



Layer 3 Ethernet Switch  
Web-based  
Network Management  
User Manual



## **About This Manual**

### **Introduction**

This document chapter includes an introduction to the Fiberroad L3 WebGUI Network Management, which also contains Fiberroad Industrial Grade Ethernet Switch and Commercial Grade Ethernet Switch Series.

### **Conventions**

This document contains notices, figures, screen captures, and certain text conventions.

### **Figures and Screen Captures**

This document provides figures and screen captures as examples. These examples contain sample data. This data may vary from the actual data on an installed system.

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### Revision History

| Version | Date       | Author | Reasons of Change | Section(s)<br>Affected |
|---------|------------|--------|-------------------|------------------------|
| 1.0     | 2020/12/04 |        | Initial Release   | All                    |
|         |            |        |                   |                        |
|         |            |        |                   |                        |
|         |            |        |                   |                        |
|         |            |        |                   |                        |

# 1. Introduction

## 1.1 About Web-GUI Management

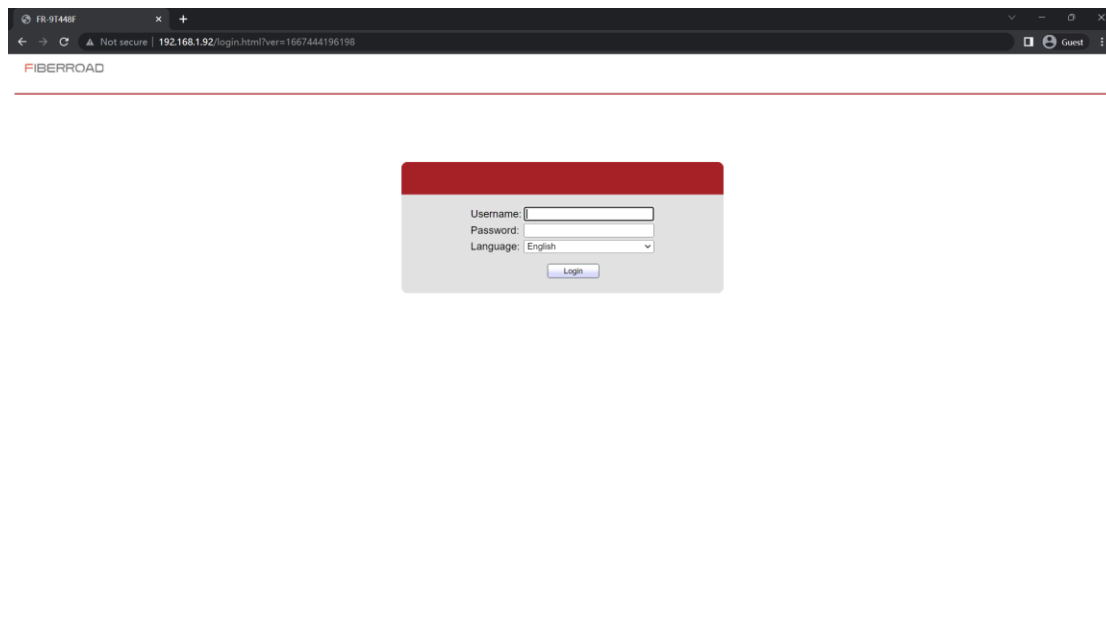
There is an embedded HTML web site residing in flash memory on CPU board of the switch, which offers advanced management features and allows users to manage the switch from anywhere on the network through a standard browser such as Mozilla Firefox or Chrome. (Note: Window IE is not supported) The Web-Based Management supports Mozilla Firefox 54.X or later, or Chrome 59.X or later. The Web browser is a program that can read hypertext.

## 1.2 Preparing for Web Management

Before using the web management, install the Ethernet Switch on the network and make sure that any one of the PCs on the network can connect with the Ethernet through the web browser.

All of the Fiberroad Network Switch default value of IP, subnet mask, username and password are listed as below:

- ❖ IP Address: 192.168.1.6
- ❖ HTTP service: Enable
- ❖ User Name: admin
- ❖ Password: admin



## 2. Status

Use the Status pages to view system information and status.

### 2.1 System Information

To display System Information web page, click **Status > System Information**

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

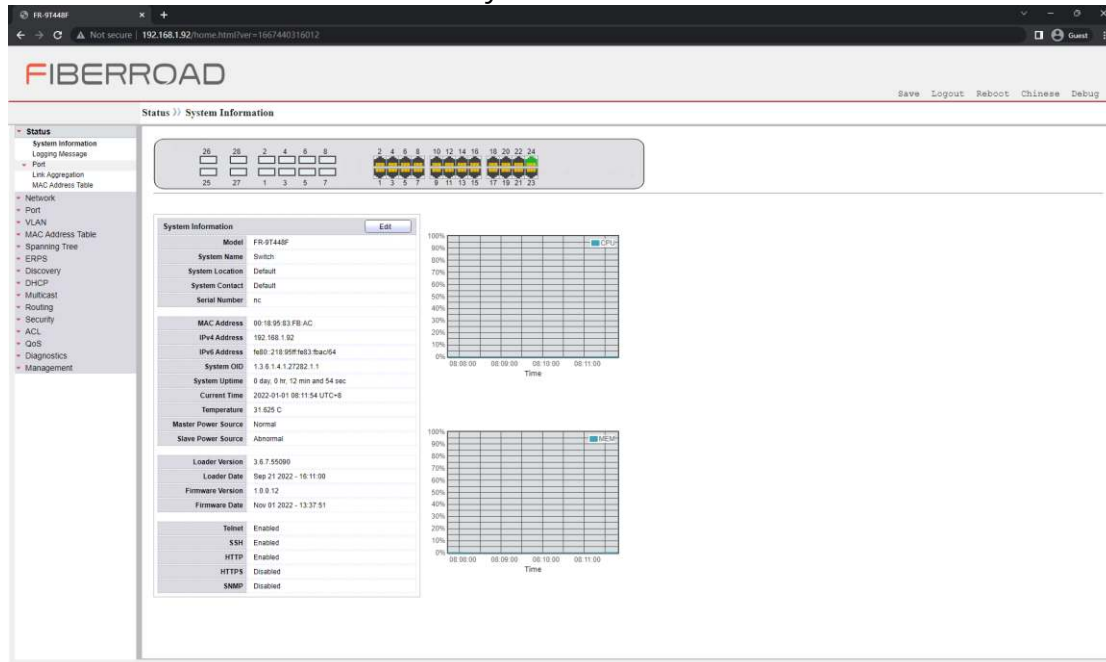


Figure 2-1 System Information Page

| Field                   | Description                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Model</b>            | Model name of the switch                                                                                |
| <b>System Name</b>      | System name of the switch. This name will also use as CLI prefix of each line. ("Switch>" or "Switch#") |
| <b>System Location</b>  | Location information of the switch                                                                      |
| <b>System Contact</b>   | Contact information of the switch                                                                       |
| <b>MAC Address</b>      | Base MAC address of the switch                                                                          |
| <b>IPv4 Address</b>     | Current system IPv4 address                                                                             |
| <b>IPv6 Address</b>     | Current system IPv6 address                                                                             |
| <b>System OID</b>       | SNMP system object ID                                                                                   |
| <b>System Uptime</b>    | Total elapsed time from booting                                                                         |
| <b>Current Time</b>     | Current system time                                                                                     |
| <b>Loader Version</b>   | Boot loader image version                                                                               |
| <b>Loader Date</b>      | Boot loader image build date                                                                            |
| <b>Firmware Version</b> | Current running firmware image version                                                                  |
| <b>Firmware Date</b>    | Current running firmware image build date                                                               |
| <b>Telnet</b>           | Current Telnet service enable/disable state                                                             |

|              |                                            |
|--------------|--------------------------------------------|
| <b>SSH</b>   | Current SSH service enable/disable state   |
| <b>HTTP</b>  | Current HTTP service enable/disable state  |
| <b>HTTPS</b> | Current HTTPS service enable/disable state |
| <b>SNMP</b>  | Current SNMP service enable/disable state  |

**Table 2-1 Current System Information**

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

The screenshot shows a web interface with a breadcrumb trail 'Status >> System Information'. Below it is a dialog box titled 'Edit System Information'. Inside the dialog, there are three rows of input fields: 'System Name' (containing 'Switch'), 'System Location' (containing 'Default'), and 'System Contact' (containing 'Default'). At the bottom of the dialog are two buttons: 'Apply' and 'Close'.

Figure 2-2 Edit System Information dialog

| Field                  | Description                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------|
| <b>System Name</b>     | System name of the switch. This name will also use as CLI prefix of each line. ("Switch>" or "Switch#") |
| <b>System Location</b> | Location information of the switch                                                                      |
| <b>System Contact</b>  | Contact information of the switch                                                                       |

Table 2-2 System Information Fields

## 2.2. Logging Message

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

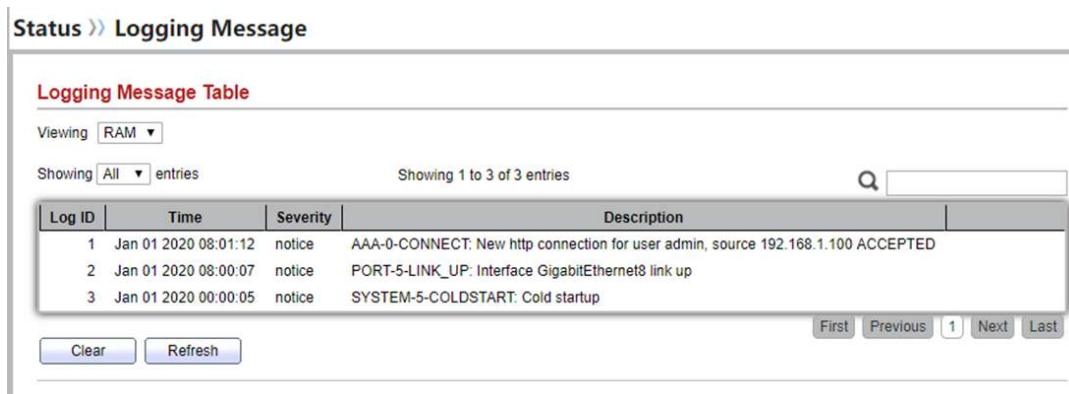


Figure 2-3: Logging Message page.

| Field              | Description                             |
|--------------------|-----------------------------------------|
| <b>Log ID</b>      | The log identifier.                     |
| <b>Time</b>        | The time stamp for the logging message. |
| <b>Severity</b>    | The severity for the logging message.   |
| <b>Description</b> | The description of logging message.     |

Table 2-3: Logging Message fields.

| Field          | Description                                                                                                                                                                                                      |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Viewing</b> | The logging view including: <ul style="list-style-type: none"> <li>• <b>RAM:</b> Show the logging messages stored on the RAM.</li> <li>• <b>Flash:</b> Show the logging messages stored on the Flash.</li> </ul> |
| <b>Clear</b>   | Clear the logging messages.                                                                                                                                                                                      |
| <b>Refresh</b> | Refresh the logging messages.                                                                                                                                                                                    |

Table 2-4: Logging Message buttons.

## 2.3Port

The Port configuration page displays port summary and status information.

### 2.3.1 Statistics

To display Port Counters web page, click Status > Port > Statistics

This page displays 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. The "Clear" button will clear MIB counter of current selected port.

#### Status >> Port >> Statistics

Port
GE1 ▼

MIB Counter
☒ All  
☐ Interface  
☐ Etherlike  
☐ RMON

Refresh Rate
☐ None  
☐ 5 sec  
☒ 10 sec  
☐ 30 sec

Clear

| Interface          |   |
|--------------------|---|
| ifInOctets         | 0 |
| ifInUcastPkts      | 0 |
| ifInNUcastPkts     | 0 |
| ifInDiscards       | 0 |
| ifOutOctets        | 0 |
| ifOutUcastPkts     | 0 |
| ifOutNUcastPkts    | 0 |
| ifOutDiscards      | 0 |
| ifInMulticastPkts  | 0 |
| ifInBroadcastPkts  | 0 |
| ifOutMulticastPkts | 0 |
| ifOutBroadcastPkts | 0 |

| Etherlike                        |   |
|----------------------------------|---|
| dot3StatsAlignmentErrors         | 0 |
| dot3StatsFCSErrors               | 0 |
| dot3StatsSingleCollisionFrames   | 0 |
| dot3StatsMultipleCollisionFrames | 0 |
| dot3StatsDeferredTransmissions   | 0 |
| dot3StatsLateCollisions          | 0 |
| dot3StatsExcessiveCollisions     | 0 |
| 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 |

Figure 2-4 Port Counters Page

| Field | Description                                 |
|-------|---------------------------------------------|
| Port  | Select one port to show counter statistics. |

|                     |                                                                                                                                                                                                                                                             |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MIB Counter</b>  | Select the MIB counter to show different counter type                                                                                                                                                                                                       |
|                     | <ul style="list-style-type: none"> <li>• <b>All:</b> All counters.</li> <li>• <b>Interface:</b> Interface related MIB counters</li> <li>• <b>Etherlike:</b> Ethernet-like related MIB counters</li> <li>• <b>RMON:</b> RMON related MIB counters</li> </ul> |
| <b>Refresh Rate</b> | Refresh the web page every period of seconds to get new counter of specified port                                                                                                                                                                           |

Table 2-5 Port Counters Fields

### 2.3.2 Error Disabled

To display the status of port error disabled, click Status > Port > Error Disabled.

Status >> Port >> Error Disabled

**Error Disabled Table**

|                          | Port | Reason | Time Left (sec) |
|--------------------------|------|--------|-----------------|
| <input type="checkbox"/> | GE1  | ---    | ---             |
| <input type="checkbox"/> | GE2  | ---    | ---             |
| <input type="checkbox"/> | GE3  | ---    | ---             |
| <input type="checkbox"/> | GE4  | ---    | ---             |
| <input type="checkbox"/> | GE5  | ---    | ---             |
| <input type="checkbox"/> | GE6  | ---    | ---             |
| <input type="checkbox"/> | GE7  | ---    | ---             |
| <input type="checkbox"/> | GE8  | ---    | ---             |
| <input type="checkbox"/> | GE9  | ---    | ---             |
| <input type="checkbox"/> | GE10 | ---    | ---             |
| <input type="checkbox"/> | LAG1 | ---    | ---             |
| <input type="checkbox"/> | LAG2 | ---    | ---             |
| <input type="checkbox"/> | LAG3 | ---    | ---             |
| <input type="checkbox"/> | LAG4 | ---    | ---             |
| <input type="checkbox"/> | LAG5 | ---    | ---             |
| <input type="checkbox"/> | LAG6 | ---    | ---             |
| <input type="checkbox"/> | LAG7 | ---    | ---             |
| <input type="checkbox"/> | LAG8 | ---    | ---             |

Refresh Recover

Figure 2-5: Error Disabled Status page.

| Field         | Description                                                                      |
|---------------|----------------------------------------------------------------------------------|
| <b>Port</b>   | Interface or port number.                                                        |
| <b>Reason</b> | Port will be disabled by one of the following error reason:<br><b>BPDU Guard</b> |

- 
- **UDLD** Table 2-6: Error Disabled Status fields.
  - **Self Loop**
  - **Broadcast Flood**
  - **Unknown Multicast Flood**
  - **Unicast Flood**
  - **ACL**
  - **Port Security Violation**
  - **DHCP rate limit**
  - **ARP rate limit**

**Time Left (sec)**    The time left in second for the error recovery.

---

### 2.3.3 Bandwidth Utilization

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

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

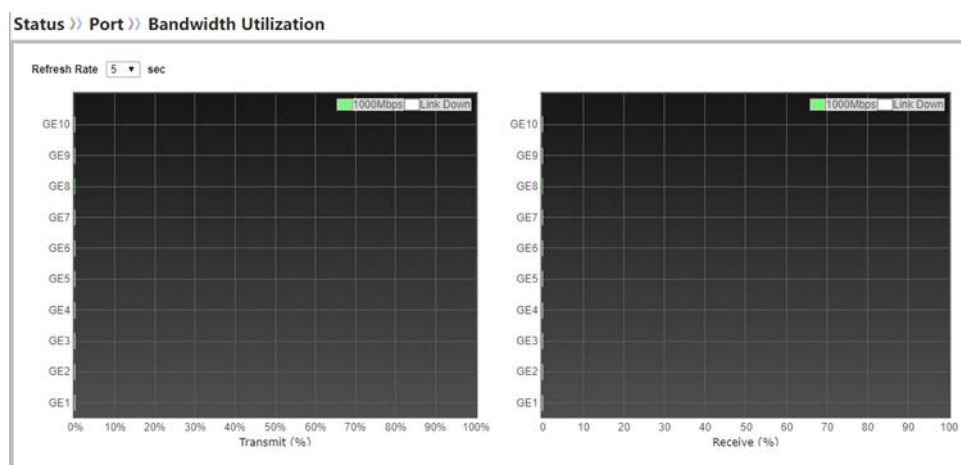


Figure 2-6 Port Bandwidth Utilization Page

| Field               | Description                                                                        |
|---------------------|------------------------------------------------------------------------------------|
| <b>Refresh Rate</b> | Refresh the web page every period of seconds to get new bandwidth utilization data |

Table 2-7 Bandwidth Utilization Field

### 2.3 Link Aggregation

To display Link Aggregation status web page, click Status > Link Aggregation

| LAG   | Name | Type | Link Status | Active Member | Inactive Member |
|-------|------|------|-------------|---------------|-----------------|
| LAG 1 | ---  | ---  | ---         |               |                 |
| LAG 2 | ---  | ---  | ---         |               |                 |
| LAG 3 | ---  | ---  | ---         |               |                 |
| LAG 4 | ---  | ---  | ---         |               |                 |
| LAG 5 | ---  | ---  | ---         |               |                 |
| LAG 6 | ---  | ---  | ---         |               |                 |
| LAG 7 | ---  | ---  | ---         |               |                 |
| LAG 8 | ---  | ---  | ---         |               |                 |

Figure 2-7 Link Aggregation Status Page

| Field       | Description          |
|-------------|----------------------|
| <b>LAG</b>  | LAG Name             |
| <b>Name</b> | LAG port description |

|                        |                                                                                                                                                                                                                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>            | The type of the LAG                                                                                                                                                                                                                                                                              |
|                        | <ul style="list-style-type: none"> <li>• <b>Static:</b> The group of ports assigned to a static LAG are always active members.</li> <li>• <b>LACP:</b> The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports.</li> </ul> |
| <b>Link Status</b>     | LAG port link status                                                                                                                                                                                                                                                                             |
| <b>Active Member</b>   | Active member ports of the LAG                                                                                                                                                                                                                                                                   |
| <b>Inactive Member</b> | Inactive member ports of the LAG                                                                                                                                                                                                                                                                 |

Table 2-8 LAG Status Fields

## 2.4 MAC Address Table

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

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

**Status >> MAC Address Table**

**MAC Address Table**

Showing All entries Showing 1 to 2 of 2 entries

| VLAN | MAC Address       | Type       | Port |
|------|-------------------|------------|------|
| 1    | 00:E0:4C:00:00:00 | Management | CPU  |
| 1    | 00:0E:C6:D8:58:EC | Dynamic    | GE8  |

Clear Refresh

First Previous 1 Next Last

Figure 2-8 MAC Address Status Page

| Field              | Description                                                                                                                                                                                                                             |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>        | VLAN ID of the mac address                                                                                                                                                                                                              |
| <b>MAC Address</b> | MAC address                                                                                                                                                                                                                             |
| <b>Type</b>        | The type of MAC address                                                                                                                                                                                                                 |
|                    | <ul style="list-style-type: none"> <li>• <b>Management:</b> DUT's base mac address for management purpose</li> <li>• <b>Static:</b> Manually configured by administrator</li> <li>• <b>Dynamic:</b> Auto learned by hardware</li> </ul> |
| <b>Port</b>        | The type of Port                                                                                                                                                                                                                        |
|                    | <ul style="list-style-type: none"> <li>• <b>CPU:</b> DUT's CPU port for management purpose</li> <li>• <b>Other:</b> Normal switch port</li> </ul>                                                                                       |

Table 2-9 MAC Address Status Fields

## 3. 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.

### 3.1 IP Address

To configure the Switch IP/IPv6 address and DNS configuration, click Network > IP Address.

**Network >> IP Address**

| IPv4 Address    |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| Address Type    | <input type="radio"/> Static<br><input checked="" type="radio"/> Dynamic |
| IP Address      | 192.168.1.1                                                              |
| Subnet Mask     | 255.255.255.0                                                            |
| Default Gateway | 192.168.1.254                                                            |

| IPv6 Address       |                                            |
|--------------------|--------------------------------------------|
| Auto Configuration | <input checked="" type="checkbox"/> Enable |
| DHCPv6 Client      | <input type="checkbox"/> Enable            |
| IPv6 Address       |                                            |
| Prefix Length      | 0 (0 - 128)                                |
| IPv6 Gateway       |                                            |

| Operational Status   |                          |
|----------------------|--------------------------|
| IPv4 Address         | 192.168.1.1              |
| IPv4 Default Gateway | 192.168.1.254            |
| IPv6 Address         | ::                       |
| IPv6 Gateway         | ::                       |
| Link Local Address   | fe80::2e0:4cff:fe00:0/64 |

Apply

Figure 3-1: IP Address page.

| Field           | Description                                                                                                                                                                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Address Type    | The address type of switch IP configuration including <ul style="list-style-type: none"> <li><b>Static:</b> Static IP configured by users will be used.</li> <li><b>Dynamic:</b> Enable the DHCP to obtain the IP address from a DHCP server.</li> </ul> |
| IP Address      | Specify the switch static IP address on the static configuration.                                                                                                                                                                                        |
| Subnet Mask     | Specify the switch subnet mask on the static configuration                                                                                                                                                                                               |
| Default Gateway | Specify the default gateway on the static configuration. The default gateway must be in the same subnet with switch IP address configuration.                                                                                                            |

|                        |                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Default Gateway</b> | Specify the default gateway on the static configuration. The default gateway must be in the same subnet with switch IP address configuration. |
| <b>DNS Server 1</b>    | Specify the primary user-defined IPv4 DNS server configuration                                                                                |
| <b>DNS Server 2</b>    | Specify the secondary user-defined IPv4 DNS server configuration                                                                              |

Table 3-1: IPv4 Address fields.

| Field                     | Description                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Auto Configuration</b> | Enable/Disable the IPv6 auto configuration.                                                               |
| <b>DHCPv6 Client</b>      | Enable/Disable the DHCPv6 client.                                                                         |
| <b>IPv6 Address</b>       | Specify the IPv6 address, when the IPv6 auto configuration and DHCPv6 client are disabled.                |
| <b>IPv6 Prefix</b>        | Specify the prefix for the IPv6 address, when the IPv6 auto configuration and DHCPv6 client are disabled. |
| <b>Gateway</b>            | Specify the IPv6 default gateway, when the IPv6 auto configuration and DHCPv6 client are disabled.        |
| <b>DNS Server 1</b>       | Specify the primary user-defined IPv6 DNS server configuration.                                           |
| <b>DNS Server 2</b>       | Specify the secondary user-defined IPv6 DNS server configuration.                                         |

Table 3-2: IPv6 Address fields.

| Field                     | Description                                 |
|---------------------------|---------------------------------------------|
| <b>IPv4 Address</b>       | The operational IPv4 address of the switch. |
| <b>IPv4 Gateway</b>       | The operational IPv4 gateway of the switch. |
| <b>IPv6 Address</b>       | The operational IPv6 address of the switch. |
| <b>IPv6 Gateway</b>       | The operational IPv6 gateway of the switch. |
| <b>Link Local Address</b> | The IPv6 link local address for the switch. |

Table 3-3: Operational Status fields.

### 3.2 System Time

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

Figure 3-2 System Time Page

| Field                 | Description                                                                                                                                                                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Source</b>         | Select the time source. <ul style="list-style-type: none"> <li>• <b>SNTP:</b> Time sync from NTP server.</li> <li>• <b>From Computer:</b> Time set from browser host.</li> <li>• <b>Manual Time:</b> Time set by manually configure.</li> </ul> |
| <b>Time Zone</b>      | Select a time zone difference from listing district.                                                                                                                                                                                            |
| <b>SNTP</b>           | <b>Description</b>                                                                                                                                                                                                                              |
| <b>Address Type</b>   | Select the address type of NTP server. This is enabled when time source is SNTP.                                                                                                                                                                |
| <b>Server Address</b> | Input IPv4 address or hostname for NTP server. This is enabled when time source is SNTP.                                                                                                                                                        |
| <b>Server Port</b>    | Input NTP port for NTP server. Default is 123. This is enabled when time source is SNTP.                                                                                                                                                        |
| <b>Manual Time</b>    | <b>Description</b>                                                                                                                                                                                                                              |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Date</b>                 | Input manual date. This is enabled when time source is manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Time</b>                 | Input manual time. This is enabled when time source is manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Daylight Saving Time</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Type</b>                 | <p>Select the mode of daylight saving time.</p> <ul style="list-style-type: none"> <li>• <b>Disable:</b> Disable daylight saving time.</li> <li>• <b>Recurring:</b> Using recurring mode of daylight saving time.</li> <li>• <b>Non-Recurring:</b> Using non-recurring mode of daylight saving time.</li> <li>• <b>USA:</b> Using daylight saving time in the United States that starts on the second Sunday of March and ends on the first Sunday of November</li> <li>• <b>European:</b> Using daylight saving time in the Europe that starts on the last Sunday in March and ending on the last Sunday in October</li> </ul> |
| <b>Offset</b>               | Specify the adjust offset of daylight saving time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Recurring From</b>       | Specify the starting time of recurring daylight saving time. This field available when selecting "Recurring" mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Recurring To</b>         | Specify the ending time of recurring daylight saving time. This field available when selecting "Recurring" mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Non-recurring From</b>   | Specify the starting time of non-recurring daylight saving time. This field available when selecting "Non-Recurring" mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Non recurring To</b>     | Specify the ending time of recurring daylight saving time. This field available when selecting "Non-Recurring" mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

Table 3-4 System Time Fields

## 4.Port

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

### 4.1 Port Setting

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

Port Setting Table

| <input type="checkbox"/> | Entry | Port | Type         | Description | State   | Link Status | Speed        | Duplex      | Flow Control   |
|--------------------------|-------|------|--------------|-------------|---------|-------------|--------------|-------------|----------------|
| <input type="checkbox"/> | 1     | GE1  | 1000M Copper |             | Enabled | Down        | Auto         | Auto        | Disabled       |
| <input type="checkbox"/> | 2     | GE2  | 1000M Copper |             | Enabled | Down        | Auto         | Auto        | Disabled       |
| <input type="checkbox"/> | 3     | GE3  | 1000M Copper |             | Enabled | Down        | Auto         | Auto        | Disabled       |
| <input type="checkbox"/> | 4     | GE4  | 1000M Copper |             | Enabled | Down        | Auto         | Auto        | Disabled       |
| <input type="checkbox"/> | 5     | GE5  | 1000M Copper |             | Enabled | Down        | Auto         | Auto        | Disabled       |
| <input type="checkbox"/> | 6     | GE6  | 1000M Copper |             | Enabled | Down        | Auto         | Auto        | Disabled       |
| <input type="checkbox"/> | 7     | GE7  | 1000M Copper |             | Enabled | Down        | Auto         | Auto        | Disabled       |
| <input type="checkbox"/> | 8     | GE8  | 1000M Copper |             | Enabled | Up          | Auto (1000M) | Auto (Full) | Disabled (Off) |
| <input type="checkbox"/> | 9     | GE9  | 1000M Fiber  |             | Enabled | Down        | Auto         | Auto        | Disabled       |
| <input type="checkbox"/> | 10    | GE10 | 1000M Fiber  |             | Enabled | Down        | Auto         | Auto        | Disabled       |

Edit

Figure 4-1 Port Setting Table

| Field        | Description                                                                                                                                      |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Port         | Port Name                                                                                                                                        |
| Type         | Port media type                                                                                                                                  |
| Description  | Port description                                                                                                                                 |
| State        | Port admin state. <ul style="list-style-type: none"> <li><b>Enabled:</b> Enable the port.</li> <li><b>Disabled:</b> Disable the port.</li> </ul> |
| Link Status  | Current port link status <ul style="list-style-type: none"> <li><b>Up:</b> Port is link up</li> <li><b>Down:</b> Port is link down</li> </ul>    |
| 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                                                                             |

Table 4-1 Port Setting Table Fields

## Port &gt;&gt; Port Setting

## Edit Port Setting

|              |                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------|
| Port         | GE7-GE10                                                                                               |
| Description  | <input type="text"/>                                                                                   |
| State        | <input checked="" type="checkbox"/> Enable                                                             |
| Speed        | <input checked="" type="radio"/> Auto                                                                  |
|              | <input type="radio"/> Auto - 10M                                                                       |
|              | <input type="radio"/> Auto - 100M                                                                      |
|              | <input type="radio"/> Auto - 1000M                                                                     |
|              | <input type="radio"/> Auto - 10M/100M                                                                  |
|              | <input type="radio"/> 10M                                                                              |
|              | <input type="radio"/> 100M                                                                             |
|              | <input type="radio"/> 1000M                                                                            |
|              | <input type="radio"/> 10G                                                                              |
| Duplex       | <input checked="" type="radio"/> Auto<br><input type="radio"/> Full<br><input type="radio"/> Half      |
| Flow Control | <input type="radio"/> Auto<br><input type="radio"/> Enable<br><input checked="" type="radio"/> Disable |

Apply Close

Figure 4-2 Edit Port Setting Dialog

| Field       | Description                                                                                 |
|-------------|---------------------------------------------------------------------------------------------|
| Port        | Selected port list                                                                          |
| Description | Port description                                                                            |
| State       | Port admin state.<br><b>Enabled:</b> Enable the port.<br><b>Disabled:</b> Disable the port. |

**Port speed capabilities.****Speed**

- **Auto:** Auto speed with all capabilities
- **Auto-10M:** Auto speed with 10M ability only
- **Auto-100M:** Auto speed with 100M ability only
- **Auto-1000M:** Auto speed with 1000M ability only
- **Auto-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

**Port duplex capabilities.****Duplex**

- **Auto:** Auto duplex with all capabilities
- **Half:** Auto speed with 10M and 100M ability only
- **Full:** Auto speed with 10M/100M/1000M ability only

**Port flow control.****Flow Control**

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

Table 4-2 Edit Port Setting Fields

## 4.2 Error Disabled

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

**Port >> Error Disabled**

Recovery Interval:  Sec (30 - 86400)

|                         |                                 |
|-------------------------|---------------------------------|
| BPDU Guard              | <input type="checkbox"/> Enable |
| UDLD                    | <input type="checkbox"/> Enable |
| Self Loop               | <input type="checkbox"/> Enable |
| Broadcast Flood         | <input type="checkbox"/> Enable |
| Unknown Multicast Flood | <input type="checkbox"/> Enable |
| Unicast Flood           | <input type="checkbox"/> Enable |
| ACL                     | <input type="checkbox"/> Enable |
| Port Security           | <input type="checkbox"/> Enable |
| DHCP Rate Limit         | <input type="checkbox"/> Enable |
| ARP Rate Limit          | <input type="checkbox"/> Enable |

Figure 4-3 Error Disabled Page

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

|                        |                                                                                                                                 |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>DHCP Rate Limit</b> | Enabled to auto shutdown port when DHCP rate limit reason occur. This reason caused by DHCP packet rate exceed DHCP rate limit. |
| <b>ARP Rate Limit</b>  | Enabled to auto shutdown port when ARP rate limit reason occur. This reason caused by DHCP packet rate exceed ARP rate limit.   |

Table 4-3 Error Disabled Fields

### 4.3 Link Aggregation

#### 4.3.1 Group

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

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

Figure 4-4 LAG Global Setting

| Field                         | Description                                                                                                                                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Load Balance Algorithm</b> | <p>LAG load balance distribution algorithm</p> <ul style="list-style-type: none"> <li>• <b>src-dst-mac:</b> Based on MAC address</li> <li>• <b>src-dst-mac-ip:</b> Based on MAC address and IP address</li> </ul> |

Table 4-4 LAG Global Setting Fields

#### Link Aggregation Table

| LAG                                    | Name | Type | Link Status | Active Member | Inactive Member |
|----------------------------------------|------|------|-------------|---------------|-----------------|
| <input checked="" type="radio"/> LAG 1 |      | ---  | ---         |               |                 |
| <input type="radio"/> LAG 2            |      | ---  | ---         |               |                 |
| <input type="radio"/> LAG 3            |      | ---  | ---         |               |                 |
| <input type="radio"/> LAG 4            |      | ---  | ---         |               |                 |
| <input type="radio"/> LAG 5            |      | ---  | ---         |               |                 |
| <input type="radio"/> LAG 6            |      | ---  | ---         |               |                 |
| <input type="radio"/> LAG 7            |      | ---  | ---         |               |                 |
| <input type="radio"/> LAG 8            |      | ---  | ---         |               |                 |

Figure 4-5 LAG Group Setting Table

| Field                  | Description                                                                                                                                                                                                                                                                                                          |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LAG</b>             | LAG Name                                                                                                                                                                                                                                                                                                             |
| <b>Name</b>            | LAG port description                                                                                                                                                                                                                                                                                                 |
| <b>Type</b>            | The type of the LAG <ul style="list-style-type: none"> <li>• <b>Static:</b> The group of ports assigned to a static LAG are always active members.</li> <li>• <b>LACP:</b> The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports.</li> </ul> |
| <b>Link Status</b>     | LAG port link status                                                                                                                                                                                                                                                                                                 |
| <b>Active Member</b>   | Active member ports of the LAG                                                                                                                                                                                                                                                                                       |
| <b>Inactive Member</b> | Inactive member ports of the LAG                                                                                                                                                                                                                                                                                     |

Table 4-5 LAG Group Setting Fields

## Port &gt;&gt; Link Aggregation &gt;&gt; Group

Edit Link Aggregation Group

LAG

1

Name

Type

☒ Static
☐ LACP

Member

Available Port

GE3  
GE4  
GE5  
GE6  
GE7  
GE8  
GE9  
GE10

>
<

Selected Port

GE1  
GE2

Apply

Close

Figure 4-6 Edit LAG Group Setting Dialog

| Field       | Description           |
|-------------|-----------------------|
| <b>LAG</b>  | Selected LAG group ID |
| <b>Name</b> | LAG port description  |

|               |                                                                                                                                                                                                                                                                                                  |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>   | The type of the LAG                                                                                                                                                                                                                                                                              |
|               | <ul style="list-style-type: none"> <li>• <b>Static:</b> The group of ports assigned to a static LAG are always active members.</li> <li>• <b>LACP:</b> The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports.</li> </ul> |
| <b>Member</b> | Select available port to be LAG group member port                                                                                                                                                                                                                                                |

Table 4-6 Edit LAG Group Setting Field

### 4.3.2 Port Setting

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

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

#### Port >> Link Aggregation >> Port Setting

**Port Setting Table**

Q

| <input type="checkbox"/> | LAG   | Type | Description | State   | Link Status | Speed | Duplex | Flow Control |
|--------------------------|-------|------|-------------|---------|-------------|-------|--------|--------------|
| <input type="checkbox"/> | LAG 1 |      |             | Enabled | Down        | Auto  | Auto   | Disabled     |
| <input type="checkbox"/> | LAG 2 |      |             | Enabled | Down        | Auto  | Auto   | Disabled     |
| <input type="checkbox"/> | LAG 3 |      |             | Enabled | Down        | Auto  | Auto   | Disabled     |
| <input type="checkbox"/> | LAG 4 |      |             | Enabled | Down        | Auto  | Auto   | Disabled     |
| <input type="checkbox"/> | LAG 5 |      |             | Enabled | Down        | Auto  | Auto   | Disabled     |
| <input type="checkbox"/> | LAG 6 |      |             | Enabled | Down        | Auto  | Auto   | Disabled     |
| <input type="checkbox"/> | LAG 7 |      |             | Enabled | Down        | Auto  | Auto   | Disabled     |
| <input type="checkbox"/> | LAG 8 |      |             | Enabled | Down        | Auto  | Auto   | Disabled     |

Figure 4-7 LAG Port Setting Table

| Field              | Description                                                                                                                                              |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LAG</b>         | LAG Port Name                                                                                                                                            |
| <b>Type</b>        | LAG Port media type                                                                                                                                      |
| <b>Description</b> | LAG Port description                                                                                                                                     |
| <b>State</b>       | LAG Port admin state. <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Enable the port.</li> <li>• <b>Disabled:</b> Disable the port.</li> </ul> |
| <b>Link Status</b> | Current LAG port link status <ul style="list-style-type: none"> <li>• <b>Up:</b> Port is link up</li> <li>• <b>Down:</b> Port is link down</li> </ul>    |
| <b>Speed</b>       | Current LAG port speed configuration and link speed status                                                                                               |
| <b>Duplex</b>      | Current LAG port duplex configuration and link duplex status                                                                                             |

**Flow Control**

Current LAG port flow control configuration and link flow control status

Table 4-7 Port Setting Status Fields

**Port >> Link Aggregation >> Port Setting**

**Edit Port Setting**

---

Port

LAG1

Description

State

☒ Enable

Speed

☒ Auto
 ☐ 10M  
☐ Auto - 10M
 ☐ 100M  
☐ Auto - 100M
 ☐ 1000M  
☐ Auto - 1000M
 ☐ 10G  
☐ Auto - 10M/100M

Flow Control

☐ Auto  
☐ Enable  
☒ Disable

Apply

Close

Figure 4-8 Edit LAG Port Setting Dialog

| Field               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>         | Selected port list                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Description</b>  | Port description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>State</b>        | Port admin state. <ul style="list-style-type: none"> <li>• <b>Enable:</b> Enable the port.</li> <li>• <b>Disable:</b> Disable the port.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Speed</b>        | Port speed capabilities. <ul style="list-style-type: none"> <li>• <b>Auto:</b> Auto speed with all capabilities</li> <li>• <b>Auto-10M:</b> Auto speed with 10M ability only</li> <li>• <b>Auto-100M:</b> Auto speed with 100M ability only</li> <li>• <b>Auto-1000M:</b> Auto speed with 1000M ability only</li> <li>• <b>Auto-10M/100M:</b> Auto speed with 10M/100M abilities</li> <li>• <b>10M:</b> Force speed with 10M ability</li> <li>• <b>100M:</b> Force speed with 100M ability</li> <li>• <b>1000M:</b> Force speed with 1000M ability</li> </ul> |
| <b>Flow Control</b> | Port flow control. <ul style="list-style-type: none"> <li>• <b>Auto:</b> Auto flow control by negotiation.</li> <li>• <b>Enabled:</b> Enable flow control ability.</li> <li>• <b>Disabled:</b> Disable flow control ability.</li> </ul>                                                                                                                                                                                                                                                                                                                       |

**Table 4-8 Port Setting Status Fields**

### 4.3.3 LACP

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

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

#### Port >> Link Aggregation >> LACP

System Priority: 32768 (1 - 65535, default 32768)

Apply

Figure 4-9 LACP Global Setting

| Field                  | Description                                                                                |
|------------------------|--------------------------------------------------------------------------------------------|
| <b>System Priority</b> | Configure the system priority of LACP. This decides the system priority field in LACP PDU. |

#### LACP Port Setting Table

| Entry | Port | Port Priority | Timeout |
|-------|------|---------------|---------|
| 1     | GE1  | 1             | Long    |
| 2     | GE2  | 1             | Long    |
| 3     | GE3  | 1             | Long    |
| 4     | GE4  | 1             | Long    |
| 5     | GE5  | 1             | Long    |
| 6     | GE6  | 1             | Long    |
| 7     | GE7  | 1             | Long    |
| 8     | GE8  | 1             | Long    |
| 9     | GE9  | 1             | Long    |
| 10    | GE10 | 1             | Long    |

Edit

Figure 4-10 LACP Port Setting Table

| Field                | Description                                                                                                                                                                                                                       |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>          | Port Name                                                                                                                                                                                                                         |
| <b>Port Priority</b> | LACP priority value of the port                                                                                                                                                                                                   |
| <b>Timeout</b>       | <p>The periodic transmissions type of LACP PDUs.</p> <ul style="list-style-type: none"> <li><b>Long:</b> Transmit LACP PDU with slow periodic (30s).</li> <li><b>Short:</b> Transmit LACPP DU with fast periodic (1s).</li> </ul> |

Table 4-10 LACP Port Setting Table Fields

## Port &gt;&gt; Link Aggregation &gt;&gt; LACP

Figure 4-11 Edit LACP Port Setting

| Field         | Description                                                                                                                                                                                                                           |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port          | Selected port list                                                                                                                                                                                                                    |
| Port Priority | Enter the LACP priority value of the port                                                                                                                                                                                             |
| Timeout       | <p>The periodic transmissions type of LACP PDUs.</p> <ul style="list-style-type: none"> <li>• <b>Long:</b> Transmit LACP PDU with slow periodic (30s).</li> <li>• <b>Short:</b> Transmit LACPP DU with fast periodic (1s).</li> </ul> |

Table 4-11 Edit LACP Port Setting Fields

## 4.4 EEE

To display EEE web page, click Port > EEE

This page allow user to configure Energy Efficient Ethernet settings.

## Port &gt;&gt; EEE

|                          | Entry | Port | State    |
|--------------------------|-------|------|----------|
| <input type="checkbox"/> | 1     | GE1  | Disabled |
| <input type="checkbox"/> | 2     | GE2  | Disabled |
| <input type="checkbox"/> | 3     | GE3  | Disabled |
| <input type="checkbox"/> | 4     | GE4  | Disabled |
| <input type="checkbox"/> | 5     | GE5  | Disabled |
| <input type="checkbox"/> | 6     | GE6  | Disabled |
| <input type="checkbox"/> | 7     | GE7  | Disabled |
| <input type="checkbox"/> | 8     | GE8  | Disabled |
| <input type="checkbox"/> | 9     | GE9  | Disabled |
| <input type="checkbox"/> | 10    | GE10 | Disabled |

Figure 4-12 EEE Setting Table

| Field | Description                                                                                                                                                 |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port  | Port Name                                                                                                                                                   |
| State | <p>Port EEE admin state.</p> <ul style="list-style-type: none"> <li>• <b>Enabled:</b> EEE is enabled</li> <li>• <b>Disabled:</b> EEE is disabled</li> </ul> |

Port EEE operational status.

### Operational Status

- **Enabled:** EEE is operating
- **Disabled:** EEE is no operating

Table 4-12 EEE Setting Table Fields

| Field | Description                                                                                                                                |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Port  | Selected port list                                                                                                                         |
| State | Port EEE admin state. <ul style="list-style-type: none"> <li>• <b>Enable:</b> Enable EEE</li> <li>• <b>Disable:</b> Disable EEE</li> </ul> |

Table 4-13 Edit EEE Setting Fields

## 4.5 Jumbo Frame

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

This page allow user to configure switch jumbo frame size.

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

Table 4-14 Jumbo Frame Fields

## 5. VLAN

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

VLAN membership can be configured through software instead of physically relocating devices or connections.

### 5.1 VLAN

Use the VLAN pages to configure settings of VLAN.

#### 5.1.1 Create VLAN

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

**VLAN >> VLAN >> Create VLAN**

VLAN

Available VLAN

VLAN 2  
VLAN 3  
VLAN 4  
VLAN 5  
VLAN 6  
VLAN 7  
VLAN 8  
VLAN 9

Created VLAN

VLAN 1

Apply

**VLAN Table**

Showing All entries Showing 1 to 1 of 1 entries

| <input type="checkbox"/> | VLAN | Name    | Type    | VLAN Interface State |
|--------------------------|------|---------|---------|----------------------|
| <input type="checkbox"/> | 1    | default | Default | Disabled             |

First Previous 1 Next Last

Edit Delete

Figure 5-1 Create VLAN Page

| Field                 | Description                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------|
| <b>Available VLAN</b> | VLAN has not created yet.<br>Select available VLANs from left box then move to right box to add. |
| <b>Created VLAN</b>   | VLAN had been created.<br>Select created VLANs from right box then move to left box to delete.   |

Table 5-1 Create VLAN Fields

**VLAN >> VLAN >> Create VLAN**

**Edit VLAN Name**

Name

Figure 5-2 Edit VLAN Name Dialog

| Field       | Description      |
|-------------|------------------|
| <b>Name</b> | Input VLAN name. |

Table 5-2 Edit VLAN Name Fields

### 5.1.2 VLAN Configuration

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

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

**VLAN >> VLAN >> VLAN Configuration**

**VLAN Configuration Table**

VLAN

| Entry | Port | Mode  | Membership                                                                                            | PVID                     | Forbidden                |
|-------|------|-------|-------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 1     | GE1  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 2     | GE2  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 3     | GE3  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 4     | GE4  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 5     | GE5  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 6     | GE6  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 7     | GE7  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 8     | GE8  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 9     | GE9  | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 10    | GE10 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 11    | LAG1 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 12    | LAG2 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 13    | LAG3 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 14    | LAG4 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 15    | LAG5 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 16    | LAG6 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 17    | LAG7 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |
| 18    | LAG8 | Trunk | <input checked="" type="radio"/> Excluded <input type="radio"/> Tagged <input type="radio"/> Untagged | <input type="checkbox"/> | <input type="checkbox"/> |

Figure 5-3 VLAN configuration Page

| Field       | Description                                               |
|-------------|-----------------------------------------------------------|
| <b>VLAN</b> | Select specified VLAN ID to configure VLAN configuration. |
| <b>Port</b> | Display the interface of port entry.                      |
| <b>Mode</b> | Display the interface VLAN mode of port.                  |

|                   |                                                                                                                                                                                                                                                                                                                                              |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Membership</b> | Select the membership for this port of the specified VLAN ID.                                                                                                                                                                                                                                                                                |
|                   | <ul style="list-style-type: none"> <li>• <b>Forbidden:</b> Specify the port is forbidden in the VLAN.</li> <li>• <b>Excluded:</b> Specify the port is excluded in the VLAN.</li> <li>• <b>Tagged:</b> Specify the port is tagged member in the VLAN.</li> <li>• <b>Untagged:</b> Specify the port is untagged member in the VLAN.</li> </ul> |
| <b>PVID</b>       | Display if it is PVID of interface.                                                                                                                                                                                                                                                                                                          |

Table 5-3 VLAN Configuration Settings Fields

### 5.1.3 Membership

To display Membership page, click VLAN > VLAN > Membership

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

VLAN >> VLAN >> Membership

| Entry | Port | Mode  | Administrative VLAN | Operational VLAN |
|-------|------|-------|---------------------|------------------|
| 1     | GE1  | Trunk | 1UP                 | 1UP              |
| 2     | GE2  | Trunk | 1UP                 | 1UP              |
| 3     | GE3  | Trunk | 1UP                 | 1UP              |
| 4     | GE4  | Trunk | 1UP                 | 1UP              |
| 5     | GE5  | Trunk | 1UP                 | 1UP              |
| 6     | GE6  | Trunk | 1UP                 | 1UP              |
| 7     | GE7  | Trunk | 1UP                 | 1UP              |
| 8     | GE8  | Trunk | 1UP                 | 1UP              |
| 9     | GE9  | Trunk | 1UP                 | 1UP              |
| 10    | GE10 | Trunk | 1UP                 | 1UP              |
| 11    | LAG1 | Trunk | 1UP                 | 1UP              |
| 12    | LAG2 | Trunk | 1UP                 | 1UP              |
| 13    | LAG3 | Trunk | 1UP                 | 1UP              |
| 14    | LAG4 | Trunk | 1UP                 | 1UP              |
| 15    | LAG5 | Trunk | 1UP                 | 1UP              |
| 16    | LAG6 | Trunk | 1UP                 | 1UP              |
| 17    | LAG7 | Trunk | 1UP                 | 1UP              |
| 18    | LAG8 | Trunk | 1UP                 | 1UP              |

Figure 5-4 Membership Page

|                            |                                                                                                                                                             |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>                | Display the interface of port entry.                                                                                                                        |
| <b>Mode</b>                | Display the interface VLAN mode of port.                                                                                                                    |
| <b>Administrative VLAN</b> | Display the administrative VLAN list of this port.                                                                                                          |
| <b>Operational VLAN</b>    | 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. |

Table 5-4 Membership Fields

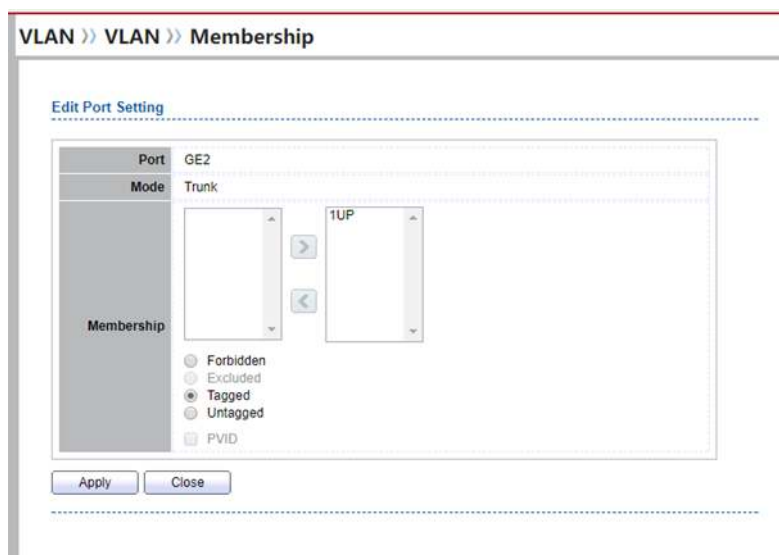


Figure 5-5 Edit Membership Dialog

| Field      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port       | Display the interface.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Mode       | Display the VLAN mode of interface.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Membership | <p>Select VLANs of left box and select one of following membership then move to right box to add membership. Select VLANs of right box then move to left box to remove membership. Tagging membership may not choose in differ VLAN port mode. Select the time source.</p> <ul style="list-style-type: none"> <li>• <b>Forbidden:</b> Set VLAN as forbidden VLAN.</li> <li>• <b>Excluded:</b> This option is always disabled.</li> <li>• <b>Tagged:</b> Set VLAN as tagged VLAN.</li> <li>• <b>Untagged:</b> Set VLAN as untagged VLAN.</li> <li>• <b>PVID:</b> 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.</li> </ul> |

Table 5-5 Edit Membership Fields

### 5.1.4 Port Setting

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

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

VLAN >> VLAN >> Port Setting

Port Setting Table

| <input type="checkbox"/>            | Entry | Port | Mode  | PVID | Accept Frame Type | Ingress Filtering | Uplink   | TPID   |
|-------------------------------------|-------|------|-------|------|-------------------|-------------------|----------|--------|
| <input type="checkbox"/>            | 1     | GE1  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 2     | GE2  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 3     | GE3  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 4     | GE4  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 5     | GE5  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 6     | GE6  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input checked="" type="checkbox"/> | 7     | GE7  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 8     | GE8  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 9     | GE9  | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 10    | GE10 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 11    | LAG1 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 12    | LAG2 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 13    | LAG3 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 14    | LAG4 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 15    | LAG5 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 16    | LAG6 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 17    | LAG7 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |
| <input type="checkbox"/>            | 18    | LAG8 | Trunk | 1    | All               | Enabled           | Disabled | 0x8100 |

Edit

Figure 5-6 Port Setting Page

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

Table 5-6 Port setting Fields

VLAN >> VLAN >> Port Setting

Edit Port Setting

|                   |                                                                                                                                        |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Port              | GE7                                                                                                                                    |
| Mode              | <input type="radio"/> Hybrid<br><input type="radio"/> Access<br><input checked="" type="radio"/> Trunk<br><input type="radio"/> Tunnel |
| PVID              | 1 (1 - 4094)                                                                                                                           |
| Accept Frame Type | <input checked="" type="radio"/> All<br><input type="radio"/> Tag Only<br><input type="radio"/> Untag Only                             |
| Ingress Filtering | <input checked="" type="checkbox"/> Enable                                                                                             |
| Uplink            | <input checked="" type="checkbox"/> Enable                                                                                             |
| TPID              | 0x9100 ▼                                                                                                                               |

Apply Close

Figure 5-7 Edit Port Setting Dialog

| Field             | Description                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port              | Display selected port to be edited.                                                                                                                                                                                                                                                                                                                                       |
| Mode              | Select the VLAN mode of the interface. <ul style="list-style-type: none"> <li>• <b>Hybrid:</b> Support all functions as defined in IEEE 802.1Q specification.</li> <li>• <b>Access:</b> Accepts only untagged frames and join an untagged VLAN.</li> <li>• <b>Trunk:</b> An untagged member of one VLAN at most, and is a tagged member of zero or more VLANs.</li> </ul> |
| PVID              | Specify the port-based VLAN ID (1-4094). It's only available with Hybrid and Trunk mode.                                                                                                                                                                                                                                                                                  |
| Accepted Type     | Specify the acceptable-frame-type of the specified interfaces. It's only available with Hybrid mode.                                                                                                                                                                                                                                                                      |
| Ingress Filtering | Set checkbox to enable/disable ingress filtering. It's only available with Hybrid mode.                                                                                                                                                                                                                                                                                   |
| Uplink            | Set checkbox to enable/disable uplink mode. It's only available with trunk mode.                                                                                                                                                                                                                                                                                          |
| TPID              | Select TPID used of interface. It's only available with trunk mode.                                                                                                                                                                                                                                                                                                       |

Table 5-7 Edit Port Setting Fields

## 5.2 Voice VLAN

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

### 5.2.1 Property

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

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

Figure 5-8 Property Page

| Field             | Description                                                                                                                                |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State</b>      | Set checkbox to enable or disable voice VLAN function.                                                                                     |
| <b>VLAN</b>       | Select Voice VLAN ID. Voice VLAN ID cannot be default VLAN.                                                                                |
| <b>Cos/802.1p</b> | Select a value of VPT. Qualified packets will use this VPT value as inner priority.                                                        |
| <b>Remarking</b>  | Set checkbox to enable or disable 1p remarking. If enabled, qualified packets will be remark by this value.                                |
| <b>Aging Time</b> | 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. |

Table 5-8 Property Fields

Port Setting Table

|                          | Entry | Port | State    | Mode | QoS Policy   |
|--------------------------|-------|------|----------|------|--------------|
| <input type="checkbox"/> | 1     | GE1  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 2     | GE2  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 3     | GE3  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 4     | GE4  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 5     | GE5  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 6     | GE6  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 7     | GE7  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 8     | GE8  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 9     | GE9  | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 10    | GE10 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 11    | LAG1 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 12    | LAG2 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 13    | LAG3 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 14    | LAG4 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 15    | LAG5 | Disabled | Auto | Voice Packet |

Figure 5-9 Property Port Page

| Field      | Description                                                |
|------------|------------------------------------------------------------|
| Port       | Display port entry.                                        |
| State      | Display enable/disabled status of interface.               |
| Mode       | Display voice VLAN mode.                                   |
| QoS Policy | Display voice VLAN remark will effect which kind of packet |

Table 5-9 Property Port Fields

**VLAN >> Voice VLAN >> Property**

Edit Port Setting

|            |                                                                            |
|------------|----------------------------------------------------------------------------|
| Port       | GE1                                                                        |
| State      | <input type="checkbox"/> Enable                                            |
| Mode       | <input checked="" type="radio"/> Auto<br><input type="radio"/> Manual      |
| QoS Policy | <input checked="" type="radio"/> Voice Packet<br><input type="radio"/> All |

Apply Close

Table 5-9 Property Port Fields

**VLAN >> Voice VLAN >> Property**

Edit Port Setting

|            |                                                                            |
|------------|----------------------------------------------------------------------------|
| Port       | GE1                                                                        |
| State      | <input type="checkbox"/> Enable                                            |
| Mode       | <input checked="" type="radio"/> Auto<br><input type="radio"/> Manual      |
| QoS Policy | <input checked="" type="radio"/> Voice Packet<br><input type="radio"/> All |

Apply Close

Figure 5-10 Edit Property Port Dialog

| Field | Description                                                       |
|-------|-------------------------------------------------------------------|
| Port  | Display selected port to be edited.                               |
| State | Set checkbox to enable/disabled voice VLAN function of interface. |

|                   |                                                                                                                                                                                                                                                                   |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mode</b>       | Select port voice VLAN mode                                                                                                                                                                                                                                       |
|                   | <ul style="list-style-type: none"> <li>• <b>Auto:</b> Voice VLAN auto detect packets that match OUI table and add received port into voice VLAN ID tagged member.</li> <li>• <b>Manual:</b> User need add interface to VLAN ID tagged member manually.</li> </ul> |
| <b>QoS Policy</b> | Select port QoS Policy mode                                                                                                                                                                                                                                       |
|                   | <ul style="list-style-type: none"> <li>• <b>Voice Packet:</b> QoS attributes are applied to packets with OUIs in the source MAC address.</li> <li>• <b>All:</b> QoS attributes are applied to packets that are classified to the Voice VLAN.</li> </ul>           |

Table 5-10 Edit Property Port Fields

### 5.2.2 Voice OUI

To display Voice OUI page, click VLAN> Voice VLAN> Voice OUI

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

Figure 5-11 Voice OUI Page

| Field              | Description                       |
|--------------------|-----------------------------------|
| <b>OUI</b>         | Display OUI MAC address.          |
| <b>Description</b> | Display description of OUI entry. |

Table 5-11 Voice OUI Mac Setting Fields



The 'Edit Voice OUI' dialog box contains two input fields: 'OUI' with the value '00:E0:BB' and 'Description' with the value '3COM'. Below the fields are 'Apply' and 'Close' buttons.

Figure 5-12 Add and Edit Voice OUI Dialog

| Field              | Description                                                                |
|--------------------|----------------------------------------------------------------------------|
| <b>OUI</b>         | Input OUI MAC address. Can't be edited in edit dialog.                     |
| <b>Description</b> | Input description of the specified MAC address to the voice VLAN OUI table |

Table 5-12 Add and Edit Voice OUI Fields

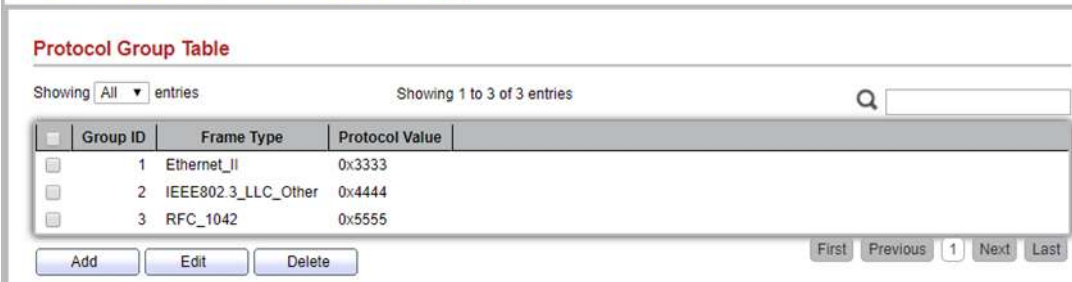
### 5.3 Protocol VLAN

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

#### 5.3.1 Protocol Group

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

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



The 'Protocol Group Page' shows a breadcrumb trail: VLAN >> Protocol VLAN >> Protocol Group. Below the title 'Protocol Group Table', it indicates 'Showing All entries' and 'Showing 1 to 3 of 3 entries'. A search bar is present. The table lists three entries:

|                          | Group ID | Frame Type           | Protocol Value |
|--------------------------|----------|----------------------|----------------|
| <input type="checkbox"/> | 1        | Ethernet_II          | 0x3333         |
| <input type="checkbox"/> | 2        | IEEE802.3_LL_C_Other | 0x4444         |
| <input type="checkbox"/> | 3        | RFC_1042             | 0x5555         |

At the bottom, there are 'Add', 'Edit', and 'Delete' buttons, and pagination controls: 'First', 'Previous', '1', 'Next', 'Last'.

Figure 5-13 Protocol Group Page

| Field                 | Description                      |
|-----------------------|----------------------------------|
| <b>Group ID</b>       | Display group ID of entry.       |
| <b>Frame Type</b>     | Display frame type of entry.     |
| <b>Protocol Value</b> | Display protocol value of entry. |

Table 5-13 Protocol Group Fields

## VLAN &gt;&gt; Protocol VLAN &gt;&gt; Protocol Group

**Add Protocol Group**

Group ID

4 ▼

Frame Type

Ethernet\_II ▼

Protocol Value

0x  (0x600 ~ 0xFFFFE)

Apply

Close

---

**Edit Protocol Group**

Group ID

1

Frame Type

Ethernet\_II ▼

Protocol Value

0x 3333 (0x600 ~ 0xFFFFE)

Apply

Close

Figure 5-14 Add and Edit Protocol Group Dialog

| Field                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Group ID</b>       | Select group ID of list. The range from 1 to 8.                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Frame Type</b>     | Select frame type of list that maps packets to protocol-defined VLANs by examining the type octet within the packet header to discover the type of protocol associated with it. <ul style="list-style-type: none"> <li>• <b>Ethernet_II:</b> packet type is Ethernet version 2.</li> <li>• <b>IEEE802.3_LL_C_Other:</b> packet type is 802.3 packet with LLC other header.</li> <li>• <b>RFC_1042:</b> packet type is rfc 1042 packet.</li> </ul> |
| <b>Protocol Value</b> | Input protocol value of the target protocol. Packets match this protocol value classified to specified VLAN ID.                                                                                                                                                                                                                                                                                                                                   |

Table 5-14 Add and Edit Protocol Group Fields

### 5.3.2 Group Binding

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

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

## VLAN &gt;&gt; Protocol VLAN &gt;&gt; Group Binding

**Group Binding Table**

Showing All ▼ entries      Showing 1 to 1 of 1 entries     

| <input type="checkbox"/> | Port | Group ID | VLAN |
|--------------------------|------|----------|------|
| <input type="checkbox"/> | GE1  | 1        | 22   |

Add

Edit

Delete

First

Previous

1

Next

Last

Figure 5-15 Group binding Page

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

Table 5-15 Group Binding Fields

**VLAN >> Protocol VLAN >> Group Binding**

**Add Group Binding**

Port

Available Port

Selected Port

GE1

Note: Only VLAN Hybrid port can be set Protocol VLAN

Group ID

1 ▼

VLAN

2222 (1 - 4094)

Apply Close

Figure 5-16 Add and Edit Group Binding Dialog

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

Table 5-16 Group Binding Fields

## 5.4 MAC VLAN

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

### 5.4.1 MAC Group

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

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

VLAN >> MAC VLAN >> MAC Group

MAC Group Table

Showing All entries Showing 1 to 3 of 3 entries

|                          | Group ID | MAC Address       | Mask |
|--------------------------|----------|-------------------|------|
| <input type="checkbox"/> | 1        | 02:03:04:05:06:07 | 48   |
| <input type="checkbox"/> | 2        | 04:05:06:07:08:09 | 9    |
| <input type="checkbox"/> | 3        | AA:BB:CC:DD:EE:FF | 32   |

Add Edit Delete

First Previous 1 Next Last

Figure 5-17 MAC Group Page

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

Table 5-17 MAC Group Fields

VLAN >> MAC VLAN >> MAC Group

Add MAC Group

Group ID (1 - 2147483647)

MAC Address

Mask (9 - 48)

Apply Close

Edit MAC Group

Group ID 1

MAC Address 02:03:04:05:06:07

Mask 48 (9 - 48)

Apply Close

Figure 5-18 Add and Edit MAC Group Dialog

| Field | Description |
|-------|-------------|
|-------|-------------|

|                    |                                                                                                                      |
|--------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Group ID</b>    | Input group ID that is a unique ID of mac group entry. The range from 1 to 2147483647. Only available on Add Dialog. |
| <b>MAC Address</b> | Input mac address for classifying packets.                                                                           |
| <b>Mask</b>        | Input mask of mac address.                                                                                           |

Table 5-18 Add and Edit MAC Group Fields

### 5.4.2 Group Binding

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

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

**VLAN >> MAC VLAN >> Group Binding**

**Group Binding Table**

Showing  entries      Showing 1 to 1 of 1 entries     

| <input type="checkbox"/> | Port | Group ID | VLAN |
|--------------------------|------|----------|------|
| <input type="checkbox"/> | GE1  | 1        | 3333 |

Figure 5-19 Group binding Page

| Field           | Description                                                  |
|-----------------|--------------------------------------------------------------|
| <b>Port</b>     | Display port ID that binding with MAC group entry            |
| <b>Group ID</b> | Display group ID that port binding with                      |
| <b>VLAN</b>     | Display VLAN ID that assign to packets which match MAC group |

Table 5-19 Group Binding Fields

**VLAN >> MAC VLAN >> Group Binding**

**Add Group Binding**

Port

Available Port

Selected Port

GE1

Note: Only VLAN Hybrid port can be set MAC VLAN

Group ID

1

VLAN

(1 - 4094)

## Edit Group Binding

|          |      |            |
|----------|------|------------|
| Port     | GE1  |            |
| Group ID | 1    |            |
| VLAN     | 3333 | (1 - 4094) |

Figure 5-20 Add and Edit Group Binding Dialog

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

Table 5-20 Group Binding Fields

## 5.5 Surveillance VLAN

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

### 5.5.1 Property

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

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

#### VLAN >> Surveillance VLAN >> Property

|                        |                                            |
|------------------------|--------------------------------------------|
| State                  | <input checked="" type="checkbox"/> Enable |
| VLAN                   | VLAN0002 ▼                                 |
| CoS / 802.1p Remarking | <input checked="" type="checkbox"/> Enable |
|                        | 6 ▼                                        |
| Aging Time             | 1440 Min (30 - 65536, default 1440)        |

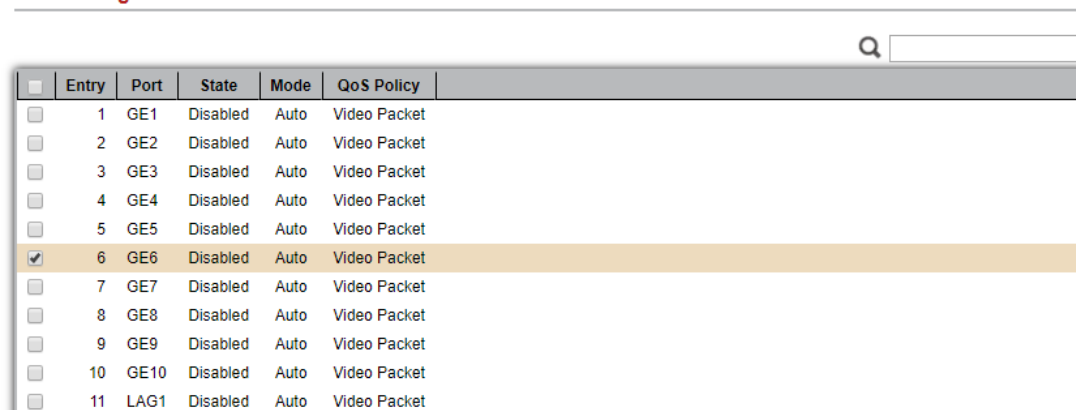
Figure 5-21 Property Page

| Field | Description                                                               |
|-------|---------------------------------------------------------------------------|
| State | Set checkbox to enable or disable Surveillance VLAN function.             |
| VLAN  | Select Surveillance VLAN ID. Surveillance VLAN ID cannot be default VLAN. |

|                   |                                                                                                                                            |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cos/802.1p</b> | Select a value of VPT. Qualified packets will use this VPT value as inner priority.                                                        |
| <b>Remarking</b>  | Set checkbox to enable or disable 1p remarking. If enabled, qualified packets will be remark by this value.                                |
| <b>Aging Time</b> | Input value of aging time. Default is 1440 minutes. A video VLAN entry will be age out after this time if without any packet pass through. |

Table 5-21 Property Fields

Port Setting Table



|                                     | Entry | Port | State    | Mode | QoS Policy   |
|-------------------------------------|-------|------|----------|------|--------------|
| <input type="checkbox"/>            | 1     | GE1  | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 2     | GE2  | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 3     | GE3  | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 4     | GE4  | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 5     | GE5  | Disabled | Auto | Video Packet |
| <input checked="" type="checkbox"/> | 6     | GE6  | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 7     | GE7  | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 8     | GE8  | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 9     | GE9  | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 10    | GE10 | Disabled | Auto | Video Packet |
| <input type="checkbox"/>            | 11    | LAG1 | Disabled | Auto | Video Packet |

Figure 5-22 Property Port Page

| Field             | Description                                                       |
|-------------------|-------------------------------------------------------------------|
| <b>Port</b>       | Display port entry.                                               |
| <b>State</b>      | Display enable/disabled status of interface.                      |
| <b>Mode</b>       | Display voice VLAN mode.                                          |
| <b>QoS Policy</b> | Display Surveillance VLAN remark will effect which kind of packet |

Table 5-22 Property Port Fields

**VLAN >> Surveillance VLAN >> Property**

Edit Port Setting

|            |                                                                            |
|------------|----------------------------------------------------------------------------|
| Port       | GE6                                                                        |
| State      | <input checked="" type="checkbox"/> Enable                                 |
| Mode       | <input type="radio"/> Auto<br><input type="radio"/> Manual                 |
| QoS Policy | <input checked="" type="radio"/> Video Packet<br><input type="radio"/> All |

Apply Close

Figure 5-23 Edit Property Port Dialog

| Field             | Description                                                                                                                                                                                                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>       | Display selected port to be edited.                                                                                                                                                                                                                                                                         |
| <b>State</b>      | Set checkbox to enable/disabled Surveillance VLAN function of interface.                                                                                                                                                                                                                                    |
| <b>Mode</b>       | Select port Surveillance VLAN mode <ul style="list-style-type: none"> <li>• <b>Auto:</b> Video VLAN auto detect packets that match OUI table and add received port into surveillance VLAN ID tagged member.</li> <li>• <b>Manual:</b> User need add interface to VLAN ID tagged member manually.</li> </ul> |
| <b>QoS Policy</b> | Select port QoS Policy mode <ul style="list-style-type: none"> <li>• <b>Video Packet:</b> QoS attributes are applied to packets with OUIs in the source MAC address.</li> <li>• <b>All:</b> QoS attributes are applied to packets that are classified to the Surveillance VLAN.</li> </ul>                  |

### 5.5.2 Surveillance OUI

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

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

Figure 5-24 Surveillance OUI Page

| Field              | Description                       |
|--------------------|-----------------------------------|
| <b>OUI</b>         | Display OUI MAC address.          |
| <b>Description</b> | Display description of OUI entry. |

Table 5-24 Surveillance OUI Fields

Figure 5-25 Add and Edit Surveillance OUI Dialog

| Field              | Description                                                                       |
|--------------------|-----------------------------------------------------------------------------------|
| <b>OUI</b>         | Input OUI MAC address. Can't be edited in edit dialog.                            |
| <b>Description</b> | Input description of the specified MAC address to the Surveillance VLAN OUI table |

Table 5-25 Add and Edit Surveillance OUI Fields

## 5.6 GVRP

### 5.6.1 Property

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

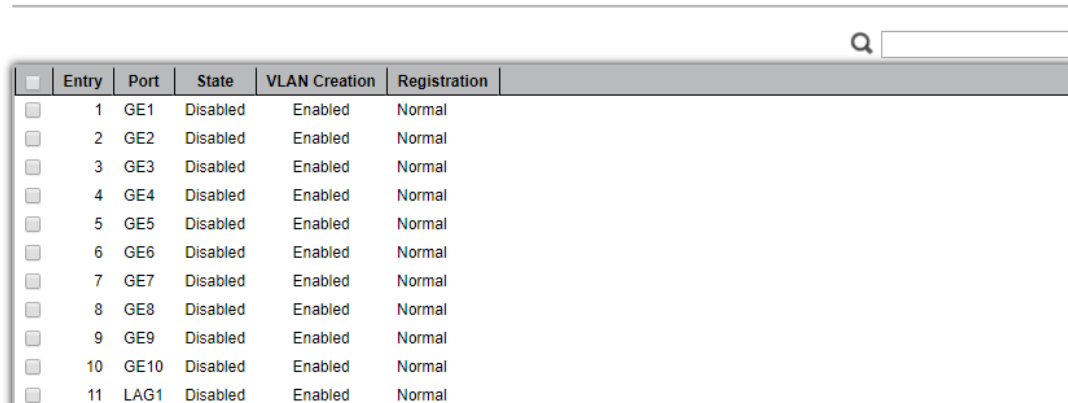
This page allow user to enable or disable GVRP function and GVRP port setting

Figure 5-26 GVRP Setting Page

| Field                      | Description                                                                                                  |
|----------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>State</b>               | Set the enabling status of GVRP functionality<br><b>Enable:</b> if Checked Enable GVRP, else is Disable GVRP |
| <b>Operational Timeout</b> |                                                                                                              |
| <b>Join</b>                | GVRP Join time out.                                                                                          |
| <b>Leave</b>               | GVRP leave time out.                                                                                         |
| <b>Leave All</b>           | GVRP leave all time out.                                                                                     |

Table 5-26 GVRP Setting Fields

Port Setting Table

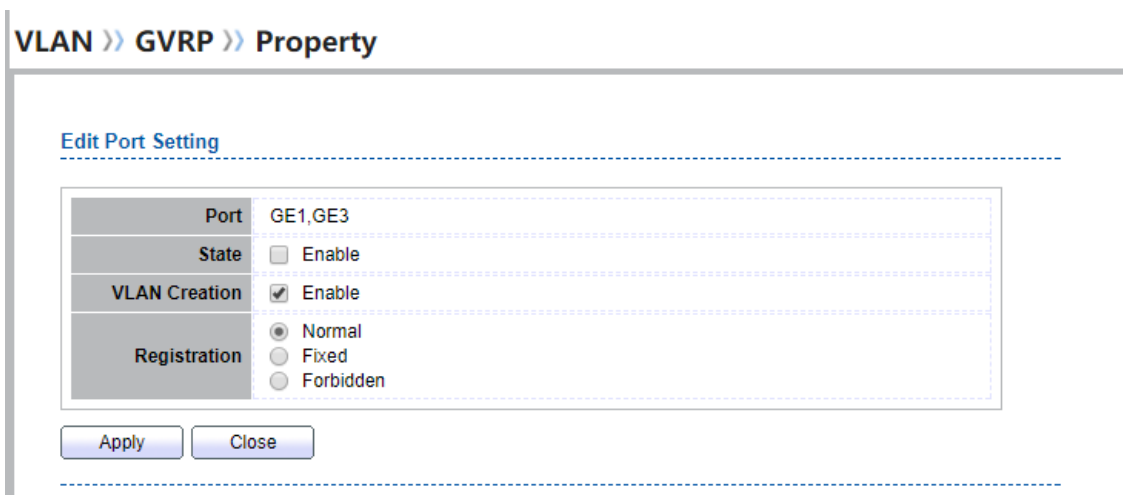


| <input type="checkbox"/> | Entry | Port | State    | VLAN Creation | Registration |
|--------------------------|-------|------|----------|---------------|--------------|
| <input type="checkbox"/> | 1     | GE1  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 2     | GE2  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 3     | GE3  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 4     | GE4  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 5     | GE5  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 6     | GE6  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 7     | GE7  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 8     | GE8  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 9     | GE9  | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 10    | GE10 | Disabled | Enabled       | Normal       |
| <input type="checkbox"/> | 11    | LAG1 | Disabled | Enabled       | Normal       |

Figure 5-27 GVRP port Setting Page

| Field         | Description                           |
|---------------|---------------------------------------|
| Entry         | Entry of number                       |
| Port          | Port Name                             |
| State         | Display port GVRP state               |
| Vlan Creation | Display port GVRP creation vlan state |
| Registration  | Display port GVRP registration mode   |

Table 5-27 GVRP port setting Fields



VLAN >> GVRP >> Property

Edit Port Setting

|               |                                                                                                           |
|---------------|-----------------------------------------------------------------------------------------------------------|
| Port          | GE1,GE3                                                                                                   |
| State         | <input type="checkbox"/> Enable                                                                           |
| VLAN Creation | <input checked="" type="checkbox"/> Enable                                                                |
| Registration  | <input checked="" type="radio"/> Normal<br><input type="radio"/> Fixed<br><input type="radio"/> Forbidden |

Apply Close

Figure 5-28 GVRP port Setting Edit Page

| Field | Description                                                                               |
|-------|-------------------------------------------------------------------------------------------|
| Port  | Display the selected port list                                                            |
| State | Set the enabling status of GVRP port<br><b>Enable:</b> Enable/Disable port of GVRP state. |

|                      |                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vlan Creation</b> | Set the enabling status of GVRP port create VLAN<br><b>Enable:</b> Enable/Disable port create dynamic VLAN.                                                                                                                                                                                                                                                                          |
| <b>Register Mode</b> | Set the register mode of GVRP port <ul style="list-style-type: none"> <li>• <b>Normal:</b> Normal mode.</li> <li>• <b>Fixed:</b> The port will not learn any dynamic VLAN. Only send static VLAN information to neighbor and allow static VLAN packet pass.</li> <li>• <b>Forbidden:</b> The port will not learn any dynamic VLAN and only allow default VLAN packet pass</li> </ul> |

Table 5-28 GVRP port setting Edit Fields

### 5.6.2 Membership

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

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

VLAN >> GVRP >> Membership

Membership Table

Showing 

All

 entries

Showing 1 to 1 of 1 entries

| VLAN | Member             | Dynamic Member | Type   |
|------|--------------------|----------------|--------|
| 1    | GE1-GE10,LAG1-LAG8 |                | Static |

First

Previous

1

Next

Last

Figure 5-29 GVRP VLAN Information Page

| Field                | Description                                         |
|----------------------|-----------------------------------------------------|
| <b>VLAN</b>          | VLAN ID                                             |
| <b>Member</b>        | VLAN port members include static and dynamic member |
| <b>Dynamic Ports</b> | GVRP learned dynamic ports                          |
| <b>Vlan Type</b>     | The type of VLAN is static or dynamic.              |

Table 5-29 GVRP Port Status Fields

5.6.3 Statistics

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

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

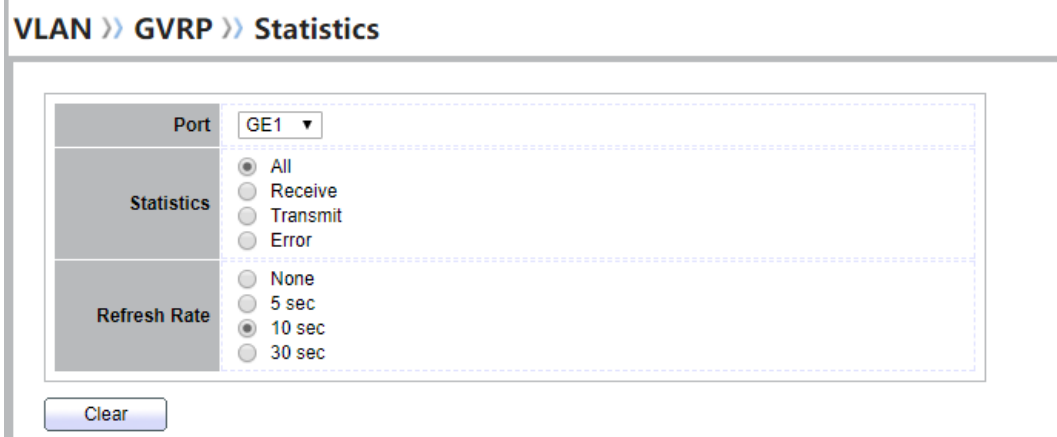


Figure 5-30 GVRP Port Statistics Display Setting

| Field        | Description                                                                                                                                                                                                                                                                                                                                    |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port         | Port ID                                                                                                                                                                                                                                                                                                                                        |
| Statistics   | Type of statistics <ul style="list-style-type: none"><li>• <b>All:</b> Display Receiver, Transmit and Error port statistics</li><li>• <b>Receive:</b> Display Receive port statistics</li><li>• <b>Transmit:</b> Display Transmit port statistics</li><li>• <b>Error:</b> Display Error port statistics</li></ul>                              |
| Refresh Rate | Web refresh rate <ul style="list-style-type: none"><li>• <b>None:</b> Not auto refresh display port statistics</li><li>• <b>5 sec:</b> Refresh display port statistics per 5 seconds</li><li>• <b>10 sec:</b> Refresh display port statistics per 10 seconds</li><li>• <b>30 sec:</b> Refresh display port statistics per 30 seconds</li></ul> |

Table 5-30 GVRP Port Statistics Display Setting Fields

| Receive                  |   |
|--------------------------|---|
| Join empty               | 0 |
| Empty                    | 0 |
| Leave Empty              | 0 |
| Join In                  | 0 |
| Leave In                 | 0 |
| Leave All                | 0 |
| Transmit                 |   |
| Join empty               | 0 |
| Empty                    | 0 |
| Leave Empty              | 0 |
| Join In                  | 0 |
| Leave In                 | 0 |
| Leave All                | 0 |
| Error                    |   |
| Invalid Protocol ID      | 0 |
| Invalid Attribute Type   | 0 |
| Invalid Attribute Value  | 0 |
| Invalid Attribute Length | 0 |
| Invalid Event            | 0 |

Figure 5-31 GVRP Port Statistics

| Field                          | Description                                                       |
|--------------------------------|-------------------------------------------------------------------|
| <b>Join empty</b>              | The number of Receive or Transmit Join empty attribute value.     |
| <b>Empty</b>                   | The number of Receive or Transmit Empty attribute value.          |
| <b>Leave Empty</b>             | The number of Receive or Transmit Leave Empty attribute value.    |
| <b>Join In</b>                 | The number of Receive or Transmit Join In attribute value.        |
| <b>Leave In</b>                | The number of Receive or Transmit Leave In empty attribute value. |
| <b>Leave All</b>               | The number of Receive or Transmit Leave All attribute value.      |
| <b>Invalid Protocol ID</b>     | The number of Receive Invalid Protocol ID                         |
| <b>Invalid Attribute Type</b>  | The number of Receive Invalid Attribut Type                       |
| <b>Invalid Attribute Value</b> | The number of Receive Invalid Attribute value.                    |

|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| <b>Invalid Attribute Length</b> | The number of Receive Invalid Attribute Length. |
| <b>Invalid Event</b>            | The number of Receive Invalid Event.            |

Table 5-31 GVRP Port Statistics Fields

## 6. MAC Address Table

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

### 6.1 Dynamic Address

To configure the aging time of the dynamic address, click **MAC Address Table > Dynamic Address**.

Figure 6-1: Dynamic Address Setting page.

| Field             | Description                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Aging Time</b> | 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.. |

Table 6-1: Dynamic Address Setting fields.

### 6.2 Static Address

To display the static MAC address, click **MAC Address Table > Static Address**.

Figure 6-2: Static Address Page.

| Field              | Description                                                    |
|--------------------|----------------------------------------------------------------|
| <b>MAC Address</b> | The MAC address to which packets will be statically forwarded. |
| <b>VLAN</b>        | Specify the VLAN to show or clear MAC entries.                 |
| <b>Port</b>        | Interface or port number.                                      |

Table 6-2: Static Address Setting fields.

### 6.3 Filtering Address

To configure and display the MAC filtering settings, click **MAC Address Table > Filtering Address**.

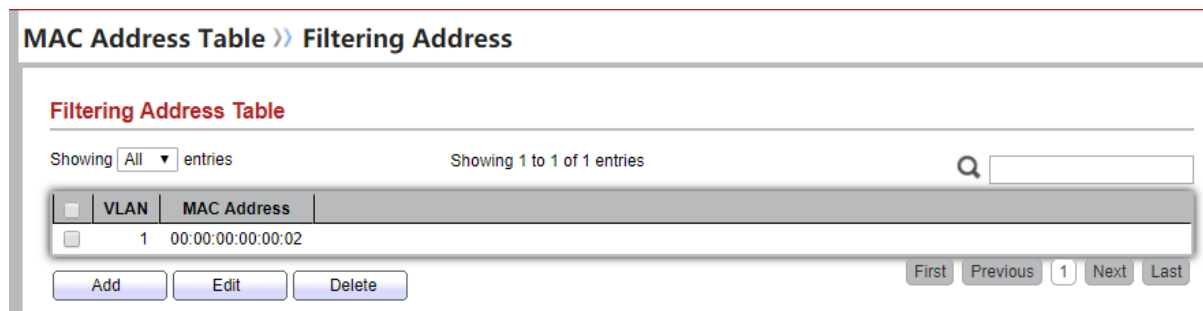


Figure 6-3: Filtering Address page.

| Field              | Description                                               |
|--------------------|-----------------------------------------------------------|
| <b>MAC Address</b> | Specify unicast MAC address in the packets to be dropped. |
| <b>VLAN</b>        | Specify the VLAN ID for the specific MAC address.         |

Table 6-3: Filtering Address Setting fields.

## 7. STP

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

### 7.1 Property

To configure and display STP property configuration, click Spanning Tree > Property.

**Spanning Tree >> Property**

|                           |                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------|
| State                     | <input checked="" type="checkbox"/> Enable                                                       |
| Operation Mode            | <input type="radio"/> STP<br><input checked="" type="radio"/> RSTP<br><input type="radio"/> MSTP |
| Path Cost                 | <input checked="" type="radio"/> Long<br><input type="radio"/> Short                             |
| BPDU Handling             | <input type="radio"/> Filtering<br><input checked="" type="radio"/> Flooding                     |
| Priority                  | <input type="text" value="32768"/> (0 - 61440, default 32768)                                    |
| Hello Time                | <input type="text" value="2"/> Sec (1 - 10, default 2)                                           |
| Max Age                   | <input type="text" value="20"/> Sec (6 - 40, default 20)                                         |
| Forward Delay             | <input type="text" value="15"/> Sec (4 - 30, default 15)                                         |
| Tx Hold Count             | <input type="text" value="6"/> (1 - 10, default 6)                                               |
| Region Name               | <input type="text" value="00:E0:4C:00:00:00"/>                                                   |
| Revision                  | <input type="text" value="0"/> (0 - 65535, default 0)                                            |
| Max Hop                   | <input type="text" value="20"/> (1 - 40, default 20)                                             |
| <b>Operational Status</b> |                                                                                                  |
| Bridge Identifier         | 32768-00:E0:4C:00:00:00                                                                          |
| Designated Root Bridge    | 0-00:00:00:00:00:00                                                                              |
| Root Port                 | N/A                                                                                              |
| Root Path Cost            | 0                                                                                                |
| Topology Change Count     | 0                                                                                                |
| Last Topology Change      | 0D/0H/0M/0S                                                                                      |

Figure 7-1: STP Property

| Field                 | Description                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------------------|
| <b>State</b>          | Enable/Disable the Spanning Tree on the switch.                                                    |
| <b>Operation Mode</b> | Specify the Spanning Tree operation mode.<br><b>STP:</b> Enable the Spanning Tree (STP) operation. |

|                      |                                                                                                                                                                                                                                                                                                                |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | <ul style="list-style-type: none"> <li>• <b>RSTP: Enable the Rapid Spanning Tree (RSTP) operation.</b></li> <li>• <b>MSTP: Enable the Multiple Spanning Tree (MSTP) operation.</b></li> </ul>                                                                                                                  |
| <b>Path Cost</b>     | <p>Specify the path cost method.</p> <ul style="list-style-type: none"> <li>• <b>Long:</b> Specifies that the default port path costs are within the range: 1-200,000,000..</li> <li>• <b>Short:</b> Specifies that the default port path costs are within the range: 1-65,535.</li> </ul>                     |
| <b>BPDU Handling</b> | <p>Specify the BPDU forward method when the STP is disabled.</p> <ul style="list-style-type: none"> <li>• <b>Filtering:</b> Filter the BPDU when STP is disabled.</li> <li>• <b>Flooding:</b> Flood the BPDU when STP is disabled.</li> </ul>                                                                  |
| <b>Priority</b>      | <p>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.</p> |
| <b>Hello Time</b>    | <p>Specify the STP hello time in second to broadcast its hello message to other bridges by Designated Ports. Its valid range is from 1 to 10 seconds.</p>                                                                                                                                                      |
| <b>Max Age</b>       | <p>Specify the time interval in seconds for a switch to wait the configuration messages, without attempting to redefine its own configuration.</p>                                                                                                                                                             |
| <b>Forward Delay</b> | <p>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.</p>                                                                                                |
| <b>TX Hold Count</b> | <p>Specify the tx-hold-count used to limit the maximum numbers of packets transmission per second. The valid range is from 1 to 10.</p>                                                                                                                                                                        |
| <b>Region Name</b>   | <p>The MSTP instance name. Its maximum length is 32 characters. The default value is the MAC address of the switch.</p>                                                                                                                                                                                        |
| <b>Revision</b>      | <p>The MSTP revision number. Its valid range is from 0 to 65535.</p>                                                                                                                                                                                                                                           |
| <b>Max Hops</b>      | <p>Specify the number of hops in an MSTP region before the BPDU is discarded. The valid range is 1 to 40.</p>                                                                                                                                                                                                  |

Table 7-1: STP Property field.

| Field                                    | Description                                      |
|------------------------------------------|--------------------------------------------------|
| <b>Bridge Identifier</b>                 | Bridge identifier of the switch.                 |
| <b>Designated Identifier</b> <b>Root</b> | Bridge identifier of the designated root bridge. |
| <b>Root Port</b>                         | Operational root port of the switch.             |
| <b>Root Path Cost</b>                    | Operational root path cost.                      |
| <b>Topology Change Count</b>             | Numbers of the topology changes.                 |
| <b>Last Topology</b>                     | The last time for the topology change            |

## Change

Table 7-2: STP Operational Status field.

### 7.2 Port Setting

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

#### Spanning Tree >> Port Setting

**Port Setting Table**

| <input type="checkbox"/> | Entry | Port | State    | Path Cost | Priority | BPDU Filter | BPDU Guard | Operational Edge | Operational Point-to-Point | Port Role |
|--------------------------|-------|------|----------|-----------|----------|-------------|------------|------------------|----------------------------|-----------|
| <input type="checkbox"/> | 1     | GE1  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 2     | GE2  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 3     | GE3  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 4     | GE4  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 5     | GE5  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 6     | GE6  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 7     | GE7  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 8     | GE8  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Enabled                    | Disabled  |
| <input type="checkbox"/> | 9     | GE9  | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 10    | GE10 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 11    | LAG1 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 12    | LAG2 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 13    | LAG3 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 14    | LAG4 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 15    | LAG5 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 16    | LAG6 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 17    | LAG7 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |
| <input type="checkbox"/> | 18    | LAG8 | Disabled | 20000     | 128      | Disabled    | Disabled   | Disabled         | Disabled                   | Disabled  |

Figure 7-2: STP Port Setting page.

| Field                             | Description                                                  |
|-----------------------------------|--------------------------------------------------------------|
| <b>Port</b>                       | Specify the interface ID or the list of interface IDs.       |
| <b>State</b>                      | The operational state on the specified port.                 |
| <b>Path Cost</b>                  | STP path cost on the specified port.                         |
| <b>Priority</b>                   | STP priority on the specified port.                          |
| <b>BPDU Filter</b>                | The states of BPDU filter on the specified port.             |
| <b>BPDU Guard</b>                 | The states of BPDU guard on the specified port.              |
| <b>Operational Edge</b>           | The operational edge port status on the specified port.      |
| <b>Operational Point-to-Point</b> | The operational point-to-point status on the specified port. |

|                           |                                                                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port Role</b>          | The current port role on the specified port. The possible values are: "Disabled", "Master", "Root", "Designated", "Alternative", and "Backup". |
| <b>Port State</b>         | The current port state on the specified port. The possible values are: "Disabled", "Discarding", "Learning", and "Forwarding".                 |
| <b>Designated Bridge</b>  | The bridge ID of the designated bridge.                                                                                                        |
| <b>Designated Port ID</b> | The designated port ID on the switch.                                                                                                          |
| <b>Designated Cost</b>    | The path cost of the designated port on the switch                                                                                             |

Table 7-3: STP Port Setting fields.

| Field                           | Description                                                                                                                |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Protocol Migration Check</b> | Restart the Spanning Tree Protocol (STP) migration process (re-negotiate with its neighborhood) on the specific interface. |

Table 7-4: STP Port Setting buttons.

**Spanning Tree >> Port Setting**

[Edit Port Setting](#)

Port

GE1-GE4

State

☒ Enable

Path Cost

(0 - 200000000) (0 = Auto)

Priority

128 ▾

Edge Port

☐ Enable

BPDU Filter

☐ Enable

BPDU Guard

☐ Enable

Point-to-Point

☒ Auto  
☐ Enable  
☐ Disable

Port State

Disabled

Designated Bridge

0-00:00:00:00:00:00

Designated Port ID

128-1

Designated Cost

20000

Operational Edge

False

Operational Point-to-Point

False

Apply

Close

Figure 7-3: Edit STP Port Setting page.

| Field        | Description                                   |
|--------------|-----------------------------------------------|
| <b>State</b> | Enable/Disable the STP on the specified port. |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Path Cost</b>      | Specify the STP path cost on the specified port.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Priority</b>       | Specify the STP path cost on the specified port.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Edge Port</b>      | <p>Specify the edge mode.</p> <ul style="list-style-type: none"> <li>• <b>Enable:</b> Force to true state (as link to a host).</li> <li>• <b>Disable:</b> Force to false state (as link to a bridge).</li> </ul> <p>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.</p> |
| <b>BPDU Filter</b>    | <p>The BPDU Filter configuration avoids receiving/transmitting BPDU from the specified ports.</p> <ul style="list-style-type: none"> <li>• <b>Enable:</b> Enable BPDU filter function.</li> <li>• <b>Disable:</b> Disable BPDU filter function.</li> </ul>                                                                                                                                                                                                                                      |
| <b>BPDU Guard</b>     | <p>The BPDU Guard configuration to drop the received BPDU directly.</p> <ul style="list-style-type: none"> <li>• <b>Enable:</b> Enable BPDU guard function.</li> <li>• <b>Disable:</b> Disable BPDU guard function.</li> </ul>                                                                                                                                                                                                                                                                  |
| <b>Point-to-Point</b> | <p>Specify the Point-to-Point port configuration:</p> <ul style="list-style-type: none"> <li>• <b>Auto:</b> The state is depended on the duplex setting of the port</li> <li>• <b>Enable:</b> Force to true state.</li> <li>• <b>Disable:</b> Force to false state.</li> </ul>                                                                                                                                                                                                                  |

Table 7-5: Edit STP Port Setting fields.

### 7.3 MST Instance

To configure MST instance setting, click **Spanning Tree > MST Instance**.

**Spanning Tree >> MST Instance**

**MST Instance Table**

|                       | MSTI | Priority | Bridge Identifier       | Designated Root Bridge | Root Port | Root Path Cost | Remaining Hop | VLAN   |
|-----------------------|------|----------|-------------------------|------------------------|-----------|----------------|---------------|--------|
| <input type="radio"/> | 0    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             | 1-4094 |
| <input type="radio"/> | 1    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 2    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 3    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 4    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 5    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 6    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 7    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 8    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 9    | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 10   | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 11   | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 12   | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 13   | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 14   | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |
| <input type="radio"/> | 15   | 32768    | 32768-00:E0:4C:00:00:00 | 0-00:00:00:00:00:00    | N/A       | 0              | 0             |        |

Figure 7-4: MST Instance page

| Field                         | Description                                                  |
|-------------------------------|--------------------------------------------------------------|
| <b>MSTI</b>                   | MST instance ID.                                             |
| <b>Priority</b>               | The bridge priority on the specified MSTI.                   |
| <b>Bridge Identifier</b>      | The bridge identifier on the specified MSTI.                 |
| <b>Designated Root Bridge</b> | The designated root bridge identifier on the specified MSTI. |
| <b>Root Port</b>              | The designated root port on the specified MSTI.              |
| <b>Root Path Cost</b>         | The designated root path cost on the specified MSTI.         |
| <b>Remaining Hop</b>          | The configuration of remaining hop on the specified MSTI.    |
| <b>VLAN</b>                   | The VLAN configuration on the specified MSTI.                |

Table 7-6: MST Instance fields.

**Spanning Tree >> MST Instance**

[Edit MST Instance Setting](#)

---

**MSTI**

1

**VLAN**

Available VLAN

1  
2  
3  
4  
5  
6  
7  
8

>  
<

Selected VLAN

**Priority**

(0 - 61440, default 32768)

**Bridge Identifier**

32768-00:E0:4C:00:00:00

**Designated Root Bridge**

0-00:00:00:00:00:00

**Root Port**

**Root Path Cost**

0

**Remaining Hop**

0

Figure 7-5: Edit MST Instance page.

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

Table 7-7: Edit MST Instance fields.

## 7.4 MST Port Setting

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

**Spanning Tree >> MST Port Setting**

**MST Port Setting Table**

MSTI 0 ▼

|                          | Entry | Port | Path Cost | Priority | Port Role | Port State | Mode | Type     | Designated Bridge   | Designated Port ID | Designate |
|--------------------------|-------|------|-----------|----------|-----------|------------|------|----------|---------------------|--------------------|-----------|
| <input type="checkbox"/> | 1     | GE1  | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-1              |           |
| <input type="checkbox"/> | 2     | GE2  | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-2              |           |
| <input type="checkbox"/> | 3     | GE3  | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-3              |           |
| <input type="checkbox"/> | 4     | GE4  | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-4              |           |
| <input type="checkbox"/> | 5     | GE5  | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-5              |           |
| <input type="checkbox"/> | 6     | GE6  | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-6              |           |
| <input type="checkbox"/> | 7     | GE7  | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-7              |           |
| <input type="checkbox"/> | 8     | GE8  | 20000     | 128      | Disabled  | Forwarding | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-8              |           |
| <input type="checkbox"/> | 9     | GE9  | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-9              |           |
| <input type="checkbox"/> | 10    | GE10 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-10             |           |
| <input type="checkbox"/> | 11    | LAG1 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-11             |           |
| <input type="checkbox"/> | 12    | LAG2 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-12             |           |
| <input type="checkbox"/> | 13    | LAG3 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-13             |           |
| <input type="checkbox"/> | 14    | LAG4 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-14             |           |
| <input type="checkbox"/> | 15    | LAG5 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-15             |           |
| <input type="checkbox"/> | 16    | LAG6 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-16             |           |
| <input type="checkbox"/> | 17    | LAG7 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-17             |           |
| <input type="checkbox"/> | 18    | LAG8 | 20000     | 128      | Disabled  | Disabled   | RSTP | Boundary | 0-00:00:00:00:00:00 | 128-18             |           |

Figure 7-6: MST Port Setting page.

| Field            | Description                                                           |
|------------------|-----------------------------------------------------------------------|
| <b>MSTI</b>      | Specify the port setting on the specified MSTI                        |
| <b>Port</b>      | Specify the interface ID or the list of interface IDs.                |
| <b>Path Cost</b> | The port path cost on the specified MSTI.                             |
| <b>Priority</b>  | The port priority on the specified MSTI.                              |
| <b>Port Role</b> | The current port role on the specified port. The possible values are: |

|                           |                                                                                                                                                                                                                                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <b>"Disabled", "Master", "Root", "Designated", "Alternative", and "Backup".</b>                                                                                                                                                                                                                       |
| <b>Port State</b>         | The current port state on the specified port. The possible values are: "Disabled", "Discarding", "Learning", and "Forwarding".                                                                                                                                                                        |
| <b>Mode</b>               | The operational STP mode on the specified port.                                                                                                                                                                                                                                                       |
| <b>Type</b>               | <p>The possible value for the port type are:</p> <ul style="list-style-type: none"> <li>• <b>Boundary:</b> The port attaching an MST Bridge to a LAN that is not in the same region.</li> <li>• <b>Internal:</b> The port attaching an MST Bridge to a LAN that is not in the same region.</li> </ul> |
| <b>Designated Bridge</b>  | The bridge ID of the designated bridge.                                                                                                                                                                                                                                                               |
| <b>Designated Port ID</b> | The designated port ID on the switch.                                                                                                                                                                                                                                                                 |
| <b>Designated Cost</b>    | The path cost of the designated port on the switch                                                                                                                                                                                                                                                    |
| <b>Remaining Hop</b>      | The remaining hops count on the specified port.                                                                                                                                                                                                                                                       |

Table 7-8: MST Port Setting fields.

**Spanning Tree >> MST Port Setting**

Edit MST Port Setting

|                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| <b>MSTI</b>               | 0                                                         |
| <b>Port</b>               | GE1-GE4                                                   |
| <b>Path Cost</b>          | <input type="text" value="0"/> (0 - 200000000) (0 = Auto) |
| <b>Priority</b>           | <input type="text" value="128"/> ▼                        |
| <b>Port Role</b>          | Disabled                                                  |
| <b>Port State</b>         | Disabled                                                  |
| <b>Mode</b>               | RSTP                                                      |
| <b>Type</b>               | Boundary                                                  |
| <b>Designated Bridge</b>  | 0-00:00:00:00:00:00                                       |
| <b>Designated Port ID</b> | 128-1                                                     |
| <b>Designated Cost</b>    | 20000                                                     |
| <b>Remaining Hop</b>      | 20                                                        |

Figure 7-7: Edit MST Port Setting page.

| Field            | Description                                           |
|------------------|-------------------------------------------------------|
| <b>Path Cost</b> | Specify the STP port path cost on the specified MSTI. |
| <b>Priority</b>  | Specify the STP port priority on the specified MSTI.  |

Table 7-9: Edit MST Port Setting fields.

## 7.5 Statistics

To display the STP statistics, click Spanning Tree > Statistics.

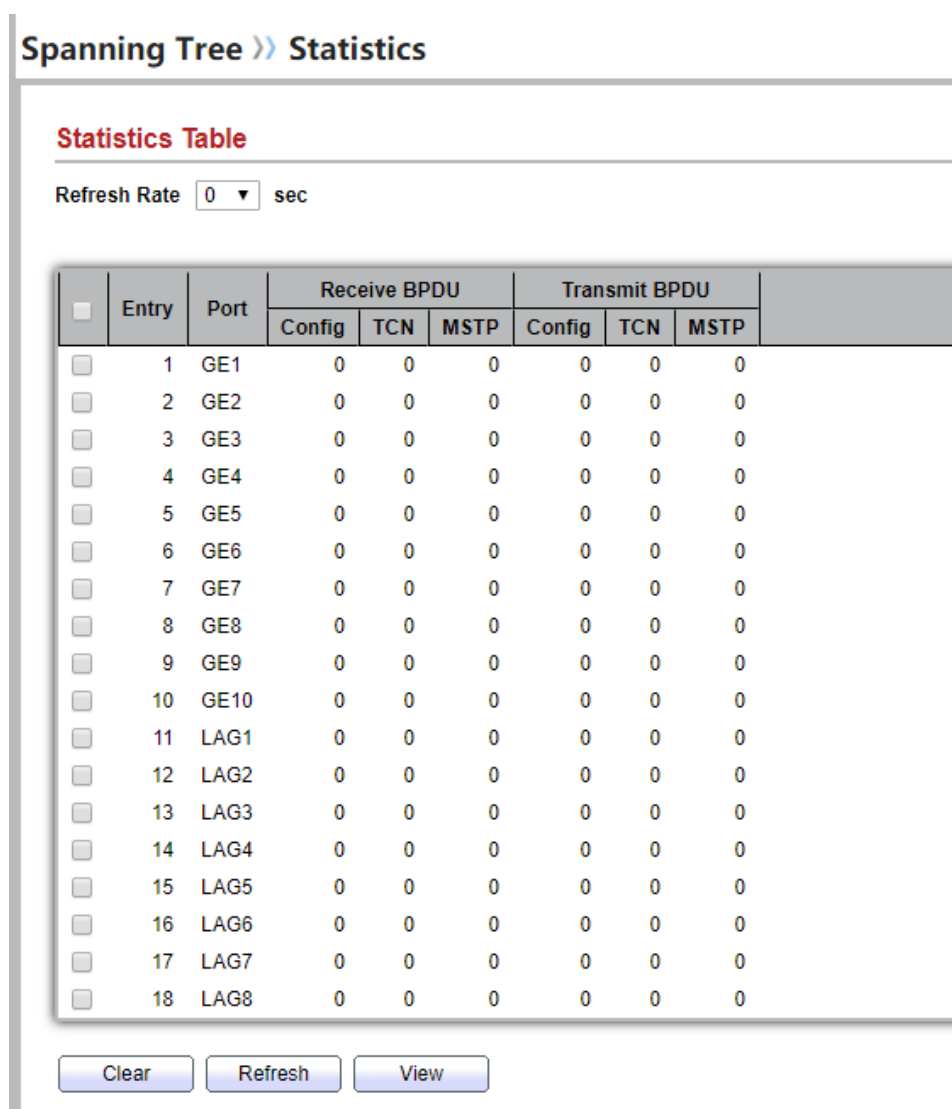


Figure 7-8: STP Statistics page

| Field                          | Description                                         |
|--------------------------------|-----------------------------------------------------|
| <b>Refresh Rate</b>            | The option to refresh the statistics automatically. |
| <b>Receive BPDUs (Config)</b>  | The counts of the received CONFIG BPDU.             |
| <b>Receive BPDUs (TCN)</b>     | The counts of the received TCN BPDU.                |
| <b>Receive BPDUs (MSTP)</b>    | The counts of the received MSTP BPDU.               |
| <b>Transmit BPDUs (Config)</b> | The counts of the transmitted CONFIG BPDU.          |

**Transmit BPDU (TCN)**

The counts of the transmitted TCN BPDU.

**Transmit BPDU (MSTP)**

The counts of the transmitted MSTP BPDU.

**Clear**

Clear the statistics for the selected interfaces

**View**

View the statistics for the interface.

Table 7-10: View STP Statistic fields.

| Field        | Description                                      |
|--------------|--------------------------------------------------|
| <b>Clear</b> | Clear the statistics for the selected interfaces |
| <b>View</b>  | View the statistics for the interface.           |

Table 7-11: View STP Statistic buttons.

**Spanning Tree >> Statistics**

**STP Port Statistic**

---

|              |                                                                                                                                      |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Port         | GE1                                                                                                                                  |
| Refresh Rate | <input checked="" type="radio"/> None<br><input type="radio"/> 5 sec<br><input type="radio"/> 10 sec<br><input type="radio"/> 30 sec |

|                     |   |
|---------------------|---|
| <b>Receive BPDU</b> |   |
| Config              | 0 |
| TCN                 | 0 |
| MSTP                | 0 |

|                      |   |
|----------------------|---|
| <b>Transmit BPDU</b> |   |
| Config               | 0 |
| TCN                  | 0 |
| MSTP                 | 0 |

Figure 7-9: View STP Port Statistics page.

| Field               | Description                                         |
|---------------------|-----------------------------------------------------|
| <b>Refresh Rate</b> | The option to refresh the statistics automatically. |
| <b>Clear</b>        | Clear the statistics for the selected interfaces    |

Table 7-12: View STP Port Statistic buttons.

## 8.Discovery

### 8.1 LLDP

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

#### 8.1.1 Property

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

Discovery >> LLDP >> Property

**LLDP**

State ☒ Enable

LLDP Handling ☐ Filtering ☐ Bridging ☒ Flooding

TLV Advertise Interval  Sec (5 - 32767, default 30)

Hold Multiplier  (2 - 10, default 4)

Reinitializing Delay  Sec (1 - 10, default 2)

Transmit Delay  Sec (1 - 8191, default 2)

**LLDP-MED**

Fast Start Repeat Count  (1 - 10, default 3)

Apply

Figure 8-1 LLDP Property Setting

| Field                         | Description                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State</b>                  | Enable/ Disable LLDP protocol on this switch.                                                                                                                                                                                                                                                                                                                |
| <b>LLDP Handling</b>          | <p>Select LLDP PDU handling action to be filtered, bridging or flooded when LLDP is globally disabled.</p> <ul style="list-style-type: none"> <li>• <b>Filtering:</b> Deletes the packet.</li> <li>• <b>Bridging:</b> (VLAN-aware flooding) Forwards the packet to all VLAN members.</li> <li>• <b>Flooding:</b> Forwards the packet to all ports</li> </ul> |
| <b>TLV Advertise Interval</b> | Select the interval at which frames are transmitted. The default is 30 seconds, and the valid range is 5–32767 seconds.                                                                                                                                                                                                                                      |
| <b>Holdtime Multiplier</b>    | Select the multiplier on the transmit interval to assign to TTL (range 2–10, default = 4).                                                                                                                                                                                                                                                                   |
| <b>Reinitialization Delay</b> | Select the delay before a re-initialization (range 1–10 seconds, default = 2).                                                                                                                                                                                                                                                                               |

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

Table 8-1 LLDP Property Setting Fields

### 8.1.2 Port Setting

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

Discovery >> LLDP >> Port Setting

#### Port Setting Table

|                          | Entry | Port | Mode   | Selected TLV |
|--------------------------|-------|------|--------|--------------|
| <input type="checkbox"/> | 1     | GE1  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 2     | GE2  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 3     | GE3  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 4     | GE4  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 5     | GE5  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 6     | GE6  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 7     | GE7  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 8     | GE8  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 9     | GE9  | Normal | 802.1 PVID   |
| <input type="checkbox"/> | 10    | GE10 | Normal | 802.1 PVID   |

Edit

Figure 8-2 LLDP Port Setting Page

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

Discovery >> LLDP >> Port Setting

#### Edit Port Setting

|                 |                                                                                                                                             |                                                                      |                            |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------|
| Port            | GE1                                                                                                                                         |                                                                      |                            |
| Mode            | <input type="radio"/> Transmit<br><input type="radio"/> Receive<br><input checked="" type="radio"/> Normal<br><input type="radio"/> Disable |                                                                      |                            |
| Optional TLV    | Available TLV<br>Port Description<br>System Name<br>System Description<br>System Capabilities<br>802.3 MAC-PHY                              | <input type="button" value="→"/><br><input type="button" value="←"/> | Selected TLV<br>802.1 PVID |
| 802.1 VLAN Name | Available VLAN<br>VLAN 1<br>VLAN 2<br>VLAN 3                                                                                                | <input type="button" value="→"/><br><input type="button" value="←"/> | Selected VLAN<br>          |

Apply

Close

Figure 8-3 LLDP Port Edit Page

| Field               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>         | Select specified port or all ports to configure LLDP state.                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Mode</b>         | Select the transmission state of LLDP port interface. <ul style="list-style-type: none"> <li>• <b>Disable:</b> Disable the transmission of LLDP PDUs.</li> <li>• <b>RX Only:</b> Receive LLDP PDUs only.</li> <li>• <b>TX Only:</b> Transmit LLDP PDUs only.</li> <li>• <b>TX And RX:</b> Transmit and receive LLDP PDUs both.</li> </ul>                                                                                                             |
| <b>Optional TLV</b> | Select the LLDP optional TLVs to be carried (multiple selection is allowed). <ul style="list-style-type: none"> <li>• <b>System Name</b></li> <li>• <b>Port Description</b></li> <li>• <b>System Description</b></li> <li>• <b>System Capability</b></li> <li>• <b>802.3 MAC-PHY</b></li> <li>• <b>802.3 Link Aggregation</b></li> <li>• <b>802.3 Maximum Frame Size</b></li> <li>• <b>Management Address</b></li> <li>• <b>802.1 PVID</b></li> </ul> |
| <b>802.1 Name</b>   | <b>VLAN</b> Select the VLAN Name ID to be carried (multiple selection is allowed).                                                                                                                                                                                                                                                                                                                                                                    |

### 8.1.3 MED Network Policy

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

#### Discovery >> LLDP >> MED Network Policy

**MED Network Policy Table**

Showing **All** entries Showing 1 to 1 of 1 entries

|                          | Policy ID | Application     | VLAN | VLAN Tag | Priority | DSCP |
|--------------------------|-----------|-----------------|------|----------|----------|------|
| <input type="checkbox"/> | 1         | Voice Signaling | 2    | Tagged   | 0        | 0    |

Figure 8-4 LLDP MED Network Policy Page

To Add LLDP MED Network Policy entry, Click button **Add**

To Edit LLDP MED Network Policy entry, select the entry which to edit, Click button **Edit**

Add MED Network Policy

|             |                                                                           |
|-------------|---------------------------------------------------------------------------|
| Policy ID   | 1                                                                         |
| Application | Voice                                                                     |
| VLAN        | <input type="text"/> Range (0 - 4095)                                     |
| VLAN Tag    | <input checked="" type="radio"/> Tagged<br><input type="radio"/> Untagged |
| Priority    | 0                                                                         |
| DSCP        | 0                                                                         |

Figure 8-5 LLDP MED Network Policy Setting Page

| Field              | Description                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Policy ID</b>   | Select specified network policy ID to configure.                                                                                                                                                                                                                                                                                                                    |
| <b>Application</b> | Select the network policy application type. <ul style="list-style-type: none"> <li>• <b>Voice</b></li> <li>• <b>Voice Signaling</b></li> <li>• <b>Guest Voice</b></li> <li>• <b>Guest Voice Signaling</b></li> <li>• <b>Softphone Voice</b></li> <li>• <b>Video Conferencing</b></li> <li>• <b>App Streaming Video</b></li> <li>• <b>Video Signaling</b></li> </ul> |
| <b>VLAN</b>        | Set the VLAN ID, range from 1 to 4094.                                                                                                                                                                                                                                                                                                                              |
| <b>VLAN Tag</b>    | Set the VLAN tag status. <ul style="list-style-type: none"> <li>• <b>Tagged:</b> Traffic is tagged.</li> <li>• <b>Untagged:</b> Traffic is untagged.</li> </ul>                                                                                                                                                                                                     |
| <b>Priority</b>    | Set the L2 priority, range from 0 to 7.                                                                                                                                                                                                                                                                                                                             |
| <b>DSCP</b>        | Set the DSCP value, range from 0 to 63                                                                                                                                                                                                                                                                                                                              |

Table 8-3 LLDP MED Network Policy Configuration Fields

### 8.1.4 MED Port Setting

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

Discovery >> LLDP >> MED Port Setting

**MED Port Setting Table**

| <input type="checkbox"/> | Entry | Port | State   | Network Policy |             | Location | Inventory |  |
|--------------------------|-------|------|---------|----------------|-------------|----------|-----------|--|
|                          |       |      |         | Active         | Application |          |           |  |
| <input type="checkbox"/> | 1     | GE1  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 2     | GE2  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 3     | GE3  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 4     | GE4  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 5     | GE5  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 6     | GE6  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 7     | GE7  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 8     | GE8  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 9     | GE9  | Enabled | Yes            |             | No       | No        |  |
| <input type="checkbox"/> | 10    | GE10 | Enabled | Yes            |             | No       | No        |  |

Edit

Figure 8-6 LLDP MED Setting Page

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

**Discovery >> LLDP >> MED Port Setting**

**Edit MED Port Setting**

|                 |                                                                |                           |  |
|-----------------|----------------------------------------------------------------|---------------------------|--|
| Port            | GE1                                                            |                           |  |
| State           | <input checked="" type="checkbox"/> Enable                     |                           |  |
| Optional TLV    | Available TLV                                                  | Selected TLV              |  |
|                 | <div>Location</div> <div>Inventory</div>                       | <div>Network Policy</div> |  |
| Network policy  | Available Policy                                               | Selected Policy           |  |
|                 | <div>1 (Voice Signaling)</div>                                 | <div></div>               |  |
| <b>Location</b> |                                                                |                           |  |
| Coordinate      | <input type="text"/> (16 pairs of hexadecimal characters)      |                           |  |
| Civic           | <input type="text"/> (6 - 160 pairs of hexadecimal characters) |                           |  |
| ECS ELIN        | <input type="text"/> (10 - 25 pairs of hexadecimal characters) |                           |  |

Apply Close

Figure 8-7 LLDP MED Add/Edit Page

| Field          | Description                                                                                                                                                                                    |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port           | Select specified port or all ports to configure LLDP MED.                                                                                                                                      |
| State          | Select LLDP MED enable status                                                                                                                                                                  |
| Optional TLV   | Select LLDP MED optional TLVs (multiple selection is allowed) <ul style="list-style-type: none"> <li>• <b>Network Policy</b></li> <li>• <b>Location</b></li> <li>• <b>Inventory</b></li> </ul> |
| Network Policy | Select the network policy IDs to be bound to ports. The network policy should be created in MED Network Policy page at first.                                                                  |

Table 8-3 LLDP MED Port Configuration Fields

| Field      | Description    |
|------------|----------------|
| Coordinate | Set Coordinate |
| Civic      | Set Civic      |
| ECS ELIN   | Set ECS ELIN   |

Table 8-4 LLDP MED Port Location Configuration Fields

### 8.1.5 Packet View

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

Discovery >> LLDP >> Packet View

Packet View Table

Q

|                       | Entry | Port | In-Use (Bytes) | Available (Bytes) | Operational Status |
|-----------------------|-------|------|----------------|-------------------|--------------------|
| <input type="radio"/> | 1     | GE1  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 2     | GE2  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 3     | GE3  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 4     | GE4  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 5     | GE5  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 6     | GE6  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 7     | GE7  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 8     | GE8  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 9     | GE9  | 38             | 1450              | Not Overloading    |
| <input type="radio"/> | 10    | GE10 | 39             | 1449              | Not Overloading    |

Detail

Figure 8-8 LLDP Overloading Page

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

Table 8-5 LLDP Overloading Fields

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

**Discovery >> LLDP >> Packet View**

**Packet View Detail**

|                                   |             |
|-----------------------------------|-------------|
| Port                              | GE1         |
| <b>Mandatory TLVs</b>             |             |
| Size (Bytes)                      | 21          |
| Operational Status                | Transmitted |
| <b>MED Capabilities</b>           |             |
| Size (Bytes)                      | 9           |
| Operational Status                | Transmitted |
| <b>MED Location</b>               |             |
| Size (Bytes)                      | 0           |
| Operational Status                | Transmitted |
| <b>MED Network Policy</b>         |             |
| Size (Bytes)                      | 0           |
| Operational Status                | Transmitted |
| <b>MED Inventory</b>              |             |
| Size (Bytes)                      | 0           |
| Operational Status                | Transmitted |
| <b>MED Extended Power via MDI</b> |             |
| Size (Bytes)                      | 0           |
| Operational Status                | Transmitted |
| <b>802.3 TLVs</b>                 |             |
| Size (Bytes)                      | 0           |
| Operational Status                | Transmitted |
| <b>Optional TLVs</b>              |             |
| Size (Bytes)                      | 0           |
| Operational Status                | Transmitted |
| <b>802.1 TLVs</b>                 |             |
| Size (Bytes)                      | 8           |
| Operational Status                | Transmitted |
| <b>Total</b>                      |             |
| In-Use (Bytes)                    | 38          |
| Available (Bytes)                 | 1450        |

Close

Figure 8-9 LLDP Overloading Detail Page

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

Table 8-6 LLDP Overloading Detail Fields

### 8.1.6 Local Information

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

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

#### Discovery >> LLDP >> Local Information

**Device Summary**

|                        |                   |
|------------------------|-------------------|
| Chassis ID Subtype     | MAC address       |
| Chassis ID             | 00:E0:4C:00:00:00 |
| System Name            | Switch            |
| System Description     | IG80              |
| Supported Capabilities | Bridge            |
| Enabled Capabilities   | Bridge            |
| Port ID Subtype        | Local             |

**Port Status Table**

|                       | Entry | Port | LLDP State | LLDP-MED State |
|-----------------------|-------|------|------------|----------------|
| <input type="radio"/> | 1     | GE1  | Normal     | Enabled        |
| <input type="radio"/> | 2     | GE2  | Normal     | Enabled        |
| <input type="radio"/> | 3     | GE3  | Normal     | Enabled        |
| <input type="radio"/> | 4     | GE4  | Normal     | Enabled        |
| <input type="radio"/> | 5     | GE5  | Normal     | Enabled        |
| <input type="radio"/> | 6     | GE6  | Normal     | Enabled        |
| <input type="radio"/> | 7     | GE7  | Normal     | Enabled        |
| <input type="radio"/> | 8     | GE8  | Normal     | Enabled        |
| <input type="radio"/> | 9     | GE9  | Normal     | Enabled        |
| <input type="radio"/> | 10    | GE10 | Normal     | Enabled        |

Figure 8-10 LLDP Local Information Page

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

Table 8-7 LLDP Local Information Fields

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

**Discovery >> LLDP >> Local Information**

**Local Information Detail**

|                        |                   |
|------------------------|-------------------|
| Chassis ID Subtype     | MAC address       |
| Chassis ID             | 00:E0:4C:00:00:00 |
| System Name            | Switch            |
| System Description     | IG80              |
| Supported Capabilities | Bridge            |
| Enabled Capabilities   | Bridge            |
| Port ID                | GE1               |
| Port ID Subtype        | Local             |
| Port Description       | WWW               |

**Management Address Table**

| Address Subtype  | Address | Interface Subtype | Interface Number |
|------------------|---------|-------------------|------------------|
| 0 results found. |         |                   |                  |

**MAC/PHY Detail**

|                                          |     |
|------------------------------------------|-----|
| Auto-Negotiation Supported               | N/A |
| Auto-Negotiation Enabled                 | N/A |
| Auto-Negotiation Advertised Capabilities | N/A |
| Operational MAU Type                     | N/A |

**802.3 Detail**

|                          |     |
|--------------------------|-----|
| 802.3 Maximum Frame Size | N/A |
|--------------------------|-----|

**802.3 Link Aggregation**

|                        |     |
|------------------------|-----|
| Aggregation Capability | N/A |
| Aggregation Status     | N/A |
| Aggregation Port ID    | N/A |

**MED Detail**

|                        |                               |
|------------------------|-------------------------------|
| Capabilities Supported | Capabilities , Network policy |
| Current Capabilities   | Capabilities , Network policy |

| MED Detail             |                               |
|------------------------|-------------------------------|
| Capabilities Supported | Capabilities , Network policy |
| Current Capabilities   | Capabilities , Network policy |
| Device Class           | Network Connectivity          |
| PoE Device Type        | N/A                           |
| PoE Power Source       | N/A                           |
| PoE Power Priority     | N/A                           |
| PoE Power Value        | N/A                           |
| Hardware Revision      | N/A                           |
| Firmware Revision      | N/A                           |
| Software Revision      | N/A                           |
| Serial Number          | N/A                           |
| Manufacturer Name      | N/A                           |
| Model Name             | N/A                           |
| Asset ID               | N/A                           |

| Location Information |     |
|----------------------|-----|
| Civic                | N/A |
| Coordinate           | N/A |
| ECS ELIN             | N/A |

| Network Policy Table |      |           |          |      |  |
|----------------------|------|-----------|----------|------|--|
| Application Type     | VLAN | VLAN Type | Priority | DSCP |  |
| 0 results found.     |      |           |          |      |  |

Close

Figure 8-11 LLDP Local Information Detail Page

### 8.1.7 Neighbor

To display LLDP Remote Device, click **Discovery > LLDP > Neighbor**. Use the LLDP Neighbor page to view LLDP neighbors information.

**Discovery >> LLDP >> Neighbor**

**Neighbor Table**

Showing All ▾ entries      Showing 0 to 0 of 0 entries      🔍

| <input type="checkbox"/> | Local Port | Chassis ID Subtype | Chassis ID | Port ID Subtype | Port ID | System Name | Time to Live |
|--------------------------|------------|--------------------|------------|-----------------|---------|-------------|--------------|
| 0 results found.         |            |                    |            |                 |         |             |              |

Figure 8-12 LLDP Neighbor Page

| Field                     | Description                                                                        |
|---------------------------|------------------------------------------------------------------------------------|
| <b>Local Port</b>         | Number of the local port to which the neighbor is connected.                       |
| <b>Chassis ID Subtype</b> | Type of chassis ID (for example, MAC address).                                     |
| <b>Chassis ID</b>         | Identifier of the 802 LAN neighboring device's chassis.                            |
| <b>Port ID Subtype</b>    | Type of the port identifier that is shown.                                         |
| <b>Port ID</b>            | Identifier of port.                                                                |
| <b>System Name</b>        | Published name of the switch.                                                      |
| <b>Time to Live</b>       | Time interval in seconds after which the information for this neighbor is deleted. |

Table 8-8 LLDP Neighbor Fields

Click “detail” to view selected neighbor detail information.

### 8.1.8 Statistics

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

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

**Discovery >> LLDP >> Statistics**

---

**Global Statistics**

|            |   |
|------------|---|
| Insertions | 0 |
| Deletions  | 0 |
| Drops      | 0 |
| AgeOuts    | 0 |

---

**Statistics Table**

|                          | Entry | Port | Transmit Frame | Receive Frame |         |       | Receive TLV |              | Neighbor Timeout |
|--------------------------|-------|------|----------------|---------------|---------|-------|-------------|--------------|------------------|
|                          |       |      | Total          | Total         | Discard | Error | Discard     | Unrecognized |                  |
| <input type="checkbox"/> | 1     | GE1  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 2     | GE2  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 3     | GE3  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 4     | GE4  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 5     | GE5  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 6     | GE6  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 7     | GE7  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 8     | GE8  | 344            | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 9     | GE9  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 10    | GE10 | 0              | 0             | 0       | 0     | 0           | 0            | 0                |

Figure 8-14 LLDP Statistics Page

| Field                           | Description                                                                                                                                                                                     |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Insertions</b>               | 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.                |
| <b>Deletions</b>                | The number of times the complete set of information advertised by MSAP has been deleted from tables associated with the remote systems.                                                         |
| <b>Drops</b>                    | 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.                   |
| <b>Age Outs</b>                 | The number of times the complete set of information advertised by MSAP has been deleted from tables associated with the remote systems because the information timeliness interval has expired. |
| <b>Port</b>                     | Interface or port number.                                                                                                                                                                       |
| <b>Transmit Frame Total</b>     | Number of LLDP frames transmitted on the corresponding port.                                                                                                                                    |
| <b>Receive Frame Total</b>      | Number of LLDP frames received by this LLDP agent on the corresponding port, while the LLDP agent is enabled.                                                                                   |
| <b>Receive Frame Discard</b>    | Number of LLDP frames discarded for any reason by the LLDP agent on the corresponding port.                                                                                                     |
| <b>Receive Frame Error</b>      | Number of invalid LLDP frames received by the LLDP agent on the corresponding port, while the LLDP agent is enabled.                                                                            |
| <b>Receive TLV Discard</b>      | Number of TLVs of LLDP frames discarded for any reason by the LLDP agent on the corresponding port.                                                                                             |
| <b>Receive TLV Unrecognized</b> | Number of TLVs of LLDP frames that are unrecognized while the LLDP agent is enabled                                                                                                             |
| <b>Neighbor Timeout</b>         | Number of age out LLDP frames.                                                                                                                                                                  |

Table 8-9 LLDP Statistics Fields

## 9. Multicast

### 9.1 General

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

#### 9.1.1 Property

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

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

**Multicast >> General >> Property**

**Unknown Multicast Action**

- ☒ Flood
- ☐ Drop
- ☐ Forward to Router Port

**Multicast Forward Method**

**IPv4**

- ☒ DMAC-VID
- ☐ DIP-VID

**IPv6**

- ☒ DMAC-VID
- ☐ DIP-VID

Figure 9-1 Multicast General Properties Page

| Field                           | Description                                                                                                                                                                                                                                                                     |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unknown Multicast Action</b> | Set the unknown multicast action <ul style="list-style-type: none"> <li>• <b>Drop:</b> drop the unknown multicast data.</li> <li>• <b>Flood:</b> flood the unknown multicast data.</li> <li>• <b>Router port:</b> forward the unknown multicast data to router port.</li> </ul> |
| <b>IPv4</b>                     | Set the ipv4 multicast forward method. <ul style="list-style-type: none"> <li>• <b>MAC-VID:</b> forward method dmac+vid.</li> <li>• <b>DIP-VID:</b> forward method dip+vid.</li> </ul>                                                                                          |
| <b>Pv6</b>                      | Set the ipv6 multicast forward method. <ul style="list-style-type: none"> <li>• <b>MAC-VID:</b> forward method dmac+vid.</li> <li>• <b>DIP-VID:</b> forward method dip+vid(dip is ipv6 low 32 bit).</li> </ul>                                                                  |

Table 9-1 Multicast General Property Setting Fields

### 9.1.2 Group Address

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

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

**Multicast >> General >> Group Address**

Figure 9-2 Multicast Group Address Table Page

| Field                | Description                                                                                                                                   |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IP Version</b>    | IP Version <ul style="list-style-type: none"> <li>• <b>IPv4:</b> ipv4 multicast group</li> <li>• <b>IPv6:</b> ipv6 multicast group</li> </ul> |
| <b>VLAN</b>          | The VLAN ID of group.                                                                                                                         |
| <b>Group Address</b> | The group IP address.                                                                                                                         |
| <b>Member</b>        | The member ports of group.                                                                                                                    |
| <b>Type</b>          | The type of group. Static or Dynamic.                                                                                                         |
| <b>Life(Sec)</b>     | The life time of this dynamic group.                                                                                                          |

Table 9-2 Multicast Group Address Table Fields

Figure 9-3 Multicast Group Address Add Page

| Field                | Description                                                                                                                                                                      |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>          | The VLAN ID of group.                                                                                                                                                            |
| <b>IP Version</b>    | IP Version <ul style="list-style-type: none"> <li>• <b>IPv4:</b> ipv4 multicast group</li> <li>• <b>IPv6:</b> ipv6 multicast group</li> </ul>                                    |
| <b>Group Address</b> | The group IP address.                                                                                                                                                            |
| <b>Member</b>        | The member ports of group. <ul style="list-style-type: none"> <li>• <b>Available Port:</b> Optional port member</li> <li>• <b>Selected Port:</b> Selected port member</li> </ul> |

Table 9-3 Multicast Group Address Add Fields

**Multicast >> General >> Group Address**

[Edit Group Address](#)

|                      |                                                                                                                                                                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>          | 1                                                                                                                                                                                                                                          |
| <b>Group Address</b> | 224.1.1.1                                                                                                                                                                                                                                  |
| <b>Member</b>        | <div> <div>Available Port</div> <div>           GE2<br/>GE3<br/>GE4<br/>GE5<br/>GE6<br/>GE7<br/>GE8<br/>GE9         </div> <div>           &gt;<br/>&lt;         </div> <div>Selected Port</div> <div>           GE1         </div> </div> |

Figure 9-4 Multicast Group Address Edit Page

| Field                | Description                                                                                                                                                                      |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>          | The VLAN ID of edited group.                                                                                                                                                     |
| <b>Group Address</b> | The group IP address.                                                                                                                                                            |
| <b>Member</b>        | The member ports of group. <ul style="list-style-type: none"> <li>• <b>Available Port:</b> Optional port member</li> <li>• <b>Selected Port:</b> Selected port member</li> </ul> |

Table 9-4 Multicast Group Address Edit Fields

### 9.1.3 Router Port

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

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

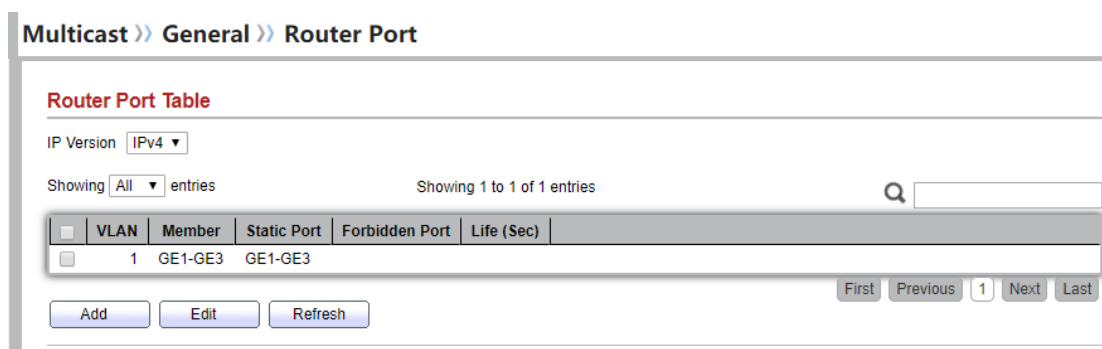


Figure 9-5 Multicast Router Table Page

| Field          | Description                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| IP Version     | IP Version                                                                                                                           |
|                | <ul style="list-style-type: none"> <li>• <b>IPv4:</b> ipv4 multicast router</li> <li>• <b>IPv6:</b> ipv6 multicast router</li> </ul> |
| VLAN           | The VLAN ID router entry                                                                                                             |
| Member         | Router Port member (include static and learned port member).                                                                         |
| Static Port    | Static router port member                                                                                                            |
| Forbidden Port | Forbidden router port member                                                                                                         |
| Life (Sec)     | The expiry time of the router entry.                                                                                                 |

Table 9-5 Multicast Router Table Fields

## Multicast &gt;&gt; General &gt;&gt; Router Port

Add Router Port

|            |                                                                                                                         |               |
|------------|-------------------------------------------------------------------------------------------------------------------------|---------------|
| VLAN       | Available VLAN                                                                                                          | Selected VLAN |
|            | <div>2</div> <div>3</div>                                                                                               | <div></div>   |
| IP Version | IPv4 ▼                                                                                                                  |               |
| Type       | <input checked="" type="radio"/> Static<br><input type="radio"/> Forbidden                                              |               |
| Port       | Available Port                                                                                                          | Selected Port |
|            | <div>GE1</div> <div>GE2</div> <div>GE3</div> <div>GE4</div> <div>GE5</div> <div>GE6</div> <div>GE7</div> <div>GE8</div> | <div></div>   |

Apply Close

Figure 9-6 Multicast Router Add Page

| Field             | Description                                                                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>       | The VLAN ID for router entry <ul style="list-style-type: none"> <li>• <b>Available VLAN:</b> Optional VLAN member</li> <li>• <b>Selected VLAN:</b> Selected VLAN member</li> </ul>                    |
| <b>IP Version</b> | IP Version <ul style="list-style-type: none"> <li>• <b>IPv4:</b> ipv4 multicast router</li> <li>• <b>IPv6:</b> ipv6 multicast router</li> </ul>                                                       |
| <b>Type</b>       | The router port type <ul style="list-style-type: none"> <li>• <b>Static:</b> static router port</li> <li>• <b>Forbidden:</b> forbidden router port, can't learn dynamic router port member</li> </ul> |
| <b>Port</b>       | The member ports of router entry. <ul style="list-style-type: none"> <li>• <b>Available Port:</b> Optional router port member</li> <li>• <b>Selected Port:</b> Selected router port member</li> </ul> |

Table 9-6 Multicast Router Add Fields

## Multicast » General » Router Port

[Edit Router Port](#)

---

VLAN

1

IP Version

IPv4

Type

☒ Static  
☐ Forbidden

Port

Available Port

GE4  
GE5  
GE6  
GE7  
GE8  
GE9  
GE10  
LAG1

Selected Port

GE1  
GE2  
GE3

Apply

Close

Figure 9-7 Multicast Router Edit Page

| Field             | Description                                                                                                                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>       | VLAN ID of Selected router entry                                                                                                                                                                                             |
| <b>IP Version</b> | Selected IP version                                                                                                                                                                                                          |
| <b>Type</b>       | The router port type <ul style="list-style-type: none"> <li>• <b>Static:</b> static router port</li> <li>• <b>Forbidden:</b> forbidden router port, can't learn dynamic router port member</li> </ul>                        |
| <b>Port</b>       | The member ports of router entry for selected port type. <ul style="list-style-type: none"> <li>• <b>Available Port:</b> Optional router port member</li> <li>• <b>Selected Port:</b> Selected router port member</li> </ul> |

Table 9-7 Multicast Router Edit Fields

### 9.1.4 Forward All

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

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

**Multicast >> General >> Forward All**

**Forward All Table**

IP Version

Showing  entries Showing 1 to 2 of 2 entries

|                          | VLAN | Static Port | Forbidden Port |
|--------------------------|------|-------------|----------------|
| <input type="checkbox"/> | 2    | GE2-GE3     |                |
| <input type="checkbox"/> | 3    | GE1-GE2     |                |

Figure 9-8 Multicast Forward All Table Page

| Field                 | Description                                                                                                                                           |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IP Version</b>     | IP Version <ul style="list-style-type: none"> <li><b>IPv4:</b> ipv4 multicast forward all</li> <li><b>IPv6:</b> ipv6 multicast forward all</li> </ul> |
| <b>VLAN</b>           | VLAN ID of forward all entry                                                                                                                          |
| <b>Static Port</b>    | Known multicast group always forward port member                                                                                                      |
| <b>Forbidden Port</b> | Known multicast group always not forward port member                                                                                                  |

Table 9-8 Multicast Forward All Table Fields

**Multicast >> General >> Forward All**

**Add Forward All**

VLAN

Available VLAN

1

Selected VLAN

IP Version

IPv4

Type

☒ Static
☐ Forbidden

Port

Available Port

GE1  
GE2  
GE3  
GE4  
GE5  
GE6  
GE7  
GE8

Selected Port

Figure 9-9 Multicast Forward All Add Page

| Field             | Description                                                                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>       | The VLAN ID for forward all entry <ul style="list-style-type: none"> <li>• <b>Available VLAN:</b> Optional VLAN member</li> <li>• <b>Selected VLAN:</b> Selected VLAN member</li> </ul>               |
| <b>IP Version</b> | IP Version <ul style="list-style-type: none"> <li>• <b>IPv4:</b> ipv4 multicast forward all</li> <li>• <b>IPv6:</b> ipv6 multicast forward all</li> </ul>                                             |
| <b>Type</b>       | The forward all port type <ul style="list-style-type: none"> <li>• <b>Static:</b> static forward all port</li> <li>• <b>Forbidden:</b> forbidden forward all port</li> </ul>                          |
| <b>Port</b>       | The member ports of router entry. <ul style="list-style-type: none"> <li>• <b>Available Port:</b> Optional router port member</li> <li>• <b>Selected Port:</b> Selected router port member</li> </ul> |

Table 9-9 Multicast Forward All Add Fields

**Multicast >> General >> Forward All**

[Edit Forward All](#)

VLAN

3

IP Version

IPv4

Type

☒ Static  
☐ Forbidden

Port

Available Port

GE3  
GE4  
GE5  
GE6  
GE7  
GE8  
GE9  
GE10

>  
<

Selected Port

GE1  
GE2

Apply

Close

Figure 9-10 Multicast Forward All Edit Page

| Field             | Description                                                                                                                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>       | VLAN ID of Selected forward all entry                                                                                                                                                                                             |
| <b>IP Version</b> | Selected IP version                                                                                                                                                                                                               |
| <b>Type</b>       | The forward all port type <ul style="list-style-type: none"> <li>• <b>Static:</b> static forward all port</li> <li>• <b>Forbidden:</b> forbidden forward all port</li> </ul>                                                      |
| <b>Port</b>       | The member ports of forward all entry for selected port type. <ul style="list-style-type: none"> <li>• <b>Available Port:</b> Optional router port member</li> <li>• <b>Selected Port:</b> Selected router port member</li> </ul> |

Table 9-10 Multicast Forward All Edit Fields

### 9.1.5 Throttling

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

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

**Multicast >> General >> Throttling**

**Throttling Table**

IP Version IPv4 ▼

| <input type="checkbox"/> | Entry | Port | Max Group | Exceed Action |
|--------------------------|-------|------|-----------|---------------|
| <input type="checkbox"/> | 1     | GE1  | 256       | Deny          |
| <input type="checkbox"/> | 2     | GE2  | 256       | Deny          |
| <input type="checkbox"/> | 3     | GE3  | 256       | Deny          |
| <input type="checkbox"/> | 4     | GE4  | 256       | Deny          |
| <input type="checkbox"/> | 5     | GE5  | 256       | Deny          |
| <input type="checkbox"/> | 6     | GE6  | 256       | Deny          |
| <input type="checkbox"/> | 7     | GE7  | 256       | Deny          |
| <input type="checkbox"/> | 8     | GE8  | 256       | Deny          |
| <input type="checkbox"/> | 9     | GE9  | 256       | Deny          |
| <input type="checkbox"/> | 10    | GE10 | 256       | Deny          |
| <input type="checkbox"/> | 11    | LAG1 | 256       | Deny          |
| <input type="checkbox"/> | 12    | LAG2 | 256       | Deny          |
| <input type="checkbox"/> | 13    | LAG3 | 256       | Deny          |
| <input type="checkbox"/> | 14    | LAG4 | 256       | Deny          |
| <input type="checkbox"/> | 15    | LAG5 | 256       | Deny          |
| <input type="checkbox"/> | 16    | LAG6 | 256       | Deny          |
| <input type="checkbox"/> | 17    | LAG7 | 256       | Deny          |
| <input type="checkbox"/> | 18    | LAG8 | 256       | Deny          |

Edit

Figure 9-11 Multicast Throttling Table Page

| Field         | Description                                                                                                                                                        |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IP Version    | IP Version <ul style="list-style-type: none"> <li><b>IPv4:</b> ipv4 for igmp snooping throttling</li> <li><b>IPv6:</b> ipv6 for mld snooping throttling</li> </ul> |
| Entry         | Entry of number                                                                                                                                                    |
| Port          | Port Name                                                                                                                                                          |
| Max Group     | Max number of group for port                                                                                                                                       |
| Exceed Action | Display the port exceed max number group learning group action                                                                                                     |

Table 9-11 Multicast Throttling Table Fields

## Multicast &gt;&gt; General &gt;&gt; Throttling

## Edit Throttling

|               |                                                                        |           |
|---------------|------------------------------------------------------------------------|-----------|
| Port          | GE2,GE4                                                                |           |
| IP Version    | IPv4                                                                   |           |
| Max Group     | 256                                                                    | (0 - 256) |
| Exceed Action | <input checked="" type="radio"/> Deny<br><input type="radio"/> Replace |           |

Figure 9-12 Multicast Throttling Edit Page

| Field         | Description                                                                                                                                                                                       |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port          | Display the selected port list                                                                                                                                                                    |
| IP Version    | Display the selected IP version                                                                                                                                                                   |
| Max Group     | Max number of group for port                                                                                                                                                                      |
| Exceed Action | Excess Max number of port learning group action <ul style="list-style-type: none"> <li>• <b>Deny:</b> do not learning group.</li> <li>• <b>Replace:</b> random replace one exist group</li> </ul> |

Table 9-12 Multicast Throttling Table Edit Fields

### 9.1.6 Filtering Profile

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

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

## Multicast &gt;&gt; General &gt;&gt; Filtering Profile

**Filtering Profile Table**

IP Version IPv4 ▾

Showing All ▾ entries Showing 1 to 1 of 1 entries Q

| <input type="checkbox"/> | Profile ID | Start Address | End Address | Action |
|--------------------------|------------|---------------|-------------|--------|
| <input type="checkbox"/> | 1          | 224.1.1.1     | 224.1.2.3   | Allow  |

First Previous **1** Next Last

Figure 9-13 Multicast Profile Table Page

| Field                | Description                                                                                                                                     |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IP Version</b>    | IP version: <ul style="list-style-type: none"> <li>• <b>IPv4:</b> IGMP snooping profile</li> <li>• <b>IPv6:</b> MLD snooping profile</li> </ul> |
| <b>Profile ID</b>    | Display profile ID                                                                                                                              |
| <b>Start Address</b> | The start group address of profile                                                                                                              |
| <b>End Address</b>   | The end group address of profile                                                                                                                |
| <b>Action</b>        | Display profile action                                                                                                                          |

Table 9-13 Multicast Profile Table Fields

**Multicast >> General >> Filtering Profile**

Add Profile

|               |                                                                      |
|---------------|----------------------------------------------------------------------|
| Profile ID    | <input type="text"/> (1 - 128)                                       |
| IP Version    | IPv4 ▼                                                               |
| Start Address | <input type="text"/>                                                 |
| End Address   | <input type="text"/>                                                 |
| Action        | <input checked="" type="radio"/> Allow<br><input type="radio"/> Deny |

Apply Close

Figure 9-14 Multicast Profile Add Page

| Field                | Description                                                                                                                                                                                          |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Profile ID</b>    | Profile ID                                                                                                                                                                                           |
| <b>IP Version</b>    | IP version: <ul style="list-style-type: none"> <li>• <b>IPv4:</b> IGMP snooping profile</li> <li>• <b>IPv6:</b> MLD snooping profile</li> </ul>                                                      |
| <b>Start Address</b> | The start group address of profile                                                                                                                                                                   |
| <b>End Address</b>   | The end group address of profile                                                                                                                                                                     |
| <b>Action</b>        | The action of profile: <ul style="list-style-type: none"> <li>• <b>Allow:</b> permit all packets that match the profile.</li> <li>• <b>Deny:</b> deny all packets that match the profile.</li> </ul> |

Table 9-14 Multicast Profile Add Fields

## Multicast >> General >> Filtering Profile

Edit Profile

|               |                                                                      |
|---------------|----------------------------------------------------------------------|
| Profile ID    | 1                                                                    |
| IP Version    | IPv4                                                                 |
| Start Address | 224.1.1.1                                                            |
| End Address   | 224.1.2.3                                                            |
| Action        | <input checked="" type="radio"/> Allow<br><input type="radio"/> Deny |

Apply Close

Figure 9-15 Multicast Profile Edit Page

| Field                | Description                                                                                                                                                                                                                     |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Profile ID</b>    | Edit Profile ID                                                                                                                                                                                                                 |
| <b>IP Version</b>    | Display the edit profile ip version                                                                                                                                                                                             |
| <b>Start Address</b> | The start group address of profile                                                                                                                                                                                              |
| <b>End Address</b>   | The end group address of profile                                                                                                                                                                                                |
| <b>Action</b>        | The action of profile: <ul style="list-style-type: none"> <li>• <b>Allow:</b> permit the group can learned that match the profile.</li> <li>• <b>Deny:</b> deny the group to learn the group that match the profile.</li> </ul> |

Table 9-15 Multicast Profile Edit Fields

### 9.1.7 Filtering Binding

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

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

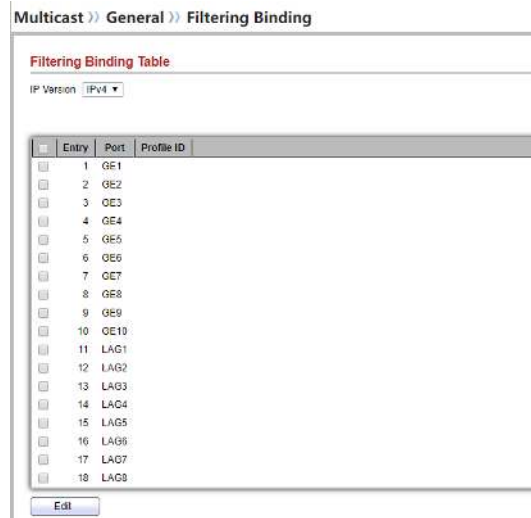


Figure 9-16 Multicast Filtering Table Page

| Field      | Description                                                                                                                                                            |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IP Version | IP Version <ul style="list-style-type: none"> <li>• <b>IPv4:</b> ipv4 for igmp snooping throttling</li> <li>• <b>IPv6:</b> ipv6 for mld snooping throttling</li> </ul> |
| Entry      | Entry of number                                                                                                                                                        |
| Port       | Port Name                                                                                                                                                              |
| Profile ID | Port Binding Profile ID                                                                                                                                                |

Table 9-16 Multicast Filtering Table Fields

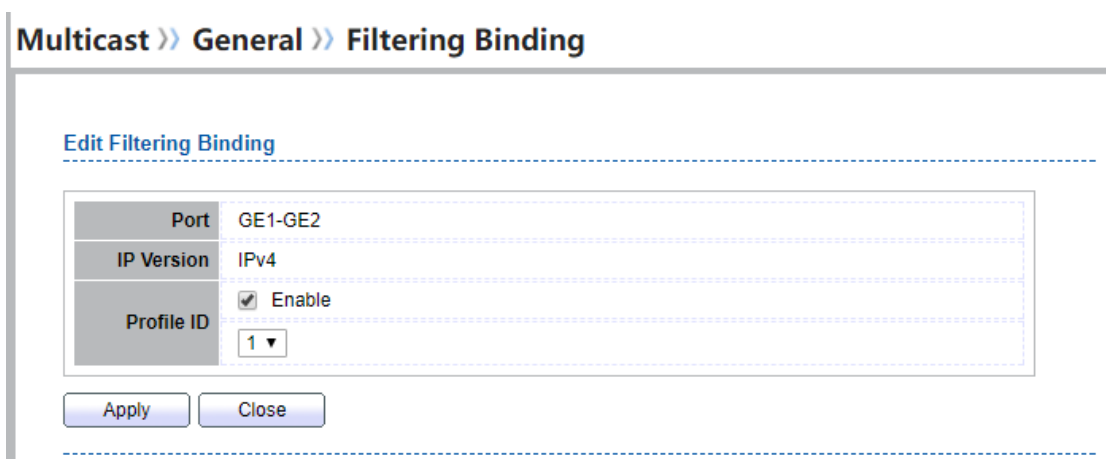


Figure 9-17 Multicast Filtering Edit Page

| Field      | Description                                |
|------------|--------------------------------------------|
| Port       | Selected Port List                         |
| IP Version | Display Selected Port filtering IP version |

**Profile ID**

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

Table 9-17 Multicast Filtering Edit Fields

## 9.2 IGMP Snooping

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

### 9.2.1 Property

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

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

**Multicast >> IGMP Snooping >> Property**

|                    |                                                                         |
|--------------------|-------------------------------------------------------------------------|
| State              | <input type="checkbox"/> Enable                                         |
| Version            | <input checked="" type="radio"/> IGMPv2<br><input type="radio"/> IGMPv3 |
| Report Suppression | <input checked="" type="checkbox"/> Enable                              |

Apply

**VLAN Setting Table**

|                          | VLAN | Operational Status | Router Port Auto Learn | Query Robustness | Query Interval | Query Max Response Interval | Last Member Query Counter | Last Member Query Interval | Immediate Leave |
|--------------------------|------|--------------------|------------------------|------------------|----------------|-----------------------------|---------------------------|----------------------------|-----------------|
| <input type="checkbox"/> | 1    | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |
| <input type="checkbox"/> | 2    | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |
| <input type="checkbox"/> | 3    | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |
| <input type="checkbox"/> | 5    | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |
| <input type="checkbox"/> | 10   | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |

Edit

Figure 9-18 IGMP Snooping Property Page

| Field              | Description                                                                                                                                                                                                                |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| State              | Set the enabling status of IGMP Snooping functionality <ul style="list-style-type: none"> <li><b>Enable:</b> If Checked Enable IGMP Snooping, else is Disabled IGMP Snooping.</li> </ul>                                   |
| Version            | Set the igmp snooping version <ul style="list-style-type: none"> <li><b>IGMPv2:</b> Only support process igmp v2 packet.</li> <li><b>IGMPv3:</b> Support v3 basic and v2.</li> </ul>                                       |
| Report Suppression | Set the enabling status of IGMP v2 report suppression <ul style="list-style-type: none"> <li><b>Enable:</b> If Checked Enable IGMP Snooping v2 report suppression, else Disable the report suppression function</li> </ul> |
| VLAN               | The IGMP entry VLAN ID                                                                                                                                                                                                     |

|                                    |                                                                                                                                 |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Operation Status</b>            | The enable status of IGMP snooping VLAN functionality                                                                           |
| <b>Router Port Auto Learn</b>      | The enabling status of IGMP snooping router port auto learning                                                                  |
| <b>Query Robustness</b>            | The Query Robustness allows tuning for the expected packet loss on a subnet.                                                    |
| <b>Query Interval</b>              | The interval of querier to send general query                                                                                   |
| <b>Query Max Response Interval</b> | In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second. |
| <b>Last Member Query count</b>     | The count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.                  |
| <b>Last Member Query Interval</b>  | The interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.               |
| <b>Immediate leave</b>             | The immediate leave status of the group will immediate leave when receive IGMP Leave message.                                   |

Table 9-18 IGMP Snooping Property Fields

**Multicast >> IGMP Snooping >> Property**

[Edit VLAN Setting](#)

|                                    |                                                                |
|------------------------------------|----------------------------------------------------------------|
| <b>VLAN</b>                        | 3,5                                                            |
| <b>State</b>                       | <input type="checkbox"/> Enable                                |
| <b>Router Port Auto Learn</b>      | <input checked="" type="checkbox"/> Enable                     |
| <b>Immediate leave</b>             | <input type="checkbox"/> Enable                                |
| <b>Query Robustness</b>            | <input type="text" value="2"/> (1 - 7, default 2)              |
| <b>Query Interval</b>              | <input type="text" value="125"/> Sec (30 - 18000, default 125) |
| <b>Query Max Response Interval</b> | <input type="text" value="10"/> Sec (5 - 20, default 10)       |
| <b>Last Member Query Counter</b>   | <input type="text" value="2"/> (1 - 7, default 2)              |
| <b>Last Member Query Interval</b>  | <input type="text" value="1"/> Sec (1 - 25, default 1)         |
| <b>Operational Status</b>          |                                                                |
| <b>Status</b>                      | Disabled                                                       |
| <b>Query Robustness</b>            | 2                                                              |
| <b>Query Interval</b>              | 125 (Sec)                                                      |
| <b>Query Max Response Interval</b> | 10 (Sec)                                                       |
| <b>Last Member Query Counter</b>   | 2                                                              |
| <b>Last Member Query Interval</b>  | 1 (Sec)                                                        |

Figure 9-19 IGMP Snooping VLAN Edit Page

| Field                                       | Description                                                                                                                                                                                                                            |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>                                 | The selected VLAN List                                                                                                                                                                                                                 |
| <b>State</b>                                | Set the enabling status of IGMP Snooping VLAN functionality <ul style="list-style-type: none"> <li>• <b>Enable:</b> If Checked Enable IGMP Snooping VLAN, else is Disabled IGMP Snooping VLAN.</li> </ul>                              |
| <b>Router Learn</b> <b>Port</b> <b>Auto</b> | Set the enabling status of IGMP Snooping router port learning <ul style="list-style-type: none"> <li>• <b>Enable:</b> If checked Enable learning router port by query and PIM, DVRMP, else Disable the learning router port</li> </ul> |
| <b>Immediate leave</b>                      | Immediate Leave the group when receive IGMP Leave message. <ul style="list-style-type: none"> <li>• <b>Enable:</b> If checked Enable immediate leave, else disable immediate leave</li> </ul>                                          |
| <b>Query Robustness</b>                     | The Admin Query Robustness allows tuning for the expected packet loss on a subnet.                                                                                                                                                     |
| <b>Query Interval</b>                       | The Admin interval of querier to send general query                                                                                                                                                                                    |
| <b>Query Max Response Interval</b>          | 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.                                                                 |
| <b>Last Member Query Counter</b>            | The Admin last member query count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.                                                                                                 |
| <b>Last Member Query Interval</b>           | The Admin last member query interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.                                                                                              |
| <b>Operational Status</b>                   |                                                                                                                                                                                                                                        |
| <b>Status</b>                               | Operational IGMP snooping status , must both IGMP snooping global and IGMP snooping enable the status will be enable.                                                                                                                  |
| <b>Query Robustness</b>                     | Operational Query Robustness                                                                                                                                                                                                           |
| <b>Query Interval</b>                       | Operational Query Interval                                                                                                                                                                                                             |
| <b>Query Max Response Interval</b>          | Operational Query Max Response Interval                                                                                                                                                                                                |
| <b>Last Member Query Counter</b>            | Operational Last Member Query Count                                                                                                                                                                                                    |
| <b>Last Member Query Interval</b>           | Operational Last Member Query Interval                                                                                                                                                                                                 |

Table 9-19 IGMP Snooping VLAN Edit Fields

### 9.2.2 Querier

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

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

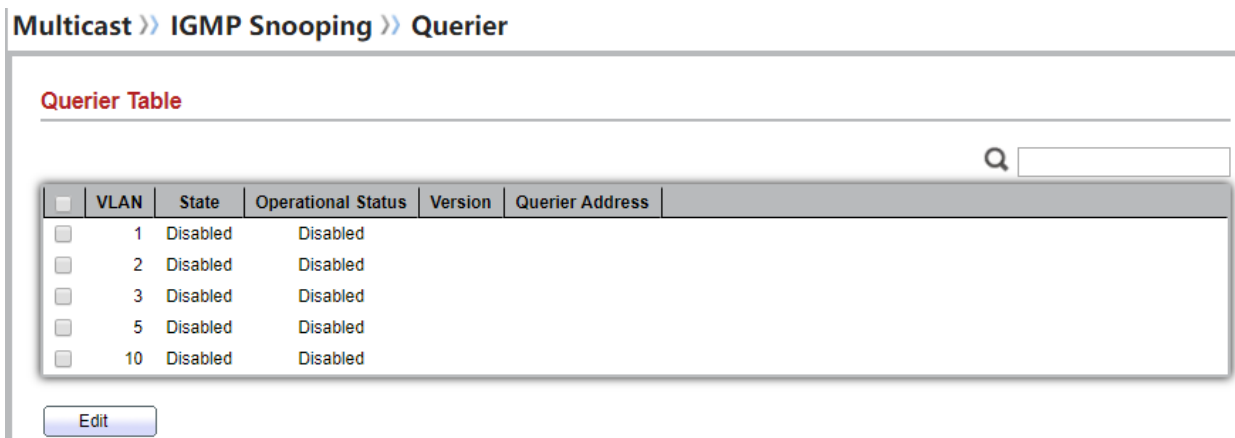


Figure 9-20 IGMP Snooping Querier Table Page

| Field                     | Description                                    |
|---------------------------|------------------------------------------------|
| <b>VLAN</b>               | IGMP Snooping querier entry VLAN ID            |
| <b>State</b>              | The IGMP Snooping querier Admin State.         |
| <b>Operational Status</b> | The IGMP Snooping querier operational status   |
| <b>Querier Version</b>    | The IGMP Snooping querier operational version. |
| <b>Querier IP</b>         | The operational Querier IP address on the VLAN |

Table 9-20 IGMP Snooping Querier Table Fields

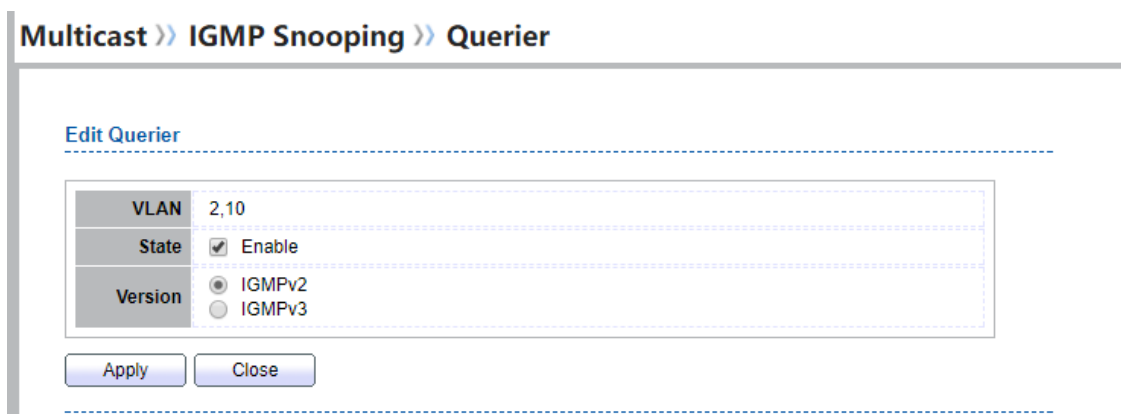


Figure 9-21 IGMP Snooping Querier Edit Page

| Field       | Description                                       |
|-------------|---------------------------------------------------|
| <b>VLAN</b> | The Selected Edit IGMP Snooping querier VLAN List |

|                |                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State</b>   | Set the enabling status of IGMP Querier Election on the chose VLANs                                                                                                         |
|                | <ul style="list-style-type: none"> <li>• <b>Enabled:</b> if checked Enable IGMP Querier else Disable IGMPQuerier</li> </ul>                                                 |
| <b>Version</b> | Set the query version of IGMP Querier Election on the chose VLANs                                                                                                           |
|                | <ul style="list-style-type: none"> <li>• <b>IGMPv2:</b> Querier version 2.</li> <li>• <b>IGMPv3:</b> Querier version 3. (IGMP Snooping version should be IGMPv3)</li> </ul> |

Table 9-21 IGMP Snooping Querier Edit Fields

### 9.2.3 Statistics

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

This page allow user to clear IGMP snooping statics.

**Multicast >> IGMP Snooping >> Statistics**

| Receive Packet              |   |
|-----------------------------|---|
| Total                       | 0 |
| Valid                       | 0 |
| InValid                     | 0 |
| Other                       | 0 |
| Leave                       | 0 |
| Report                      | 0 |
| General Query               | 0 |
| Special Group Query         | 0 |
| Source-specific Group Query | 0 |

| Transmit Packet             |   |
|-----------------------------|---|
| Leave                       | 0 |
| Report                      | 0 |
| General Query               | 0 |
| Special Group Query         | 0 |
| Source-specific Group Query | 0 |

Figure 9-22 IGMP Snooping Statistics Page

| Field                 | Description                                               |
|-----------------------|-----------------------------------------------------------|
| <b>Receive Packet</b> |                                                           |
| <b>Total</b>          | Total RX igmp packet, include ipv4 multicast data to CPU. |
| <b>Valid</b>          | The valid igmp snooping process packet.                   |
| <b>InValid</b>        | The invalid igmp snooping process packet.                 |

|                                    |                                                                                     |
|------------------------------------|-------------------------------------------------------------------------------------|
| <b>Other</b>                       | The ICMP protocol is not 2, and is not ipv4 multicast data packet.                  |
| <b>Leave</b>                       | IGMP leave packet.                                                                  |
| <b>Report</b>                      | IGMP join and report packet                                                         |
| <b>General Query</b>               | IGMP General Query packet                                                           |
| <b>Special Group Query</b>         | IGMP Special Group General Query packet                                             |
| <b>Source-specific Group Query</b> | IGMP Special Source and Group General Query packet                                  |
| <b>Transmit Packet</b>             |                                                                                     |
| <b>Leave</b>                       | IGMP leave packet                                                                   |
| <b>Report</b>                      | IGMP join and report packet                                                         |
| <b>General Query</b>               | IGMP general query packet include querier transmit general query packet             |
| <b>Special Group Query</b>         | IGMP special group query packet include querier transmit special group query packet |
| <b>Source-specific Group Query</b> | IGMP Special Source and Group General Query packet                                  |

Table 9-22 IGMP Snooping Statistics Fields

### 9.3 MLD Snooping

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

#### 9.3.1 Property

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

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

#### Multicast >> MLD Snooping >> Property

The screenshot shows the 'Multicast >> MLD Snooping >> Property' configuration page. It contains a form for global settings and a table for VLAN settings.

**Global Settings:**

- State:** ☐ Enable
- Version:** ☒ MLDv1, ☐ MLDv2
- Report Suppression:** ☒ Enable

**Buttons:** Apply, Edit

**VLAN Setting Table:**

|                          | VLAN | Operational Status | Router Port Auto Learn | Query Robustness | Query Interval | Query Max Response Interval | Last Member Query Counter | Last Member Query Interval | Immediate Leave |
|--------------------------|------|--------------------|------------------------|------------------|----------------|-----------------------------|---------------------------|----------------------------|-----------------|
| <input type="checkbox"/> | 1    | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |
| <input type="checkbox"/> | 2    | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |
| <input type="checkbox"/> | 3    | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |
| <input type="checkbox"/> | 5    | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |
| <input type="checkbox"/> | 10   | Disabled           | Enabled                | 2                | 125            | 10                          | 2                         | 1                          | Disabled        |

Figure 9-23 MLD Snooping Property Page

| Field                         | Description                                                                                                                                                                                                                |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State</b>                  | Set the enabling status of IGMP Snooping functionality <ul style="list-style-type: none"> <li>• <b>Enable:</b> If Checked Enable IGMP Snooping, else is Disabled IGMP Snooping.</li> </ul>                                 |
| <b>Version</b>                | Set the MLD snooping version <ul style="list-style-type: none"> <li>• <b>MLDv1:</b> Only support process MLD v1 packet.</li> <li>• <b>MLDv2:</b> Support v2 basic and v1.</li> </ul>                                       |
| <b>Report Suppression</b>     | Set the enabling status of MLD v1 report suppression <ul style="list-style-type: none"> <li>• <b>Enable:</b> If Checked Enable MLD Snooping v1 report suppression, else Disable the report suppression function</li> </ul> |
| <b>VLAN</b>                   | The MLD entry VLAN ID                                                                                                                                                                                                      |
| <b>Operation Status</b>       | The enable status of MLD snooping VLAN functionality                                                                                                                                                                       |
| <b>Router Port Auto Learn</b> | The enabling status of MLD snooping router port auto learning                                                                                                                                                              |

|                                    |                                                                                                                                 |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Query Robustness</b>            | The Query Robustness allows tuning for the expected packet loss on a subnet.                                                    |
| <b>Query Interval</b>              | The interval of querier to send general query                                                                                   |
| <b>Query Max Response Interval</b> | In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second. |
| <b>Last Member Query count</b>     | The count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.                  |
| <b>Last Member Query Interval</b>  | The interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.               |
| <b>Immediate leave</b>             | The immediate leave status of the group will immediate leave when receive MLD Leave message.                                    |

Table 9-23 MLD Snooping Property Fields

**Multicast >> MLD Snooping >> Property**

[Edit VLAN Setting](#)

|                               |                                            |
|-------------------------------|--------------------------------------------|
| <b>VLAN</b>                   | 5,10                                       |
| <b>State</b>                  | <input type="checkbox"/> Enable            |
| <b>Router Port Auto Learn</b> | <input checked="" type="checkbox"/> Enable |
| <b>Immediate leave</b>        | <input type="checkbox"/> Enable            |

|                                    |                                                                |
|------------------------------------|----------------------------------------------------------------|
| <b>Query Robustness</b>            | <input type="text" value="2"/> (1 - 7, default 2)              |
| <b>Query Interval</b>              | <input type="text" value="125"/> Sec (30 - 18000, default 125) |
| <b>Query Max Response Interval</b> | <input type="text" value="10"/> Sec (5 - 20, default 10)       |

|                                   |                                                        |
|-----------------------------------|--------------------------------------------------------|
| <b>Last Member Query Counter</b>  | <input type="text" value="2"/> (1 - 7, default 2)      |
| <b>Last Member Query Interval</b> | <input type="text" value="1"/> Sec (1 - 25, default 1) |

| Operational Status                 |           |
|------------------------------------|-----------|
| <b>Status</b>                      | Disabled  |
| <b>Query Robustness</b>            | 2         |
| <b>Query Interval</b>              | 125 (Sec) |
| <b>Query Max Response Interval</b> | 10 (Sec)  |
| <b>Last Member Query Counter</b>   | 2         |
| <b>Last Member Query Interval</b>  | 1 (Sec)   |

Figure 9-24 MLD Snooping VLAN Edit Page

| Field                               | Description                                                                                                                                                                                                                           |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>                         | The selected VLAN List                                                                                                                                                                                                                |
| <b>State</b>                        | Set the enabling status of MLD Snooping VLAN functionality <ul style="list-style-type: none"> <li>• <b>Enable:</b> If Checked Enable MLD Snooping VLAN, else is Disabled MLD Snooping VLAN.</li> </ul>                                |
| <b>Router Learn    Port    Auto</b> | Set the enabling status of MLD Snooping router port learning <ul style="list-style-type: none"> <li>• <b>Enable:</b> If checked Enable learning router port by query and PIM, DVRMP, else Disable the learning router port</li> </ul> |
| <b>Immediate leave</b>              | Immediate Leave the group when receive MLD Leave message. <ul style="list-style-type: none"> <li>• <b>Enable:</b> If checked Enable immediate leave, else disable immediate leave</li> </ul>                                          |
| <b>Query Robustness</b>             | The Admin Query Robustness allows tuning for the expected packet loss on a subnet.                                                                                                                                                    |
| <b>Query Interval</b>               | The Admin interval of querier to send general query                                                                                                                                                                                   |
| <b>Query Max Response Interval</b>  | 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.                                                                |
| <b>Last Member Query Counter</b>    | The Admin last member query count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.                                                                                                |
| <b>Last Member Query Interval</b>   | The Admin last member query interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group.                                                                                             |
| <b>Operational Status</b>           |                                                                                                                                                                                                                                       |
| <b>Status</b>                       | Operational MLD snooping status, must both MLD snooping global and MLD snooping enable the status will be enable.                                                                                                                     |
| <b>Query Robustness</b>             | Operational Query Robustness                                                                                                                                                                                                          |
| <b>Query Interval</b>               | Operational Query Interval                                                                                                                                                                                                            |
| <b>Query Max Response Interval</b>  | Operational Query Max Response Interval                                                                                                                                                                                               |
| <b>Last Member Query Counter</b>    | Operational Last Member Query Count                                                                                                                                                                                                   |
| <b>Last Member Query Interval</b>   | Operational Last Member Query Interval                                                                                                                                                                                                |

Table 9-24 MLD Snooping VLAN Edit Fields

### 9.3.2 Statistics

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

This page allow user to clear MLD snooping statics.

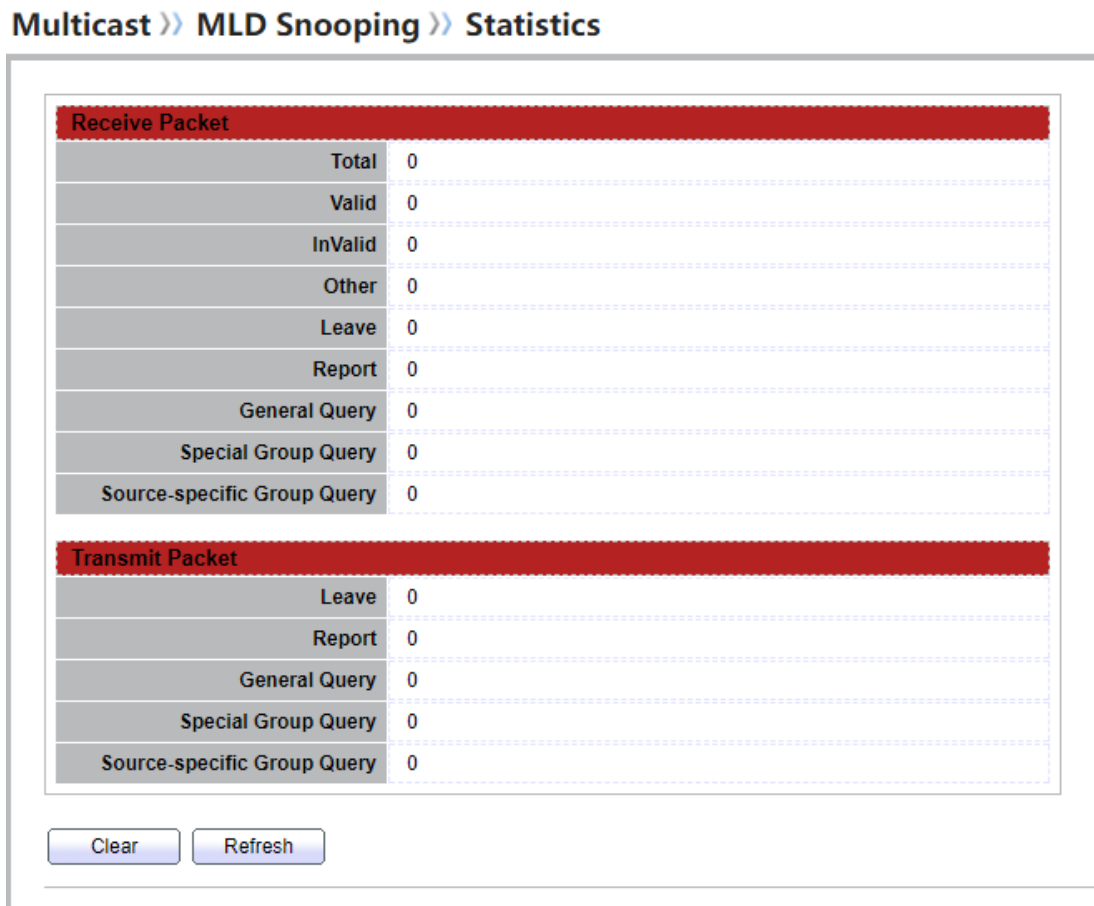


Figure 9-25 MLD Snooping Statistics Page

| Field                      | Description                                                                                         |
|----------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Receive Packet</b>      |                                                                                                     |
| <b>Total</b>               | Total RX MLD packet, include ipv4 multicast data to CPU.                                            |
| <b>Valid</b>               | The valid MLD snooping process packet.                                                              |
| <b>InValid</b>             | The invalid MLD snooping process packet.                                                            |
| <b>Other</b>               | The ICMPV6 type is not MLD, and is not ipv6 multicast data packet, and is not IPV6 router protocol. |
| <b>Leave</b>               | MLD leave packet.                                                                                   |
| <b>Report</b>              | MLD join and report packet                                                                          |
| <b>General Query</b>       | MLD General Query packet                                                                            |
| <b>Special Group Query</b> | MLD Special Group General Query packet                                                              |

|                              |              |                                                   |
|------------------------------|--------------|---------------------------------------------------|
| <b>Source-specific Query</b> | <b>Group</b> | MLD Special Source and Group General Query packet |
| <b>Transmit Packet</b>       |              |                                                   |
| <b>Leave</b>                 |              | MLD leave packet                                  |
| <b>Report</b>                |              | MLD join and report packet                        |
| <b>General Query</b>         |              | MLD general query packet                          |
| <b>Special Group Query</b>   |              | MLD special group query packet                    |
| <b>Source-specific Query</b> | <b>Group</b> | MLD Special Source and Group General Query packet |

Table 9-25 MLD Snooping Statistics Fields

## 9.4 MVR

Use the MVR pages to configure settings of MVR function.

### 9.4.1 Property

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

This page allow user to set MVR property.

**Multicast >> MVR >> Property**

|                          |                                                                              |
|--------------------------|------------------------------------------------------------------------------|
| State                    | <input checked="" type="checkbox"/> Enable                                   |
| VLAN                     | 2 ▼                                                                          |
| Mode                     | <input checked="" type="radio"/> Compatible<br><input type="radio"/> Dynamic |
| Group Start              | 224.1.1.1                                                                    |
| Group Count              | 8 (1 - 128)                                                                  |
| Query Time               | 1 Sec (1 - 10)                                                               |
| <b>Operational Group</b> |                                                                              |
| Maximum                  | 128                                                                          |
| Current                  | 0                                                                            |

Apply

Figure 9-26 Multicast MVR Properties Page

| Field              | Description                                                                                                                                                                              |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State</b>       | <ul style="list-style-type: none"> <li>• <b>Enable:</b> if checked enable the MVR state, else disable the MVR state</li> </ul>                                                           |
| <b>VLAN</b>        | The MVR VLAN ID                                                                                                                                                                          |
| <b>Mode</b>        | Set the MVR mode. <ul style="list-style-type: none"> <li>• <b>Compatible:</b> compatible mode</li> <li>• <b>Dynamic:</b> dynamic mode, will learn group member on source port</li> </ul> |
| <b>Group Start</b> | MVR group range start                                                                                                                                                                    |
| <b>Group Count</b> | MVR group continue count                                                                                                                                                                 |
| <b>Query Time</b>  | MVR query time when receive MVR leave MVR group packet                                                                                                                                   |
| <b>Maximum</b>     | The max number of MVR group database                                                                                                                                                     |
| <b>Current</b>     | The learned MVR group current time                                                                                                                                                       |

Table 9-27 MVR Property Fields

### 9.4.2 Port Setting

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

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

**Multicast >> MVR >> Port Setting**

**Port Setting Table**

| <input type="checkbox"/> | Entry | Port | Role | Immediate Leave |
|--------------------------|-------|------|------|-----------------|
| <input type="checkbox"/> | 1     | GE1  | None | Disabled        |
| <input type="checkbox"/> | 2     | GE2  | None | Disabled        |
| <input type="checkbox"/> | 3     | GE3  | None | Disabled        |
| <input type="checkbox"/> | 4     | GE4  | None | Disabled        |
| <input type="checkbox"/> | 5     | GE5  | None | Disabled        |
| <input type="checkbox"/> | 6     | GE6  | None | Disabled        |
| <input type="checkbox"/> | 7     | GE7  | None | Disabled        |
| <input type="checkbox"/> | 8     | GE8  | None | Disabled        |
| <input type="checkbox"/> | 9     | GE9  | None | Disabled        |
| <input type="checkbox"/> | 10    | GE10 | None | Disabled        |
| <input type="checkbox"/> | 11    | LAG1 | None | Disabled        |
| <input type="checkbox"/> | 12    | LAG2 | None | Disabled        |
| <input type="checkbox"/> | 13    | LAG3 | None | Disabled        |
| <input type="checkbox"/> | 14    | LAG4 | None | Disabled        |
| <input type="checkbox"/> | 15    | LAG5 | None | Disabled        |
| <input type="checkbox"/> | 16    | LAG6 | None | Disabled        |
| <input type="checkbox"/> | 17    | LAG7 | None | Disabled        |
| <input type="checkbox"/> | 18    | LAG8 | None | Disabled        |

Figure 9-28 Multicast MVR Port Setting Table Page

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

Table 9-29 MVR Port Setting Fields

Multicast >> MVR >> Port Setting

Edit Port Setting

|                 |                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------|
| Port            | GE1-GE2,GE4-GE5                                                                                         |
| Role            | <input checked="" type="radio"/> None<br><input type="radio"/> Receiver<br><input type="radio"/> Source |
| Immediate Leave | <input checked="" type="checkbox"/> Enable                                                              |

Apply Close

Figure 9-30 Multicast MVR Port Setting Edit Page

| Field           | Description                                                                                                                                                                                      |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port            | Display the selected port list                                                                                                                                                                   |
| Role            | MVR port role <ul style="list-style-type: none"> <li>• <b>None:</b> port role is none</li> <li>• <b>Receiver:</b> port role is receiver</li> <li>• <b>Source:</b> port role is source</li> </ul> |
| Immediate Leave | MVR Port immediate leave <ul style="list-style-type: none"> <li>• <b>Enable:</b> if checked is enable immediate leave, else disable immediate leave.</li> </ul>                                  |

Table 9-31 MVR Port Setting Edit Fields

### 9.4.3 Group Address

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

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

**Multicast >> MVR >> Group Address**

Figure 9-32 Multicast MVR Group Address Table Page

| Field                | Description                               |
|----------------------|-------------------------------------------|
| <b>VLAN</b>          | The VLAN ID of MVR group.                 |
| <b>Group Address</b> | The MVR group IP address.                 |
| <b>Member</b>        | The member ports of MVR group.            |
| <b>Type</b>          | The type of MVR group. Static or Dynamic. |
| <b>Life(Sec)</b>     | The life time of this dynamic MVR group.  |

Table 9-33 MVR Group Address Table Fields

Figure 9-34 Multicast MVR Group Address Add Page

| Field                | Description                                                                                                                                                                                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>          | The VLAN ID of MVR group.                                                                                                                                                                                                                                                                      |
| <b>Group Address</b> | MVR group IP address.                                                                                                                                                                                                                                                                          |
| <b>Member</b>        | <p>The member ports of MVR group.</p> <ul style="list-style-type: none"> <li>• <b>Available Port:</b> Optional port member, it is only receiver port when MVR mode is compatible, it include source port when mode is dynamic</li> <li>• <b>Selected Port:</b> Selected port member</li> </ul> |

Table 9-35 MVR Group Address Add Fields

Figure 9-36 Multicast MVR Group Address Edit Page

| Field                | Description                                                                                                                                                                                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>          | The VLAN ID of edited MVR group.                                                                                                                                                                                                                                                               |
| <b>Group Address</b> | The edited MVR group IP address.                                                                                                                                                                                                                                                               |
| <b>Member</b>        | <p>The member ports of MVR group.</p> <ul style="list-style-type: none"> <li>• <b>Available Port:</b> Optional port member, it is only receiver port when MVR mode is compatible, it include source port when mode is dynamic</li> <li>• <b>Selected Port:</b> Selected port member</li> </ul> |

Table 9-37 MVR Group Address Edit Fields

## 10.Security

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

### 10.1 RADIUS

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

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

Security >> RADIUS

Use Default Parameter

|            |                                |                         |
|------------|--------------------------------|-------------------------|
| Retry      | <input type="text" value="3"/> | (1 - 10, default 3)     |
| Timeout    | <input type="text" value="3"/> | Sec (1 - 30, default 3) |
| Key String | <input type="text"/>           |                         |

Apply

Figure 10-1 RADIUS Default Setting

| Field      | Description                   |
|------------|-------------------------------|
| Retry      | Set default retry number      |
| Timeout    | Set default timeout value     |
| Key String | Set default RADIUS key string |

Table 10-1 RADIUS Default Setting Fields

#### RADIUS Table

Showing All entries      Showing 1 to 1 of 1 entries     

| <input type="checkbox"/> | Server Address | Server Port | Priority | Retry | Timeout | Usage |
|--------------------------|----------------|-------------|----------|-------|---------|-------|
| <input type="checkbox"/> | 192.168.1.98   | 1812        | 1        | 3     | 3       | All   |

First
Previous
1
Next
Last

Figure 10-2 RADIUS Table

| Field          | Description                                                                                                                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Server Address | RADIUS server address                                                                                                                                                                                                           |
| Server Port    | RADIUS server port                                                                                                                                                                                                              |
| Priority       | RADIUS server priority (smaller value has higher priority). RADIUS session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority. |
| Retry          | RADIUS server retry value. If it is fail to connect to server, it will keep trying until timeout with retry times.                                                                                                              |

|                |                                                                                                                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Timeout</b> | RADIUS server timeout value. If it is fail to connect to server, it will keep trying until timeout.                                                                                                          |
| <b>Usage</b>   | RADIUS server usage type <ul style="list-style-type: none"> <li>• <b>Login:</b> For login authentication</li> <li>• <b>802.1x:</b> For 802.1x authentication</li> <li>• <b>All:</b> For all types</li> </ul> |

Table 10-2 RADIUS Table Fields

**Security » RADIUS**

**Add RADIUS Server**

|                |                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------|
| Address Type   | <input checked="" type="radio"/> Hostname<br><input type="radio"/> IPv4<br><input type="radio"/> IPv6 |
| Server Address | 192.168.1.98                                                                                          |
| Server Port    | 1812 (0 - 65535, default 1812)                                                                        |
| Priority       | 1 (0 - 65535)                                                                                         |
| Key String     | <input checked="" type="checkbox"/> Use Default<br><input type="text"/>                               |
| Retry          | <input checked="" type="checkbox"/> Use Default<br><input type="text"/> 3 (1 - 10, default 3)         |
| Timeout        | <input checked="" type="checkbox"/> Use Default<br><input type="text"/> 3 Sec (1 - 30, default 3)     |
| Usage          | <input type="radio"/> Login<br><input type="radio"/> 802.1X<br><input checked="" type="radio"/> All   |

---

**Security » RADIUS**

**Edit RADIUS Server**

|                |                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------|
| Server Address | 192.168.1.98                                                                                        |
| Server Port    | 1812 (0 - 65535, default 1812)                                                                      |
| Priority       | 1 (0 - 65535)                                                                                       |
| Key String     | <input checked="" type="checkbox"/> Use Default<br><input type="text"/>                             |
| Retry          | <input checked="" type="checkbox"/> Use Default<br><input type="text"/> 3 (1 - 10, default 3)       |
| Timeout        | <input checked="" type="checkbox"/> Use Default<br><input type="text"/> 3 Sec (1 - 30, default 3)   |
| Usage          | <input type="radio"/> Login<br><input type="radio"/> 802.1X<br><input checked="" type="radio"/> All |

Figure 10-3 Add/Edit RADIUS Server Dialog

| Field                 | Description                                                                                                                                                                                                                                                          |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Address Type</b>   | In add dialog, user need to specify server Address Type <ul style="list-style-type: none"> <li>• <b>Hostname:</b> Use domain name as server address</li> <li>• <b>IPv4:</b> Use IPv4 as server address</li> <li>• <b>IPv6:</b> Use IPv6 as server address</li> </ul> |
| <b>Server Address</b> | In add dialog, user need to input server address based on address type. In edit dialog, it shows current edit server address.                                                                                                                                        |
| <b>Server Port</b>    | Set RADIUS server port                                                                                                                                                                                                                                               |
| <b>Priority</b>       | Set RADIUS server priority (smaller value has higher priority). RADIUS session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority.                                  |
| <b>Retry</b>          | Set RADIUS server retry value. If it is fail to connect to server, it will keep trying until timeout with retry times.                                                                                                                                               |
| <b>Timeout</b>        | Set RADIUS server timeout value. If it is fail to connect to server, it will keep trying until timeout.                                                                                                                                                              |
| <b>Usage</b>          | Set RADIUS server usage type <ul style="list-style-type: none"> <li>• <b>Login:</b> For login authentication</li> <li>• <b>802.1x:</b> For 802.1x authentication</li> <li>• <b>All:</b> For all types</li> </ul>                                                     |

Table 10-3 Add/Edit RADIUS Server Fields

## 10.2 TACACS+

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

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

Figure 10-4 TACACS+ Default Setting

| Field             | Description                    |
|-------------------|--------------------------------|
| <b>Timeout</b>    | Set default timeout value      |
| <b>Key String</b> | Set default TACACS+ key string |

Table 10-4 TACACS+ Default Setting Fields

**TACACS+ Table**

Showing **All** entries Showing 1 to 1 of 1 entries

| <input type="checkbox"/> | Server Address | Server Port | Priority | Timeout |
|--------------------------|----------------|-------------|----------|---------|
| <input type="checkbox"/> | 192.168.1.97   | 49          | 1        | 5       |

Figure 10-5 TACACS+ Table

| Field                 | Description                                                                                                                                                                                                                       |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Server Address</b> | TACACS+ server address                                                                                                                                                                                                            |
| <b>Server Port</b>    | TACACS+ server port                                                                                                                                                                                                               |
| <b>Priority</b>       | TACACS+ server priority (smaller value has higher priority). TACACS+ session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority. |
| <b>Timeout</b>        | TACACS+ server timeout value. If it is fail to connect to server, it will keep trying until timeout.                                                                                                                              |

Table 10-5 RADIUS Table Fields

**Security >> TACACS+**

[Add TACACS+ Server](#)

**Address Type**  
☒ Hostname  
☐ IPv4  
☐ IPv6

**Server Address**

**Server Port**  
 (0 - 65535, default 49)

**Priority**  
 (0 - 65535)

**Key String**  
☒ Use Default

**Timeout**  
☒ Use Default  
 Sec (1 - 30, default 5)

Security >> TACACS+

Edit TACACS+ Server

|                |                                                 |
|----------------|-------------------------------------------------|
| Server Address | 192.168.1.97                                    |
| Server Port    | 49 (0 - 65535, default 49)                      |
| Priority       | 1 (0 - 65535)                                   |
| Key String     | <input checked="" type="checkbox"/> Use Default |
| Timeout        | <input checked="" type="checkbox"/> Use Default |
|                | 5 Sec (1 - 30, default 5)                       |

Apply Close

Figure 10-6 Add/Edit TACACS+ Server Dialog

| Field                 | Description                                                                                                                                                                                                                                                          |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Address Type</b>   | In add dialog, user need to specify server Address Type <ul style="list-style-type: none"> <li>• <b>Hostname:</b> Use domain name as server address</li> <li>• <b>IPv4:</b> Use IPv4 as server address</li> <li>• <b>IPv6:</b> Use IPv6 as server address</li> </ul> |
| <b>Server Address</b> | In add dialog, user need to input server address based on address type. In edit dialog, it shows current edit server address.                                                                                                                                        |
| <b>Server Port</b>    | Set TACACS+ server port                                                                                                                                                                                                                                              |
| <b>Priority</b>       | Set TACACS+ server priority (smaller value has higher priority). TACACS+ session will try to establish with the server setting which has highest priority. If failed, it will try to connect to the server with next higher priority.                                |
| <b>Timeout</b>        | Set TACACS+ server timeout value. If it is fail to connect to server, it will keep trying until timeout.                                                                                                                                                             |

Table 10-6 Add/Edit TACACS+ Server Fields

## 10.3 AAA

### 10.3.1 Method List

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

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

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

## Security &gt;&gt; AAA &gt;&gt; Method List

**Method List Table**

Showing All entries Showing 1 to 2 of 2 entries

| <input type="checkbox"/> | Name    | Sequence    |
|--------------------------|---------|-------------|
| <input type="checkbox"/> | default | (1) Local   |
| <input type="checkbox"/> | TEST    | (1) TACACS+ |

Figure 10-7 Method List Table

| Field           | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name</b>     | Login authentication list name. This name should be different from other existing lists.                                                                                                                                                                                                                                                                                                                                       |
| <b>Sequence</b> | Priority of login authentication method. <ul style="list-style-type: none"> <li>• <b>None:</b> Authenticated with any condition.</li> <li>• <b>Local:</b> Use local accounts database to authenticate</li> <li>• <b>TACACS+:</b> Use remote TACACS+ server to authenticate.</li> <li>• <b>RADIUS:</b> Use remote Radius server to authenticate.</li> <li>• <b>Enable:</b> Use local enable password to authenticate</li> </ul> |

Table 10-7 Method List Table Fields

## Security &gt;&gt; AAA &gt;&gt; Method List

## Add Method List

|          |                                                                                                                                                                                                      |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name     | <input type="text"/>                                                                                                                                                                                 |
| Method 1 | <input checked="" type="radio"/> Empty<br><input type="radio"/> None<br><input type="radio"/> Local<br><input type="radio"/> Enable<br><input type="radio"/> RADIUS<br><input type="radio"/> TACACS+ |
| Method 2 | <input checked="" type="radio"/> Empty<br><input type="radio"/> None<br><input type="radio"/> Local<br><input type="radio"/> Enable<br><input type="radio"/> RADIUS<br><input type="radio"/> TACACS+ |
| Method 3 | <input checked="" type="radio"/> Empty<br><input type="radio"/> None<br><input type="radio"/> Local<br><input type="radio"/> Enable<br><input type="radio"/> RADIUS<br><input type="radio"/> TACACS+ |
| Method 4 | <input checked="" type="radio"/> Empty<br><input type="radio"/> None<br><input type="radio"/> Local<br><input type="radio"/> Enable<br><input type="radio"/> RADIUS<br><input type="radio"/> TACACS+ |

Security >> AAA >> Method List

Edit Method List

| Name     | TEST                                                                                                                                                                                                 |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Method 1 | <input type="radio"/> Empty<br><input type="radio"/> None<br><input type="radio"/> Local<br><input type="radio"/> Enable<br><input type="radio"/> RADIUS<br><input checked="" type="radio"/> TACACS+ |
| Method 2 | <input checked="" type="radio"/> Empty<br><input type="radio"/> None<br><input type="radio"/> Local<br><input type="radio"/> Enable<br><input type="radio"/> RADIUS<br><input type="radio"/> TACACS+ |
| Method 3 | <input type="radio"/> Empty<br><input type="radio"/> None<br><input checked="" type="radio"/> Local<br><input type="radio"/> Enable<br><input type="radio"/> RADIUS<br><input type="radio"/> TACACS+ |
| Method 4 | <input checked="" type="radio"/> Empty<br><input type="radio"/> None<br><input type="radio"/> Local<br><input type="radio"/> Enable<br><input type="radio"/> RADIUS<br><input type="radio"/> TACACS+ |

Apply Close

Figure 10-8 Add/Edit Method List Dialog

| Field           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name</b>     | Login authentication list name. This name should be different from other existing lists.                                                                                                                                                                                                                                                                                                                                                     |
| <b>Method 1</b> | Select first priority of login authentication method. <ul style="list-style-type: none"> <li>• <b>None:</b> Authenticated with any condition.</li> <li>• <b>Local:</b> Use local accounts database to authenticate</li> <li>• <b>TACACS+:</b> Use remote TACACS+ server to authenticate.</li> <li>• <b>RADIUS:</b> Use remote Radius server to authenticate.</li> <li>• <b>Enable:</b> Use local enable password to authenticate</li> </ul>  |
| <b>Method 2</b> | Select second priority of login authentication method. <ul style="list-style-type: none"> <li>• <b>None:</b> Authenticated with any condition.</li> <li>• <b>Local:</b> Use local accounts database to authenticate</li> <li>• <b>TACACS+:</b> Use remote TACACS+ server to authenticate.</li> <li>• <b>RADIUS:</b> Use remote Radius server to authenticate.</li> <li>• <b>Enable:</b> Use local enable password to authenticate</li> </ul> |
| <b>Method 3</b> | Select thrid priority of login authentication method. <ul style="list-style-type: none"> <li>• <b>None:</b> Authenticated with any condition.</li> <li>• <b>Local:</b> Use local accounts database to authenticate</li> <li>• <b>TACACS+:</b> Use remote TACACS+ server to authenticate.</li> <li>• <b>RADIUS:</b> Use remote Radius server to authenticate.</li> <li>• <b>Enable:</b> Use local enable password to authenticate</li> </ul>  |
| <b>Method 4</b> | Select fourth priority of login authentication method. <ul style="list-style-type: none"> <li>• <b>None:</b> Authenticated with any condition.</li> <li>• <b>Local:</b> Use local accounts database to authenticate</li> <li>• <b>TACACS+:</b> Use remote TACACS+ server to authenticate.</li> <li>• <b>RADIUS:</b> Use remote Radius server to authenticate.</li> <li>• <b>Enable:</b> Use local enable password to authenticate</li> </ul> |

Table 10-8 Add/Edit Method List Fields

### 10.3.2 Login Authentication

To display the login authentication combined web page, click **Security > AAA > Login Authentication**. This page allow user to combine AAA login authentication list to all management interfaces.

| Interface | Authentication List | Count | Method  |
|-----------|---------------------|-------|---------|
| Console   | default             | (1)   | Local   |
| Telnet    | default             | (1)   | Local   |
| SSH       | TEST                | (1)   | TACACS+ |
| HTTP      | default             | (1)   | Local   |
| HTTPS     | TEST                | (1)   | TACACS+ |

Apply

Figure 10-9: Login Authentication Page

| Field   | Description                                           |
|---------|-------------------------------------------------------|
| Console | Specify login authentication list combined on console |
| Telnet  | Specify login authentication list combined on Telnet  |
| SSH     | Specify login authentication list combined on SSH     |
| HTTP    | Specify login authentication list combined on HTTP    |
| HTTPS   | Specify login authentication list combined on HTTPS   |

Table 10-9: Login Authentication Page Fields

## 10.4 Management Access

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

### 10.4.1 Management VLAN

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

This page allow user to change management VLAN.

Management VLAN: 1 - default

Note: Change Management VLAN may cause connection interrupted

Apply

Figure 10-10 Management VLAN Page

| Field                  | Description                                                                                                                                                                                   |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Management VLAN</b> | Select management VLAN in option list.<br>Management connection, such as http, https, snmp etc., has the same VLAN of management VLAN are allow connecting to device. Others will be dropped. |

Table 10-10 Management VLAN Fields

### 10.4.2 Management Services

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

This page allow user to change management services related configurations.

**Security >> Management Access >> Management Service**

Management Service

Telnet

☐ Enable

SSH

☐ Enable

HTTP

☒ Enable

HTTPS

☐ Enable

SNMP

☐ Enable

Session Timeout

Console

10

Min (0 - 65535, default 10)

Telnet

10

Min (0 - 65535, default 10)

SSH

10

Min (0 - 65535, default 10)

HTTP

10

Min (0 - 65535, default 10)

HTTPS

10

Min (0 - 65535, default 10)

Password Retry Count

Console

3

(0 - 120, default 3)

Telnet

3

(0 - 120, default 3)

SSH

3

(0 - 120, default 3)

Silent Time

Console

0

Sec (0 - 65535, default 0)

Telnet

0

Sec (0 - 65535, default 0)

SSH

0

Sec (0 - 65535, default 0)

Apply

Figure 10-11 Management Service Page

| Field                     | Description                                                                                                                                                                                                                                                                                                                  |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Management Service</b> | Management service admin state. <ul style="list-style-type: none"> <li><b>Telnet:</b> Connect CLI through telnet</li> <li><b>SSH:</b> Connect CLI through SSH</li> <li><b>HTTP:</b> Connect WEBUI through HTTP</li> <li><b>HTTPS:</b> Connect WEBUI through HTTPS</li> <li><b>SNMP:</b> Manage switch trough SNMP</li> </ul> |

|                             |                                                                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Session Timeout</b>      | Set session timeout minutes for user access to user interface. 0 minutes means never timeout.                                                                   |
| <b>Password Retry Count</b> | Retry count is the number which CLI password input error tolerance count. After input error password exceeds this count, the CLI will freeze after silent time. |
| <b>Silent Time</b>          | After input error password exceeds password retry count, the CLI will freeze after silent time.                                                                 |

Table 10-11 Management Service Fields

### 10.4.3 Management ACL

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

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

Figure 10-12 Management ACL Page

| Field           | Description        |
|-----------------|--------------------|
| <b>ACL Name</b> | Input MAC ACL name |

Table 10-12 Management ACL Fields

#### Management ACL Table

| Showing                                                                                                                                                                               | All      | entries  | Showing 1 to 3 of 3 entries | Q |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-----------------------------|---|--|
|                                                                                                                                                                                       | ACL Name | State    | Rule                        |   |  |
| <input type="checkbox"/>                                                                                                                                                              | aaa      | Deactive | 0                           |   |  |
| <input type="checkbox"/>                                                                                                                                                              | bbb      | Deactive | 0                           |   |  |
| <input type="checkbox"/>                                                                                                                                                              | ccc      | Deactive | 0                           |   |  |
| <input type="button" value="Active"/> <input type="button" value="Deactive"/> <input type="button" value="Delete"/>                                                                   |          |          |                             |   |  |
| <input type="button" value="First"/> <input type="button" value="Previous"/> <input type="button" value="1"/> <input type="button" value="Next"/> <input type="button" value="Last"/> |          |          |                             |   |  |

Figure 10-13 Management ACL Table Page

| Field           | Description                                   |
|-----------------|-----------------------------------------------|
| <b>ACL Name</b> | Display Management ACL name                   |
| <b>State</b>    | Display Management ACL whether active.        |
| <b>Rule</b>     | Display the number Management ACE rule of ACL |

Table 10-13 Management ACL Table Fields

### 10.4.4 Management ACE

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

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



Figure 10-14 Management ACE Page

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

Table 10-14 Management ACE Fields

**Security >> Management Access >> Management ACE**

[Add Managemet ACE](#)

|            |                                                                                                                                                                                              |                          |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| ACL Name   | aaa                                                                                                                                                                                          |                          |
| Priority   | 1 (1 - 65535)                                                                                                                                                                                |                          |
| Service    | <input type="radio"/> All<br><input type="radio"/> Http<br><input type="radio"/> Https<br><input checked="" type="radio"/> Snmp<br><input type="radio"/> SSH<br><input type="radio"/> Telnet |                          |
| Action     | <input type="radio"/> Permit<br><input checked="" type="radio"/> Deny                                                                                                                        |                          |
| Port       | Available Port<br>GE1<br>GE2<br>GE3<br>GE4<br>GE5<br>GE6<br>GE7<br>GE8                                                                                                                       | Selected Port<br>(Empty) |
| IP Version | <input checked="" type="radio"/> All<br><input type="radio"/> IPv4<br><input type="radio"/> IPv6                                                                                             |                          |
| IPv4       | / 255.255.255.255                                                                                                                                                                            |                          |
| IPv6       | / 128 (1 - 128)                                                                                                                                                                              |                          |

Apply Close

Security >> Management Access >> Management ACE

Edit Managemet ACE

|            |                                                                                                                                                                                              |                                    |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| ACL Name   | aaa                                                                                                                                                                                          |                                    |
| Priority   | 1                                                                                                                                                                                            |                                    |
| Service    | <input type="radio"/> All<br><input type="radio"/> Http<br><input type="radio"/> Https<br><input checked="" type="radio"/> Snmp<br><input type="radio"/> SSH<br><input type="radio"/> Telnet |                                    |
| Action     | <input type="radio"/> Permit<br><input checked="" type="radio"/> Deny                                                                                                                        |                                    |
| Port       | Available Port<br>GE2<br>GE4<br>GE5<br>GE7<br>GE8<br>GE9<br>GE10<br>LAG1                                                                                                                     | Selected Port<br>GE1<br>GE3<br>GE6 |
| IP Version | <input checked="" type="radio"/> All<br><input type="radio"/> IPv4<br><input type="radio"/> IPv6                                                                                             |                                    |
| IPv4       | / 255.255.255.255                                                                                                                                                                            |                                    |
| IPv6       | / 128 (1 - 128)                                                                                                                                                                              |                                    |

Apply Close

Figure 10-15 Add and Edit Management ACE Dialog

| Field             | Description                                                                                                                                                                                                                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ACL Name</b>   | Display the ACL name to which an ACE is being added.                                                                                                                                                                                                                                                                                     |
| <b>Priority</b>   | Specify the priority of the ACE. ACEs with higher sequence are processed first (1 is the highest priority). Only available on Add Dialog.                                                                                                                                                                                                |
| <b>Service</b>    | Select the type service of rule. <ul style="list-style-type: none"> <li>• <b>All:</b> All services</li> <li>• <b>HTTP:</b> Only HTTP service.</li> <li>• <b>HTTPs:</b> Only HTTPs service.</li> <li>• <b>SNMP:</b> Only SNMP service.</li> <li>• <b>SSH:</b> Only SSH service.</li> <li>• <b>Telnet:</b> Only Telnet service.</li> </ul> |
| <b>Action</b>     | Select the action after ACE match packet. <ul style="list-style-type: none"> <li>• <b>Permit:</b> Forward packets that meet the ACE criteria.</li> <li>• <b>Deny:</b> Drop packets that meet the ACE criteria.</li> </ul>                                                                                                                |
| <b>Port</b>       | Select ports which will be matched.                                                                                                                                                                                                                                                                                                      |
| <b>IP Version</b> | Select the type of source IP address. <ul style="list-style-type: none"> <li>• <b>All:</b> All IP addresses can access.</li> <li>• <b>IPv4:</b> Specify IPv4 address ca access</li> <li>• <b>IPv6:</b> Specify IPv6 address ca access</li> </ul>                                                                                         |
| <b>IPv4</b>       | Enter the source IPv4 address value and mask to which will be matched.                                                                                                                                                                                                                                                                   |
| <b>IPv6</b>       | Enter the source IPv6 address value and mask to which will be matched.                                                                                                                                                                                                                                                                   |

Table 10-15 Add and Edit Management ACE Fields

## 10.5 Authentication Manager

### 10.5.1 Property

To display authentication manager property web page, click **Security > Authentication Manger > Property**

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

Figure 10-16 Authentication Manager Global Setting

| Field                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Authentication Type</b>      | <p>Set checkbox to enable/disable following authentication types</p> <ul style="list-style-type: none"> <li>• <b>802.1x:</b> Use IEEE 802.1x to do authentication</li> <li>• <b>MAC-Based:</b> Use MAC address to do authentication</li> <li>• <b>WEB-Based:</b> Prompt authentication web page for user to do authentication</li> </ul>                                                                                                                                                                                                                                                                                                 |
| <b>Guest VLAN</b>               | <p>Set checkbox to enable/disable guest VLAN, if guest VLAN is enabled, you need to select one available VLAN ID to be guest VID.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>MAC-Based User ID Format</b> | <p>Select mac-based authentication RADIUS username/password ID format.</p> <ul style="list-style-type: none"> <li>• XXXXXXXXXXXX</li> <li>• xxxxxxxxxxxx</li> <li>• XX:XX:XX:XX:XX:XX</li> <li>• xx:xx:xx:xx:xx:xx</li> <li>• XX-XX-XX-XX-XX-XX</li> <li>• xx-xx-xx-xx-xx-xx</li> <li>• XX.XX.XX.XX.XX.XX</li> <li>• xx.xx.xx.xx.xx.xx</li> <li>• XXXX:XXXX:XXXX</li> <li>• xxxx:xxxx:xxxx</li> <li>• XXXX-XXXX-XXXX</li> <li>• xxxx-xxxx-xxxx</li> <li>• XXXX.XXXX.XXXX</li> <li>• xxxx.xxxx.xxxx</li> <li>• XXXXXX:XXXXXX</li> <li>• xxxxxx:xxxxxx</li> <li>• XXXXXX-XXXXXXXXXX-XXXXXX</li> <li>• XXXXXX.XXXXXXXXXXX.XXXXXX</li> </ul> |

Table 10-16 Authentication Manager Global Setting Fields

## Port Mode Table

|                          | Entry | Port | Authentication Type |           |           | Host Mode               | Order  | Method | Guest VLAN | VLAN Assign Mode |
|--------------------------|-------|------|---------------------|-----------|-----------|-------------------------|--------|--------|------------|------------------|
|                          |       |      | 802.1x              | MAC-Based | WEB-Based |                         |        |        |            |                  |
| <input type="checkbox"/> | 1     | GE1  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 2     | GE2  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 3     | GE3  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 4     | GE4  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 5     | GE5  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 6     | GE6  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 7     | GE7  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 8     | GE8  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 9     | GE9  | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |
| <input type="checkbox"/> | 10    | GE10 | Disabled            | Disabled  | Disabled  | Multiple Authentication | 802.1x | RADIUS | Disabled   | Static           |

Figure 10-17 Port Mode Table

| Field                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>                            | Port name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Authentication Type (802.1X)</b>    | 802.1 X authentication type state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> 802.1X is enabled</li> <li>• <b>Disabled:</b> 802.1X is disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Authentication Type (MAC-Based)</b> | MAC-Based authentication type state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> MAC-Based authentication is enabled</li> <li>• <b>Disabled:</b> MAC-Based authentication is disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                |
| <b>Authentication Type (WEB-Based)</b> | WEB-Based authentication type state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> WEB-Based authentication is enabled</li> <li>• <b>Disabled:</b> WEB-Based authentication is disabled</li> </ul>                                                                                                                                                                                                                                                                                                                                                |
| <b>Host Mode</b>                       | Authenticating host mode <ul style="list-style-type: none"> <li>• <b>Multiple Authentication:</b> In this mode, every client need to pass authenticate procedure individually.</li> <li>• <b>Multiple Hosts:</b> In this mode, only one client need to be authenticated and other clients will get the same access accessibility. Web-auth cannot be enabled in this mode.</li> <li>• <b>Single Host:</b> In this mode, only one host is allowed to be authenticated. It is the same as Multi-auth mode with max hosts number configure to be 1.</li> </ul> |
| <b>Order</b>                           | Support following authentication type order combinations. Web Authentication should always be the last type. The authentication manager will go to next type if current type is not enabled or authenticated fail. <ul style="list-style-type: none"> <li>• 802.1x</li> <li>• MAC-Based</li> <li>• WEB-Based</li> <li>• 802.1x MAC-Based</li> </ul>                                                                                                                                                                                                         |

|                   |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |               | <ul style="list-style-type: none"> <li>• 802.1x WEB-Based</li> <li>• MAC-Based 802.1x</li> <li>• WEB-Based 802.1x</li> <li>• 802.1x MAC-Based WEB-Based</li> <li>• 802.1x WEB-Based MAC-Based</li> </ul>                                                                                                                                                                                                                                                                                                                                             |
| <b>Method</b>     |               | <p>Support following authentication method order combinations. These orders only available on MAC-Based authentication and WEB-Based authentication. 802.1x only support Radius method.</p> <ul style="list-style-type: none"> <li>• Local: Use DUT's local database to do authentication</li> <li>• Radius: Use remote RADIUS server to do authentication</li> <li>• Local Radius</li> <li>• Radius Local</li> </ul>                                                                                                                                |
| <b>Guest VLAN</b> |               | <p>Port guest VLAN enable state</p> <ul style="list-style-type: none"> <li>• Enabled: Guest VLAN is enabled on port</li> <li>• Disabled: Guest VLAN is disabled on port</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   |
| <b>VLAN Mode</b>  | <b>Assign</b> | <p>Support following VLAN assign mode and only apply when source is RADIUS</p> <ul style="list-style-type: none"> <li>• <b>Disable:</b> Ignore the VLAN authorization result and keep original VLAN of host.</li> <li>• <b>Reject:</b> If get VLAN authorized information, just use it. However, if there is no VLAN authorized information, reject the host and make it unauthorized.</li> <li>• <b>Static:</b> If get VLAN authorized information, just use it. If there is no VLAN authorized information, keep original VLAN of host.</li> </ul> |

### 10.5.2 Port Setting

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

This page allow user to configure authentication manger port settings

## Security &gt;&gt; Authentication Manager &gt;&gt; Port Setting

Port Setting Table

|                          | Entry | Port | Port Control | Reauthentication | Max Hosts | Common Timer     |          |       | 802.1x Param |                    |    |
|--------------------------|-------|------|--------------|------------------|-----------|------------------|----------|-------|--------------|--------------------|----|
|                          |       |      |              |                  |           | Reauthentication | Inactive | Quiet | TX Period    | Supplicant Timeout | Se |
| <input type="checkbox"/> | 1     | GE1  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 2     | GE2  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 3     | GE3  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 4     | GE4  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 5     | GE5  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 6     | GE6  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 7     | GE7  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 8     | GE8  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 9     | GE9  | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |
| <input type="checkbox"/> | 10    | GE10 | Disabled     | Disabled         | 256       | 3600             | 60       | 60    | 30           | 30                 |    |

Figure 10-19: Authentication Manager Port Setting Table

| Field                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>                            | Port name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Port Control</b>                    | <p>Support following authentication port control types.</p> <ul style="list-style-type: none"> <li>• <b>Disable:</b> Disable authentication function and all clients have network accessibility.</li> <li>• <b>Force Authorized:</b> Port is force authorized and all clients have network accessibility.</li> <li>• <b>Force Unauthorized:</b> Port is force unauthorized and all clients have no network accessibility.</li> <li>• <b>Auto:</b> Need passing authentication procedure to get network accessibility.</li> </ul> |
| <b>Reauthentication</b>                | <p>Reauthenticate state</p> <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Host will be reauthenticated after reauthentication period</li> <li>• <b>Disabled:</b> Host will not be reauthenticated after reauthentication period</li> </ul>                                                                                                                                                                                                                                                                            |
| <b>Max Hosts</b>                       | In Multiple Authentication mode, total host number cannot not exceed max hosts number                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Common Timer (Reauthentication)</b> | After re-authenticate period, host will return to initial state and need to pass authentication procedure again.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Common Timer (Inactive)</b>         | If no packet from the authenticated host, the inactive timer will increase. After inactive timeout, the host will be unauthorized and corresponding session will be deleted. In multi-host mode, the packet is counting on the authorized host only and not all packets on the port.                                                                                                                                                                                                                                             |
| <b>Common Timer (Quiet)</b>            | When port is in Locked state after authenticating fail several times, the host will be locked in quiet period. After this quiet period, the host is allowed to authenticate again.                                                                                                                                                                                                                                                                                                                                               |

|                                                   |                                                                                                                                                                                         |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>802.1X<br/>Params<br/>(TX<br/>Period)</b>      | Number of seconds that the device waits for a response to an Extensible Authentication Protocol (EAP) request/identity frame from the supplicant (client) before resending the request. |
| <b>802.1X Params<br/>(Supplicant<br/>Timeout)</b> | The maximum number of EAP requests that can be sent. If a response is not received after the defined period (supplicant timeout), the authentication process is restarted.              |
| <b>802.1X<br/>Params<br/>(Server<br/>Timeout)</b> | Number of seconds that lapses before EAP requests are resent to the supplicant.                                                                                                         |
| <b>802.1X<br/>Params<br/>(Max<br/>Request)</b>    | Number of seconds that lapses before the device resends a request to the authentication server.                                                                                         |
| <b>Web-Based<br/>Param<br/>(Max<br/>Login)</b>    | Allow user login fail number. After login fail number exceed, the host will enter Lock state and is not able to authenticate until quiet period exceed.                                 |

Table 10-19: Authentication Manager Port Setting Table Fields

Security >> Authentication Manager >> Port Setting

Edit Port Setting

|                                                                           |                                                                                                                                                               |                                      |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Port                                                                      | GE1-GE3                                                                                                                                                       |                                      |
| Port Control                                                              | <input checked="" type="radio"/> Disabled<br><input type="radio"/> Force Authorized<br><input type="radio"/> Force Unauthorized<br><input type="radio"/> Auto |                                      |
| Reauthentication                                                          | <input type="checkbox"/> Enable                                                                                                                               |                                      |
| Max Hosts                                                                 | 256                                                                                                                                                           | (1 - 256, default 256)               |
| <b>Common Timer</b>                                                       |                                                                                                                                                               |                                      |
| Reauthentication                                                          | 3600                                                                                                                                                          | Sec (300 - 2147483647, default 3600) |
| Inactive                                                                  | 60                                                                                                                                                            | Sec (60 - 65535, default 60)         |
| Quiet                                                                     | 60                                                                                                                                                            | Sec (0 - 65535, default 60)          |
| <b>802.1x Parameters</b>                                                  |                                                                                                                                                               |                                      |
| TX Period                                                                 | 30                                                                                                                                                            | Sec (1 - 65535, default 30)          |
| Supplicant Timeout                                                        | 30                                                                                                                                                            | Sec (1 - 65535, default 30)          |
| Server Timeout                                                            | 30                                                                                                                                                            | Sec (1 - 65535, default 30)          |
| Max Request                                                               | 2                                                                                                                                                             | (1 - 10, default 2)                  |
| <b>Web-Based Parameters</b>                                               |                                                                                                                                                               |                                      |
| Max Login                                                                 | <input type="checkbox"/> Infinite<br>3                                                                                                                        | (3 - 10, default 3)                  |
| <input type="button" value="Apply"/> <input type="button" value="Close"/> |                                                                                                                                                               |                                      |

Figure 10-20: Authentication Manager Port Setting Dialog

| Field                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port                            | Port name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Port Control                    | <p>Support following authentication port control types.</p> <ul style="list-style-type: none"> <li>• <b>Disable:</b> Disable authentication function and all clients have network accessibility.</li> <li>• <b>Force Authorized:</b> Port is force authorized and all clients have network accessibility.</li> <li>• <b>Force Unauthorized:</b> Port is force unauthorized and all clients have no network accessibility.</li> <li>• <b>Auto:</b> Need passing authentication procedure to get network accessibility.</li> </ul> |
| Reauthentication                | Set checkbox to enable/disable reauthentication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Max Hosts                       | In Multiple Authentication mode, total host number cannot not exceed max number hosts num                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Common Timer (Reauthentication) | After re-authenticate period, host will return to initial state and need to pass authentication procedure again.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Common Timer (Inactive)         | If no packet from the authenticated host, the inactive timer will increase. After inactive timeout, the host will be unauthorized and corresponding session will be deleted. In multi-host mode, the packet is counting on the authorized host only and not all packets on the port.                                                                                                                                                                                                                                             |
| Common Timer (Quiet)            | When port is in Locked state after authenticating fail several times, the host will be locked in quiet period. After this quiet period, the host is allowed to                                                                                                                                                                                                                                                                                                                                                                   |

authenticate again.

|                                               |                                                                                                                                                                                         |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>802.1X Params<br/>(TX Period)</b>          | Number of seconds that the device waits for a response to an Extensible Authentication Protocol (EAP) request/identity frame from the supplicant (client) before resending the request. |
| <b>802.1X Params<br/>(Supplicant Timeout)</b> | The maximum number of EAP requests that can be sent. If a response is not received after the defined period (supplicant timeout), the authentication process is restarted.              |
| <b>802.1X Params<br/>(Server Timeout)</b>     | Number of seconds that lapses before EAP requests are resent to the supplicant.                                                                                                         |
| <b>802.1X Params<br/>(Max Request)</b>        | Number of seconds that lapses before the device resends a request to the authentication server.                                                                                         |
| <b>Web-Based Param<br/>(Max Login)</b>        | Set checkbox to set max login number to be infinite or specify max login number.                                                                                                        |

Table 10-20: Authentication Manager Port Setting Table Fields

### 10.5.3 MAC-Based Local Account

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

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

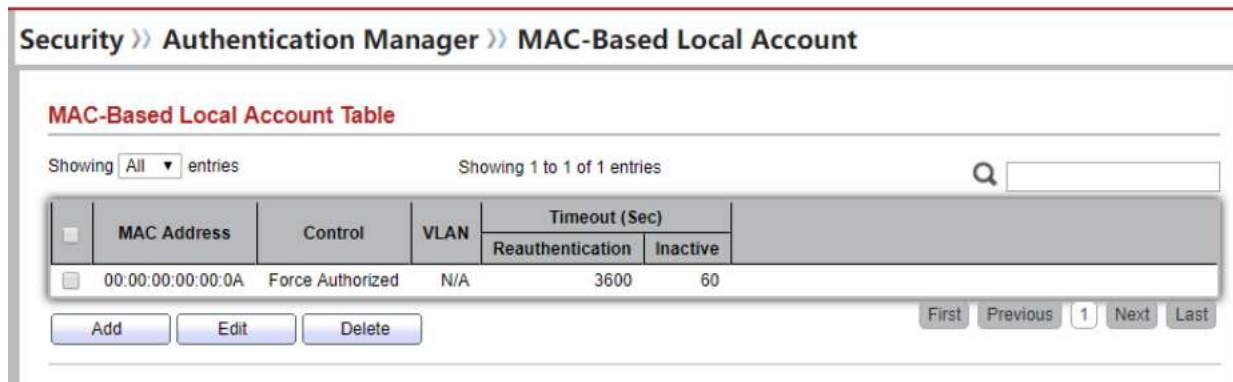


Figure 10-21 MAC-Based Local Account Table

| Field              | Description                                                                                                                                                                                   |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MAC Address</b> | Authenticated host MAC address, and each MAC allow only one entry in local database.                                                                                                          |
| <b>Control</b>     | Control Type <ul style="list-style-type: none"> <li>• <b>Force Authorized:</b> Host will be force authorized</li> <li>• <b>Force Unauthorized:</b> Host will be force unauthorized</li> </ul> |

|                                   |                                                              |
|-----------------------------------|--------------------------------------------------------------|
| <b>VLAN</b>                       | Assigned VLAN ID for the authenticated host.                 |
| <b>Timeout (Reauthentication)</b> | Assigned reauthentication period for the authenticated host. |
| <b>Timeout (Inactive)</b>         | Assigned inactive timeout for the authenticated host.        |

Table 10-21 MAC-Based Local Account Table Fields

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

Add MAC-Based Local Account

|                       |                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------|
| MAC Address           | <input type="text"/>                                                                              |
| Port Control          | <input type="radio"/> Force Authorized<br><input checked="" type="radio"/> Force Unauthorized     |
| VLAN                  | <input type="checkbox"/> User Defined<br><input type="text" value="1"/> (1 - 4094)                |
| <b>Assigned Timer</b> |                                                                                                   |
| Reauthentication      | <input type="checkbox"/> User Defined<br><input type="text" value="3600"/> Sec (300 - 2147483647) |
| Inactive              | <input type="checkbox"/> User Defined<br><input type="text" value="60"/> Sec (60 - 65535)         |

Apply Close

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

Edit MAC-Based Local Account

|                       |                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------|
| MAC Address           | 00:00:00:00:00:0A                                                                                            |
| Port Control          | <input checked="" type="radio"/> Force Authorized<br><input type="radio"/> Force Unauthorized                |
| VLAN                  | <input type="checkbox"/> User Defined<br><input type="text" value="1"/> (1 - 4094)                           |
| <b>Assigned Timer</b> |                                                                                                              |
| Reauthentication      | <input checked="" type="checkbox"/> User Defined<br><input type="text" value="3600"/> Sec (300 - 2147483647) |
| Inactive              | <input checked="" type="checkbox"/> User Defined<br><input type="text" value="60"/> Sec (60 - 65535)         |

Apply Close

Figure 10-22 Add/Edit MAC-Based Local Account Dialog

| Field              | Description                                                                                                                                                                                   |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MAC Address</b> | Authenticated host MAC address, and each MAC allow only one entry in local database.                                                                                                          |
| <b>Control</b>     | Control Type <ul style="list-style-type: none"> <li>• <b>Force Authorized:</b> Host will be force authorized</li> <li>• <b>Force Unauthorized:</b> Host will be force unauthorized</li> </ul> |
| <b>VLAN</b>        | Assigned VLAN ID for the authenticated host.                                                                                                                                                  |

|                                       |                                                              |
|---------------------------------------|--------------------------------------------------------------|
| <b>Timeout<br/>(Reauthentication)</b> | Assigned reauthentication period for the authenticated host. |
| <b>Timeout<br/>(Inactive)</b>         | Assigned inactive timeout for the authenticated host.        |

Table 10-22 Add/Edit MAC-Based Local Account Fields

### 10.5.4 WEB-Based Local Account

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

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

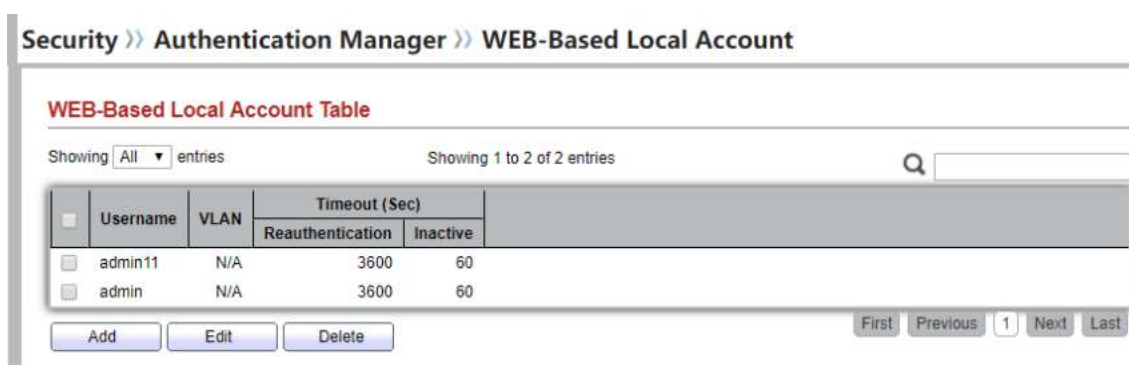


Figure 10-23 WEB-Based Local Account Table

| Field                                 | Description                                                  |
|---------------------------------------|--------------------------------------------------------------|
| <b>Username</b>                       | Authenticating account user name                             |
| <b>VLAN</b>                           | Assigned VLAN ID for the authenticated host.                 |
| <b>Timeout<br/>(Reauthentication)</b> | Assigned reauthentication period for the authenticated host. |
| <b>Timeout<br/>(Inactive)</b>         | Assigned inactive timeout for the authenticated host.        |

Table 10-23 WEB-Based Local Account Table Fields

## Security >> Authentication Manager >> WEB-Based Local Account

### Add WEB-Based Local Account

|                       |                                                                                 |  |
|-----------------------|---------------------------------------------------------------------------------|--|
| Username              | admin11                                                                         |  |
| Password              | *****                                                                           |  |
| Confirm Password      | *****                                                                           |  |
| VLAN                  | <input type="checkbox"/> User Defined<br>1 (1 - 4094)                           |  |
| <b>Assigned Timer</b> |                                                                                 |  |
| Reauthentication      | <input checked="" type="checkbox"/> User Defined<br>3600 Sec (300 - 2147483647) |  |
| Inactive              | <input checked="" type="checkbox"/> User Defined<br>60 Sec (60 - 65535)         |  |

## Security >> Authentication Manager >> WEB-Based Local Account

### Edit WEB-Based Local Account

|                       |                                                                                 |  |
|-----------------------|---------------------------------------------------------------------------------|--|
| Username              | admin11                                                                         |  |
| Password              |                                                                                 |  |
| Confirm Password      | *****                                                                           |  |
| VLAN                  | <input type="checkbox"/> User Defined<br>(1 - 4094)                             |  |
| <b>Assigned Timer</b> |                                                                                 |  |
| Reauthentication      | <input checked="" type="checkbox"/> User Defined<br>3600 Sec (300 - 2147483647) |  |
| Inactive              | <input checked="" type="checkbox"/> User Defined<br>60 Sec (60 - 65535)         |  |

Figure 10-24 Add/Edit WEB-Based Local Account Dialog

| Field            | Description                             |
|------------------|-----------------------------------------|
| Username         | Authenticating account user name        |
| Password         | Authenticating account password         |
| Confirm Password | Confirm authenticating account password |

|                                   |                                                              |
|-----------------------------------|--------------------------------------------------------------|
| <b>VLAN</b>                       | Assigned VLAN ID for the authenticated host.                 |
| <b>Timeout (Reauthentication)</b> | Assigned reauthentication period for the authenticated host. |
| <b>Timeout (Inactive)</b>         | Assigned inactive timeout for the authenticated host.        |

Table 10-24 Add/Edit WEB-Based Local Account Fields

### 10.5.5 Sessions

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

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

Figure 10-25 Sessions Table

| Field               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Session ID</b>   | Session ID is unique of each session                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Port</b>         | Port name which the host located                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>MAC Address</b>  | Host MAC address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Current Type</b> | Show current authenticating type <ul style="list-style-type: none"> <li>• <b>802.1x:</b> Use IEEE 802.1X to do authenticating</li> <li>• <b>MAC-Based:</b>Use MAC-Based authentication to do authenticating</li> <li>• <b>WEB-Based:</b>Use WEB-Based authentication to do authenticating</li> </ul>                                                                                                                                                                                                                                                           |
| <b>Status</b>       | Show host authentication session status <ul style="list-style-type: none"> <li>• <b>Disable:</b> This session is ready to be deleted</li> <li>• <b>Running:</b> Authentication process is running</li> <li>• <b>Authorized:</b>Authentication is passed and getting network accessibility.</li> <li>• <b>UnAuthorized:</b> Authentication is not passed and not getting network accessibility.</li> <li>• <b>Locked:</b>Host is locked and do not allow to do authenticating until quiet period.</li> <li>• <b>Guest:</b> Host is in the guest VLAN</li> </ul> |

|                                             |                                                                           |
|---------------------------------------------|---------------------------------------------------------------------------|
| <b>Operational (VLAN)</b>                   | Shows host operational VLAN ID.                                           |
| <b>Operational (Session Time)</b>           | In “Authorized” state, it shows total time after authorized.              |
| <b>Operational (Inactived)</b>              | In “Authorized” state, it shows how long the host do not send any packet. |
| <b>Operational (Quiet Time)</b>             | In “Locked” state, it shows total time after locked.                      |
| <b>Authorized (VLAN)</b>                    | Shows VLAN ID given from authorized procedure.                            |
| <b>Authorized (Reauthentication Period)</b> | Shows reauthentication period given from authorized procedure.            |
| <b>Authorized (Inactive Timeouts)</b>       | Shows inactive timeout given from authorized procedure.                   |

Table 10-25 Sessions Table Fields

## 10.6 Port Security

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

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

**Security >> Port Security**

**State** ☐ Enable

**Rate Limit**  Packet / Sec (1 - 600, default 100)

**Port Security Table**

| <input type="checkbox"/> | Entry | Port | State    | Address Limit | Total | Configured | Violate Number | Violate Action | Sticky   |
|--------------------------|-------|------|----------|---------------|-------|------------|----------------|----------------|----------|
| <input type="checkbox"/> | 1     | GE1  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 2     | GE2  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 3     | GE3  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 4     | GE4  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 5     | GE5  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 6     | GE6  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 7     | GE7  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 8     | GE8  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 9     | GE9  | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |
| <input type="checkbox"/> | 10    | GE10 | Disabled | 1             | 0     | 0          | 0              | Protect        | Disabled |

Figure 10-26 Port Security Page

| Field       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port        | Select one or multiple ports to configure.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| State       | Select the status of port security <ul style="list-style-type: none"> <li>• <b>Disable:</b> Disable port security function.</li> <li>• <b>Enable:</b> Enable port security function.</li> </ul>                                                                                                                                                                                                                                                               |
| MAC Address | Specify the number of how many mac addresses can be learned.                                                                                                                                                                                                                                                                                                                                                                                                  |
| Action      | Select the action if learned mac addresses <ul style="list-style-type: none"> <li>• <b>Forward:</b> Forward this packet whose SMAC is new to system and exceed the learning-limit number.</li> <li>• <b>Discard:</b> Discard this packet whose SMAC is new to system and exceed the learning-limit number.</li> <li>• <b>Shutdown:</b> Shutdown this port when receives a packet whose SMAC is new to system and exceed the learning limit number.</li> </ul> |

Table 10-26 Port Security Fields

### 10.7 Protected Port

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

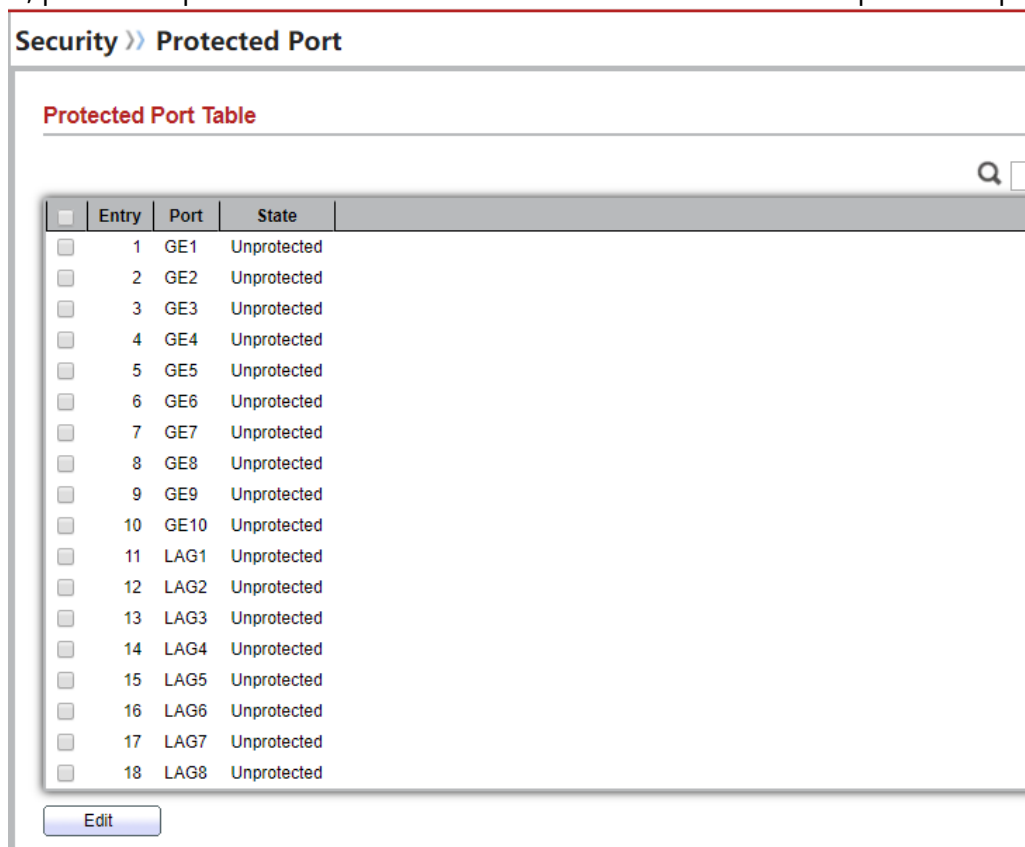


Figure 10-27 Protected Port Table

| Field | Description                                                                                                                                                             |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port  | Port Name                                                                                                                                                               |
| State | Port protected admin state. <ul style="list-style-type: none"> <li>• <b>Protected:</b> Port is protected.</li> <li>• <b>Unprotected:</b> Port is unprotected</li> </ul> |

Figure 10-28 Edit Protected Port dialog

| Field | Description                                                                                                                                                                               |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port  | Selected port list                                                                                                                                                                        |
| State | Port protected admin state. <ul style="list-style-type: none"> <li>• <b>Protected:</b> Enable protecting function.</li> <li>• <b>Unprotected:</b> Disable protecting function.</li> </ul> |

Table 10-28 Edit Protected Port Fields

## 10.8 Storm Control

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

**Security >> Storm Control**

**Mode**
☐ Packet / Sec  
☒ Kbits / Sec

**IFG**
☒ Exclude  
☐ Include

**Port Setting Table**

|                          | Entry | Port | State    | Broadcast |             | Unknown Multicast |             | Unknown Unicast |             | Action |
|--------------------------|-------|------|----------|-----------|-------------|-------------------|-------------|-----------------|-------------|--------|
|                          |       |      |          | State     | Rate (Kbps) | State             | Rate (Kbps) | State           | Rate (Kbps) |        |
| <input type="checkbox"/> | 1     | GE1  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 2     | GE2  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 3     | GE3  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 4     | GE4  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 5     | GE5  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 6     | GE6  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 7     | GE7  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 8     | GE8  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 9     | GE9  | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |
| <input type="checkbox"/> | 10    | GE10 | Disabled | Disabled  | 10000       | Disabled          | 10000       | Disabled        | 10000       | Drop   |

Figure 10-29 Storm Control Setting Page

| Field | Description                                                                                                                                                                                                                       |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unit  | Select the unit of storm control <ul style="list-style-type: none"> <li>• <b>Packet / Sec:</b> storm control rate calculates by packet-bas</li> <li>• <b>Kbits / Sec:</b> storm control rate calculates by octet-based</li> </ul> |
| IFG   | Select the rate calculates w/o preamble & IFG (20 bytes)<br><b>Excluded:</b> exclude preamble & IFG (20 bytes) when count                                                                                                         |

ingress storm control rate.

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

Table 10-29 Storm Control Global Setting Fields

To Edit Storm Control port setting web page, select the port which to set, click button **Edit**

Figure 10-30 Storm Control Edit Port Setting Page

| Field                    | Description                                                                                                                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>              | Select the setting ports                                                                                                                                                                                                                     |
| <b>State</b>             | Select the state of setting<br><b>Enable:</b> Enable the storm control function.                                                                                                                                                             |
| <b>Broadcast</b>         | <b>Enable:</b> Enable the storm control function of Broadcast packet.<br>Value of storm control rate, Unit: pps (packet per-second, range 1 - 262143) or Kbps (Kbits per-second, range 16 - 1000000) depends on global mode setting.         |
| <b>Unknown Multicast</b> | <b>Enable:</b> Enable the storm control function of Unknown multicast packet.<br>Value of storm control rate, Unit: pps (packet per-second, range 1 - 262143) or Kbps (Kbits per-second, range 16 - 1000000) depends on global mode setting. |
| <b>Unknown Unicast</b>   | <b>Enable:</b> 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, range 16 - 1000000) depends on global mode setting.      |
| <b>Action</b>            | Select the state of setting<br><b>Drop:</b> Packets exceed storm control rate will be dropped.<br><b>Shutdown:</b> Port will be shutdown when packets exceed storm control rate.                                                             |

Table 10-30 Storm Control Port Setting Fields

## 10.9 DoS

A Denial of Service (DoS) attack is a hacker attempt to make a device unavailable to its users. DoS attacks saturate the device with external communication requests, so that it cannot respond to legitimate traffic. These attacks usually lead to a device CPU overload.

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

### 10.9.1 Property

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

**Security >> DoS >> Property**

|                    |                                                                                                                                                                      |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| POD                | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| Land               | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| UDP Blat           | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| TCP Blat           | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| DMAC = SMAC        | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| Null Scan Attack   | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| X-Mas Scan Attack  | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| TCP SYN-FIN Attack | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| TCP SYN-RST Attack | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| ICMP Fragment      | <input checked="" type="checkbox"/> Enable                                                                                                                           |
| TCP-SYN            | <input checked="" type="checkbox"/> Enable<br>Note: Source Port < 1024                                                                                               |
| TCP Fragment       | <input checked="" type="checkbox"/> Enable<br>Note: Offset = 1                                                                                                       |
| Ping Max Size      | <input checked="" type="checkbox"/> Enable IPv4<br><input checked="" type="checkbox"/> Enable IPv6<br><input type="text" value="512"/> Byte (0 - 65535, default 512) |
| TCP Min Hdr size   | <input checked="" type="checkbox"/> Enable<br><input type="text" value="20"/> Byte (0 - 31, default 20)                                                              |
| IPv6 Min Fragment  | <input checked="" type="checkbox"/> Enable<br><input type="text" value="1240"/> Byte (0 - 65535, default 1240)                                                       |
| Smurf Attack       | <input checked="" type="checkbox"/> Enable<br><input type="text" value="0"/> Netmask Length (0 - 32, default 0)                                                      |

Figure 10-31 DoS Property Page

| Field                            | Description                                                                                                                                                                    |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>POD</b>                       | Avoids ping of death attack.                                                                                                                                                   |
| <b>Land</b>                      | Drops the packets if the source IP address is equal to the destination IP address.                                                                                             |
| <b>UDP Blat</b>                  | Drops the packets if the UDP source port equals to the UDP destination port.                                                                                                   |
| <b>TCP Blat</b>                  | Drops the packages if the TCP source port is equal to the TCP destination port.                                                                                                |
| <b>DMAC = SMAC</b>               | Drops the packets if the destination MAC address is equal to the source MAC address.                                                                                           |
| <b>Null Scan Attack</b>          | Drops the packets with NULL scan.                                                                                                                                              |
| <b>X-Mas Scan Attack</b>         | Drops the packets if the sequence number is zero, and the FIN, URG and PSH bits are set.                                                                                       |
| <b>TCP Attack</b> <b>SYN-FIN</b> | Drops the packets with SYN and FIN bits set.                                                                                                                                   |
| <b>TCP Attack</b> <b>SYN-RST</b> | Drops the packets with SYN and RST bits set.                                                                                                                                   |
| <b>ICMP Fragment</b>             | Drops the fragmented ICMP packets.                                                                                                                                             |
| <b>TCP-SYN(SPORT&lt;1024)</b>    | Drops SYN packets with sport less than 1024.                                                                                                                                   |
| <b>TCP Fragment (Offset = 1)</b> | Drops the TCP fragment packets with offset equals to one.                                                                                                                      |
| <b>Ping Max Size</b>             | 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.                                      |
| <b>IPv4 Ping Max Size</b>        | Checks the maximum size of ICMP ping packets, and drops the packets larger than the maximum packet size.                                                                       |
| <b>IPv6 Ping Max Size</b>        | Checks the maximum size of ICMPv6 ping packets, and drops the packets larger than the maximum packet size.                                                                     |
| <b>TCP Min Hdr Size</b>          | 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. |
| <b>IPv6 Min Fragment</b>         | 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.     |
| <b>Smurf Attack</b>              | Avoids smurf attack. The length range of the netmask is from 0 to 323 bytes, and default length is 0 bytes.                                                                    |

Table 10-31: DoS Property fields.

### 10.9.2 Port Setting

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

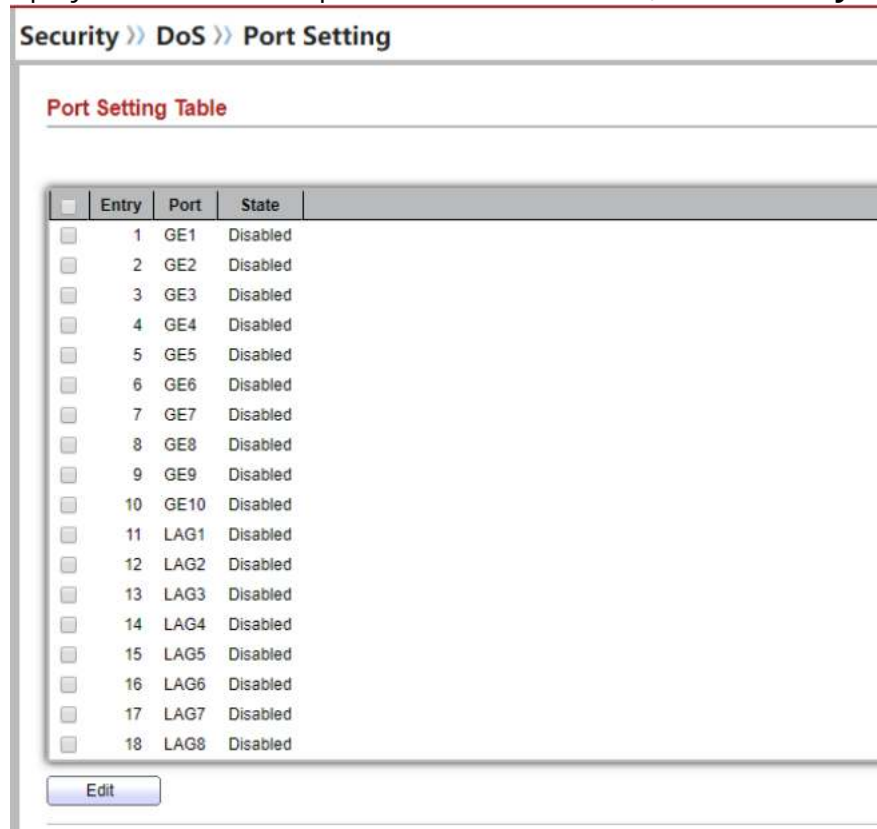


Figure 10-32: Port Setting page.

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

Table 10-32: Port Setting fields.

## 10.10 Dynamic ARP Inspection

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

### 10.10.1 Property

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

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

Figure 10-33 Property Page

| Field | Description                                                                                                                                                     |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| State | Set checkbox to enable/disable Dynamic ARP Inspection function.                                                                                                 |
| VLAN  | Select VLANs in left box then move to right to enable Dynamic ARP Inspection. Or select VLANs in right box then move to left to disable Dynamic ARP Inspection. |

Table 10-33 Property Fields

Port Setting Table

|                          | Entry | Port | Trust    | Source MAC Address | Destination MAC Address | IP Address | Rate Limit |  |
|--------------------------|-------|------|----------|--------------------|-------------------------|------------|------------|--|
| <input type="checkbox"/> | 1     | GE1  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 2     | GE2  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 3     | GE3  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 4     | GE4  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 5     | GE5  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 6     | GE6  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 7     | GE7  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 8     | GE8  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 9     | GE9  | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 10    | GE10 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 11    | LAG1 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 12    | LAG2 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 13    | LAG3 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 14    | LAG4 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 15    | LAG5 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 16    | LAG6 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 17    | LAG7 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |
| <input type="checkbox"/> | 18    | LAG8 | Disabled | Disabled           | Disabled                | Disabled   | Unlimited  |  |

Edit

Figure 10-34 Property Port Page

| Field                   | Description                                                                                                                          |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Port                    | Display port ID.                                                                                                                     |
| Trust                   | Display enable/disabled trust attribute of interface                                                                                 |
| Source Address          | MAC Display enable/disabled source mac address validation attribute of interface                                                     |
| Destination MAC Address | Display enable/disabled destination mac address validation attribute of interface                                                    |
| IP Address              | Display enable/disabled IP address validation attribute of interface.<br>_____ Allow zero which means allow 0.0.0.0 IP address _____ |
| Rate Limit              | Display rate limitation value of interface.                                                                                          |

Table 10-34 Property Port Fields

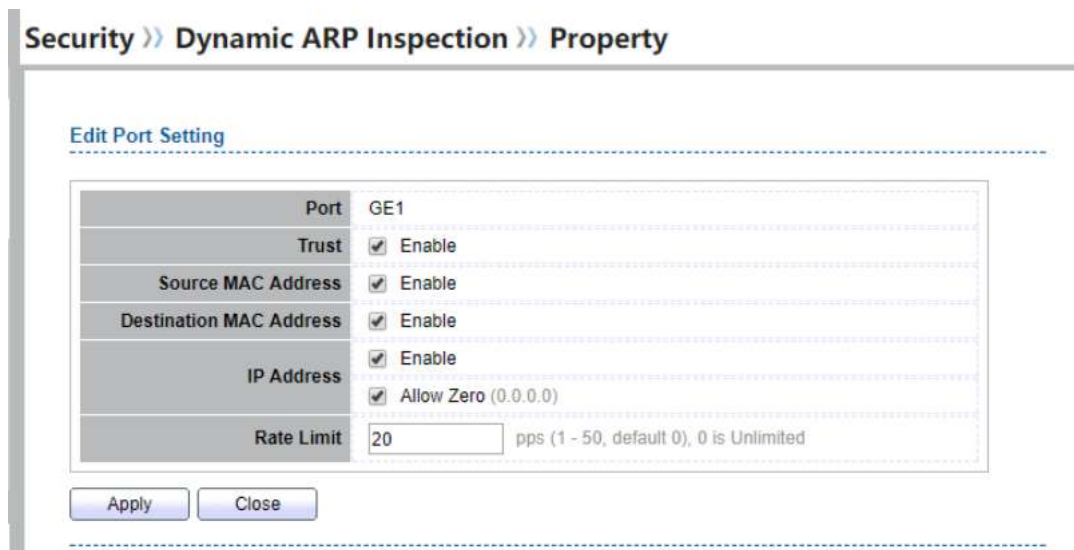


Figure 10-35 Edit Property Port Dialog

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

|                                |                                                                                                                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IP Address</b>              | Set checkbox to enable or disable IP address validation of interface. All ARP packets will be checked whether IP address is 0.0.0.0, 255.255.255.255 or multicast address. Default is disabled. |
| <b>IP Address – Allow Zero</b> | Set checkbox to enable or disable allow zero of IP address validation. 0.0.0.0 IP address is valid if allow zero enable. Default is disabled.                                                   |
| <b>Rate Limit</b>              | Input rate limitation of ARP packets. The unit is pps. 0 means unlimited. Default is unlimited.                                                                                                 |

Table 10-35 Edit Property Port Fields

### 10.10.2 Statistics

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

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

Security >> Dynamic ARP Inspection >> Statistics

Statistics Table

|                          | Entry | Port | Forward | Source MAC Failure | Destination MAC Failure | Source IP Validation Failure | Destination IP Validation Failure | IP-MAC Mismatch Failure |
|--------------------------|-------|------|---------|--------------------|-------------------------|------------------------------|-----------------------------------|-------------------------|
| <input type="checkbox"/> | 1     | GE1  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 2     | GE2  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 3     | GE3  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 4     | GE4  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 5     | GE5  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 6     | GE6  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 7     | GE7  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 8     | GE8  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 9     | GE9  | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 10    | GE10 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 11    | LAG1 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 12    | LAG2 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 13    | LAG3 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 14    | LAG4 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 15    | LAG5 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 16    | LAG6 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 17    | LAG7 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |
| <input type="checkbox"/> | 18    | LAG8 | 0       | 0                  | 0                       | 0                            | 0                                 | 0                       |

Clear Refresh

Figure 10-36 Statistics Page

| Field                                     | Description                                                     |
|-------------------------------------------|-----------------------------------------------------------------|
| <b>Port</b>                               | Display port ID                                                 |
| <b>Forwarded</b>                          | Display how many packets forwarded normally.                    |
| <b>Source MAC Failures</b>                | Display how many packets dropped by source MAC validation.      |
| <b>Destination MAC Failures</b>           | Display how many packets dropped by destination MAC validation. |
| <b>Source IP Validation Failures</b>      | Display how many packets dropped by source IP validation.       |
| <b>Destination IP Validation Failures</b> | Display how many packets dropped by destination IP validation   |

|                                 |                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------|
| <b>IP-MAC Mismatch Failures</b> | <b>Display how many packets dropped by IP-MAC doesn't match in IP Source Guard binding table.</b> |
|---------------------------------|---------------------------------------------------------------------------------------------------|

## 10.11 DHCP Snooping

Use the DHCP Snooping pages to configure settings of DHCP Snooping

### 10.11.1 Property

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

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

Figure 10-37 Property Page

| Field        | Description                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State</b> | Set checkbox to enable/disable DHCP Snooping function.                                                                                        |
| <b>VLAN</b>  | Select VLANs in left box then move to right to enable DHCP Snooping. Or select VLANs in right box then move to left to disable DHCP Snooping. |

Table 10-37 Property Fields

Port Setting Table

|                          | Entry | Port | Trust    | Verify Chaddr | Rate Limit |
|--------------------------|-------|------|----------|---------------|------------|
| <input type="checkbox"/> | 1     | GE1  | Disabled | Disabled      | Unlimited  |
| <input type="checkbox"/> | 2     | GE2  | Disabled | Disabled      | Unlimited  |
| <input type="checkbox"/> | 3     | GE3  | Disabled | Disabled      | Unlimited  |
| <input type="checkbox"/> | 4     | GE4  | Disabled | Disabled      | Unlimited  |
| <input type="checkbox"/> | 5     | GE5  | Disabled | Disabled      | Unlimited  |
| <input type="checkbox"/> | 6     | GE6  | Disabled | Disabled      | Unlimited  |
| <input type="checkbox"/> | 7     | GE7  | Disabled | Disabled      | Unlimited  |
| <input type="checkbox"/> | 8     | GE8  | Disabled | Disabled      | Unlimited  |

Table 10-38 Property Port Fields

Security >> DHCP Snooping >> Property

Edit Port Setting

|               |                                            |
|---------------|--------------------------------------------|
| Port          | GE1                                        |
| Trust         | <input checked="" type="checkbox"/> Enable |
| Verify Chaddr | <input checked="" type="checkbox"/> Enable |
| Rate Limit    | 0 pps (1 - 300, default 0), 0 is Unlimited |

Apply Close

Figure 10-39 Edit Property Port Dialog

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

Table 10-39 Edit Property Port Fields

### 10.11.2 Statistics

To display Statistics page, click **Security > DHCP Snooping > Statistic**

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

Security >> DHCP Snooping >> Statistics

Statistics Table

Q

|                          | Entry | Port | Forward | Chaddr Check Drop | Untrust Port Drop | Untrust Port with Option82 Drop | Invalid Drop |  |
|--------------------------|-------|------|---------|-------------------|-------------------|---------------------------------|--------------|--|
| <input type="checkbox"/> | 1     | GE1  | 0       | 0                 | 0                 | 0                               | 0            |  |
| <input type="checkbox"/> | 2     | GE2  | 0       | 0                 | 0                 | 0                               | 0            |  |
| <input type="checkbox"/> | 3     | GE3  | 0       | 0                 | 0                 | 0                               | 0            |  |
| <input type="checkbox"/> | 4     | GE4  | 0       | 0                 | 0                 | 0                               | 0            |  |
| <input type="checkbox"/> | 5     | GE5  | 0       | 0                 | 0                 | 0                               | 0            |  |
| <input type="checkbox"/> | 6     | GE6  | 0       | 0                 | 0                 | 0                               | 0            |  |
| <input type="checkbox"/> | 7     | GE7  | 0       | 0                 | 0                 | 0                               | 0            |  |

Figure 10-40 DHCP Snooping Statistics Page

| Field                             | Description                                                                       |
|-----------------------------------|-----------------------------------------------------------------------------------|
| Port                              | Display port ID                                                                   |
| Forwarded                         | Display how packets forwarded normally.                                           |
| Chaddr Check Drop                 | Display how many packets dropped by chaddr validation.                            |
| Untrusted Port Drop               | Display how many DHCP server packets that are received by untrusted port dropped. |
| Untrusted Port with Option82 Drop | Display how many packets dropped by untrusted port with option82 checking.        |
| Invalid Drop                      | Display how many packets dropped by invalid checking.                             |

### 10.11.3 Option 82 Property

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

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

Figure 10-41 Option82 Property Page

| Field        | Description                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------|
| User Defined | Set checkbox to enable user-defined remote-ID. By default, remote ID is switch mac in byte order. |
| Remote ID    | Input user-defined remote ID. Only available when enable user-define remote ID                    |

Table 10-41 DHCP Snooping Option82 Fields

Port Setting Table

| Entry | Port | State    | Allow Untrust |
|-------|------|----------|---------------|
| 1     | GE1  | Disabled | Drop          |
| 2     | GE2  | Disabled | Drop          |
| 3     | GE3  | Disabled | Drop          |
| 4     | GE4  | Disabled | Drop          |
| 5     | GE5  | Disabled | Drop          |
| 6     | GE6  | Disabled | Drop          |
| 7     | GE7  | Disabled | Drop          |

Figure 10-42 Option82 Port Page

| Field                  | Description                                         |
|------------------------|-----------------------------------------------------|
| <b>Port</b>            | Display port ID                                     |
| <b>Enable</b>          | Display option82 enable/disable status of interface |
| <b>Allow untrusted</b> | Display allow untrusted action of interface         |

Table 10-42 Option82 Port Fields

Security >> DHCP Snooping >> Option82 Property

Edit Port Setting

|               |                                            |
|---------------|--------------------------------------------|
| Port          | GE5                                        |
| State         | <input checked="" type="checkbox"/> Enable |
| Allow Untrust | <input type="radio"/> Keep                 |
|               | <input checked="" type="radio"/> Drop      |
|               | <input type="radio"/> Replace              |

Apply Close

Figure 10-43 Edit Option82 Port Dialog

| Field                  | Description                                                                                                                                                                                                                                                                                                                        |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>            | Display selected port to be edited                                                                                                                                                                                                                                                                                                 |
| <b>State</b>           | Set checkbox to enable/disable option82 function of interface                                                                                                                                                                                                                                                                      |
| <b>Allow untrusted</b> | <p>Select the action perform when untrusted port receive DHCP packet has option82 filed. Default is drop.</p> <ul style="list-style-type: none"> <li><b>Keep:</b> Keep original option82 content.</li> <li><b>Replace:</b> Replace option82 content by switch setting</li> <li><b>Drop:</b> Drop packets with option82.</li> </ul> |

Table 10-43 Edit Option82 Port Fields

#### 10.11.4 Option 82 Client ID

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

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

Security >> DHCP Snooping >> Option82 Circuit ID

Option82 Circuit ID Table

Showing All entries Showing 1 to 2 of 2 entries

|                          | Port | VLAN | Circuit ID |
|--------------------------|------|------|------------|
| <input type="checkbox"/> | GE1  | 1    | rainbow    |
| <input type="checkbox"/> | GE2  | 2    | WWW        |

Add Edit Delete

First Previous 1 Next Last

Figure 10-44 Option82 Circuit ID Page

| Field             | Description                        |
|-------------------|------------------------------------|
| <b>Port</b>       | Display port ID of entry           |
| <b>VLAN</b>       | Display associate VLAN of entry    |
| <b>Circuit ID</b> | Display circuit ID string of entry |

Table 10-44 Option82 Circuit ID Fields

The screenshot displays two web-based dialog boxes for configuring Option82 Circuit ID fields. The top dialog, titled 'Add Option82 Circuit ID', contains three input fields: 'Port' with a dropdown menu showing 'GE5', 'VLAN' with a text box containing '2' and a note '(1 - 4094) (Keep empty to set without VLAN)', and 'Circuit ID' with a text box containing 'dddd'. Below these fields are 'Apply' and 'Close' buttons. The bottom dialog, titled 'Edit Option82 Circuit ID', contains three input fields: 'Port' with a dropdown menu showing 'GE1', 'VLAN' with a text box containing '1', and 'Circuit ID' with a text box containing 'rainbow'. Below these fields are 'Apply' and 'Close' buttons.

Figure 10-45 Add and Edit Option82 Circuit ID Dialog

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

Table 10-45 Option82 Circuit ID Fields

## 10.12 IP Source Guard

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

### 10.12.1 Port Setting

To display Port Setting page, click **Security > IP Source Guard > Port Setting**

This page allow user to configure per port settings of IP Source Guard.

| Entry | Port | State    | Verify Source | Current Entry | Max Entry |
|-------|------|----------|---------------|---------------|-----------|
| 1     | GE1  | Disabled | IP            | 0             | Unlimited |
| 2     | GE2  | Disabled | IP            | 0             | Unlimited |
| 3     | GE3  | Disabled | IP            | 0             | Unlimited |
| 4     | GE4  | Disabled | IP            | 0             | Unlimited |
| 5     | GE5  | Disabled | IP            | 0             | Unlimited |
| 6     | GE6  | Disabled | IP            | 0             | Unlimited |

Figure 10-46 Port Setting Page

| Field                 | Description                                                |
|-----------------------|------------------------------------------------------------|
| Port                  | Display port ID                                            |
| State                 | Display IP Source Guard enable/disable status of interface |
| Verify Source         | Display mode of IP Source Guard verification               |
| Current Binding Entry | Display current binding entries of a interface.            |
| MAX Binding Entry     | Display the number of maximum binding entry of interface   |

Table 10-46 Port Setting Fields

**Security >> IP Source Guard >> Port Setting**

**Edit Port Setting**

|               |                                                                     |
|---------------|---------------------------------------------------------------------|
| Port          | GE1                                                                 |
| State         | <input checked="" type="checkbox"/> Enable                          |
| Verify Source | <input checked="" type="radio"/> IP<br><input type="radio"/> IP-MAC |
| Max Entry     | <input type="text" value="20"/> (1 - 50, default 0), 0 is Unlimited |

Figure 10-47 Edit Port Setting Dialog

| Field                    | Description                                                                                                                                                                                                                        |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>              | Display selected port to be edited.                                                                                                                                                                                                |
| <b>Status</b>            | Set checkbox to enable or disable IP Source Guard function. Default is disabled                                                                                                                                                    |
| <b>Verify Source</b>     | Select the mode of IP Source Guard verification <ul style="list-style-type: none"> <li>• <b>IP:</b> Only verify source IP address of packet</li> <li>• <b>IP-MAC:</b> Verify source IP and source MAC address of packet</li> </ul> |
| <b>Max Binding Entry</b> | Input the maximum number of entries that a port can be bounded.<br>Default is un-limited on all ports. No entry will be bound if limitation reached.                                                                               |

Table 10-47 Edit Port Setting Fields

### 10.12.2 IMPV Binding

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

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

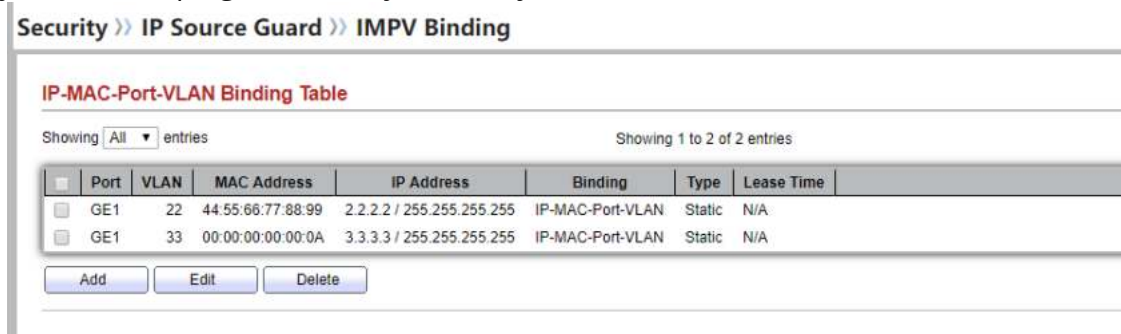


Figure 10-48 IPMV Binding Page

| Field              | Description                                                                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>        | Display port ID of entry.                                                                                                                                           |
| <b>VLAN</b>        | Display VLAN ID of entry                                                                                                                                            |
| <b>MAC Address</b> | Display MAC address of entry. Only available of IP-MAC binding entry                                                                                                |
| <b>IP Address</b>  | Display IP address of entry. Mask always to be 255.255.255.255 for IP-MAC binding. IP binding entry display user input.                                             |
| <b>Binding</b>     | Display binding type of entry                                                                                                                                       |
| <b>Type</b>        | Type of existing binding entry <ul style="list-style-type: none"> <li>• Static: Entry added by user.</li> <li>• Dynamic: Entry learned by DHCP snooping.</li> </ul> |
| <b>Lease Time</b>  | Lease time of DHCP Snooping learned entry. After lease time entry will be deleted. Only available of dynamic entry.                                                 |

Table 10-48 IPMV Binding Fields

**Security >> IP Source Guard >> IMPV Binding**

**Add IP-MAC-Port-VLAN Binding**

|             |                                                                                         |                   |
|-------------|-----------------------------------------------------------------------------------------|-------------------|
| Port        | GE1 ▼                                                                                   |                   |
| VLAN        | 33                                                                                      | (1 - 4094)        |
| Binding     | <input checked="" type="radio"/> IP-MAC-Port-VLAN<br><input type="radio"/> IP-Port-VLAN |                   |
| MAC Address | 00:00:00:00:00:0A                                                                       |                   |
| IP Address  | 3.3.3.3                                                                                 | / 255.255.255.255 |

Apply Close

**Edit IP-MAC-Port-VLAN Binding**

|             |                   |                   |
|-------------|-------------------|-------------------|
| Port        | GE1 ▼             |                   |
| VLAN        | 33                |                   |
| Binding     | IP-MAC-Port-VLAN  |                   |
| MAC Address | 00:00:00:00:00:0A |                   |
| IP Address  | 3.3.3.3           | / 255.255.255.255 |

Apply Close

Figure 10-49 Add and Edit IPMV Binding Dialog

| Field              | Description                                                                                                                                                                                                                                                                |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>        | Select port from list of a binding entry.                                                                                                                                                                                                                                  |
| <b>VLAN</b>        | Specify a VLAN ID of a binding entry                                                                                                                                                                                                                                       |
| <b>Binding</b>     | Select matching mode of binding entry <ul style="list-style-type: none"> <li>• <b>IP-MAC-Port-VLAN:</b> packet must match IP address 、MAC address、 Port and VLAN ID.</li> <li>• <b>IP-Port-VLAN:</b> packet must match IP address or subnet 、 Port and VLAN ID.</li> </ul> |
| <b>MAC Address</b> | Input MAC address. Only available on IP-MAC-Port-VLAN mode.                                                                                                                                                                                                                |
| <b>IP Address</b>  | Input IP address and mask. Mask only available on IP-MAC-Port mode.                                                                                                                                                                                                        |

Table 10-49 Add and Edit IPMV Binding Fields

### 10.12.3 Save Database

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

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

Figure 10-50 Save Database Page

| Field                 | Description                                                                                                                                                                                                                                                          |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>           | Select the type of database agent. <ul style="list-style-type: none"> <li>• None: Disable database agent service.</li> <li>• Flash: Save DHCP dynamic binding entries to flash.</li> <li>• TFTP: Save DHCP dynamic binding entries to remote TFTP server.</li> </ul> |
| <b>Filename</b>       | Input filename for backup file. Only available when selecting type "flash" and "TFTP".                                                                                                                                                                               |
| <b>Address Type</b>   | Select the type of TFTP server. <ul style="list-style-type: none"> <li>• Hostname: TFTP server address is hostname.</li> <li>• IPv4: TFTP server address is IPv4 address.</li> </ul>                                                                                 |
| <b>Server Address</b> | Input remote TFTP server hostname or IP address. Only available when selecting type "TFTP"                                                                                                                                                                           |
| <b>Write Delay</b>    | Input delay timer for doing backup after change happened. Default is 300 seconds.                                                                                                                                                                                    |
| <b>Timeout</b>        | Input aborts timeout for doing backup failure. Default is 300 seconds.                                                                                                                                                                                               |

Table 10-50 Save Database Fields

## 11.ACL

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

### 11.1 MAC ACL

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

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

Figure 11-1 MAC ACL Page

**ACL Table**

Showing All entries Showing 1 to 3 of 3 entries

| <input type="checkbox"/> | ACL Name | Rule | Port |
|--------------------------|----------|------|------|
| <input type="checkbox"/> | AAAA     | 0    |      |
| <input type="checkbox"/> | SSSS     | 0    |      |
| <input type="checkbox"/> | DDDD     | 0    |      |

Figure 11-2 MAC ACL Table Page

| Field           | Description                              |
|-----------------|------------------------------------------|
| <b>ACL Name</b> | Display MAC ACL name                     |
| <b>Rule</b>     | Display the number ACE rule of ACL       |
| <b>Port</b>     | Display the port list that bind this ACL |

Table 11-2 MAC ACL Table Fields

### 11.2 MAC ACE

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

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

Figure 11-3 MAC ACE Page

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

Table 11-3 MAC ACE Fields

Figure 11-4 Add and Edit MAC ACE Dialog

| Field           | Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ACL Name</b> | Display the ACL name to which an ACE is being added.                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Sequence</b> | Specify the sequence of the ACE. ACEs with higher sequence are processed first (1 is the highest priority). Only available on Add Dialog.                                                                                                                                                                                                                                                                                          |
| <b>Action</b>   | <p>Select the action after ACE match packet.</p> <ul style="list-style-type: none"> <li>• <b>Permit:</b> Forward packets that meet the ACE criteria.</li> <li>• <b>Deny:</b> Drop packets that meet the ACE criteria.</li> <li>• <b>Shutdown:</b> Drop packets that meet the ACE criteria, and disable the port from where the packets were received.</li> </ul> <p>Such ports can be reactivated from the Port Settings page.</p> |

|                        |                                                                                                                                                                                                                                                                                                                                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Source MAC</b>      | Select the type for source MAC address. <ul style="list-style-type: none"> <li>• <b>Any:</b> All source addresses are acceptable.</li> <li>• <b>User Defined:</b> Only a source address or a range of source addresses which users define are acceptable. Enter the source MAC address and mask to which will be matched.</li> </ul>                          |
| <b>Destination MAC</b> | Select the type for Destination MAC address. <ul style="list-style-type: none"> <li>• <b>Any:</b> All destination addresses are acceptable.</li> <li>• <b>User Defined:</b> Only a destination address or a range of destination addresses which users define are acceptable. Enter the destination MAC address and mask to which will be matched.</li> </ul> |
| <b>Ethertype</b>       | Select the type for Ethernet frame type. <ul style="list-style-type: none"> <li>• <b>Any:</b> All Ethernet frame type is acceptable.</li> <li>• <b>User Defined:</b> Only an Ethernet frame type which users define is acceptable. Enter the Ethernet frame type value to which will be matched.</li> </ul>                                                   |
| <b>VLAN ID</b>         | Select the type for VLAN ID. <ul style="list-style-type: none"> <li>• <b>Any: All VLAN ID is acceptable.</b></li> <li>• <b>User Defined:</b> Only a VLAN ID which users define is acceptable. Enter the VLAN ID to which will be matched.</li> </ul>                                                                                                          |
| <b>802.1p</b>          | Select the type for 802.1p value. <ul style="list-style-type: none"> <li>• <b>Any:</b> All 802.1p value is acceptable.</li> <li>• <b>User Defined:</b> Only an 802.1p value or a range of 802.1p value which users define is acceptable. Enter the 802.1p value and mask to which will be matched.</li> </ul>                                                 |

Table 11-4 Add and Edit MAC ACE Fields

### 11.3 IPv4 ACL

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

This page allow user to add or delete Ipv4 ACL rule. A rule cannot be deleted if under binding.

Figure 11-5 IPv4 ACL Page

| Field           | Description         |
|-----------------|---------------------|
| <b>ACL Name</b> | Input IPv4 ACL name |

Table 11-5 IPv4 ACL Fields

ACL >> IPv4 ACL

ACL Name

Apply

**ACL Table**

Showing All entries Showing 1 to 3 of 3 entries

|                          | ACL Name | Rule | Port |
|--------------------------|----------|------|------|
| <input type="checkbox"/> | IP11     | 0    |      |
| <input type="checkbox"/> | IP23     | 0    |      |
| <input type="checkbox"/> | IP8      | 0    |      |

Delete

Figure 11-6 IPv4 ACL Table Page

| Field    | Description                              |
|----------|------------------------------------------|
| ACL Name | Display IPv4 ACL name                    |
| Rule     | Display the number ACE rule of ACL       |
| Port     | Display the port list that bind this ACL |

Table 11-6 IPv4 ACL Table Fields

## 11.4 IPv4 ACE

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

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

ACL >> IPv4 ACE

**ACE Table**

ACL Name IP11

Showing All entries Showing 1 to 1 of 1 entries

|                          | Sequence | Action | Protocol | Source IP |      | Destination IP |      | Source Port | Destination Port | TCP Flags | Type of Service |               | ICMP |      |
|--------------------------|----------|--------|----------|-----------|------|----------------|------|-------------|------------------|-----------|-----------------|---------------|------|------|
|                          |          |        |          | Address   | Mask | Address        | Mask |             |                  |           | DSCP            | IP Precedence | Type | Code |
| <input type="checkbox"/> | 23       | Permit | Any (IP) | Any       | Any  | Any            | Any  |             |                  |           | Any             | Any           |      |      |

Add Edit Delete

Figure 11-7 IPv4 ACE Page

| Field     | Description                                         |
|-----------|-----------------------------------------------------|
| ACL Name  | Select the ACL name to which an ACE is being added. |
| Sequence  | Display the sequence of ACE.                        |
| Action    | Display the action of ACE                           |
| Protocol  | Display the protocol value of ACE                   |
| Source IP | Display the source IP address and mask of ACE       |

|                         |                                                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Destination IP</b>   | Display the destination IP address and mask of ACE                                                                  |
| <b>Source Port</b>      | Display single source port or a range of source ports of ACE. Only available when protocol is TCP or UDP.           |
| <b>Destination Port</b> | Display single destination port or a range of destination ports of ACE. Only available when protocol is TCP or UDP. |
| <b>TCP Flags</b>        | Display the TCP flag value if ACE. Only available when protocol is TCP.                                             |
| <b>Type of Service</b>  | Display the ToS value of ACE which could be DSCP or IP Precedence.                                                  |
| <b>ICMP</b>             | Display the ICMP type and code of ACE. Only available when protocol is ICMP                                         |

Table 11-7 IPv4 ACL Fields

**ACL >> IPv4 ACE**

[Add ACE](#)

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ACL Name</b>         | IP11                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Sequence</b>         | <input type="text"/> (1 - 2147483647)                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Action</b>           | <input checked="" type="radio"/> Permit<br><input type="radio"/> Deny<br><input type="radio"/> Shutdown                                                                                                                                                                                                                                                                                                                              |
| <b>Protocol</b>         | <input checked="" type="radio"/> Any<br><input type="radio"/> Select <input type="text" value="ICMP"/> <input type="button" value="v"/><br><input type="radio"/> Define <input type="text"/> (0 - 255)                                                                                                                                                                                                                               |
| <b>Source IP</b>        | <input checked="" type="checkbox"/> Any<br><input type="text"/> / <input type="text"/> (Address / Mask)                                                                                                                                                                                                                                                                                                                              |
| <b>Destination IP</b>   | <input checked="" type="checkbox"/> Any<br><input type="text"/> / <input type="text"/> (Address / Mask)                                                                                                                                                                                                                                                                                                                              |
| <b>Type of Service</b>  | <input checked="" type="radio"/> Any<br><input type="radio"/> DSCP <input type="text"/> (0 - 63)<br><input type="radio"/> IP Precedence <input type="text"/> (0 - 7)                                                                                                                                                                                                                                                                 |
| <b>Source Port</b>      | <input checked="" type="radio"/> Any<br><input type="radio"/> Single <input type="text"/> (0 - 65535)<br><input type="radio"/> Range <input type="text"/> - <input type="text"/> (0 - 65535)                                                                                                                                                                                                                                         |
| <b>Destination Port</b> | <input checked="" type="radio"/> Any<br><input type="radio"/> Single <input type="text"/> (0 - 65535)<br><input type="radio"/> Range <input type="text"/> - <input type="text"/> (0 - 65535)                                                                                                                                                                                                                                         |
| <b>TCP Flags</b>        | Urg: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Ack: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Psh: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Rst: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care |

## ACL » IPv4 ACE

Edit ACE

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACL Name         | IP11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Sequence         | 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Action           | <input checked="" type="radio"/> Permit<br><input type="radio"/> Deny<br><input type="radio"/> Shutdown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Protocol         | <input checked="" type="radio"/> Any<br><input type="radio"/> Select <span>ICMP</span><br><input type="radio"/> Define <span></span> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Source IP        | <input checked="" type="radio"/> Any<br><input type="radio"/> <span></span> / <span></span> (Address / Mask)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Destination IP   | <input checked="" type="radio"/> Any<br><input type="radio"/> <span></span> / <span></span> (Address / Mask)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Type of Service  | <input checked="" type="radio"/> Any<br><input type="radio"/> DSCP <span></span> (0 - 63)<br><input type="radio"/> IP Precedence <span></span> (0 - 7)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Source Port      | <input checked="" type="radio"/> Any<br><input type="radio"/> Single <span></span> (0 - 65535)<br><input type="radio"/> Range <span></span> - <span></span> (0 - 65535)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Destination Port | <input checked="" type="radio"/> Any<br><input type="radio"/> Single <span></span> (0 - 65535)<br><input type="radio"/> Range <span></span> - <span></span> (0 - 65535)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| TCP Flags        | Urg: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Ack: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Psh: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Rst: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Syn: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Fin: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care |
| ICMP Type        | <input checked="" type="radio"/> Any<br><input type="radio"/> Select <span>Echo Reply</span><br><input type="radio"/> Define <span></span> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ICMP Code        | <input checked="" type="radio"/> Any<br><input type="radio"/> Define <span></span> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

Apply Close

Figure 11-8 Add and Edit IPv4 ACE Dialog

| Field    | Description                                                                                                                                                                                                                                                                                                                                                                                               |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACL Name | Display the ACL name to which an ACE is being added.                                                                                                                                                                                                                                                                                                                                                      |
| Sequence | Specify the sequence of the ACE. ACEs with higher sequence are processed first (1 is the highest sequence). Only available on Add dialog.                                                                                                                                                                                                                                                                 |
| Action   | Select the action for a match. <ul style="list-style-type: none"> <li>• <b>Permit:</b> Forward packets that meet the ACE criteria.</li> <li>• <b>Deny:</b> Drop packets that meet the ACE criteria.</li> <li>• <b>Shutdown:</b> Drop packets that meet the ACE criteria, and disable the port from where the packets were received. Such ports can be reactivated from the Port Settings page.</li> </ul> |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Protocol</b>        | <p>Select the type of protocol for a match.</p> <ul style="list-style-type: none"> <li>• <b>Any (IP):</b> All IP protocols are acceptable.</li> <li>• <b>Select from list:</b> Select one of the following protocols from the drop-down list.<br/>(ICMP/IPinIP/TCP/EGP/IGP/UDP/HMP/RDP/IPV6/IPV6:ROUT/IPV6:FRAG/RSVP/IPV6:ICMP/OSPF/PIM/L2TP)</li> <li>• <b>Protocol ID to match:</b> Enter the protocol ID.</li> </ul>                                                                                                                                |
| <b>Source IP</b>       | <p>Select the type for source IP address.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All source addresses are acceptable.</li> <li>• <b>User Defined:</b> Only a source address or a range of source addresses which users define are acceptable. Enter the source IP address value and mask to which will be matched.</li> </ul>                                                                                                                                                                                                        |
| <b>Destination IP</b>  | <p>Select the type for destination IP address.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All destination addresses are acceptable.</li> <li>• <b>User Defined:</b> Only a destination address or a range of destination addresses which users define are acceptable. Enter the destination IP address value and mask to which will be matched.</li> </ul>                                                                                                                                                                               |
| <b>Source Port</b>     | <p>Select the type of protocol for a match. Only available when protocol is TCP or UDP.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All source ports are acceptable.</li> <li>• <b>Single:</b> Enter a single TCP/UDP source port to which packets are matched.</li> <li>• <b>Range:</b> Select a range of TCP/UDP source ports to which the packet is matched. There are eight different port ranges that can be configured (shared between source and destination ports). TCP and UDP protocols each have eight port ranges.</li> </ul> |
| <b>TCP Flags</b>       | <p>Select one or more TCP flags with which to filter packets. Filtered packets are either forwarded or dropped. Filtering packets by TCP flags increases packet control, which increases network security. Only available when protocol is TCP.</p>                                                                                                                                                                                                                                                                                                    |
| <b>Type of Service</b> | <p>Select the type of service for a match.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All types of service are acceptable.</li> <li>• <b>DSCP to match:</b> Enter a Differentiated Services Code Point (DSCP) to match.</li> <li>• <b>IP Precedence to match:</b> Enter a IP Precedence to match.</li> </ul>                                                                                                                                                                                                                             |
| <b>ICMP Type</b>       | <p>Either select the message type by name or enter the message type number. Only available when protocol is ICMP.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All message types are acceptable.</li> <li>• <b>Select from list:</b> Select message type by name.</li> <li>• <b>Protocol ID to match:</b> Enter the number of message type.</li> </ul>                                                                                                                                                                                     |
| <b>ICMP Code</b>       | <p>Select the type for ICMP code. Only available when protocol is ICMP.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All codes are acceptable.</li> <li>• <b>User Defined:</b> Enter an ICMP code to match.</li> </ul>                                                                                                                                                                                                                                                                                                                     |

Table 11-8 Add and Edit IPv4 ACL Fields

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

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

Figure 11-9 IPv6 ACL Page

| Field           | Description         |
|-----------------|---------------------|
| <b>ACL Name</b> | Input IPv6 ACL name |

Table 11-9 IPv6 ACL Fields

Figure 11-10 IPv6 ACL Table Page

| Field           | Description                              |
|-----------------|------------------------------------------|
| <b>ACL Name</b> | Display IPv6 ACL name                    |
| <b>Rule</b>     | Display the number ACE rule of ACL       |
| <b>Port</b>     | Display the port list that bind this ACL |

Table 11-10 IPv6 ACL Table Fields

## 11.6 IPv6 ACE

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

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

Figure 11-11 IPv6 ACE Page

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

Table 11-11 IPv6 ACE Fields

## ACL » IPv6 ACE

## Add ACE

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| ACL Name         | IP61                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| Sequence         | <input type="text" value=""/> (1 - 2147483647)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| Action           | <input checked="" type="radio"/> Permit<br><input type="radio"/> Deny<br><input type="radio"/> Shutdown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Protocol         | <input checked="" type="radio"/> Any<br><input type="radio"/> Select <input type="text" value="TCP"/> <input type="button" value="v"/><br><input type="radio"/> Define <input type="text" value=""/> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| Source IP        | <input checked="" type="radio"/> Any<br><input type="text" value=""/> / <input type="text" value=""/> (Address / Prefix (0 - 128))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Destination IP   | <input checked="" type="radio"/> Any<br><input type="text" value=""/> / <input type="text" value=""/> (Address / Prefix (0 - 128))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Type of Service  | <input checked="" type="radio"/> Any<br><input type="radio"/> DSCP <input type="text" value=""/> (0 - 63)<br><input type="radio"/> IP Precedence <input type="text" value=""/> (0 - 7)                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| Source Port      | <input checked="" type="radio"/> Any<br><input type="radio"/> Single <input type="text" value=""/> (0 - 65535)<br><input type="radio"/> Range <input type="text" value=""/> - <input type="text" value=""/> (0 - 65535)                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Destination Port | <input checked="" type="radio"/> Any<br><input type="radio"/> Single <input type="text" value=""/> (0 - 65535)<br><input type="radio"/> Range <input type="text" value=""/> - <input type="text" value=""/> (0 - 65535)                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| TCP Flags        | Urg: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Ack: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Psh: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Rst: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Syn: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Fin: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care |  |
| ICMP Type        | <input checked="" type="radio"/> Any<br><input type="radio"/> Select <input type="text" value="Destination Unreachable"/> <input type="button" value="v"/><br><input type="radio"/> Define <input type="text" value=""/> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| ICMP Code        | <input checked="" type="radio"/> Any<br><input type="radio"/> Define <input type="text" value=""/> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |

## ACL » IPv6 ACE

## Edit ACE

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| ACL Name         | IP61                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| Sequence         | 22334                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| Action           | <input checked="" type="radio"/> Permit<br><input type="radio"/> Deny<br><input type="radio"/> Shutdown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Protocol         | <input checked="" type="radio"/> Any<br><input type="radio"/> Select <span>TCP ▾</span><br><input type="radio"/> Define <input type="text"/> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| Source IP        | <input checked="" type="radio"/> Any<br><input type="text"/> / <input type="text"/> (Address / Prefix (0 - 128))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| Destination IP   | <input checked="" type="radio"/> Any<br><input type="text"/> / <input type="text"/> (Address / Prefix (0 - 128))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| Type of Service  | <input type="radio"/> DSCP <input type="text"/> (0 - 63)<br><input type="radio"/> IP Precedence <input type="text"/> (0 - 7)<br><input checked="" type="radio"/> Any                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| Source Port      | <input type="radio"/> Single <input type="text"/> (0 - 65535)<br><input type="radio"/> Range <input type="text"/> - <input type="text"/> (0 - 65535)<br><input checked="" type="radio"/> Any                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| Destination Port | <input type="radio"/> Single <input type="text"/> (0 - 65535)<br><input type="radio"/> Range <input type="text"/> - <input type="text"/> (0 - 65535)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| TCP Flags        | Urg: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Ack: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Psh: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Rst: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Syn: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care<br>Fin: <input type="radio"/> Set <input type="radio"/> Unset <input checked="" type="radio"/> Don't care |  |
| ICMP Type        | <input checked="" type="radio"/> Any<br><input type="radio"/> Select <span>Destination Unreachable ▾</span><br><input type="radio"/> Define <input type="text"/> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| ICMP Code        | <input checked="" type="radio"/> Any<br><input type="radio"/> Define <input type="text"/> (0 - 255)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |

Figure 11-12 Add and Edit IPv6 ACE Dialog

| Field                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ACL Name</b>         | Display the ACL name to which an ACE is being added.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Sequence</b>         | Specify the sequence of the ACE. ACEs with higher sequence are processed first (1 is the highest sequence). Only available on Add dialog.                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Action</b>           | <p>Select the action for a match.</p> <ul style="list-style-type: none"> <li>• <b>Permit:</b> Forward packets that meet the ACE criteria.</li> <li>• <b>Deny:</b> Drop packets that meet the ACE criteria.</li> <li>• <b>Shutdown:</b> Drop packets that meet the ACE criteria, and disable the port from where the packets were received. Such ports can be reactivated from the Port Settings page.</li> </ul>                                                                                                                                       |
| <b>Protocol</b>         | <p>Select the type of protocol for a match.</p> <ul style="list-style-type: none"> <li>• <b>Any (IP):</b> All IP protocols are acceptable.</li> <li>• <b>Select from list:</b> Select one of the following protocols from the drop-down list.(TCP / UDP / ICMP)</li> <li>• <b>Protocol ID to match:</b> Enter the protocol ID.</li> </ul>                                                                                                                                                                                                              |
| <b>Source IP</b>        | <p>Select the type for source IP address.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All source addresses are acceptable.</li> <li>• <b>User Defined:</b> Only a source address or a range of source addresses which users define are acceptable. Enter the source IP address value and prefix length to which will be matched.</li> </ul>                                                                                                                                                                                               |
| <b>Destination IP</b>   | <p>Select the type for destination IP address.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All destination addresses are acceptable.</li> <li>• <b>User Defined:</b> Only a destination address or a range of destination addresses which users define are acceptable. Enter the destination IP address value and prefix to which will be matched.</li> </ul>                                                                                                                                                                             |
| <b>Source Port</b>      | <p>Select the type of protocol for a match. Only available when protocol is TCP or UDP.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All source ports are acceptable.</li> <li>• <b>Single:</b> Enter a single TCP/UDP source port to which packets are matched.</li> <li>• <b>Range:</b> Select a range of TCP/UDP source ports to which the packet is matched. There are eight different port ranges that can be configured (shared between source and destination ports). TCP and UDP protocols each have eight port ranges.</li> </ul> |
| <b>Destination Port</b> | <p>Select the type of protocol for a match. Only available when protocol is TCP or UDP.</p> <ul style="list-style-type: none"> <li>• <b>Any:</b> All source ports are acceptable.</li> <li>• <b>Single:</b> Enter a single TCP/UDP source port to which packets are matched.</li> <li>• <b>Range:</b> Select a range of TCP/UDP source ports to which packet is matched. There are eight different port ranges that can be configured(share between source and destination ports). TCP and UDP potocols each have eight port ranges.</li> </ul>        |

|                        |                                                                                                                                                                                                                                                                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TCP Flags</b>       | Select one or more TCP flags with which to filter packets. Filtered packets are either forwarded or dropped. Filtering packets by TCP flags increases packet control, which increases network security. Only available when protocol is TCP.                                                                                                                |
| <b>Type of Service</b> | Select the type of service for a match. <ul style="list-style-type: none"> <li>• <b>Any:</b> All types of service are acceptable.</li> <li>• <b>DSCP to match:</b> Enter a Differentiated Services Code Point (DSCP) to match.</li> <li>• <b>IP Precedence to match:</b> Enter a IP Precedence to match.</li> </ul>                                         |
| <b>ICMP Type</b>       | Either select the message type by name or enter the message type number. Only available when protocol is ICMP. <ul style="list-style-type: none"> <li>• <b>Any:</b> All message types are acceptable.</li> <li>• <b>Select from list:</b> Select message type by name.</li> <li>• <b>Protocol ID to match:</b> Enter the number of message type.</li> </ul> |
| <b>ICMP Code</b>       | Select the type for ICMP code. Only available when protocol is ICMP. <ul style="list-style-type: none"> <li>• <b>Any:</b> All codes are acceptable.</li> <li>• <b>User Defined:</b> Enter an ICMP code to match.</li> </ul>                                                                                                                                 |

Table 11-12 Add and Edit IPv6 ACE Fields

### 11.7 ACL Binding

To display ACL Binding page, click ACL > ACL Binding

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

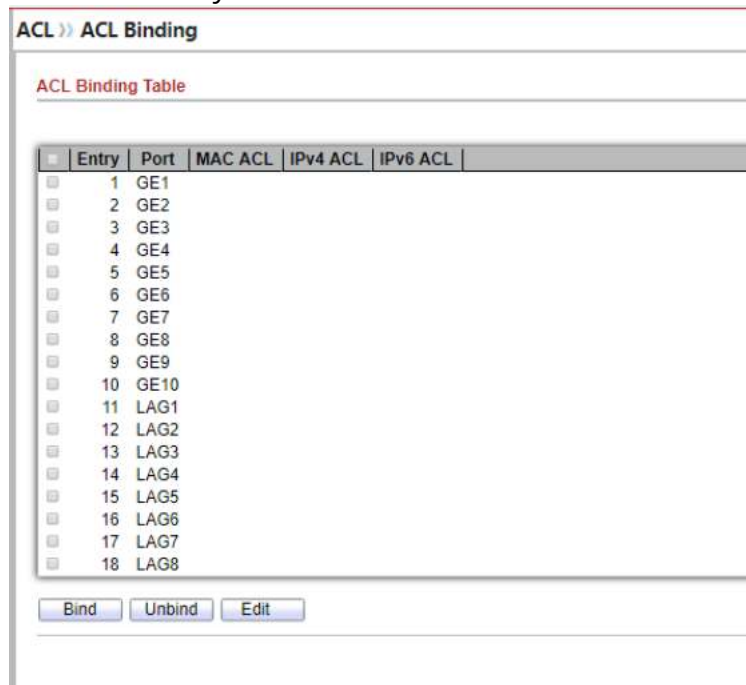


Figure 11-13 ACL Binding Page

| Field | Description            |
|-------|------------------------|
| Port  | Display port entry ID. |

|                 |                                                                                 |
|-----------------|---------------------------------------------------------------------------------|
| <b>MAC ACL</b>  | <b>Display mac ACL name that bound of interface. Empty means no rule bound.</b> |
| <b>IPv4 ACL</b> | Display ipv4 ACL name that bound of interface. Empty means no rule bound.       |
| <b>IPv6 ACL</b> | Display ipv6 ACL name that bound of interface. Empty means no rule bound.       |

Table 11-13 ACL Binding Fields

**ACL >> ACL Binding**

**Add ACL Binding**

Port

GE1

Note: ACL without any rules cannot be bound

MAC ACL

AAAA ▾

IPv4 ACL

IP11 ▾

IPv6 ACL

None ▾

Apply

Close

**Edit ACL Binding**

Port

GE1

Note: ACL without any rules cannot be bound

MAC ACL

AAAA ▾

IPv4 ACL

IP11 ▾

IPv6 ACL

None ▾

Apply

Close

Figure 11-14 Add and Edit ACL Binding Dialog

| Field           | Description                             |
|-----------------|-----------------------------------------|
| <b>Port</b>     | Display port entry ID.                  |
| <b>MAC ACL</b>  | Select mac ACL name from list to bind.  |
| <b>IPv4 ACL</b> | Select IPv4 ACL name from list to bind. |
| <b>IPv6 ACL</b> | Select IPv6 ACL name from list to bind. |

Table 11-14 Add and Edit ACL Binding Fields

## 12.QoS

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

### 12.1 General

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

#### 12.1.1 Property

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

Figure 12-1 QoS Global Setting

| Field             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State</b>      | Set checkbox to enable/disable QoS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Trust Mode</b> | <p>Select QoS trust mode</p> <ul style="list-style-type: none"> <li>• <b>CoS:</b> 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.</li> <li>• <b>DSCP:</b> 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.</li> <li>• <b>CoS-DSCP:</b> Uses the trust CoS mode for non-IP traffic and trust DSCP mode for IP traffic</li> <li>• <b>IP Precedence:</b> 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.</li> </ul> |

Table 12-1 QoS Global Setting Fields

Port Setting Table

|                          | Entry | Port | CoS | Trust   | Remarking |          |               |
|--------------------------|-------|------|-----|---------|-----------|----------|---------------|
|                          |       |      |     |         | CoS       | DSCP     | IP Precedence |
| <input type="checkbox"/> | 1     | GE1  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 2     | GE2  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 3     | GE3  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 4     | GE4  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 5     | GE5  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 6     | GE6  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 7     | GE7  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 8     | GE8  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 9     | GE9  | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 10    | GE10 | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 11    | LAG1 | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 12    | LAG2 | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 13    | LAG3 | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 14    | LAG4 | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 15    | LAG5 | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 16    | LAG6 | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 17    | LAG7 | 0   | Enabled | Disabled  | Disabled | Disabled      |
| <input type="checkbox"/> | 18    | LAG8 | 0   | Enabled | Disabled  | Disabled | Disabled      |

Edit

Figure 12-2 QoS Port Setting Table

| Field                     | Description                                                                                                                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port                      | Port name                                                                                                                                                                                                     |
| CoS                       | Port default CoS priority value for the selected ports                                                                                                                                                        |
| Trust                     | Port trust state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Traffic will follow trust mode in global setting</li> <li>• <b>Disabled:</b> Traffic will always use best efforts</li> </ul>        |
| Remarking (CoS)           | Port CoS remarking admin state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> CoS remarking is enabled</li> <li>• <b>Disabled:</b> CoS remarking is disabled</li> </ul>                             |
| Remarking (DSCP)          | Port DSCP remarking admin state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> DSCP remarking is enabled</li> <li>• <b>Disabled:</b> DSCP remarking is disabled</li> </ul>                          |
| Remarking (IP Precedence) | Port IP Precedence remarking admin state <ul style="list-style-type: none"> <li>• <b>Enable:</b> IP Precedence remarking is enabled</li> <li>• <b>Disable:</b> IP Precedence remarking is disabled</li> </ul> |

Table 12-2 QoS Port Setting Table Fields

Figure 12-3 Edit QoS Port Setting

| Field                            | Description                                                  |
|----------------------------------|--------------------------------------------------------------|
| <b>Port</b>                      | Select port list                                             |
| <b>CoS</b>                       | Set default CoS/802.1p priority value for the selected ports |
| <b>Trust</b>                     | Set checkbox to enable/disable port trust state              |
| <b>Remarking (CoS)</b>           | Set checkbox to enable/disable port CoS remarking            |
| <b>Remarking (DSCP)</b>          | Set checkbox to enable/disable port DSCP remarking           |
| <b>Remarking (IP Precedence)</b> | Set checkbox to enable/disable port IP Precedence remarking  |

Table 12-3 Edit QoS Port Setting Fields

### 12.1.2 Queue Scheduling

o display Queue Scheduling web page, click **QoS > General > Queue Scheduling**.

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

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

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

The queuing modes can be selected on the Queue page. When the queuing mode is by Strict Priority, the priority sets the order in which queues are serviced, starting with queue\_8 (the highest priority queue) and going to the next lower queue when each queue is completed.

When the queuing mode is Weighted Round Robin, queues are serviced until their quota has been used up and then another queue is serviced. It is also possible to assign some of the lower queues to WRR, while keeping some of the higher queues in Strict Priority. In this case traffic for the SP queues is always sent before traffic from the WRR queues. After the SP queues have been emptied, traffic from the WRR queues is forwarded. (The relative portion from each WRR queue depends on its weight).

| Queue | Method                           |                                  |        |                   |
|-------|----------------------------------|----------------------------------|--------|-------------------|
|       | Strict Priority                  | WRR                              | Weight | WRR Bandwidth (%) |
| 1     | <input type="radio"/>            | <input checked="" type="radio"/> | 1      | 33.33%            |
| 2     | <input type="radio"/>            | <input checked="" type="radio"/> | 2      | 66.67%            |
| 3     | <input checked="" type="radio"/> | <input type="radio"/>            | 3      |                   |
| 4     | <input checked="" type="radio"/> | <input type="radio"/>            | 4      |                   |
| 5     | <input checked="" type="radio"/> | <input type="radio"/>            | 5      |                   |
| 6     | <input checked="" type="radio"/> | <input type="radio"/>            | 6      |                   |
| 7     | <input checked="" type="radio"/> | <input type="radio"/>            | 13     |                   |
| 8     | <input checked="" type="radio"/> | <input type="radio"/>            | 15     |                   |

Apply

Figure 12-4: Queue Scheduling Table

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

Table 12-4: Queue Scheduling Table fields.

### 12.1.3 CoS Mapping

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

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

Use the Queues to CoS table to remark the CoS/802.1p priority for egress traffic from each queue.

**QoS >> General >> CoS Mapping**

**CoS to Queue Mapping**

| CoS | Queue |
|-----|-------|
| 0   | 2 ▼   |
| 1   | 1 ▼   |
| 2   | 3 ▼   |
| 3   | 4 ▼   |
| 4   | 5 ▼   |
| 5   | 6 ▼   |
| 6   | 7 ▼   |
| 7   | 8 ▼   |

Figure 12-5 CoS to Queue Mapping Table

| Field        | Description                       |
|--------------|-----------------------------------|
| <b>CoS</b>   | CoS value                         |
| <b>Queue</b> | Select queue id for the CoS value |

Table 12-5 CoS to Queue Mapping Table Fields

**Queue to CoS Mapping**

| Queue | CoS |
|-------|-----|
| 1     | 1 ▼ |
| 2     | 0 ▼ |
| 3     | 2 ▼ |
| 4     | 3 ▼ |
| 5     | 4 ▼ |
| 6     | 5 ▼ |
| 7     | 6 ▼ |
| 8     | 7 ▼ |

Figure 12-6 Queue to CoS Mapping Table

| Field        | Description                       |
|--------------|-----------------------------------|
| <b>Queue</b> | Queue ID                          |
| <b>Cos</b>   | Select CoS value for the queue id |

Table 12-6 Queue to CoS Mapping Table Fields

### 12.1.4 DSCP Mapping

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

The DSCP to Queue table determines the egress queues of the incoming IP packets based on their DSCP values. The original VLAN Priority Tag (VPT) of the packet is unchanged.

Use the Queues to DSCP page to remark DSCP value for egress traffic from each queue.

#### QoS >> General >> DSCP Mapping

**DSCP to Queue Mapping**

| DSCP      | Queue | DSCP      | Queue | DSCP      | Queue | DSCP     | Queue |
|-----------|-------|-----------|-------|-----------|-------|----------|-------|
| 0 [CS0]   | 1 ▼   | 16 [CS2]  | 3 ▼   | 32 [CS4]  | 5 ▼   | 48 [CS6] | 7 ▼   |
| 1         | 1 ▼   | 17        | 3 ▼   | 33        | 5 ▼   | 49       | 7 ▼   |
| 2         | 1 ▼   | 18 [AF21] | 3 ▼   | 34 [AF41] | 5 ▼   | 50       | 7 ▼   |
| 3         | 1 ▼   | 19        | 3 ▼   | 35        | 5 ▼   | 51       | 7 ▼   |
| 4         | 1 ▼   | 20 [AF22] | 3 ▼   | 36 [AF42] | 5 ▼   | 52       | 7 ▼   |
| 5         | 1 ▼   | 21        | 3 ▼   | 37        | 5 ▼   | 53       | 7 ▼   |
| 6         | 1 ▼   | 22 [AF23] | 3 ▼   | 38 [AF43] | 5 ▼   | 54       | 7 ▼   |
| 7         | 1 ▼   | 23        | 3 ▼   | 39        | 5 ▼   | 55       | 7 ▼   |
| 8 [CS1]   | 2 ▼   | 24 [CS3]  | 4 ▼   | 40 [CS5]  | 6 ▼   | 56 [CS7] | 8 ▼   |
| 9         | 2 ▼   | 25        | 4 ▼   | 41        | 6 ▼   | 57       | 8 ▼   |
| 10 [AF11] | 2 ▼   | 26 [AF31] | 4 ▼   | 42        | 6 ▼   | 58       | 8 ▼   |
| 11        | 2 ▼   | 27        | 4 ▼   | 43        | 6 ▼   | 59       | 8 ▼   |
| 12 [AF12] | 2 ▼   | 28 [AF32] | 4 ▼   | 44        | 6 ▼   | 60       | 8 ▼   |
| 13        | 2 ▼   | 29        | 4 ▼   | 45        | 6 ▼   | 61       | 8 ▼   |
| 14 [AF13] | 2 ▼   | 30 [AF33] | 4 ▼   | 46 [EF]   | 6 ▼   | 62       | 8 ▼   |
| 15        | 2 ▼   | 31        | 4 ▼   | 47        | 6 ▼   | 63       | 8 ▼   |

Apply

Figure 12-7 DSCP to Queue Mapping Table

| Field | Description                    |
|-------|--------------------------------|
| DSCP  | DSCP value                     |
| Queue | Select queue id for DSCP value |

Table 12-7 DSCP to Queue Mapping Table Fields

#### Queue to DSCP Mapping

| Queue | DSCP       |
|-------|------------|
| 1     | 0 [CS0] ▼  |
| 2     | 8 [CS1] ▼  |
| 3     | 16 [CS2] ▼ |
| 4     | 24 [CS3] ▼ |
| 5     | 32 [CS4] ▼ |
| 6     | 40 [CS5] ▼ |
| 7     | 48 [CS6] ▼ |
| 8     | 56 [CS7] ▼ |

Apply

Figure 12-8 Queue to DSCP Mapping Table

| Field | Description                    |
|-------|--------------------------------|
| Queue | Queue ID                       |
| DSCP  | Select DSCP value for queue id |

Table 12-8 Queue to DSCP Mapping Table Fields

### 12.1.5 IP Precedence Mapping

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

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

**QoS >> General >> IP Precedence Mapping**

**IP Precedence to Queue Mapping**

| IP Precedence | Queue |
|---------------|-------|
| 0             | 1 ▼   |
| 1             | 2 ▼   |
| 2             | 3 ▼   |
| 3             | 4 ▼   |
| 4             | 5 ▼   |
| 5             | 6 ▼   |
| 6             | 7 ▼   |
| 7             | 8 ▼   |

Apply

Figure 12-9 IP Precedence to Queue Mapping Table

| Field         | Description                               |
|---------------|-------------------------------------------|
| IP Precedence | IP Precedence value                       |
| Queue         | Queue value which IP Precedence is mapped |

Table 12-9 IP Precedence to Queue Mapping Table Fields

**Queue to IP Precedence Mapping**

| Queue | IP Precedence |
|-------|---------------|
| 1     | 0 ▼           |
| 2     | 1 ▼           |
| 3     | 2 ▼           |
| 4     | 3 ▼           |
| 5     | 4 ▼           |
| 6     | 5 ▼           |
| 7     | 6 ▼           |
| 8     | 7 ▼           |

Apply

Figure 12-10 Queue to IP Precedence Mapping Table

| Field         | Description                               |
|---------------|-------------------------------------------|
| Queue         | Queue ID                                  |
| IP Precedence | IP Precedence value which queue is mapped |

Table 12-10 Queue to IP Precedence Mapping Table Fields

## 12.2 Rate Limit

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

### 12.2.1 Ingress/Egress Port

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

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

| QoS >> Rate Limit >> Ingress / Egress Port |       |      |          |             |          |             |  |
|--------------------------------------------|-------|------|----------|-------------|----------|-------------|--|
| Ingress / Egress Port Table                |       |      |          |             |          |             |  |
|                                            | Entry | Port | Ingress  |             | Egress   |             |  |
|                                            |       |      | State    | Rate (Kbps) | State    | Rate (Kbps) |  |
| <input type="checkbox"/>                   | 1     | GE1  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 2     | GE2  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 3     | GE3  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 4     | GE4  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 5     | GE5  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 6     | GE6  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 7     | GE7  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 8     | GE8  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 9     | GE9  | Disabled |             | Disabled |             |  |
| <input type="checkbox"/>                   | 10    | GE10 | Disabled |             | Disabled |             |  |

Edit

Figure 12-11 Ingress/Egress Port Table

| Field           | Description                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port            | Port name                                                                                                                                                                              |
| Ingress (State) | Port ingress rate limit state <ul style="list-style-type: none"> <li><b>Enabled:</b> Ingress rate limit is enabled</li> <li><b>Disabled:</b> Ingress rate limit is disabled</li> </ul> |
| Ingress (Rate)  | Port ingress rate limit value if ingress rate state is enabled                                                                                                                         |

|                       |                                                                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Egress (State)</b> | Port egress rate limit state                                                                                                                               |
|                       | <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress rate limit is enabled</li> <li>• <b>Disabled:</b> Egress rate limit is disabled</li> </ul> |
| <b>Egress (Rate)</b>  | Port egress rate limit value if egress rate state is enabled                                                                                               |

Table 12-11 Ingress/Egress Port Table Fields

Figure 12-12 Edit Ingress/Egress Port

| Field          | Description                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>    | Select port list                                                                                                           |
| <b>Ingress</b> | Set checkbox to enable/disable ingress rate limit. If ingress rate limit is enabled, rate limit value need to be assigned. |
| <b>Egress</b>  | Set checkbox to enable/disable egress rate limit. If egress rate limit is enabled, rate limit value need to be assigned.   |

Table 12-12 Edit Ingress/Egress Port Fields

### 12.2.2 Egress Queue

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

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  |            |
|-------|------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|------------|
|       |      | 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 |            |
| 2     | GE2  | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |
| 3     | GE3  | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |
| 4     | GE4  | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |
| 5     | GE5  | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |
| 6     | GE6  | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |
| 7     | GE7  | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |
| 8     | GE8  | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |
| 9     | GE9  | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |
| 10    | GE10 | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            | Disabled |            |

Figure 12-13: Egress Queue Table

| Field           | Description                                                                                                                                                                                                 |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port            | Port name                                                                                                                                                                                                   |
| Queue 1 (State) | Port egress queue 1 rate limit state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress queue rate limit is enabled</li> <li>• <b>Disabled:</b> Egress queue rate limit is disabled</li> </ul> |
| Queue 1 (CIR)   | Queue 1 egress committed information rate                                                                                                                                                                   |
| Queue 2 (State) | Port egress queue 2 rate limit state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress queue rate limit is enabled</li> <li>• <b>Disabled:</b> Egress queue rate limit is disabled</li> </ul> |
| Queue 2 (CIR)   | Queue 2 egress committed information rate                                                                                                                                                                   |
| Queue 3 (State) | Port egress queue 3 rate limit state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress queue rate limit is enabled</li> <li>• <b>Disabled:</b> Egress queue rate limit is disabled</li> </ul> |
| Queue 3 (CIR)   | Queue 3 egress committed information rate                                                                                                                                                                   |
| Queue 4 (State) | Port egress queue 4 rate limit state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress queue rate limit is enabled</li> <li>• <b>Disabled:</b> Egress queue rate limit is disabled</li> </ul> |
| Queue 4 (CIR)   | Queue 4 egress committed information rate                                                                                                                                                                   |
| Queue 5 (State) | Port egress queue 5 rate limit state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress queue rate limit is enabled</li> <li>• <b>Disabled:</b> Egress queue rate limit is disabled</li> </ul> |
| Queue 5 (CIR)   | Queue 5 egress committed information rate                                                                                                                                                                   |
| Queue 6 (State) | Port egress queue 6 rate limit state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress queue rate limit is enabled</li> <li>• <b>Disabled:</b> Egress queue rate limit is disabled</li> </ul> |
| Queue 6 (CIR)   | Queue 6 egress committed information rate                                                                                                                                                                   |
| Queue 7 (State) | Port egress queue 7 rate limit state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress queue rate limit is enabled</li> <li>• <b>Disabled:</b> Egress queue rate limit is disabled</li> </ul> |
| Queue 7 (CIR)   | Queue 7 egress committed information rate                                                                                                                                                                   |
| Queue 8 (State) | Port egress queue 8 rate limit state <ul style="list-style-type: none"> <li>• <b>Enabled:</b> Egress queue rate limit is enabled</li> <li>• <b>Disabled:</b> Egress queue rate limit is disabled</li> </ul> |
| Queue 8 (CIR)   | Queue 8 egress committed information rate                                                                                                                                                                   |

Table 12-13: Egress Queue Table Fields.

**QoS » Rate Limit » Egress Queue**

**Edit Egress Queue**

|         |                                            |                                                          |
|---------|--------------------------------------------|----------------------------------------------------------|
| Port    | GE1-GE3                                    |                                                          |
| Queue 1 | <input checked="" type="checkbox"/> Enable | <input type="text" value="1000000"/> Kbps (16 - 1000000) |
| Queue 2 | <input checked="" type="checkbox"/> Enable | <input type="text" value="1000000"/> Kbps (16 - 1000000) |
| Queue 3 | <input checked="" type="checkbox"/> Enable | <input type="text" value="1000000"/> Kbps (16 - 1000000) |
| Queue 4 | <input checked="" type="checkbox"/> Enable | <input type="text" value="1000000"/> Kbps (16 - 1000000) |
| Queue 5 | <input type="checkbox"/> Enable            | <input type="text" value="1000000"/> Kbps (16 - 1000000) |
| Queue 6 | <input type="checkbox"/> Enable            | <input type="text" value="1000000"/> Kbps (16 - 1000000) |
| Queue 7 | <input type="checkbox"/> Enable            | <input type="text" value="1000000"/> Kbps (16 - 1000000) |
| Queue 8 | <input type="checkbox"/> Enable            | <input type="text" value="1000000"/> Kbps (16 - 1000000) |

Figure 12-14: Edit Egress Queue

| Field          | Description                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>    | Select port list                                                                                                                 |
| <b>Queue 1</b> | Set checkbox to enable/disable egress queue 1 rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |
| <b>Queue 2</b> | Set checkbox to enable/disable egress queue 2 rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |
| <b>Queue 3</b> | Set checkbox to enable/disable egress queue 3 rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |
| <b>Queue 4</b> | Set checkbox to enable/disable egress queue 4 rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |
| <b>Queue 5</b> | Set checkbox to enable/disable egress queue 5 rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |
| <b>Queue 6</b> | Set checkbox to enable/disable egress queue 6 rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |
| <b>Queue 7</b> | Set checkbox to enable/disable egress queue 7 rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |
| <b>Queue 8</b> | Set checkbox to enable/disable egress queue 8 rate limit. If egress rate limit is enabled, rate limit value need to be assigned. |

Table 12-14: Edit Egress Queue Fields.

## 13.Diagnostics

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

### 13.1 Logging

#### 13.1.1 Property

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

**Diagnostics >> Logging >> Property**

|                         |                                                                                                             |
|-------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>State</b>            | <input checked="" type="checkbox"/> Enable                                                                  |
| <b>Aggregation</b>      | <input checked="" type="checkbox"/> Enable                                                                  |
| <b>Aging Time</b>       | <input type="text" value="300"/> Sec (15 - 3600, default 300)                                               |
| <b>Console Logging</b>  |                                                                                                             |
| <b>State</b>            | <input checked="" type="checkbox"/> Enable                                                                  |
| <b>Minimum Severity</b> | <input type="text" value="Notice"/> <small>Note: Emergency, Alert, Critical, Error, Warning, Notice</small> |
| <b>RAM Logging</b>      |                                                                                                             |
| <b>State</b>            | <input checked="" type="checkbox"/> Enable                                                                  |
| <b>Minimum Severity</b> | <input type="text" value="Notice"/> <small>Note: Emergency, Alert, Critical, Error, Warning, Notice</small> |
| <b>Flash Logging</b>    |                                                                                                             |
| <b>State</b>            | <input type="checkbox"/> Enable                                                                             |
| <b>Minimum Severity</b> | <input type="text" value="Notice"/> <small>Note: Emergency, Alert, Critical, Error, Warning, Notice</small> |

Figure 13-1: Logging Property page.

| Field        | Description                                                                                                                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State</b> | 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. |

Table 13-1: Logging Property fields.

| Field                   | Description                                   |
|-------------------------|-----------------------------------------------|
| <b>State</b>            | Enable/Disable the console logging service.   |
| <b>Minimum Severity</b> | The minimum severity for the console logging. |

Table 13-2: Console Logging fields.

| Field                   | Description                               |
|-------------------------|-------------------------------------------|
| <b>State</b>            | Enable/Disable the RAM logging service.   |
| <b>Minimum Severity</b> | The minimum severity for the RAM logging. |

Table 13-3: RAM Logging fields.

| Field                   | Description                                        |
|-------------------------|----------------------------------------------------|
| <b>State</b>            | <b>Enable/Disable the flash logging service.</b>   |
| <b>Minimum Severity</b> | <b>The minimum severity for the flash logging.</b> |

Table 13-4: Flash Logging fields

### 13.1.2 Remove Server

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

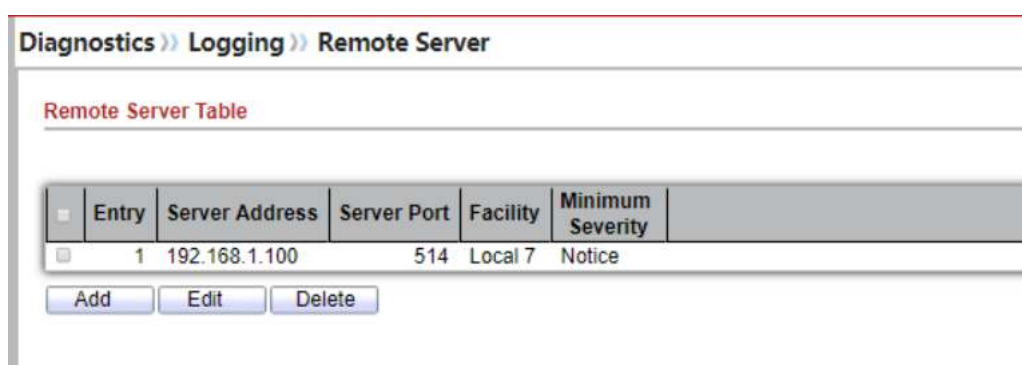


Figure 13-2: Remote Server page.

| Field                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Server Address</b> | The IP address of the remote logging server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Server Ports</b>   | The port number of the remote logging server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Facility</b>       | The facility of the logging messages. It can be one of the following values: local0, local1, local2, local3, local4, local5, local6, and local7.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Severity</b>       | <p>The minimum severity.</p> <ul style="list-style-type: none"> <li>• <b>Emergency:</b> System is not usable.</li> <li>• <b>Alert:</b> Immediate action is needed.</li> <li>• <b>Critical:</b> System is in the critical condition.</li> <li>• <b>Error:</b> System is in error condition</li> <li>• <b>Warning:</b> System warning has occurred</li> <li>• <b>Notice:</b> System is functioning properly, but a system notice has occurred.</li> <li>• <b>Informational:</b> Device information.</li> <li>• <b>Debug:</b> Provides detailed information about an event.</li> </ul> |

Table 13-5: Remote Server fields.

### 13.2 Mirroring

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

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

Allow the monitor port to send or receive normal packets

Figure 13-3 Mirroring Page

| Field        | Description                                                                                                                                                                                    |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Session ID   | Select mirror session ID                                                                                                                                                                       |
| State        | Select mirror session state : port-base mirror or disable <ul style="list-style-type: none"> <li><b>Enabled:</b> Enable port based mirror</li> <li><b>Disabled:</b> Disable mirror.</li> </ul> |
| 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 ports | Select mirror session source tx ports                                                                                                                                                          |

Table 13-6 Mirroring Fields

### 13.3 Ping

For the ping functionality, click **Diagnostic > Ping.**

Address Type: ☒ Hostname ☐ IPv4 ☐ IPv6

Server Address:

Count:  (1 - 65535)

Ping Stop

Ping Result

Packet Status

|                 |     |
|-----------------|-----|
| Status          | N/A |
| Transmit Packet | 0   |
| Receive Packet  | 0   |
| Packet Lost     | 0%  |

Round Trip Time

|         |        |
|---------|--------|
| Min     | 0.0 ms |
| Max     | 0.0 ms |
| Average | 0.0 ms |

Figure 13-4: Ping page.

| Field                 | Description                                                           |
|-----------------------|-----------------------------------------------------------------------|
| <b>Address Type</b>   | Specify the address type to “Hostname”, “IPv6”, or “IPv4”.            |
| <b>Server Address</b> | Specify the Hostname/IPv4/IPv6 address for the remote logging server. |
| <b>Count</b>          | Specify the numbers of each ICMP ping request.                        |

Table 13-7: Ping fields.

### 13.4 Traceroute

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

Figure 13-5: Traceroute page.

| Field                 | Description                                                      |
|-----------------------|------------------------------------------------------------------|
| <b>Address Type</b>   | Specify the address type to “Hostname”, or “IPv4”.               |
| <b>Server Address</b> | Specify the Hostname/IPv4 address for the remote logging server. |
| <b>Time to Live</b>   | Specify the max hops of hosts for traceroute.                    |

Table 13-8: Traceroute fields.

### 13.5 Copper Test

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

The screenshot shows the 'Copper Test' interface. At the top, there's a breadcrumb 'Diagnostics >> Copper Test'. Below it, a 'Port' dropdown is set to 'GE1', and a 'Copper Test' button is present. A section titled 'Copper Test Result' contains a table with the following data:

| Cable Status |     |
|--------------|-----|
| Port         | N/A |
| Result       | N/A |
| Length       | N/A |

Figure 13-6: Copper Test page.

| Field | Description                                |
|-------|--------------------------------------------|
| Port  | Specify the interface for the copper test. |

Table 13-9: Copper Test fields.

| Field  | Description                                                                                                                                                                                                                                                                                                                                                             |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port   | The interface for the copper test.                                                                                                                                                                                                                                                                                                                                      |
| Result | <p>The status of copper test. It include:</p> <ul style="list-style-type: none"> <li>• <b>OK:</b> Correctly terminated pair.</li> <li>• <b>Short Cable:</b> Shorted pair.</li> <li>• <b>Open Cable:</b> Open pair, no link partner.</li> <li>• <b>Impedance Mismatch:</b> Terminating impedance is not in the reference range.</li> <li>• <b>Line Drive:</b></li> </ul> |
| Length | Distance in meter from the port to the location on the cable where the fault was discovered.                                                                                                                                                                                                                                                                            |

Table 13-10: Copper Result fields.

### 13.6 Fiber Module

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

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

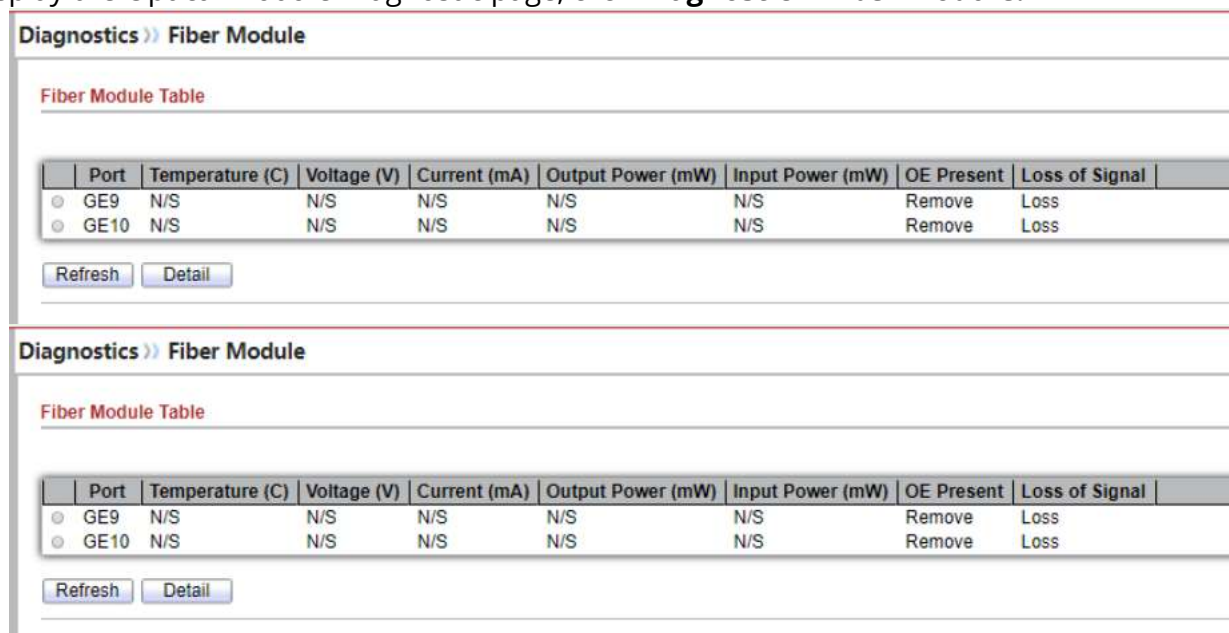


Figure 13-7: Fiber Module page.

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

Table 13-11: Fiber Module fields.

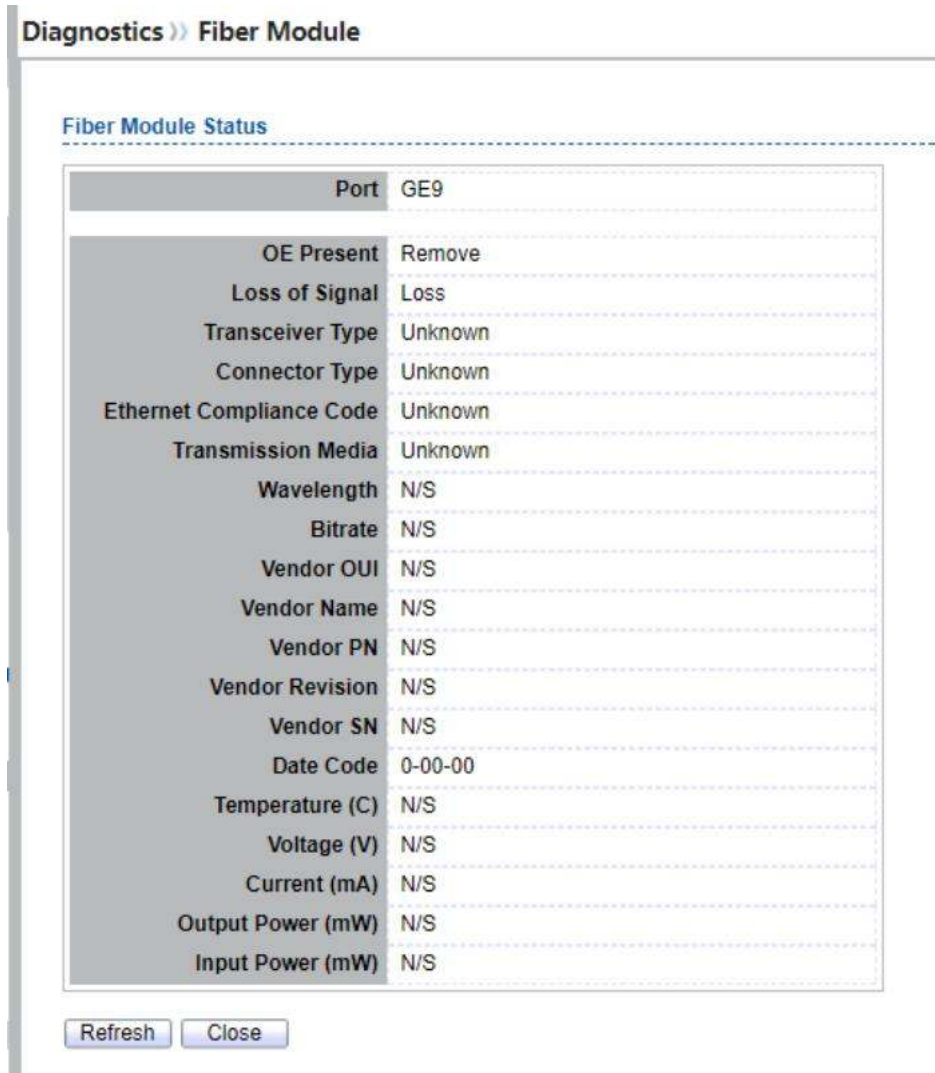


Figure 13-8: Fiber Module Status page.

## 13.7 UDLD

Use the UDLD pages to configure settings of UDLD function.

### 13.7.1 Property

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

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

| Field        | Description                                                     |
|--------------|-----------------------------------------------------------------|
| Message Time | Input the interval for sending message. Range is 1 -90 seconds. |

Table 13-12 Property Fields

Port Setting Table

|                          | Entry | Port | Mode     | Bidirectional State | Operational Status | Neighbor |  |
|--------------------------|-------|------|----------|---------------------|--------------------|----------|--|
| <input type="checkbox"/> | 1     | GE1  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 2     | GE2  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 3     | GE3  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 4     | GE4  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 5     | GE5  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 6     | GE6  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 7     | GE7  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 8     | GE8  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 9     | GE9  | Disabled | Unknown             |                    | 0        |  |
| <input type="checkbox"/> | 10    | GE10 | Disabled | Unknown             |                    | 0        |  |

Edit

Figure 13-10: Property Port page.

| Field                      | Description                                 |
|----------------------------|---------------------------------------------|
| <b>Port</b>                | Display port ID of entry.                   |
| <b>Mode</b>                | Display UDLD running mode of interface.     |
| <b>Bidirectional State</b> | Display bidirectional state of interface.   |
| <b>Operational Status</b>  | Display operational status of interface     |
| <b>Neighbor</b>            | Display the number of neighbor of interface |

Table 13-13 Property Port Fields

**Diagnostics >> UDLD >> Property**

Edit Port Setting

Port

GE1

Mode

☒ Disabled  
☐ Normal  
☐ Aggressive

Apply Close

Figure 13-11: Edit Property Port page.

| Field       | Description                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b> | Display selected port to be edited.                                                                                                                                                                                                                                                                                                                                                      |
| <b>Mode</b> | <p>Select UDLD running mode of interface.</p> <ul style="list-style-type: none"> <li>• <b>Disabled:</b> Disable UDLD function.</li> <li>• <b>Normal:</b> Running on normal mode that port goes to Link Up One phase after last neighbor ages out.</li> <li>• <b>Aggressive:</b> Running on aggressive mode that port goes to Re-Establish phase after last neighbor ages out.</li> </ul> |

Table 13-14 Edit Property Port Fields

### 13.7.2 Neighbor

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



Figure 13-12: Neighbor page.

| Field                         | Description                              |
|-------------------------------|------------------------------------------|
| <b>Entry</b>                  | Display entry index                      |
| <b>Expiration Time</b>        | Display expiration time before age out.  |
| <b>Current Neighbor State</b> | Display neighbor current state           |
| <b>Device ID</b>              | Display neighbor device ID.              |
| <b>Device Name</b>            | Display neighbor device name.            |
| <b>Port ID</b>                | Display neighbor port ID that connected. |
| <b>Message Interval</b>       | Display neighbor message interval.       |
| <b>Timeout Interval</b>       | Display neighbor timeout interval        |

Table 13-15: Neighbor fields.

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

### 14.1 User Account

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

The default username/password is admin/admin. 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.

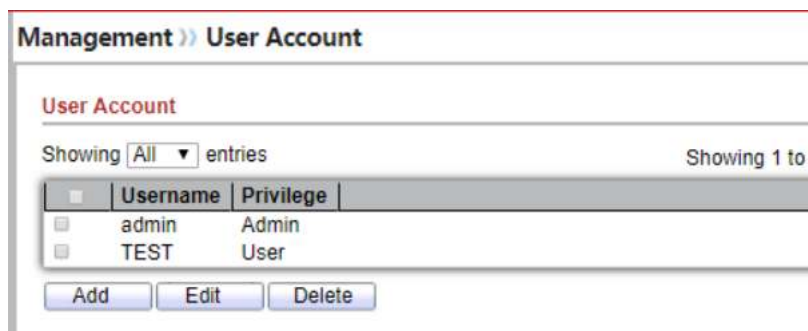


Figure 14-1 User Account Table

| Field            | Description                                                                                                                                                                                                                                                                        |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Username</b>  | User name of the account                                                                                                                                                                                                                                                           |
| <b>Privilege</b> | <p>Select privilege level for new account.</p> <ul style="list-style-type: none"> <li><b>Admin:</b> Allow to change switch settings. Privilege value equals to 15.</li> <li><b>User:</b> See switch settings only. Not allow to change it. Privilege level equals to 1.</li> </ul> |

Table 14-1 User Account Table Fields

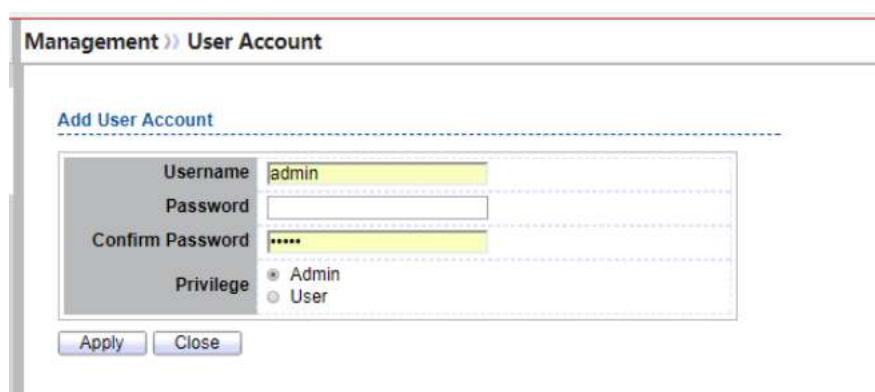


Figure 14-2 Add/Edit User Account Dialog

| Field                   | Description                                                                                                                                                                                                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Username</b>         | User name of the account                                                                                                                                                                                                                                                        |
| <b>Password</b>         | Set password of the account                                                                                                                                                                                                                                                     |
| <b>Confirm Password</b> | Set the same password of the account as in "Password" field                                                                                                                                                                                                                     |
| <b>Privilege</b>        | Select privilege level for new account. <ul style="list-style-type: none"> <li>• <b>Admin:</b> Allow to change switch settings. Privilege value equals to 15.</li> <li>• <b>User:</b> See switch settings only. Not allow to change it. Privilege level equals to 1.</li> </ul> |

Table 14-2 Add/Edit User Account Fields

## 14.2 Firmware

### 14.2.1 Upgrade / Backup

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

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

Figure 14-3 Upgrade Firmware through HTTP

| Field           | Description                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | Firmware operations                                                                                                                                                                  |
| <b>Action</b>   | <ul style="list-style-type: none"> <li>• <b>Upgrade:</b> Upgrade firmware from remote host to DUT</li> <li>• <b>Backup:</b> Backup firmware image from DUT to remote host</li> </ul> |
|                 | Firmware upgrade / backup method                                                                                                                                                     |
| <b>Method</b>   | <ul style="list-style-type: none"> <li>• <b>TFTP:</b> Using TFTP to upgrade/backup firmware</li> <li>• <b>HTTP:</b> Using WEB browser to upgrade/backup firmware</li> </ul>          |
| <b>Filename</b> | Use browser to upgrade firmware, you should select firmware image file on your host PC.                                                                                              |

Table 14-3 Upgrade Firmware through HTTP Fields

Management >> Firmware >> Upgrade / Backup

|                |                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------|
| Action         | <input checked="" type="radio"/> Upgrade<br><input type="radio"/> Backup                              |
| Method         | <input checked="" type="radio"/> TFTP<br><input type="radio"/> HTTP                                   |
| Address Type   | <input checked="" type="radio"/> Hostname<br><input type="radio"/> IPv4<br><input type="radio"/> IPv6 |
| Server Address | <input type="text"/>                                                                                  |
| Filename       | <input type="text"/>                                                                                  |

Apply

Figure 14-4 Upgrade Firmware through TFTP

| Field                 | Description                                                                                                                                                                                                  |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | Firmware operations                                                                                                                                                                                          |
| <b>Action</b>         | <ul style="list-style-type: none"> <li>• <b>Upgrade:</b> Upgrade firmware from remote host to DUT</li> <li>• <b>Backup:</b> Backup firmware image from DUT to remote host</li> </ul>                         |
|                       | Firmware upgrade / backup method                                                                                                                                                                             |
| <b>Method</b>         | <ul style="list-style-type: none"> <li>• <b>TFTP:</b> Using TFTP to upgrade/backup firmware</li> <li>• <b>HTTP:</b> Using WEB browser to upgrade/backup firmwar</li> </ul>                                   |
|                       | Specify TFTP server address type                                                                                                                                                                             |
| <b>Address Type</b>   | <ul style="list-style-type: none"> <li>• <b>Hostname:</b> Use domain name as server address</li> <li>• <b>IPv4:</b> Use IPv4 as server address</li> <li>• <b>IPv6:</b> Use IPv6 as server address</li> </ul> |
| <b>Server Address</b> | Specify TFTP server address.                                                                                                                                                                                 |
| <b>Filename</b>       | Firmware image file name on remote TFTP server                                                                                                                                                               |

Table 14-4 Upgrade Firmware through TFTP Fields

The screenshot shows the 'Management >> Firmware >> Upgrade / Backup' page. The 'Action' section has 'Backup' selected. The 'Method' section has 'HTTP' selected. The 'Firmware' section has 'Image0' and 'Image1' selected. An 'Apply' button is at the bottom.

Figure 14-5 Backup Firmware through HTTP

| Field    | Description                                                                                                                                                                          |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action   | Firmware operations                                                                                                                                                                  |
|          | <ul style="list-style-type: none"> <li>• <b>Upgrade:</b> Upgrade firmware from remote host to DUT</li> <li>• <b>Backup:</b> Backup firmware image from DUT to remote host</li> </ul> |
| Method   | Firmware upgrade / backup method                                                                                                                                                     |
|          | <ul style="list-style-type: none"> <li>• <b>TFTP:</b> Using TFTP to upgrade/backup firmware</li> <li>• <b>HTTP:</b> Using WEB browser to upgrade/backup firmware</li> </ul>          |
| Firmware | Firmware partition need to backup                                                                                                                                                    |
|          | <ul style="list-style-type: none"> <li>• <b>Image0:</b> Firmware image in flash partition 0</li> <li>• <b>Image1:</b> Firmware image in flash partition 1</li> </ul>                 |

Table 14-5 Backup Firmware through HTTP Fields

The screenshot shows the 'Management >> Firmware >> Upgrade / Backup' page. The 'Action' section has 'Backup' selected. The 'Method' section has 'TFTP' selected. The 'Firmware' section has 'Image0' and 'Image1' selected. The 'Address Type' section has 'Hostname', 'IPv4', and 'IPv6' selected. The 'Server Address' and 'Filename' fields are empty text boxes. An 'Apply' button is at the bottom.

Figure 14-6 Backup Firmware through TFTP

| Field                 | Description                                                                                                                                                                                                                                   |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Action</b>         | Firmware operations <ul style="list-style-type: none"> <li>• <b>Upgrade:</b> Upgrade firmware from remote host to DUT</li> <li>• <b>Backup:</b> Backup firmware image from DUT to remote host</li> </ul>                                      |
|                       |                                                                                                                                                                                                                                               |
| <b>Method</b>         | Firmware upgrade / backup method <ul style="list-style-type: none"> <li>• <b>TFTP:</b> Using TFTP to upgrade/backup firmware</li> <li>• <b>HTTP:</b> Using WEB browser to upgrade/backup firmware</li> </ul>                                  |
|                       |                                                                                                                                                                                                                                               |
| <b>Firmware</b>       | Firmware partition need to backup <ul style="list-style-type: none"> <li>• <b>Image0:</b> Firmware image in flash partition</li> <li>• <b>Image1:</b> Firmware image in flash partition 1</li> </ul>                                          |
|                       |                                                                                                                                                                                                                                               |
| <b>Address Type</b>   | Specify TFTP server address type <ul style="list-style-type: none"> <li>• <b>Hostname:</b> Use domain name as server address</li> <li>• <b>IPv4:</b> Use IPv4 as server address</li> <li>• <b>IPv6:</b> Use IPv6 as server address</li> </ul> |
|                       |                                                                                                                                                                                                                                               |
| <b>Server Address</b> | Specify TFTP server address.                                                                                                                                                                                                                  |
| <b>Filename</b>       | File name saved on remote TFTP server                                                                                                                                                                                                         |

Table 14-6 Backup Firmware through TFTP Fields

### 14.2.2 Active Image

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

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

The screenshot shows a web interface for managing firmware images. At the top, there's a section titled 'Active Image' with two radio buttons: 'Image0' (selected) and 'Image1'. Below this, a note states: 'Note: the image was selected for the next boot'. The main content area is divided into two sections: 'Active Image' and 'Backup Image'. Each section contains a table of details for the selected image.

| Active Image |                     |
|--------------|---------------------|
| Firmware     | Image0              |
| Version      | 3.1.0.b10           |
| Name         |                     |
| Size         | 5882191 Bytes       |
| Created      | 2014-09-22 16:53:53 |

| Backup Image |                     |
|--------------|---------------------|
| Firmware     | Image1              |
| Version      | 3.1.0.50153         |
| Name         | vmlinux.bix         |
| Size         | 6284117 Bytes       |
| Created      | 2014-10-09 18:32:26 |

At the bottom of the page, there is an 'Apply' button.

Figure 14-7 Active Image Page

| Field               | Description                                  |
|---------------------|----------------------------------------------|
| <b>Active Image</b> | Select firmware image to use on next booting |
| <b>Firmware</b>     | Firmware flash partition name                |
| <b>Version</b>      | Firmware version                             |
| <b>Name</b>         | Firmware name                                |
| <b>Size</b>         | Firmware image size                          |
| <b>Created</b>      | Firmware image created date                  |

Table 14-7 Active Image Fields

## 14.3 Configuration

### 14.3.1 Upgrade / Backup

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

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



Figure 14-8 Upgrade Configuration through HTTP

| Field         | Description                                                                                                                                                                          |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Action</b> | Configuration operations                                                                                                                                                             |
|               | <ul style="list-style-type: none"> <li>• <b>Upgrade:</b> Upgrade firmware from remote host to DUT</li> <li>• <b>Backup:</b> Backup firmware image from DUT to remote host</li> </ul> |
| <b>Method</b> | Configuration upgrade / backup method                                                                                                                                                |
|               | <ul style="list-style-type: none"> <li>• <b>TFTP:</b> Using TFTP to upgrade/backup firmware</li> <li>• <b>HTTP:</b> Using WEB browser to upgrade/backup firmware</li> </ul>          |

|                      |                                                                                                                               |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Configuration</b> | Configuration types                                                                                                           |
|                      | <ul style="list-style-type: none"> <li>• <b>Running Configuration:</b> Merge to current running configuration file</li> </ul> |
|                      | <ul style="list-style-type: none"> <li>• <b>Startup Configuration:</b> Replace startup configuration file</li> </ul>          |
|                      | <ul style="list-style-type: none"> <li>• <b>Backup Configuration:</b> Replace backup configuration file</li> </ul>            |
| <b>Filename</b>      | Use browser to upgrade configuration, you should select configuration file on your host PC                                    |

Table 14-8 Upgrade Configuration through HTTP Fields

Figure 14-9 Upgrade Configuration through TFTP

| Field                 | Description                                                                                                                                                                                                                                                                         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Action</b>         | Configuration operations                                                                                                                                                                                                                                                            |
|                       | <ul style="list-style-type: none"> <li>• <b>Upgrade:</b> Upgrade firmware from remote host to DUT</li> <li>• <b>Backup:</b> Backup firmware image from DUT to remote host</li> </ul>                                                                                                |
| <b>Method</b>         | Configuration upgrade / backup method                                                                                                                                                                                                                                               |
|                       | <ul style="list-style-type: none"> <li>• <b>TFTP:</b> Using TFTP to upgrade/backup firmware</li> <li>• <b>HTTP:</b> Using WEB browser to upgrade/backup firmware</li> </ul>                                                                                                         |
| <b>Configuration</b>  | Configuration types                                                                                                                                                                                                                                                                 |
|                       | <ul style="list-style-type: none"> <li>• <b>Running Configuration:</b> Merge to current running configuration file</li> <li>• <b>Startup Configuration:</b> Replace startup configuration file</li> <li>• <b>Backup Configuration:</b> Replace backup configuration file</li> </ul> |
| <b>Address Type</b>   | Specify TFTP server address type                                                                                                                                                                                                                                                    |
|                       | <ul style="list-style-type: none"> <li>• <b>Hostname:</b> Use domain name as server address</li> <li>• <b>IPv4:</b> Use IPv4 as server address</li> <li>• <b>IPv6:</b> Use IPv6 as server address</li> </ul>                                                                        |
| <b>Server Address</b> | Specify TFTP server address                                                                                                                                                                                                                                                         |
| <b>Filename</b>       | Configuration file name on remote TFTP server                                                                                                                                                                                                                                       |

Table 14-9 Upgrade Firmware through TFTP Fields

Management >> Configuration >> Upgrade / Backup

**Action**

- ☐ Upgrade
- ☒ Backup

**Method**

- ☐ TFTP
- ☒ HTTP

**Configuration**

- ☒ Running Configuration
- ☐ Startup Configuration
- ☐ Backup Configuration
- ☐ RAM Log
- ☐ Flash Log

Apply

Figure 14-10 Backup Configuration through HTTP

| Field                | Description                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Action</b>        | Configuration operations <ul style="list-style-type: none"> <li>• <b>Upgrade:</b> Upgrade configuration from remote host to DUT</li> <li>• <b>Backup:</b> Backup configuration from DUT to remote host</li> </ul>                                                                                                                                                                                               |
| <b>Method</b>        | Configuration upgrade / backup method <ul style="list-style-type: none"> <li>• <b>TFTP:</b> Using TFTP to upgrade/backup configuration</li> <li>• <b>HTTP:</b> Using WEB browser to upgrade/backup configuration</li> </ul>                                                                                                                                                                                     |
| <b>Configuration</b> | Configuration types <ul style="list-style-type: none"> <li>• <b>Running Configuration:</b> Backup running configuration file</li> <li>• <b>Startup Configuration:</b> Backup start configuration file</li> <li>• <b>Backup Configuration:</b> Backup backup configuration file</li> <li>• <b>RAM Log:</b> Backup log file stored in RAM</li> <li>• <b>Flash Log:</b> Backup log files store in Flash</li> </ul> |

Table 14-10 Backup Configuration through HTTP Fields

Management >> Configuration >> Upgrade / Backup

**Action**

- ☐ Upgrade
- ☒ Backup

**Method**

- ☒ TFTP
- ☐ HTTP

**Configuration**

- ☒ Running Configuration
- ☐ Startup Configuration
- ☐ Backup Configuration
- ☐ RAM Log
- ☐ Flash Log

**Address Type**

- ☒ Hostname
- ☐ IPv4
- ☐ IPv6

**Server Address**

**Filename**

Apply

Figure 14-11 Backup Configuration through TFTP

| Field                 | Description                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Action</b>         | Firmware operations <ul style="list-style-type: none"> <li>• <b>Upgrade:</b> Upgrade firmware from remote host to DUT</li> <li>• <b>Backup:</b> Backup firmware image from DUT to remote host</li> </ul>                                                                                                                                                                                                        |
| <b>Method</b>         | Firmware upgrade / backup method <ul style="list-style-type: none"> <li>• <b>TFTP:</b> Using TFTP to upgrade/backup firmware</li> <li>• <b>HTTP:</b> Using WEB browser to upgrade/backup firmware</li> </ul>                                                                                                                                                                                                    |
| <b>Configuration</b>  | Configuration types <ul style="list-style-type: none"> <li>• <b>Running Configuration:</b> Backup running configuration file</li> <li>• <b>Startup Configuration:</b> Backup start configuration file</li> <li>• <b>Backup Configuration:</b> Backup backup configuration file</li> <li>• <b>RAM Log:</b> Backup log file stored in RAM</li> <li>• <b>Flash Log:</b> Backup log files store in Flash</li> </ul> |
| <b>Address Type</b>   | Specify TFTP server address type <ul style="list-style-type: none"> <li>• <b>Hostname:</b> Use domain name as server address</li> <li>• <b>IPv4:</b> Use IPv4 as server address</li> <li>• <b>IPv6:</b> Use IPv6 as server address</li> </ul>                                                                                                                                                                   |
| <b>Server Address</b> | Specify TFTP server address.                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Filename</b>       | File name saved on remote TFTP server                                                                                                                                                                                                                                                                                                                                                                           |

Table 14-11 Backup Firmware through TFTP Fields

### 14.3.2 Save Configuration

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

This page allow user to manage configuration file saved on DUT and click "Restore Factory Default" button to restore factory defaults.

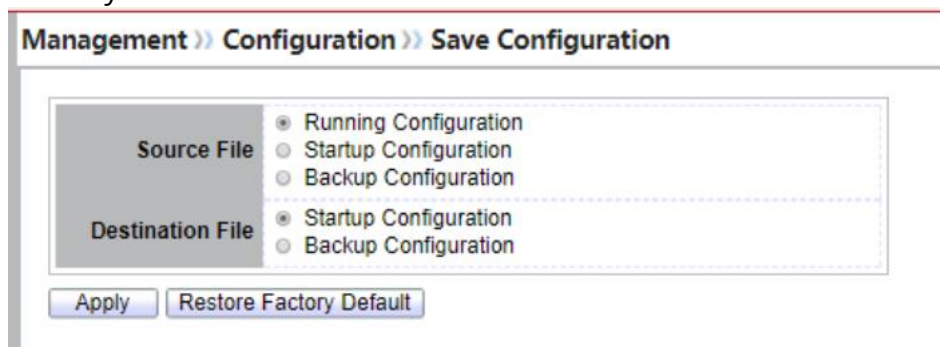


Figure 14-12 Save Configuration Page

| Field              | Description                                                                                                                                                                                                                                                                                                                      |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Source File</b> | Source file types <ul style="list-style-type: none"> <li>• <b>Running Configuration:</b> Copy running configuration file to destination</li> <li>• <b>Startup Configuration:</b> Copy startup configuration file to destination</li> <li>• <b>Backup Configuration:</b> Copy backup configuration file to destination</li> </ul> |

Destination file

- Destination File**
- **Startup Configuration:** Save file as startup configuration
  - **Backup Configuration:** Save file as backup configuration

Table 14-11 Backup Firmware through TFTP Fields

## 14.4 SNMP

### 14.4.1 View

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



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

Table 14-13 SNMP View Fields

### 14.4.2 Group

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

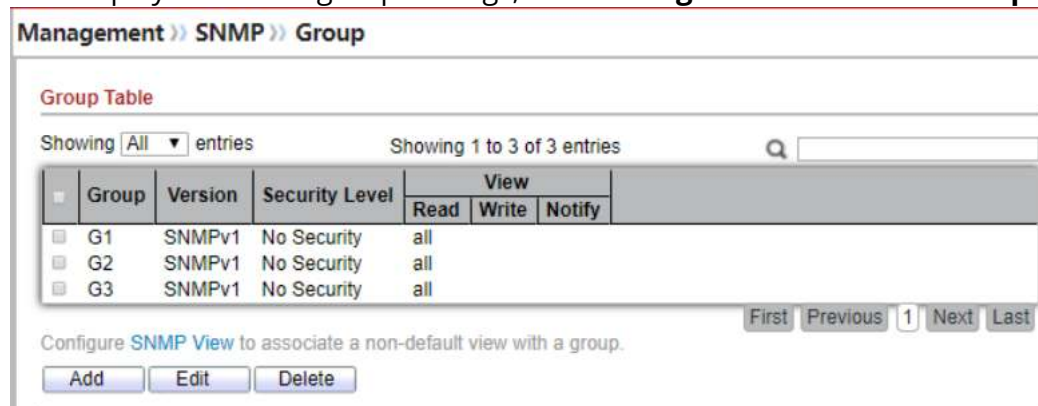


Figure 14-14 SNMP Group Table Page

| Field        | Description                                                       |
|--------------|-------------------------------------------------------------------|
| <b>Group</b> | Specify SNMP group name, and the maximum length is 30 characters. |

|                       |                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Version</b>        | Specify SNMP version <ul style="list-style-type: none"> <li>• <b>SNMPv1:</b> SNMP Version 1.</li> <li>• <b>SNMPv2:</b> Community-based SNMP Version 2c.</li> <li>• <b>SNMPv3:</b> User security model SNMP version 3.</li> </ul>                                                                                                                                                    |
| <b>Security Level</b> | Specify SNMP security level <ul style="list-style-type: none"> <li>• <b>No Security :</b> Specify that no packet authentication is performed.</li> <li>• <b>Authentication:</b> Specify that no packet authentication without entryption is performed.</li> <li>• <b>Authentication and Privacy:</b> Specify that no packet authentication with entryption is performed.</li> </ul> |
| <b>View</b>           |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Read</b>           | Group read view name                                                                                                                                                                                                                                                                                                                                                                |
| <b>Write</b>          | Group write view name.                                                                                                                                                                                                                                                                                                                                                              |
| <b>Notify</b>         | The view name that sends only traps with contents that is included in SNMP view selected for notification.                                                                                                                                                                                                                                                                          |

Table 14-14 SNMP Group Table Fields

Figure 14-15 SNMP Group Add Page

| Field          | Description                                                                                                                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Group</b>   | Specify SNMP group name, and the maximum length is 30 characters.                                                                                                                                                                |
| <b>Version</b> | Specify SNMP version <ul style="list-style-type: none"> <li>• <b>SNMPv1:</b> SNMP Version 1.</li> <li>• <b>SNMPv2:</b> Community-based SNMP Version 2c.</li> <li>• <b>SNMPv3:</b> User security model SNMP version 3.</li> </ul> |

|                       |                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Security Level</b> | Specify SNMP security level                                                                                                                                                                                                                                                                                                                             |
|                       | <ul style="list-style-type: none"> <li>• <b>No Security</b> : Specify that no packet authentication is performed.</li> <li>• <b>Authentication</b>: Specify that no packet authentication without encryption is performed.</li> <li>• <b>Authentication and Privacy</b>: Specify that no packet authentication with encryption is performed.</li> </ul> |
|                       |                                                                                                                                                                                                                                                                                                                                                         |
|                       |                                                                                                                                                                                                                                                                                                                                                         |
| <b>View</b>           |                                                                                                                                                                                                                                                                                                                                                         |
| <b>Read</b>           | Select read view name if Read is checked                                                                                                                                                                                                                                                                                                                |
| <b>Write</b>          | Select write view name, if Write is checked                                                                                                                                                                                                                                                                                                             |
| <b>Notify</b>         | Select notify view name, if Notify is checked                                                                                                                                                                                                                                                                                                           |

Table 14-15 SNMP Group Add Fields

Management >> SNMP >> Group

Edit Group

Group G2

Version

- ☒ SNMPv1
- ☐ SNMPv2
- ☐ SNMPv3

Security Level

- ☒ No Security
- ☐ Authentication
- ☐ Authentication and Privacy

☒ Read

all ▼

☒ Write

all ▼

☒ Notify

all ▼

Apply Close

Figure 14-16 SNMP Group Edit Page

| Field                 | Description                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Group</b>          | Display the edit group name                                                                                                                                                                                                                                                                                                                                                         |
| <b>Version</b>        | Specify SNMP version <ul style="list-style-type: none"> <li>• <b>SNMPv1</b>: SNMP Version 1.</li> <li>• <b>SNMPv2</b>: Community-based SNMP Version 2c.</li> <li>• <b>SNMPv3</b>: User security model SNMP version 3.</li> </ul>                                                                                                                                                    |
| <b>Security Level</b> | Specify SNMP security level <ul style="list-style-type: none"> <li>• <b>No Security</b> : Specify that no packet authentication is performed.</li> <li>• <b>Authentication</b>: Specify that no packet authentication without encryption is performed.</li> <li>• <b>Authentication and Privacy</b>: Specify that no packet authentication with encryption is performed.</li> </ul> |

| View          |                                               |
|---------------|-----------------------------------------------|
| <b>Read</b>   | Select read view name if Read is checked      |
| <b>Write</b>  | Select write view name, if Write is checked   |
| <b>Notify</b> | Select notify view name, if Notify is checked |

Table 14-16 SNMP Group Add Fields

### 14.4.3 Community

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

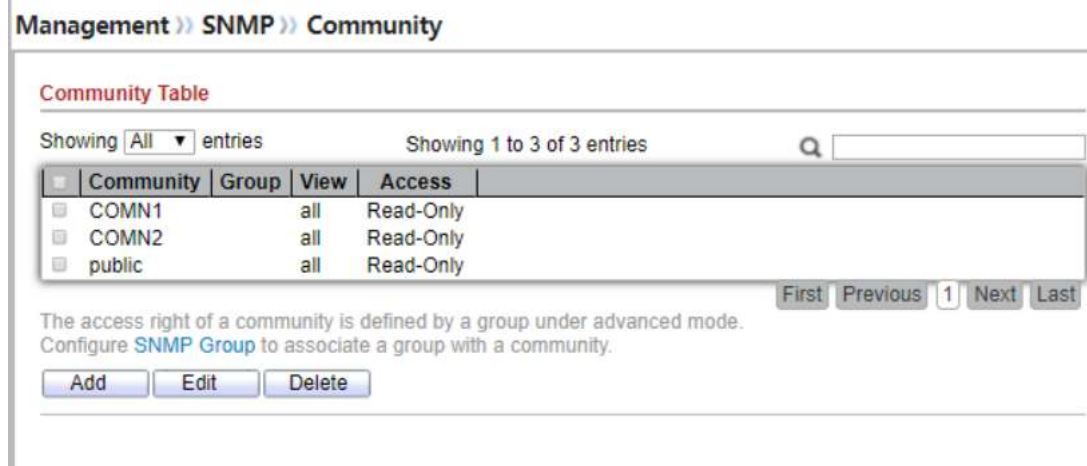
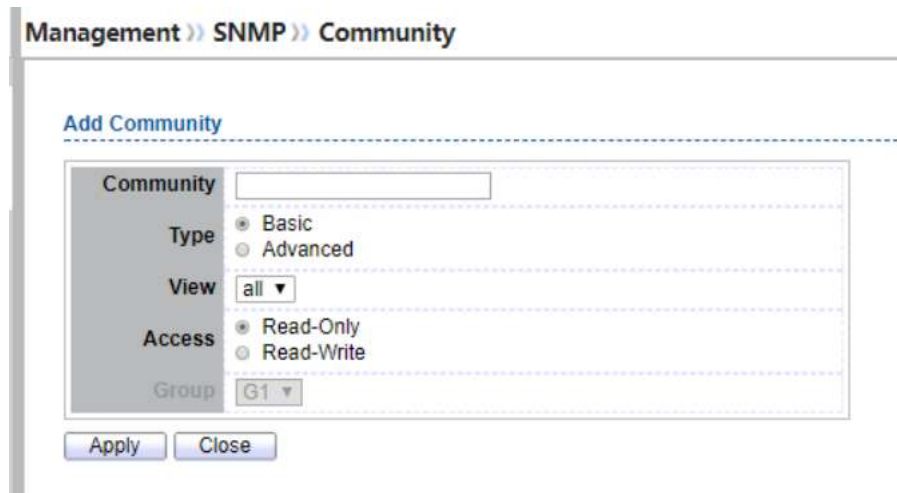


Figure 14-17 SNMP Community Table Page

| Field                 | Description                                                                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community</b>      | The SNMP community name. Its maximum length is 20 characters.                                                                                                                                     |
| <b>Community Mode</b> | SNMP Community mode <ul style="list-style-type: none"> <li>• <b>Basic:</b> snmp community specifies view and access right.</li> <li>• <b>Advanced:</b> snmp community specifies group.</li> </ul> |
| <b>Group Name</b>     | Specify the SNMP group configured by the command <b>snmp group</b> to define the object available to the community.                                                                               |
| <b>View Name</b>      | Specify the SNMP view to define the object available to the community.                                                                                                                            |
| <b>Access Right</b>   | SNMP access mode <ul style="list-style-type: none"> <li>• <b>Read-Only:</b> Read only.</li> <li>• <b>Read-Wrtie:</b> Read and write.</li> </ul>                                                   |

Table 14-17 SNMP Community Table Fields



Management » SNMP » Community

Add Community

Community

Type ☒ Basic ☐ Advanced

View

Access ☒ Read-Only ☐ Read-Write

Group

Apply Close

Figure 14-18 SNMP Community Add Page

| Field            | Description                                                                                                                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community</b> | The SNMP community name. Its maximum length is 20 characters.                                                                                                                                     |
| <b>Type</b>      | SNMP Community mode <ul style="list-style-type: none"> <li>• <b>Basic:</b> SNMP community specifies view and access right.</li> <li>• <b>Advanced:</b> SNMP community specifies group.</li> </ul> |
| <b>View</b>      | Specify the SNMP view to define the object available to the community.                                                                                                                            |
| <b>Access</b>    | SNMP access mode <ul style="list-style-type: none"> <li>• <b>Read-Only:</b> Read only.</li> <li>• <b>Read-Write:</b> Read and write.</li> </ul>                                                   |
| <b>Group</b>     | Specify the SNMP group configured by user to define the object available to the community.                                                                                                        |

Table 14-18 SNMP Community Add Fields



Management » SNMP » Community

Edit Community

Community

Type ☒ Basic ☐ Advanced

View

Access ☒ Read-Only ☐ Read-Write

Group

Apply Close

Figure 14-19 SNMP Community Edit Page

| Field            | Description                                                                                                                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community</b> | The Edit SNMP community name                                                                                                                                                                      |
| <b>Type</b>      | SNMP Community mode <ul style="list-style-type: none"> <li>• <b>Basic:</b> SNMP community specifies view and access right.</li> <li>• <b>Advanced:</b> SNMP community specifies group.</li> </ul> |
| <b>View</b>      | Specify the SNMP view to define the object available to the community.                                                                                                                            |
| <b>Access</b>    | SNMP access mode <ul style="list-style-type: none"> <li>• <b>Read-Only:</b> Read only.</li> <li>• <b>Read-Write:</b> Read and write.</li> </ul>                                                   |
| <b>Group</b>     | Specify the SNMP group configured by user to define the object available to the community.                                                                                                        |

Table 14-19 SNMP Community Edit Fields

#### 14.4.4 User

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

User Table

Showing All entries Showing 1 to 3 of 3 entries

| <input type="checkbox"/> | User  | Group | Security Level             | Authentication Method | Privacy Method |
|--------------------------|-------|-------|----------------------------|-----------------------|----------------|
| <input type="checkbox"/> | user1 | g1    | Authentication and Privacy | SHA                   | DES            |
| <input type="checkbox"/> | user2 | g2    | Authentication             | MD5                   | None           |
| <input type="checkbox"/> | user3 | g3    | No Security                | None                  | None           |

Configure [SNMP Group](#) to associate an SNMPv3 group with an SNMPv3 user.

[Add](#) [Edit](#) [Delete](#)

First Previous 1 Next Last

Figure 14-20 SNMP User Table Page

| Field                        | Description                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>User</b>                  | Specify the SNMP user name on the host that connects to the SNMP agent. The max character is 30 characters. For the SNMP v1 or v2c, the user name must match the community name                                                                                                                                                                                             |
| <b>Group</b>                 | Specify the SNMP group to which the SNMP user belongs.                                                                                                                                                                                                                                                                                                                      |
| <b>Security Level</b>        | SNMP privilege mode <ul style="list-style-type: none"> <li>• <b>No Security :</b> Specify that no packet authentication is performed.</li> <li>• <b>Authentication:</b> Specify that no packet authentication without encryption is performed.</li> <li>• <b>Authentication and Privacy:</b> Specify that no packet authentication with encryption is performed.</li> </ul> |
| <b>Authentication Method</b> | Authentication Protocol which is available when Privilege Mode is <b>Authentication</b> or <b>Authentication and Privacy</b> . <ul style="list-style-type: none"> <li>• <b>None:</b> No authentication required.</li> <li>• <b>MD5:</b> Specify the HMAC-MD5-96 authentication protocol.</li> <li>• <b>SHA:</b> Specify the HMAC-SHA-96 authentication protocol.</li> </ul> |

## Encryption Protocol

## Privacy Method

- **None:** No privacy required.
- **DES:** DES algorithm

Table 14-20 SNMP User Table Fields

**Add User**

**User** [Text Input]

**Group** [g31]

**Security Level**

- ☒ No Security
- ☐ Authentication
- ☐ Authentication and Privacy

**Authentication**

**Method**

- ☒ None
- ☐ MD5
- ☐ SHA

**Password** [Text Input]

**Privacy**

**Method**

- ☒ None
- ☐ DES

**Password** [Text Input]

[Apply] [Close]

Figure 14-21 SNMP User Add Page

| Field                 | Description                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>User</b>           | Specify the SNMP user name on the host that connects to the SNMP agent. The max character is 30 characters.                                                                                                                                                                                                                                                                 |
| <b>Group</b>          | Specify the SNMP group to which the SNMP user belongs.                                                                                                                                                                                                                                                                                                                      |
| <b>Security Level</b> | SNMP privilege mode <ul style="list-style-type: none"> <li>• <b>No Security</b> : Specify that no packet authentication is performed.</li> <li>• <b>Authentication</b>: Specify that no packet authentication without encryption is performed.</li> <li>• <b>Authentication and Privacy</b>: Specify that no packet authentication with encryption is performed.</li> </ul> |
| <b>Authentication</b> |                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Method</b>         | Authentication Protocol which is available when Privilege Mode is <b>Authentication</b> or <b>Authentication and Privacy</b> . <ul style="list-style-type: none"> <li>• <b>None</b>: No authentication required.</li> <li>• <b>MD5</b>: Specify the HMAC-MD5-96 authentication protocol.</li> </ul>                                                                         |

|                 |                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------|
|                 | <ul style="list-style-type: none"> <li>• <b>SHA:</b> Specify the HMAC-SHA-96 authentication protocol</li> </ul>            |
| <b>Password</b> | The authentication password, The number of character range is 8 to 32 characters.                                          |
| <b>Privacy</b>  |                                                                                                                            |
|                 | Encryption Protocol                                                                                                        |
| <b>Method</b>   | <ul style="list-style-type: none"> <li>• <b>None:</b> No privacy required.</li> <li>• <b>DES:</b> DES algorithm</li> </ul> |
| <b>Password</b> | The privacy password, The number of character range is 8 to 64 characters.                                                 |

Table 14-21 SNMP User Add Fields

| Field                 | Description                                                                                                                                                                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>User</b>           | Edit User name                                                                                                                                                                                                                                                                                             |
| <b>Group</b>          | Specify the SNMP group to which the SNMP user belongs.                                                                                                                                                                                                                                                     |
| <b>Security Level</b> | SNMP privilege mode<br><b>No Security :</b> Specify that no packet authentication is performed.<br><b>Authentication:</b> Specify that no packet authentication without encryption is performed.<br><b>Authentication and Privacy:</b> Specify that no packet authentication with encryption is performed. |
| <b>Authentication</b> |                                                                                                                                                                                                                                                                                                            |
|                       | Authentication Protocol which is available when Privilege Mode is Authentication or Authentication and Privacy.                                                                                                                                                                                            |
| <b>Method</b>         | <ul style="list-style-type: none"> <li>• <b>None:</b> No authentication required.</li> <li>• <b>MD5:</b> Specify the HMAC-MD5-96 authentication protocol.</li> <li>• <b>SHA:</b> Specify the HMAC-SHA-96 authentication protocol.</li> </ul>                                                               |
| <b>Password</b>       | The authentication password, The number of character range is 8 to 32 characters.                                                                                                                                                                                                                          |
| <b>Privacy</b>        |                                                                                                                                                                                                                                                                                                            |

|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| <b>Method</b>   | Encryption Protocol                                                        |
|                 | <b>None:</b> No privacy required.<br><b>DES:</b> DES algorithm             |
| <b>Password</b> | The privacy password, The number of character range is 8 to 64 characters. |

Figure 14-22 SNMP User Edit Page

| Field                 | Description                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| User                  | Edit User name                                                                                                                                                                                                                                                                                                                                                              |
| Group                 | Specify the SNMP group to which the SNMP user belongs.                                                                                                                                                                                                                                                                                                                      |
| Security Level        | SNMP privilege mode <ul style="list-style-type: none"> <li>• <b>No Security</b> : Specify that no packet authentication is performed.</li> <li>• <b>Authentication</b>: Specify that no packet authentication without encryption is performed.</li> <li>• <b>Authentication and Privacy</b>: Specify that no packet authentication with encryption is performed.</li> </ul> |
| <b>Authentication</b> |                                                                                                                                                                                                                                                                                                                                                                             |
| Method                | Authentication Protocol which is available when Privilege Mode is <b>Authentication</b> or <b>Authentication and Privacy</b> . <ul style="list-style-type: none"> <li>• <b>None</b>: No authentication required.</li> <li>• <b>MD5</b>: Specify the HMAC-MD5-96 authentication protocol.</li> <li>• <b>SHA</b>: Specify the HMAC-SHA-96 authentication protocol.</li> </ul> |

|                 |                                                                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Password</b> | The authentication password, The number of character range is 8 to 32 characters.                                                              |
| <b>Privacy</b>  |                                                                                                                                                |
| <b>Method</b>   | Encryption Protocol <ul style="list-style-type: none"> <li>• <b>None:</b> No privacy required.</li> <li>• <b>DES:</b> DES algorithm</li> </ul> |
| <b>Password</b> | The privacy password, The number of character range is 8 to 64 characters.                                                                     |

Table 14-22 SNMP User Edit Fields

### 14.4.5 Engine ID

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

#### Management >> SNMP >> Engine ID

**Local Engine ID**

Engine ID ☐ User Defined

80006a920300e04c000000 (10 - 64 Hexadecimal Characters)

Apply

**Remote Engine ID Table**

Showing All entries Showing 1 to 2 of 2 entries

| Server Address | Engine ID      |
|----------------|----------------|
| 192.168.1.100  | 112223FDED FE  |
| 192.168.1.99   | 00004DADDDDDDD |

Add Edit Delete First Previous 1 Next Last

Figure 14-23 SNMP Engine ID Page

| Field                  | Description |
|------------------------|-------------|
| <b>Local Engine ID</b> |             |

|                               |                                                                                                                                                                                                                                                                                    |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Engine ID</b>              | <p>If checked "User Defined", the local engine ID is configure by user, else use the default Engine ID which is made up of MAC and Enterprise ID.</p> <p>The user defined engine ID is range 10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2.</p> |
| <b>Remote Engine ID Table</b> |                                                                                                                                                                                                                                                                                    |
| <b>Server Address</b>         | Remote host                                                                                                                                                                                                                                                                        |
| <b>Engine ID</b>              | Specify Remote SNMP engine ID. The engine ID is range 10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2.                                                                                                                                            |

Table 14-23 SNMP Engine ID Fields

Figure 14-24 SNMP Remote Engine ID Add Page

| Field                 | Description                                                                                                                             |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Address Type</b>   | Remote host address type for Hostname/IPv4/IPv6                                                                                         |
| <b>Server Address</b> | Remote host                                                                                                                             |
| <b>Engine ID</b>      | Specify Remote SNMP engine ID. The engine ID is range 10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2. |

Figure 14-25 SNMP Remote Engine ID Edit Page

| Field                 | Description                                                                                                                             |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Server Address</b> | Edit Remote host address                                                                                                                |
| <b>Engine ID</b>      | Specify Remote SNMP engine ID. The engine ID is range 10 to 64 hexadecimal characters, and the hexadecimal number must be divided by 2. |

Table 14-25 SNMP Remote Engine ID Edit Fields

#### 14.4.6 Trap Event

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

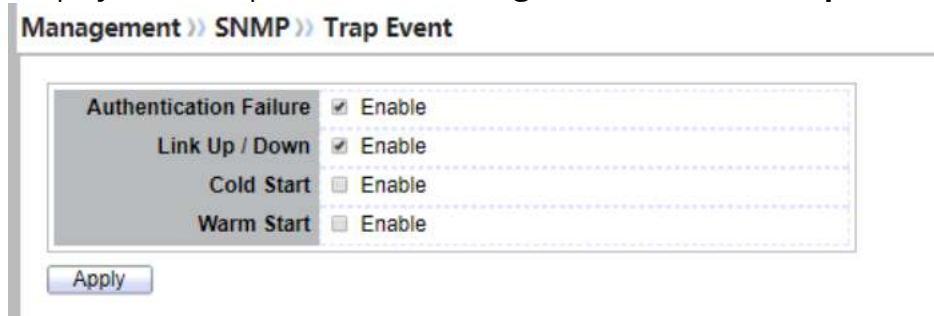


Figure 14-26 SNMP Trap Event Page

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

Table 14-26 SNMP Trap Event Fields

#### 14.4.7 Notification

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

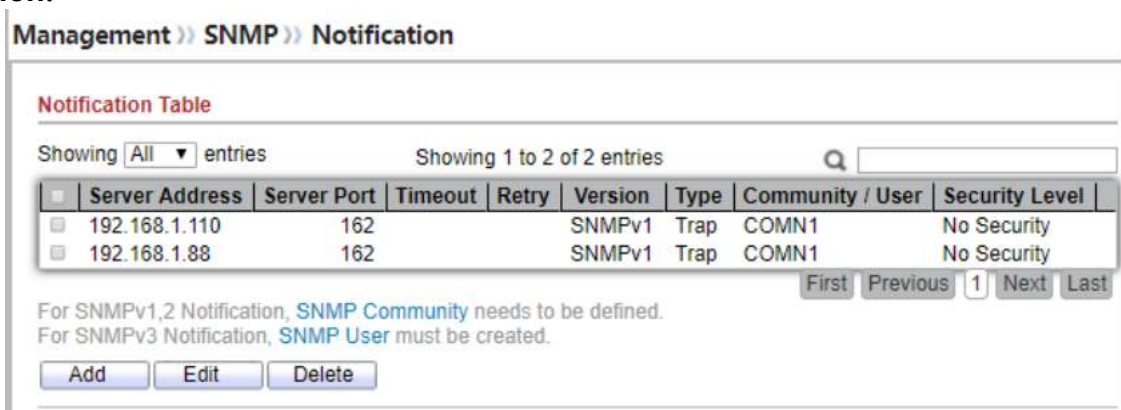


Figure 14-27 SNMP Notification Table Page

| Field          | Description                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Server Address | IP address or the hostname of the SNMP trap recipients.                                                                                                                                                                                                                                                                                                                                |
| Server Port    | Recipients server UDP port number                                                                                                                                                                                                                                                                                                                                                      |
| Timeout        | Specify the SNMP informs timeout                                                                                                                                                                                                                                                                                                                                                       |
| Retry          | Specify the retry counter of the SNMP informs.                                                                                                                                                                                                                                                                                                                                         |
| Version        | Specify SNMP notification version <ul style="list-style-type: none"> <li>• <b>SNMPv1:</b> SNMP Version 1 notification.</li> <li>• <b>SNMPv2:</b> SNMP Version 2 notification.</li> <li>• <b>SNMPv3:</b> SNMP Version 3 notification.</li> </ul>                                                                                                                                        |
| Type           | Notification Type <ul style="list-style-type: none"> <li>• <b>Trap:</b> Send SNMP traps to the host.</li> <li>• <b>Inform:</b> Send SNMP informs to the host.</li> </ul>                                                                                                                                                                                                               |
| Community/User | SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name                                                                                                                                                                                                                                                                          |
| UDP Port       | Specify the UDP port number.                                                                                                                                                                                                                                                                                                                                                           |
| Timeout        | Specify the SNMP informs timeout                                                                                                                                                                                                                                                                                                                                                       |
| Security Level | SNMP trap packet security level <ul style="list-style-type: none"> <li>• <b>No Security:</b> Specify that no packet authentication is performed.</li> <li>• <b>Authentication:</b> Specify that no packet authentication without encryption is performed.</li> <li>• <b>Authentication and Privacy:</b> Specify that no packet authentication with encryption is performed.</li> </ul> |

Table 14-27 SNMP Notification Table Fields

Management >> SNMP >> Notification

Add Notification

|                  |                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Address Type     | <input checked="" type="radio"/> Hostname<br><input type="radio"/> IPv4<br><input type="radio"/> IPv6                                    |
| Server Address   | <input type="text"/>                                                                                                                     |
| Version          | <input checked="" type="radio"/> SNMPv1<br><input type="radio"/> SNMPv2<br><input type="radio"/> SNMPv3                                  |
| Type             | <input checked="" type="radio"/> Trap<br><input type="radio"/> Inform                                                                    |
| Community / User | COMN1 ▼                                                                                                                                  |
| Security Level   | <input checked="" type="radio"/> No Security<br><input type="radio"/> Authentication<br><input type="radio"/> Authentication and Privacy |
| Server Port      | <input checked="" type="checkbox"/> Use Default<br><input type="text" value="162"/> (1 - 65535, default 162)                             |
| Timeout          | <input checked="" type="checkbox"/> Use Default<br><input type="text" value="15"/> Sec (1 - 300, default 15)                             |
| Retry            | <input checked="" type="checkbox"/> Use Default<br><input type="text" value="3"/> (1 - 255, default 3)                                   |

Apply Close

Figure 14-28 SNMP Notification Add Page

| Field                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Address Type</b>   | Notify recipients host address type                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Server Address</b> | IP address or the hostname of the SNMP trap recipients.                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Version</b>        | Specify SNMP notification version <ul style="list-style-type: none"> <li>• <b>SNMPv1:</b> SNMP Version 1 notification.</li> <li>• <b>SNMPv2:</b> SNMP Version 2 notification.</li> <li>• <b>SNMPv3:</b> SNMP Version 3 notification.</li> </ul>                                                                                                                                                                                                                       |
| <b>Type</b>           | Notification Type <ul style="list-style-type: none"> <li>• <b>Trap:</b> Send SNMP traps to the host.</li> <li>• <b>Inform:</b> Send SNMP informs to the host.(version 1 have no inform)</li> </ul>                                                                                                                                                                                                                                                                    |
| <b>Community/User</b> | SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name                                                                                                                                                                                                                                                                                                                                                         |
| <b>Security Level</b> | SNMP notification packet security level, the security level must less than or equal to the community/user name <ul style="list-style-type: none"> <li>• <b>No Security:</b> Specify that no packet authentication is performed.</li> <li>• <b>Authentication:</b> Specify that no packet authentication without encryption is performed.</li> <li>• <b>Authentication and Privacy:</b> Specify that no packet authentication with encryption is performed.</li> </ul> |
| <b>Server Port</b>    | Recipients server UDP port number, if “use default” checked the value is 162, else user configure                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Timeout</b>        | Specify the SNMP informs timeout, if “use default” checked the value is 15, else user configure                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Retry</b>          | Specify the SNMP informs retry count, if “use default” checked the value is 3, else user configure                                                                                                                                                                                                                                                                                                                                                                    |

Table 14-28 SNMP Notification Add Fields

Management >> SNMP >> Notification

Edit Notification

|                  |                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Server Address   | 192.168.1.110                                                                                                                            |
| Version          | <input checked="" type="radio"/> SNMPv1<br><input type="radio"/> SNMPv2<br><input type="radio"/> SNMPv3                                  |
| Type             | <input checked="" type="radio"/> Trap<br><input type="radio"/> Inform                                                                    |
| Community / User | COMN1 ▾                                                                                                                                  |
| Security Level   | <input checked="" type="radio"/> No Security<br><input type="radio"/> Authentication<br><input type="radio"/> Authentication and Privacy |
| Server Port      | <input checked="" type="checkbox"/> Use Default<br><input type="text" value="162"/> (1 - 65535, default 162)                             |
| Timeout          | <input checked="" type="checkbox"/> Use Default<br><input type="text" value="15"/> Sec (1 - 300, default 15)                             |
| Retry            | <input checked="" type="checkbox"/> Use Default<br><input type="text" value="3"/> (1 - 255, default 3)                                   |

Apply Close

Figure 14-29 SNMP Notification Edit Page

| Field                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Server Address</b> | Edit SNMP notify recipients address.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Version</b>        | Specify SNMP notification version <ul style="list-style-type: none"> <li>• <b>SNMPv1:</b> SNMP Version 1 notification.</li> <li>• <b>SNMPv2:</b> SNMP Version 2 notification.</li> <li>• <b>SNMPv3:</b> SNMP Version 3 notification.</li> </ul>                                                                                                                                                                                                                       |
| <b>Type</b>           | Notification Type <ul style="list-style-type: none"> <li>• <b>Trap:</b> Send SNMP traps to the host.</li> <li>• <b>Inform:</b> Send SNMP informs to the host.(version 1 have no inform)</li> </ul>                                                                                                                                                                                                                                                                    |
| <b>Community/User</b> | SNMP community/user name for notification. If version is SNMPv3 the name is user name, else is community name                                                                                                                                                                                                                                                                                                                                                         |
| <b>Security Level</b> | SNMP notification packet security level, the security level must less than or equal to the community/user name <ul style="list-style-type: none"> <li>• <b>No Security:</b> Specify that no packet authentication is performed.</li> <li>• <b>Authentication:</b> Specify that no packet authentication without encryption is performed.</li> <li>• <b>Authentication and Privacy:</b> Specify that no packet authentication with encryption is performed.</li> </ul> |
| <b>Server Port</b>    | Recipients server UDP port number, if “use default” checked the value is 162, else user configure                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Timeout</b>        | Specify the SNMP informs timeout, if “use default” checked the value is 15, else user configure                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Retry</b>          | Specify the SNMP informs retry count, if “use default” checked the value is 3, else user configure                                                                                                                                                                                                                                                                                                                                                                    |

Table 14-29 SNMP Notification Edit Fields

## 14.5 RMON

### 14.5.1 Statistics

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

Management >> RMON >> Statistics

Statistics Table

Refresh Rate  sec

|                          | Entry | Port | Bytes Received | Drop Events | Packets Received | Broadcast Packets | Multicast Packets | CRC & Align Errors | Undersize Packets | Oversize Packets |
|--------------------------|-------|------|----------------|-------------|------------------|-------------------|-------------------|--------------------|-------------------|------------------|
| <input type="checkbox"/> | 1     | GE1  | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 2     | GE2  | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 3     | GE3  | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 4     | GE4  | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 5     | GE5  | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 6     | GE6  | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 7     | GE7  | 396656         | 0           | 2488             | 113               | 454               | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 8     | GE8  | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 9     | GE9  | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 10    | GE10 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 11    | LAG1 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 12    | LAG2 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 13    | LAG3 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 14    | LAG4 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 15    | LAG5 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 16    | LAG6 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 17    | LAG7 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |
| <input type="checkbox"/> | 18    | LAG8 | 0              | 0           | 0                | 0                 | 0                 | 0                  | 0                 | 0                |

Figure 14-30: RMON Statistics page.

| Field                         | Description                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Port</b>                   | The port for the RMON statistics.                                                                                                                                                                                                                                                                                                                                             |
| <b>Bytes Received</b>         | Number of octets received, including bad packets and FCS octets, but excluding framing bits.                                                                                                                                                                                                                                                                                  |
| <b>Drop Events</b>            | Number of packets that were dropped.                                                                                                                                                                                                                                                                                                                                          |
| <b>Packets Received</b>       | Number of packets received, including bad packets, Multicast packets, and Broadcast packets.                                                                                                                                                                                                                                                                                  |
| <b>Broadcast Packets</b>      | Number of good Broadcast packets received. This number does not include Multicast packets.                                                                                                                                                                                                                                                                                    |
| <b>Multicast Packets</b>      | Number of good Multicast packets received.                                                                                                                                                                                                                                                                                                                                    |
| <b>CRC &amp; Align Errors</b> | Number of CRC and Align errors that have occurred.                                                                                                                                                                                                                                                                                                                            |
| <b>Undersize Packages</b>     | Number of undersized packets (less than 64 octets) received.                                                                                                                                                                                                                                                                                                                  |
| <b>Oversize Packages</b>      | Number of oversized packets (over 1518 octets) received.                                                                                                                                                                                                                                                                                                                      |
| <b>Fragments</b>              | Number of fragments (packets with less than 64 octets, excluding framing bits, but including FCS octets) received.                                                                                                                                                                                                                                                            |
| <b>Jabbers</b>                | Number of received packets that were longer than 1632 octets. This number excludes frame bits, but includes FCS octets that had either a bad FCS (Frame Check Sequence) with an integral number of octets (FCS Error) or a bad FCS with a non-integral octet (Alignment Error) number. A Jabber packet is defined as an Ethernet frame that satisfies the following criteria: |

- Packet data length is greater than MRU.
- Packet has an invalid CRC.
- RX error event has not been detected.

|                                       |                                                                                                                                           |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Collision</b>                      | Number of collisions received. If Jumbo Frames are enabled, the threshold of Jabber Frames is raised to the maximum size of Jumbo Frames. |
| <b>Frames of 64 Bytes</b>             | Number of frames, containing 64 bytes that were received.                                                                                 |
| <b>Frames of 65 to 127 Bytes</b>      | Number of frames, containing 65 to 127 bytes that were received.                                                                          |
| <b>Frames of 128 to 255 Bytes</b>     | Number of frames, containing 128 to 255 bytes that were received.                                                                         |
| <b>Frames of 256 to 511 Bytes</b>     | Number of frames, containing 256 to 511 bytes that were received.                                                                         |
| <b>Frames of 512 to 1024 Bytes</b>    | Number of frames, containing 512 to 1023 bytes that were received.                                                                        |
| <b>Frames Greater than 1024 Bytes</b> | Number of frames, containing 1024 to 1518 bytes that were received.                                                                       |
| <b>Clear</b>                          | Clear the statistics for the selected ports                                                                                               |
| <b>View</b>                           | View the statistics on the specified port.                                                                                                |

Table 14-30: RMON Statistics fields.

## Management &gt;&gt; RMON &gt;&gt; Statistics

## View Port Statistics

|                                |                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Port                           | GE1                                                                                                                                  |
| Refresh Rate                   | <input checked="" type="radio"/> None<br><input type="radio"/> 5 sec<br><input type="radio"/> 10 sec<br><input type="radio"/> 30 sec |
| Received Bytes (Octets)        | 0                                                                                                                                    |
| Drop Events                    | 0                                                                                                                                    |
| Received Packets               | 0                                                                                                                                    |
| Broadcast Packets Received     | 0                                                                                                                                    |
| Multicast Packets Received     | 0                                                                                                                                    |
| CRC & Align Errors             | 0                                                                                                                                    |
| Undersize Packets              | 0                                                                                                                                    |
| Oversize Packets               | 0                                                                                                                                    |
| Fragments                      | 0                                                                                                                                    |
| Jabbers                        | 0                                                                                                                                    |
| Collisions                     | 0                                                                                                                                    |
| Frames of 64 Bytes             | 0                                                                                                                                    |
| Frames of 65 to 127 Bytes      | 0                                                                                                                                    |
| Frames of 128 to 255 Bytes     | 0                                                                                                                                    |
| Frames of 256 to 511 Bytes     | 0                                                                                                                                    |
| Frames Greater than 1024 Bytes | 0                                                                                                                                    |

Figure 14-31: View RMON Statistics page.

### 14.5.2 History

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

## Management &gt;&gt; RMON &gt;&gt; History

**History Table**

Showing **All** entries      Showing 1 to 2 of 2 entries     

|                          | Entry | Port | Interval | Owner   | Sample  |         |
|--------------------------|-------|------|----------|---------|---------|---------|
|                          |       |      |          |         | Maximum | Current |
| <input type="checkbox"/> | 1     | GE1  | 1800     | RAINBOW | 50      | 50      |
| <input type="checkbox"/> | 2     | GE1  | 1800     | CERR    | 50      | 50      |

The SNMP service is currently disabled.  
For RMON configuration to be effective, the [SNMP service](#) must be enabled.

Figure 14-32: RMON History page.

| Field           | Description                            |
|-----------------|----------------------------------------|
| <b>Port</b>     | The port for the RMON history.         |
| <b>Interval</b> | The number of seconds for each sample. |

|                       |                                            |
|-----------------------|--------------------------------------------|
| <b>Owner</b>          | The owner name of event (0~31 characters). |
| <b>Sample Maximum</b> | The maximum number of buckets.             |
| <b>Sample Current</b> | The current number of buckets.             |

Table 14-31: RMON History fields.

| Field         | Description                      |
|---------------|----------------------------------|
| <b>Add</b>    | Add the new RMON history entries |
| <b>Edit</b>   | Edit the RMON history            |
| <b>Delete</b> | Delete the RMON histories.       |
| <b>View</b>   | View the history log.            |

Table 14-32: RMON History buttons.

Figure 14-33: RMON History Add page.

| Field             | Description                                        |
|-------------------|----------------------------------------------------|
| <b>Port</b>       | Specify port for the RMON history.                 |
| <b>Max Sample</b> | Specify the maximum number of buckets.             |
| <b>Interval</b>   | Specify the number of seconds for each sample.     |
| <b>Owner</b>      | Specify the owner name of event (0~31 characters). |

Table 14-33: RMON History buttons.

Management >> RMON >> History

Edit History

|            |                               |
|------------|-------------------------------|
| Entry      | 2                             |
| Port       | GE1 ▼                         |
| Max Sample | 50 (1 - 50, default 50)       |
| Interval   | 1800 (1 - 3600, default 1800) |
| Owner      | CERR                          |

Apply Close

Figure 14-34: RMON History Edit page

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

Table 14-34: RMON History Edit fields.

Management >> RMON >> History

View History

Entry: 1

Showing All ▼ entries Showing 0 to 0 of 0 entries

| Sample No.       | Drop Events | Bytes Received | Packets Received | Broadcast Packets | Multicast Packets | CRC & Align Errors | Undersize Packets | Oversize Packets |
|------------------|-------------|----------------|------------------|-------------------|-------------------|--------------------|-------------------|------------------|
| 0 results found. |             |                |                  |                   |                   |                    |                   |                  |

Close

Figure 14-35: RMON History Log page.

| Field             | Description                                                                                  |
|-------------------|----------------------------------------------------------------------------------------------|
| Port              | The port for the RMON statistics.                                                            |
| Bytes Received    | Number of octets received, including bad packets and FCS octets, but excluding framing bits. |
| Drop Events       | Number of packets that were dropped.                                                         |
| Packets Received  | Number of packets received, including bad packets, Multicast packets, and Broadcast packets. |
| Broadcast Packets | Number of good Broadcast packets received. This number does not include Multicast packets.   |

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Multicast Packets</b>      | Number of good Multicast packets received.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>CRC &amp; Align Errors</b> | Number of CRC and Align errors that have occurred.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Undersize Packages</b>     | Number of undersized packets (less than 64 octets) received.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Oversize Packages</b>      | Number of oversized packets (over 1518 octets) received.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Fragments</b>              | Number of fragments (packets with less than 64 octets, excluding framing bits, but including FCS octets) received.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Jabbers</b>                | <p>Number of received packets that were longer than 1632 octets. This number excludes frame bits, but includes FCS octets that had either a bad FCS (Frame Check Sequence) with an integral number of octets (FCS Error) or a bad FCS with a non-integral octet (Alignment Error) number. A Jabber packet is defined as an Ethernet frame that satisfies the following criteria:</p> <ul style="list-style-type: none"> <li>• Packet data length is greater than MRU.</li> <li>• Packet has an invalid CRC.</li> <li>• RX error event has not been detected.</li> </ul> |
| <b>Collision</b>              | Number of collisions received. If Jumbo Frames are enabled, the threshold of Jabber Frames is raised to the maximum size of Jumbo Frames.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Utilization</b>            | Percentage of current interface traffic compared to the maximum traffic that the interface can handle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

Table 14-35: RMON History Log fields.

### 14.5.3 Event

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

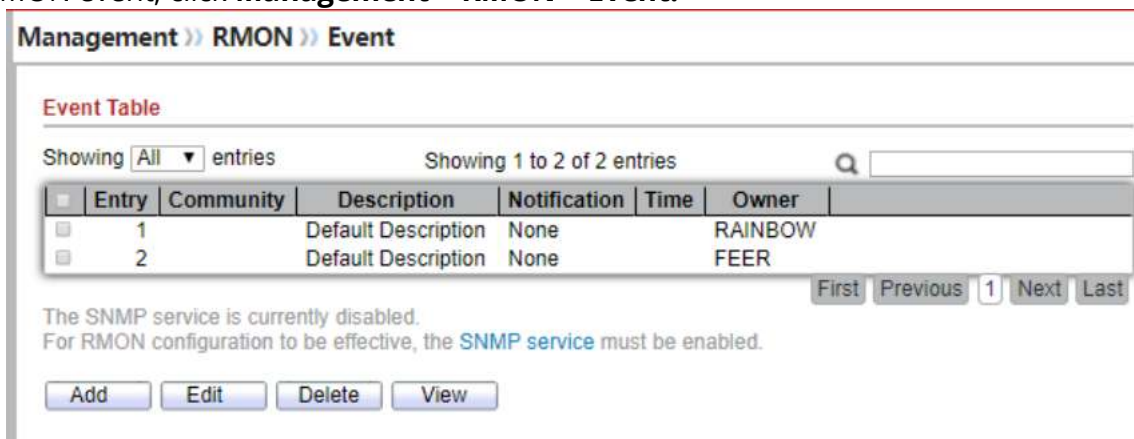


Figure 14-36: RMON Event page.

| Field              | Description                                                         |
|--------------------|---------------------------------------------------------------------|
| <b>Community</b>   | The SNMP community when the notification type is specified as trap. |
| <b>Description</b> | The description for the event.                                      |

|                     |                                                                                                                                                                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Notification</b> | The notification type for the event, and the possible value are:                                                                                                                                                                                                                                 |
|                     | <ul style="list-style-type: none"> <li>• <b>None:</b> Nothing for notification.</li> <li>• <b>Event Log:</b> Logging the event in the RMON Event Log table.</li> <li>• <b>Trap:</b> Send a SNMP trap.</li> <li>• <b>Event Log and Trap:</b> Logging the event and send the SNMP trap.</li> </ul> |
|                     |                                                                                                                                                                                                                                                                                                  |
|                     |                                                                                                                                                                                                                                                                                                  |
|                     |                                                                                                                                                                                                                                                                                                  |
| <b>Time</b>         | The time that the event was triggered.                                                                                                                                                                                                                                                           |
| <b>Owner</b>        | The owner for the event.                                                                                                                                                                                                                                                                         |

Table 14-36: RMON Event fields.

Figure 14-37: RMON Event Add page.

| Field               | Description                                                                                                                                                                                                                                                                                      |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community</b>    | Specify the SNMP community when the notification type is specified as “Trap” or “Event Log and Trap”.                                                                                                                                                                                            |
| <b>Description</b>  | Specify the description for the event.                                                                                                                                                                                                                                                           |
| <b>Notification</b> | Specify the notification type for the event, and the possible value are:                                                                                                                                                                                                                         |
|                     | <ul style="list-style-type: none"> <li>• <b>None:</b> Nothing for notification.</li> <li>• <b>Event Log:</b> Logging the event in the RMON Event Log table.</li> <li>• <b>Trap:</b> Send a SNMP trap.</li> <li>• <b>Event Log and Trap:</b> Logging the event and send the SNMP trap.</li> </ul> |
|                     |                                                                                                                                                                                                                                                                                                  |
|                     |                                                                                                                                                                                                                                                                                                  |
| <b>Owner</b>        | Specify owner for the event.                                                                                                                                                                                                                                                                     |

Table 14-37: RMON Event Add fields.

Figure 14-38: RMON Event Edit page.

| Field               | Description                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community</b>    | Specify the SNMP community when the notification type is specified as “Trap” or “Event Log and Trap”.                                                                                                                                                                                                                                                                     |
| <b>Description</b>  | Specify the description for the event.                                                                                                                                                                                                                                                                                                                                    |
| <b>Notification</b> | Specify the notification type for the event, and the possible value are: <ul style="list-style-type: none"> <li>• <b>None</b>: Nothing for notification.</li> <li>• <b>Event Log</b>: Logging the event in the RMON Event Log table.</li> <li>• <b>Trap</b>: Send a SNMP trap.</li> <li>• <b>Event Log and Trap</b>: Logging the event and send the SNMP trap.</li> </ul> |
| <b>Owner</b>        | Specify owner for the event.                                                                                                                                                                                                                                                                                                                                              |

Table 14-38: RMON Event Edit fields.

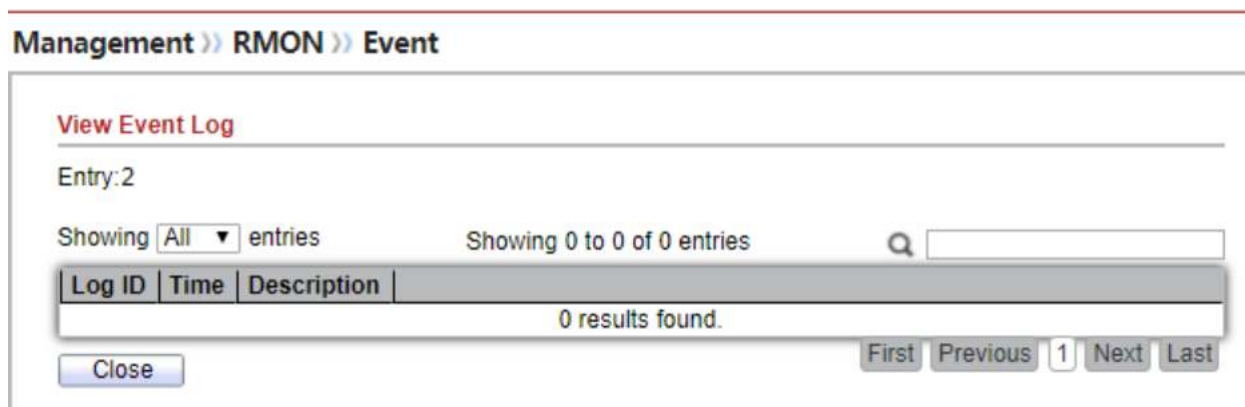


Figure 14-39: RMON Event Log page.

| Field              | Description                            |
|--------------------|----------------------------------------|
| <b>Log ID</b>      | The log identifier.                    |
| <b>Time</b>        | The time that the event was triggered. |
| <b>Description</b> | The description for the event.         |

Table 14-39: RMON Event Log fields.

#### 14.5.4 Alarm

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

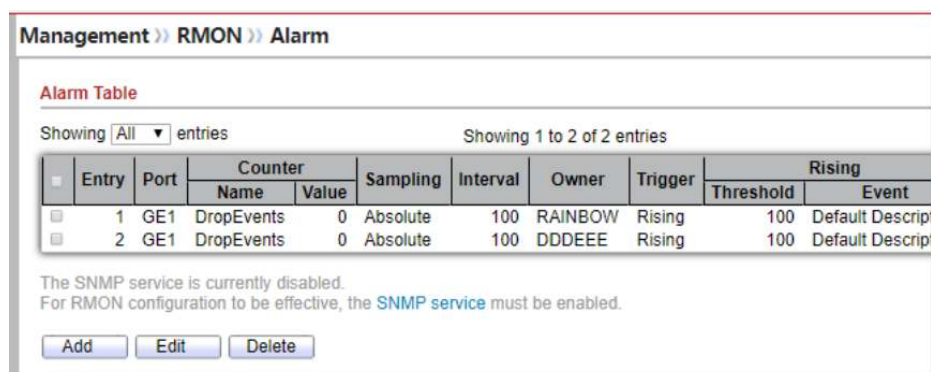


Figure 14-40: RMON Alarm page.

| Field             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port              | The port configuration for the RMON alarm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Counter           | <p>The counter for sampling</p> <ul style="list-style-type: none"> <li>• <b>DropEvents (Drop Event):</b> Total number of events received in which the packets were dropped.</li> <li>• <b>Octes (Received Bytes):</b> Octets.</li> <li>• <b>Pkts (Received Packets):</b> Number of packets.</li> <li>• <b>BroadcastPkts (Broadcast Packets Received):</b> Broadcast packets.</li> <li>• <b>MulticastPkts (Multicast Packets Received):</b> Multicast packets.</li> <li>• <b>CRCAlignError (CRC and Align Error):</b> CRC alignment error.</li> <li>• <b>UndersizePkts (Undersize Packets):</b> Number of undersized packets.</li> <li>• <b>OversizePkts (Oversize Packets):</b> Number of oversized packets.</li> <li>• <b>Fragments (Fragments):</b> Total number of packet fragment.</li> <li>• <b>Jabbers (Jabbers):</b> Total number of packet jabber.</li> <li>• <b>Collisions (Collisions):</b> Collision.</li> <li>• <b>Pkts64Octetes (Frames of 64 Bytes):</b> Number of packets size 64 octets.</li> <li>• <b>Pkts65to127Octetes (Frames of 65 to 127 Bytes):</b> Number of packets size 65 to 127 octets.</li> <li>• <b>Pkts128to255Octetes (Frames of 128 to 255 Bytes):</b> Number of packets size 128 to 255 octets.</li> <li>• <b>Pkts256to511Octetes (Frames of 256 to 511 Bytes):</b> Number of packets size 256 to 511 octets.</li> <li>• <b>Pkts512to1023Octetes (Frames of 512 to 1023 Bytes):</b> Number of packets size 512 to 1023 octets.</li> <li>• <b>Pkts1024to1518Octetes (Frames Greater than 1024 Bytes):</b> Number of packets size 1024 to 1518 octets.</li> </ul> |
| Sampling          | <p>The sampling type including:</p> <ul style="list-style-type: none"> <li>• <b>Absolute:</b> The selected variable value is compared directly with the thresholds at the end of the sampling interval.</li> <li>• <b>Delta:</b> The selected variable value of the last sample is subtracted from the current value and the difference is compared with the thresholds.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Interval          | The number of seconds for each sample.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Owner             | The owner for the alarm entry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Trigger           | The type of event triggering.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Rising Threshold  | The threshold for firing rising event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rising Event      | The rising event when alarm was fired.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Falling Threshold | The threshold for firing falling event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Falling Event     | The falling event when alarm was fired.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

Table 14-40: RMON Alarm fields.

Add Alarm

|                |                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------|
| Entry          | 3                                                                                                                    |
| Port           | GE1 ▼                                                                                                                |
| Counter        | Drop Events ▼                                                                                                        |
| Sampling       | <input checked="" type="radio"/> Absolute<br><input type="radio"/> Delta                                             |
| Interval       | 100 Sec (1 - 2147483647, default 100)                                                                                |
| Owner          |                                                                                                                      |
| Trigger        | <input checked="" type="radio"/> Rising<br><input type="radio"/> Falling<br><input type="radio"/> Rising and Falling |
| <b>Rising</b>  |                                                                                                                      |
| Threshold      | 100 (0 - 2147483647, default 100)                                                                                    |
| Event          | 1 - Default Description ▼                                                                                            |
| <b>Falling</b> |                                                                                                                      |
| Threshold      | 20 (0 - 2147483647, default 20)                                                                                      |
| Event          | 1 - Default Description ▼                                                                                            |

Apply Close

Figure 14-41: RMON Alarm Add page.

| Field    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port     | Specify the port for sampling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Counter  | <p>Specify the counter for sampling</p> <ul style="list-style-type: none"> <li>• <b>Drop Event:</b> Total number of events received in which the packets were dropped.</li> <li>• <b>Received Bytes (Octets):</b> Octets.</li> <li>• <b>Received Packets:</b> Number of packets.</li> <li>• <b>Broadcast Packets Received:</b> Broadcast packets.</li> <li>• <b>Multicast Packets Received:</b> Multicast packets.</li> <li>• <b>CRC and Align Error:</b> CRC alignment error.</li> <li>• <b>Undersize Packets:</b> Number of undersized packets.</li> <li>• <b>Oversize Packets:</b> Number of oversized packets.</li> </ul>                                                                                                                   |
|          | <ul style="list-style-type: none"> <li>• <b>Fragments:</b> Total number of packet fragment.</li> <li>• <b>Jabbers:</b> Total number of packet jabber.</li> <li>• <b>Collisions:</b> Collision.</li> <li>• <b>Frames of 64 Bytes:</b> Number of packets size 64 octets.</li> <li>• <b>Frames of 65 to 127 Bytes:</b> Number of packets size 65 to 127 octets.</li> <li>• <b>Frames of 128 to 255 Bytes:</b> Number of packets size 128 to 255 octets.</li> <li>• <b>Frames of 256 to 511 Bytes:</b> Number of packets size 256 to 511 octets.</li> <li>• <b>Frames of 512 to 1023 Bytes:</b> Number of packets size 512 to 1023 octets.</li> <li>• <b>Frames Greater than 1024 Bytes:</b> Number of packets size 1024 to 1518 octets.</li> </ul> |
| Sampling | <p>Specify the sampling type.</p> <ul style="list-style-type: none"> <li>• <b>Absolute:</b> The selected variable value is compared directly with the thresholds at the end of the sampling interval.</li> <li>• <b>Delta:</b> The selected variable value of the last sample is subtracted from the current value and the difference is compared with the thresholds.</li> </ul>                                                                                                                                                                                                                                                                                                                                                               |

|                          |                                                          |
|--------------------------|----------------------------------------------------------|
| <b>Interval</b>          | Specify the sampling interval.                           |
| <b>Owner</b>             | Specify the owner for the sampling.                      |
| <b>Trigger</b>           | Specify the type for the alarm trigger.                  |
| <b>Rising Threshold</b>  | Specify the threshold for firing rising event.           |
| <b>Rising Event</b>      | Specify the index of rising event when alarm was fired.  |
| <b>Falling Threshold</b> | Specify the threshold for firing falling event.          |
| <b>Falling Event</b>     | Specify the index of falling event when alarm was fired. |

Table 14-41: RMON Alarm Add fields.

Management >> RMON >> Alarm

Edit Alarm

|                |                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------|
| Entry          | 2                                                                                                                    |
| Port           | GE1 ▼                                                                                                                |
| Counter        | Drop Events ▼                                                                                                        |
| Sampling       | <input checked="" type="radio"/> Absolute<br><input type="radio"/> Delta                                             |
| Interval       | 100 Sec (1 - 2147483647, default 100)                                                                                |
| Owner          | DDDEEE                                                                                                               |
| Trigger        | <input checked="" type="radio"/> Rising<br><input type="radio"/> Falling<br><input type="radio"/> Rising and Falling |
| <b>Rising</b>  |                                                                                                                      |
| Threshold      | 100 (0 - 2147483647, default 100)                                                                                    |
| Event          | 1 - Default Description ▼                                                                                            |
| <b>Falling</b> |                                                                                                                      |
| Threshold      | 20 (0 - 2147483647, default 20)                                                                                      |
| Event          | 1 - Default Description ▼                                                                                            |

Apply Close

Figure 14-42: RMON Alarm Edit page.

| Field             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port              | Specify the port for sampling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Counter           | <p>Specify the counter for sampling</p> <ul style="list-style-type: none"> <li>• <b>Drop Event:</b> Total number of events received in which the packets were dropped.</li> <li>• <b>Received Bytes (Octets):</b> Octets.</li> <li>• <b>Received Packets:</b> Number of packets.</li> <li>• <b>Broadcast Packets Received:</b> Broadcast packets.</li> <li>• <b>Multicast Packets Received:</b> Multicast packets.</li> <li>• <b>CRC and Align Error:</b> CRC alignment error.</li> <li>• <b>Undersize Packets:</b> Number of undersized packets.</li> <li>• <b>Oversize Packets:</b> Number of oversized packets.</li> </ul>                                                                                                                   |
|                   | <ul style="list-style-type: none"> <li>• <b>Fragments:</b> Total number of packet fragment.</li> <li>• <b>Jabbers:</b> Total number of packet jabber.</li> <li>• <b>Collisions:</b> Collision.</li> <li>• <b>Frames of 64 Bytes:</b> Number of packets size 64 octets.</li> <li>• <b>Frames of 65 to 127 Bytes:</b> Number of packets size 65 to 127 octets.</li> <li>• <b>Frames of 128 to 255 Bytes:</b> Number of packets size 128 to 255 octets.</li> <li>• <b>Frames of 256 to 511 Bytes:</b> Number of packets size 256 to 511 octets.</li> <li>• <b>Frames of 512 to 1023 Bytes:</b> Number of packets size 512 to 1023 octets.</li> <li>• <b>Frames Greater than 1024 Bytes:</b> Number of packets size 1024 to 1518 octets.</li> </ul> |
| Sampling          | <p>Specify the sampling type.</p> <ul style="list-style-type: none"> <li>• <b>Absolute:</b> The selected variable value is compared directly with the thresholds at the end of the sampling interval.</li> <li>• <b>Delta:</b> The selected variable value of the last sample is subtracted from the current value and the difference is compared with the thresholds.</li> </ul>                                                                                                                                                                                                                                                                                                                                                               |
| Interval          | Specify the sampling interval.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Owner             | Specify the owner for the sampling.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Trigger           | Specify the type for the alarm trigger.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Rising Threshold  | Specify the threshold for firing rising event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Rising Event      | Specify the index of rising event when alarm was fired.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Falling Threshold | Specify the threshold for firing falling event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Falling Event     | Specify the index of falling event when alarm was fired.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Table 14-42: RMON Alarm Edit fields.

## 15. PoE Setting

### 15.1 PoE Port Setting

To configure and display the PoE Setting, click PoE Setting> PoE Port Setting.

POE Setting >> POE Port Setting

**System Info**

|                       |                                                                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| System Power(W)       | 0                                                                                                                                    |
| System Temperature(C) | 25                                                                                                                                   |
| Refresh Rate          | <input type="radio"/> None<br><input type="radio"/> 5 sec<br><input checked="" type="radio"/> 10 sec<br><input type="radio"/> 30 sec |

**Port Setting Table**

| Entry                    | Port | PortEnable | Status  | Type | Level | Actual Power(mW) | Voltage(V) | Current(mA) |
|--------------------------|------|------------|---------|------|-------|------------------|------------|-------------|
| <input type="checkbox"/> | 1    | GE1        | Enabled | Off  | N/A   | N/A              | N/A        | N/A         |
| <input type="checkbox"/> | 2    | GE2        | Enabled | Off  | N/A   | N/A              | N/A        | N/A         |
| <input type="checkbox"/> | 3    | GE3        | Enabled | Off  | N/A   | N/A              | N/A        | N/A         |
| <input type="checkbox"/> | 4    | GE4        | Enabled | Off  | N/A   | N/A              | N/A        | N/A         |
| <input type="checkbox"/> | 5    | GE5        | Enabled | Off  | N/A   | N/A              | N/A        | N/A         |
| <input type="checkbox"/> | 6    | GE6        | Enabled | Off  | N/A   | N/A              | N/A        | N/A         |
| <input type="checkbox"/> | 7    | GE7        | Enabled | Off  | N/A   | N/A              | N/A        | N/A         |
| <input type="checkbox"/> | 8    | GE8        | Enabled | Off  | N/A   | N/A              | N/A        | N/A         |

Edit

Figure 15-43: System Info and Port Setting Table

To select the one port you want to configure, and then Click “Edit” button on the table title to edit

POE Setting >> POE Port Setting

**Edit Port Setting**

Port: GE1

PortEnable: ☒ Enable ☐ Disable

Apply Close

### 15.2 PoE Port Timer Setting

To configure and display the PoE Timer Setting, click PoE Setting> PoE Timer Setting

POE Setting >> POE Port Timer Setting

Port: GE1

|     | 00                       | 01                       | 02                       | 03                       | 04                       | 05                       | 06                       | 07                       | 08                       | 09                       | 10                       | 11                       | 12                       | 13                       | 14                       | 15                       | 16                       | 17                       | 18                       | 19                       | 20                       | 21                       | 22                       | 23                       |
|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Wed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tue | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Thu | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sun | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Mon | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Fri | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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