



ALL-SG8420M

ALL-SG8428M



User Manual

Default-IP

192.168.1.1

Username & Password:

admin

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Chapter 1 Introduction

1.1 General Description

The Gigabit Smart Managed Switch is equipped with 24/16 gigabit RJ45 ports and 4 SFP slots. The switch supports high performance, enterprise-level security control & QoS Layer 2 management features. It is a cost-effective product solution for the small and medium business.

The switch supports the WebGUI to control each port status and bandwidth control by port rate limiting. The Storm Control feature protects against Broadcast, Multicast and Unicast Storm. The rich Quality of Service (QoS) & VLAN provides enhanced traffic management capabilities to move your data smoother and faster. The device supports a complete lineup of layer 2 features, including 802.1Q tag VLAN, Port Isolation, Port Mirroring, STP/RSTP, Link Aggregation Group and 802.3x Flow Control function. It also supports SNMP management functions.

The switch complies with IEEE802.3az Energy Efficient Ethernet to save power consumption, Support IGMP Snooping function to improve traffic performance. Moreover, the rich diagnostic LEDs on the front-panel provide the operating status of individual port and whole system.

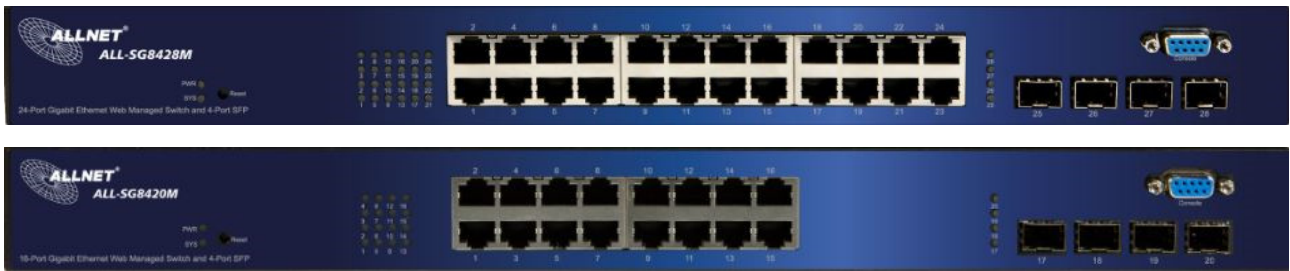
1.2 Key Features

- 24/16 * RJ-45 ports for 10/100/1000Mbps connectivity
- 4* SFP ports for 100/1000Mbps Fiber connectivity
- Supports MDI/MDI-X auto crossover
- Supports NWay protocol and auto-detection
- Complies with IEEE802.3, 802.3u, 802.3ab Ethernet standards
- Supports IEEE802.3x Flow Control and Back-Pressure control
- Supports STP & RSTP
- Supports LLDP Discovery
- Supports VLAN : Static, Port Based, Tag Based, Voice OUI mode
- Supports QoS : CoS, DSCP, CoS-DSCP, IP Precedence
- Supports Security : Management Service (Telnet, HTTP, HTTPS, SNMP), Protected Port, Storm Control, DoS attack prevention
- Supports Storm Filter (Broadcast, Unknown Multicast, Unknown Unicast)
- Supports port based Ingress/Egress rate limit
- Supports 8 queues is handled SP and WRR
- Supports Jumbo Frame : 1518~10K Bytes
- Supports 8 Link Aggregation Groups with Static & LACP types
- Support port mirroring, Ping Testing, Copper Testing
- Supports SNMP access control & trap event

- Supports IGMP Snooping v2/v3
- Supports IEEE802.3az EEE enable and disable
- Supports Firmware upgrade and backup
- Supports Configuration upgrade and backup
- Full Range of Internal universal switching power supply
- Supports Reset to factory default button

1.3 The Front Panel

The following figure shows the front panel of the switch.



LEDs Definition

This device provides extensive LEDs to show the activities on power, system and ports. See the following description for your reference:

| LED | Status | Operation |
|-----------------|----------------|--|
| POWER | Steady Green | The switch is powered on. |
| | Off | The switch is powered off. |
| SYSTEM | Steady Green | The switch is on and functioning properly |
| | Blinking Green | The switch is rebooting and performing self-diagnostic tests. |
| | Off | The power is off or the system is not ready/malfunctioning. |
| Link/ACT | Steady Green | Valid port connection; |
| | Blinking Green | Valid port connection and there is data transmitting/receiving |
| | Off | Port disconnected. |

The Reset Button

Reset the switch to its factory default configuration via the RESET button. Press the RESET button for five seconds more and release. The switch automatically reboots and reloads its factory configuration file. Press the RESET button for two seconds and release, the switch will warm boot for hardware reset. The RESET button is on the front panel of the switch.

Console Port

This port is reserved for command-line interface (CLI) and RS232 firmware upgrade to use.

1.4 The Rear Panel

The following figure shows the rear panel of the switch:



Power Receptacle

To be compatible with the electric service standards around the world, the switch is designed to afford the power supply in the range from 100 to 240 VAC, 50/60 Hz. Please make sure that your outlet standard to be within this range.

To power on the switch, please plug the female end of the power cord firmly into the receptacle of the switch, the other end into an electric service outlet. After the switch powered on, please check if the power LED is lit for a normal power status.

1.5 Installation

Unpacking Information

The product package should include the following:

- One 24G/16G+4SFP Gigabit Ethernet Smart Managed Switch
- One power cord
- Rubber foot and screws
- Rack-mount brackets
- One CD-ROM for user manual

Rack-mount Installation

Rack Mounting the Switch in the 19-inch rack:

- Disconnect all cables from the switch before continuing.
- Place the unit the right way up on a hard, flat surface with the front facing toward you.
- Locate a mounting bracket over the mounting holes on one side of the unit.
- Insert the screws and fully tighten with a suitable screwdriver.
- Repeat the two previous steps for the other side of the unit.
- Insert the unit into the 19" rack and secure with suitable screws (not provided).
- Reconnect all cables.

Installing Network Cables

To make a valid connection and obtain the optimal performance, an appropriate cable that

corresponds to different transmitting/receiving speed is required. To choose a suitable cable, please refer to the following table.

| Media | Speed | Wiring |
|-------------------------|--------------|--|
| Network Media(Cable) | 10 Mbps | 10Base-T: UTP category 3, 4, 5 cable (maximum 100m) EIA/TIA-568 100Ω STP (maximum 100m) |
| | 100 Mbps | 100Base-TX: UTP category 5, 5e cable (maximum 100m) EIA/TIA-568 100Ω STP (maximum 100m) |
| | 1000 Mbps | 1000Base-T: UTP category 5e, 6 cable (maximum 100m) EIA/TIA-568 100Ω STP (maximum 100m) |

Chapter 2 Getting Started

2.1 Web-based Management Interface (Web UI)

The Web UI supports all frequently used web browsers listed below:

- Internet Explorer 8 and above
- Firefox 20.0 and above
- Chrome 23.0 and above
- Safari 5.1.7 and above

2.2 Connect to switch Web Pages

1. To connect to the web server, input the IP of switch in the URL field of the browser.
2. The default IP is 192.168.1.1 and default Subnet mask is 255.255.255.0
3. Type "http://" and the IP address of the switch (for example, the default management IP address is 192.168.1.1) in the Location or Address field. Press **Enter**.



4. The login screen appears. Enter the User Name and Password to login the configuration interface. They are both **admin** by default. You can select **Remember my password** to remember the User Name and Password.



2.3 Graphic User Interface Overview

After the password authorization, the information page shows up. You may click on each folder on the left column of each page to get access to each configuration page. The Graphic User Interface is as follows:

ALL-SG8428M

The screenshot displays the 'System Information' page for the ALL-SG8428M switch. On the left is a navigation menu with categories like Status, Network, and Management. The main content area includes a port status bar at the top, a 'System Information' table, and two resource usage graphs for CPU and MEM.

| System Information | |
|--------------------|--|
| Model | ALL-SG8428M |
| System Name | Switch |
| System Location | ALLNET GmbH, Maistr. 2, 82110 Germering, Germany |
| System Contact | ALLNET |
| MAC Address | 00:0F:C9:09:38:B1 |
| IPv4 Address | 192.168.1.1 |
| IPv6 Address | fe80::208:54ff:fe72:faee/64 |
| System OID | 1.3.6.1.4.1.27282.3.2.10 |
| System Uptime | 0 day, 0 hr, 6 min and 9 sec |
| Current Time | 2000-01-01 01:06:09 UTC+1 |
| Loader Version | 2.1.3.46351 |
| Loader Date | Apr 20 2015 - 14:00:13 |
| Firmware Version | 2.1.0.1664 |
| Firmware Date | Feb 16 2016 - 12:01:55 |
| Telnet | Disabled |
| HTTP | Enabled |
| HTTPS | Disabled |
| SNMP | Enabled |

ALL-SG8420M

The screenshot displays the 'System Information' page for the ALL-SG8420M switch. The layout is similar to the previous model, showing system details and resource usage graphs.

| System Information | |
|--------------------|--|
| Model | ALL-SG8420M |
| System Name | Switch |
| System Location | ALLNET GmbH, Maistr. 2, 82110 Germering, Germany |
| System Contact | ALLNET |
| MAC Address | 00:0F:C9:09:72:E5 |
| IPv4 Address | 192.168.1.1 |
| IPv6 Address | fe80::208:54ff:fe72:fe7f/64 |
| System OID | 1.3.6.1.4.1.27282.3.2.10 |
| System Uptime | 0 day, 0 hr, 0 min and 51 sec |
| Current Time | 2000-01-01 01:00:51 UTC+1 |
| Loader Version | 2.1.3.46351 |
| Loader Date | Apr 20 2015 - 14:00:13 |
| Firmware Version | 2.1.0.1667 |
| Firmware Date | Jan 01 1970 - 00:00:00 |
| Telnet | Disabled |
| HTTP | Enabled |
| HTTPS | Disabled |
| SNMP | Enabled |

In the navigation panel, click a main link to reveal a list of submenu links shown as the following:

The following table describes the links in the navigation panel.

| LINKS | Submenu |
|--------------------------|---|
| Status | System Information. Logging Message Port – Statistics, Bandwidth Utilization Link Aggregation MAC Address Table |
| Network | IP Address System Time |
| Port | Port Setting Link Aggregation – Group, Port Setting, LACP EEE Jumbo Frame |
| VLAN | VLAN - Create VLAN, VLAN Configuration, Membership, Port Setting Voice VLAN - Property, Voice OUI |
| MAC Address Table | Dynamic Address Static Address |
| Spanning Tree | Property Port Setting Statistics |
| Discovery (LLDP) | Property Port Setting Packet View Local Information Neighbor Statistics |
| Multicast | General – Property, Group Address, Router Port IGMP Snooping – Property, Querier, Statistics |
| Security | Management Access – Management VLAN, Management Service Protected Port Storm Control DoS – Property, Port Setting |
| QoS | General – Property, Queue Scheduling, CoS Mapping, DSCP Mapping, IP Precedence Mapping Rate Limit – Ingress/Egress Port, Egress Queue |
| Diagnostics | Logging – Property, Remove Server Mirroring Ping Copper Test |
| Management | User Account Firmware – Upgrade/Backup Active Image Configuration – Upgrade/Backup, Save Configuration, Notification |

Chapter 3 Status

Use the Status pages to view system information and status.

3.1 System Information

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.

The screenshot shows the 'System Information' page. At the top, there's a navigation menu with 'System Information' selected. Below it, a switch panel shows 24 ports (1-24) with status indicators. To the right, there are four status boxes for ports 25-28. The main content area features a 'System Information' table with an 'Edit' button. The table lists various system parameters. To the right of the table are two line graphs: 'CPU' utilization (0-100% over time) and 'MEM' utilization (0-100% over time).

| System Information | | Edit |
|--------------------|--|------|
| Model | ALL-SG8428M | |
| System Name | Switch | |
| System Location | ALLNET GmbH, Maistr. 2, 82110 Germering, Germany | |
| System Contact | ALLNET | |
| MAC Address | 00:0F:C9:09:38:B1 | |
| IPv4 Address | 192.168.1.1 | |
| IPv6 Address | fe80::208:54ff:fe72:faee/64 | |
| System OID | 1.3.6.1.4.1.27282.3.2.10 | |
| System Uptime | 0 day, 0 hr, 6 min and 9 sec | |
| Current Time | 2000-01-01 01:06:09 UTC+1 | |
| Loader Version | 2.1.3.46351 | |
| Loader Date | Apr 20 2015 - 14:00:13 | |
| Firmware Version | 2.1.0.1664 | |
| Firmware Date | Feb 16 2016 - 12:01:55 | |
| Telnet | Disabled | |
| HTTP | Enabled | |
| HTTPS | Disabled | |
| SNMP | Enabled | |

| Field | Description |
|------------------------|---|
| Model | Model name of the switch |
| System Name | System name of the switch. This name will also use as CLI prefix of each line |
| System Location | Location information of the switch |
| System Contact | Contact information of the switch |
| MAC Address | Base MAC address of the switch |
| IPv4 Address | Current system IPv4 address |
| IPv6 Address | Current system IPv6 address |
| System OID | SNMP system object ID |
| System Uptime | Total elapsed time from booting |

| | |
|-------------------------|---|
| Current Time | Current system time |
| Loader Version | Boot loader image version |
| Loader Date | Boot loader image build date |
| Firmware Version | Current running firmware image version |
| Firmware Date | Current running firmware image build date |
| Telnet | Current Telnet service enable/disable state |
| HTTP | Current HTTP service enable/disable state |
| HTTPS | Current HTTPS service enable/disable state |
| SNMP | Current SNMP service enable/disable state |

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

| Field | Description |
|------------------------|--|
| System Name | System name of the switch. This name will also use as CLI prefix of each line. |
| System Location | Location information of the switch. |
| System Contact | Contact information of the switch. |

3.2 Logging Message

Click **Status > Logging Message**

This page shows logging messages stored on the RAM and Flash.

The screenshot shows the 'Status > Logging Message' page. On the left is a navigation menu with 'Logging Message' selected. The main content area has a title 'Logging Message Table' and a dropdown menu set to 'RAM'. Below this, it says 'Showing 1 to 4 of 4 entries'. The table has the following data:

| Log ID | Time | Severity | Description |
|--------|----------------------|----------|---|
| 1 | Jan 01 2000 01:06:05 | notice | New ssh connection for user admin, source 192.168.1.44 ACCEPTED |
| 2 | Jan 01 2000 01:00:24 | notice | GigabitEthernet6 link up |
| 3 | Jan 01 2000 01:00:23 | notice | RESTART: System restarted - Cold Start |
| 4 | Jan 01 2000 01:00:23 | notice | Logging is enabled |

Below the table are 'Clear' and 'Refresh' buttons. At the bottom right of the table area are navigation buttons: 'First', 'Previous', '1', 'Next', 'Last'.

| Field | Description |
|----------------|---|
| Viewing | The logging view including : RAM: Show the logging messages stored on the RAM Flash: Show the logging messages stored on the Flash. |
| Clear | Clear the logging messages. |
| Refresh | Refresh the logging messages. |
| Log ID | The log identifier. |

| | |
|--------------------|---|
| Time | The time stamp for the logging message. |
| Severity | The severity for the logging message. |
| Description | The description of logging message. |

3.3 Port

The port configuration page displays port summary and status information.

3.3.1 Statistics

Click **Status > Port > Statistics**

On this page user can get standard counters on network traffic from the interfaces, Ethernet-like and RMON MIB. Interfaces and Ethernet-like counters display errors on the traffic passing through each port. RMON counters provide a total count of different frame types and sizes passing through each port.

The screenshot shows the 'Status > Port > Statistics' page. On the left is a navigation tree with 'Statistics' selected. The main area has a 'Port' dropdown set to 'GE1'. Below it are 'MIB Counter' options: 'All' (selected), 'Interface', 'Etherlike', and 'RMON'. 'Refresh Rate' options are 'None', '5 sec', '10 sec' (selected), and '30 sec'. A 'Clear' button is present. Below is an 'Interface' table with the following data:

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

Status » Port » Statistics

Status

- System Information
- Logging Message
- Port
 - Statistics**
 - Bandwidth Utilization
 - Link Aggregation
 - MAC Address Table
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
- Multicast
- Security
- QoS
- Diagnostics
- Management

| 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 |

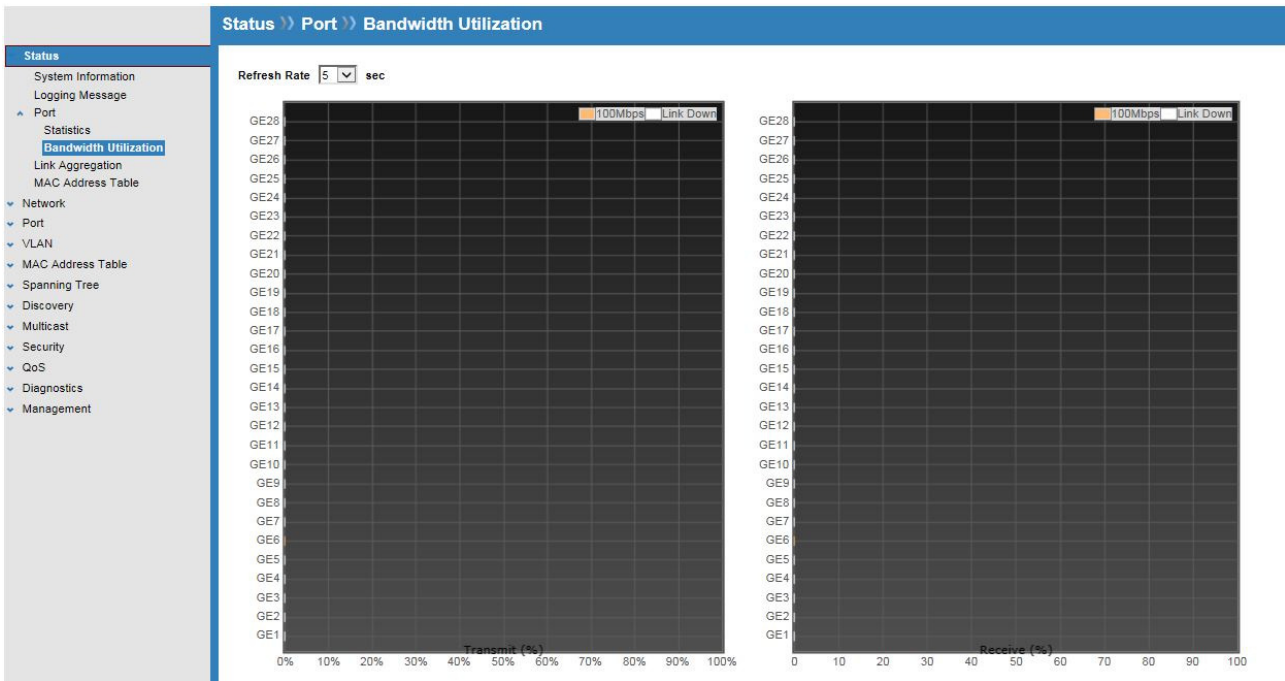
The "Clear" button will clear MIB counter of current selected port.

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

3.3.2 Bandwidth Utilization

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.

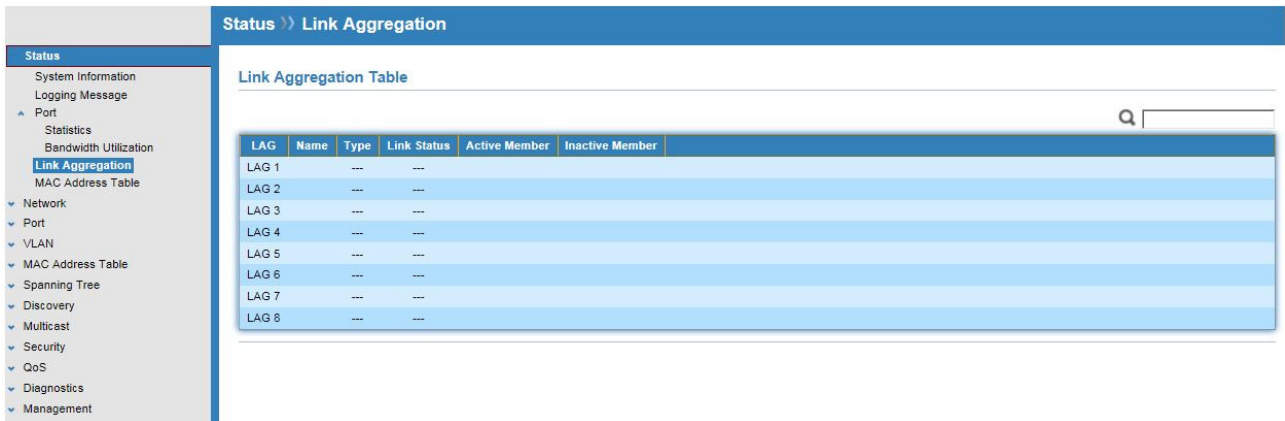


| Field | Description |
|--------------|--|
| Refresh Rate | Refresh the web page every period of second to get new bandwidth utilization data. |

3.4 Link Aggregation

Click **Status > Link Aggregation**

Display the Link Aggregation status of web page.



| Field | Description |
|-------|----------------------|
| Lag | LAG Name. |
| Name | LAG port description |

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

3.5 MAC Address Table

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.

| Field | Description |
|--------------------|---|
| VLAN | VLAN ID of the MAC address. |
| MAC Address | MAC address |
| Type | The type of MAC address Management: DUT’s base MAC address for management purpose. Static: Manually configured by administrator. Dynamic: Auto learned by hardware. |
| Port | The type of port CPU : DUT’s CPU port for management purpose Other : Normal switch port |

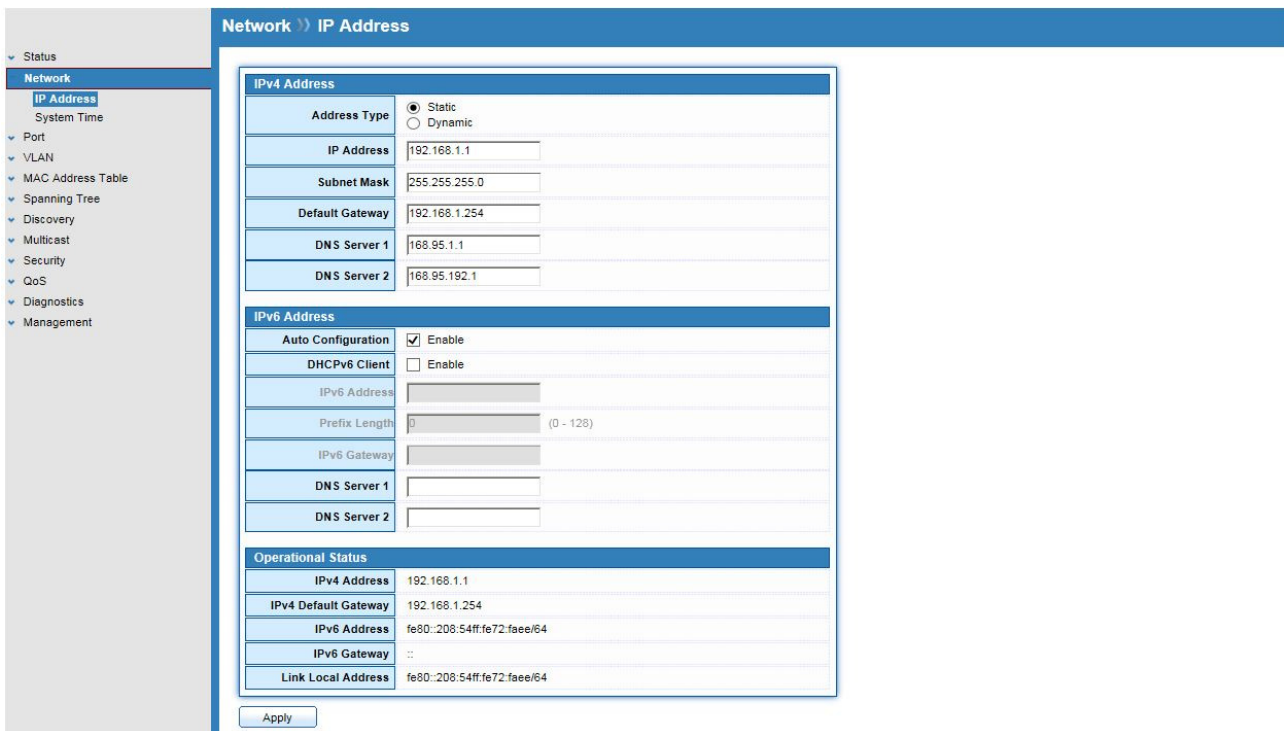
Chapter 4 Network

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

4.1 IP Address

Click **Network > IP Address**

Use the IP Setting screen to configure the switch IP address and the default gateway device. The gateway field specifies the IP address of the gateway (next hop) for outgoing traffic. The switch needs an IP address for it to be managed over the network. The factory default IP address is 192.168.1.1. The subnet mask specifies the network number portion of an IP address. The factory default subnet mask is 255.255.255.0.



| | |
|---------------------------|---|
| Default Gateway | Specify the default gateway on the static configuration. The default gateway must be in the same subnet with switch IP address configuration |
| DNS Server 1 | If static mode is enabled, enter primary DNS server address in this field. |
| DNS Server 2 | If static mode is enabled, enter secondary DNS server address in this field. |
| IPv6 Address Field | |
| Auto Configuration | Select Enable or Disable the IPv6 auto configuration.. |
| DHCPv6 Client | DHCPv6 client state. <ul style="list-style-type: none"> ■ Enable: Enable DHCPv6 client function. ■ Disable: Disable DHCPv6 client function |
| IPv6 Address | Specify the IPv6 address, when the IPv6 auto configuration and DHCPv6 client are disabled. |
| IPv6 Prefix | Specify the prefix for the IPv6 address, when the IPv6 auto configuration and DHCPv6 client are disabled. |
| Gateway | Specify the IPv6 default gateway, when the IPv6 auto configuration and DHCPv6 client are disabled. |
| DNS Server 1 | Specify the primary user-defined IPv6 DNS server configuration. |
| DNS Server 2 | Specify the secondary user-defined IPv6 DNS server configuration. |
| Operational Status | |
| IPv4 Address | The operational IPv4 address of the switch. |
| IPv4 Gateway | The operational IPv4 gateway of the switch. |
| IPv6 Address | The operational IPv6 address of the switch. |
| IPv6 Gateway | The operational IPv6 gateway of the switch. |
| Link Local Address | The operational IPv6 link local address for the switch. |

4.2 System Time

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.

Network >> System Time

Source SNTP From Computer Manual Time

Time Zone UTC+1:00

SNTP

Address Type Hostname IPv4

Server Address

Server Port 123 (1 - 65535, default 123)

Manual Time

Date 2000-01-01 YYYY-MM-DD

Time 01:15:27 HH:MM:SS

Daylight Saving Time

Type None Recurring Non-recurring USA European

Offset 60 Min (1 - 1440, default 60)

Recurring
 From: Day Sun Week First Month Jan Time
 To: Day Sun Week First Month Jan Time

Non-recurring
 From: YYYY-MM-DD HH:MM
 To: YYYY-MM-DD HH:MM

Operational Status

Current Time 2000-01-01 01:15:27 UTC+1

Apply

| Field | Description |
|-----------------------------|---|
| Source | Select the time source <ul style="list-style-type: none"> ■ SNTP: Time sync from NTP server. ■ From Computer: Time set from browser host. ■ Manual Time: Time set by manually configure. |
| Time Zone | Select a time zone difference from listing district.. |
| SNTP | |
| Address Type | Select the address type of NTP server. This is enabled when time source is SNTP. |
| Server Address | Input IPv4 address or hostname for NTP server. This is enabled when time source is SNTP. |
| Server Port | Input NTP port for NTP server. Default is 123. This is enabled when time source is SNTP. |
| Manual Time | |
| Date | Input manual date. This is enabled when time source is manual. |
| Time | Input manual time. This is enabled when time source is manual. |
| Daylight Saving Time | |
| Type | Select the mode of daylight saving time. Disable : Disable daylight saving time. Recurring : Using recurring mode of daylight saving time. Non-Recurring : Using non-recurring mode of daylight saving time. USA : Using daylight saving time in the United States that starts on the second Sunday of March and ends on the first Sunday of November European : Using daylight saving time in the Europe that starts on the last Sunday in March and ending on the last Sunday in October. |
| Offset | Specify the adjust offset of daylight saving time. |
| Recurring From | Specify the starting time of recurring daylight saving time. This field available when selecting "Recurring" mode. |

| | |
|---------------------------|--|
| Recurring To | Specify the ending time of recurring daylight saving time. This field available when selecting "Recurring" mode. |
| Non-recurring From | Specify the starting time of non-recurring daylight saving time. This field available when selecting "Non-Recurring" mode. |
| Non-recurring To | Specify the ending time of non-recurring daylight saving time. This field available when selecting "Non-Recurring" mode. |

Chapter 5 Port

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

5.1 Port Setting

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.

| 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 | Up | Auto (100M) | Auto (Full) | Disabled (Disabled) |
| <input type="checkbox"/> | 7 | GE7 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 8 | GE8 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 9 | GE9 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 10 | GE10 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 11 | GE11 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 12 | GE12 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 13 | GE13 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 14 | GE14 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 15 | GE15 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 16 | GE16 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 17 | GE17 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 18 | GE18 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 19 | GE19 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 20 | GE20 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 21 | GE21 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 22 | GE22 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 23 | GE23 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 24 | GE24 | 1000M Copper | Enabled | Down | Auto | Auto | Disabled |
| <input type="checkbox"/> | 25 | GE25 | 1000M Fiber | Enabled | Down | Auto | Full | Disabled |
| <input type="checkbox"/> | 26 | GE26 | 1000M Fiber | Enabled | Down | Auto | Full | Disabled |
| <input type="checkbox"/> | 27 | GE27 | 1000M Fiber | Enabled | Down | Auto | Full | Disabled |
| <input type="checkbox"/> | 28 | GE28 | 1000M Fiber | Enabled | Down | Auto | Full | Disabled |

| Field | Description |
|--------------------|--|
| Port | Port Name. |
| Type | Allows you to Enable/Disable the port. When Enable is selected, the port can forward the packets normally. |
| Description | Port description |
| State | Port admin state. Enabled: Enable the port. Disabled: Disable the port. |
| Link Status | Current port link status Up: Port is link up. Down: Port is link down. |
| Speed | Current port speed configuration and link speed status. |
| Duplex | Current port duplex configuration and link duplex status. |

| | |
|---------------------|---|
| Flow Control | Current port flow control configuration and link flow control status. |
|---------------------|---|



Note:

1. The switch can't be managed through the disable port.
2. The switch might lose connection temporarily for the specific port (which connect to the management PC) setting. If it happens, refresh WEB GUI can recover the connection.

Edit Port Setting

| Field | Description |
|--------------------|---|
| Port | Selected Port list. |
| Description | Port description |
| State | Port admin state. Enabled: Enable the port. Disabled: Disable the port. |
| Link Status | Current port link status Up: Port is link up. Down: Port is link down. |
| Speed | Select the Port speed/duplex capabilities for the ports you need: <ul style="list-style-type: none"> ● Auto: Auto-negotiation speed/ duplex with all capabilities. ● Auto-10M: Auto speed with 10M ability only. ● Auto-100M: Auto speed with 100M ability only. ● Auto-1000M: Auto speed with 1000M ability only. ● Auto-10M/100M: Auto speed with 10M/100M abilities. ● 10M: Force speed with 10M ability. ● 100M: Force speed with 100M ability. ● 1000M: Force speed with 1000M ability |
| Duplex | Port duplex capabilities <ul style="list-style-type: none"> ● Auto: Auto flow control ability. ● Enabled: Enable flow control ability. ● Disabled: Disable flow control ability. |

5.2 Link Aggregation

Click **Port > Link Aggregation**

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

5.2.1 Trunk Group Setting

Click Port >Link Aggregation>Group

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

| Field | Description |
|-------------------------------|--|
| Load Balance Algorithm | LAG load balance distribution algorithm. Src-dst-mac: Based on MAC address Src-dst-mac-ip: Based on MAC address and IP address |
| LAG | LAG (Link Aggregation Group) Name. |
| Name | LAG port description |
| Type | The type of the LAG. Static: The group of ports assigned to a static LAG are always active members. LACP: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports. |
| Link Status | LAG port link status. |
| Active Member | Active member ports of the LAG. |
| Inactive Member | Inactive member ports of the LAG. |
| Flow Control | Current port flow control configuration and link flow control status. |

Select Link Aggregation Table and click "Edit" button to edit LAG setting.

Edit LAG Group Setting

| Field | Description |
|-------------|-----------------------|
| LAG | Selected LAG Group ID |
| Name | LAG port description |

| | |
|---------------|--|
| Type | The type of the LAG. Static: The group of ports assigned to a static LAG are always active members. LACP: The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports. |
| Member | Select available port to be LAG group member port. |

5.2.2 Port Setting

Click Port >Link Aggregation>Port Setting

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

The screenshot shows a web-based network configuration interface. The breadcrumb navigation is 'Port > Link Aggregation > Port Setting'. On the left is a sidebar menu with categories like Status, Network, and Port. Under 'Port', 'Port Setting' is selected. The main area displays a 'Port Setting Table' with a search bar and an 'Edit' button. The table contains the following data:

| LAG | Type | Description | State | Link Status | Speed | Duplex | Flow Control |
|-------|------|-------------|---------|-------------|-------|--------|--------------|
| LAG 1 | | | Enabled | Down | Auto | Auto | Disabled |
| LAG 2 | | | Enabled | Down | Auto | Auto | Disabled |
| LAG 3 | | | Enabled | Down | Auto | Auto | Disabled |
| LAG 4 | | | Enabled | Down | Auto | Auto | Disabled |
| LAG 5 | | | Enabled | Down | Auto | Auto | Disabled |
| LAG 6 | | | Enabled | Down | Auto | Auto | Disabled |
| LAG 7 | | | Enabled | Down | Auto | Auto | Disabled |
| LAG 8 | | | Enabled | Down | Auto | Auto | Disabled |

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

Select Port Setting Table and click "Edit" button to edit port setting.

Edit LAG Port Setting

| Field | Description |
|-------------|--------------------|
| Port | Selected port list |

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

5.2.3 LACP

Click Port >Link Aggregation>LACP

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

Port >> Link Aggregation >> LACP

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

Apply

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 |
| 11 | GE11 | 1 | Long |
| 12 | GE12 | 1 | Long |
| 13 | GE13 | 1 | Long |
| 14 | GE14 | 1 | Long |
| 15 | GE15 | 1 | Long |
| 16 | GE16 | 1 | Long |
| 17 | GE17 | 1 | Long |
| 18 | GE18 | 1 | Long |
| 19 | GE19 | 1 | Long |
| 20 | GE20 | 1 | Long |
| 21 | GE21 | 1 | Long |
| 22 | GE22 | 1 | Long |
| 23 | GE23 | 1 | Long |
| 24 | GE24 | 1 | Long |
| 25 | GE25 | 1 | Long |
| 26 | GE26 | 1 | Long |
| 27 | GE27 | 1 | Long |
| 28 | GE28 | 1 | Long |

Edit

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

| | |
|----------------------|---|
| Port | Port Name. |
| Port Priority | LACP priority value of the port. |
| Timeout | The periodic transmissions type of LACP PDUs. Long: Transmit LACP PDU with slow periodic (30s). Short: Transmit LACP PDU with fast periodic (1s). |

Select ports and click "Edit" button to edit port configuration.

Edit LACP Port Setting

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

5.3 EEE

Click **Port > EEE**

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

The screenshot shows the 'Port >> EEE' configuration page. On the left is a navigation sidebar with categories like Status, Network, Port, and Port Setting. The 'Port' section is expanded, showing sub-options like Link Aggregation, Group, Port Setting, LACP, and EEE (which is selected). The main area displays the 'EEE Setting Table' with a search bar and a table of 24 entries. Each entry has a checkbox, an 'Entry' number, a 'Port' name (GE1-GE24), a 'State' (all 'Disabled'), and an 'Operational Status' (all 'Disabled'). An 'Edit' button is at the bottom left of the table.

| Field | Description |
|--------------|--|
| Port | Port Name. |
| State | Port EEE admin state. Enable: EEE is enabled Disable: EEE is disabled. |

| | |
|---------------------------|--|
| Operational Status | Port EEE operational status. Enable: EEE is operating Disable: EEE is no operating |
|---------------------------|--|

Select EEE and click "Edit" button to edit EEE configuration.

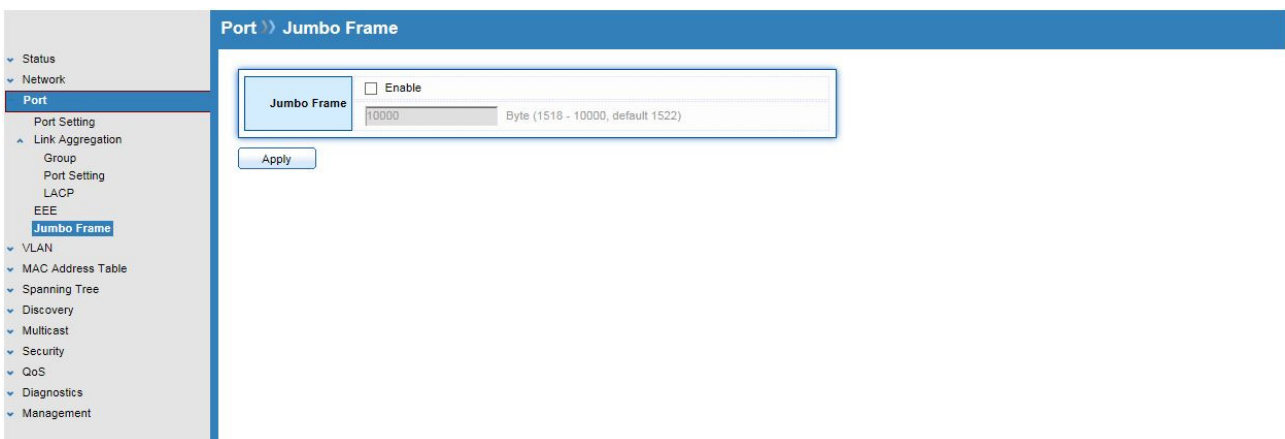
Edit EEE Setting

| Field | Description |
|--------------|---|
| Port | Selected port list. |
| State | Port EEE admin state. Enable: Enable EEE Disable: Disabled EEE. |

5.3 Jumbo Frame

Click **Port > Jumbo Frame**

This page allows 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. (from 1518 to 10000) When jumbo frame is disabled, default frame size 1522 will be used. |

Chapter 6 VLAN

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

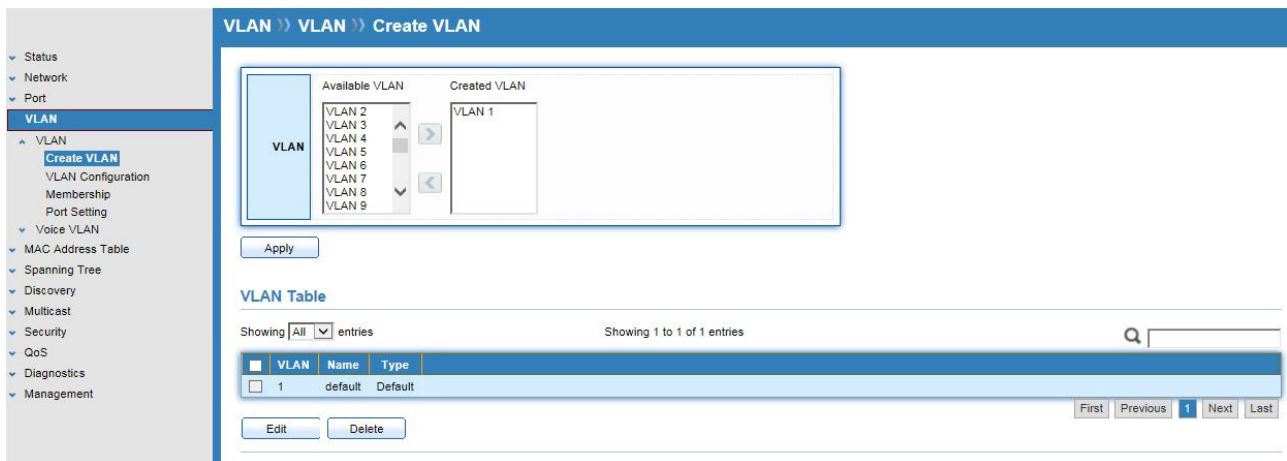
6.1 VLAN

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

6.1.1 Create VLAN

Click **VLAN > VLAN > Create VLAN**

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



| Field | Description |
|-----------------------|---|
| Available VLAN | VLAN has not been created yet. Select available VLANs from the left box then move them to the right box to add. |
| Created VLAN | VLAN has been created. Select created VLANs from the right box then move them to the left box to delete. |

Click "Edit" button to edit VLAN name

| Field | Description |
|-------------|------------------|
| Name | Input VLAN name. |

6.1.2 VLAN Configuration

Click **VLAN > VLAN > VLAN Configuration**

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

The screenshot shows the 'VLAN Configuration' page in a network management system. The left sidebar contains a navigation menu with options like Status, Network, Port, VLAN, and MAC Address Table. The main area displays a table with columns: Entry, Port, Mode, Membership, and PVID. The table lists 36 entries, each representing a port (GE1-GE24 and LAG1-LAG8) in Trunk mode. For each port, there are radio buttons for Excluded, Forbidden, Tagged, and Untagged membership, and a checkbox for PVID. The 'Untagged' membership is selected for all ports, and the PVID checkbox is checked for all. An 'Apply' button is located at the bottom left of the table.

| Entry | Port | Mode | Membership | | | | PVID |
|-------|------|-------|--------------------------------|---------------------------------|------------------------------|---|-------------------------------------|
| 1 | GE1 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 2 | GE2 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 3 | GE3 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 4 | GE4 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 5 | GE5 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 6 | GE6 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 7 | GE7 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 8 | GE8 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 9 | GE9 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 10 | GE10 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 11 | GE11 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 12 | GE12 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 13 | GE13 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 14 | GE14 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 15 | GE15 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 16 | GE16 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 17 | GE17 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 18 | GE18 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 19 | GE19 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 20 | GE20 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 21 | GE21 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 22 | GE22 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 23 | GE23 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 24 | GE24 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 25 | GE25 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 26 | GE26 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 27 | GE27 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 28 | GE28 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 29 | LAG1 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 30 | LAG2 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 31 | LAG3 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 32 | LAG4 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 33 | LAG5 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 34 | LAG6 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 35 | LAG7 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 36 | LAG8 | Trunk | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |

| Field | Description |
|-------------------|---|
| VLAN | Select specified VLAN ID to configure VLAN configuration. |
| Port | Display the interface of port entry. |
| Mode | Display the interface VLAN mode of port. |
| Membership | Select the membership for this port of the specified VLAN ID. Forbidden: Specify the port is forbidden in the VLAN. Excluded: Specify the port is excluded in the VLAN. Tagged: Specify the port is tagged member in the VLAN. Untagged: Specify the port is untagged member in the VLAN. |
| PVID | Display if it is PVID of interface. |

6.1.3 Membership

Click **VLAN > VLAN > Membership**

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

| Entry | Port | Mode | Administrative VLAN | Operational VLAN |
|-----------------------|------|------|---------------------|------------------|
| <input type="radio"/> | 1 | GE1 | Trunk | 1UP |
| <input type="radio"/> | 2 | GE2 | Trunk | 1UP |
| <input type="radio"/> | 3 | GE3 | Trunk | 1UP |
| <input type="radio"/> | 4 | GE4 | Trunk | 1UP |
| <input type="radio"/> | 5 | GE5 | Trunk | 1UP |
| <input type="radio"/> | 6 | GE6 | Trunk | 1UP |
| <input type="radio"/> | 7 | GE7 | Trunk | 1UP |
| <input type="radio"/> | 8 | GE8 | Trunk | 1UP |
| <input type="radio"/> | 9 | GE9 | Trunk | 1UP |
| <input type="radio"/> | 10 | GE10 | Trunk | 1UP |
| <input type="radio"/> | 11 | GE11 | Trunk | 1UP |
| <input type="radio"/> | 12 | GE12 | Trunk | 1UP |
| <input type="radio"/> | 13 | GE13 | Trunk | 1UP |
| <input type="radio"/> | 14 | GE14 | Trunk | 1UP |
| <input type="radio"/> | 15 | GE15 | Trunk | 1UP |
| <input type="radio"/> | 16 | GE16 | Trunk | 1UP |
| <input type="radio"/> | 17 | GE17 | Trunk | 1UP |
| <input type="radio"/> | 18 | GE18 | Trunk | 1UP |
| <input type="radio"/> | 19 | GE19 | Trunk | 1UP |
| <input type="radio"/> | 20 | GE20 | Trunk | 1UP |
| <input type="radio"/> | 21 | GE21 | Trunk | 1UP |
| <input type="radio"/> | 22 | GE22 | Trunk | 1UP |
| <input type="radio"/> | 23 | GE23 | Trunk | 1UP |
| <input type="radio"/> | 24 | GE24 | Trunk | 1UP |
| <input type="radio"/> | 25 | GE25 | Trunk | 1UP |
| <input type="radio"/> | 26 | GE26 | Trunk | 1UP |
| <input type="radio"/> | 27 | GE27 | Trunk | 1UP |
| <input type="radio"/> | 28 | GE28 | Trunk | 1UP |
| <input type="radio"/> | 29 | LAG1 | Trunk | 1UP |
| <input type="radio"/> | 30 | LAG2 | Trunk | 1UP |
| <input type="radio"/> | 31 | LAG3 | Trunk | 1UP |
| <input type="radio"/> | 32 | LAG4 | Trunk | 1UP |
| <input type="radio"/> | 33 | LAG5 | Trunk | 1UP |
| <input type="radio"/> | 34 | LAG6 | Trunk | 1UP |
| <input type="radio"/> | 35 | LAG7 | Trunk | 1UP |
| <input type="radio"/> | 36 | LAG8 | Trunk | 1UP |

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

Click "Edit" button to edit VLAN membership

| Field | Description |
|-------------------|--|
| Port | Display the interface of port entry. |
| Mode | Display the VLAN mode of interface. |
| Membership | Select VLANs of left box and select one of following membership then move to right box to add membership. Select VLANs of right box then move to left box to remove membership. Tagging membership may |

not choose in differ VLAN port mode.
Forbidden: Set VLAN as forbidden VLAN.
Excluded: Set option is always disabled.
Tagged: Set VLAN as tagged VLAN.
Untagged: Set VLAN as untagged VLAN.
PVID: Check this checkbox to select the VLAN ID to be the port-based VLAN ID for this port. PVID may auto select or can't select in differ settings.

6.1.4 Port Setting

Click **VLAN > VLAN > Port Setting**

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

VLAN > VLAN > Port Setting

Port Setting Table

| Entry | Port | Mode | PVID | Accept Frame Type | Ingress Filtering |
|-------|------|-------|------|-------------------|-------------------|
| 1 | GE1 | Trunk | 1 | All | Enabled |
| 2 | GE2 | Trunk | 1 | All | Enabled |
| 3 | GE3 | Trunk | 1 | All | Enabled |
| 4 | GE4 | Trunk | 1 | All | Enabled |
| 5 | GE5 | Trunk | 1 | All | Enabled |
| 6 | GE6 | Trunk | 1 | All | Enabled |
| 7 | GE7 | Trunk | 1 | All | Enabled |
| 8 | GE8 | Trunk | 1 | All | Enabled |
| 9 | GE9 | Trunk | 1 | All | Enabled |
| 10 | GE10 | Trunk | 1 | All | Enabled |
| 11 | GE11 | Trunk | 1 | All | Enabled |
| 12 | GE12 | Trunk | 1 | All | Enabled |
| 13 | GE13 | Trunk | 1 | All | Enabled |
| 14 | GE14 | Trunk | 1 | All | Enabled |
| 15 | GE15 | Trunk | 1 | All | Enabled |
| 16 | GE16 | Trunk | 1 | All | Enabled |
| 17 | GE17 | Trunk | 1 | All | Enabled |
| 18 | GE18 | Trunk | 1 | All | Enabled |
| 19 | GE19 | Trunk | 1 | All | Enabled |
| 20 | GE20 | Trunk | 1 | All | Enabled |
| 21 | GE21 | Trunk | 1 | All | Enabled |
| 22 | GE22 | Trunk | 1 | All | Enabled |
| 23 | GE23 | Trunk | 1 | All | Enabled |
| 24 | GE24 | Trunk | 1 | All | Enabled |
| 25 | GE25 | Trunk | 1 | All | Enabled |
| 26 | GE26 | Trunk | 1 | All | Enabled |
| 27 | GE27 | Trunk | 1 | All | Enabled |
| 28 | GE28 | Trunk | 1 | All | Enabled |
| 29 | LAG1 | Trunk | 1 | All | Enabled |
| 30 | LAG2 | Trunk | 1 | All | Enabled |
| 31 | LAG3 | Trunk | 1 | All | Enabled |
| 32 | LAG4 | Trunk | 1 | All | Enabled |
| 33 | LAG5 | Trunk | 1 | All | Enabled |
| 34 | LAG6 | Trunk | 1 | All | Enabled |
| 35 | LAG7 | Trunk | 1 | All | Enabled |
| 36 | LAG8 | Trunk | 1 | All | Enabled |

Edit

| 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 accepted frame type of port. |
| Ingress Filtering | Display ingress filter status of port |

Click "Edit" button to edit VLAN port setting

| Field | Description |
|--------------------------|---|
| Port | Display the interface of port entry. |
| Mode | Select the VLAN mode of the interface. Hybrid: Support all functions as defined in IEEE802.1Q specification. Access: Accepts only untagged frames and join an untagged VLAN. Trunk: An untagged member of one VLAN at most, and is a tagged member of zero or more VLANs. |
| PVID | Specify the port-based VLAN ID (1~4094). It's only available with hybrid and Trunk mode. |
| Accept Frame Type | Specify the acceptable-frame-type of the specified interfaces. It's only available with Hybrid mode. |
| Ingress Filtering | Specify the status of ingress filtering. It's only available with Hybrid mode. |

6.2 Voice VLAN

6.2.1 Property

Click **VLAN > Voice VLAN > Property**

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

The screenshot shows the 'Voice VLAN > Property' configuration page. It features a configuration form with the following fields:

- State:** Enable
- VLAN:** [None]
- CoS / 802.1p Remarking:** Enable
- Aging Time:** 1440 (Sec (0 - 65536, default 1440))

Below the form is an 'Apply' button and a 'Port Setting Table' with the following columns: Entry, Port, State, Mode, and QoS Policy. The table lists 36 entries, each corresponding to a network interface (GE1-GE28, LAG1-LAG5) with a 'Disabled' state and 'Auto' mode, all using the 'Voice Packet' QoS Policy.

| 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 GE11 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 12 GE12 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 13 GE13 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 14 GE14 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 15 GE15 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 16 GE16 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 17 GE17 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 18 GE18 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 19 GE19 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 20 GE20 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 21 GE21 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 22 GE22 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 23 GE23 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 24 GE24 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 25 GE25 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 26 GE26 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 27 GE27 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 28 GE28 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 29 LAG1 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 30 LAG2 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 31 LAG3 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 32 LAG4 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 33 LAG5 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 34 LAG6 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 35 LAG7 | Disabled | Auto | Voice Packet |
| <input type="checkbox"/> | 36 LAG8 | Disabled | Auto | Voice Packet |

An 'Edit' button is located at the bottom left of the table.

| Field | Description |
|-------------------|--|
| State | Set checkbox to enable or disable voice VLAN function. |
| VLAN | Select Voice VLAN ID. Voice VLAN ID cannot be default VLAN. |
| Cos/802.1p | Select a value of VPT. Qualified packets will use this VPT value as inner priority. |
| Remarking | Set checkbox to enable or disable 1p remarking. If enabled, qualified packets will be remark by this value. |
| Aging Time | Input value of aging time. Default is 1440 minutes. A voice VLAN entry will be age out after this time if without any packet pass through. |

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

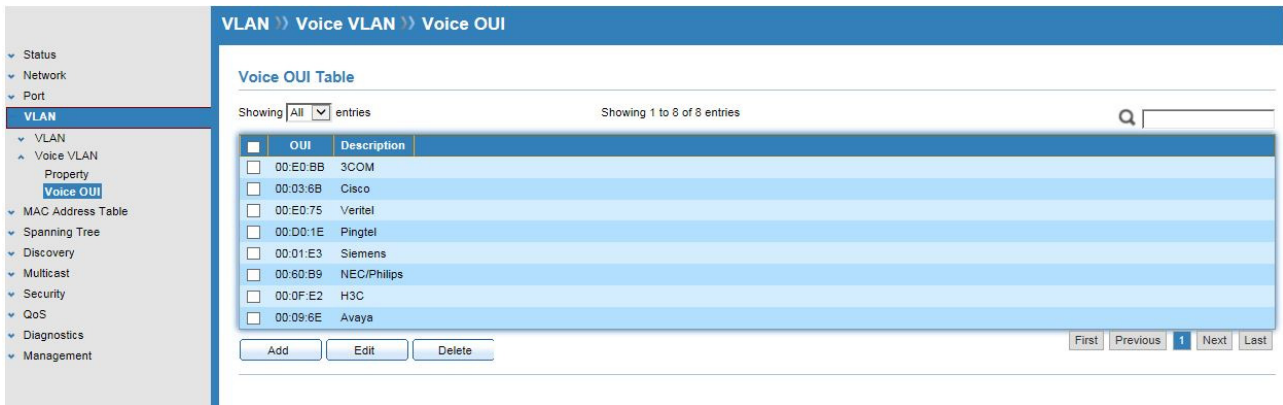
Click "Edit" button to edit Property Port.

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

6.2.2 Voice OUI

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.



| Field | Description |
|--------------------|-----------------------------------|
| OUI | Display OUI MAC address. |
| Description | Display description of OUI entry. |

Click "Add" or "Edit" buttons to edit Voice OUI.

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

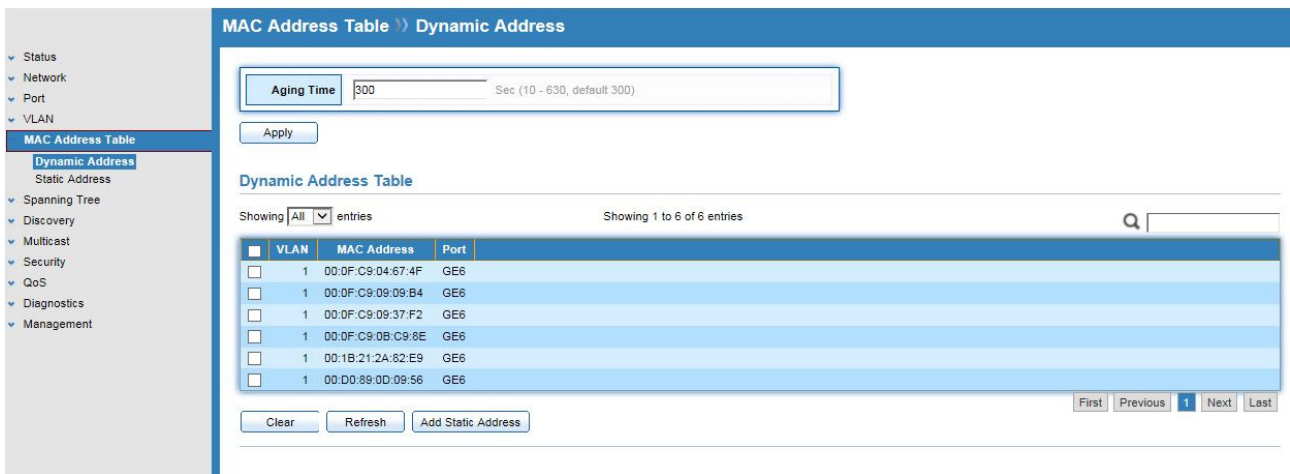
Chapter 7 MAC Address Table

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

7.1 Dynamic Address

Click **MAC Address Table > Dynamic Address**

Configure the aging time of the dynamic address.

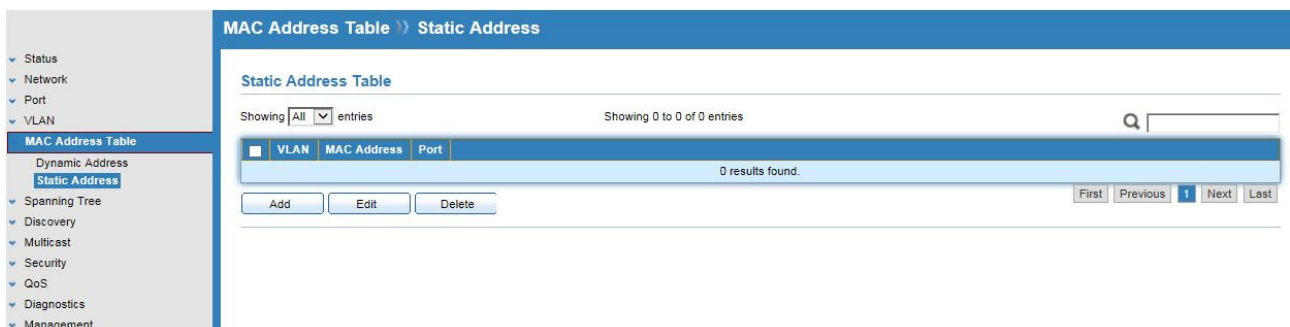


| Field | Description |
|-------------------|--|
| Aging Time | The time in seconds that an entry remains in the MAC address table. Its valid range is from 10 to 630 seconds, and the default value is 300 seconds. |

7.2 Static Address

Click **MAC Address Table > Static Address**

To display the static MAC address.



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

Chapter 8 Spanning Tree Protocol (STP)

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

8.1 Property

Click **STP > Property**

Configure and display STP property configuration.

| Field | Description |
|-----------------------|---|
| State | Enable/Disable the STP on the switch. |
| Operation Mode | Specify the STP operation mode. STP: Enable the Spanning Tree (STP) operation. RSTP: Enable the Rapid Spanning Tree (RSTP) operation. |
| Path Cost | Specify the path cost method. Long: Specifies that the default port path costs are within the range : 1~200,000,000. Short: Specifies that the default port path costs are within the range : 1~65,535. |

| | |
|----------------------|---|
| BPDU Handling | Specify the BPDU forward method when the STP is disabled. Filtering: Filter the BPDU when STP is disabled. Flooding: Flood the BPDU when STP is disabled. |
| Priority | Specify the bridge priority. The valid range is from 0 to 61440, and the value should be the multiple of 4096. It ensures the probability that the switch is selected as the root bridge, and the lower value has the higher priority for the switch to be selected as the root bridge of the topology. |
| Hello Time | Specify the STP hello time in second to broadcast its hello message to other bridge by Designated Ports. Its valid range is from 1 to 10 seconds. |
| Max Age | Specify the time interval in seconds for a switch to wait the configuration messages, without attempting to redefine its own configuration. |
| Forward Delay | Specify the STP forward delay time, which is the amount of time that a port remains in the Listening and Learning states before it enters the Forwarding state. Its valid range is from 4 to 10 seconds. |
| TX Hold Count | Specify the tx-hold-count used to limit the maximum numbers of packets transmission per second. The valid range is from 1 to 10. |

STP operational status

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

8.2 Port Setting

Click **STP > Port Setting**

Configure and display STP port settings.

Spanning Tree >> Port Setting

Port Setting Table

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

Edit Protocol Migration Check

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

| | |
|------------------------|---|
| Designated Cost | The path cost of the designated port on the switch. |
|------------------------|---|

STP port setting buttons

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

Edit STP port setting

| Field | Description |
|-----------------------|---|
| State | Enable/Disable the STP on the specified port |
| Path Cost | Specify the STP path cost on the specified port. |
| Priority | Specify the STP priority on the specified port. |
| Edge Port | Specify the edge mode. Enable : Force to true state (as link to a host) Disable : Force to false state (as link to a bridge) In the edge mode, the interface would be put into the Forwarding state immediately upon link up. If the edge mode is enabled for the interface and there are BPDUs received on the interface, the loop might be occurred in the short time before the STP state change. |
| Point-to-Point | Specify the Point-to-Point port configuration: Auto : The state is depended on the duplex setting of the port. Enable : Force to true state. Disable : Force to false state. |

8.3 Statistics

Click **STP > Statistics**

To display STP statistics

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

Spanning Tree » Statistics

Statistics Table

Refresh Rate sec

| Entry | Port | Receive BPDU | | Transmit BPDU | | |
|--------------------------|------|--------------|-----|---------------|-----|---|
| | | Config | TCN | Config | TCN | |
| <input type="checkbox"/> | 1 | GE1 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 2 | GE2 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 3 | GE3 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 4 | GE4 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 5 | GE5 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 6 | GE6 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 7 | GE7 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 8 | GE8 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 9 | GE9 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 10 | GE10 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 11 | GE11 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 12 | GE12 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 13 | GE13 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 14 | GE14 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 15 | GE15 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 16 | GE16 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 17 | GE17 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 18 | GE18 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 19 | GE19 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 20 | GE20 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 21 | GE21 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 22 | GE22 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 23 | GE23 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 24 | GE24 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 25 | GE25 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 26 | GE26 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 27 | GE27 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 28 | GE28 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 29 | LAG1 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 30 | LAG2 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 31 | LAG3 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 32 | LAG4 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 33 | LAG5 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 34 | LAG6 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 35 | LAG7 | 0 | 0 | 0 | 0 |
| <input type="checkbox"/> | 36 | LAG8 | 0 | 0 | 0 | 0 |

Clear Refresh View

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

| | |
|----------------------------|---|
| (Config) | |
| Transmit BPDU (TCN) | The counts of the transmitted TCN BPDU. |

| Field | Description |
|--------------|---|
| Clear | Clear the statistics for the selected interfaces. |
| View | View the statistics for the interface. |

View STP Port Statistics.

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

Chapter 9 Discovery

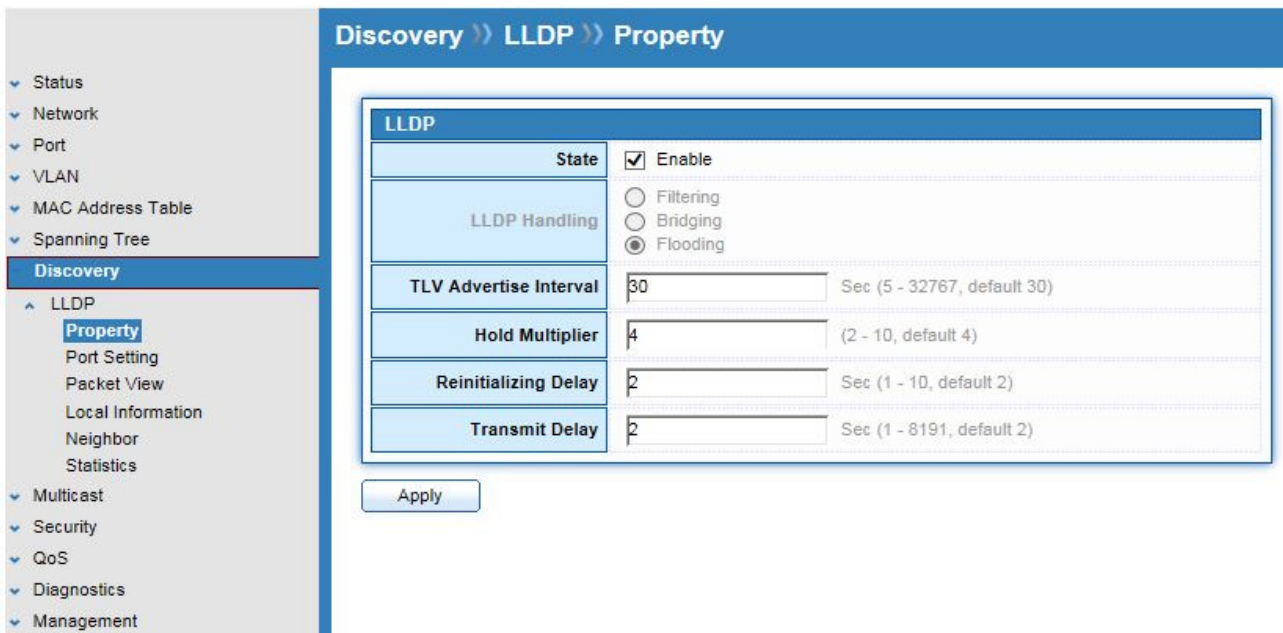
9.1 LLDP

The **Link Layer Discovery Protocol (LLDP)** is a vendor-neutral link layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on an IEEE 802 local area network, principally wired Ethernet. The LLDP is a one-way protocol; there are no request/response sequences. Information is advertised by stations implementing the transmit function, and is received and processed by stations implementing the receive function. The LLDP category contains LLDP and LLDP-MED pages.

9.1.1 Property

Click **Discovery > LLDP > Property**

To display LLDP Property Setting web page.



| Field | Description |
|----------------------|---|
| State | Enable/Disable LLDP protocol on this switch |
| LLDP Handling | Select LLDP PDU handling action to be filtered, bridging or flooded when LLDP is globally disabled. Filtering: Deletes the packet. Bridging: (VLAN-aware flooding) Forwards the packet to all VLAN members. Flooding: Forwards the packet to all ports. |

| | |
|-------------------------------|---|
| TLV Advertise Interval | Select the interval at which frames are transmitted. The default is 30 seconds, and the valid range is 5~32767 seconds. |
| Holdtime Multiplier | Select the multiplier on the transmit interval to assign to TTL (range 2~10, default=4). |
| Reinitialization Delay | Select the delay before a re-initialization (range 1~10 seconds, default=2). |
| Transmit Delay | Select the delay after an LLDP frame is sent (range 1~8191 seconds, default=3). |

9.1.2 Port Setting

Click **Discovery > LLDP > Port Setting**

To display LLDP Port Setting.

Discovery >> LLDP >> Port Setting

Port Setting Table

| <input type="checkbox"/> | 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 |
| <input type="checkbox"/> | 11 | GE11 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 12 | GE12 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 13 | GE13 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 14 | GE14 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 15 | GE15 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 16 | GE16 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 17 | GE17 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 18 | GE18 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 19 | GE19 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 20 | GE20 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 21 | GE21 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 22 | GE22 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 23 | GE23 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 24 | GE24 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 25 | GE25 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 26 | GE26 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 27 | GE27 | Normal | 802.1 PVID |
| <input type="checkbox"/> | 28 | GE28 | Normal | 802.1 PVID |

Edit

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

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

9.1.3 Packet View

Click **Discovery > LLDP > Packet View**

To display LLDP Overloading.

Discovery » LLDP » Packet View

Packet View Table

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

Detail

| 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 |

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

| Field | Description |
|-----------------------|--|
| Port | Port Name |
| Mandatory TLVs | Total mandatory TLV 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. |

9.1.4 Local Information

Click **Discovery > LLDP > Local Information**

To display LLDP Local Device.

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

Discovery >> LLDP >> Local Information

Device Summary

| | |
|-------------------------------|-------------------|
| Chassis ID Subtype | MAC address |
| Chassis ID | 00:0F:C9:09:38:B1 |
| System Name | Switch |
| System Description | switch |
| Supported Capabilities | Bridge |
| Enabled Capabilities | Bridge |
| Port ID Subtype | Local |

Port Status Table

| Entry | Port | LLDP State |
|-----------------------|---------|------------|
| <input type="radio"/> | 1 GE1 | Normal |
| <input type="radio"/> | 2 GE2 | Normal |
| <input type="radio"/> | 3 GE3 | Normal |
| <input type="radio"/> | 4 GE4 | Normal |
| <input type="radio"/> | 5 GE5 | Normal |
| <input type="radio"/> | 6 GE6 | Normal |
| <input type="radio"/> | 7 GE7 | Normal |
| <input type="radio"/> | 8 GE8 | Normal |
| <input type="radio"/> | 9 GE9 | Normal |
| <input type="radio"/> | 10 GE10 | Normal |
| <input type="radio"/> | 11 GE11 | Normal |
| <input type="radio"/> | 12 GE12 | Normal |
| <input type="radio"/> | 13 GE13 | Normal |
| <input type="radio"/> | 14 GE14 | Normal |
| <input type="radio"/> | 15 GE15 | Normal |
| <input type="radio"/> | 16 GE16 | Normal |
| <input type="radio"/> | 17 GE17 | Normal |
| <input type="radio"/> | 18 GE18 | Normal |
| <input type="radio"/> | 19 GE19 | Normal |

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

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

9.1.5 Neighbor

Click **Discovery > LLDP > Neighbor**

To display LLDP Remote Device.

Use the LLDP Neighbor page to view LLDP neighbors information.

| Field | Description |
|---------------------------|--|
| Local Port | Number of the local port to which the neighbor is connected. |
| Chassis ID Subtype | Type of chassis ID (for example, MAC address) |
| Chassis ID | Identifier of the 802 LAN neighboring device’s chassis. |
| Port ID Subtype | Type of the port identifier that is shown. |
| Port ID | Identifier of port. |

| | |
|---------------------|--|
| System Name | Published name of the switch. |
| Time to Live | Time interval in seconds after which the information for this neighbor is deleted. |

Click "detail" to view selected neighbor detail information.

9.1.6 Statistics

Click **Discovery > LLDP > Statistics**

To display LLDP Statistics status.

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

The screenshot shows the 'Discovery >> LLDP >> Statistics' page. On the left is a navigation menu with categories like Status, Network, Port, VLAN, MAC Address Table, Spanning Tree, Discovery, LLDP (Property, Port Setting, Packet View, Local Information, Neighbor, Statistics), Multicast, Security, QoS, Diagnostics, and Management. The 'Statistics' option under LLDP is selected.

The main content area is titled 'Global Statistics' and contains a summary table:

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

Below this are 'Clear' and 'Refresh' buttons.

The 'Statistics Table' below shows per-port data:

| 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 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 7 GE7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 8 GE8 | 0 | 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 | |
| <input type="checkbox"/> | 11 GE11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 12 GE12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 13 GE13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 14 GE14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 15 GE15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 16 GE16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 17 GE17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 18 GE18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 19 GE19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 20 GE20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 21 GE21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 22 GE22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 23 GE23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 24 GE24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| <input type="checkbox"/> | 25 GE25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

| Field | Description |
|---------------------------------|--|
| Insertions | The number of times the complete set of information advertised by a particular MAC Service Access Point (MSAP) has been inserted into tables associated with the remote systems. |
| Deletions | The number of times the complete set of information advertised by MSAP has been deleted from tables associated with the remote systems. |
| Drops | The number of times the complete set of information advertised by MSAP could not be entered into tables associated with the remote systems because of insufficient resources. |
| Age Outs | The number of times the complete set of information advertised by MSAP has been deleted from tables associated with the remote system because the information timeliness interval has expired. |
| Port | Interface or port number. |
| Transmit Frame Total | Number of LLDP frames transmitted on the corresponding port/ |
| Receive Frame Total | Number of LLDP frames received by this LLDP agent on the corresponding port, while the LLDP agent is enabled. |
| Receive Frame Discard | Number of LLDP frames discarded for any reason by the LLDP agent on the corresponding port. |
| Receive Frame Error | Number of invalid LLDP frames received by the LLDP agent on the corresponding port, while the LLDP agent is enabled. |
| Receive TLV Discard | Number of TLVs of LLDP frames discarded for any reason by the LLDP agent on the corresponding port. |
| Receive TLV Unrecognized | Number of TLVs of LLDP frames that are unrecognized while the LLDP agent is enabled. |
| Neighbor Timeout | Number of age out LLDP frames. |

Chapter 10 Multicast

10.1 General

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

10.1.1 Property

Click **Multicast > General > Property**

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



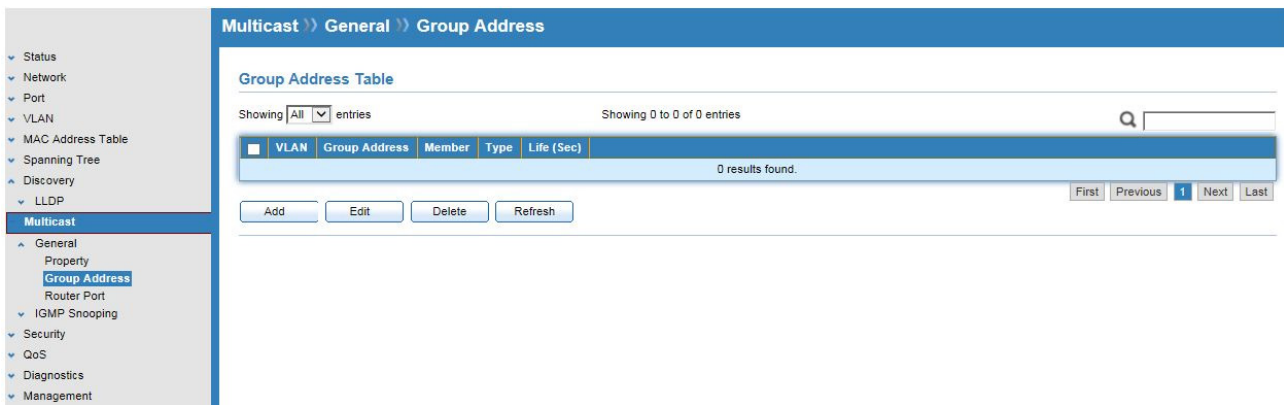
| Field | Description |
|---------------------------------|--|
| Unknown Multicast Action | Set the unknown multicast action Drop: drop the unknown multicast data. Flood: flood the unknown multicast data. Router port: forward the unknown multicast data to router port. |
| IPv4 | Set the IPv4 multicast forward method. MAC-VID: forward method dmac+vid. DIP-VID: forward method dip+vid. |

10.1.2 Group Address

Click **Multicast > General > Group Address**

To display Multicast General Group web page.

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



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

Click "Add" to add Group Address.

| Field | Description |
|----------------------|---|
| VLAN | The VLAN ID of group. |
| Group Address | The group IP address. |
| Member | The member ports of group. Available Port : Optional port member Selected Port : Selected port member |

Click "Edit" to edit Group Address.

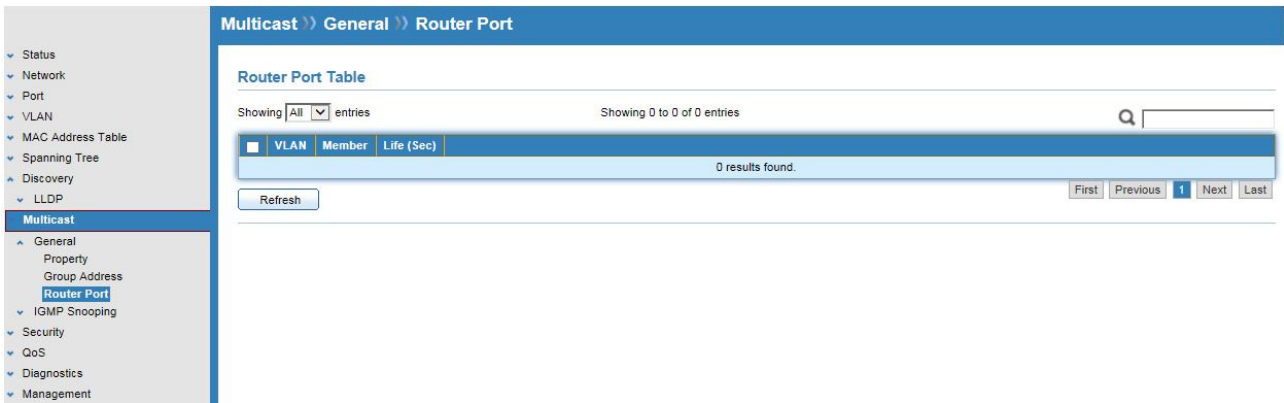
| Field | Description |
|----------------------|---|
| VLAN | The VLAN ID of group. |
| Group Address | The group IP address. |
| Member | The member ports of group. Available Port : Optional port member Selected Port : Selected port member |

10.1.3 Router Port

Click **Multicast > General > Router Port**

To display Multicast router port table web page.

This page browse all router port information.



| Field | Description |
|-------------------|--------------------------------------|
| VLAN | The VLAN ID router entry. |
| Member | Router Port member. |
| Life (Sec) | The expiry time of the router entry. |

10.2 IGMP Snooping

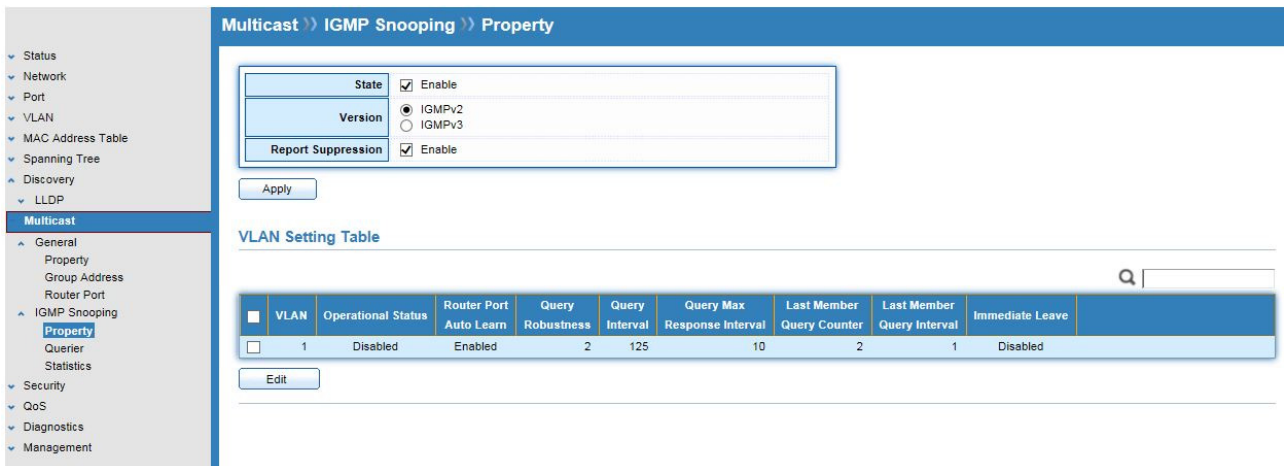
Use the IGMP Snooping pages to configure setting of IGMP snooping function.

10.2.1 Property

Click **Multicast > IGMP Snooping > Property**

To display IGMP Snooping global setting and VLAN setting web page.

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



| Field | Description |
|------------------------------------|---|
| State | Set the enabling status of IGMP Snooping functionality Enable: If Checked Enable IGMP Snooping, else is Disabled IGMP Snooping. |
| Version | Set the IGMP Snooping version IGMPv2: Only support process IGMP v2 packet. IGMPv3: Support v3 basic and v2. |
| Report Suppression | Set the enabling status of IGMP v2 report suppression. Enable: If Checked Enable IGMP Snooping v2 report suppression, else Disable the report suppression function. |
| VLAN | The IGMP entry VLAN ID. |
| Operation Status | The enable status of IGMP Snooping VLAN functionality. |
| Router Port Auto Learn | The enabling status of IGMP Snooping router port auto learning |
| Query Robustness | The Query Robustness allows tuning for the expected packet lose on a subnet. |
| Query Interval | The interval of query to send general query. |
| Query Max Response Interval | In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second. |
| Last Member Query count | The count that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group. |
| Last Member Query Interval | The interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group. |
| Immediate Leave | The immediate leave status of the group will immediate leave when receive IGMP Leave message. |

Click "Edit" to edit VLAN Setting.

| Field | Description |
|------------------------------------|---|
| VLAN | The selected VLAN List |
| State | Set the enabling status of IGMP Snooping VLAN functionality Enable: If Checked Enable IGMP Snooping router VLAN, else is Disabled IGMP Snooping VLAN. |
| Router Port Auto Learn | Set the enabling status of IGMP Snooping router port learning. Enable: If Checked Enable learning router port by query and PIM, DVRMP, else Disable the learning router port. |
| Immediate Leave | Immediate Leave the group when receive IGMP Leave message. Enable: If Checked Enable immediate leave, else Disable immediate leave. |
| Query Robustness | The Admin Query Robustness allows tuning for the expected packet loss on a subnet. |
| Query Interval | The Admin interval of querier to send general query. |
| Query Max Response Interval | The Admin query max response interval, In Membership Query Messages, it specifies the maximum allowed time before sending a responding report in units of 1/10 second. |
| Last Member | The Admin last member query count that Querier-switch sends |

| | |
|-----------------------------------|---|
| Query Counter | Group-Specific Queries when it receives a Leave Group message for a group. |
| Last Member Query Interval | The Admin last member query interval that Querier-switch sends Group-Specific Queries when it receives a Leave Group message for a group. |

Operational Status.

| Field | Description |
|------------------------------------|--|
| Status | Operational IGMP Snooping status, must both IGMP Snooping global and IGMP Snooping enable the status will be enable. |
| Query Robustness | Operational Query Robustness. |
| Query Interval | Operational Query Interval. |
| Query Max Response Interval | Operational Query Max Response Interval. |
| Last Member Query Counter | Operational Last Member Query Count. |
| Last Member Query Interval | Operational Last Member Query Interval. |

10.2.2 Querier

Click **Multicast > IGMP Snooping > Querier**

To display IGMP Snooping Querier setting web page.

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

| Field | Description |
|--------------|--|
| VLAN | IGMP Snooping querier entry VLAN ID. |
| State | The IGMP Snooping querier Admin State. |

| | |
|---------------------------|---|
| Operational Status | The IGMP Snooping querier operational status. |
| Querier Version | The IGMP Snooping querier operational version. |
| Querier IP | The operational querier IP address on the VLAN. |

Click "Edit" to edit IGMP Snooping Querier.

| Field | Description |
|----------------|--|
| VLAN | The selected Edit IGMP Snooping querier VLAN list. |
| State | Set the enabling status of IGMP Querier Election on the chose VLANs. Enabled: If checked Enable IGMP Querier, else Disable IGMP Querier. |
| Version | Set the query version of IGMP Querier Election on the chose VLANs. IGMPv2: Querier version 2 IGMPv3: Querier version 3. (IGMP Snooping version should be IGMPv3) |

10.2.3 Statistics

Click **Multicast > IGMP Snooping > Statistics**

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

Multicast >> IGMP Snooping >> Statistics

| Receive Packet | | |
|-----------------------------|--|-----|
| Total | | 109 |
| Valid | | 107 |
| InValid | | 2 |
| 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 |

Clear Refresh

Receive Packet

| Field | Description |
|------------------------------------|--|
| Total | Total RX IGMP packet, include IPv4 multicast data to CPU. |
| Valid | The valid IGMP Snooping process packet. |
| InValid | The invalid IGMP Snooping process packet. |
| Other | The ICMP protocol is not 2, and is not IPv4 multicast data packet. |
| Leave | IGMP leave packet. |
| Report | IGMP join and report packet. |
| General Query | IGMP general query packet |
| Special Group Query | IGMP special group general query packet |
| Source-specific Group Query | IGMP special source and group general query packet |

Transmit Packet

| Field | Description |
|------------------------------------|--|
| Leave | IGMP leave packet |
| Report | IGMP join and report packet |
| General Query | IGMP general query packet includes querier transmit general query packet. |
| Special Group Query | IGMP special group query packet include querier transmit special group query packet. |
| Source-specific Group Query | IGMP special source and group general query packet. |

Chapter 11 Security

Use the security pages to configure setting for the switch security features.

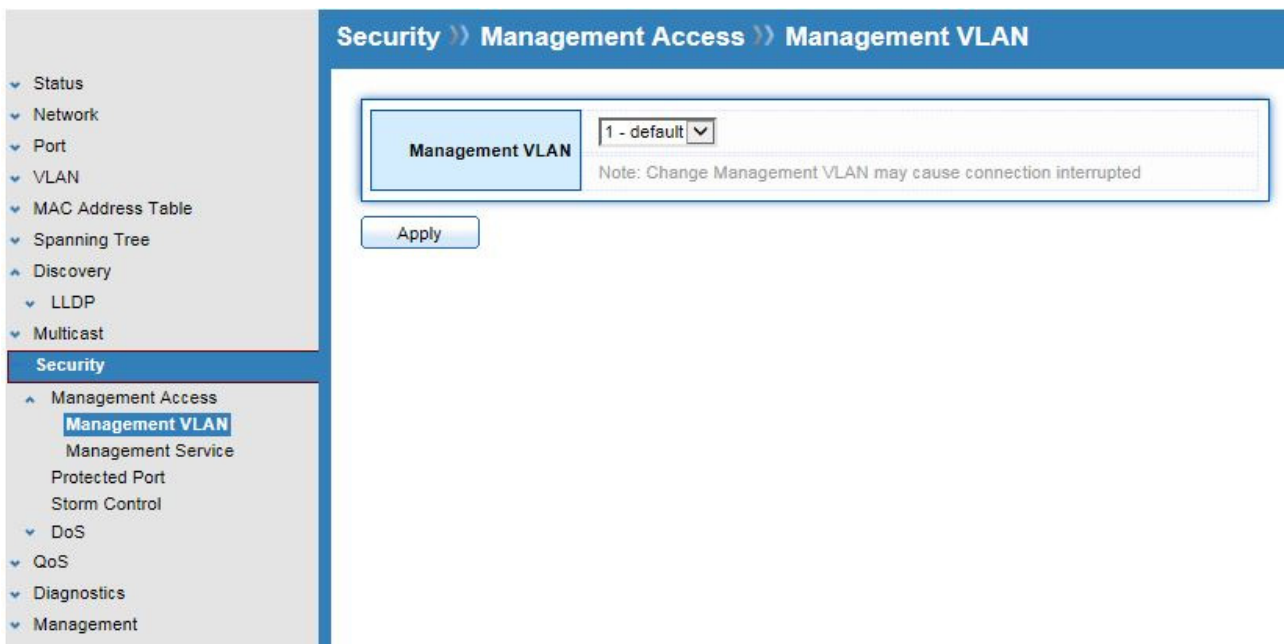
11.1 Management Access

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

11.1.1 Management VLAN

Click **Security > Management Access > Management VLAN**

This page allow user to change Management VLAN connection.

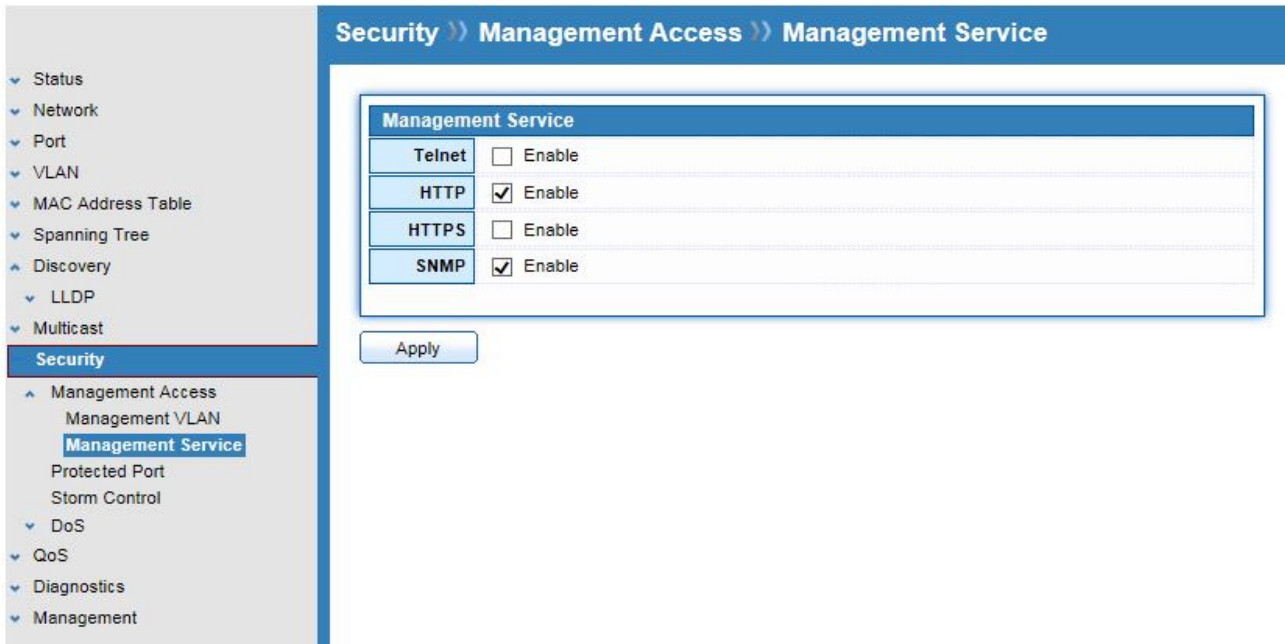


| Field | Description |
|------------------------|--|
| Management VLAN | Select management VLAN in option list. Management connection, such as http, https, SNMP etc., has the same VLAN of management VLAN are allow connecting to device. Others will be dropped. |

11.1.2 Management Service

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

This page allow user to change management services related configurations.



| Field | Description |
|---------------------------|---|
| Management Service | Management Service admin state. Telnet: Connect CLI through Telnet. HTTP: Connect Web UI through HTTP. HTTPS: Connect Web UI through HTTPS. SNMP: Manage switch through SNMP. |
| Session Timeout | Set session timeout minutes for user access to user interface. 0 minute means never timeout. |

11.2 Protected Port

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.

Security >> Protected Port

Protected Port Table

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

| Field | Description |
|--------------|---|
| Port | Port Name |
| State | Port protected admin state. Protected: Port is protected. Unprotected: Port is unprotected. |

Click "Edit" to edit the protected port.

| Field | Description |
|--------------|--|
| Port | Selected port list |
| State | Port protected admin state. Protected: Enable protecting function. Unprotected: Disable protecting function. |

11.3 Storm Control

Click **Security > Storm Control**

To display Storm Control global setting web page.

Security >> Storm Control

Mode: Packet / Sec
 Kbits / Sec

IFG: Exclude
 Include

Apply

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 |
| <input type="checkbox"/> | 11 | GE11 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 12 | GE12 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 13 | GE13 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 14 | GE14 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 15 | GE15 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 16 | GE16 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 17 | GE17 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 18 | GE18 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 19 | GE19 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 20 | GE20 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 21 | GE21 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 22 | GE22 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 23 | GE23 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 24 | GE24 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 25 | GE25 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 26 | GE26 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 27 | GE27 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |
| <input type="checkbox"/> | 28 | GE28 | Disabled | Disabled | 10000 | Disabled | 10000 | Disabled | 10000 | Drop |

Edit

| Field | Description |
|-------------|--|
| Unit | Select the unit of storm control Packet/Sec : storm control rate calculates by packet-based Kbits/Sec : storm control rate calculates by octet-based |
| IFG | Select the rate calculates w/o preamble & IFG (20 bytes) Excluded : exclude preamble & IFG (20 bytes) when count ingress storm control rate. Included : include preamble & IFG (20 bytes) when count ingress storm control rate. |

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

| Field | Description |
|--------------------------|---|
| Port | Select the setting ports |
| State | Select the state of setting. Enable : Enable the storm control function. |
| Broadcast | Enable : Enable the storm control function of broadcast packet. Value of storm control rate, Unit: pps (packet per-second, range 1~262143) or Kbps (Kbits per-second, range 16~1000000) depends on global mode setting. |
| Unknown Multicast | Enable : Enable the storm control function of unknown multicast packet. Value of storm control rate, Unit: pps (packet per-second, range 1~262143) or Kbps (Kbits per-second, range 16~1000000) depends on |

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

11.4 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 Setting enables activating the security suite.

11.4.1 Property

Click **Security > DoS > Property**

To display DoS Global Setting web page.

Security » DoS » Property

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
 - LLDP
 - Multicast
- Security**
 - Management Access
 - Protected Port
 - Storm Control
 - DoS
 - Property**
 - Port Setting
 - QoS
 - Diagnostics
 - Management

| | |
|--------------------|---|
| 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 Note: Source Port < 1024 |
| TCP Fragment | <input checked="" type="checkbox"/> Enable Note: Offset = 1 |
| Ping Max Size | <input checked="" type="checkbox"/> Enable IPv4 <input checked="" type="checkbox"/> Enable IPv6 512 Byte (0 - 65535, default 512) |
| TCP Min Hdr size | <input checked="" type="checkbox"/> Enable 20 Byte (0 - 31, default 20) |
| IPv6 Min Fragment | <input checked="" type="checkbox"/> Enable 1240 Byte (0 - 65535, default 1240) |
| Smurf Attack | <input checked="" type="checkbox"/> Enable 0 Netmask Length (0 - 32, default 0) |

Apply

| Field | Description |
|---------------------------|--|
| POD | Avoids ping of death attack. |
| Land | Drops the packets if the source IP address is equal to the destination IP address. |
| UDP Blat | Drops the packets if the UDP source port equals to the UDP destination port. |
| TCP Blat | Drops the packages if the TCP source port is equal to the TCP destination port. |
| DMAC=SMAC | Drops the packets if the destination MAC address is equal to the source MAC address. |
| Null Scan Attack | Drops the packets with NULL scan. |
| X-Mas Scan Attack | Drops the packets if the sequence number is zero, and the FIN, URG and PSH bits are set. |
| TCP SYN-FIN Attack | Drops the packets with SYN and FIN bits set. |
| TCP SYN-RST Attack | Drops the packets with SYN and RST bits set. |
| ICMP Fragment | Drops the fragmented ICMP packets. |

| | |
|--------------------------------|--|
| TCP-SYN(SPORT <1024) | Drops SYN packets with sport less than 1024. |
| TCP Fragment (Offset=1) | Drops the TCP fragment packets with offset equals to one. |
| Ping Max Size | Specify the maximum size of the ICMPv4/ICMPv6 ping packets. The valid range is from 0 to 65535 bytes, and the default value is 512 bytes. |
| IPv4 Ping Max Size | Checks the maximum size of ICMP ping packets, and drops the packets larger than the maximum packet size. |
| IPv6 Ping Max Size | Checks the maximum size of ICMPv6 ping packets, and drops the packets larger than the maximum packet size |
| TCP Min Hdr Size | Checks the minimum TCP header and drops the TCP packets with the header smaller than the minimum size. The length range is from 0 to 31 bytes, and default length is 20 bytes. |
| IPv6 Min Fragment | Checks the minimum size of IPv6 fragments, and drops the packets smaller than the minimum size. The valid range is from 0 to 65535 bytes, and default value is 1240 bytes. |
| Smurf Attack | Avoid smurf attack. The length range of the netmask is from 0 to 323 bytes, and default length is 0 bytes. |

11.4.2 Port Setting

Click **Security > DoS > Port Setting**

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

Security >> DoS >> Port Setting

Port Setting Table

| <input type="checkbox"/> | 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 |
| <input type="checkbox"/> | 11 | GE11 | Disabled |
| <input type="checkbox"/> | 12 | GE12 | Disabled |
| <input type="checkbox"/> | 13 | GE13 | Disabled |
| <input type="checkbox"/> | 14 | GE14 | Disabled |
| <input type="checkbox"/> | 15 | GE15 | Disabled |
| <input type="checkbox"/> | 16 | GE16 | Disabled |
| <input type="checkbox"/> | 17 | GE17 | Disabled |
| <input type="checkbox"/> | 18 | GE18 | Disabled |
| <input type="checkbox"/> | 19 | GE19 | Disabled |
| <input type="checkbox"/> | 20 | GE20 | Disabled |
| <input type="checkbox"/> | 21 | GE21 | Disabled |
| <input type="checkbox"/> | 22 | GE22 | Disabled |
| <input type="checkbox"/> | 23 | GE23 | Disabled |
| <input type="checkbox"/> | 24 | GE24 | Disabled |
| <input type="checkbox"/> | 25 | GE25 | Disabled |
| <input type="checkbox"/> | 26 | GE26 | Disabled |
| <input type="checkbox"/> | 27 | GE27 | Disabled |
| <input type="checkbox"/> | 28 | GE28 | Disabled |

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

Chapter 12 QoS

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

12.1 General

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

12.1.1 Property

Click **QoS > General > Property**

To display QoS property web page.

QoS > General > Property

State Enable

Trust Mode

- CoS
- DSCP
- CoS-DSCP
- IP Precedence

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 | GE11 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 12 | GE12 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 13 | GE13 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 14 | GE14 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 15 | GE15 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 16 | GE16 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 17 | GE17 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 18 | GE18 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 19 | GE19 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 20 | GE20 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 21 | GE21 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 22 | GE22 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 23 | GE23 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 24 | GE24 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 25 | GE25 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 26 | GE26 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 27 | GE27 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 28 | GE28 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 29 | LAG1 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 30 | LAG2 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 31 | LAG3 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 32 | LAG4 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 33 | LAG5 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 34 | LAG6 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 35 | LAG7 | 0 | Enabled | Disabled | Disabled | Disabled |
| <input type="checkbox"/> | 36 | LAG8 | 0 | Enabled | Disabled | Disabled | Disabled |

| Field | Description |
|----------------------------------|---|
| State | Set checkbox to enable/disable QoS. |
| Trust Mode | Select QoS trust mode. CoS: Traffic is mapped to queues based on the CoS field in the VLAN tag, or based on the per-port default CoS value (if there is no VLAN tag on the incoming packet), the actual mapping of the CoS to queue can be configured on port setting dialog. DSCP: All IP traffic is mapped to queues based on the DSCP field in the IP header. The actual mapping of the DSCP to queue can be configured on the DSCP mapping page. If traffic is not IP traffic, it is mapped to the best effort queue. CoS-DSCP: Uses the trust CoS mode for non-IP traffic and trust DSCP mode for IP traffic. IP Precedence: Traffic is mapped to queues based on the IP precedence. The actual mapping of the IP precedence to queue can be configured on the IP Precedence mapping page. |
| Field | Description |
| Port | Port name |
| CoS | Port default CoS priority value for the selected ports. |
| Trust | Port trust state Enable: Traffic will follow trust mode in global setting. Disable: Traffic will always use best efforts. |
| Remarking (CoS) | Port CoS remarking admin state. Enable: CoS remarking is enabled Disable: CoS remarking is disabled |
| Remarking (DSCP) | Port DSCP remarking admin state. Enable: DSCP remarking is enabled Disable: DSCP remarking is disabled |
| Remarking (IP Precedence) | Port IP Precedence remarking admin state. Enable: IP Precedence remarking is enabled Disable: IP Precedence remarking is disabled |

Click "Edit" to edit the QoS port setting.

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

12.1.2 Queue Scheduling

Click **QoS > General > Queue Scheduling**

To display Queue Scheduling web page.

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

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

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

The queuing mode can be selected on the Queue page. When the queuing mode is by Strict Priority, the priority sets the order in which queues are serviced, starting with queue_8 (the highest priority queue) and going to the next lower queue when each queue is completed. When the queuing mode is Weighted Round Robin, queues are serviced until their quota has been used up and then another queue is serviced. It is also possible to assign some of the lower queues to WRR, while keeping some of the higher queues in Strict Priority. In this case traffic for the SP queues is always sent before traffic from the WRR queues. After the SP queues has been emptied, traffic from the WRR queues is forwarded. (The relative portion from each WRR queue depends on its weight).

| Queue | Method | | WRR Bandwidth (%) |
|-------|----------------------------------|-----------------------|-------------------|
| | Strict Priority | WRR | |
| 1 | <input checked="" type="radio"/> | <input type="radio"/> | 1 |
| 2 | <input checked="" type="radio"/> | <input type="radio"/> | 2 |
| 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 |

| 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. |

12.1.3 CoS Mapping

Click **QoS > General > CoS Mapping**

To display CoS Mapping web page.

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

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

The screenshot shows the configuration interface for CoS Mapping. On the left is a navigation menu with 'QoS' expanded to 'CoS Mapping'. The main area contains two tables:

- CoS to Queue Mapping:** A table with 8 rows. The 'CoS' column contains values 0 through 7. The 'Queue' column contains values 2 through 8. An 'Apply' button is located below the table.
- Queue to CoS Mapping:** A table with 8 rows. The 'Queue' column contains values 1 through 8. The 'CoS' column contains values 1 through 7. An 'Apply' button is located below the table.

| Field | Description |
|--------------|------------------------------------|
| CoS | CoS value |
| Queue | Select queue ID for the CoS value |
| Field | Description |
| Queue | Queue ID |
| CoS | Select CoS value for the queue ID. |

12.1.4 DSCP Mapping

Click **QoS > General > DSCP Mapping**

To display DSCP Mapping web page.

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

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

DSCP 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 |

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] |

| Field | Description |
|--------------|---------------------------------|
| DSCP | DSCP value |
| Queue | Select Queue ID for DSCP value. |
| Field | Description |
| Queue | Queue ID |
| DSCP | Select DSCP value for Queue ID. |

12.1.5 IP Precedence Mapping

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

To display IP Precedence Mapping web page.

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

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

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

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

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

Click **QoS > Rate Limit > Ingress/Egress**

To display Ingress/Egress Port web page.

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

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 | |
| <input type="checkbox"/> | 11 GE11 | Disabled | | Disabled | |
| <input type="checkbox"/> | 12 GE12 | Disabled | | Disabled | |
| <input type="checkbox"/> | 13 GE13 | Disabled | | Disabled | |
| <input type="checkbox"/> | 14 GE14 | Disabled | | Disabled | |
| <input type="checkbox"/> | 15 GE15 | Disabled | | Disabled | |
| <input type="checkbox"/> | 16 GE16 | Disabled | | Disabled | |
| <input type="checkbox"/> | 17 GE17 | Disabled | | Disabled | |
| <input type="checkbox"/> | 18 GE18 | Disabled | | Disabled | |
| <input type="checkbox"/> | 19 GE19 | Disabled | | Disabled | |
| <input type="checkbox"/> | 20 GE20 | Disabled | | Disabled | |
| <input type="checkbox"/> | 21 GE21 | Disabled | | Disabled | |
| <input type="checkbox"/> | 22 GE22 | Disabled | | Disabled | |
| <input type="checkbox"/> | 23 GE23 | Disabled | | Disabled | |
| <input type="checkbox"/> | 24 GE24 | Disabled | | Disabled | |
| <input type="checkbox"/> | 25 GE25 | Disabled | | Disabled | |
| <input type="checkbox"/> | 26 GE26 | Disabled | | Disabled | |
| <input type="checkbox"/> | 27 GE27 | Disabled | | Disabled | |
| <input type="checkbox"/> | 28 GE28 | Disabled | | Disabled | |

Edit

| Field | Description |
|------------------------|---|
| Port | Port name |
| Ingress (State) | Port ingress rate limit state Enable: Ingress rate limit is enabled. Disable: Ingress rate limit is disabled. |
| Ingress (Rate) | Port ingress rate limit value if ingress rate state is enabled. |
| Egress (State) | Port egress rate limit state Enable: Egress rate limit is enabled. Disable: Egress rate limit is disabled. |
| Egress (Rate) | Port egress rate limit value if egress rate state is enabled. |

Click "Edit" to edit Ingress/Egress Port.

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

12.2.2 Egress Queue

Click **QoS > Rate Limit > Egress Queue**

To display Egress Queue web page.

Egress rate limiting is performed by shaping the output load.

QoS >> Rate Limit >> Egress Queue

Egress Queue Table

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

Edit

| Field | Description |
|------------------------|---|
| Port | Port name |
| Queue 1 (State) | Port egress queue 1 rate limit state. Enable: Egress queue rate limit is enable. Disable: Egress queue rate limit is disable. |
| Queue 1 (CIR) | Queue 1 egress committed information rate. |
| Queue 2 (State) | Port egress queue 2 rate limit state. Enable: Egress queue rate limit is enable. Disable: Egress queue rate limit is disable. |
| Queue 2 (CIR) | Queue 2 egress committed information rate. |
| Queue 3 (State) | Port egress queue 3 rate limit state. Enable: Egress queue rate limit is enable. Disable: Egress queue rate limit is disable. |
| Queue 3 (CIR) | Queue 3 egress committed information rate. |
| Queue 4 (State) | Port egress queue 4 rate limit state. Enable: Egress queue rate limit is enable. Disable: Egress queue rate limit is disable. |
| Queue 4 (CIR) | Queue 4 egress committed information rate. |
| Queue 5 (State) | Port egress queue 5 rate limit state. Enable: Egress queue rate limit is enable. Disable: Egress queue rate limit is disable. |
| Queue 5 (CIR) | Queue 5 egress committed information rate. |
| Queue 6 (State) | Port egress queue 6 rate limit state. Enable: Egress queue rate limit is enable. Disable: Egress queue rate limit is disable. |

| | |
|------------------------|---|
| Queue 6 (CIR) | Queue 6 egress committed information rate. |
| Queue 7 (State) | Port egress queue 7 rate limit state. Enable: Egress queue rate limit is enable. Disable: Egress queue rate limit is disable. |
| Queue 7 (CIR) | Queue 7 egress committed information rate. |
| Queue 8 (State) | Port egress queue 8 rate limit state. Enable: Egress queue rate limit is enable. Disable: Egress queue rate limit is disable. |
| Queue 8 (CIR) | Queue 8 egress committed information rate. |

Click "Edit" to edit Egress Queue

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

Chapter 13 Diagnostics

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

13.1 Logging

13.1.1 Property

Click **Diagnostics > Logging > Property**

To display the Logging Service web page.

| Field | Description |
|--------------|---|
| State | Enable/Disable the global logging services. When the logging service is enabled, logging configuration of each destination rule can be individually configured. If the logging service is disabled, no messages will be sent to these destinations. |

Console Logging

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

RAM Logging

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

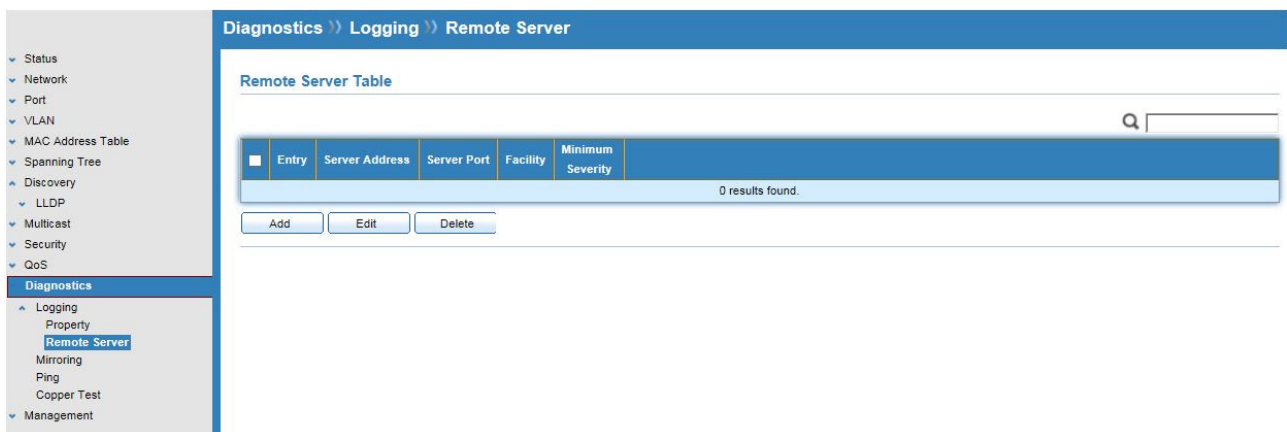
Flash Logging

| Field | Description |
|-------------------------|---|
| State | Enable/Disable the Flash logging service. |
| Minimum Severity | The minimum severity for the Flash logging. |

13.1.2 Remote Server

Click **Diagnostics > Logging > Remote Server**

To display the Remote Logging Server web page.



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

13.2 Mirroring

Click **Diagnostics > Mirroring**

To display the Port Mirroring web page.

The screenshot shows the 'Diagnostics > Mirroring' page. On the left is a navigation menu with categories like Status, Network, Port, VLAN, MAC Address Table, Spanning Tree, Discovery, LLDP, Multicast, Security, QoS, and Diagnostics. Under Diagnostics, 'Mirroring' is selected. The main content area is titled 'Mirroring Table' and contains a table with the following data:

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

Below the table is an 'Edit' button and a note: '*** Allow the monitor port to send or receive normal packets'.

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

13.2 Ping

Click **Diagnostics > Ping**

To display the Diagnostic Ping functionality web page.

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

13.3 Copper Test

Click **Diagnostics > Copper Test**

To test the copper length diagnostic.

The screenshot shows a web-based network configuration interface. On the left is a navigation menu with categories like Status, Network, Port, VLAN, MAC Address Table, Spanning Tree, Discovery, LLD, Multicast, Security, QoS, Diagnostics, Logging, Property, Remote Server, Mirroring, Ping, Copper Test, and Management. The main area is titled 'Diagnostics >> Copper Test'. It features a 'Port' dropdown menu currently showing 'GE1' and a 'Copper Test' button. Below this is a 'Copper Test Result' section containing a table with the following data:

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

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

Copper Test Result

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

Chapter 14 Management

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

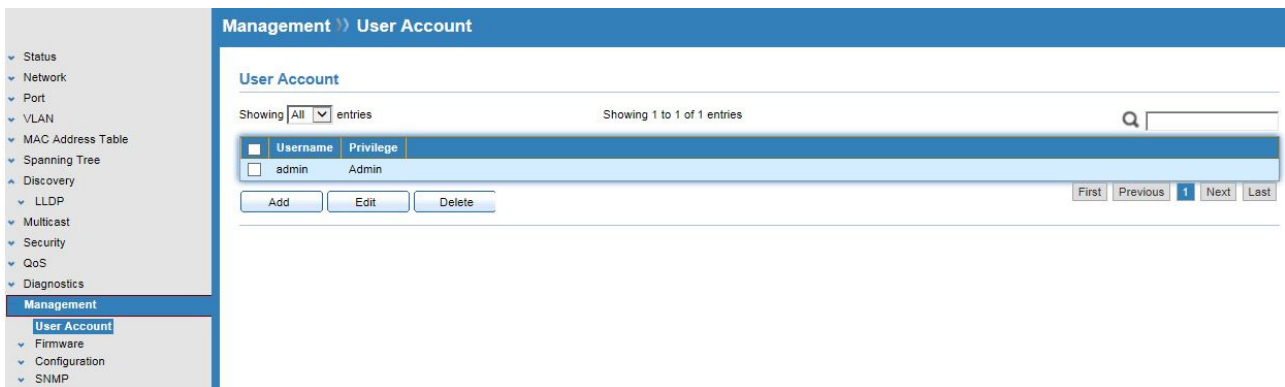
14.1 User Account

Click **Management > User Account**

To display User Account web page.

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.



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

Click "Add" or "Edit" to add/edit User Account.

| Field | Description |
|-------------------------|--|
| Username | User name of the account. |
| Password | Set password of the account. |
| Confirm Password | Set the same password of the account as in "Password" field |
| Privilege | Select privilege level for new account. Admin: Allow to change switch settings. Privilege value equals to 15. User: See switch settings only. Not allow to change it. Privilege level equals to 1. |

14.2 Firmware

14.2.1 Upgrade/Backup

Click **Management > Firmware > Upgrade/Backup**

To display the Firmware Upgrade or Backup web page.

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

Upgrade Firmware through HTTP

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

Upgrade Firmware through TFTP.

| Field | Description |
|---------------------|---|
| Action | Firmware operations Upgrade: Upgrade firmware from remote host to DUT. Backup: Backup firmware image from DUT to remote host. |
| Method | Firmware upgrade/backup method TFTP: Using TFTP to upgrade/backup firmware. HTTP: Using WEB browser to upgrade/backup firmware. |
| Address Type | Specify TFTP server address type Hostname: Use domain name as server address. |

| | |
|-----------------------|--|
| | IPv4 : Use IPv4 as server address IPv6 : Use IPv6 as server address |
| Server Address | Specify TFTP server address. |
| Filename | Firmware image file name on remote TFTP server |

Backup Firmware through HTTP

| Field | Description |
|---------------|---|
| Action | Firmware operations Upgrade : Upgrade firmware from remote host to DUT. Backup : Backup firmware image from DUT to remote host. |
| Method | Firmware upgrade/backup method TFTP : Using TFTP to upgrade/backup firmware. HTTP : Using WEB browser to upgrade/backup firmware. |

Backup Firmware through TFTP

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

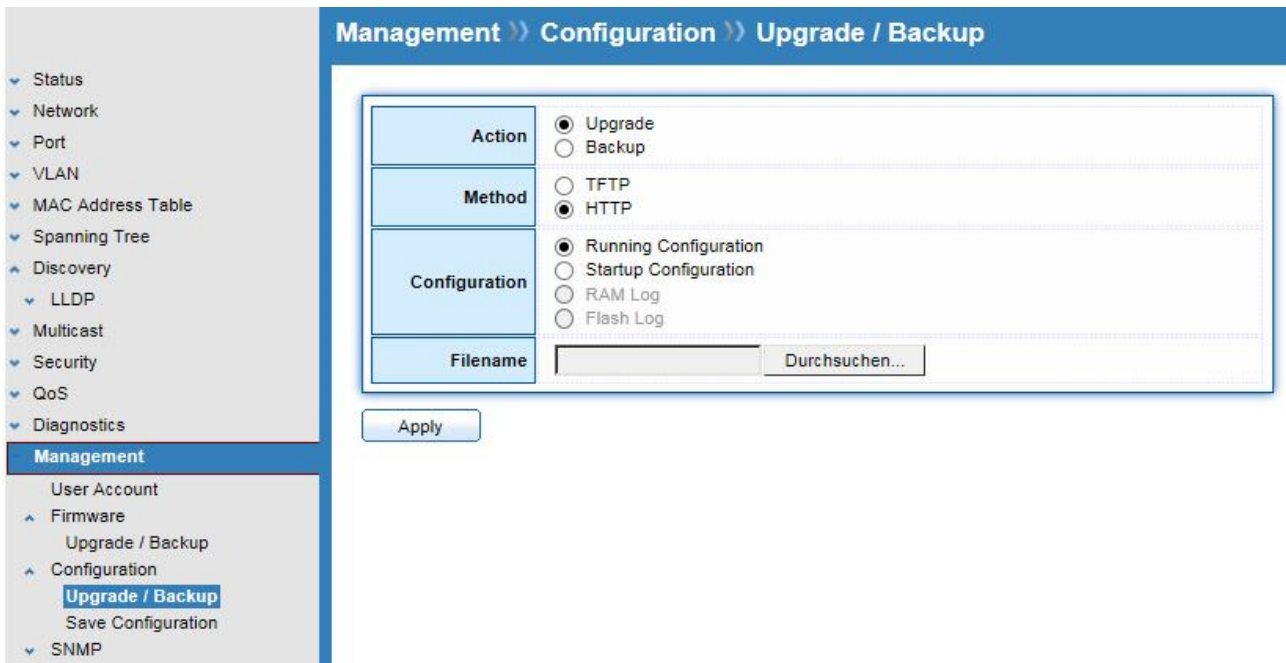
14.3 Configuration

14.3.1 Upgrade/Backup

Click **Management > Configuration > Upgrade/Backup**

To display the Firmware Upgrade or Backup web page.

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



Upgrade Configuration through HTTP

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

Upgrade Configuration through TFTP.

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

| | |
|-----------------|---|
| Filename | Configuration image file name on remote TFTP server |
|-----------------|---|

Backup Configuration through HTTP

| Field | Description |
|----------------------|---|
| Action | Configuration operations Upgrade: Upgrade Configuration from remote host to DUT. Backup: Backup Configuration image from DUT to remote host. |
| Method | Configuration upgrade/backup method TFTP: Using TFTP to upgrade/backup Configuration. HTTP: Using WEB browser to upgrade/backup Configuration.. |
| Configuration | Configuration types Running Configuration: Merge to current running configuration file. Startup Configuration: Replace startup configuration file. RAM Log: Backup log file stored in RAM Flash Log: Backup log files store in Flash. |

Backup Configuration through TFTP.

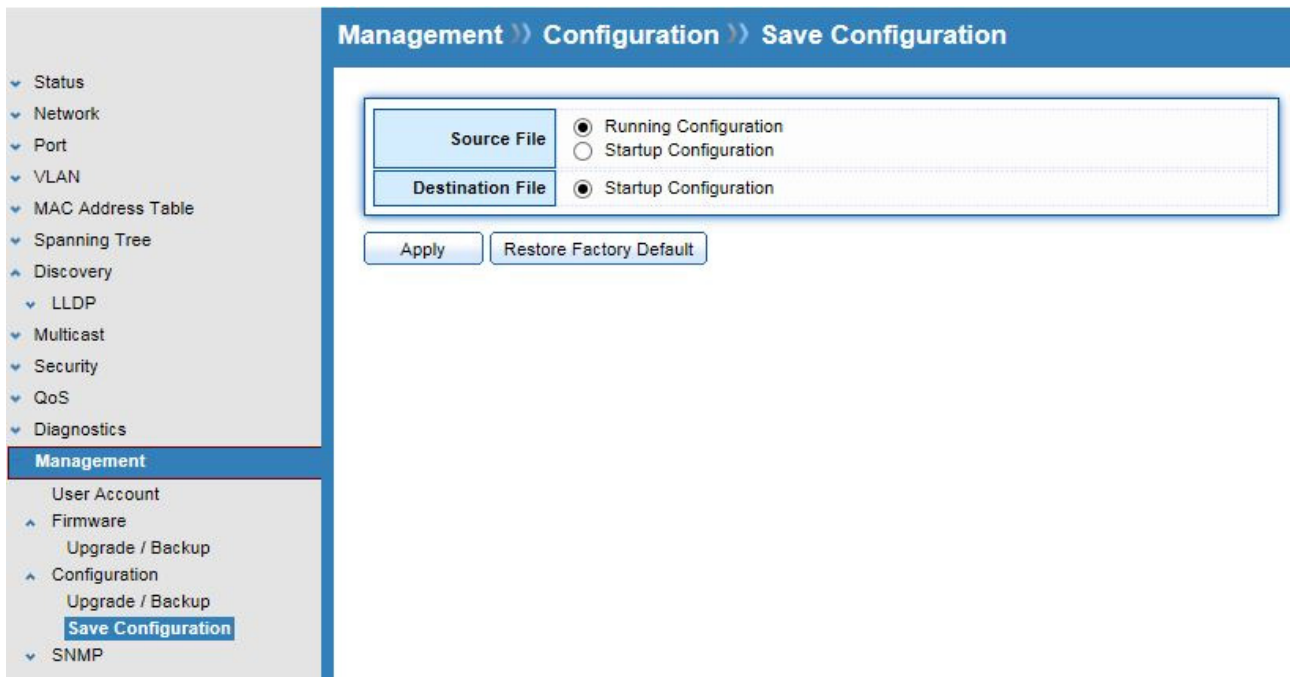
| Field | Description |
|-----------------------|---|
| Action | Configuration operations Upgrade: Upgrade Configuration from remote host to DUT. Backup: Backup Configuration image from DUT to remote host. |
| Method | Configuration upgrade/backup method TFTP: Using TFTP to upgrade/backup Configuration.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

14.3.2 Save Configuration

Click **Management > Configuration > Save Configuration**

To display the Save Configuration web page.

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



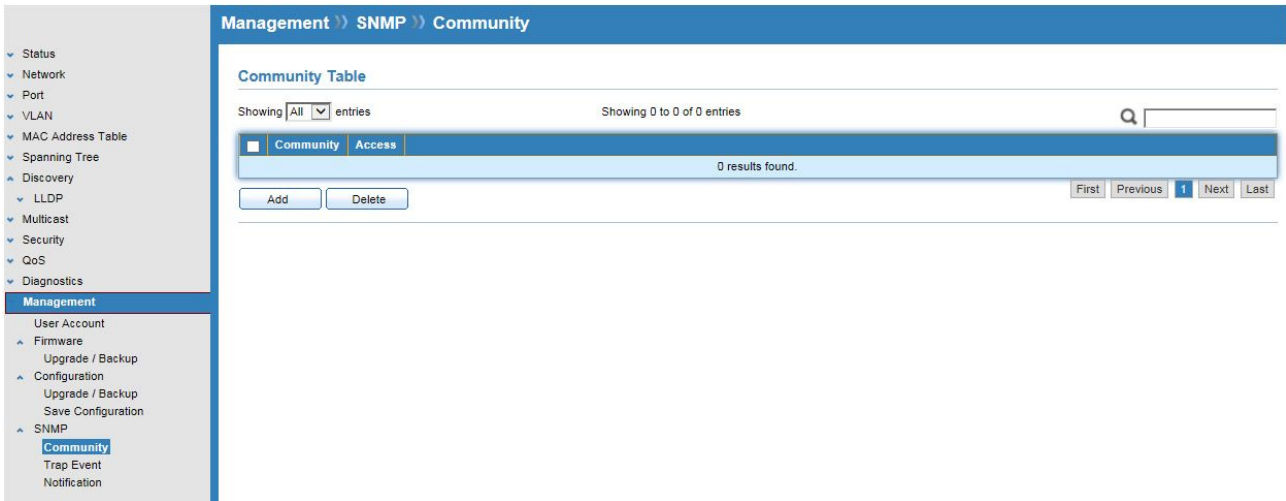
| Field | Description |
|-------------------------|---|
| Source File | Source file types Running Configuration: Copy running configuration file to destination. Startup Configuration: Copy startup configuration file to destination. |
| Destination File | Destination file Startup Configuration: Save file as startup configuration. |

14.4 SNMP

14.4.1 Community

Click **Management > SNMP > Community**

To display and configure the SNMP community settings.

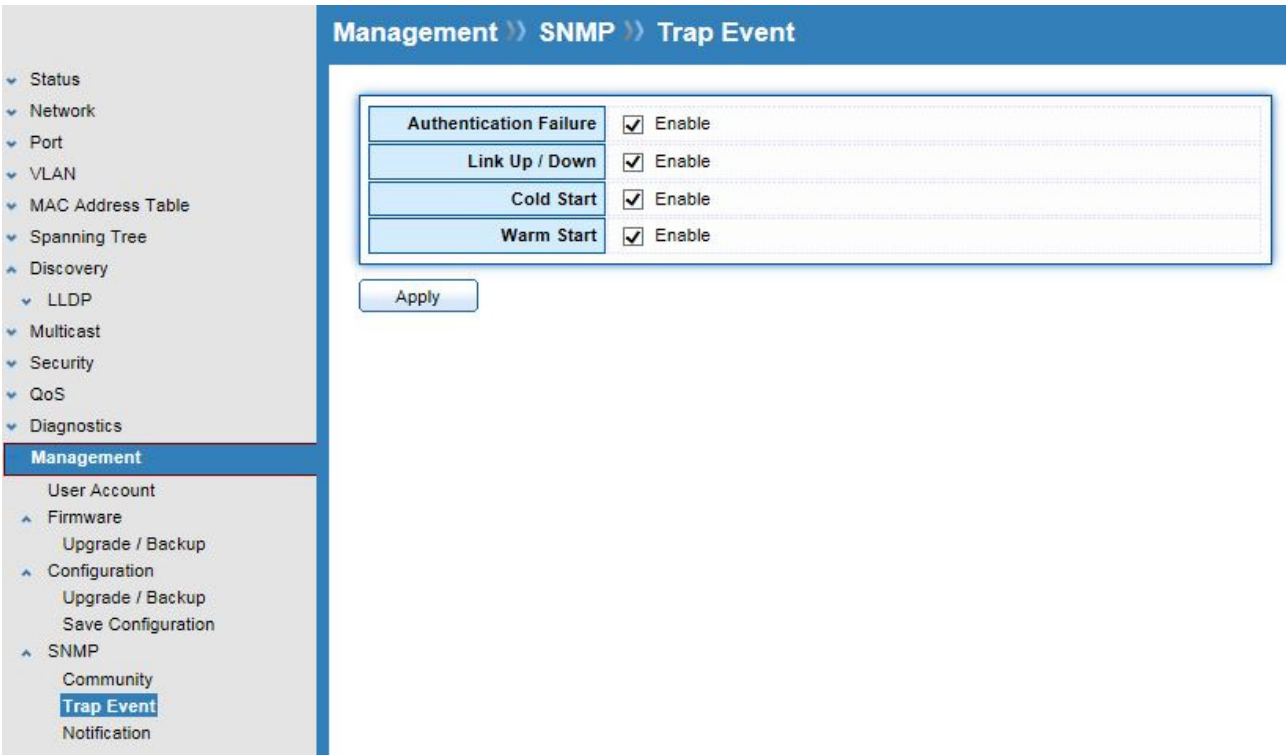


| Field | Description |
|---------------------|---|
| Community | The SNMP community name. Its maximum length is 20 characters. |
| Access Right | SNMP access mode Read-Only: Read only Read-Write: Read and Write. |

14.4.2 Trap Event

Click **Management > SNMP > Trap Event**

To display and configure the SNMP trap event.

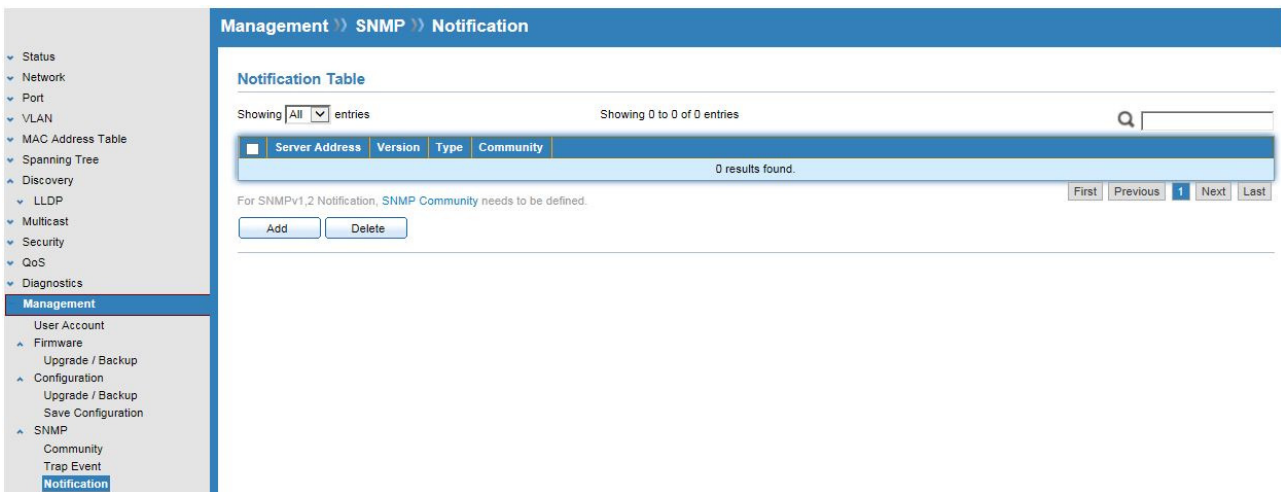


| Field | Description |
|-------------------------------|---|
| Authentication Failure | SNMP authentication failure trap, when community not match or user authentication password not match. |
| Link Up/Down | Port link up or down trap. |
| Cold Start | Device reboot configure by user trap. |
| Warm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

14.4.3 Notification

Click **Management > SNMP > Notification**

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



| Field | Description |
|-----------------------|--|
| Server Address | IP address or the hostname of the SNMP trap recipients. |
| Version | Specify SNMP notification version SNMPv1: SNMP Version 1 notification SNMPv2: SNMP Version 2 notification. |
| Type | Notification Type Trap: Send SNMP traps to the host. Inform: Send SNMP informs to the host. |
| Community | SNMP community name for notification. |

Product Specifications

| | |
|--------------------------|---|
| Standard | IEEE802.3, IEEE802.3u, and IEEE802.3ab IEEE 802.3x flow control IEEE 802.1p class of service, priority protocols IEEE 802.3az Energy Efficient Ethernet(EEE) |
| Interface | 24/16* 10/100/1000Mbps ports RJ-45 NWay ports 4* SFP 100/1000Mbps ports 1* DB9 Console Port 1* Reset button |
| Transmission Mode | 10/100Mbps: Full-duplex, Half-duplex 1000Mbps: Full-duplex |
| MAC Address Table | 8K |
| Jumbo Frame | 10K Bytes |
| Buffer Memory | 524.8K Bytes |
| Temperature | Operating: 0°C ~ 50°C (32°F ~122°F) |
| Humidity | Operating: 5% ~ 90% RH, non-condensing |
| LED Indications | 1*Power LED(Green) 1*System LED(Green) 24/16*Gigabit port LEDs(Link/Act: Green) 4*SFP port LEDs(Link/Act: Green) |
| Power Supply | Internal Switching Power Supply, 100~240VAC, 50~60Hz |
| Dimensions | 441*131*44 mm |
| Certification | FCC, CE Class A; LVD |

Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions:

- Do not open the device. Opening or removing the device cover can expose you to dangerous high voltage points or other risks. Only qualified service personnel can service the device. Please contact your vendor for further information.
- Do not use your device during a thunderstorm. There may be a risk of electric shock brought about by lightning.
- Do not expose your device to dust or corrosive liquids.
- Do not use this product near water sources.
- Make sure to connect the cables to the correct ports.
- Do not obstruct the ventilation slots on the device.

ALLNET GmbH Computersysteme declares that the device **ALL-SG8420M** is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC. The Declaration of conformity can be found under this link:
www.allnet.de/downloads.html

ALLNET GmbH Computersysteme declares that the device **ALL-SG8428M** is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC. The Declaration of conformity can be found under this link:
www.allnet.de/downloads.html

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GPL Declaration for ALLNET products

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