Fiber transceiver, 30km
- 1000Mbps LC, Single-Mode, SFP Fiber transceiver, 50km
- 100Mbps LC, Multi-Mode, SFP Fiber transceiver, 2km
- 100Mbps LC, Single-Mode, SFP Fiber transceiver, 30km

This user manual will help you to uncover most functions of the **SNMP-GSH2804L** with step-by-step instructions presented by high quality illustrations. Thank you for choosing OvisLink's product.

1.2 Guide to the Chapters

- **Chapter 1:** Introduction and Quick Setup guide. All the essential information including IP Address and Password information are in the Quick Setup section.
- **Chapter 2:** Detail installation instruction.
- **Chapter 3:** LED indicators
- **Chapter 4:** Detail information on Web management including how to setup remote management.

1.3 Quick Setup

This section provides the essential information for experienced users to operate the switch immediately. For detailed installation instruction, please see chapter 2 for more information.

Power-On the switch

- The **SNMP-GSH2804L** has a built-in power supply to operate with 100 ~ 240V AC, 50 ~ 60Hz power source.
- The AC power cord connector is located at the rear of the unit
- After the Switch is powered on, it will perform "**self-diagnostic**" test. This process takes about 30 seconds to complete.

Important Information

The default IP address: 192.168.2.1
The default password is **airlive**

LED Table

LED	Color/Status	Description
Power	Green	Power on
System	Green On	The switch is on
	Green Blinking	The switch is rebooting
Link/ACT	Green On	Link 1000/100Mbps
	Green Blinking	Link Up

1.4 Installation Steps

This section lists the installation procedures in steps. Each step's instruction is thoroughly explained in the subsequent sections of following chapter.

Step1. Connect your PC to the switch.

Step2. Set your PC's IP address to 192.168.2.50.

Step3. Open your web browser and enter **"192.168.2.1**" to get into the switch's web management.

Step4. Enter "**admin**" for username and "**airlive**" for password.

Step5. If you want to install the switch on the 19" rack, please install the mounting kit.

Step6. Please see the following chapters for further configurations.

2 Installation of the Switch

This chapter provides the detailed instructions for installation of the switch. For concise installation instruction, the previous chapter's "**Quick Setup**" section provides all the important information including IP address, password, and LED table for user's reference.

2.1 Unpack the Package

Before you begin the installation of **SNMP-GSH2804L** Web smart Switch, make sure that you have all the necessary accessories that come with your package. Follow the steps below to unpack your package contents:

1. Clear out an adequate space to unpack the package carton.
2. Open the package carton and take out the contents carefully.
3. Put back all the shipping materials such as plastic bag, padding and linings into the package carton and save them for future transport need.

After unpacking and taking out the entire package contents, you should check whether you have got the following items:

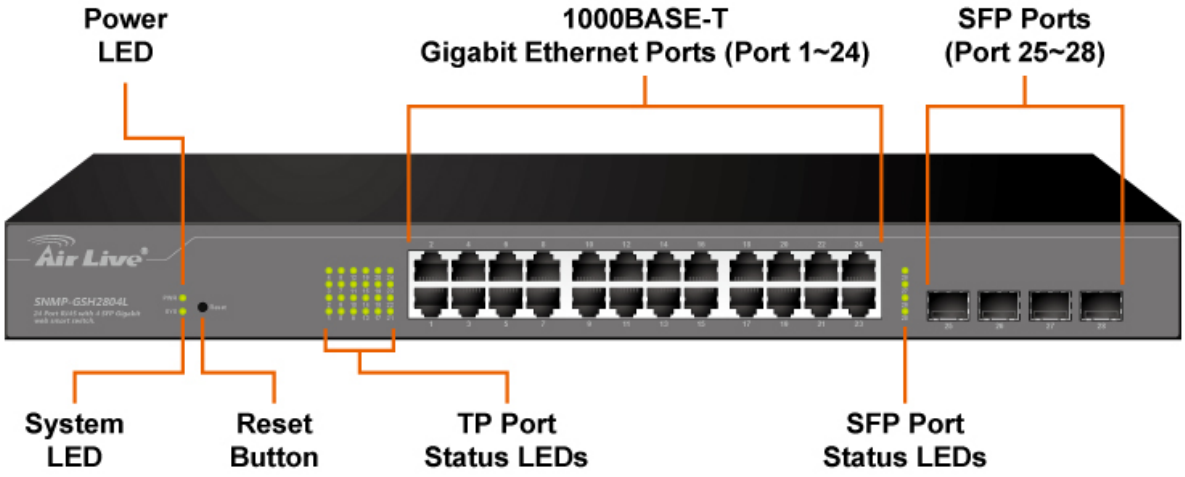
- SNMP-GSH2804L
- One AC Power Cord
- Quick Installation Guide
- Support CD-ROM (The PDF version of this User's Manual can be found within CD)
- One Pair Rack-mount Kit + 8 Screws

If any of these above items is missing or damaged, please contact your local dealer for replacement.

2.2 Hardware Overview

2.2.1. Front Panel

The front panel of the web smart switch consists of 24 10/100/1000M Base-TX RJ-45 ports and 4 100/1000M SFP ports. The LED Indicators are also located on the front panel.



- **LED Indicators:**

Comprehensive LED indicators display the status of the switch and the network (see the LED Indicators chapter below).

- **1000BASE-T Gigabit Ethernet Ports (Port 1~24)**

The Switch four Gigabit twisted pair ports, supported auto negotiable 10/100/1000Mbps and auto MDI/MDIX crossover detection function, this function gives true “plug and play” capability, just need to plug-in the network cable to the hub directly and don’t care if the end node is NIC (Network Interface Card) or switch and hub. These ports can operate in half-duplex mode for 10/100Mbps and full- duplex mode for 10/100/1000Mbps.

- **SFP Ports (Port 25~28)**

The Switch is equipped with four combo SFP ports, supported optional 1000BASE-SX/LX SFP module.

*** Note**: When the port was set to “Forced Mode”, the Auto MDI/MDIX will be disabled.

2.2.2. Rear Panel

The 3-pronged power plug and on/off switch are placed at the rear panel of the switch right side shown as below.

2.3 Installation Site Preparation

You can mount **SNMP-GSH2804L** either on desktop or on a 19-inch rack. If you plan to mount the switch on desktop, please choose a steady, level surface in a well-ventilated area that is free from excessive dust. In any case, the installation site chosen for your switch has to comply with the following requirements:

- Do not place heavy objects (more than 3kg) on top of the switch.
- The location must preferably be free from excessive dust, away from heat vent, hot-air exhaust and direct sunlight.
- The switch should not be placed near large electric motors or other strong electromagnetic sources. As a reference, the strength of the electromagnetic field on site should not exceed the (RFC) standards for IEC 801-3, Level 2(3V/M) field strength.
- The air temperature in the location should be within a range of 32 to 122 °F (0 to 50°C).
- The relative humidity in the location should not exceed 90% non-condensing humidity.
- The distance between the RJ-45 port and the standard network interface should not exceed 100 meters.
- Adequate space should be allowed in front of all the ports, so that each port is easily accessible for cable connections.
- Leave at least 10cm(4 inch) of space around the switch to allow heating dissipation

2.4 Rack Mounting

The **SNMP-GSH2804L** can be mounted on a standard size 19-inch rack, which can in turn be placed in a wiring closet with other equipments.
Before you can mount the switch on the rack, first you must attach the mounting brackets on both sides of the switch with screws, and then mount it as a unit on the rack.
To mount the unit on a rack, please follow the steps below:

Step 1. First, align the holes on the bracket with the holes on both side of the switch.

Step 2. Insert screws into the holes and then fasten the bracket on one side of the switch with a screwdriver.

Step 3. Repeat Step 1 and 2 to fasten the bracket on the other side of the switch.

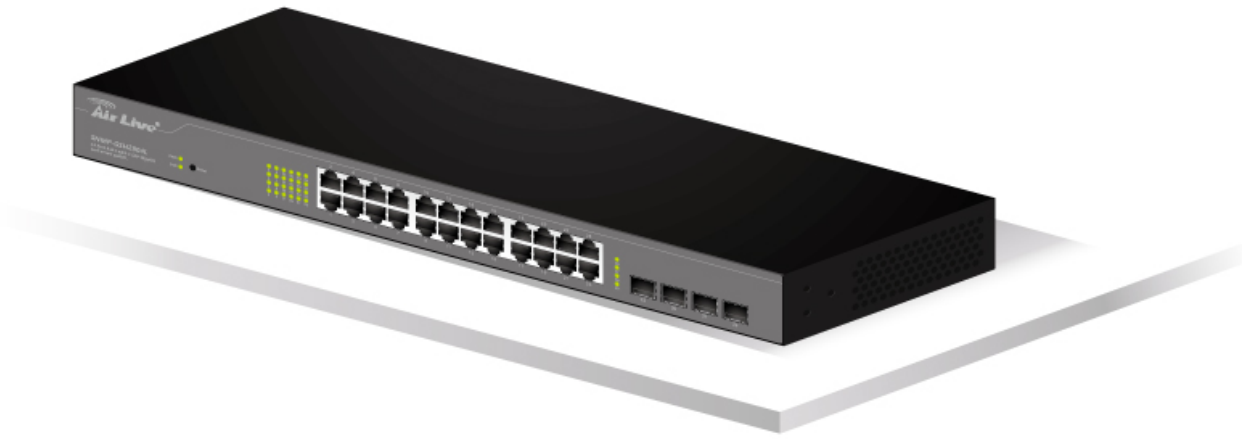
Step 4. Mount the unit on the rack and align the notches on both brackets with mounting holes on the rack, and then secure the unit with suitable screws.

Fastening the brackets on the switch

Attaching the Switch to a 19-inch rack

2.5 Desktop Installation

The **SNMP-GSH2804L** has four rubber pads attached on each corner of its underside. These pads serve as cushioning against vibration and prevent the switch from sliding off its position. They also allow adequate ventilation space when you place the switch on top of another device.



Desktop installation

- The location you choose to install your switch and the way you configure your network may greatly affect its performance. Please see the previous section for “installation site” preparation.
- Do not place more than 1.5kg (6.6lbs) of weight on the top of the switch.
- Leave at least 10cm of space around the switch to allow proper heating dissipation.

2.6 Cabling Requirements

For 100BASE-TX and 1000Base-T ports

The 24 RJ-45 station ports and the 1000Base-T ports of the optional Gigabit-Copper module require Cat. 5 twisted-pair UTP/STP cable for connection. When configuring within the 10/100/1000BASE-T cabling architecture, the cable distance should be within 100m. The following table summarizes the cable requirement for 10/100/1000BASE-TX connection:

10BASE-T	100 ohm Category 3, 4, 5 UTP/STP cable
100BASE-TX	100 ohm Category 5 UTP/STP cable

1000BASE-T	100 ohm Category 5 UTP/STP cable or better (CAT 5E recommended)

Auto MDI/MDI-X function

The **SNMP-GSH2804L** is equipped with Auto-MDI/MDI-X function, which allows you to use straight-through cable even when connecting to another switch/hub. Simply use the straight-through cable for all types of 10/100BASE-TX connections, either to a PC or to a networking device such as other hub or switch.

Connection / Specification	10 /100Base-TX and 1000Base-TPorts
Interface	RJ-45
Cable to Use	
To an end station	Straight-through twisted-pair cable
To a hub/switch	Straight-through twisted-pair cable
Maximum Distance	100 meters

Cabling type for 10/100BASE-TX and 1000Base-T

2.7 Connecting to Power

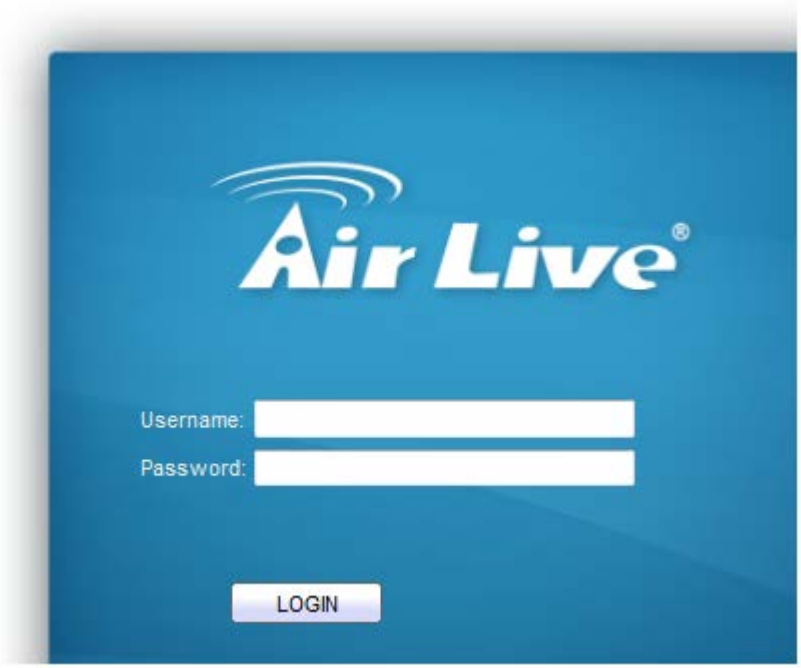
SNMP-GSH2804L features a universal auto-select power supply unit, which allows a power connection to a wide range of input voltages from 100 to 240VAC @ 50 ~ 60Hz.
To establish its power connection, simply plug the female end of the power cord into the power connector on the rear of the switch and the male end of the power cord into a suitable power outlet. Once you have correctly plugged in the power, you can then turn on the Power Switch to activate the switch.

2.8 Reset to Default

When you forgot your IP or password, please use the reset button for the factory default setting. Please take the following steps to reset the Web Smart Switch back to the original default:

Step 1. Turn on the **SNMP-GSH2804L**.
Step 2. Press and hold the reset button continuously for 10 seconds and release the resetbutton.

Step 3. The switch will reboot for 30 seconds and the configuration of switch will back to the default setting.



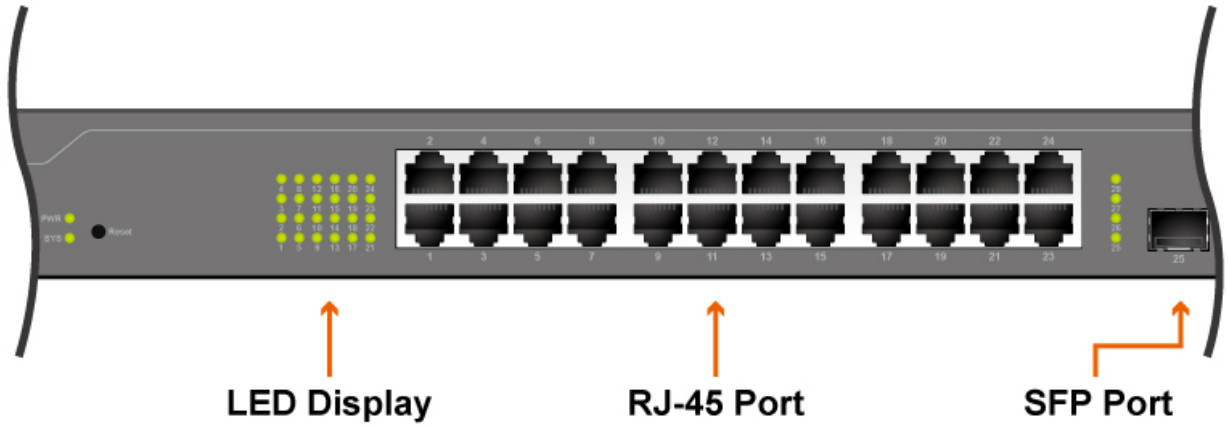
Key in the user ID and the password to pass the authentication; the default ID and Password is as below,

IP Address: 192.168.2.1
Username: **admin**
Password: **airlive**

3 LED Indicators

Before connecting any network device to **SNMP-GSH2804L**, you should take a few minutes to look over this chapter and get familiar with the front panel LED indicators of your Switch.

3.1 Comprehensive LEDs



3.2 LED Table

LED	Color/Status	Description
Power	Green	Power on
System	Green On	The switch is on
	Green Blinking	The switch is rebooting
Link/ACT	Green On	Link 1000/100Mbps
	Green Blinking	Link Up

4 Web Management

The **SNMP-GSH2804L** can be configured by web based interface, including System Information, Ports Configuration, VLAN setting, Aggregation, QoS setting, IGMP Snooping, Mirroring, SNMP, Loop Detection, Broadcast Strom, configuration/ backup/recovery, log out, and so on. The device based smart switch supports main stream browsers, such as IE, Firefox and Chrome…etc to configure the device function. All functions are illustrated below.

4.1 Setup your computer for Web management

The Concept of Subnet

Under the TCP/IP environment, network devices must be on the same subnet in order to see each other. This means before you can configure the switch through web browser, you must set your computer to the same subnet as the switch. For two network devices to be on the same subnet, they must have the following 2 criteria:

- Their IP address must be on the same subnet. For example, if one IP address is 192.168.2.1. The other's IP address must be 192.168.2.x (x is any number between 2 and 254) for Class C subnet. To find out the IP address information for your computer. Under WinXP/Vista/Win7/Win8, please open Command Line window and type "**ipconfig**".
- They must have the same subnet mask. For example, if one machine is 255.255.255.0. The other machine must also set to the same 255.255.255.0 mask.

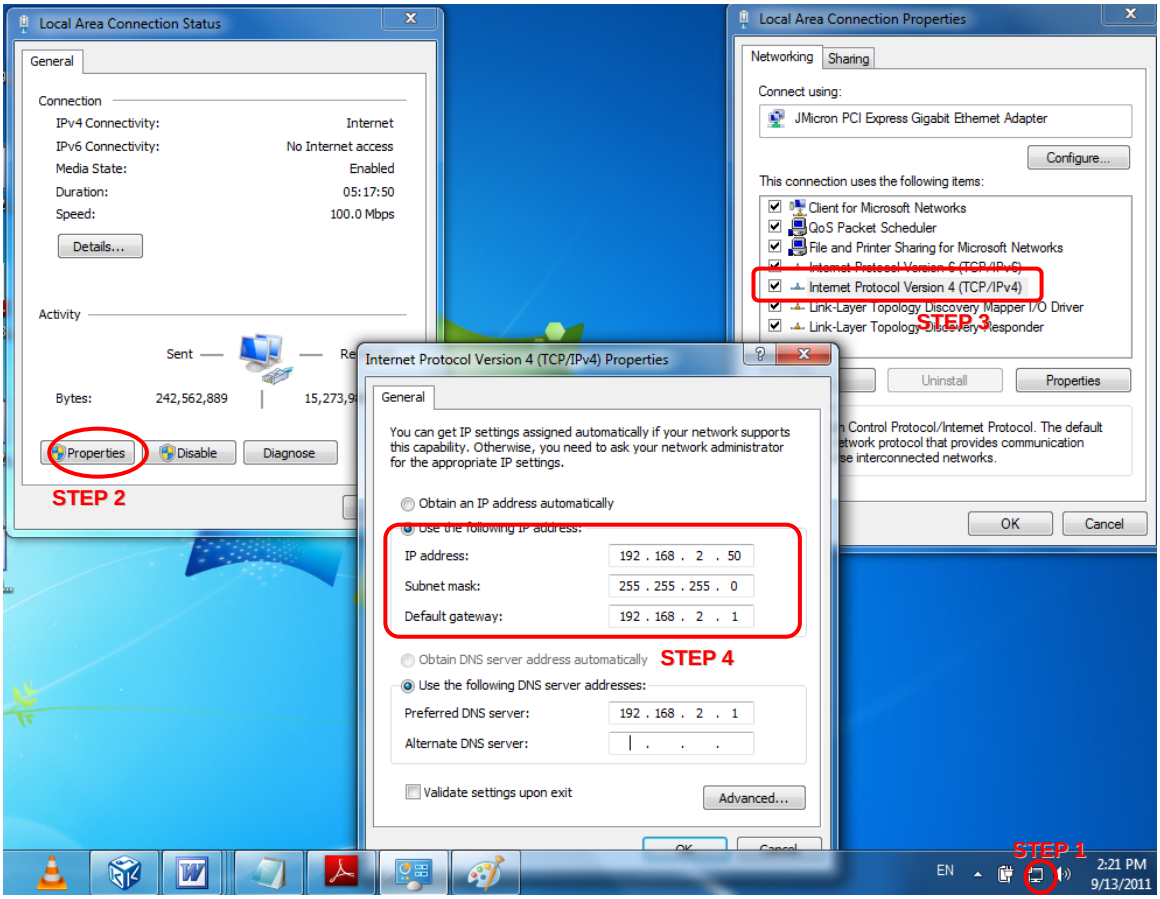
Configure your computer's IP

Before accessing the switch through web browser, please follow the instruction below to configure your computer's IP to the same subnet as the switch. If your switch's IP has not been changed, it should have the following factory default value:

The switch's Default IP

IP Address: 192.168.2.1
Subnet Mask: 255.255.255.0

Now if your computer's IP is not in the same subnet as the switch, please follow the steps below to change the computer's IP:



Manual IP setting

Step 1. Double click on the network connection status icon on the task bar. This should bring up a window showing the status of the current network connection. If there is no network status icon on the task bar, please go to the "**Start** -> **Settings** -> **Network** -> **Local Connection**" of the task bar's Start menu.

Step 2. Clock on the "**property**" icon.

Step 3. Double click on the "Internet Protocol (TCP/IP)

Step 4. Click on "**Use the following IP address**" button and enter the computer's address manually. This IP address must be on the same subnet as the switch but different from the switch's IP. Please make sure the IP is not used by other network device. If the switch's IP address is of factory's default value. We recommend enter the following for computer's IP:

IP Address: 192.168.2.50
Subnet Mask: 255.255.255.0
Gateway: 192.168.2.1

Click "**Ok**" after finish entering the IP.

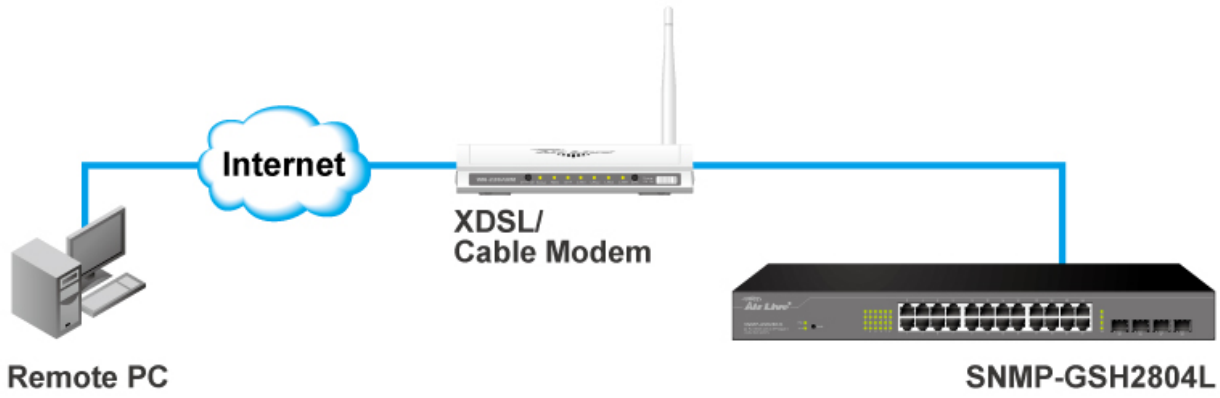
*** Note:** The **SNMP-GSH2804L** has DHCP client ability. This allows DHCP server (or router) to assign IP automatically. However, we do not recommend turning on the DHCP client because the DHCP server assign the IP randomly. The DHCP client should be used only when connecting directly to Cable Modem (for remote management) whose service provider uses DHCP for IP assignment.

Now, you will be able to access the switch by typing in the switch's IP address on the web browser.

4.2 Remote Management

In this section, you will learn how to setup your computer and the router for remote web management. Remote management allows MIS to manage a switch from outside of the switch's IP domain or from Internet. Depending on the type of Internet connection you have, there are two ways to setup the switch to be available through Internet.

Direct Connection to Interne



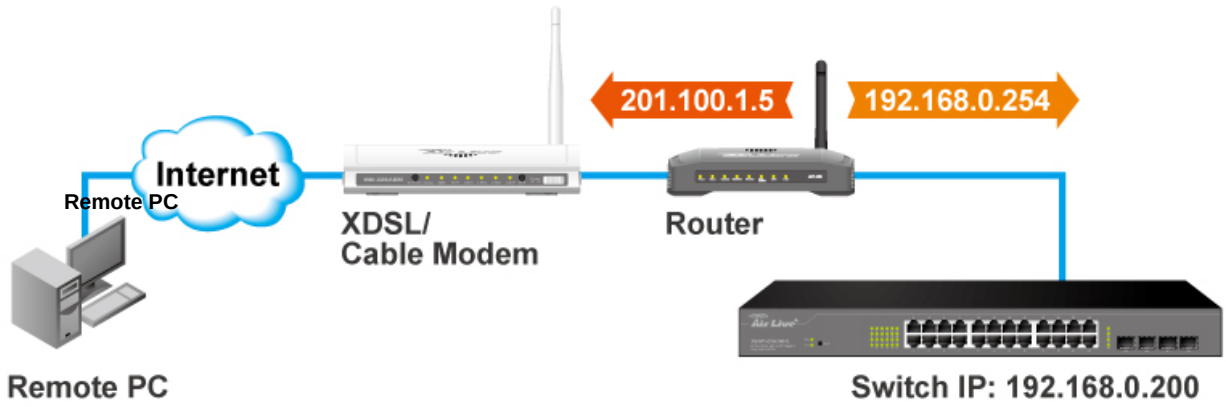
If you have a fixed IP xDSL account or cable modem account, and there is no router in the network, you can connect your switch directly to Internet via xDSL modem/Cable Modem. However, this method is not recommended as the LAN will be directly exposed to the Internet.

- **Fixed IP:** If your ISP has assigned you a fixed IP. Please go to the Switch's IP configuration and enter the IP address, Subnet Mask, and Gateway information offered by your ISP. If your ADSL connection is PPPoE or PPTP type, you have to connect through a router for remote management.

- **Cable Modem:** If your Cable service provider uses DHCP for IP assignment, please turn on the DHCP function under IP configuration. Make sure there is no DHCP server in the network. Then the Cable provider will assign the switch with a IP and Gateway. Go to the console port management to find out what IP has been assigned to the switch.

When the configuration is finished, the Remote PC can access the switch by typing the switch's IP address on the web browser.

Connect through Broadband Router



If you have an IP sharing router in the network, you can open a virtual server on the router to allow the switch to be managed through Internet. This method is more recommended as the broadband router provides natural firewall protector from hackers.

In the diagram above, the router has the WAN (given by the ISP) port IP address "**201.100.1.5**" and LAN port address "**192.168.0.254**". The switch's IP is "**192.168.0.200**". Please follow the instruction below to setup the router and switch for remote access:

On the Switch

- On the IP setting, set the gateway to Router's LAN port address 192.168.0.254.
- Please make sure the subnet mask is the same as the router's.

On the Router

- Go to router's Virtual Server setting and open the Web port (TCP Port 80) to the switch's IP address 192.168.0.200.
- If your router require enter the beginning and ending Port (from PortX to PortX), enter 80 for both.

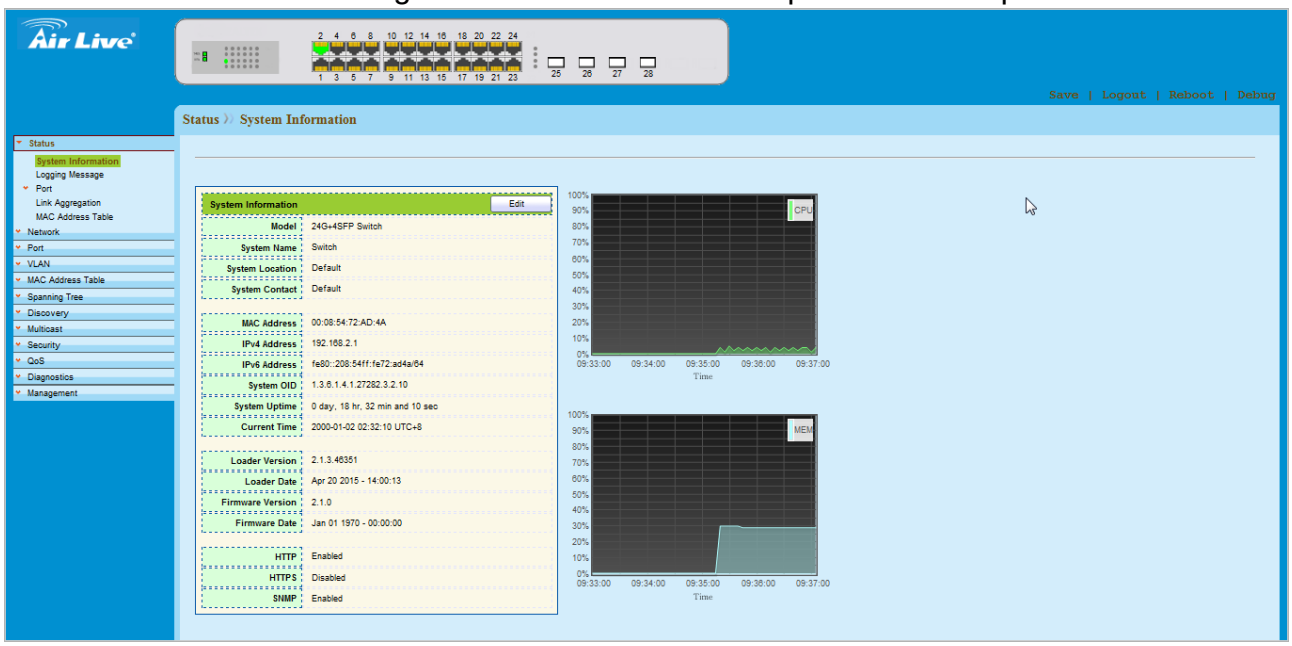
Now the Remote PC will be able to access your switch by entering "**201.100.1.5**" in the Web browser's address field.

4.3 Get Into the Web management

After you have properly configured the computer and switch's IP, you can get into the web management by the following steps:

Step 1. Open the Internet Explorer
Step 2. Enter the switch's IP address in the Address field and press enter.
Step 3. When prompt for User name and Password, enter the following information:
- User name: **admin**
- Password: **airlive**

You should see the following welcome screen after the process is completed:



Menu Bar

On the left side, the main menu tree for web is listed in the page. According to the function name in boldface, all functions can be divided into three parts, including "Configuration", "Monitoring" and "Maintenance". The functions of each folder are described in its corresponded section respectively. As to the function names in normal type are the sub-functions. When clicking it, the function is performed. The following list is the main function tree for web user interface.

Top Switch Image

The switch's image on the upper portion of the screen gives the quick overview of the port connection status. When a port is plugged in, the switch's image will show a "**plug**" on the corresponding port.

4.4 Status

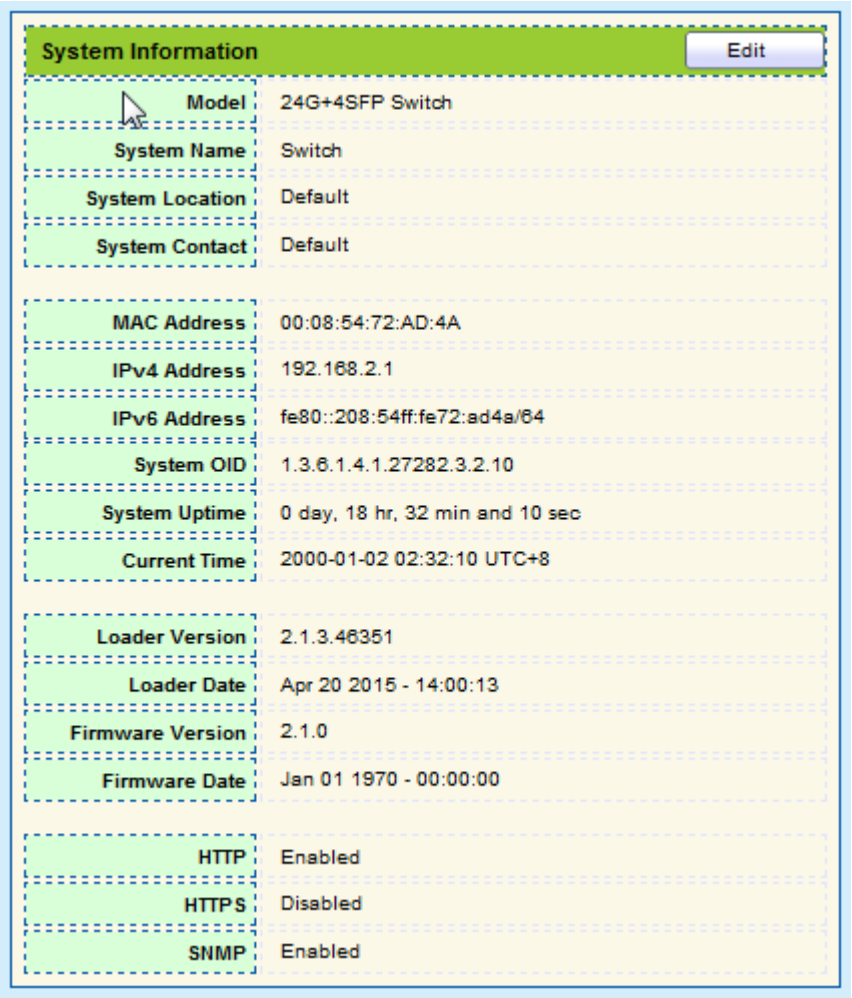
Use the Status pages to view system information and status.
Status includes the following functions:

- System Information
- Logging Message
- Port-Statistics , Bandwidth Utilization
- Link Aggregation
- MAC Address Table

In the following sessions, we will talk in detail about the management functions under the Configuration menu.

4.4.1. System Information

System configuration is one of the most important functions. Without a proper setting, network administrator would not be able to manage the device. The switch supports manual IP address setting.



- **Model:**

Model name of the switch.

- **System Name:**

System name of the switch. This name will also use as CLI prefix of each line.

- **System Location:**

Location information of the switch.

- **System Contact:**

Contact information of the switch.

- **MAC Address:**

Base MAC address of this switch.

- **IPv4 Address:**

Current system IPv4 address.

- **IPv6 Address:**

Current system IPv6 address.

- **System OID:**

SNMP system object ID.

- **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.

- **HTTP:**

Current HTTP service enable/disable state.

- **HTTPS:**

Current HTTP service enable/disable state

- **SNMP:**

Current SNMP service enable/disable state.

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

- **System Name:**

System name of the switch. This name will also use as CLI prefix of each line.

■ **System Name:**

Current SNMP service enable/disable state.

■ **System Contest:**

Contact information of the switch.

4.4.2. Logging Message

This page shows logging messages stored on the RAM and Flash

■ **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.

■ **Log ID:**

The log identifier

■ **Time:**

The time stamp for the logging message.

■ **Severity:**

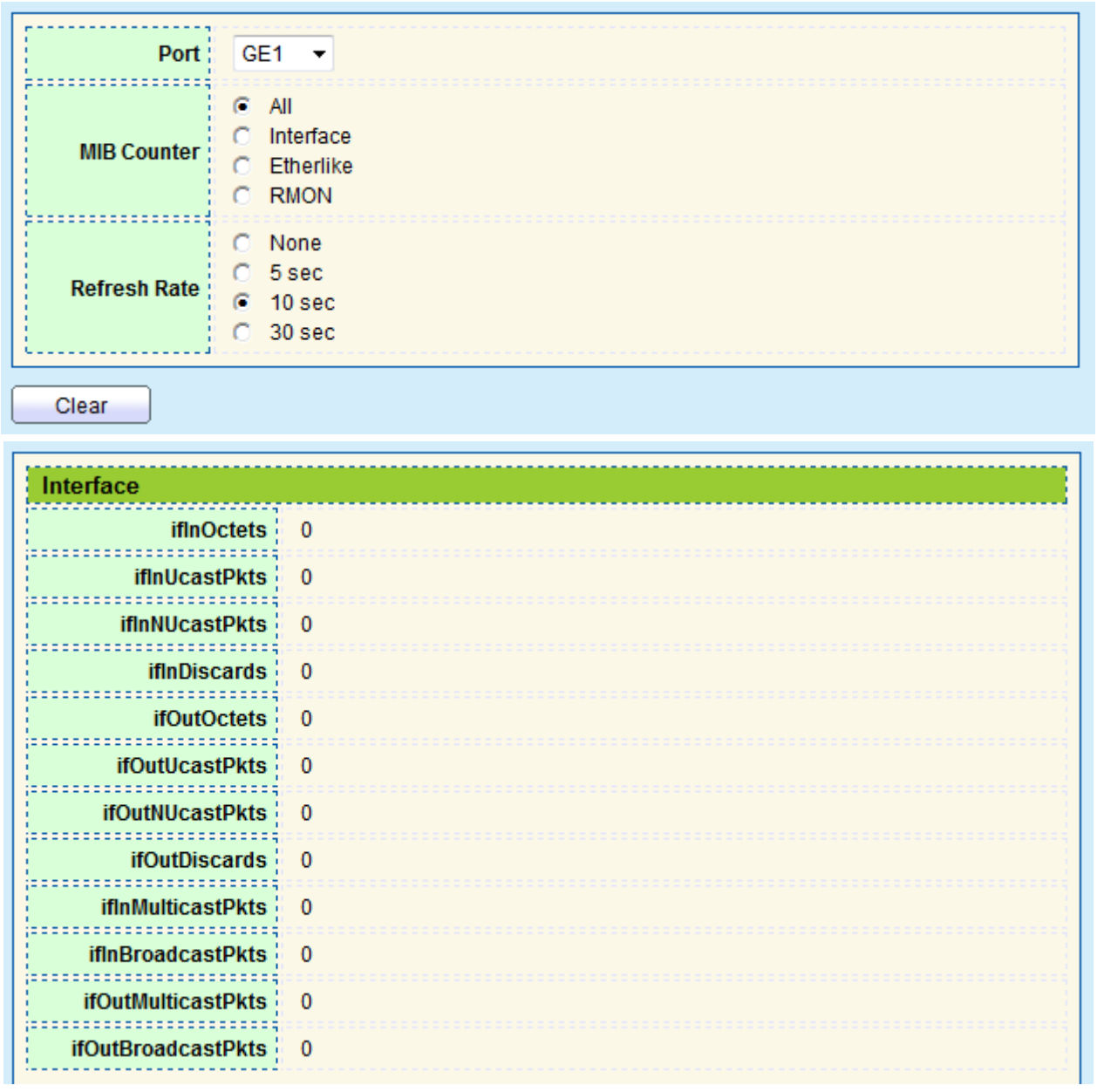
The severity for the logging message.

■ **Description:**

The description of logging message.

4.4.3. Port Statistics

On this page user can get standard counters on network traffic from the interfaces, Ethernet-like and RMON MIB. 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.



Etherlike	
dot3StatsAlignmentErrors	0
dot3StatsFCSErrors	0
dot3StatsSingleCollisionFrames	0
dot3StatsMultipleCollisionFrames	0
dot3StatsDeferredTransmissions	0
dot3StatsLateCollisions	0
dot3StatsExcessiveCollisions	0
dot3StatsFrameTooLongs	0
dot3StatsSymbolErrors	0
dot3ControlInUnknownOpcodes	0
dot3InPauseFrames	0
dot3OutPauseFrames	0

RMON	
etherStatsDropEvents	0
etherStatsOctets	0
etherStatsPkts	0
etherStatsBroadcastPkts	0
etherStatsMulticastPkts	0
etherStatsCRCAlignErrors	0
etherStatsUnderSizePkts	0
etherStatsOverSizePkts	0
etherStatsFragments	0
etherStatsJabbers	0
etherStatsCollisions	0
etherStatsPkts64Octets	0
etherStatsPkts65to127Octets	0
etherStatsPkts128to255Octets	0
etherStatsPkts256to511Octets	0
etherStatsPkts512to1023Octets	0
etherStatsPkts1024to1518Octets	0

- **Port:**

Select one port to show counter statistics.

- **MIB Counter:**

Select the MIB counter to show different count type.

All : All counters.
Interface : Interface related MIB counters.
Etherlike : Ethernet-like related MIB counters.
RMON : RMON related MIB counters.

- **Refresh Rate:**

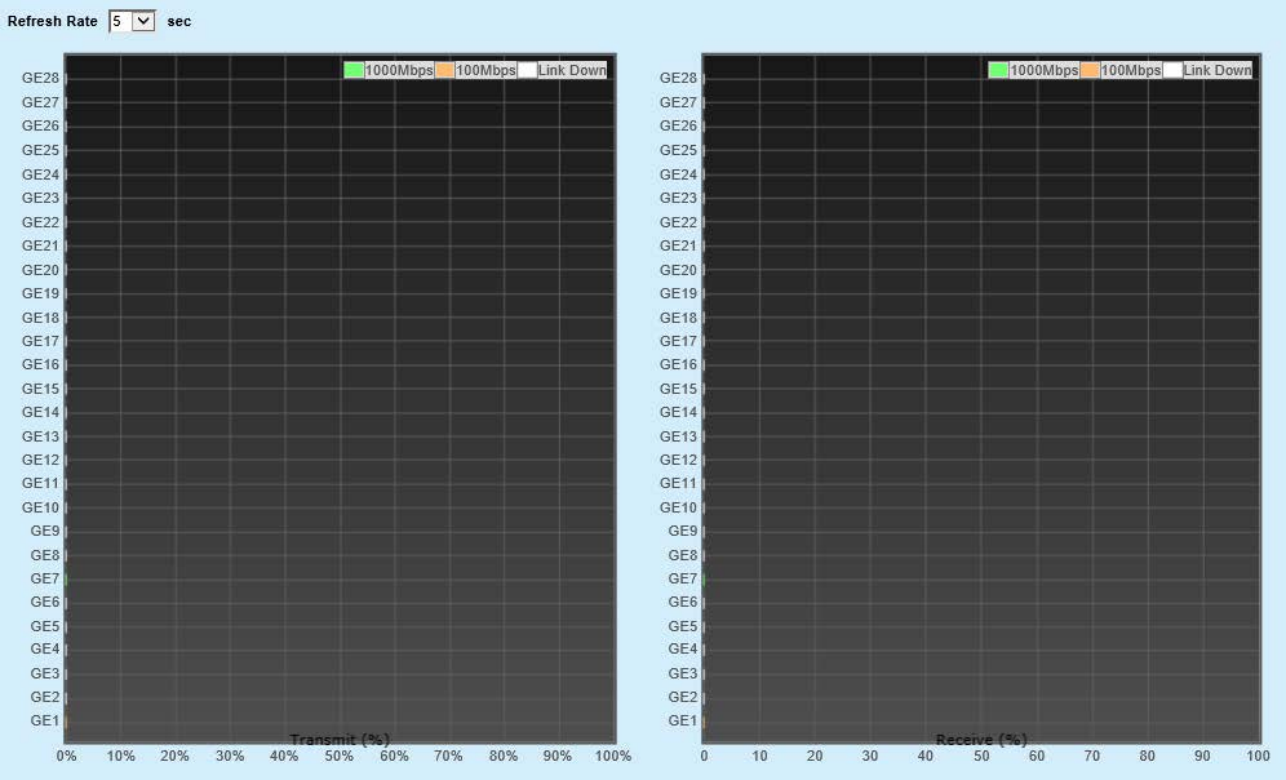
Refresh the web page every period of seconds to get new counter of specified port.

- **Clear:**

Button will clear MIB counter of current selected port.

4.4.4. Bandwidth Utilization

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



- **Refresh Rate:**

Refresh the web page every period of second to get new bandwidth utilization data.

4.4.5. Link Aggregation

Display the Link Aggregation status of web page.

- **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:**

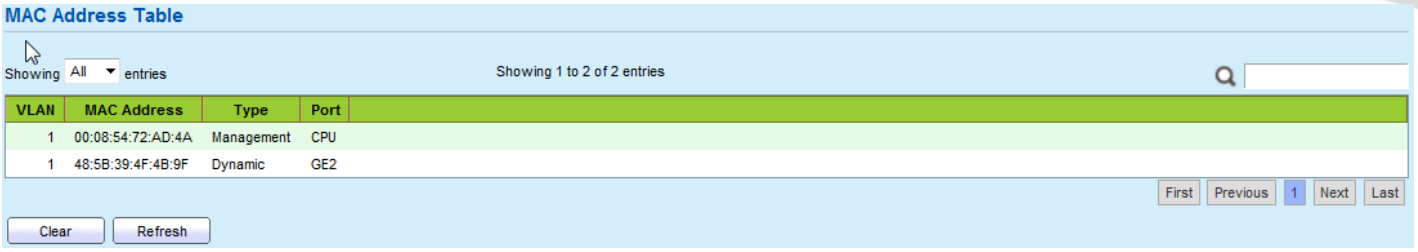
Active member ports of the LAG.

- **Inactive Member:**

Inactive member ports of the LAG.

4.4.6. 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.



- **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

- **Clear:**

Button will clear all dynamic entries.

- **Refresh:**

Button will retrieve latest MAC address entries and show them on page.

4.5 Network

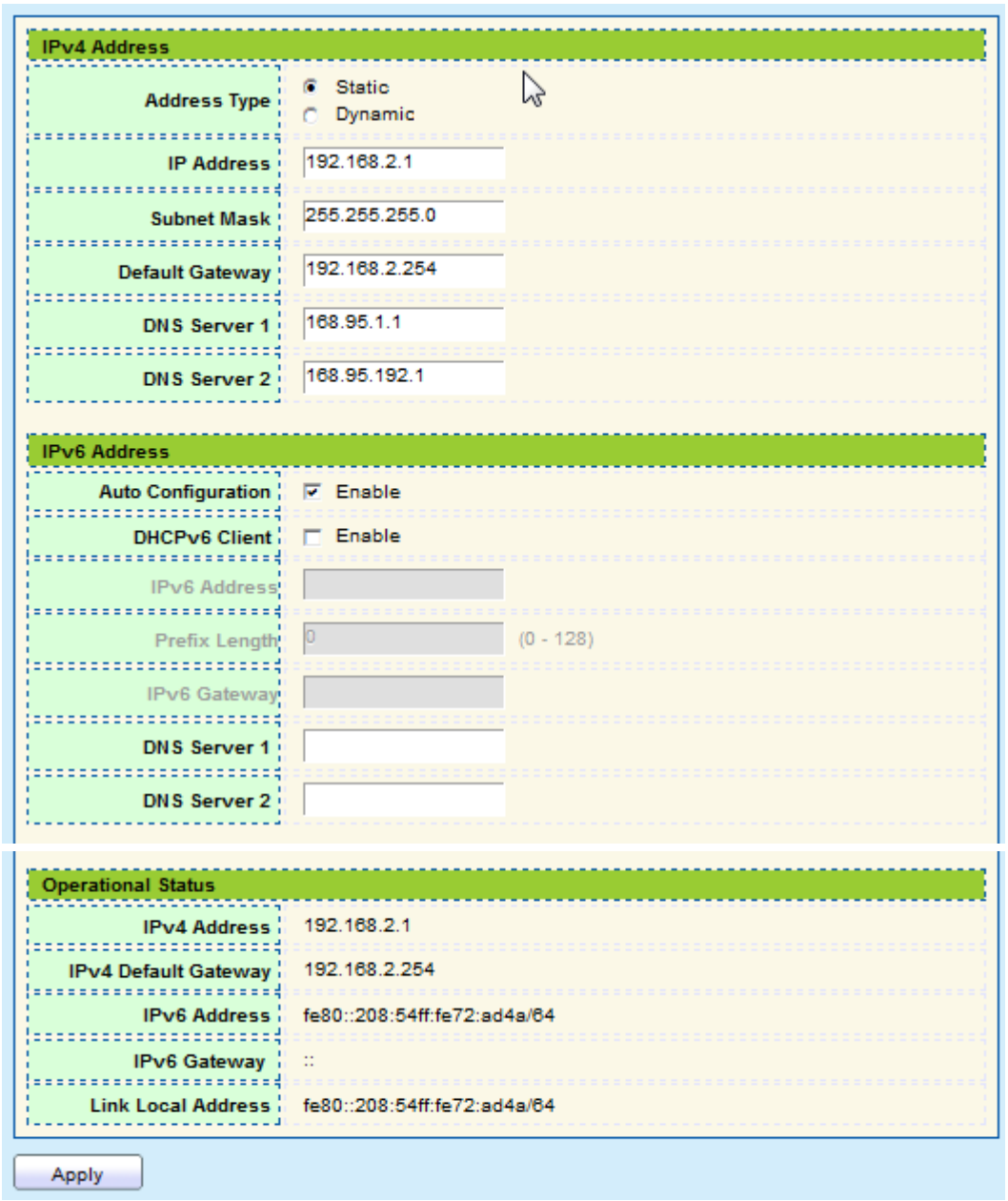
Use the Network pages to configure settings for the switch network interface and how the switch connects to a remote server to get services.
Network includes the following functions:

- IP Address
- System Time

4.5.1. IP Address

Use the IP Setting screen to configure the switch IP address and the default gateway device. The gateway field specifies the IP address of the gateway (next hop) for outgoing traffic.

The switch needs an IP address for it to be managed over the network. The factory default IP address is 192.168.1.1. The subnet mask specifies the network number portion of an IP address. The factory default subnet mask is 255.255.255.0



IPv4 Address Field

- **Address Type:**

Select the address type of IP configuration

Static: Static IP configured by users will be used.

Dynamic: Enable DHCP to obtain IP information from a DHCP server on the network.

- **IP Address:**

Enter the IP address of your switch in dotted decimal notation for example 192.168.1.1. If static mode is enabled, enter IP address in this field.

- **Subnet Mask:**

Enter the IP subnet mask of your switch in dotted decimal notation for example 255.255.255.0. If static mode is enabled, enter subnet mask in this field.

- **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:**

If static mode is enabled, enter primary DNS server address in this field.

- **DNS Server 2:**

If static mode is enabled, enter secondary DNS server address in this field.

IPv6 Address Field

- **Auto Configurayion:**

Select **Enable** or **Disable** the IPv6 auto configuration.

- **DHCPv6 Client:**

DHCPv6 client state.

Enable: Enable DHCPv6 client function.
Disable: Disable DHCPv6 client function.

- **IPv6 Address:**

Specify the IPv6 address, when the IPv6 auto configuration and DHCPv6 client are disabled.

- **IPv6 Prefix:**

Specify the prefix for the IPv6 address, when the IPv6 auto configuration and DHCPv6 client are disabled.

- **DNS Server 1:**

Specify the primary user-defined IPv6 DNS server configuration.

- **DNS Server 2:**

  Specify the secondary user-defined IPv6 DNS server configuration.

Operational Status

- **IPv4 Address:**

The operational IPv4 address of the switch.

- **IPv4 Gateway:**

The operational IPv4 gateway of the switch.

- **IPv6 Address:**

The operational IPv6 address of the switch.

- **IPv6 Gateway:**

The operational IPv6 gateway of the switch.

- **Link Local Address:**

The operational IPv6 link local address for the switch.

4.5.2. 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.

- **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.

SNMP

- **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 non-recurring daylight saving time. This field available when selecting “Non-Recurring” mode.

4.6 Port

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

Port includes the following functions:

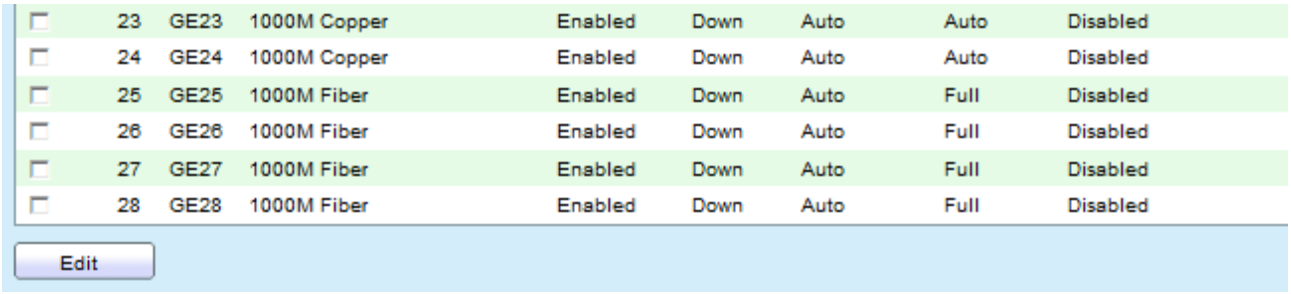
- Port Setting
- Link Aggregation Group
- Link Aggregation Port Setting
- Link Aggregation LACP
- EEE
- Jumbo Frame

4.6.1. 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.

Port Setting Table

Entry	Port	Type	Description	State	Link Status	Speed	Duplex	Flow Control
1	GE1	1000M Copper		Enabled	Down	Auto	Auto	Disabled
2	GE2	1000M Copper		Enabled	Up	Auto (100M)	Auto (Full)	Disabled (Disabled)
3	GE3	1000M Copper		Enabled	Down	Auto	Auto	Disabled
4	GE4	1000M Copper		Enabled	Down	Auto	Auto	Disabled
5	GE5	1000M Copper		Enabled	Down	Auto	Auto	Disabled
6	GE6	1000M Copper		Enabled	Down	Auto	Auto	Disabled
7	GE7	1000M Copper		Enabled	Down	Auto	Auto	Disabled
8	GE8	1000M Copper		Enabled	Down	Auto	Auto	Disabled
9	GE9	1000M Copper		Enabled	Down	Auto	Auto	Disabled
10	GE10	1000M Copper		Enabled	Down	Auto	Auto	Disabled
11	GE11	1000M Copper		Enabled	Down	Auto	Auto	Disabled
12	GE12	1000M Copper		Enabled	Down	Auto	Auto	Disabled
13	GE13	1000M Copper		Enabled	Down	Auto	Auto	Disabled
14	GE14	1000M Copper		Enabled	Down	Auto	Auto	Disabled
15	GE15	1000M Copper		Enabled	Down	Auto	Auto	Disabled
16	GE16	1000M Copper		Enabled	Down	Auto	Auto	Disabled
17	GE17	1000M Copper		Enabled	Down	Auto	Auto	Disabled
18	GE18	1000M Copper		Enabled	Down	Auto	Auto	Disabled
19	GE19	1000M Copper		Enabled	Down	Auto	Auto	Disabled
20	GE20	1000M Copper		Enabled	Down	Auto	Auto	Disabled
21	GE21	1000M Copper		Enabled	Down	Auto	Auto	Disabled
22	GE22	1000M Copper		Enabled	Down	Auto	Auto	Disabled



☐	23	GE23	1000M Copper	Enabled	Down	Auto	Auto	Disabled
☐	24	GE24	1000M Copper	Enabled	Down	Auto	Auto	Disabled
☐	25	GE25	1000M Fiber	Enabled	Down	Auto	Full	Disabled
☐	26	GE26	1000M Fiber	Enabled	Down	Auto	Full	Disabled
☐	27	GE27	1000M Fiber	Enabled	Down	Auto	Full	Disabled
☐	28	GE28	1000M Fiber	Enabled	Down	Auto	Full	Disabled

Edit

- **Port:**

Port Name.

- **Type:**

Allows you to Enable/Disable the port. When Enable is selected, the port can forward the packets normally.

- **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.

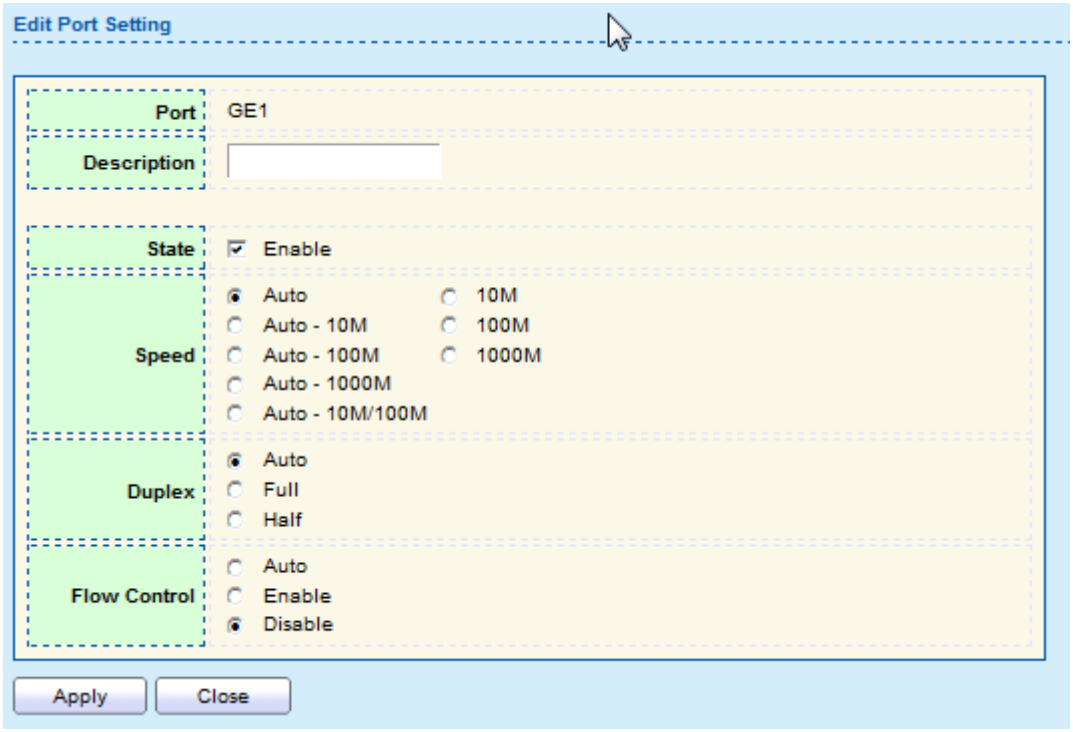
- **Duplex:**

Current port duplex configuration and link duplex status.

- **Flow Control:**

Current port flow control configuration and link flow control status

Edit Port Setting



- **Port:**

Selected Port list.

- **Description:**

Current port flow control configuration and link flow control status

- **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:**

Select the Port speed/duplex capabilities for the ports you need:

Auto: Auto-negotiation speed/ duplex 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-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

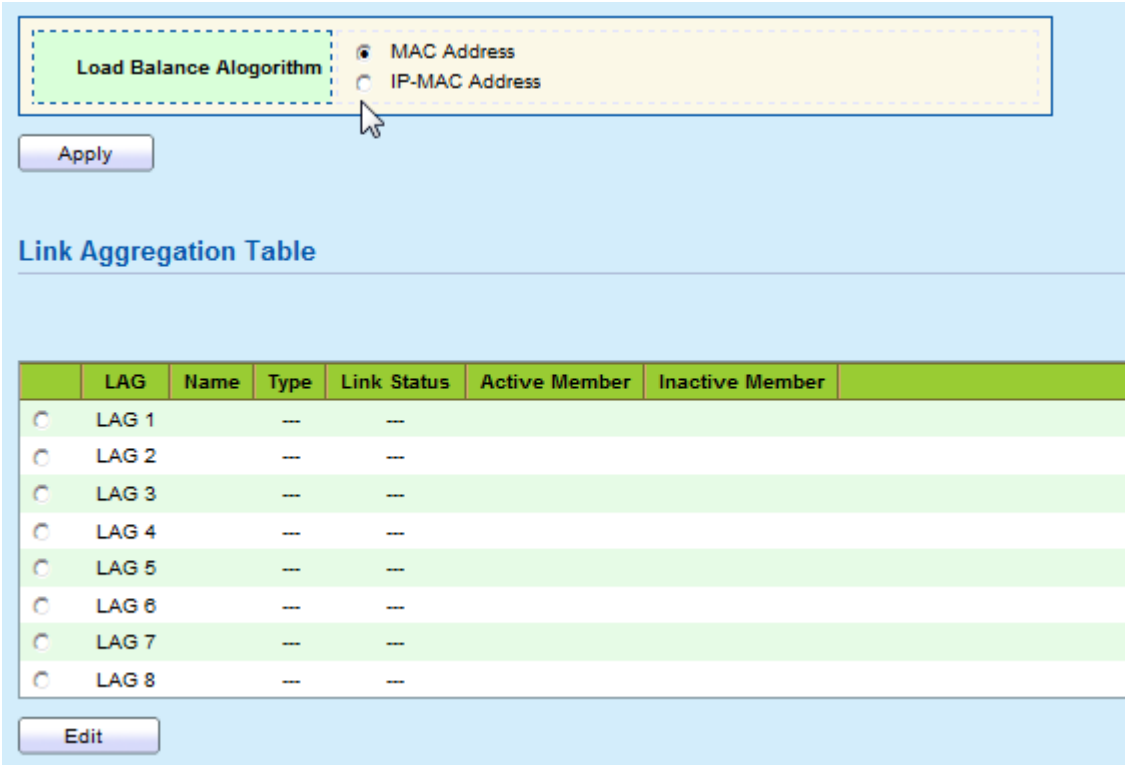
Auto: Auto flow control ability.
Enabled: Enable flow control ability.
Disabled: Disable flow control ability.

4.6.2. Link Aggregation

The Link Aggregation is used to combine a number of ports together to make a single high-bandwidth data path, which can highly extend the bandwidth

4.6.2.1. Group Setting

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



- **Load Balance Algorithm:**

  LAG load balance distribution algorithm.

  Src-dst-mac : Based on MAC address
  Src-dst-mac-ip : Based on MAC address and IP address.

- **LAG:**

LAG (Link Aggregation Group) 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.

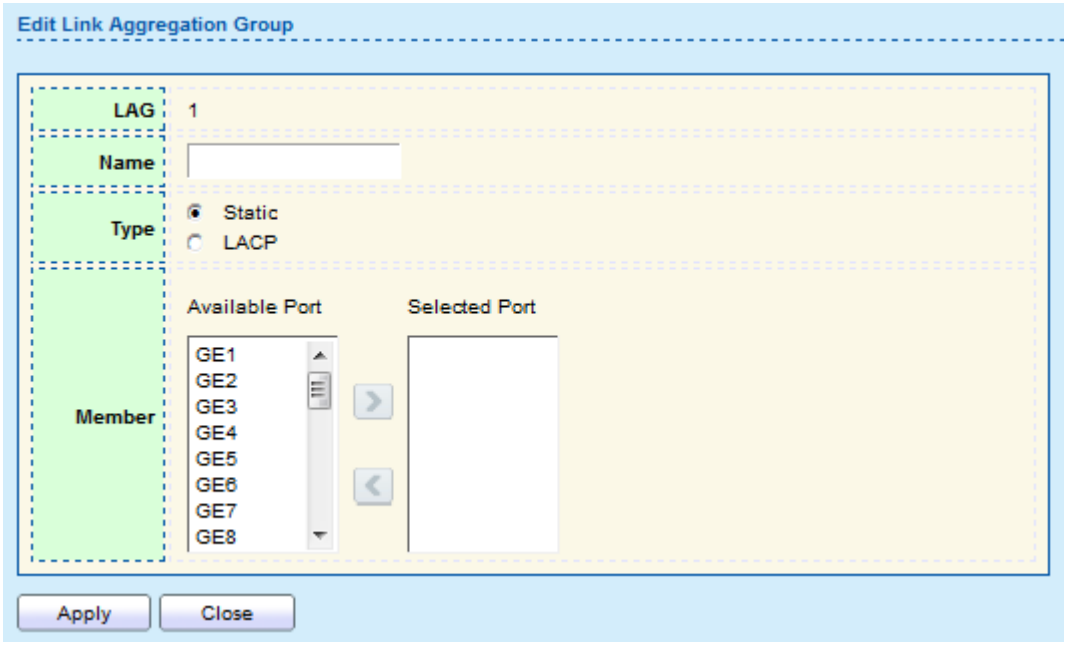
- **Inactive Member:**

Inactive member ports of the LAG.

- **Flow Control:**

Current port flow control configuration and link flow control status.

Select Link Aggregation Table and click “Edit” button to edit LAG setting.
Edit LAG Group Setting



- **LAG:**

Selected LAG Group ID.

- **Name:**

LAG port description.

- **Type:**

The type of the LAG.

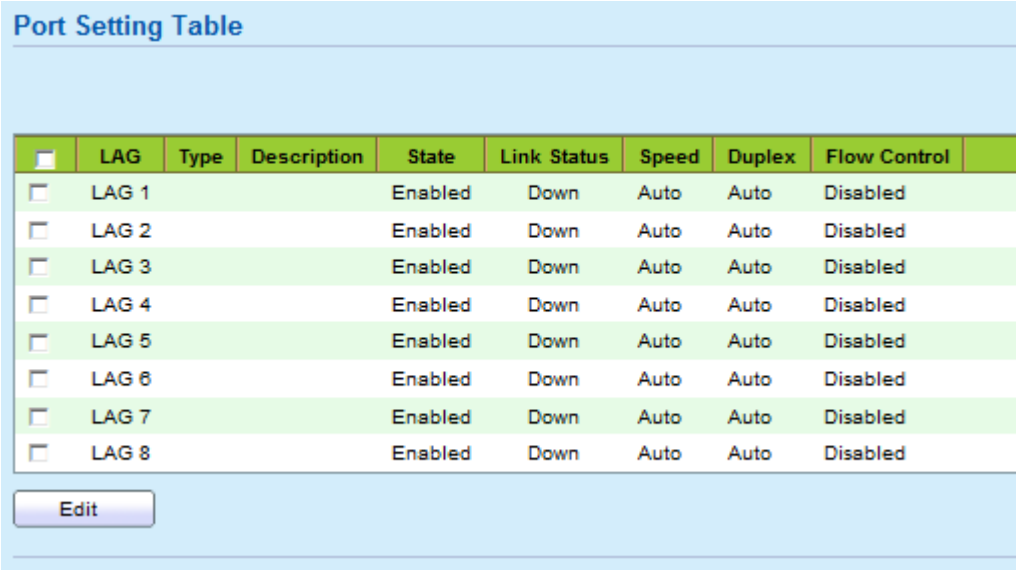
Static : The group of ports assigned to a static LAG are always active members.
LACP : The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports.

- **Member:**

Select available port to be LAG group member port.

4.6.2.2. Port Setting

This page shows LAG port current status and allows user to edit LAG port configurations.



- **LAG:**

LAG Port Name.

- **Type:**

LAG Port media type.

- **Description:**

LAG port description.

- **State:**
  LAG Port admin state.

  Enable : Enable the port.
  Disable : 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.

Select Port Setting Table and click “Edit” button to edit port setting.
Edit LAG Port Setting

- **Port :**

Selected port list.

- **Description:**

Port description.

- **State:**
  Port admin state

  Enable : Enable the port
  Disable : Disable the port.

- **Speed:**

Port speed capabilities.

Auto: Auto-negotiation speed/ duplex with all capabilities.
Auto-10M: Auto speed with 10M ability only.

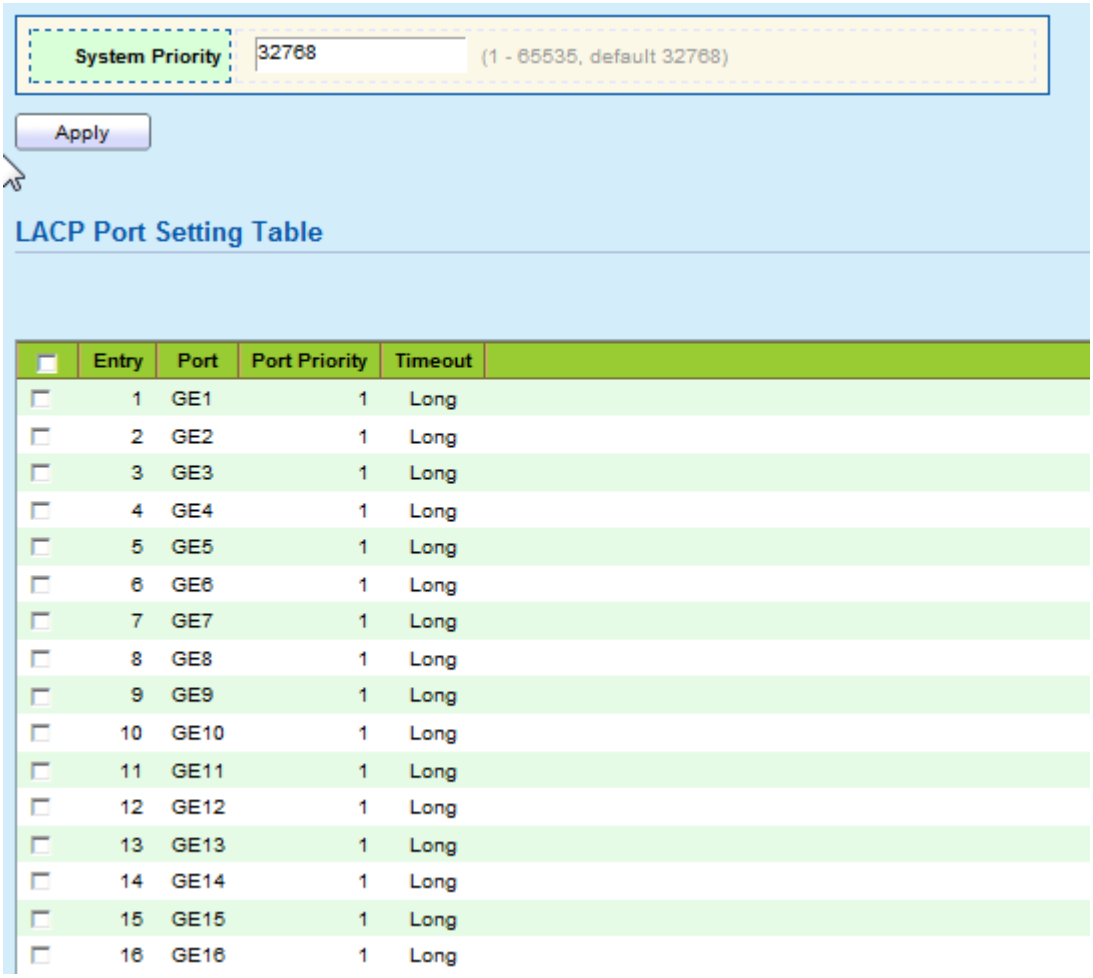
Auto-100M: Auto speed with 100M ability only.
Auto-1000M: Auto speed with 1000M ability only.
Auto-10M/100M: Auto speed with 10M/100M abilities.
10M: Force speed with 10M ability.
100M: Force speed with 100M ability.
1000M: Force speed with 1000M ability

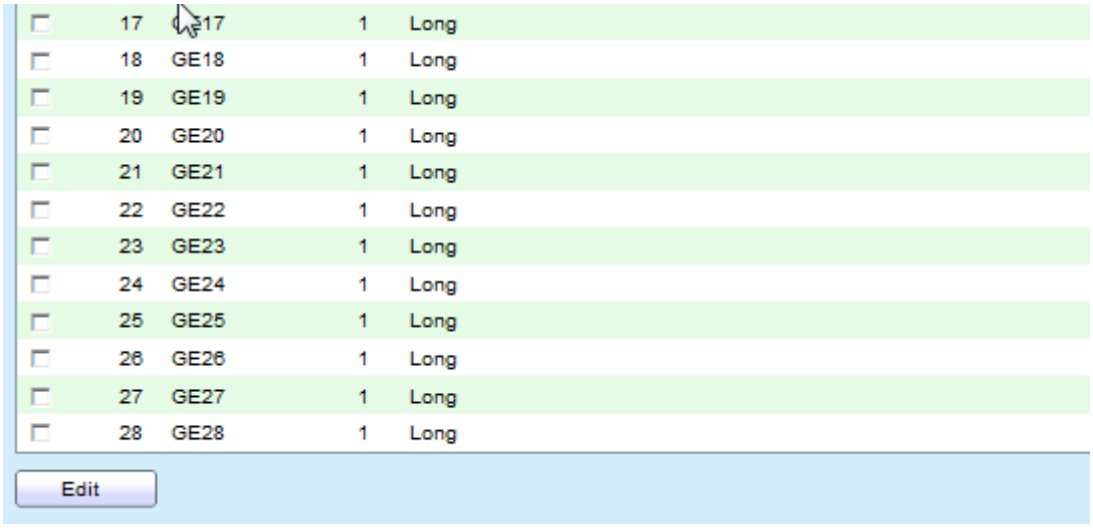
■ **Flow Control:**
Port flow control.

Auto: Auto flow control by negotiation.
Enabled: Enable flow control ability.
Disabled: Disable flow control ability.

4.6.2.3. LACP

This page allow user to configure LACP global and port configurations.





- **System Priority:**

Configure the system priority of LACP. This decides the system priority field in LACP PDU.

- **Port:**

Port Name.

- **Port Priority:**

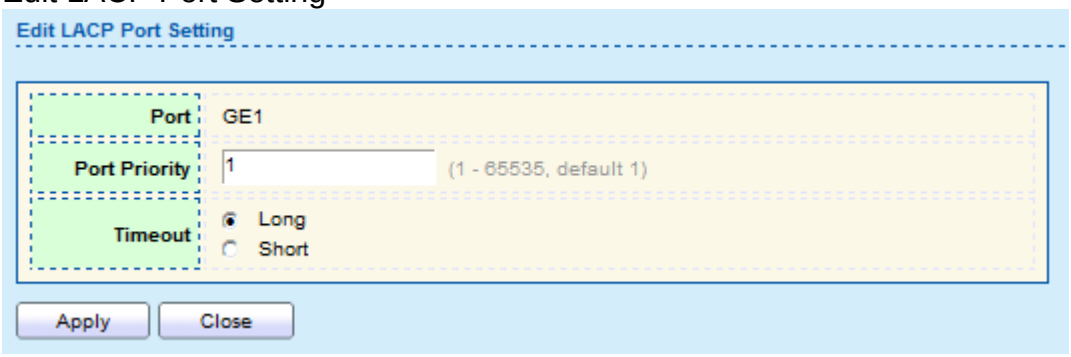
LACP priority value of the port.

- **Time Out:**

The periodic transmissions type of LACP PDUs.

Long : Transmit LACP PDU with slow periodic (30s).
Short : Transmit LACP PDU with fast periodic (1s).

Select ports and click “Edit” button to edit port configuration.
Edit LACP Port Setting



- **Port:**

Selected port list.

- **Port Priority:**
  Enter the LACP priority value of the port.

- **Time Out:**

The periodic transmissions type of LACP PDUs.

Long : Transmit LACP PDU with slow periodic (30s).
Short : Transmit LACP PDU with fast periodic (1s).

4.6.3. EEE

This page allows user to enable or disable EEE (Energy Efficient Ethernet) function.

- **Port:**
  Enter the LACP priority value of the port.

■ **State:**

Port EEE admin state.

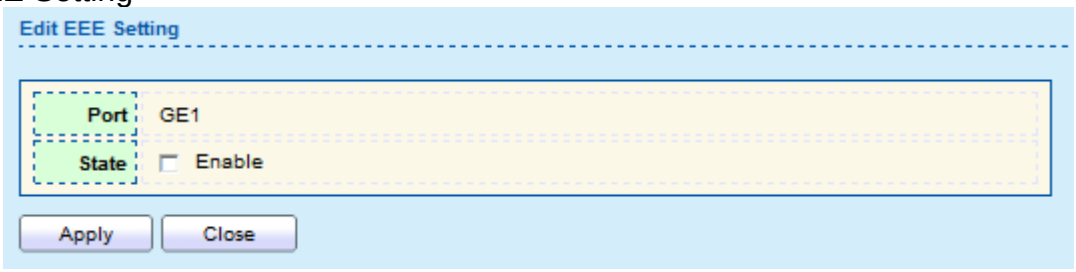
Enable : EEE is enabled
Disable : EEE is disabled.

■ **Operational Status:**

Port EEE operational status.

Enable : EEE is operating
Disable : EEE is no operating

Select EEE and click “Edit” button to edit EEE configuration.
Edit EEE Setting



■ **Port:**

Selected port list.

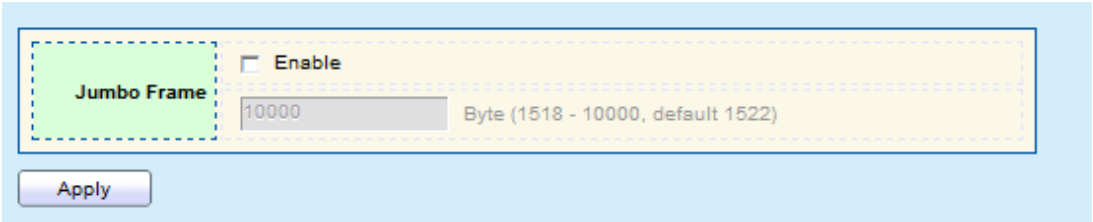
■ **State:**

Port EEE admin state.

Enable : Enable EEE
Disable : Disabled EEE.

4.6.4. Jumbo Frame

This page allows user to configure switch jumbo frame size.



■ **Jumbo Frame:**

Enable or Disable jumbo frame.
When jumbo frame is enabled, switch max frame size is allowed to configure. (from 1518 to 10000).
When jumbo frame is disabled, default frame size 1522 will be used.

4.7 VLAN

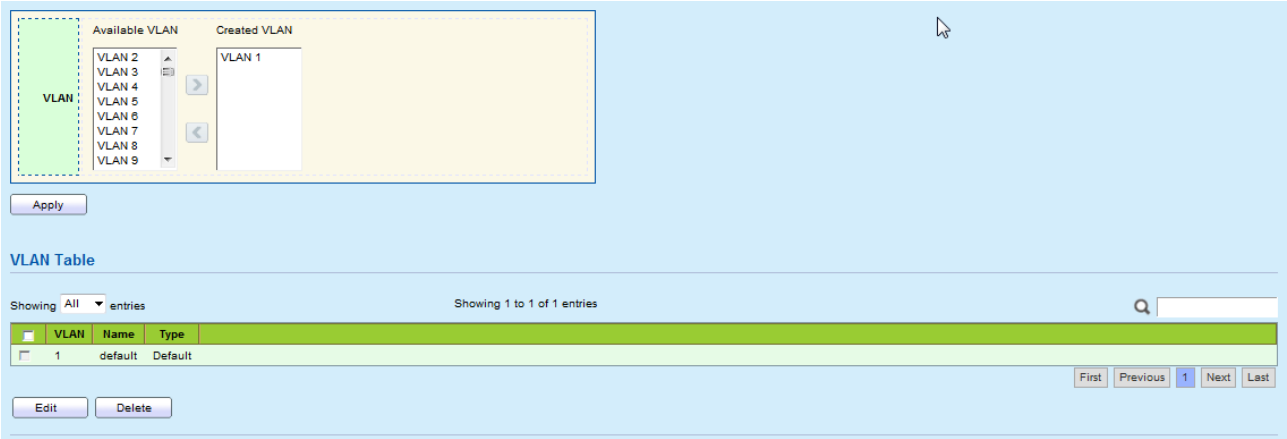
A virtual local area network (VLAN) is a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location. A VLAN has the same attributes as a physical local area network (LAN), but it allows for end stations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

4.7.1. VLAN

Use the VLAN pages to configure settings of VLAN and all VLAN-related protocol.

4.7.1.1. 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.



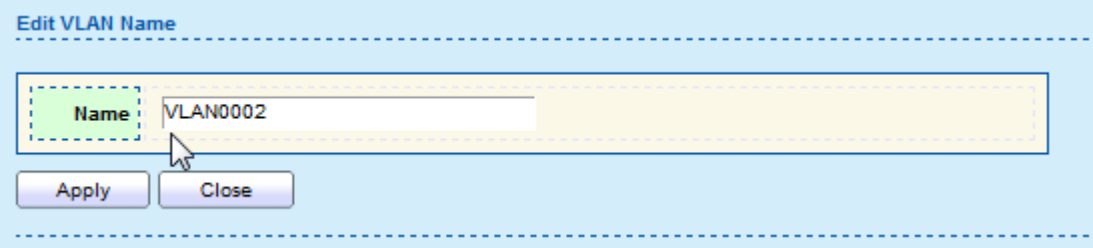
- **Available VLAN**

  VLAN has not created yet.
  Select available VLANs from left box then move to right box to add.

- **Create VLAN**

VLAN had been created.
Select created VLANs from right box then move to left box to delete.

Click “Edit” button to edit VLAN name

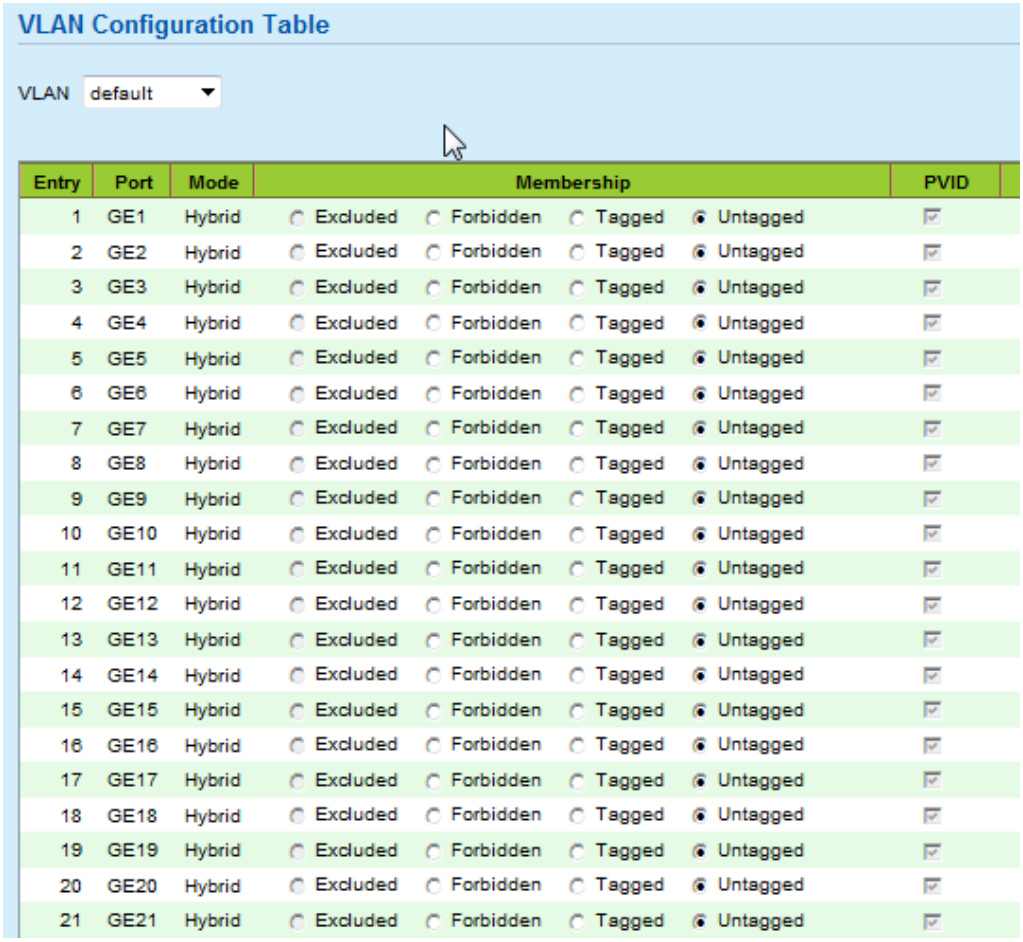


■ **Name**

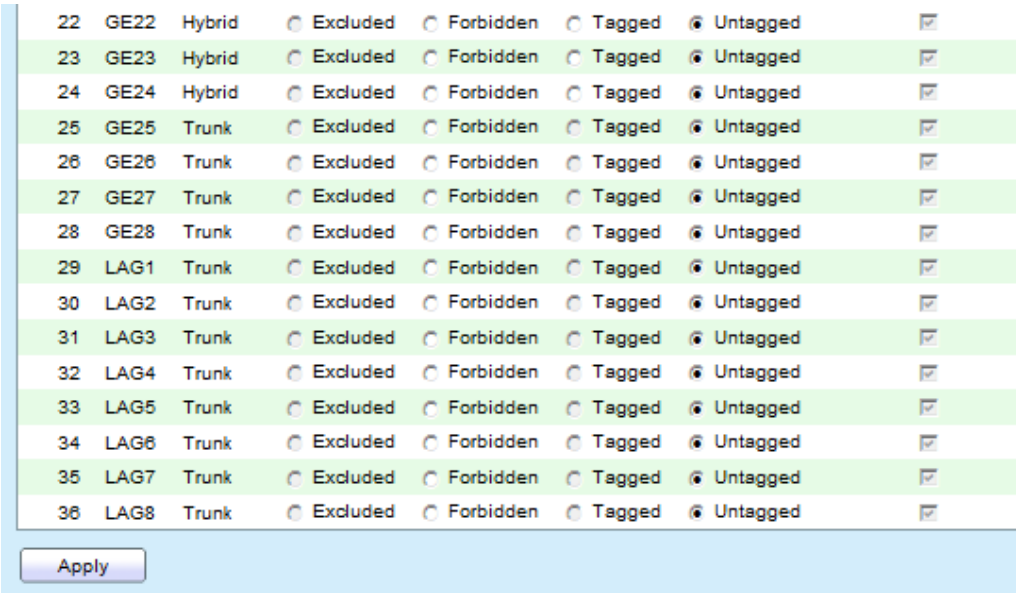
Input VLAN name.

4.7.1.2. VLAN Configuration

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



Entry	Port	Mode	Membership	PVID
1	GE1	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
2	GE2	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
3	GE3	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
4	GE4	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
5	GE5	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
6	GE6	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
7	GE7	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
8	GE8	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
9	GE9	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
10	GE10	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
11	GE11	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
12	GE12	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
13	GE13	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
14	GE14	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
15	GE15	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
16	GE16	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
17	GE17	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
18	GE18	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
19	GE19	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
20	GE20	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑
21	GE21	Hybrid	○ Excluded ○ Forbidden ○ Tagged ◉ Untagged	☑



- **VLAN**

VLAN had been created.

Select created VLANs from right box then move to left box to delete.

- **Port**

  Display the interface of port entry.

- **Mode**

  Display the interface VLAN mode of port.

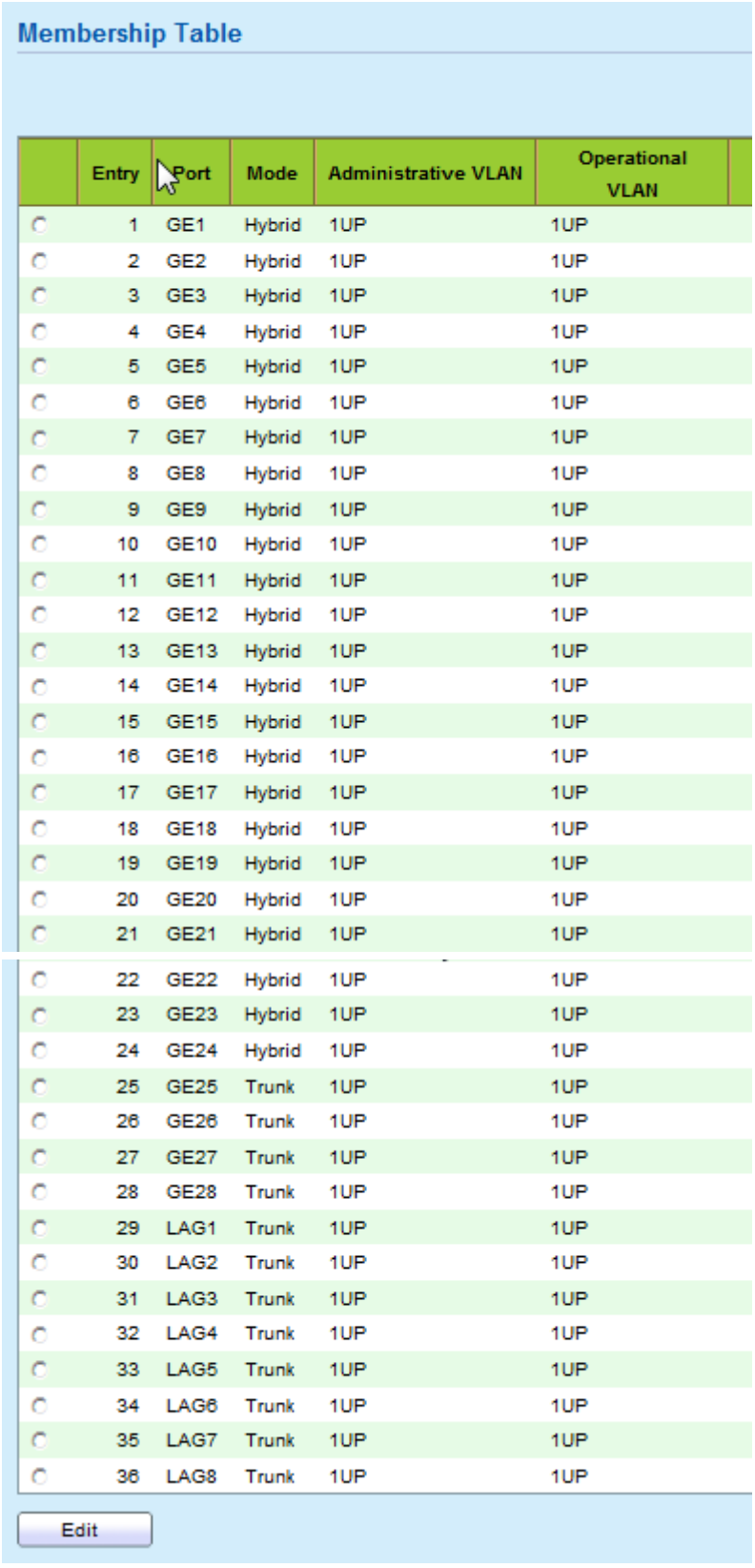
- **Membership**

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.

4.7.1.3. Membership

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



- **Port**

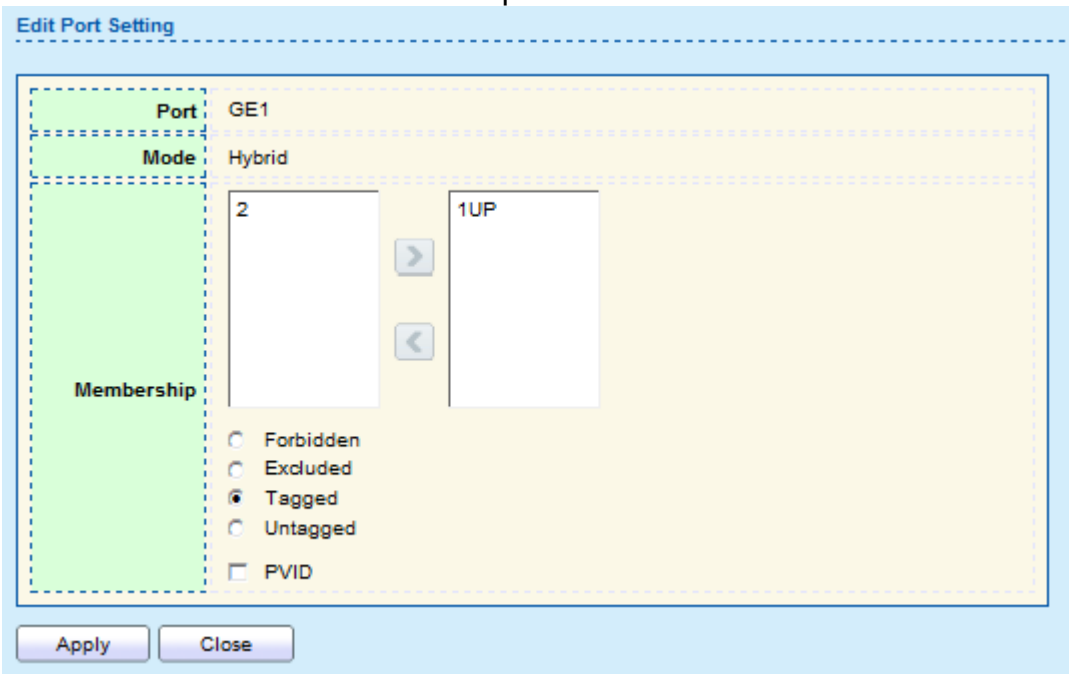
  Display the interface of port entry.

- **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 edit VLAN membership



- **Port**
  Display the interface of port entry.

- **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.

Forbidden : Set VLAN as forbidden VLAN.
Excluded : Set 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.

4.7.1.4. Port Setting

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

Port Setting Table

Entry	Port	Mode	PVID	Accept Frame Type	Ingress Filtering
1	GE1	Hybrid	1	All	Enabled
2	GE2	Hybrid	1	All	Enabled
3	GE3	Hybrid	1	All	Enabled
4	GE4	Hybrid	1	All	Enabled
5	GE5	Hybrid	1	All	Enabled
6	GE6	Hybrid	1	All	Enabled
7	GE7	Hybrid	1	All	Enabled
8	GE8	Hybrid	1	All	Enabled
9	GE9	Hybrid	1	All	Enabled
10	GE10	Hybrid	1	All	Enabled
11	GE11	Hybrid	1	All	Enabled
12	GE12	Hybrid	1	All	Enabled
13	GE13	Hybrid	1	All	Enabled
14	GE14	Hybrid	1	All	Enabled
15	GE15	Hybrid	1	All	Enabled
16	GE16	Hybrid	1	All	Enabled
17	GE17	Hybrid	1	All	Enabled
18	GE18	Hybrid	1	All	Enabled
19	GE19	Hybrid	1	All	Enabled
20	GE20	Hybrid	1	All	Enabled
21	GE21	Hybrid	1	All	Enabled
22	GE22	Hybrid	1	All	Enabled
24	GE24	Hybrid	1	All	Enabled
25	GE25	Trunk	1	All	Enabled
26	GE26	Trunk	1	All	Enabled
27	GE27	Trunk	1	All	Enabled
28	GE28	Trunk	1	All	Enabled
29	LAG1	Trunk	1	All	Enabled
30	LAG2	Trunk	1	All	Enabled
31	LAG3	Trunk	1	All	Enabled
32	LAG4	Trunk	1	All	Enabled
33	LAG5	Trunk	1	All	Enabled
34	LAG6	Trunk	1	All	Enabled
35	LAG7	Trunk	1	All	Enabled
36	LAG8	Trunk	1	All	Enabled

Edit

- **Port**

Display the interface.

- **Mode**

Display the VLAN mode of port.

- **PVID**

Display the Port-based VLAN ID of port.

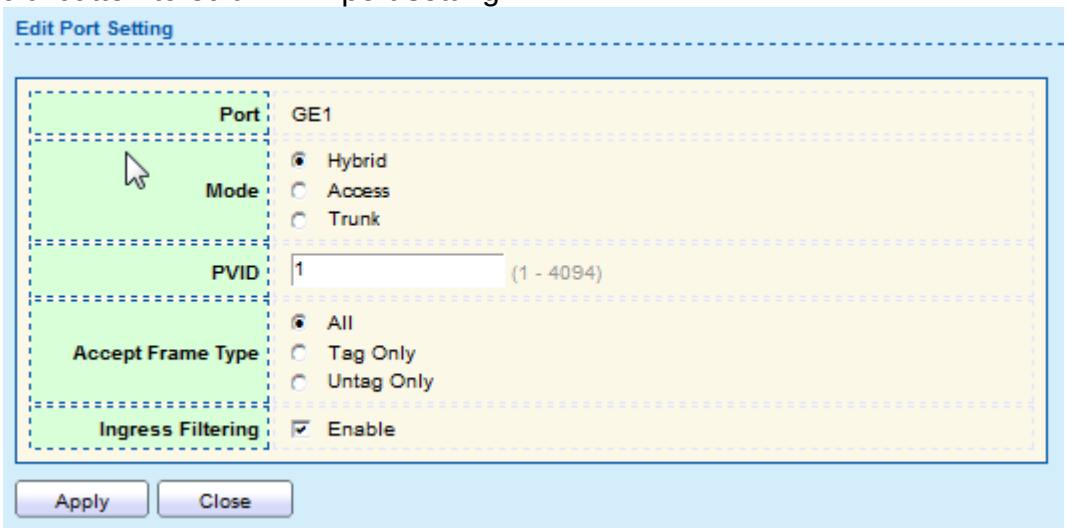
- **AcceptFrame Type**

Display accepted frame type of port.

- **Ingress Filtering**

Display ingress filter status of port.

Click “Edit” button to edit VLAN port setting



- **Port**

Display the interface of port entry.

- **Mode**

Select the VLAN mode of the interface.

Hybrid : Support all functions as defined in IEEE802.1Q 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.

- **PVID**

Specify the port-based VLAN ID (1~4094). It's only available with hybrid and Trunk mode.

- **Accept Frame Type**

Specify the acceptable-frame-type of the specified interfaces. It's only available with Hybrid mode.

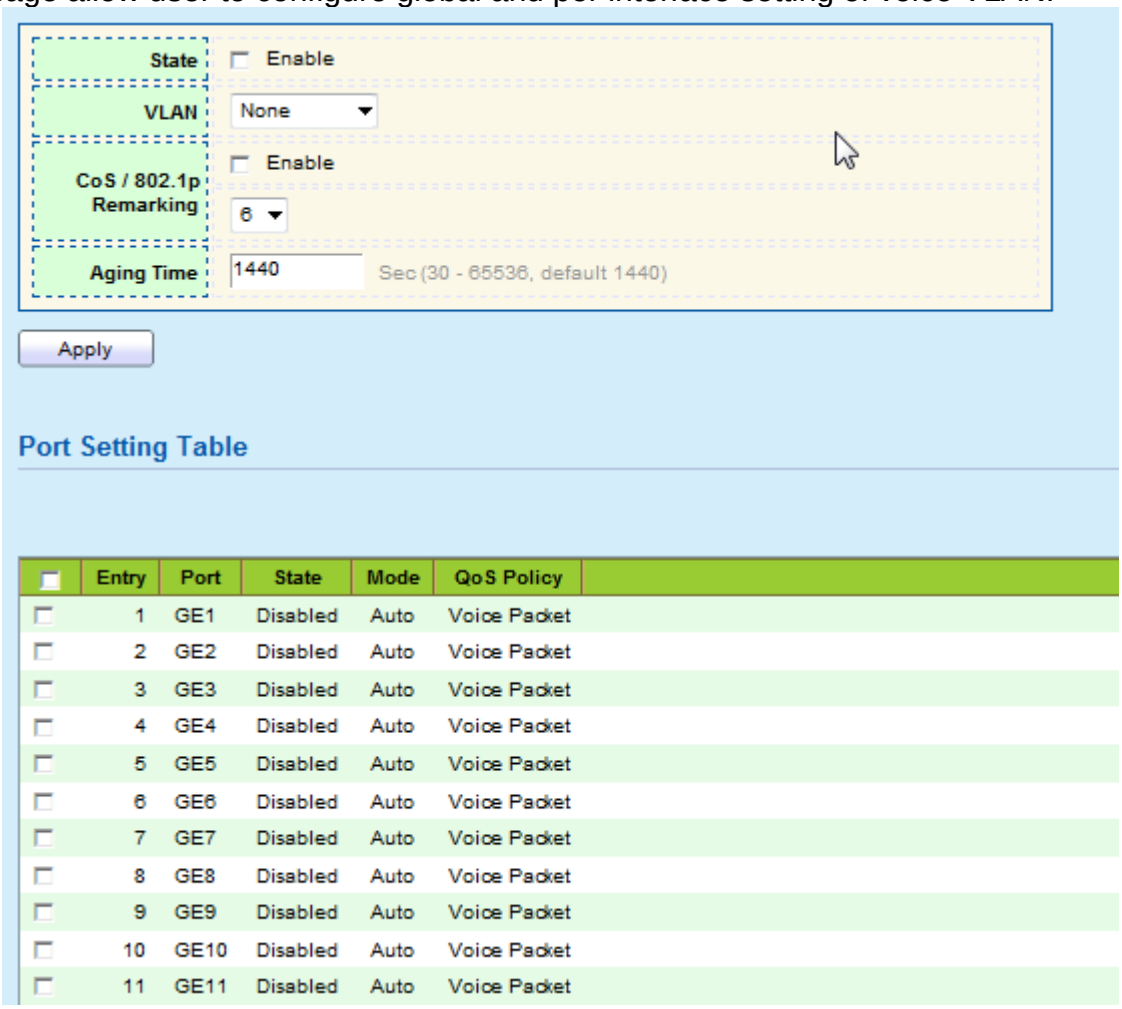
- **Ingress Filtering**

Specify the status of ingress filtering. It's only available with Hybrid mode.

4.7.2. Voice VLAN

4.7.2.1. Property

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



☐	12	GE12	Disabled	Auto	Voice Packet
☐	13	GE13	Disabled	Auto	Voice Packet
☐	14	GE14	Disabled	Auto	Voice Packet
☐	15	GE15	Disabled	Auto	Voice Packet
☐	16	GE16	Disabled	Auto	Voice Packet
☐	17	GE17	Disabled	Auto	Voice Packet
☐	18	GE18	Disabled	Auto	Voice Packet
☐	19	GE19	Disabled	Auto	Voice Packet
☐	20	GE20	Disabled	Auto	Voice Packet
☐	21	GE21	Disabled	Auto	Voice Packet
☐	22	GE22	Disabled	Auto	Voice Packet
☐	23	GE23	Disabled	Auto	Voice Packet
☐	24	GE24	Disabled	Auto	Voice Packet
☐	25	GE25	Disabled	Auto	Voice Packet
☐	26	GE26	Disabled	Auto	Voice Packet
☐	27	GE27	Disabled	Auto	Voice Packet
☐	28	GE28	Disabled	Auto	Voice Packet
☐	29	LAG1	Disabled	Auto	Voice Packet
☐	30	LAG2	Disabled	Auto	Voice Packet
☐	31	LAG3	Disabled	Auto	Voice Packet
☐	32	LAG4	Disabled	Auto	Voice Packet
☐	33	LAG5	Disabled	Auto	Voice Packet
☐	34	LAG6	Disabled	Auto	Voice Packet
☐	35	LAG7	Disabled	Auto	Voice Packet
☐	36	LAG8	Disabled	Auto	Voice Packet

Edit

- **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.

- **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**

Display port entry.

■ **State**

Display enable/disable status of interface.

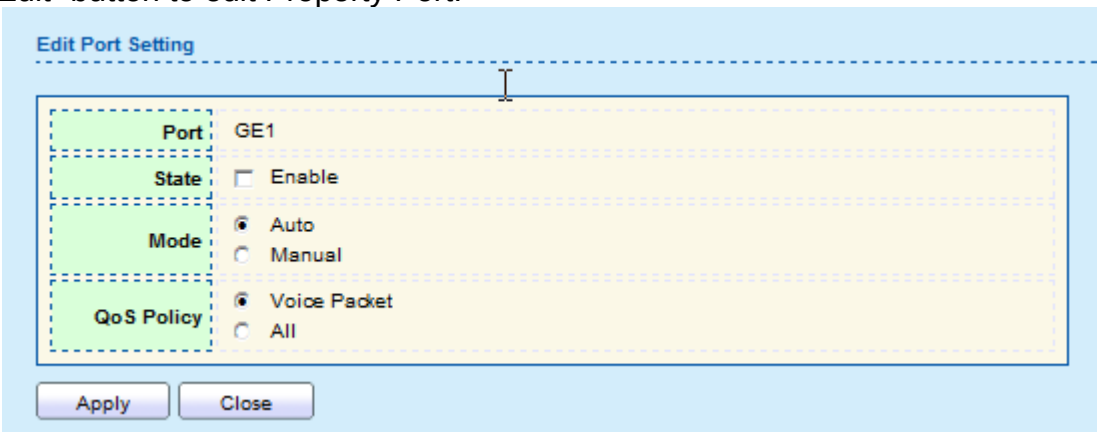
■ **Mode**

Display voice VLAN mode.

■ **QoS Policy**

Display voice VLAN remark will effect which kind of packet.

Click “Edit” button to edit Property Port.



■ **Port**

Display selected port to be edited.

■ **State**

Set checkbox to enable/disable 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.

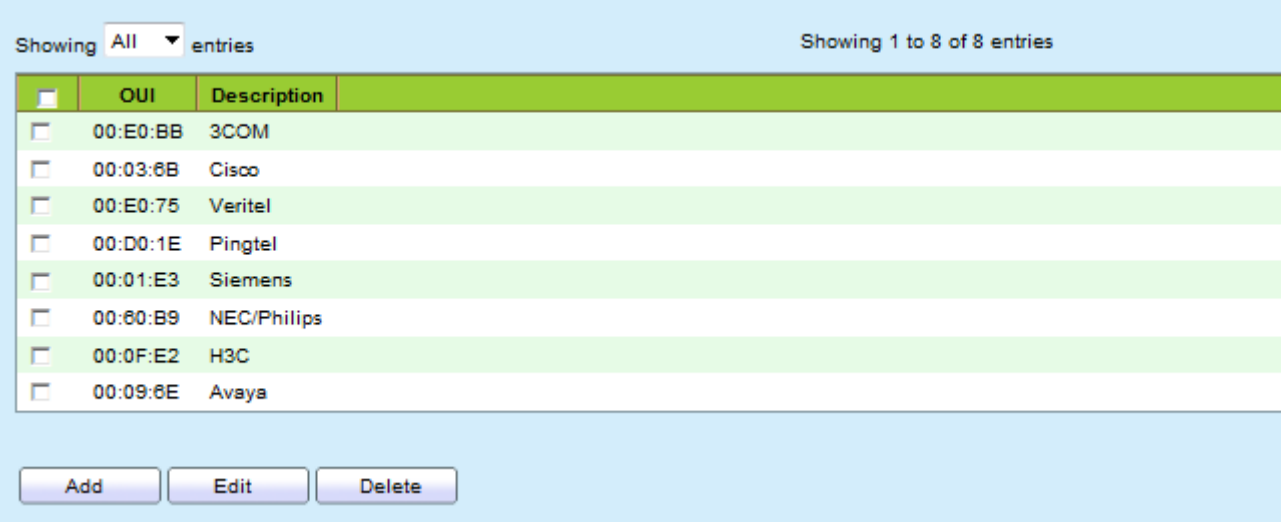
■ **QoS Policy**

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.

4.7.2.2. Voice OUI

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



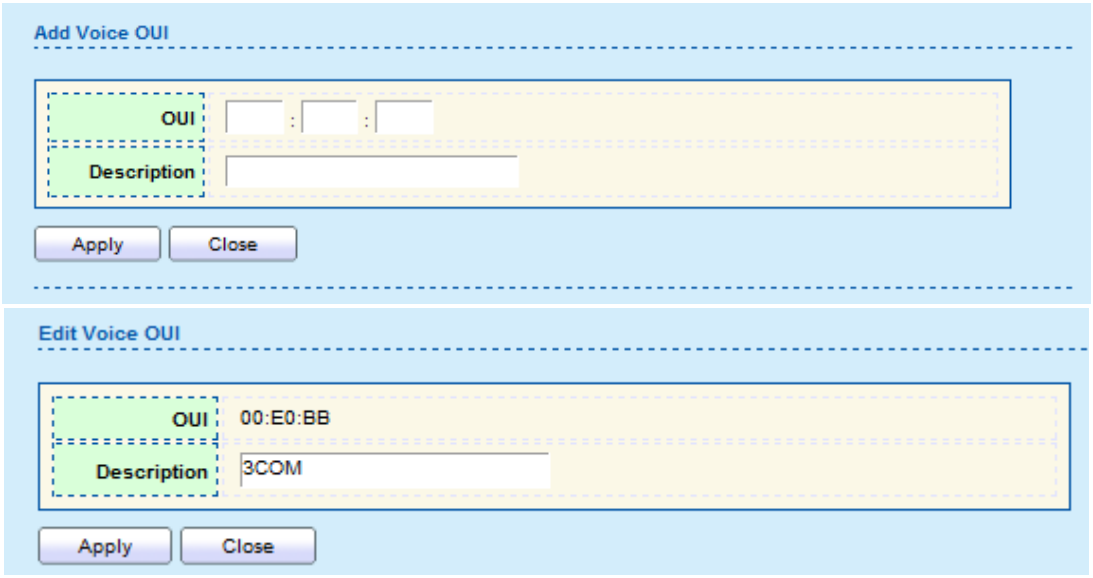
- **OUI**

Display OUI MAC address.

- **Description**

Display description of OUI entry.

Click “Add” or “Edit” buttons to edit Voice OUI.



- **OUI**

Input OUI MAC address, Can’t be edited in edit dialog.

- **Description**

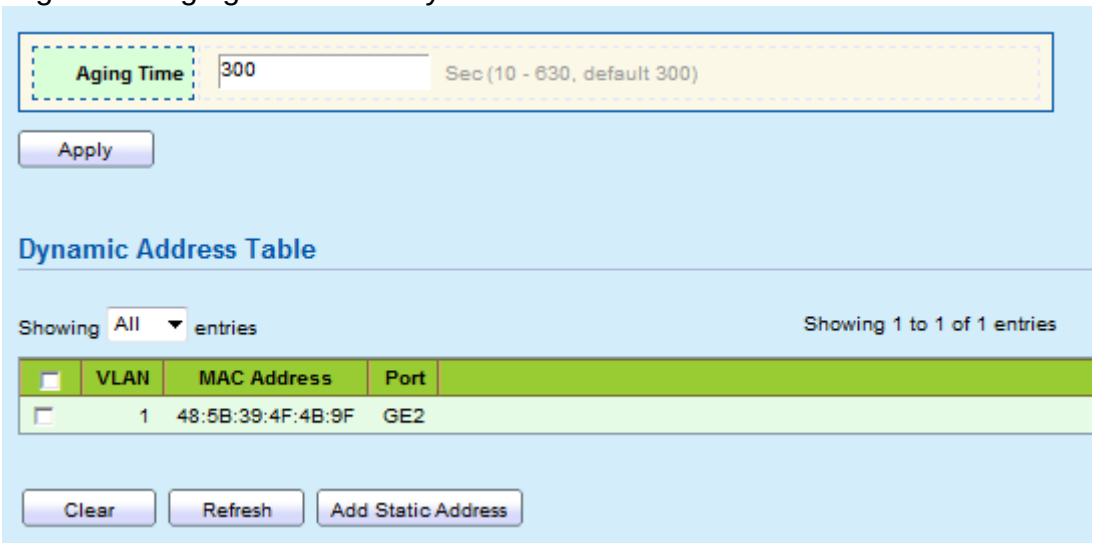
Input description of the specified MAC address to the voice VLAN OUI table.

4.8 MAC Address Table

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

4.8.1. Dynamic Address

Configure the aging time of the dynamic address.

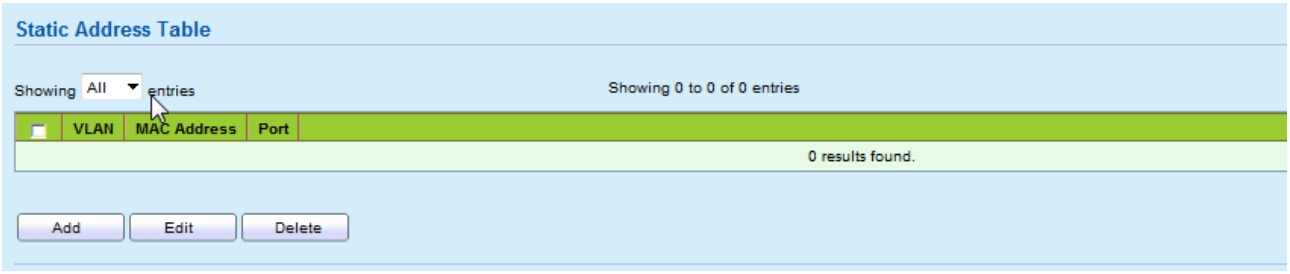


■ **Aging Time**

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.

4.8.2. Static Address

To display the static MAC address.



■ **MAC Address**

The MAC address to which packets will be statically fowarded.

■ **VLAN**

Specify the VLAN to show or clear MAC entries.

■ **Port**

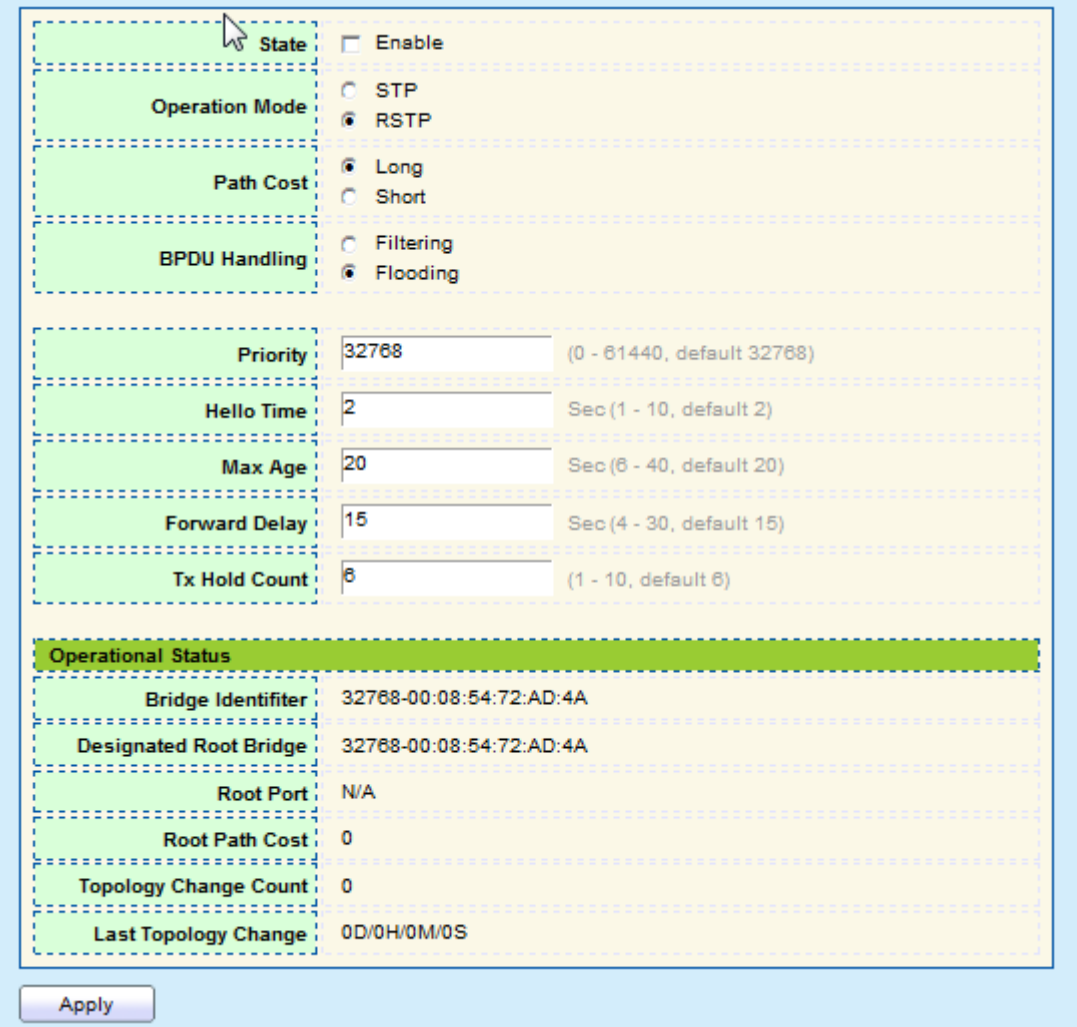
Interface or port number.

4.9 Spanning Tree Protocol (STP)

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

4.9.1. Property

Configure and display STP property configuration.



■ **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.

- **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 bridge 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.

STP operational status

- **Bridge Identifier**

Bridge identifier of the switch.

- **Designated Root Identifier**

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.

4.9.2. Port Setting

Configure and display STP port settings.

Entry	Port	State	Path Cost	Priority	Operational Edge	Operational Point-to-Point	Port Role	Port State	Designated Bridge	Designated Port ID	Designated Cost
1	GE1	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-1	20000
2	GE2	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-2	20000
3	GE3	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-3	20000
4	GE4	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-4	20000
5	GE5	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-5	20000
6	GE6	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-6	20000
7	GE7	Enabled	20000	128	Disabled	Enabled	Disabled	Forwarding	0-00:00:00:00:00:00	128-7	20000
8	GE8	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-8	20000
9	GE9	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-9	20000
10	GE10	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-10	20000
11	GE11	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-11	20000
12	GE12	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-12	20000
13	GE13	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-13	20000
14	GE14	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-14	20000
15	GE15	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-15	20000
16	GE16	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-16	20000
17	GE17	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-17	20000
18	GE18	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-18	20000
19	GE19	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-19	20000
20	GE20	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-20	20000
21	GE21	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-21	20000
22	GE22	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-22	20000
23	GE23	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-23	20000
24	GE24	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-24	20000
25	GE25	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-25	20000
26	GE26	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-26	20000
27	GE27	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-27	20000
28	GE28	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-28	20000
29	LAG1	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-29	20000
30	LAG2	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-30	20000
31	LAG3	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-31	20000
32	LAG4	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-32	20000
33	LAG5	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-33	20000
34	LAG6	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-34	20000
35	LAG7	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-35	20000
36	LAG8	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	0-00:00:00:00:00:00	128-36	20000

Edit | Protocol Migration Check

- **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.

- **Operational Edge**

The operational state on the specified port.

- **Operational Point-to-Point**

The operational edge 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**

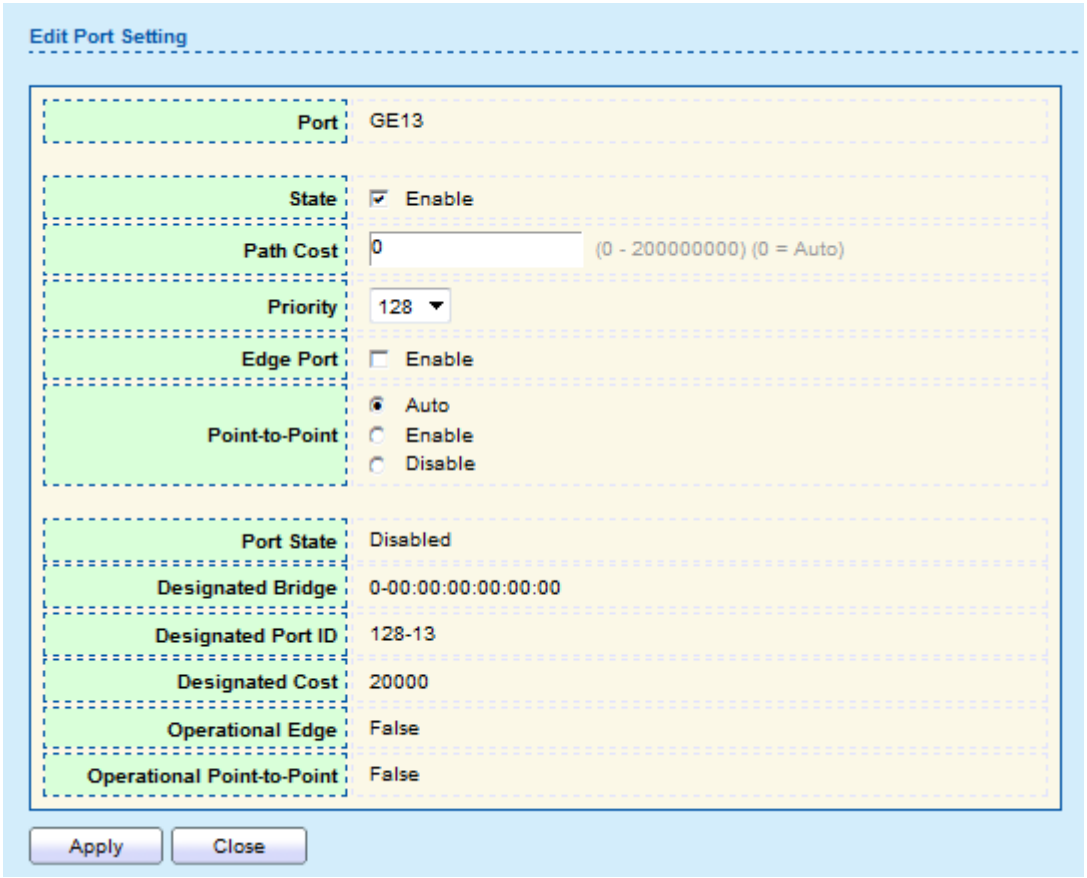
The path cost of the designated port on the switch.

STP port setting buttons

- **Protocol Migration Check**

Restart the Spanning Tree Protocol (STP) migration process (re-negotiate with its neighborhood) on the specific interface.

Edit STP port setting



- **State**

Enable/Disable the STP on the specified port.

- **Path Cost**

Specify the STP path cost on the specified port.

- **Priority**

Specify the STP priority 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.

- **Point-to-Point**

Specify the Point-to-Point port configuration:

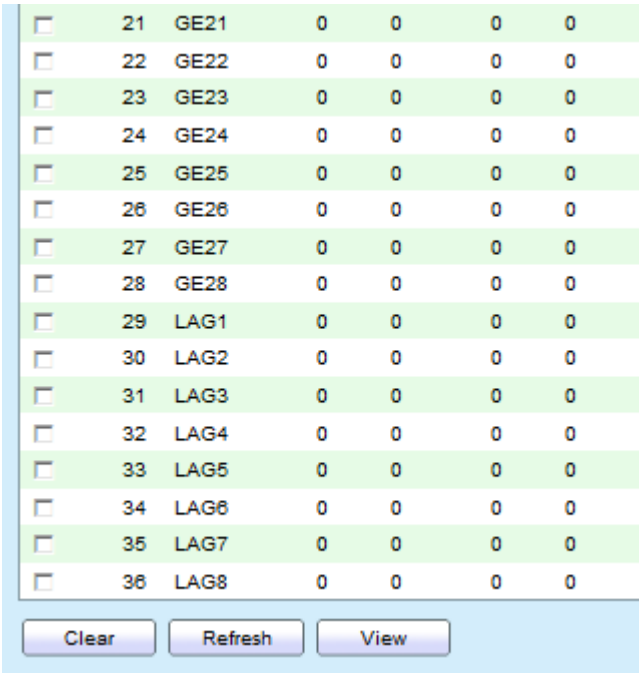
Auto : The state is depended on the duplex setting of the port.
Enable : Force to true state.
Disable : Force to false state.

4.9.3. Statistics

To display STP statistics

Bridge Protocol Data Units (BPDUs) are frames that contain information about the **Spanning tree protocol** (STP). Switches send BPDUs using a unique MAC address from its origin port and a multicast address as destination MAC (01:80:C2:00:00:00, or 01:00:0C:CC:CC:CD for Per VLAN Spanning Tree). For STP algorithms to function, the switches need to share information about themselves and their connections. What they share are bridge protocol data units (BPDUs). BPDUs are sent out as multicast frames to which only other layer 2 switches or bridges are listening. If any loops (multiple possible paths between switches) are found in the network topology, the switches will co-operate to disable a port or ports to ensure that there are no loops; that is, from one device to any other device in the layer 2 network, only one path can be taken.

Entry	Port	Receive BPDU		Transmit BPDU	
		Config	TCN	Config	TCN
1	GE1	0	0	0	0
2	GE2	0	0	0	0
3	GE3	0	0	0	0
4	GE4	0	0	0	0
5	GE5	0	0	0	0
6	GE6	0	0	0	0
7	GE7	0	0	0	0
8	GE8	0	0	0	0
9	GE9	0	0	0	0
10	GE10	0	0	0	0
11	GE11	0	0	0	0
12	GE12	0	0	0	0
13	GE13	0	0	0	0
14	GE14	0	0	0	0
15	GE15	0	0	0	0
16	GE16	0	0	0	0
17	GE17	0	0	0	0
18	GE18	0	0	0	0
19	GE19	0	0	0	0
20	GE20	0	0	0	0



☐	21	GE21	0	0	0	0
☐	22	GE22	0	0	0	0
☐	23	GE23	0	0	0	0
☐	24	GE24	0	0	0	0
☐	25	GE25	0	0	0	0
☐	26	GE26	0	0	0	0
☐	27	GE27	0	0	0	0
☐	28	GE28	0	0	0	0
☐	29	LAG1	0	0	0	0
☐	30	LAG2	0	0	0	0
☐	31	LAG3	0	0	0	0
☐	32	LAG4	0	0	0	0
☐	33	LAG5	0	0	0	0
☐	34	LAG6	0	0	0	0
☐	35	LAG7	0	0	0	0
☐	36	LAG8	0	0	0	0

Clear Refresh View

- **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.

- **Transmit BPDU (Config)**

The counts of the transmitted CONFIG BPDU.

- **Transmit BPDU (TCN)**

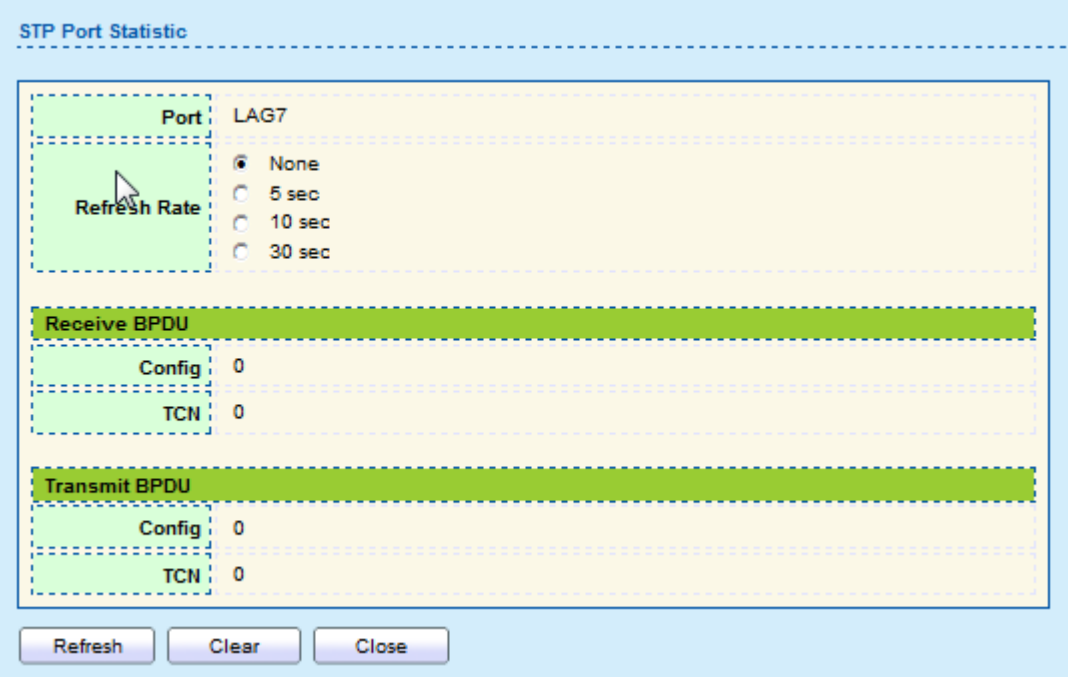
The counts of the transmitted TCN BPDU.

- **Clear**

Clear the statistics for the selected interfaces.

- **View**

Clear the statistics for the selected interfaces.



■ **Clear**

The option to refresh the statistics automatically.

■ **Clear**

Clear the statistics for the selected interfaces.

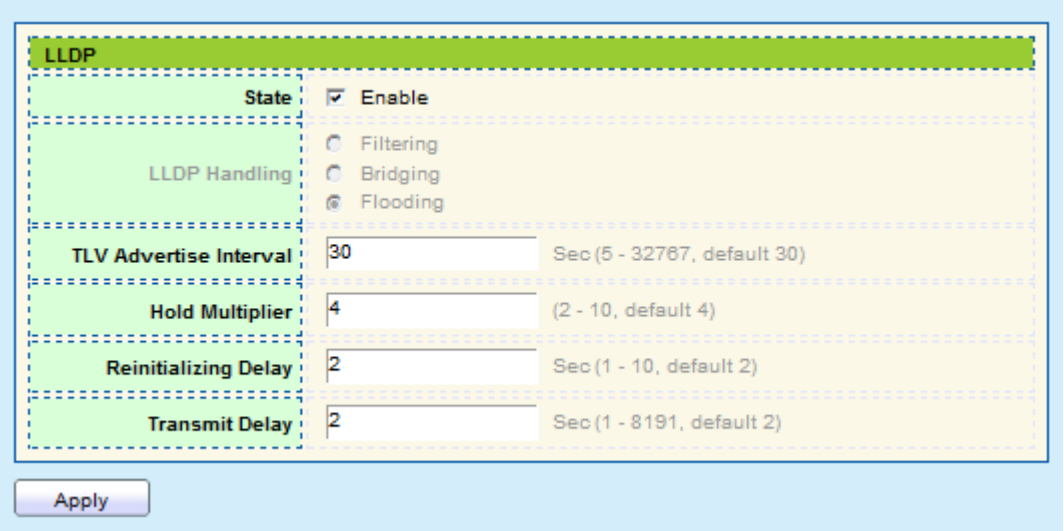
4.10 Discovery

4.10.1. LLDP

The **Link Layer Discovery Protocol** (**LLDP**) is a vendor-neutral link layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on an IEEE 802 local area network, principally wired Ethernet. The 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.

4.10.1.1. Property

To display LLDP Property Setting web page.



- **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.

- **Holdtime Multiplier**

Select the multiplier on the transmit interval to assign to TTL (range 2~10, default=4).

- **Reinitialization Delay**

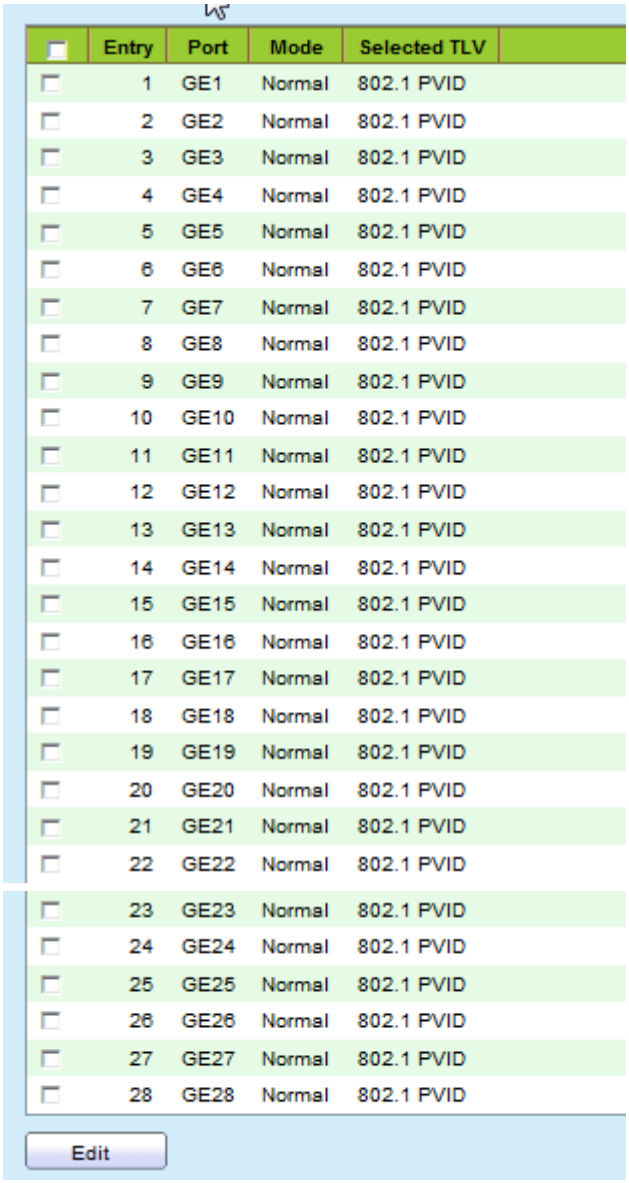
Select the delay before a re-initialization (range 1~10 seconds, default=2).

- **Transmit Delay**

Select the delay after an LLDP frame is sent (range 1~8191 seconds, default=3)

4.10.1.2. Port Setting

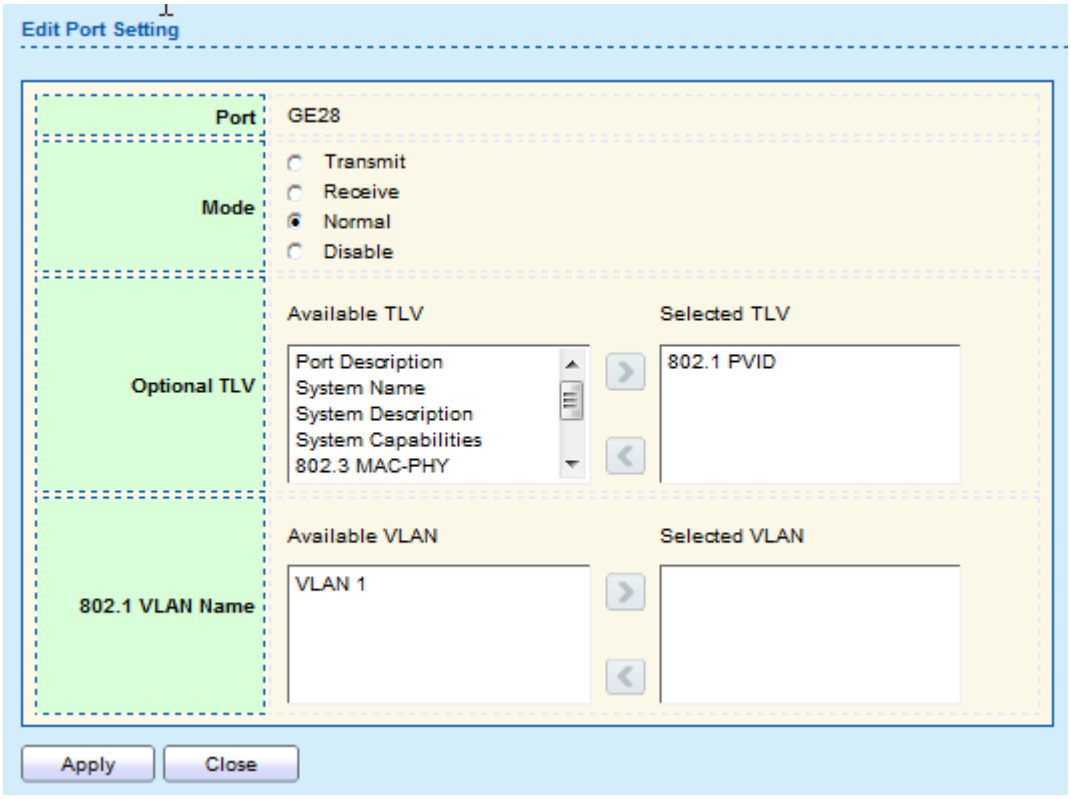
To display LLDP Port Setting.



	Entry	Port	Mode	Selected TLV
	1	GE1	Normal	802.1 PVID
	2	GE2	Normal	802.1 PVID
	3	GE3	Normal	802.1 PVID
	4	GE4	Normal	802.1 PVID
	5	GE5	Normal	802.1 PVID
	6	GE6	Normal	802.1 PVID
	7	GE7	Normal	802.1 PVID
	8	GE8	Normal	802.1 PVID
	9	GE9	Normal	802.1 PVID
	10	GE10	Normal	802.1 PVID
	11	GE11	Normal	802.1 PVID
	12	GE12	Normal	802.1 PVID
	13	GE13	Normal	802.1 PVID
	14	GE14	Normal	802.1 PVID
	15	GE15	Normal	802.1 PVID
	16	GE16	Normal	802.1 PVID
	17	GE17	Normal	802.1 PVID
	18	GE18	Normal	802.1 PVID
	19	GE19	Normal	802.1 PVID
	20	GE20	Normal	802.1 PVID
	21	GE21	Normal	802.1 PVID
	22	GE22	Normal	802.1 PVID
	23	GE23	Normal	802.1 PVID
	24	GE24	Normal	802.1 PVID
	25	GE25	Normal	802.1 PVID
	26	GE26	Normal	802.1 PVID
	27	GE27	Normal	802.1 PVID
	28	GE28	Normal	802.1 PVID

Edit

To Edit LLDP port setting web page, select the port which to set, click button Edit.



■ 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.
Normal : 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).

4.10.1.3. Packet View

To display LLDP Overloading.

	Entry	Port	In-Use (Bytes)	Available (Bytes)	Operational Status
○	1	GE1	29	1459	Not Overloading
○	2	GE2	29	1459	Not Overloading
○	3	GE3	29	1459	Not Overloading
○	4	GE4	29	1459	Not Overloading
○	5	GE5	29	1459	Not Overloading
○	6	GE6	29	1459	Not Overloading
○	7	GE7	29	1459	Not Overloading
○	8	GE8	29	1459	Not Overloading
○	9	GE9	29	1459	Not Overloading
○	10	GE10	30	1458	Not Overloading
○	11	GE11	30	1458	Not Overloading
○	12	GE12	30	1458	Not Overloading
○	13	GE13	30	1458	Not Overloading
○	14	GE14	30	1458	Not Overloading
○	15	GE15	30	1458	Not Overloading
○	16	GE16	30	1458	Not Overloading
○	17	GE17	30	1458	Not Overloading
○	18	GE18	30	1458	Not Overloading
○	19	GE19	30	1458	Not Overloading
○	20	GE20	30	1458	Not Overloading
○	21	GE21	30	1458	Not Overloading
○	22	GE22	30	1458	Not Overloading
○	23	GE23	30	1458	Not Overloading
○	24	GE24	30	1458	Not Overloading
○	25	GE25	30	1458	Not Overloading
○	26	GE26	30	1458	Not Overloading
○	27	GE27	30	1458	Not Overloading
○	28	GE28	30	1458	Not Overloading

Detail

- **Port**

Port Name.

- **In-Use (Bytes)**

Total number of bytes of LLDP information in each packet.

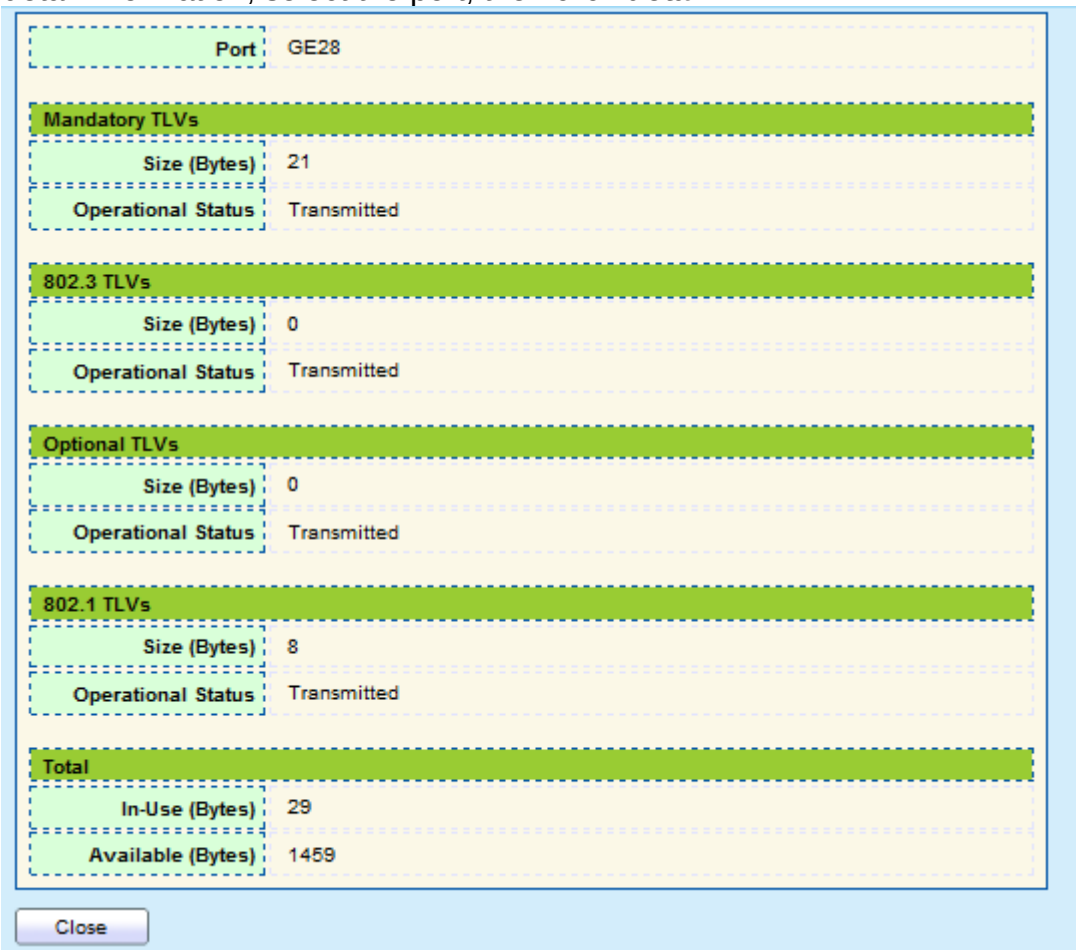
- **Available (Bytes)**

Total number of available bytes left for additional LLDP information in each packet.

■ **Operational Status**

Overloading or not.

If need detail information, select the port, then click **detail**.



■ **Port**

Port name.

■ **Mandatory TLVs**

Total mandatory TLV byte size.
Status is sent or overloading.

■ **802.3TLVs**

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

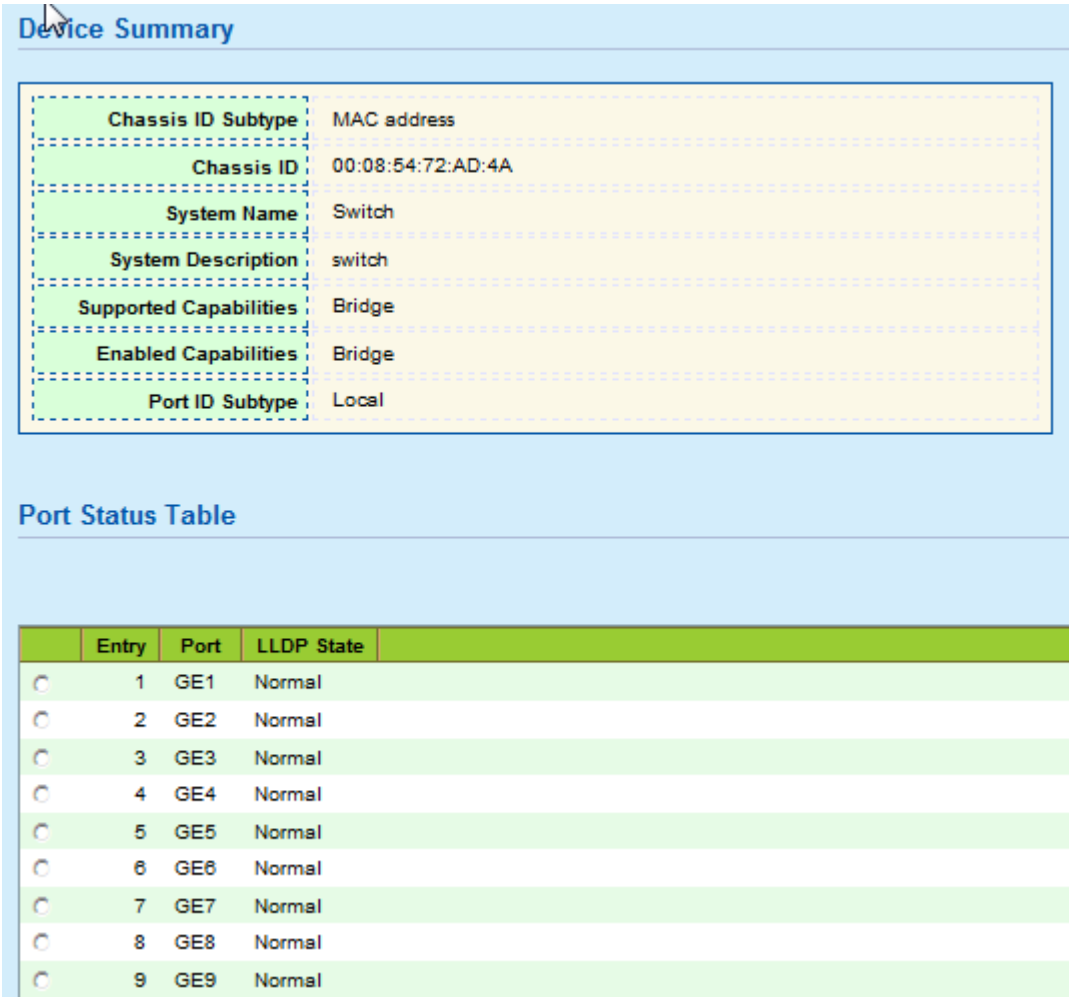
Total 802.1 TLVs byte size.
Status is sent or overloading.

■ Total

Total number of bytes of LLDP information in each packet.

4.10.1.4. Local Information

To display LLDP Local Device.



○	10	GE10	Normal
○	11	GE11	Normal
○	12	GE12	Normal
○	13	GE13	Normal
○	14	GE14	Normal
○	15	GE15	Normal
○	16	GE16	Normal
○	17	GE17	Normal
○	18	GE18	Normal
○	19	GE19	Normal
○	20	GE20	Normal
○	21	GE21	Normal
○	22	GE22	Normal
○	23	GE23	Normal
○	24	GE24	Normal
○	25	GE25	Normal
○	26	GE26	Normal
○	27	GE27	Normal
○	28	GE28	Normal

Detail

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

Local Information Detail

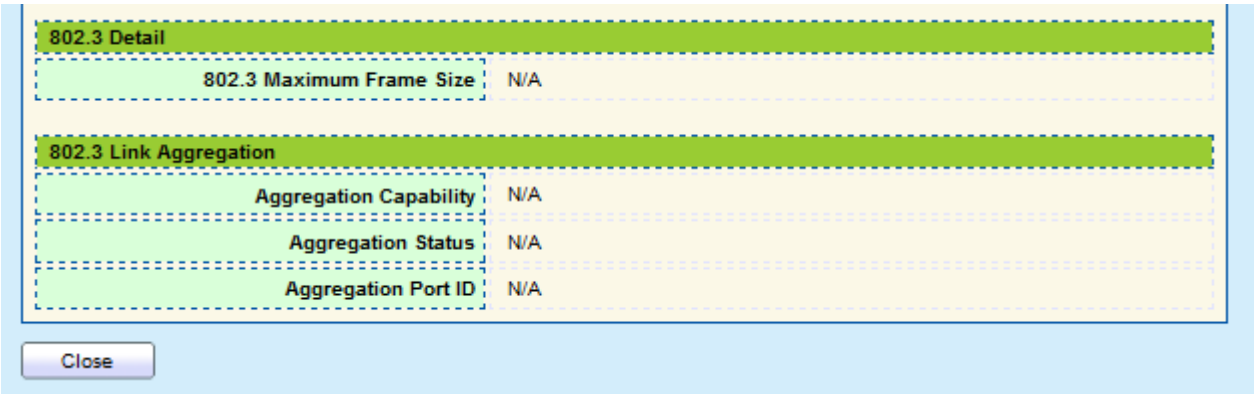
Chassis ID Subtype	MAC address
Chassis ID	00:08:54:72:AD:4A
System Name	Switch
System Description	switch
Supported Capabilities	Bridge
Enabled Capabilities	Bridge
Port ID	GE28
Port ID Subtype	Local
Port Description	

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



- **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.

- **Capabilities Supported**

Primary functions of the device, such as Bridge, WLAN AP, or Router.

- **Capabilities Enabled**

Primary enabled functions of the device.

- **Port ID Subtype**

Type of the port identifier that is shown.

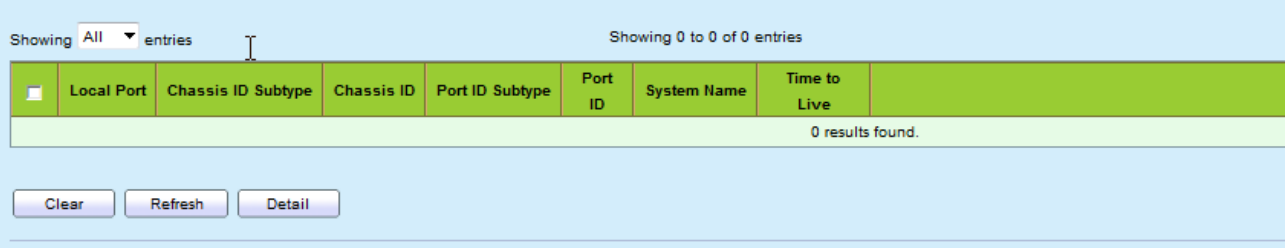
- **LLDP Status**

LLDP Tx and Rx abilities.

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

4.10.1.5. Neighbor

To display LLDP Remote Device.
Use the LLDP Neighbor page to view LLDP neighbors information.



- **Local Port**

Number of the local port to which the neighbor is connected.

- **Chassis ID Subtype**

Type of chassis ID (for example, MAC address).

- **Chassis ID**

Identifier of the 802 LAN neighboring device's chassis.

- **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.

4.10.1.6. Statistics

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

Global Statistics

Insertions	0
Deletions	0
Drops	0
AgeOuts	0

Clear Refresh

Statistics Table

Entry	Port	Transmit Frame	Receive Frame			Receive TLV		Neighbor
		Total	Total	Discard	Error	Discard	Unrecognized	Timeout
1	GE1	0	0	0	0	0	0	0
2	GE2	1	0	0	0	0	0	0
3	GE3	0	0	0	0	0	0	0
4	GE4	1	0	0	0	0	0	0
5	GE5	0	0	0	0	0	0	0
6	GE6	0	0	0	0	0	0	0
7	GE7	455	0	0	0	0	0	0
8	GE8	1	0	0	0	0	0	0
9	GE9	0	0	0	0	0	0	0
10	GE10	0	0	0	0	0	0	0
11	GE11	0	0	0	0	0	0	0
12	GE12	0	0	0	0	0	0	0
13	GE13	1	0	0	0	0	0	0
14	GE14	1	0	0	0	0	0	0
15	GE15	1	0	0	0	0	0	0
16	GE16	1	0	0	0	0	0	0
17	GE17	1	0	0	0	0	0	0
18	GE18	1	0	0	0	0	0	0
19	GE19	1	0	0	0	0	0	0
20	GE20	1	0	0	0	0	0	0
21	GE21	1	0	0	0	0	0	0
22	GE22	1	0	0	0	0	0	0
23	GE23	1	0	0	0	0	0	0
24	GE24	1	0	0	0	0	0	0
25	GE25	0	0	0	0	0	0	0
26	GE26	0	0	0	0	0	0	0
27	GE27	0	0	0	0	0	0	0
28	GE28	0	0	0	0	0	0	0

Clear Refresh

- **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 system because the information timeliness interval has expired.

- **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.

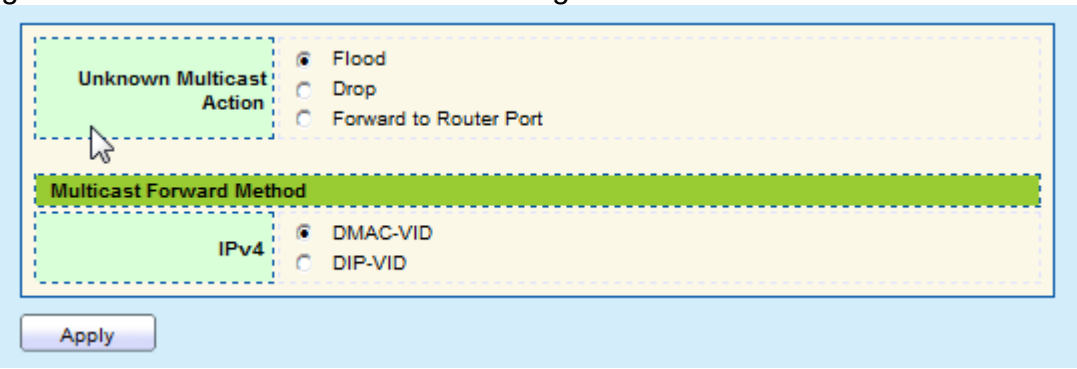
4.11 Multicast

4.11.1. General

Use the General pages to configure setting of IGMP snooping property and group and router setting function.

4.11.1.1. Property

This page allow user to set multicast forwarding method and unknown multicast action.



■ **Unknown Multicast Action**

Set the unknown multicast action

Drop : drop the unknown multicast data.
Flood : flood the unknown multicast data.
Router port : forward the unknown multicast data to router port.

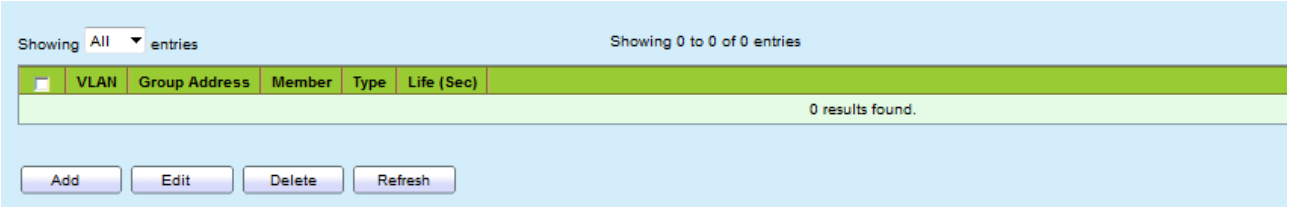
■ **IPv4**

Set the IPv4 multicast forward method.

MAC-VID : forward method dmac+vid.
DIP-VID : forward method dip+vid.

4.11.1.2. Group Address

To display Multicast General Group web page.
This page allow user to browse all multicast groups that dynamic learned or statically added.



- **VLAN**

The VLAN ID of group.

- **Group Address**

The group IP address.

- **Member**

The member ports of group.

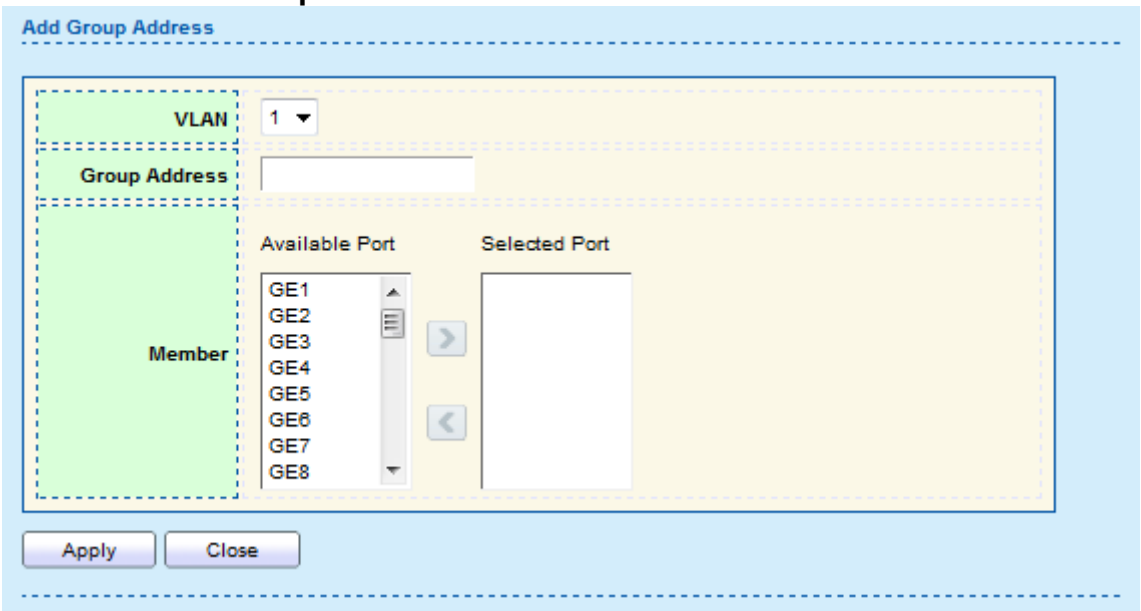
- **Type**

The type of group. Static or Dynamic.

- **Life(Sec)**

The life time of this dynamic group.

Click "Add" to add Group Address.



- **VLAN**

The VLAN ID of group.

- **Group Address**

The group IP address.

■ **Member**

The member ports of group.

Available Port : Optional port member
Selected Port : Selected port member

Click "Edit" to edit Group Address.

■ **VLAN**

The VLAN ID of group.

■ **Group Address**

The group IP address.

■ **Member**

The member ports of group.

Available Port : Optional port member
Selected Port : Selected port member

4.11.1.3. Router Port

To display Multicast router port table web page.
This page browse all router port information.

■ **VLAN**

The VLAN ID router entry.

■ **Member**

Router Port member.

■ **Life (Sec)**

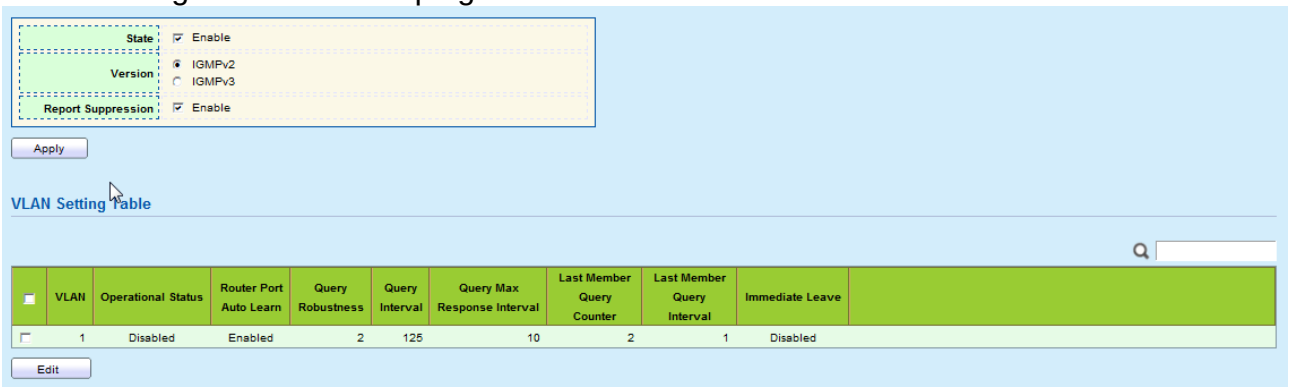
The expiry time of the router entry.

4.11.2. IGMP Snooping

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

4.11.2.1. Property

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



- **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 lose on a subnet.

- **Query Interval**

The interval of query 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.

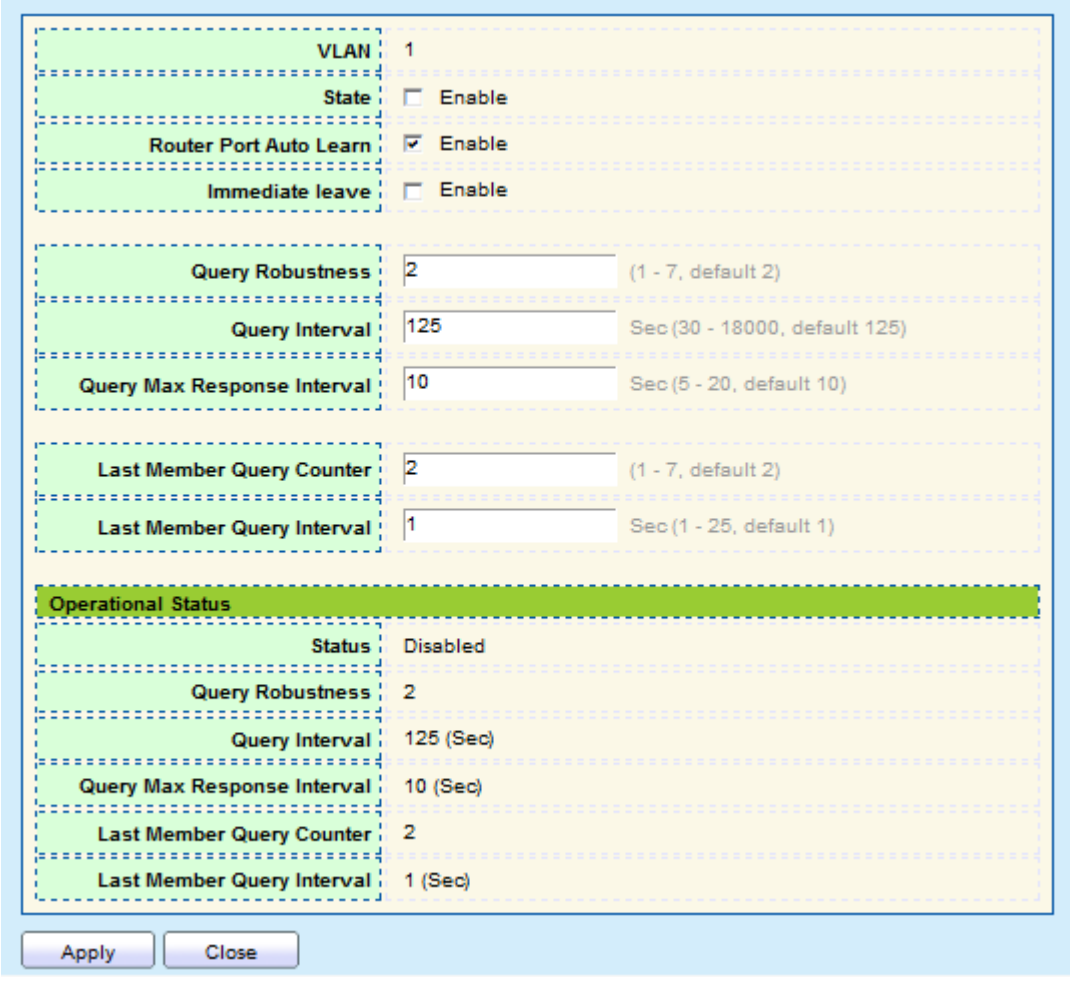
- **Last Member Query Interval**

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 immediate leave when receive IGMP Leave message.

Click "Edit" to edit VLAN Setting.



- **VLAN**

The selected VLAN List

- **State**

Set the enabling status of IGMP Snooping VLAN functionality

Enable : If Checked Enable IGMP Snooping router 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**

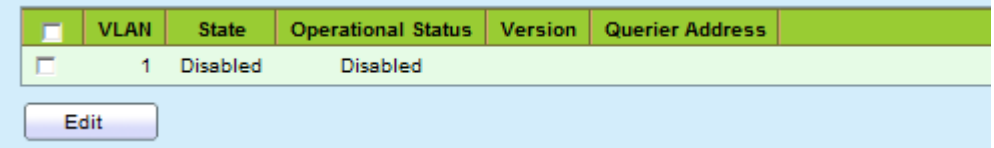
Operational Last Member Query Count.

- **Last Member Query Interval**

Operational Last Member Query Interval.

4.11.2.2. Querier

To display IGMP Snooping Querier setting web page.
This page allow user to configure querier setting on specific VLAN of IGMP Snooping.



- **VLAN**

IGMP Snooping querier entry VLAN ID.

- **State**

The IGMP Snooping querier Admin State.

- **Operational Status**

The IGMP Snooping querier operational status.

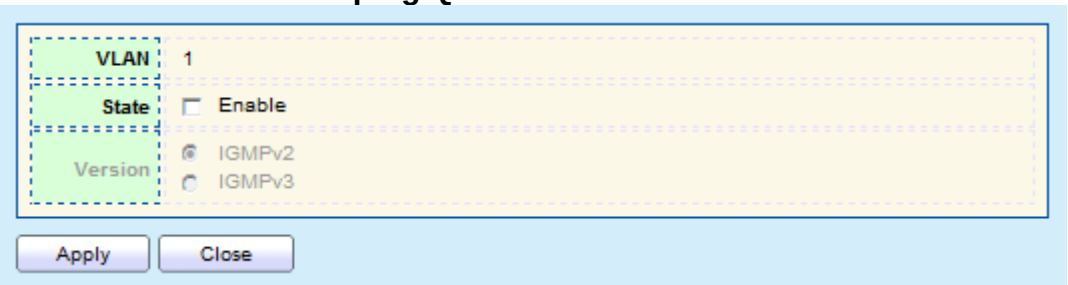
- **Querier Version**

The IGMP Snooping querier operational version.

- **Querier IP**

The operational querier IP address on the VLAN.

Click "Edit" to edit IGMP Snooping Querier.



■ **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.

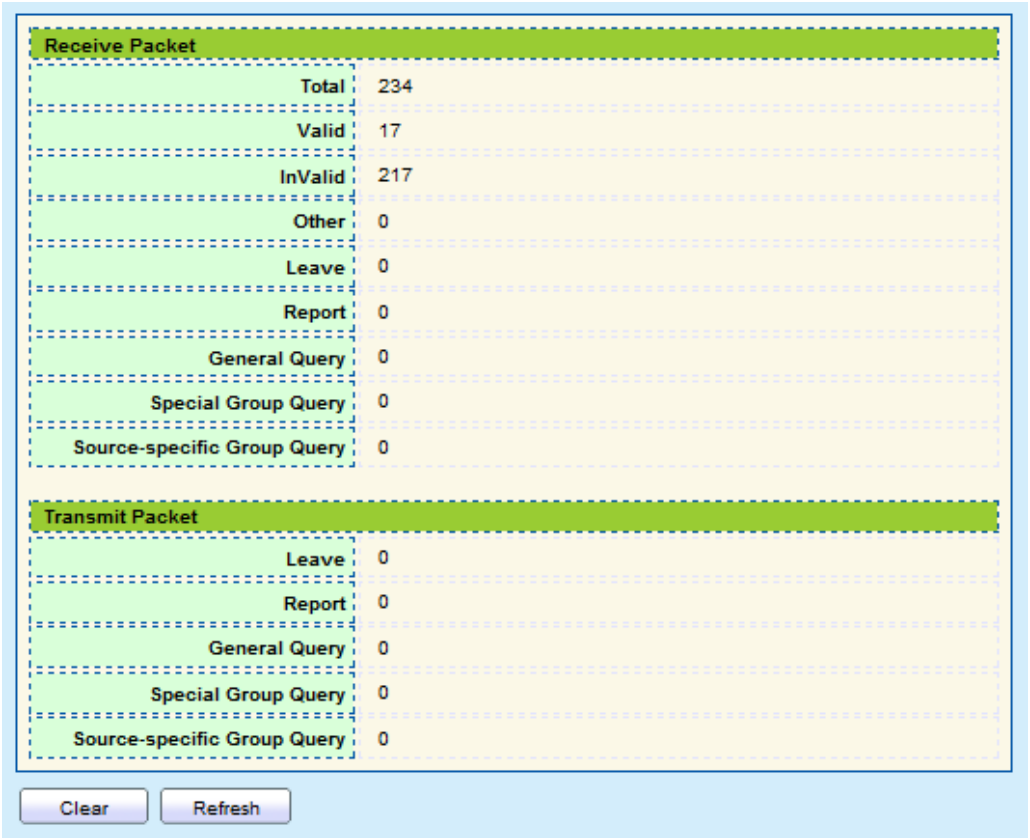
■ **Version**

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)

4.11.2.3. Statistics

This page allow user to display IGMP Snooping Statistics and clear IGMP Snooping statistics.



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 includes 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.

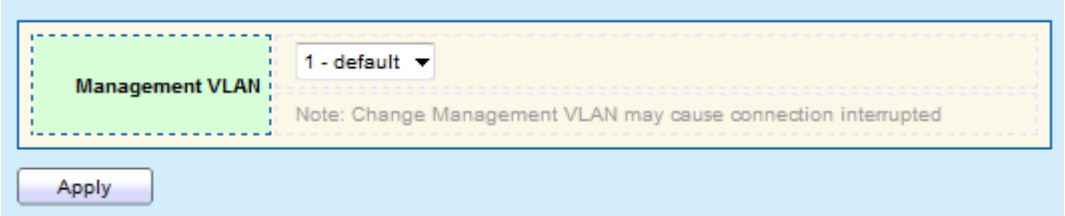
4.12 Security

4.12.1. Management Access

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

4.12.1.1. Management VLAN

This page allow user to change Management VLAN connection.



■ **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.

4.12.1.2. Management Service

This page allow user to change management services related configurations.

■ **Management Service**

Management Service admin state.

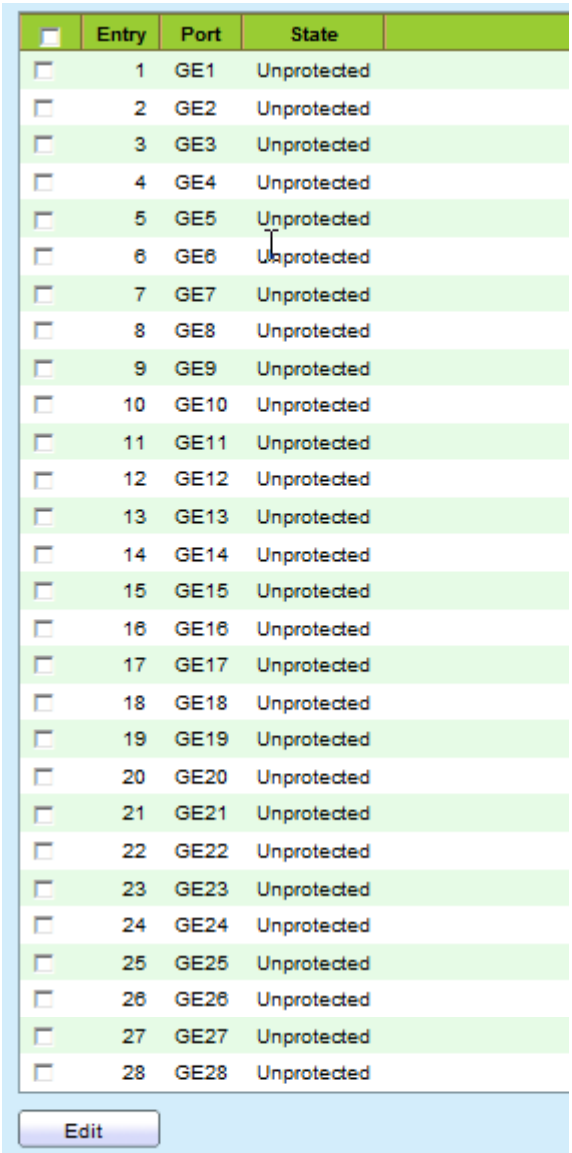
Telnet : Connect CLI through Telnet.
HTTP : Connect Web UI through HTTP.
HTTPS : Connect Web UI through HTTPS.
SNMP : Manage switch through SNMP.

■ **Session Timeout**

Set session timeout minutes for user access to user interface. O minute means never timeout.

4.12.2. Protected Port

This page allow user to configure protected port setting to prevent the selected ports from communication with each other. Protected port is only allowed to communicate with unprotected port. In other words, protected port is not allowed to communicate with another protected port.



Entry	Port	State
1	GE1	Unprotected
2	GE2	Unprotected
3	GE3	Unprotected
4	GE4	Unprotected
5	GE5	Unprotected
6	GE6	Unprotected
7	GE7	Unprotected
8	GE8	Unprotected
9	GE9	Unprotected
10	GE10	Unprotected
11	GE11	Unprotected
12	GE12	Unprotected
13	GE13	Unprotected
14	GE14	Unprotected
15	GE15	Unprotected
16	GE16	Unprotected
17	GE17	Unprotected
18	GE18	Unprotected
19	GE19	Unprotected
20	GE20	Unprotected
21	GE21	Unprotected
22	GE22	Unprotected
23	GE23	Unprotected
24	GE24	Unprotected
25	GE25	Unprotected
26	GE26	Unprotected
27	GE27	Unprotected
28	GE28	Unprotected

Edit

■ **Port**

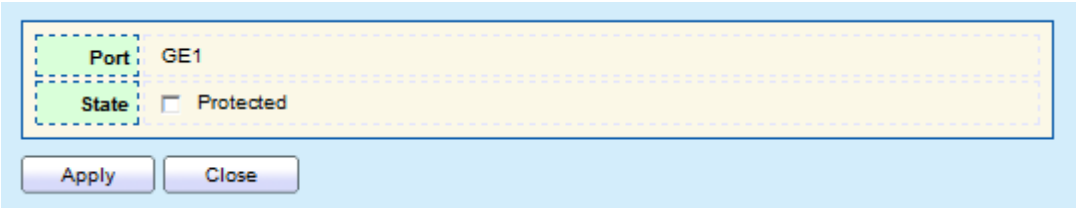
Port Name

■ **State**

Port protected admin state.

Protected : Port is protected.
Unprotected : Port is unprotected.

Click “Edit” to edit the protected port.



■ **Port**

Selected port list

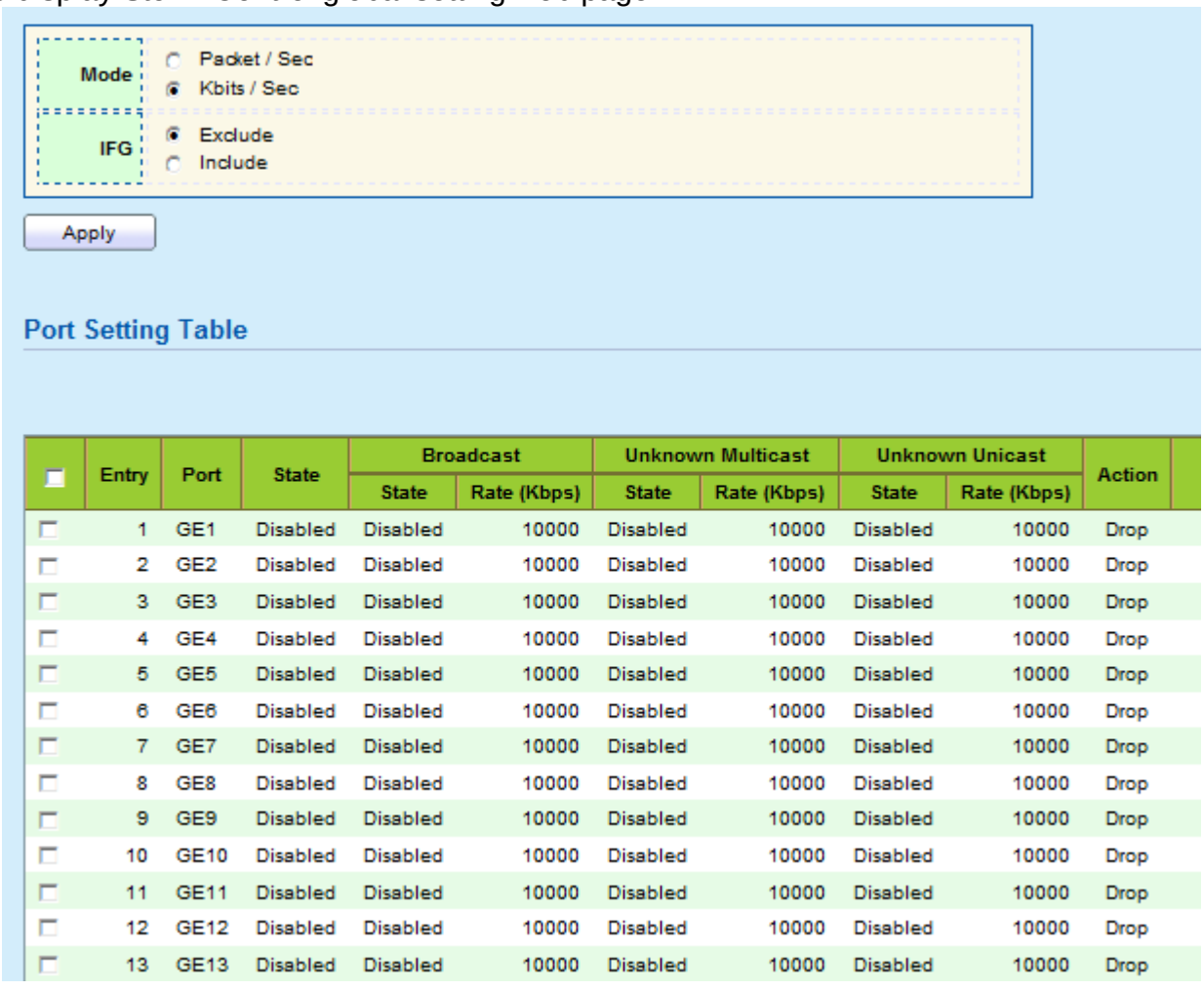
■ **State**

Port protected admin state.

Protected : Enable protecting function.
Unprotected : Disable protecting function.

4.12.3. Storm Congtrol

To display Storm Control global setting web page.



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	GE17	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	18	GE18	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	19	GE19	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	20	GE20	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	21	GE21	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	22	GE22	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	23	GE23	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	24	GE24	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	25	GE25	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	26	GE26	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	27	GE27	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop
☐	28	GE28	Disabled	Disabled	10000	Disabled	10000	Disabled	10000	Drop

Edit

■ **Unit**

Select the unit of storm control

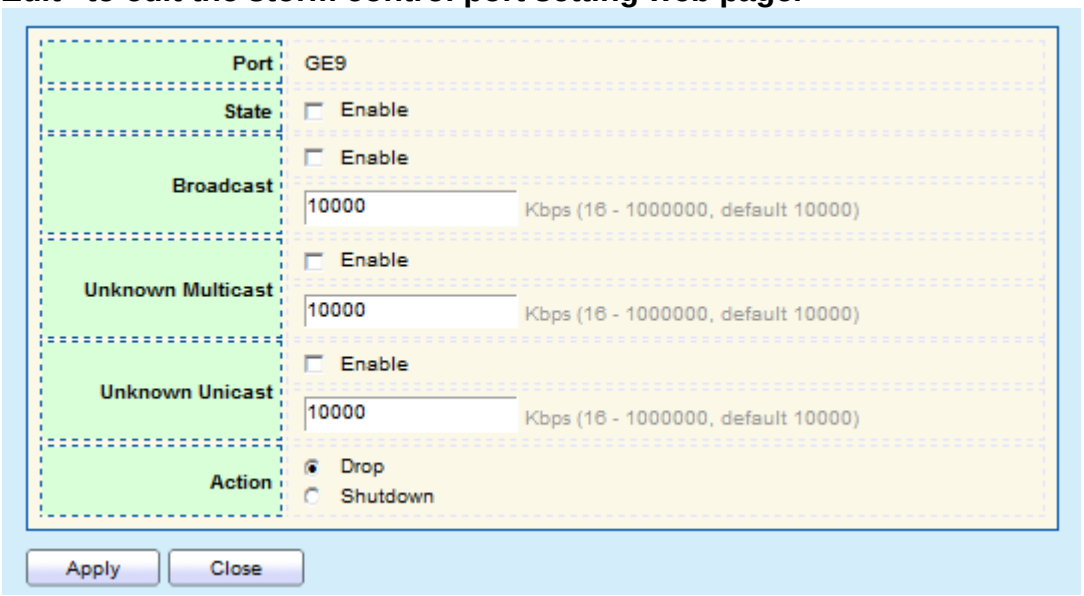
Packet/Sec : storm control rate calculates by packet-based
Kbits/Sec : storm control rate calculates by octet-based

■ **IFG**

Select the rate calculates w/o preamble & IFG (20 bytes)

Excluded : exclude preamble & IFG (20 bytes) when count ingress storm control rate.
Included : include preamble & IFG (20 bytes) when count ingress storm control rate.

Click “Edit” to edit the storm control port setting web page.



- **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**

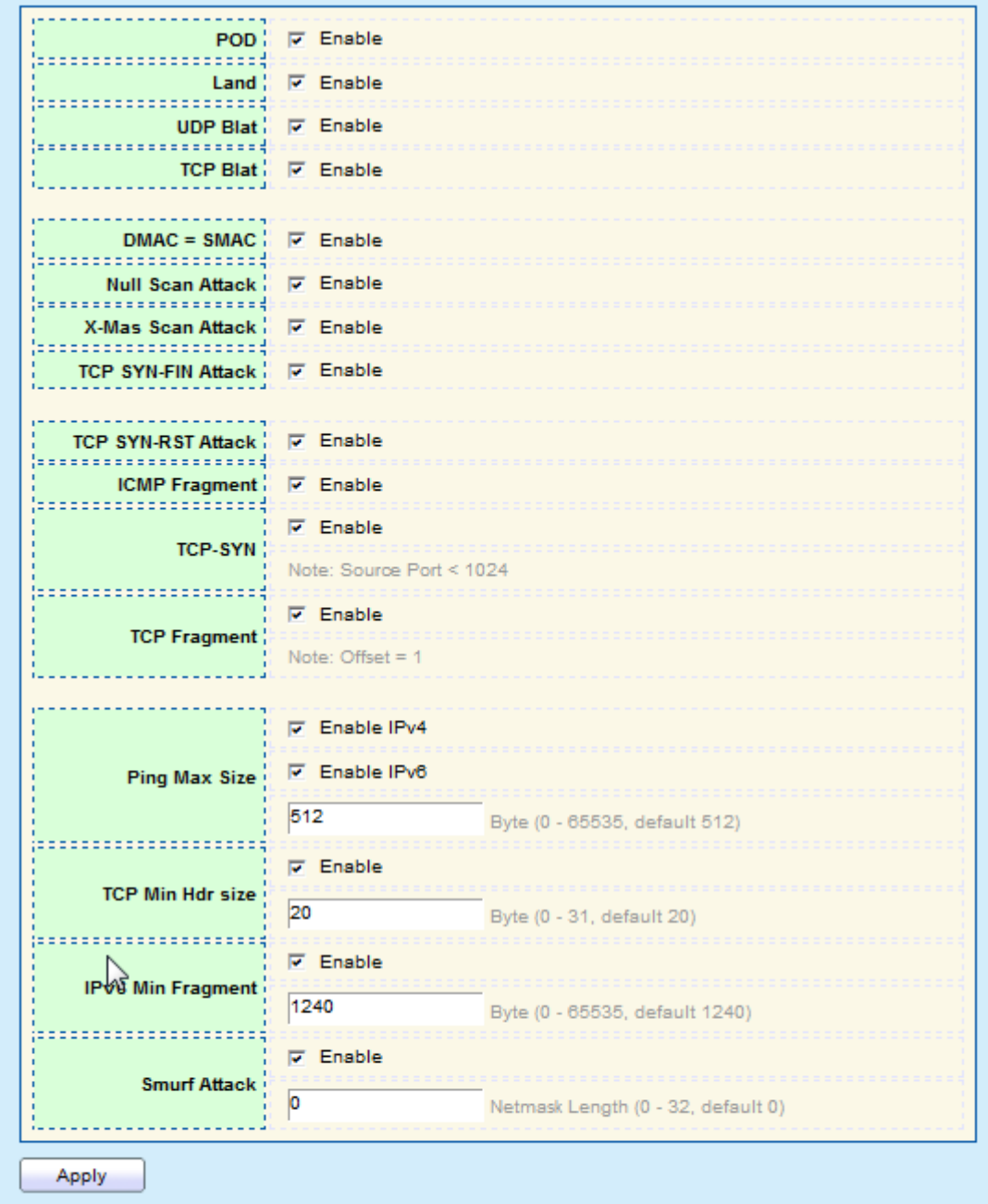
Select the state of setting.

Drop : Packets exceed storm control rate will be dropped.
Shutdown : Port will be shutdown when packets exceed storm control rate.

4.12.4. Storm Congtrol

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 Setting enables activating the security suite.

4.12.4.1. Property



- **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 Flagment**

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.

- **IPv4 Ping Max Size**

Checks the maximum size of ICMP ping packets, and drops the packets larger than the maximum packet size.

- **IPv6 Ping Max Size**

Checks the maximum size of ICMPv6 ping packets, and drops the packets larger than the maximum packet size

- **TCP Min Hdr Size**

Checks the minimum TCP header and drops the TCP packets with the header smaller than the minimum size. The length range is from 0 to 31 bytes, and default length is 20 bytes.

- **IPv6 Min Flagment**

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.

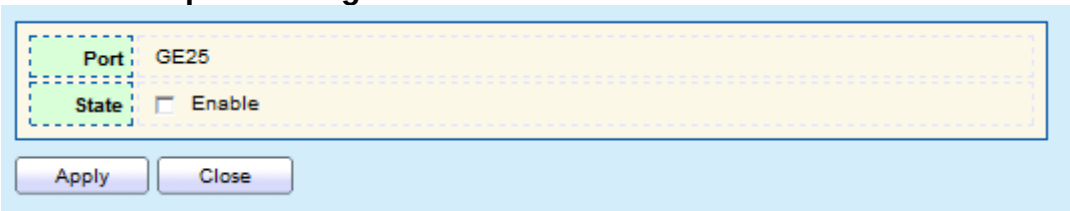
- **Smurf Attack**

Avoid smurf attack. The length range of the netmask is from 0 to 323 bytes, and default length is 0 bytes.

4.12.4.2. Port Setting

To configure and display the state of DoS protection for interfaces.

Click "Edit" to edit port setting



■ **Port**

Interface or port number.

■ **State**

Enable/Disable the DoS protection on the interface.

4.13 QoS

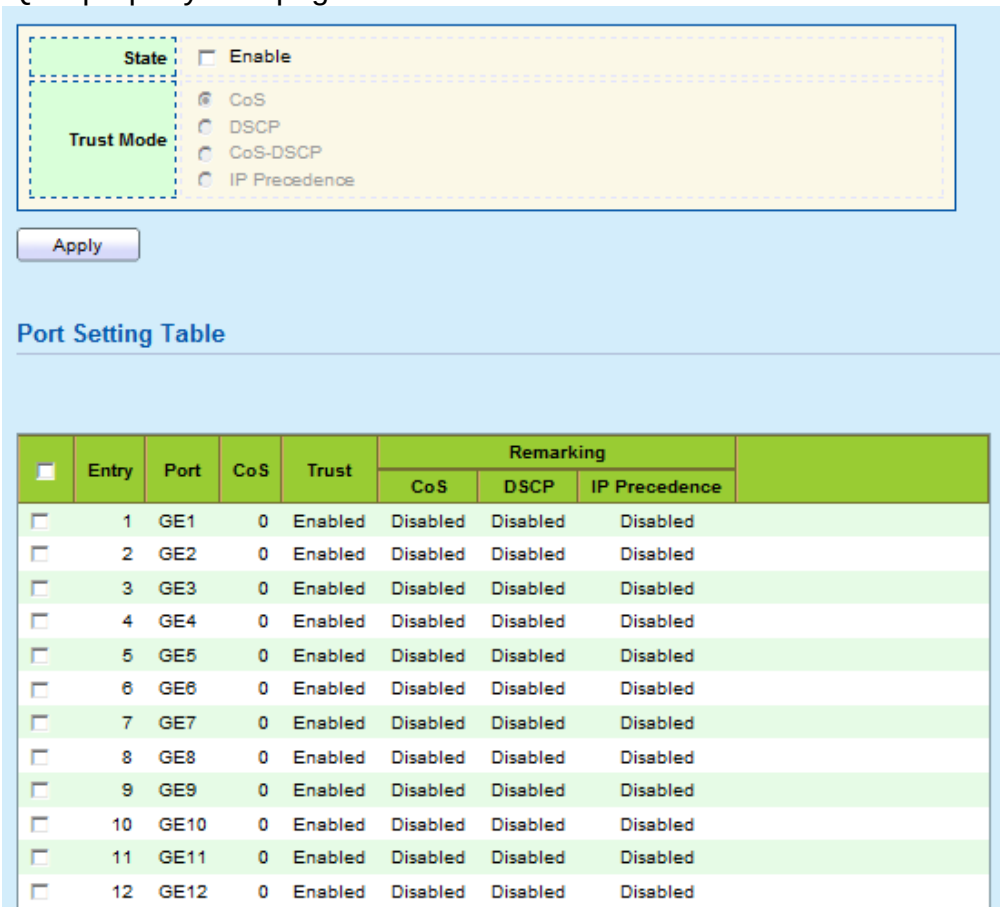
QoS (Quality of Service) functions to provide different quality of service for various network applications and requirements and optimize the bandwidth resource distribution so as to provide a network service experience of a better quality.

4.13.1. General

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

4.13.1.1. Property

To display QoS property web page.



13	GE13	0	Enabled	Disabled	Disabled	Disabled
14	GE14	0	Enabled	Disabled	Disabled	Disabled
15	GE15	0	Enabled	Disabled	Disabled	Disabled
16	GE16	0	Enabled	Disabled	Disabled	Disabled
17	GE17	0	Enabled	Disabled	Disabled	Disabled
18	GE18	0	Enabled	Disabled	Disabled	Disabled
19	GE19	0	Enabled	Disabled	Disabled	Disabled
20	GE20	0	Enabled	Disabled	Disabled	Disabled
21	GE21	0	Enabled	Disabled	Disabled	Disabled
22	GE22	0	Enabled	Disabled	Disabled	Disabled
23	GE23	0	Enabled	Disabled	Disabled	Disabled
24	GE24	0	Enabled	Disabled	Disabled	Disabled
25	GE25	0	Enabled	Disabled	Disabled	Disabled
26	GE26	0	Enabled	Disabled	Disabled	Disabled
27	GE27	0	Enabled	Disabled	Disabled	Disabled
28	GE28	0	Enabled	Disabled	Disabled	Disabled
29	LAG1	0	Enabled	Disabled	Disabled	Disabled
30	LAG2	0	Enabled	Disabled	Disabled	Disabled
31	LAG3	0	Enabled	Disabled	Disabled	Disabled
32	LAG4	0	Enabled	Disabled	Disabled	Disabled
33	LAG5	0	Enabled	Disabled	Disabled	Disabled
34	LAG6	0	Enabled	Disabled	Disabled	Disabled
35	LAG7	0	Enabled	Disabled	Disabled	Disabled
36	LAG8	0	Enabled	Disabled	Disabled	Disabled

Edit

- **State**

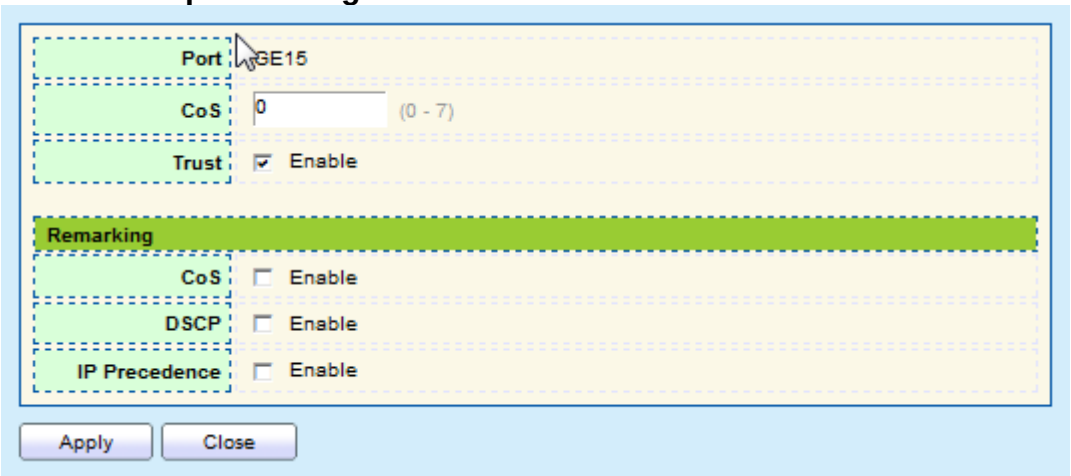
Set checkbox to enable/disable QoS.

- **Trust Mode**

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 : All IP traffic is mapped to queues based on the DSCP field in the IP header. The actual mapping of the DSCP to queue can be configured on the DSCP mapping page. If traffic is not IP traffic, it is mapped to the best effort queue.
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.

Click “Edit” to edit port setting



■ **Port**

Port name

■ **CoS**

Port default CoS priority value for the selected ports.

■ **Trust**

Port trust state

Enable : Traffic will follow trust mode in global setting.
Disable : Traffic will always use best efforts.

■ **Remarking(CoS)**

Port CoS remarking admin state.

Enable : CoS remarking is enabled
Disable : CoS remarking is disabled

■ **Remarking (DSCP)**

Port DSCP remarking admin state.

Enable : DSCP remarking is enabled
Disable : DSCP remarking is disabled

■ **Remarking (IP Precedence)**

Port IP Precedence remarking admin state.

Enable : IP Precedence remarking is enabled
Disable : IP Precedence remarking is disabled

4.13.1.2. Queue Scheduling

To display Queue Scheduling web page.

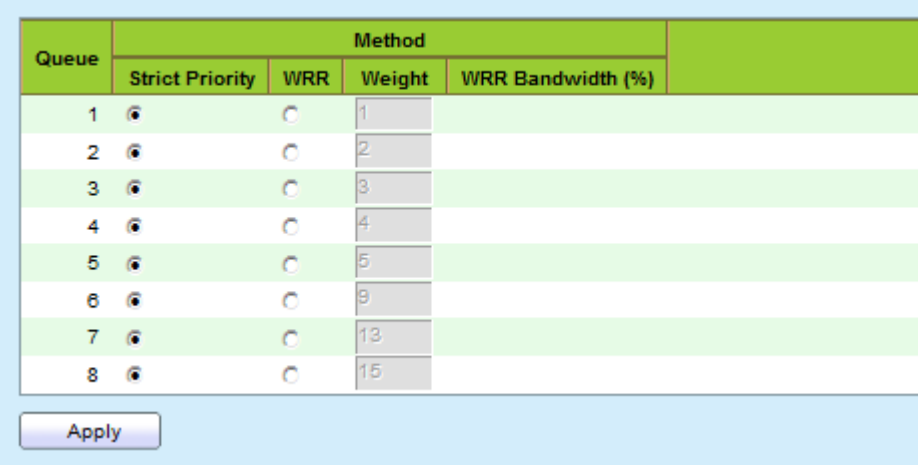
The switch supports eight queues for each interface. Queue number 8 is the highest priority queue. Queue number 1 is the lowest priority queue. There are two ways of determining how traffic in queues is handled, **Strict Priority (SP)** and **Weighted Round Robin (WRR)**.

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



- **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**

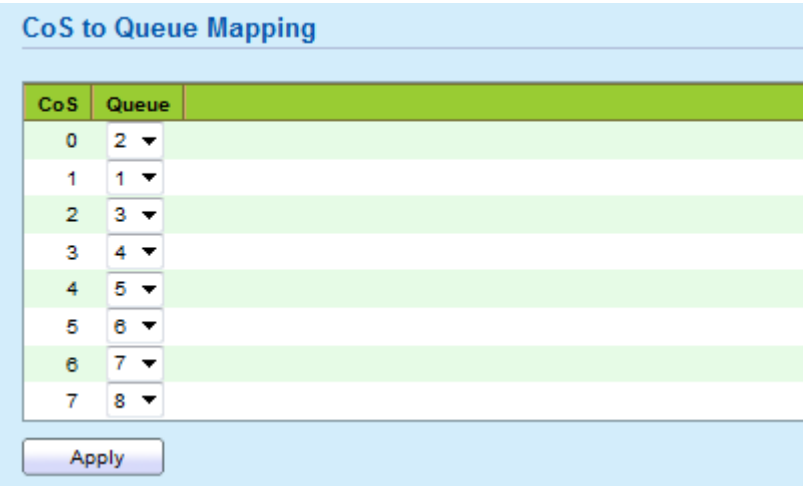
Percentage of WRR queue bandwidth.

4.13.1.3. Cos Mapping

To display CoS Mapping web page.

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.



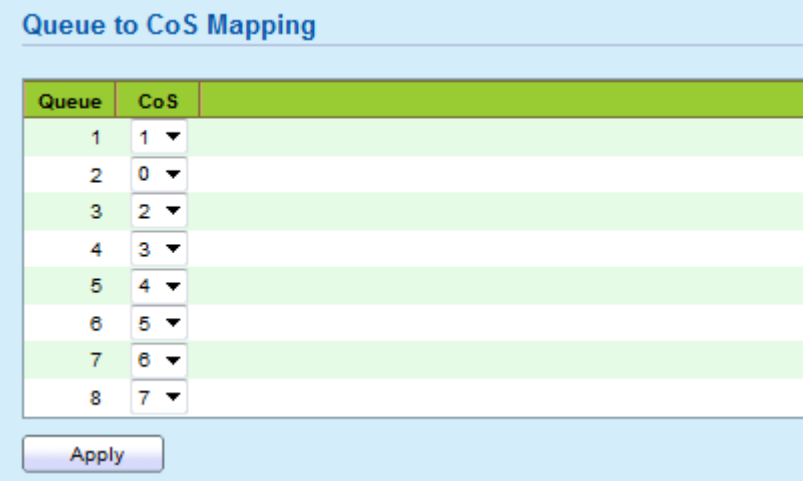
■ **CoS**

CoS value

■ **Queue**

Select queue ID for the CoS value

Queue to CoS Mapping



■ **Queue**

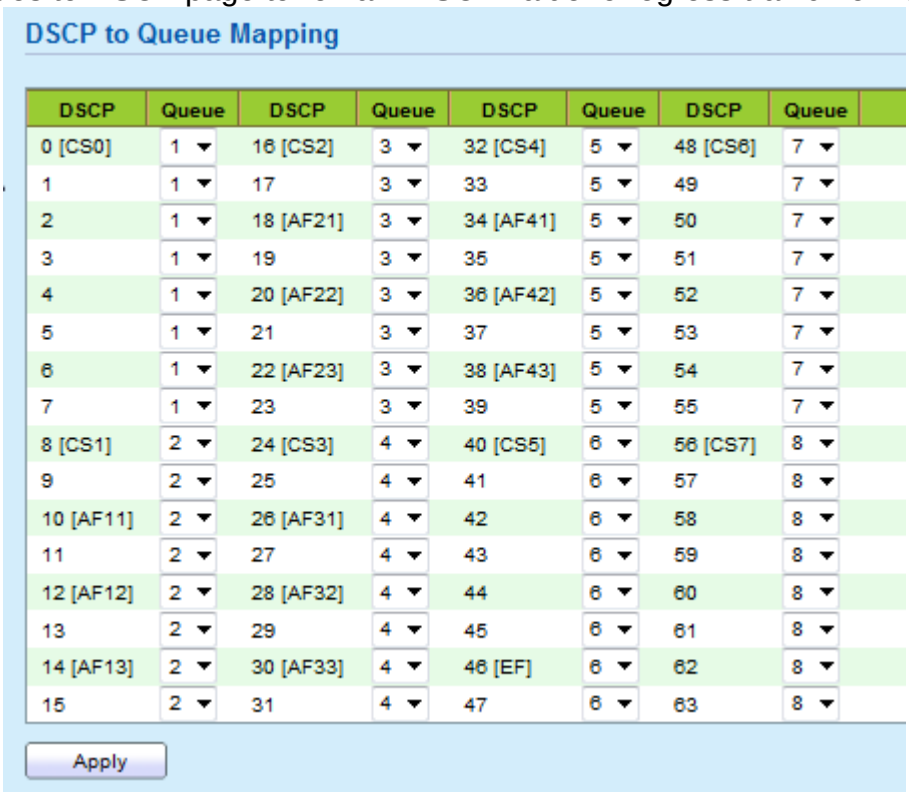
Queue ID

■ **CoS**

Select CoS value for the queue ID.

4.13.1.4. DSCP Mapping

To display DSCP Mapping web page.
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.



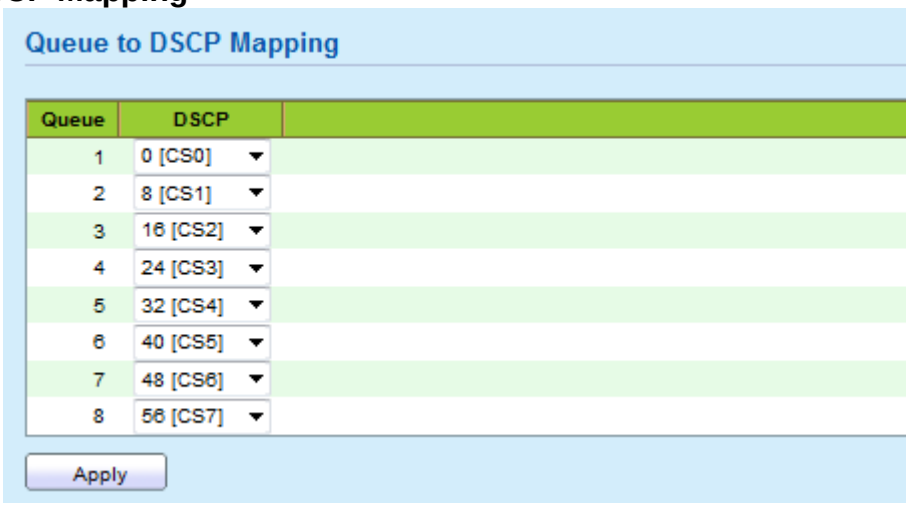
■ **DSCP**

DSCP value

■ **Queue**

Select Queue ID for DSCP value.

Queue to DSCP Mapping



■ **Queue**

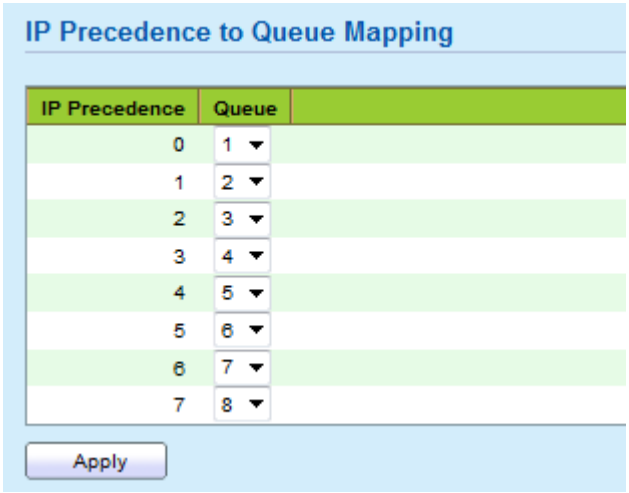
Queue ID

■ **DSCP**

Select DSCP value for Queue ID.

4.13.1.5. Precedence Mapping

To display IP Precedence Mapping web page.
This page allow user to configure IP Precedence to Queue Mapping and Queue to IP Precedence Mapping.



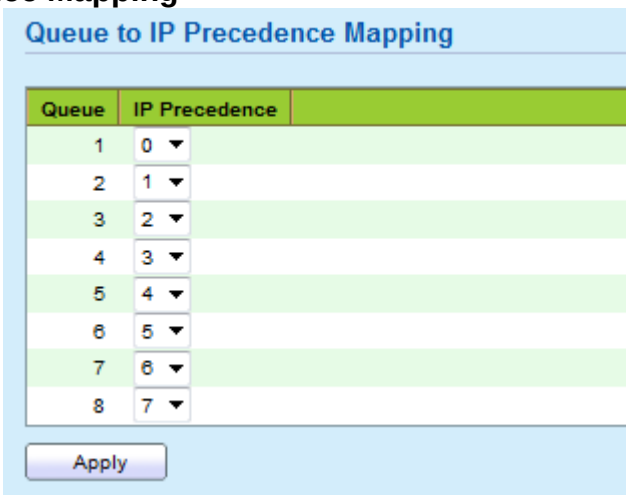
■ **IP Precedence**

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.

4.13.2. 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.

4.13.2.1. Ingress/Egress Port

To display Ingress/Egress Port web page.
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.

Entry	Port	Ingress		Egress	
		State	Rate (Kbps)	State	Rate (Kbps)
1	GE1	Disabled		Disabled	
2	GE2	Disabled		Disabled	
3	GE3	Disabled		Disabled	
4	GE4	Disabled		Disabled	
5	GE5	Disabled		Disabled	
6	GE6	Disabled		Disabled	
7	GE7	Disabled		Disabled	
8	GE8	Disabled		Disabled	
9	GE9	Disabled		Disabled	
10	GE10	Disabled		Disabled	
11	GE11	Disabled		Disabled	
12	GE12	Disabled		Disabled	
13	GE13	Disabled		Disabled	
14	GE14	Disabled		Disabled	
15	GE15	Disabled		Disabled	
16	GE16	Disabled		Disabled	
17	GE17	Disabled		Disabled	
18	GE18	Disabled		Disabled	
19	GE19	Disabled		Disabled	
20	GE20	Disabled		Disabled	
21	GE21	Disabled		Disabled	
22	GE22	Disabled		Disabled	
23	GE23	Disabled		Disabled	
24	GE24	Disabled		Disabled	
25	GE25	Disabled		Disabled	
26	GE26	Disabled		Disabled	
27	GE27	Disabled		Disabled	
28	GE28	Disabled		Disabled	

Edit

- **Port**

Port name

- **Ingress (State)**

Port ingress rate limit state

Enable : Ingress rate limit is enabled.
Disable : Ingress rate limit is disabled.

- **Ingress (Rate)**

Port ingress rate limit value if ingress rate state is enabled.

■ **Egress (State)**

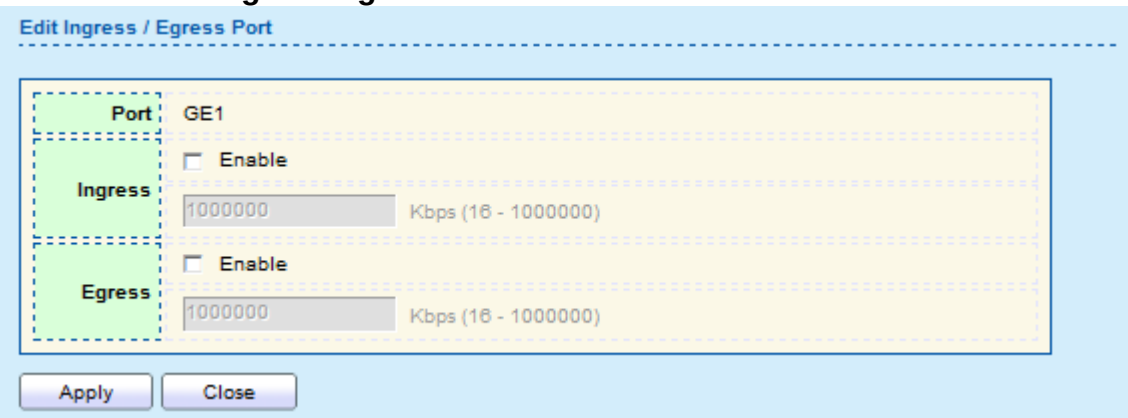
Port egress rate limit state

Enable : Egress rate limit is enabled.
Disable : Egress rate limit is disabled.

■ **Egress (Rate)**

Port egress rate limit value if egress rate state is enabled.

Click "Edit" to edit Ingress/Egress Port.



■ **Port**

Select Port list

■ **Ingress**

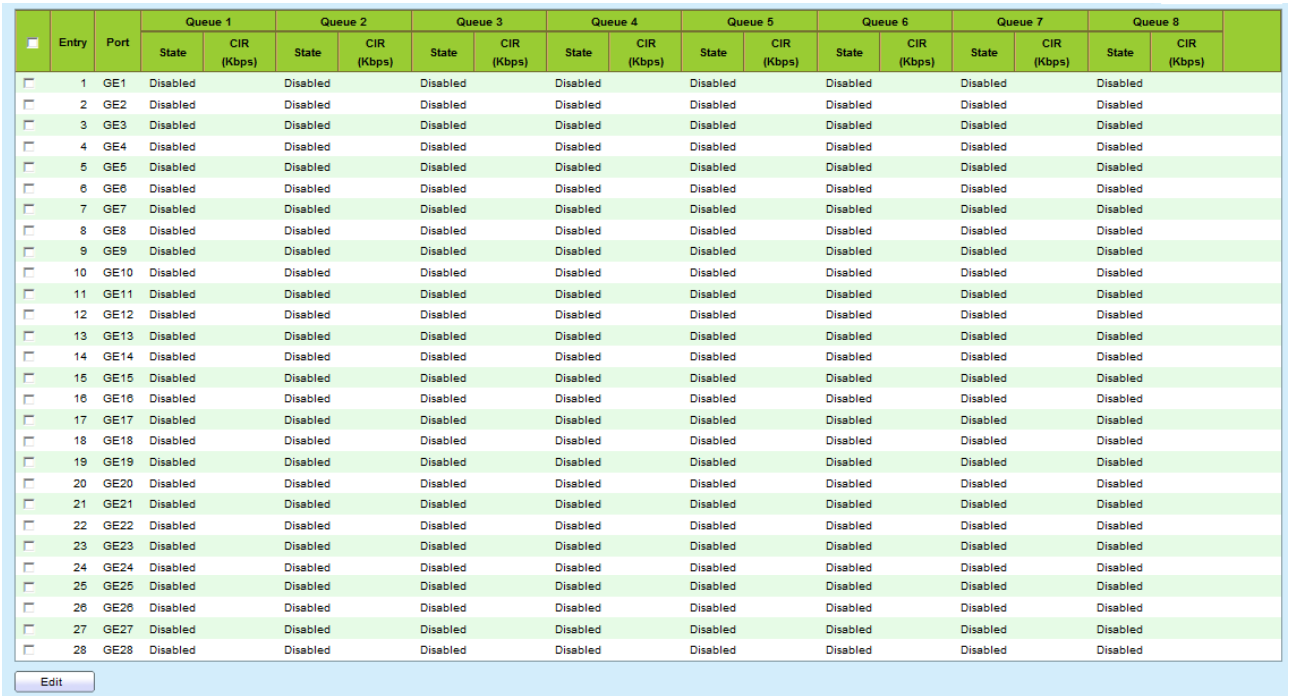
Set checkbox to enable/disable ingress rate limit. If ingress rate limit is enabled, rate limit value need to be assigned.

■ **Egress**

Set checkbox to enable/disable egress rate limit. If egress rate limit is enabled, rate limit value need to be assigned.

4.13.2.2. Egress Queue

To display Egress Queue web page.
Egress rate limiting is performed by shaping the output load.



	Entry	Port	Queue 1		Queue 2		Queue 3		Queue 4		Queue 5		Queue 6		Queue 7		Queue 8	
			State	CIR (Kbps)	State	CIR (Kbps)	State	CIR (Kbps)	State	CIR (Kbps)	State	CIR (Kbps)	State	CIR (Kbps)	State	CIR (Kbps)	State	CIR (Kbps)
	1	GE1	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	2	GE2	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	3	GE3	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	4	GE4	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	5	GE5	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	6	GE6	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	7	GE7	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	8	GE8	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	9	GE9	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	10	GE10	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	11	GE11	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	12	GE12	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	13	GE13	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	14	GE14	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	15	GE15	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	16	GE16	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	17	GE17	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	18	GE18	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	19	GE19	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	20	GE20	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	21	GE21	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	22	GE22	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	23	GE23	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	24	GE24	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	25	GE25	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	26	GE26	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	27	GE27	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	
	28	GE28	Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled		Disabled	

Edit

- **Port**

Port name

- **Queue 1 (State)**

Port egress queue 1 rate limit state.

Enable : Egress queue rate limit is enable.
Disable : Egress queue rate limit is disable.

- **Queue 1 (CIR)**

Queue 1 egress committed information rate.

- **Queue 2 (State)**

Port egress queue 2 rate limit state.

Enable : Egress queue rate limit is enable.
Disable : Egress queue rate limit is disable.

- **Queue 2 (CIR)**

Queue 2 egress committed information rate.

- **Queue 3 (State)**

Port egress queue 3 rate limit state.

Enable : Egress queue rate limit is enable.
Disable : Egress queue rate limit is disable.

- **Queue 3 (CIR)**

Queue 3 egress committed information rate.

- **Queue 4 (State)**

Port egress queue 4 rate limit state.

Enable : Egress queue rate limit is enable.
Disable : Egress queue rate limit is disable.

- **Queue 4 (CIR)**

Queue 4 egress committed information rate.

- **Queue 5 (State)**

Port egress queue 5 rate limit state.

Enable : Egress queue rate limit is enable.
Disable : Egress queue rate limit is disable.

- **Queue 5 (CIR)**

Queue 5 egress committed information rate.

- **Queue 6 (State)**

Port egress queue 6 rate limit state.

Enable : Egress queue rate limit is enable.
Disable : Egress queue rate limit is disable.

- **Queue 6 (CIR)**

Queue 6 egress committed information rate.

- **Queue 7 (State)**

Port egress queue 7 rate limit state.

Enable : Egress queue rate limit is enable.
Disable : Egress queue rate limit is disable.

- **Queue 7 (CIR)**

Queue 7 egress committed information rate.

- **Queue 8 (State)**

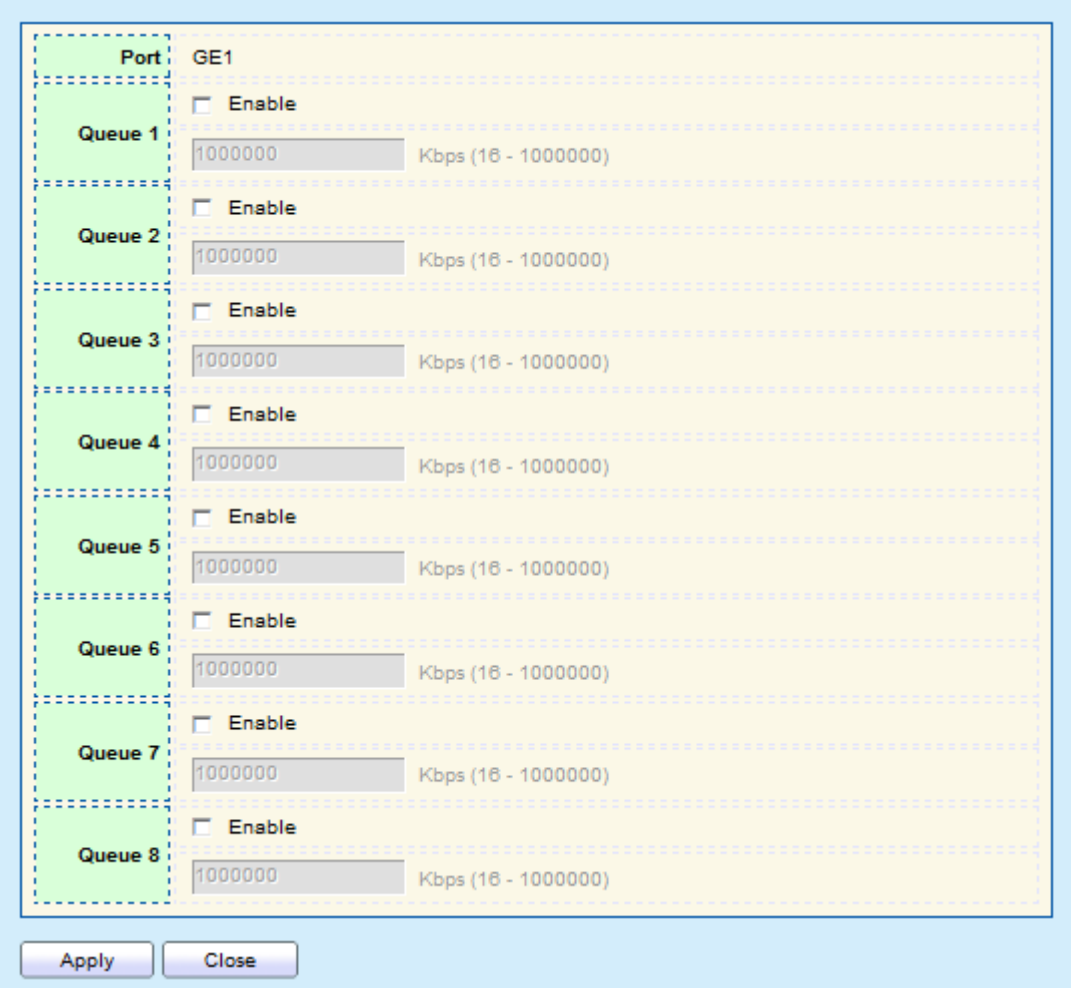
Port egress queue 8 rate limit state.

Enable : Egress queue rate limit is enable.
Disable : Egress queue rate limit is disable.

■ **Queue 8 (CIR)**

Queue 8 egress committed information rate.

Click "Edit" to edit Egress Queue



■ **Port**

Select port list.

■ **Queue 1**

Set checkbox to enable/disable egress queue 1 rate limit. If egress rate limit is enabled, rate limit value need to be assigned.

■ **Queue 2**

Set checkbox to enable/disable egress queue 2 rate limit. If egress rate limit is enabled, rate limit value need to be assigned.

■ **Queue 3**

Set checkbox to enable/disable egress queue 3 rate limit. If egress rate limit is enabled, rate limit value need to be assigned.

- **Queue 4**

Set checkbox to enable/disable egress queue 4 rate limit. If egress rate limit is enabled, rate limit value need to be assigned.

- **Queue 5**

Set checkbox to enable/disable egress queue 5 rate limit. If egress rate limit is enabled, rate limit value need to be assigned.

- **Queue 6**

Set checkbox to enable/disable egress queue 6 rate limit. If egress rate limit is enabled, rate limit value need to be assigned.

- **Queue 7**

Set checkbox to enable/disable egress queue 7 rate limit. If egress rate limit is enabled, rate limit value need to be assigned.

- **Queue 8**

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

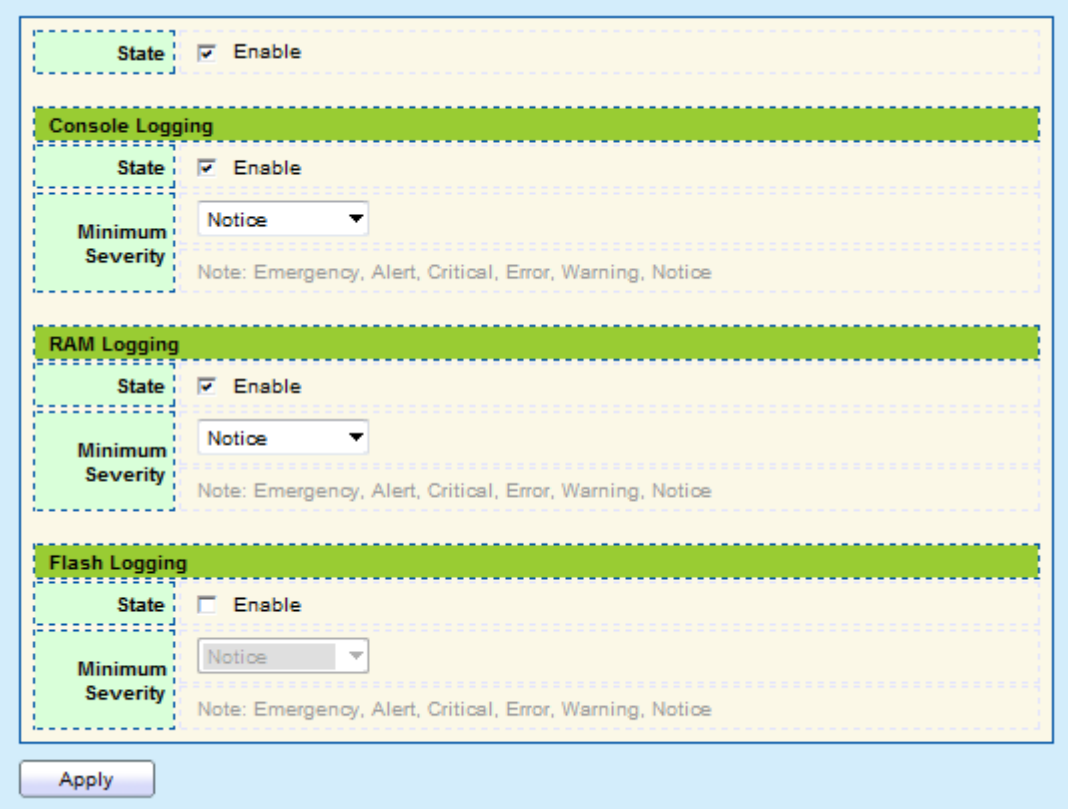
4.14 Diagnostics

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

4.14.1. Logging

4.14.1.1. Property

To display the Logging Service web page.



- **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 logging.

4.14.1.2. Remote Server

To display the Remote Logging Server web page.

- **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.

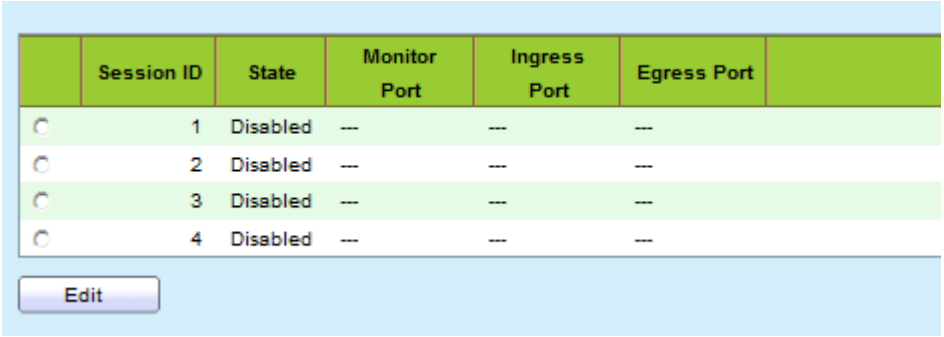
- **Severity**

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.

4.14.2. Mirroring

To display the Port Mirroring web page.



	Session ID	State	Monitor Port	Ingress Port	Egress Port	
○	1	Disabled	---	---	---	
○	2	Disabled	---	---	---	
○	3	Disabled	---	---	---	
○	4	Disabled	---	---	---	

Edit

- **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**

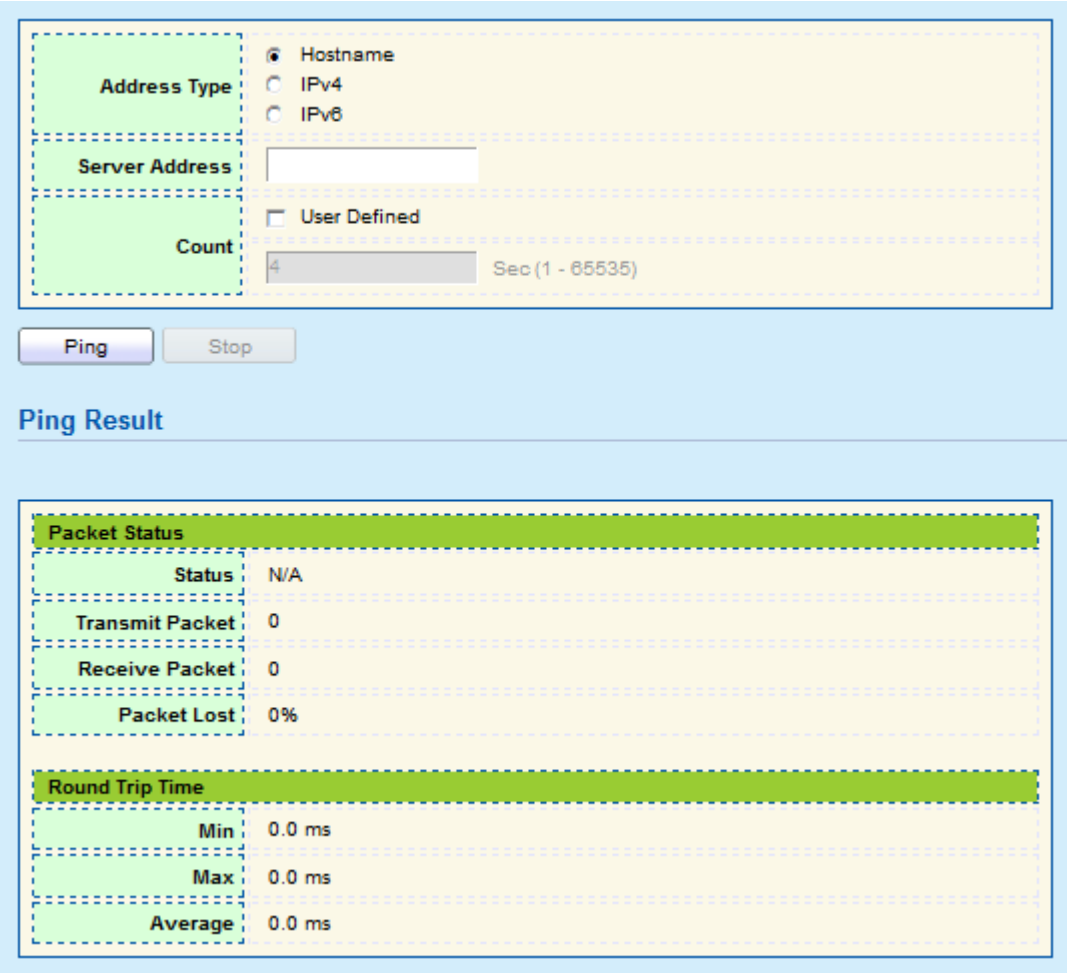
Select mirror session source RX ports.

- **Egress Port**

Select mirror session source TX ports.

4.14.3. Ping

To display the Diagnostic Ping functionality web page.



- **Address Type**

Specify the address type to “Hostname”, “IPv6”, or “IPv4”.

- **Server Address**

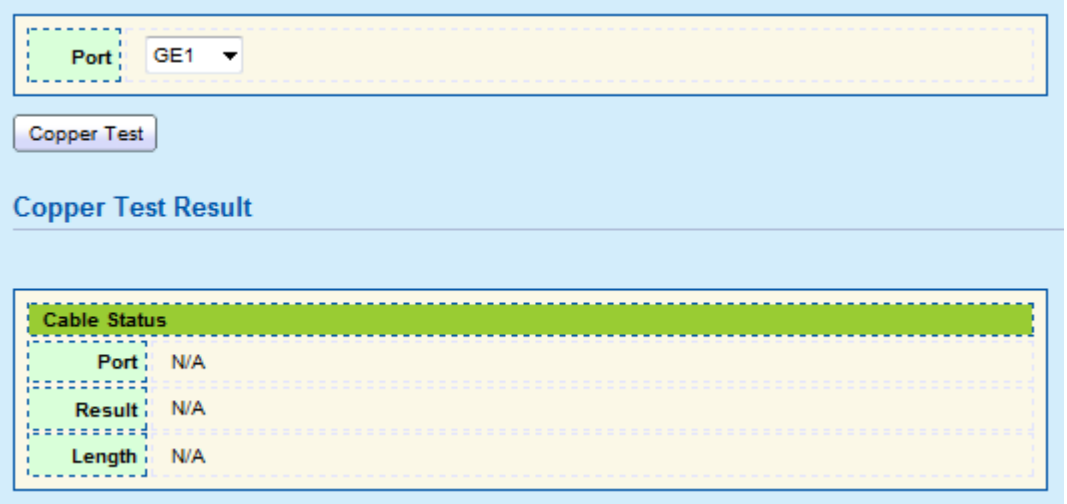
Specify the Hostname/IPv6/IPv4 address for the remote logging server.

- **Count**

Specify the numbers of each ICMP ping request.

4.14.4. Copper Test

To test the copper length diagnostic.



■ **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.
Line Drive :

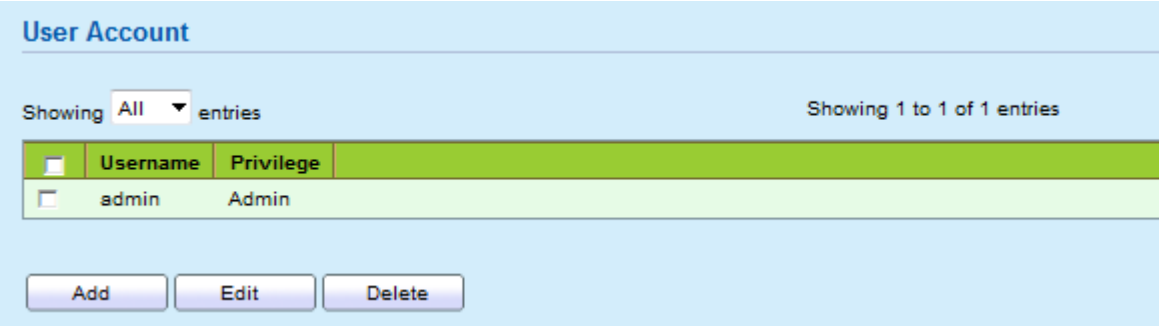
■ **Length**
Distance in meter from the port to the location on the cable where the fault was discovered.

4.15 Management

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

4.15.1. User Account

To display User Account web page.
The default username/password is admin/airlive. 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.

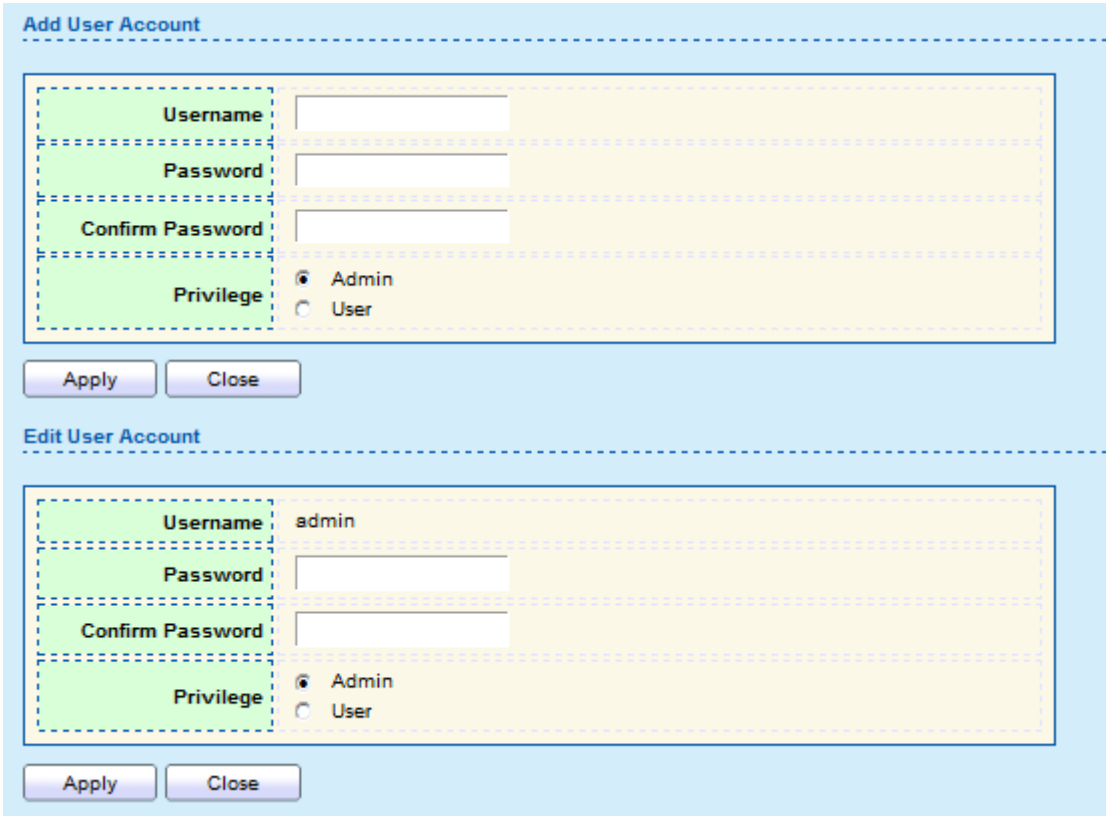


■ **Username**
User name of the account.

■ **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" to add/edit User Account.



■ **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.

4.15.2. Firmware

4.15.2.1. Upgrade/Backup

To display the Firmware Upgrade or Backup web page.
This page allow user to upgrade or backup firmware image through HTTP or TFTP server.

Upgrade Firmware through HTTP

■ **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.

Upgrade Firmware through TFTP.

■ **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

Backup Firmware through HTTP

- **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.

Backup Firmware through TFTP

- **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 TFPT server address

■ **Firmware**

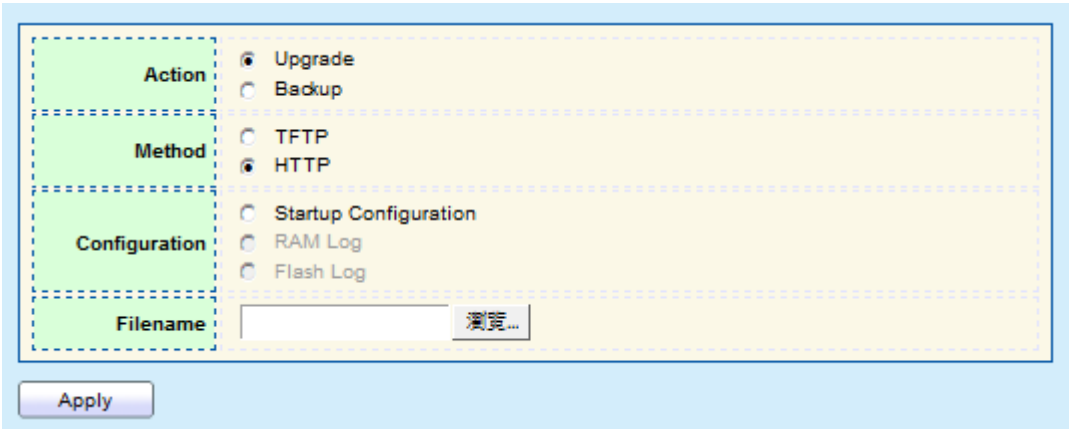
File name saved on remote TFTP server

4.15.3. Configuration

To display the Firmware Upgrade or Backup web page.
This page allow user to upgrade or backup configuration file through HTTP or TFPT server.

4.15.3.1. Upgrade/Backup

To display the Firmware Upgrade or Backup web page.
This page allow user to upgrade or backup configuration file through HTTP or TFPT server.



Upgrade Configuration through HTTP

- **Action**

Configuration operations

Upgrade : Upgrade Configuration from remote host to DUT.
Backup : Backup Configuration image from DUT to remote host.

- **Method**

Configuration upgrade/backup method

TFTP : Using TFTP to upgrade/backup Configuration.
HTTP : Using WEB browser to upgrade/backup Configuration.

- **Configuration**

Configuration types

Running Configuration : Merge to current running configuration file.
Startup Configuration : Replace startup configuration file.

- **Filename**

Use browser to upgrade Configuration, you should select Configuration image file on your host PC.

Upgrade Configuration through TFTP.

- **Action**

Configuration operations

Upgrade : Upgrade Configuration from remote host to DUT.
Backup : Backup Configuration image from DUT to remote host.

- **Method**

Configuration upgrade/backup method

TFTP : Using TFTP to upgrade/backup Configuration.
HTTP : Using WEB browser to upgrade/backup Configuration.

- **Configuration**

Configuration types

Running Configuration : Merge to current running configuration file.
Startup Configuration : Replace startup 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**

Configuration image file name on remote TFTP server

Backup Configuration through HTTP

- **Action**

Configuration operations

Upgrade : Upgrade Configuration from remote host to DUT.
Backup : Backup Configuration image from DUT to remote host.

- **Method**

Configuration upgrade/backup method

TFTP : Using TFTP to upgrade/backup Configuration.
HTTP : Using WEB browser to upgrade/backup Configuration.

- **Configuration**

Configuration types

Running Configuration : Merge to current running configuration file.
Startup Configuration : Replace startup configuration file.
RAM Log : Backup log file stored in RAM
Flash Log : Backup log files store in Flash.

Backup Configuration through TFTP.

- **Action**

Configuration operations

Upgrade : Upgrade Configuration from remote host to DUT.
Backup : Backup Configuration image from DUT to remote host.

- **Method**

Configuration upgrade/backup method

TFTP : Using TFTP to upgrade/backup Configuration.
HTTP : Using WEB browser to upgrade/backup Configuration.

- **Configuration**

Configuration types

Running Configuration : Merge to current running configuration file.
Startup Configuration : Replace startup 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

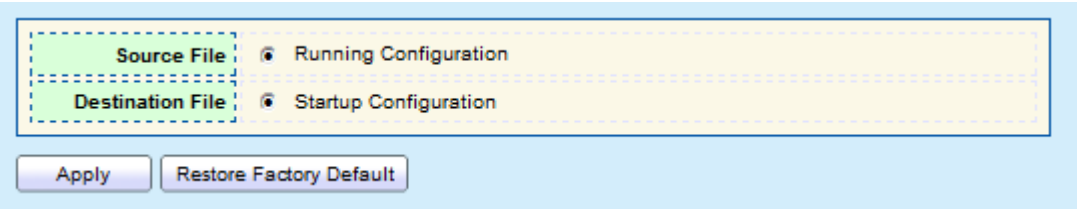
Hostname : Use domain name as server address.
IPv4 : Use IPv4 as server address
IPv6 : Use IPv6 as server address

■ **Server Address**
Specify TFTP server address.

■ **Filename**
Configuration image file name on remote TFTP server

4.15.3.2. Save Configuration

To display the Save Configuration web page.
This page allow user to manage configuration file saved on DUT and click “Restore Factory Default” button to restore factory defaults.



■ **Source File**
Source file types

Running Configuration : Copy running configuration file to destination.
Startup Configuration : Copy startup configuration file to destination.

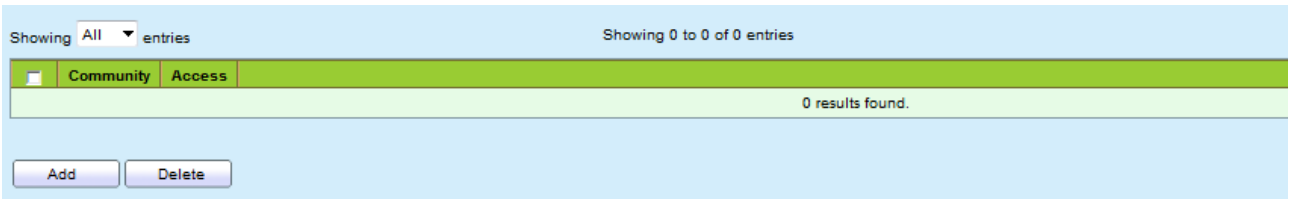
■ **Destination File**
Destination file

Startup Configuration : Save file as startup configuration.

4.16 SNMP

4.16.1. Community

To display and configure the SNMP community settings.



■ **Community**
The SNMP community name. Its maximum length is 20 characters.

■ **Access Right**
SNMP access mode

Read-Only : Read only
Read-Write : Read and Write.

4.16.2. Trap Event

To display and configure the SNMP trap event.

■ **Authentication Failure**
SNMP authentication failure trap, when community not match or user authentication password not match.

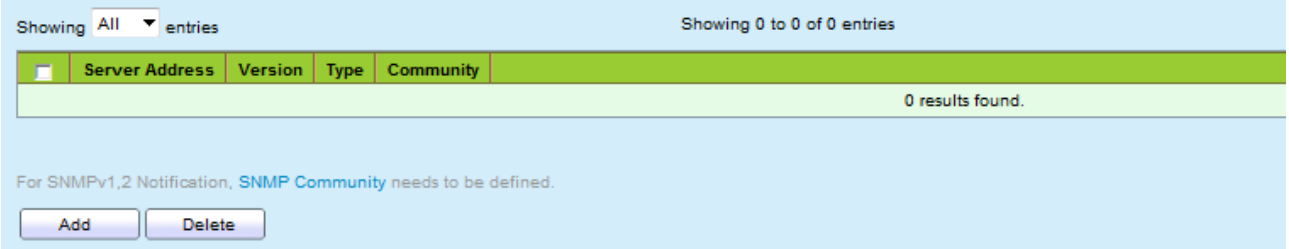
■ **Link Up/Down**
Port link up or down trap.

■ **Cold Start**
Device reboot configure by user trap.

■ **Warm Start**
Device reboot by power down trap

4.16.3. Notification

To configure the hosts to receive SNMP v1/v2 notification.



■ **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.

- **Type**

Notification Type

Trap: Send SNMP traps to the host.
Inform : Send SNMP informs to the host.

- **Community**

SNMP community name for notification.

5 Specifications

This section provides the specifications of POE-GSH2624-370, and the following table lists these specifications.

Standard	● IEEE802.3, IEEE802.3u, and IEEE802.3ab ● IEEE 802.3x flow control ● IEEE 802.1p class of service, priority protocols ● IEEE 802.3az Energy Efficient Ethernet(EEE)
Interface	● 24x 10/100/1000Mbps RJ45 ports, ● 4x Mini-GBIC ports
Switch architecture	● Store and forward switch architecture. ● Back-plane up to 56Gbps
MAC address	● 8K
Memory	● 524.8K
LED	● System ● Link/Act ● POE
Management	● Web ● SNMP v1,v2c ● SNMP Trap ● Port Trunk

	● Supports IEEE802.1d STP & IEEE802.1w RSTP ● VLAN ■ Port-base VLAN ■ Tag-Base VLAN ■ Voice VLAN ● QoS policy: ● Supports IGMP v1/v2 snooping ● Supports Port Mirroring ● LLDP ● Support Access Control List
Temperature	● Operating: 0 to 50°C ● Storage: -20 to 70°C
Humidity	● Operating: 10% ~ 90% ● Storage: 5% ~ 90%
Power	● 100~240VAC 50/60Hz (maximum)
Dimensions	● 441*131*44 mm