

# **24Giga + 4\*100/1000 SFP PoE+ Smart Managed Switch**

# **User Manual**

### FCC Certifications



This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

### CE Mark Warning



This equipment complies with the requirements relating to the EMC Directive 2014/30/EU, the Low Voltage Directive 2014/35/EU, and the RoHS Directive 2011/65/EU.

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# Chapter 1 Introduction

## 1.1 General Description

The Gigabit PoE+ Smart Managed Switch is equipped with 24 gigabit RJ45 ports and 4 SFP slots. The switch supports high performance, enterprise-level security control & QoS Layer 2 management features. It supports the PoE+ (802.3af/at) standard and provides power to connected PD devices via CAT 5 twisted cables. With a total PoE power budget is 375W, up to 30W per port. The switch can easily connect the high-powered devices such as Wireless AP, IP Cameras or VoIP Phones.

The switch supports the Web GUI to control each port status and bandwidth controlled 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 various diagnostic LEDs on the front-panel provide the operating status of individual port and whole system.

## 1.2 Key Features

- 24\* 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, 802.3af, 802.3at Ethernet standards
- Supports PoE total power budget 375W
- Supports PoE Dynamic Mode (Priority Class Base) and Statics Mode (Priority Power Base)
- Supports IEEE802.3x Flow Control and Back-Pressure function
- 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 (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 : up to 10KB
- Supports 8 Link Aggregation Groups with Static & LACP types

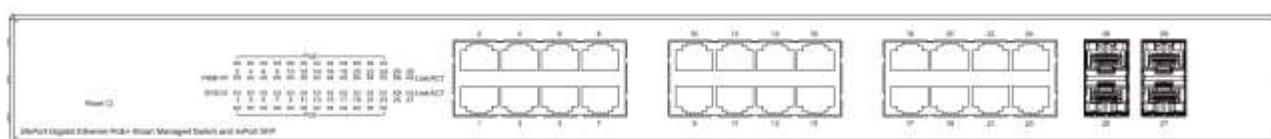
## Smart Managed GbE Switch

- 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 figures show the front panel of the switch:

#### 24-port PoE/PoE+ Plus 4SFP Gigabit Managed Switch



#### LEDs Definition

This device provides various 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 Orange(10M/100M) /Green(1000M) | Valid port connection and there is data transmitting/receiving |
|          | Off                                     | Port disconnected.   |
| PoE      | Steady Green                            | PoE port connection;.  |
|          | Off                                     | PoE port disconnected.   |

#### The Reset Button

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

## Smart Managed GbE Switch

### 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. Then, 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 24Giga+4\*100/1000 SFP PoE+ Smart Managed Switch
- One power cord
- Rubber foot and screws
- Rack-mount brackets
- One CD-ROM for user manual

#### Installation

- 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.
- Ensure adequate ventilation space around the switch for dissipating heat and air.
- Attach the provided rubber feet to the bottom of the switch to keep the switch from slipping.
- Plug the switch with the Ethernet Cable on the PD port and Uplink port.
- After plug the switch, it will automatically initialize and power LED turn on.

#### 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.



## Smart Managed GbE Switch

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

# Chapter 2 Getting Started

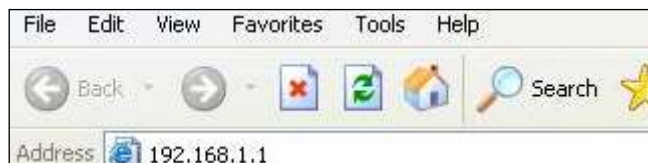
## 2.1 Web-based Management Interface (Web UI)

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**.



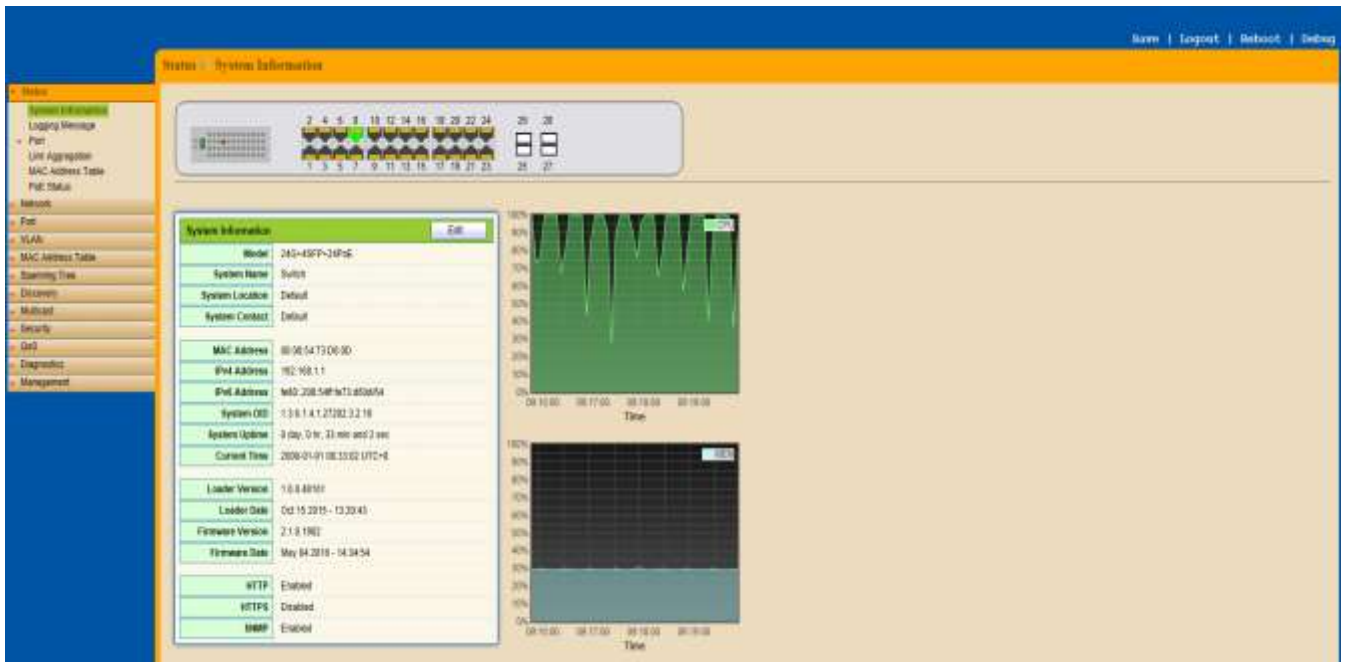
4. The login screen appears. Enter the User Name and Password to login the configuration interface. They are both **admin** by default. You can select **Remember my password** to remember the User Name and Password.



# Smart Managed GbE Switch

## 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:



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.<br>Logging Message<br>Port – Statistics, Bandwidth Utilization<br>Link Aggregation<br>MAC Address Table<br>PoE Status |
| Network           | IP Address<br>System Time   |
| Port              | Port Setting<br>Link Aggregation – Group, Port Setting, LACP<br>EEE<br>Jumbo Frame<br>PoE – PoE Port Status, PoE Setting                  |
| VLAN              | VLAN - Create VLAN, VLAN Configuration, Membership, Port Setting<br>Voice VLAN - Property, Voice OUI                                      |
| MAC Address Table | Dynamic Address<br>Static Address   |

## Smart Managed GbE Switch

|                         |  |
|-------------------------|--|
| <b>Spanning Tree</b>    | Property<br>Port Setting<br>Statistics   |
| <b>Discovery (LLDP)</b> | Property<br>Port Setting<br>Packet View<br>Local Information<br>Neighbor<br>Statistics   |
| <b>Multicast</b>        | General – Property, Group Address, Router Port<br>IGMP Snooping – Property, Querier, Statistics  |
| <b>Security</b>         | Management Access – Management VLAN, Management Service<br>Protected Port<br>Storm Control<br>DoS – Property, Port Setting               |
| <b>QoS</b>              | General – Property, Queue Scheduling, CoS Mapping, DSCP Mapping, IP Precedence Mapping<br>Rate Limit – Ingress/Egress Port, Egress Queue |
| <b>Diagnostics</b>      | Logging – Property, Remove Server<br>Mirroring<br>Ping<br>Copper Test  |
| <b>Management</b>       | User Account<br>Firmware – Upgrade/Backup<br>Configuration – Upgrade/Backup, Save Configuration<br>SNMP                                  |

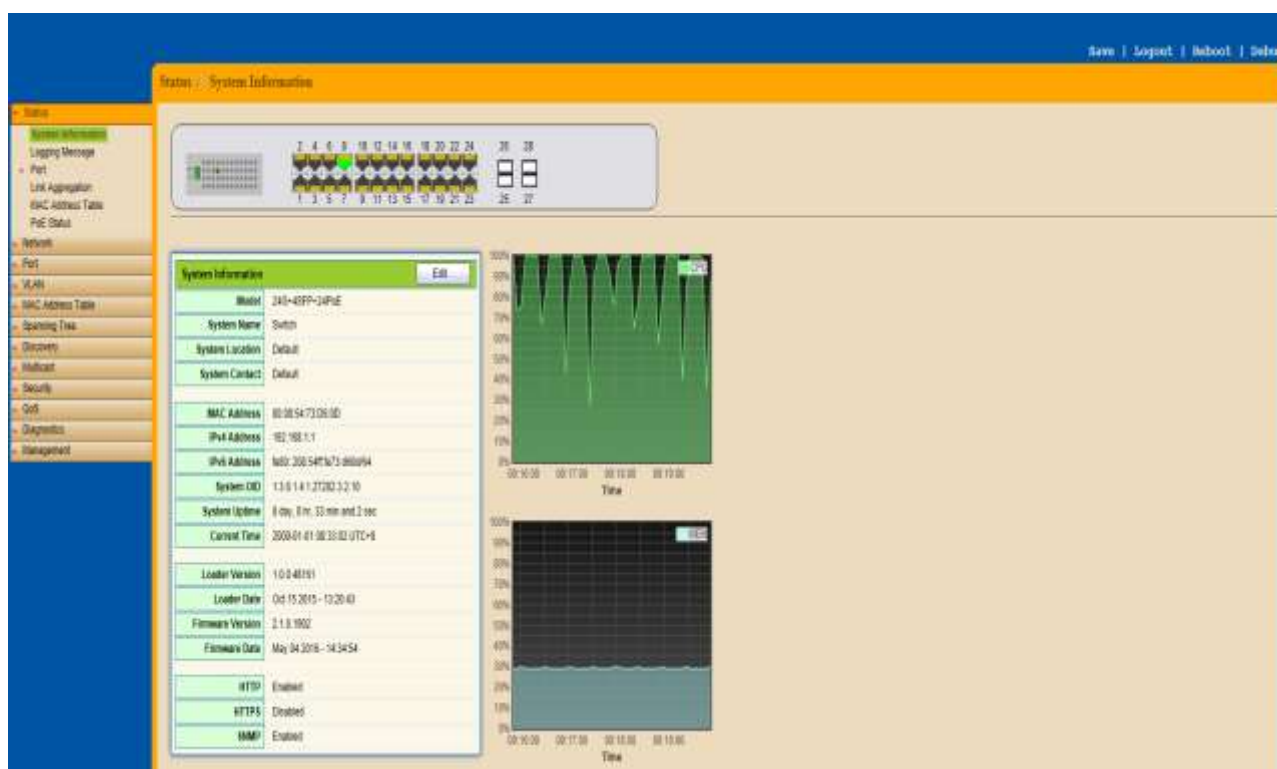
## Chapter 3 Status

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.



## Smart Managed GbE Switch

| System Information |                               | Edit |
|--------------------|-------------------------------|------|
| Model              | 24G+4SFP+24PoE                |      |
| System Name        | Switch                        |      |
| System Location    | Default                       |      |
| System Contact     | Default                       |      |
| MAC Address        | 00:08:54:73:D6:0D             |      |
| IPv4 Address       | 192.168.1.1                   |      |
| IPv6 Address       | fe80::208:54ff:fe73:d60d/64   |      |
| System OID         | 1.3.6.1.4.1.27282.3.2.10      |      |
| System Uptime      | 0 day, 0 hr, 33 min and 2 sec |      |
| Current Time       | 2000-01-01 08:33:02 UTC+8     |      |
| Loader Version     | 1.0.0.48161                   |      |
| Loader Date        | Oct 15 2015 - 13:20:43        |      |
| Firmware Version   | 2.1.0.1902                    |      |
| Firmware Date      | May 04 2016 - 14:34:54        |      |
| 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                                     |
| HTTP             | Current HTTP service enable/disable state                                     |
| HTTPS            | Current HTTPS service enable/disable state                                    |
| SNMP             | Current SNMP service enable/disable state                                     |

## Smart Managed GbE Switch

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 be used 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.

Status

System Information

Logging Message

Port

Link Aggregation

MAC Address Table

PoE Status

Network

Port

VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

QoS

Diagnostics

Management

Status >> Logging Message

Viewing RAM

Showing All entries

Showing 1 to 31 of 31 entries

| Log ID | Time                 | Severity | Description   |
|--------|----------------------|----------|---|
| 1      | Jan 01 2000 08:32:36 | notice   | New ssh connection for user admin, source 192.168.1.22 ACCEPTED |
| 2      | Jan 01 2000 08:18:38 | notice   | GigabitEthernet8 link up  |
| 3      | Jan 01 2000 08:17:30 | notice   | GigabitEthernet8 link down                                      |
| 4      | Jan 01 2000 08:17:29 | notice   | GigabitEthernet8 link up  |
| 5      | Jan 01 2000 08:15:39 | notice   | GigabitEthernet8 link down                                      |
| 6      | Jan 01 2000 08:15:31 | notice   | GigabitEthernet8 link up  |
| 7      | Jan 01 2000 08:13:07 | notice   | GigabitEthernet20 link down                                     |
| 8      | Jan 01 2000 08:13:04 | notice   | GigabitEthernet20 link up                                       |
| 9      | Jan 01 2000 08:12:55 | notice   | GigabitEthernet20 link down                                     |
| 10     | Jan 01 2000 08:11:53 | notice   | GigabitEthernet20 link up                                       |
| 11     | Jan 01 2000 08:11:45 | notice   | GigabitEthernet20 link down                                     |
| 12     | Jan 01 2000 08:11:35 | notice   | GigabitEthernet20 link up                                       |
| 13     | Jan 01 2000 08:11:19 | notice   | GigabitEthernet20 link down                                     |
| 14     | Jan 01 2000 08:10:14 | notice   | GigabitEthernet20 link up                                       |
| 15     | Jan 01 2000 08:10:08 | notice   | GigabitEthernet20 link down                                     |
| 16     | Jan 01 2000 08:09:51 | notice   | GigabitEthernet20 link up                                       |
| 17     | Jan 01 2000 08:08:58 | notice   | GigabitEthernet6 link down                                      |
| 18     | Jan 01 2000 08:08:37 | notice   | GigabitEthernet6 link up  |
| 19     | Jan 01 2000 08:07:41 | notice   | GigabitEthernet6 link down                                      |
| 20     | Jan 01 2000 08:05:14 | notice   | GigabitEthernet6 link up  |
| 21     | Jan 01 2000 08:05:10 | notice   | GigabitEthernet2 link down                                      |
| 22     | Jan 01 2000 08:04:22 | notice   | GigabitEthernet2 link up  |
| 23     | Jan 01 2000 08:04:18 | notice   | GigabitEthernet4 link down                                      |
| 24     | Jan 01 2000 08:02:57 | notice   | New ssh connection for user admin, source 192.168.1.22 ACCEPTED |
| 25     | Jan 01 2000 08:01:35 | notice   | GigabitEthernet4 link up  |
| 26     | Jan 01 2000 08:01:32 | notice   | GigabitEthernet6 link down                                      |
| 27     | Jan 01 2000 08:01:32 | notice   | GigabitEthernet6 link up  |
| 28     | Jan 01 2000 08:01:32 | notice   | GigabitEthernet6 link down                                      |
| 29     | Jan 01 2000 08:01:22 | notice   | GigabitEthernet6 link up  |
| 30     | Jan 01 2000 08:00:57 | notice   | RESTART: System restarted - Cold Start                          |
| 31     | Jan 01 2000 08:00:57 | notice   | Logging is enabled  |

Clear Refresh

## Smart Managed GbE Switch

| Field       | Description   |
|-------------|---|
| Viewing     | The logging view including :<br><b>RAM</b> : Show the logging messages stored on the RAM<br><b>Flash</b> : 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 sidebar with a tree view containing: Status (expanded), System Information, Logging Message, Port (expanded), Statistics (selected), Bandwidth Utilization, Link Aggregation, MAC Address Table, PoE Status, Network, Port, VLAN, MAC Address Table, Spanning Tree, Discovery, Multicast, Security, QoS, Diagnostics, and Management. The main content area has a header 'Status > Port > Statistics'. Below the header, there's a 'Port' dropdown set to 'GE1'. Under 'MIB Counter', 'All' is selected. Under 'Refresh Rate', '10 sec' is selected. A 'Clear' button is present. Below this is a table of 'Interface' statistics with columns for the counter name and its value (all are 0). The counters include ifInOctets, ifInUcastPkts, ifInNUcastPkts, ifInDiscards, ifOutOctets, ifOutUcastPkts, ifOutNUcastPkts, ifOutDiscards, ifInMulticastPkts, ifInBroadcastPkts, ifOutMulticastPkts, and ifOutBroadcastPkts. At the bottom, there's an 'Etherlike' section with 'dot3StatsAlignmentErrors' set to 0.



## Smart Managed GbE Switch

Status >> Port >> Statistics

▼ Status

System Information

Logging Message

▲ Port

Statistics

Bandwidth Utilization

Link Aggregation

MAC Address Table

PoE Status

▼ 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.

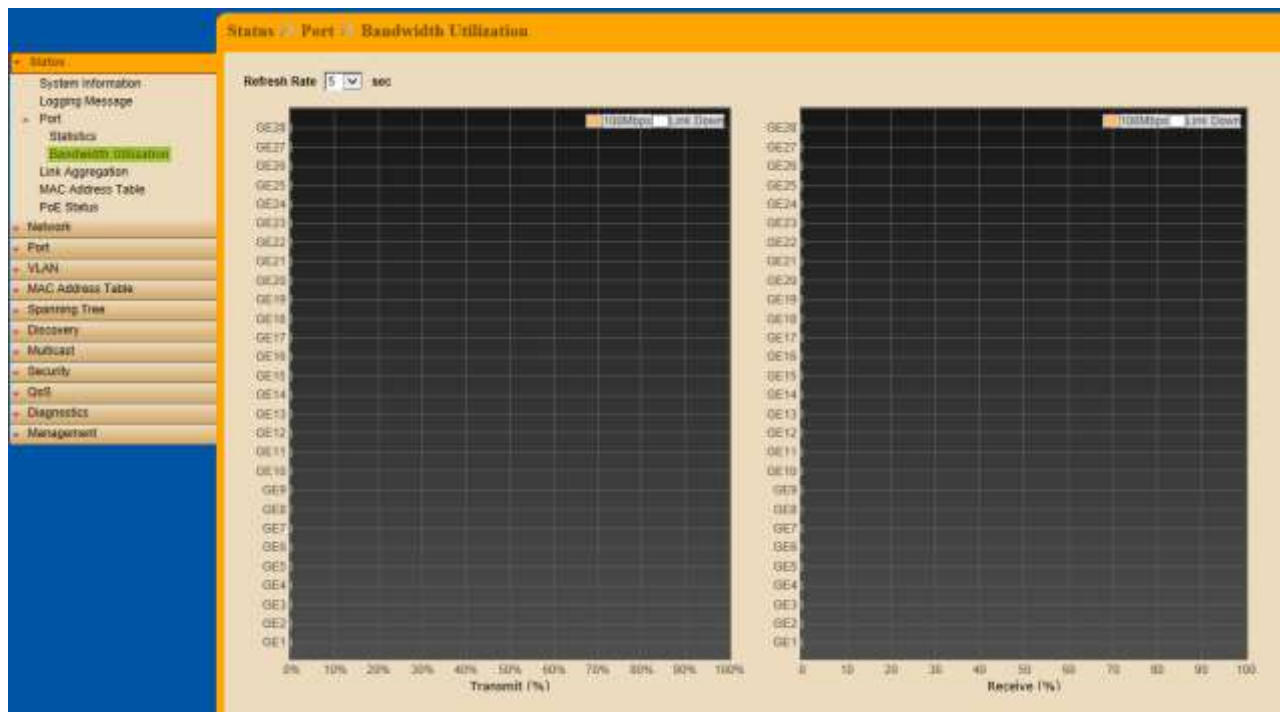
| Field        | Description  |
|--------------|--|
| Port         | Select one port to show counter statistics.  |
| MIB Counter  | Select the MIB counter to show different count type<br><b>All</b> : All counters.<br><b>Interface</b> : Interface related MIB counters<br><b>Etherlike</b> : Ethernet-like related MIB counters<br><b>RMON</b> : 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

## Smart Managed GbE Switch

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.

## Smart Managed GbE Switch

Status

System Information

Logging Message

Port

Statistics

Bandwidth Utilization

Link Aggregation

MAC Address Table

PoE Status

Network

Port

VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

QoS

Diagnostics

Management

Status > Link Aggregation

Link Aggregation Table

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

| Field                  | Description   |
|------------------------|---|
| <b>Lag</b>             | LAG Name.   |
| <b>Name</b>            | LAG port description  |
| <b>Type</b>            | The type of the LAG<br><b>Static</b> : The group of ports assigned to a static LAG are always active members.<br><b>LACP</b> : The group of ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports. |
| <b>Link Status</b>     | LAG port link status  |
| <b>Active Member</b>   | Active member ports of the LAG  |
| <b>Inactive Member</b> | Inactive member ports of the LAG  |

### 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.

## Smart Managed GbE Switch

The screenshot shows the 'Status >> MAC Address Table' page. On the left is a navigation menu with categories: Status, Network, Port, VLAN, MAC Address Table, Spanning Tree, Discovery, Multicast, Security, QoS, Diagnostics, and Management. The 'MAC Address Table' item is highlighted. The main content area is titled 'MAC Address Table' and shows 'Showing All entries' and 'Showing 1 to 2 of 2 entries'. A table displays two entries:

| VLAN | MAC Address       | Type       | Port |
|------|-------------------|------------|------|
| 1    | 00:08:54:73:D6:0D | Management | CPU  |
| 1    | B8:97:5A:0D:10:FA | Dynamic    | GE8  |

Below the table are 'Clear' and 'Refresh' buttons.

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<br><b>Management</b> : DUT’s base MAC address for management purpose.<br><b>Static</b> : Manually configured by administrator.<br><b>Dynamic</b> : Auto learned by hardware. |
| Port        | The type of port<br><b>CPU</b> : DUT’s CPU port for management purpose<br><b>Other</b> : Normal switch port  |

### 3.6 PoE Status

Click **Status>PoE Status**

The PoE Status page displays PoE working mode and PoE consuming power status.

## Smart Managed GbE Switch

### PoE Setting

| PoE Mode       | Total Power(W) | Allocated Power(W) | Remaining Power(W) |
|----------------|----------------|--------------------|--------------------|
| Classification | 210            | 0                  | 210                |

| Field                     | Description  |
|---------------------------|--|
| <b>PoE Mode</b>           | The type of PoE working mode<br><b>Dynamic(NonPriority Class Mode)</b> : Dynamic and automatic PoE PD priority and power budget management connection<br><b>Static(Priority Power Base)</b> : PoE connection base-on manual setting by PD priority and power limit |
| <b>Total Power(W)</b>     | The system total PoE Power budget  |
| <b>Allocated Power(W)</b> | Allocated PoE power budget by system.  |
| <b>Remaining Power(W)</b> | Remaining PoE power budget.  |

## 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.

**Network > IP Address**

**IPv4 Address**

|                 |  |
|-----------------|--|
| Address Type    | <input checked="" type="radio"/> Static<br><input type="radio"/> Dynamic |
| IP Address      | 192.168.1.1  |
| Subnet Mask     | 255.255.255.0  |
| Default Gateway | 192.168.1.254  |
| DNS Server 1    | 168.95.1.1   |
| DNS Server 2    | 168.95.192.1   |

**IPv6 Address**

|                    |  |
|--------------------|--|
| Auto Configuration | <input checked="" type="checkbox"/> Enable |
| DHCPv6 Client      | <input type="checkbox"/> Enable            |
| IPv6 Address       |  |
| Prefix Length      | 0 (0 - 128)                                |
| IPv6 Gateway       |  |
| DNS Server 1       |  |
| DNS Server 2       |  |

**Operational Status**

|                      |                             |
|----------------------|-----------------------------|
| IPv4 Address         | 192.168.1.1                 |
| IPv4 Default Gateway | 192.168.1.254               |
| IPv6 Address         | fe80::208:54ff:fe73:d60d/64 |
| IPv6 Gateway         | --                          |
| Link Local Address   | fe80::208:54ff:fe73:d60d/64 |

Apply



## Smart Managed GbE Switch

| Field                     | Description   |
|---------------------------|---|
| <b>IPv4 Address Field</b> |   |
| <b>Address Type</b>       | Select the address type of IP configuration <ul style="list-style-type: none"> <li>■ <b>Static:</b> Static IP configured by users will be used.</li> <li>■ <b>Dynamic:</b> Enable DHCP to obtain IP information from a DHCP server on the network.</li> </ul> |
| <b>IP Address</b>         | Enter the IP address of your switch in dotted decimal notation for example 192.168.1.1. If static mode is enabled, enter IP address in this field.  |
| <b>Subnet Mask</b>        | Enter the IP subnet mask of your switch in dotted decimal notation for example 255.255.255.0. If static mode is enabled, enter subnet mask in this field.   |
| <b>Default Gateway</b>    | Specify the default gateway on the static configuration. The default gateway must be in the same subnet with switch IP address configuration  |
| <b>DNS Server 1</b>       | If static mode is enabled, enter primary DNS server address in this field.  |
| <b>DNS Server 2</b>       | If static mode is enabled, enter secondary DNS server address in this field.  |
| <b>IPv6 Address Field</b> |   |
| <b>Auto Configuration</b> | Select <b>Enable</b> (or <b>Disable</b> ) the IPv6 auto configuration.  |
| <b>DHCPv6 Client</b>      | Select <b>Enable</b> (or <b>Disable</b> ) the DHCPv6 Client configuration.  |
| <b>IPv6 Address</b>       | Specify the IPv6 address, when the IPv6 auto configuration and DHCPv6 client are disabled.  |
| <b>IPv6 Prefix</b>        | Specify the prefix for the IPv6 address, when the IPv6 auto configuration and DHCPv6 client are disabled.   |
| <b>Gateway</b>            | Specify the IPv6 default gateway, when the IPv6 auto configuration and DHCPv6 client are disabled.  |
| <b>DNS Server 1</b>       | Specify the primary user-defined IPv6 DNS server configuration.   |
| <b>DNS Server 2</b>       | Specify the secondary user-defined IPv6 DNS server configuration.   |
| <b>Operational Status</b> |   |
| <b>IPv4Address</b>        | The operational IPv4 address of the switch.   |
| <b>IPv4Gateway</b>        | The operational IPv4 gateway of the switch.   |
| <b>IPv6 Address</b>       | The operational IPv6 address of the switch.   |
| <b>IPv6 Gateway</b>       | The operational IPv6 gateway of the switch.   |
| <b>Link Local Address</b> | The 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.

## Smart Managed GbE Switch

The screenshot shows the 'System Time' configuration page of a Smart Managed GbE Switch. The left sidebar contains a navigation menu with options: Status, Network, IP Address, System Time (highlighted), Port, VLAN, MAC Address Table, Spanning Tree, Discovery, Multicast, Security, QoS, Diagnostics, and Management. The main content area is titled 'Network System Time' and includes the following sections:

- Source:** Radio buttons for SNTP, From Computer, and Manual Time (selected).
- Time Zone:** A dropdown menu set to 'UTC +8:00'.
- SNTP:**
  - Address Type:** Radio buttons for Hostname (selected) and IPv4.
  - Server Address:** A text input field.
  - Server Port:** A text input field set to '123' with a note '(1 - 65535, default 123)'.
- Manual Time:**
  - Date:** A text input field set to '2000-01-01' with a format hint 'YYYY-MM-DD'.
  - Time:** A text input field set to '09:04:35' with a format hint 'HH:MM:SS'.
- Daylight Saving Time:**
  - Type:** Radio buttons for None (selected), Recurring, Non-recurring, USA, and European.
  - Offset:** A text input field set to '50' with a range hint 'Min (1 - 1440, default 60)'.
  - Recurring:** Fields for From (Day: Sun, Week: First, Month: Jan, Time: ) and To (Day: Sun, Week: First, Month: Jan, Time: ).
  - Non-recurring:** Fields for From (YYYY-MM-DD, HH:MM) and To (YYYY-MM-DD, HH:MM).
- Operational Status:**
  - Current Time:** Displays '2000-01-01 09:04:35 UTC+8'.

An 'Apply' button is located at the bottom of the configuration area.

| Field                       | Description   |
|-----------------------------|---|
| <b>Source</b>               | Select the time source<br><ul style="list-style-type: none"> <li>■ <b>SNTP</b>: Time sync from NTP server.</li> <li>■ <b>From Computer</b>: Time set from browser host.</li> <li>■ <b>Manual Time</b>: Time set by manually configure.</li> </ul> |
| <b>Time Zone</b>            | Select a time zone difference from listing district..   |
| <b>SNTP</b>                 |   |
| <b>Address Type</b>         | Select the address type of NTP server. This is enabled when time source is SNTP.  |
| <b>Server Address</b>       | Input IPv4 address or hostname for NTP server. This is enabled when time source is SNTP.  |
| <b>Server Port</b>          | Input NTP port for NTP server. Default is 123. This is enabled when time source is SNTP.  |
| <b>Manual Time</b>          |   |
| <b>Date</b>                 | Input manual date. This is enabled when time source is manual.  |
| <b>Time</b>                 | Input manual time. This is enabled when time source is manual.  |
| <b>Daylight Saving Time</b> |   |
| <b>Type</b>                 | Select the mode of daylight saving time.<br><b>Disable</b> : Disable daylight saving time.<br><b>Recurring</b> : Using recurring mode of daylight saving time.<br><b>Non-Recurring</b> : Using non-recurring mode of daylight saving time.        |



## Smart Managed GbE Switch

|                           |   |
|---------------------------|---|
|                           | <b>USA</b> : Using daylight saving time in the United States that starts on the second Sunday of March and ends on the first Sunday of November<br><b>European</b> : Using daylight saving time in the Europe that starts on the last Sunday in March and ending on the last Sunday in October. |
| <b>Offset</b>             | Specify the adjust offset of daylight saving time.  |
| <b>Recurring From</b>     | Specify the starting time of recurring daylight saving time. This field available when selecting "Recurring" mode.  |
| <b>Recurring To</b>       | Specify the ending time of recurring daylight saving time. This field available when selecting "Recurring" mode.  |
| <b>Non-recurring From</b> | Specify the starting time of non-recurring daylight saving time. This field available when selecting "Non-Recurring" mode.  |
| <b>Non-recurring To</b>   | Specify the ending time of non-recurring daylight saving time. This field available when selecting "Non-Recurring" mode.  |
| <b>Operational Status</b> |   |
| <b>Current Time</b>       | Display system current date & time  |

## 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 | Down        | Auto        | Auto        | 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 | Up          | Auto (100M) | Auto (Full) | Disabled (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.<br><b>Enabled</b> : Enable the port.<br><b>Disabled</b> : Disable the port.              |
| Link Status | Current port link status<br><b>Up</b> : Port is link up.   |

## Smart Managed GbE Switch

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

## 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.

## Smart Managed GbE Switch

### 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.

Port / Link Aggregation / Group

Load Balance Algorithm: ☒ MAC Address ☐ IP-MAC Address

Apply

Link Aggregation Table

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

Edit

| Field                  | Description  |
|------------------------|--|
| Load Balance Algorithm | LAG load balance distribution algorithm.<br>Src-dst-mac : Based on MAC address<br>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.<br><b>Static</b> : The ports assigned to a static LAG are always active members.<br><b>LACP</b> : The 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.  |

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.<br><b>Static</b> : The ports assigned to a static LAG are always active members. |

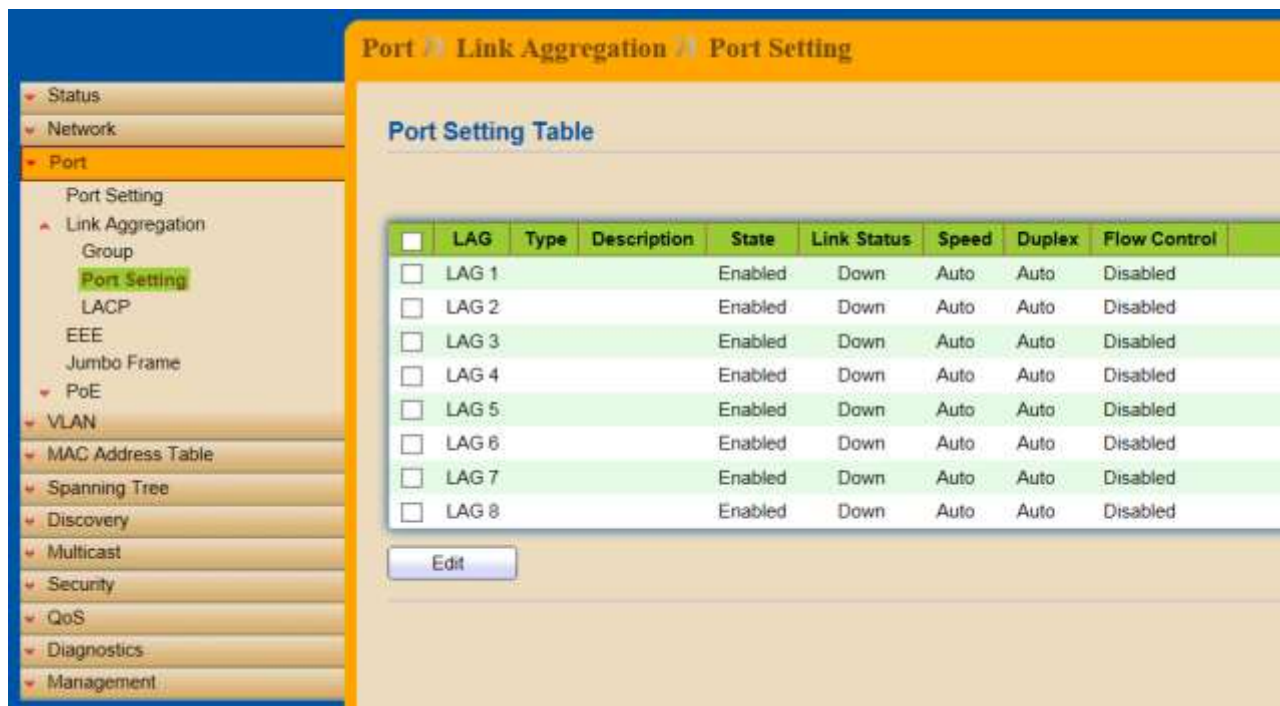
## Smart Managed GbE Switch

|               |  |
|---------------|--|
|               | <b>LACP:</b> The ports assigned to dynamic LAG are candidate ports. LACP determines which candidate ports are active member ports. |
| <b>Member</b> | 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.



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

## Smart Managed GbE Switch

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

### 5.2.3 LACP

Click **Port >Link Aggregation>LACP**

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

Status

Network

Port

Port Setting

Link Aggregation

Group

Port Setting

LACP

EEE

Jumbo Frame

PoE

VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

QoS

Diagnostics

Management

Port > Link Aggregation > LACP

System Priority

32768

(1 - 65535, default 32768)

Apply

LACP Port Setting Table

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

Edit



## Smart Managed GbE Switch

| Field                  | Description   |
|------------------------|---|
| <b>System Priority</b> | Configure the system priority of LACP. This decides the system priority field in LACP PDU.  |
| <b>Port</b>            | Port Name.  |
| <b>Port Priority</b>   | LACP priority value of the port.  |
| <b>Timeout</b>         | The periodic transmissions type of LACP PDUs.<br><b>Long</b> : Transmit LACP PDU with slow periodic (30s).<br><b>Short</b> : Transmit LACP PDU with fast periodic (1s). |

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

Edit LACP Port Setting

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

**Port > EEE**

**EEE Setting Table**

| <input type="checkbox"/> | Entry | Port | State    | Operational Status |
|--------------------------|-------|------|----------|--------------------|
| <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           |

## Smart Managed GbE Switch

| Field              | Description  |
|--------------------|--|
| Port               | Port Name.   |
| State              | Port EEE admin state.<br><b>Enable</b> : EEE is enabled<br><b>Disable</b> : EEE is disabled.             |
| Operational Status | Port EEE operational status.<br><b>Enable</b> : EEE is operating<br><b>Disable</b> : 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.<br><b>Enable</b> : Enable EEE<br><b>Disable</b> : Disabled EEE. |

### 5.3 Jumbo Frame

Click **Port>Jumbo Frame**

This page allows user to configure switch jumbo frame size.

The screenshot displays the configuration page for Jumbo Frames. On the left is a navigation menu with categories like Status, Network, Port, Link Aggregation, PoE, VLAN, MAC Address Table, Spanning Tree, Discovery, Multicast, Security, QoS, Diagnostics, and Management. The 'Port' category is expanded, and 'Jumbo Frame' is selected. The main content area is titled 'Port >> Jumbo Frame'. It contains a section with a green dashed border labeled 'Jumbo Frame'. Inside this section, there is an 'Enable' checkbox (currently unchecked), a text input field with the value '10000', and a label 'Byte (1518 - 10000, default 1522)'. Below this section is an 'Apply' button.



## Smart Managed GbE Switch

| Field              | Description   |
|--------------------|---|
| <b>Jumbo Frame</b> | Enable or Disable jumbo frame.<br>When jumbo frame is enabled, switch max frame size is allowed to configure. (from 1518 to 10000)<br>When jumbo frame is disabled, default frame size 1522 will be used. |

### 5.4 PoE

Click **Port>PoE**

This page allows user to configure PoE per port status.

#### 5.4.1 PoE Port Status

Click **Port>PoE>PoE Port Status**

This page shows PoE port current status.

|       |      | Port >> PoE >> PoE Port Status |                    |              |                 |  |  |
|-------|------|--------------------------------|--------------------|--------------|-----------------|--|--|
|       |      | PoE Port Status                |                    |              |                 |  |  |
| Entry | Port | Class                          | Consuming Power(W) | Max Power(W) | Max Current(mA) |  |  |
| 1     | GE1  | 3                              | 0                  | 15.4         | 0               |  |  |
| 2     | GE2  | 3                              | 0                  | 15.4         | 0               |  |  |
| 3     | GE3  | 3                              | 0                  | 15.4         | 0               |  |  |
| 4     | GE4  | 3                              | 0                  | 15.4         | 0               |  |  |
| 5     | GE5  | 3                              | 0                  | 15.4         | 0               |  |  |
| 6     | GE6  | 3                              | 0                  | 15.4         | 0               |  |  |
| 7     | GE7  | 3                              | 0                  | 15.4         | 0               |  |  |
| 8     | GE8  | 3                              | 0                  | 15.4         | 0               |  |  |
| 9     | GE9  | 3                              | 0                  | 15.4         | 0               |  |  |
| 10    | GE10 | 3                              | 0                  | 15.4         | 0               |  |  |
| 11    | GE11 | 3                              | 0                  | 15.4         | 0               |  |  |
| 12    | GE12 | 3                              | 0                  | 15.4         | 0               |  |  |
| 13    | GE13 | 3                              | 0                  | 15.4         | 0               |  |  |
| 14    | GE14 | 3                              | 0                  | 15.4         | 0               |  |  |
| 15    | GE15 | 3                              | 0                  | 15.4         | 0               |  |  |
| 16    | GE16 | 3                              | 0                  | 15.4         | 0               |  |  |
| 17    | GE17 | 3                              | 0                  | 15.4         | 0               |  |  |
| 18    | GE18 | 3                              | 0                  | 15.4         | 0               |  |  |
| 19    | GE19 | 3                              | 0                  | 15.4         | 0               |  |  |
| 20    | GE20 | 3                              | 0                  | 15.4         | 0               |  |  |
| 21    | GE21 | 3                              | 0                  | 15.4         | 0               |  |  |
| 22    | GE22 | 3                              | 0                  | 15.4         | 0               |  |  |
| 23    | GE23 | 3                              | 0                  | 15.4         | 0               |  |  |
| 24    | GE24 | 3                              | 0                  | 15.4         | 0               |  |  |

## Smart Managed GbE Switch

| Field              | Description   |
|--------------------|---|
| Port               | Port Name.  |
| Class              | Displays PoE power classification level status.(Dynamic mode only)<br><b>0</b> : Default (Class 3 : 12.95W)<br><b>1</b> : 0.44W~3.84W (Very Low Power)<br><b>2</b> : 3.84W~6.49W (Low Power)<br><b>3</b> : 6.49W~12.95W (Mid Power)<br><b>4</b> : 12.95W~25.5W (High Power) |
| Consuming Power(W) | Displays current PoE power consumption  |
| Max Power(W)       | Displays PSE maximum power<br>For Dynamic mode.<br><b>0</b> : Default(16.2W)<br><b>1</b> : 4.2W<br><b>2</b> : 7.4W<br><b>3</b> : 16.2W<br><b>4</b> : 31.2W  |
| Max Current(mA)    | Displays current PoE power current  |

### 5.4.2 PoE Setting

Click **Port>PoE>PoE Port Status**

This page allows user to configure PoE working type and per port status.

Select PoE Dynamic mode (Priority, Class Base)

The PoE Dynamic mode is automatic negotiation PD device by classification level of power, and power budget management by port PD priority. The default device power connection priority is port1(high priority)>port2>...>port24(low priority)..

# Smart Managed GbE Switch

Status

Network

Port

Port Setting

Link Aggregation

Group

Port Setting

LACP

EEE

Jumbo Frame

PoE

PoE Port Status

PoE Setting

VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

QoS

Diagnostics

Management

Port >> PoE >> PoE Setting

PoE Mode

Dynamic(Priority Class Base)

Dynamic Mode Warning: If there is any sudden power requirement (over power budget) from the PD equipment (device) on LAN side, Switch will terminate the PoE power supply from the device connected on LAN port with low priority to high priority.

Apply

PoE Setting

PoE Power Budget 0 (Watt)

| Port | State   | PD Priority | Power Limit(W) |
|------|---------|-------------|----------------|
| 1    | Enabled | Low         | class          |
| 2    | Enabled | Low         | class          |
| 3    | Enabled | Low         | class          |
| 4    | Enabled | Low         | class          |
| 5    | Enabled | Low         | class          |
| 6    | Enabled | Low         | class          |
| 7    | Enabled | Low         | class          |
| 8    | Enabled | Low         | class          |
| 9    | Enabled | Low         | class          |
| 10   | Enabled | Low         | class          |
| 11   | Enabled | Low         | class          |
| 12   | Enabled | Low         | class          |
| 13   | Enabled | Low         | class          |
| 14   | Enabled | Low         | class          |
| 15   | Enabled | Low         | class          |
| 16   | Enabled | Low         | class          |
| 17   | Enabled | Low         | class          |
| 18   | Enabled | Low         | class          |
| 19   | Enabled | Low         | class          |
| 20   | Enabled | Low         | class          |
| 21   | Enabled | Low         | class          |
| 22   | Enabled | Low         | class          |
| 23   | Enabled | Low         | class          |
| 24   | Enabled | Low         | class          |

Warning: It takes some time to apply setting to system. Please do not abort system operation.

Apply

| Field       | Description  |
|-------------|--|
| Port        | Port Name.   |
| PD Priority | Selected PD Priority<br><b>Low:</b> PD device set to low priority connection<br><b>Medium :</b> PD device set to middle priority connection<br><b>High :</b> PD device set to high priority connection<br><b>Critical :</b> PD device set to highest priority connection |

Select PoE Static mode (Priority, Power Base)

The PoE Static mode is manual configure per port on/off, power budget and PD priority.

# Smart Managed GbE Switch

Status

Network

Port

Port Setting

Link Aggregation

Group

Port Setting

LACP

EEE

Jumbo Frame

PoE

PoE Port Status

PoE Setting

VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

QoS

Diagnostics

Management

Port >> PoE >> PoE Setting

PoE Mode

Static(Priority Power Base)

Dynamic Mode Warning: If there is any sudden power requirement (over power budget) from the PD equipment (device) on LAN side, Switch will terminate the PoE power supply from the device connected on LAN port with low priority to high priority.

Apply

PoE Setting

PoE Power Budget 0 (Watt)

| Port | State    | PD Priority | Power Limit(W) |
|------|----------|-------------|----------------|
| 1    | Enabled  | Low         | 15             |
| 2    | Enabled  | Low         | 15             |
| 3    | Enabled  | Low         | 15             |
| 4    | Enabled  | Low         | 15             |
| 5    | Enabled  | Low         | 15             |
| 6    | Enabled  | Low         | 15             |
| 7    | Enabled  | Low         | 15             |
| 8    | Enabled  | Low         | 15             |
| 9    | Enabled  | Low         | 15             |
| 10   | Enabled  | Low         | 15             |
| 11   | Enabled  | Low         | 15             |
| 12   | Enabled  | Low         | 15             |
| 13   | Enabled  | Low         | 15             |
| 14   | Enabled  | Low         | 15             |
| 15   | Disabled | Low         | 15             |
| 16   | Disabled | Low         | 15             |
| 17   | Disabled | Low         | 15             |
| 18   | Disabled | Low         | 15             |
| 19   | Disabled | Low         | 15             |
| 20   | Disabled | Low         | 15             |
| 21   | Disabled | Low         | 15             |
| 22   | Disabled | Low         | 15             |
| 23   | Disabled | Low         | 15             |
| 24   | Disabled | Low         | 15             |

Warning: It takes some time to apply setting to system. Please do not abort system operation.

Apply

| Field          | Description   |
|----------------|---|
| Port           | Port Name.  |
| Status         | PoE Port operational status.<br><b>Enabled</b> : PoE port is enabled<br><b>Disabled</b> : PoE port is disabled  |
| PD Priority    | PoE PD Priority status<br><b>Low</b> : PD device set to low priority connection<br><b>Medium</b> : PD device set to middle priority connection<br><b>High</b> : PD device set to high priority connection<br><b>Critical</b> : PD device set to highest priority connection |
| Power Limit(W) | Selected the power delivery of watts<br><b>15W</b> : PoE port limit set to 15W (802.3af)<br><b>30W</b> : PoE port limit set to 30W (802.3at)  |

## 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 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 protocol.

#### 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 add statically or dynamic learned by GVRP. Each VLAN entry has a unique name, user can edit VLAN name in edit page.

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

# Smart Managed GbE Switch

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.

Status

Network

Port

VLAN

VLAN

Create VLAN

VLAN Configuration

Membership

Port Setting

Voice VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

QoS

Diagnostics

Management

VLAN > VLAN > VLAN Configuration

VLAN Configuration Table

VLAN default

| Entry | Port | Mode   | Membership                     |                                 |                              |   | PVID                                |
|-------|------|--------|--------------------------------|---------------------------------|------------------------------|---|-------------------------------------|
| 1     | GE1  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 2     | GE2  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 3     | GE3  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 4     | GE4  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 5     | GE5  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 6     | GE6  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 7     | GE7  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 8     | GE8  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 9     | GE9  | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 10    | GE10 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 11    | GE11 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 12    | GE12 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 13    | GE13 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 14    | GE14 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 15    | GE15 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 16    | GE16 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 17    | GE17 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 18    | GE18 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 19    | GE19 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 20    | GE20 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 21    | GE21 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 22    | GE22 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 23    | GE23 | Hybrid | <input type="radio"/> Excluded | <input type="radio"/> Forbidden | <input type="radio"/> Tagged | <input checked="" type="radio"/> Untagged | <input checked="" type="checkbox"/> |
| 24    | GE24 | Hybrid | <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"/> |

Apply

## Smart Managed GbE Switch

| 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.<br><b>Excluded</b> : Specify the port is excluded in the VLAN.<br><b>Forbidden</b> : Specify the port is forbidden in the VLAN.<br><b>Tagged</b> : Specify the port is tagged member in the VLAN.<br><b>Untagged</b> : 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.

**VLAN 10 VLAN 11 Membership**

**Membership Table**

| Entry                 | Port | Mode | Administrative VLAN | Operational VLAN |
|-----------------------|------|------|---------------------|------------------|
| <input type="radio"/> | 1    | GE1  | Hybrid              | 1UP              |
| <input type="radio"/> | 2    | GE2  | Hybrid              | 1UP              |
| <input type="radio"/> | 3    | GE3  | Hybrid              | 1UP              |
| <input type="radio"/> | 4    | GE4  | Hybrid              | 1UP              |
| <input type="radio"/> | 5    | GE5  | Hybrid              | 1UP              |
| <input type="radio"/> | 6    | GE6  | Hybrid              | 1UP              |
| <input type="radio"/> | 7    | GE7  | Hybrid              | 1UP              |
| <input type="radio"/> | 8    | GE8  | Hybrid              | 1UP              |
| <input type="radio"/> | 9    | GE9  | Hybrid              | 1UP              |
| <input type="radio"/> | 10   | GE10 | Hybrid              | 1UP              |
| <input type="radio"/> | 11   | GE11 | Hybrid              | 1UP              |
| <input type="radio"/> | 12   | GE12 | Hybrid              | 1UP              |
| <input type="radio"/> | 13   | GE13 | Hybrid              | 1UP              |
| <input type="radio"/> | 14   | GE14 | Hybrid              | 1UP              |
| <input type="radio"/> | 15   | GE15 | Hybrid              | 1UP              |
| <input type="radio"/> | 16   | GE16 | Hybrid              | 1UP              |
| <input type="radio"/> | 17   | GE17 | Hybrid              | 1UP              |
| <input type="radio"/> | 18   | GE18 | Hybrid              | 1UP              |
| <input type="radio"/> | 19   | GE19 | Hybrid              | 1UP              |
| <input type="radio"/> | 20   | GE20 | Hybrid              | 1UP              |
| <input type="radio"/> | 21   | GE21 | Hybrid              | 1UP              |
| <input type="radio"/> | 22   | GE22 | Hybrid              | 1UP              |
| <input type="radio"/> | 23   | GE23 | Hybrid              | 1UP              |
| <input type="radio"/> | 24   | GE24 | Hybrid              | 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              |

## Smart Managed GbE Switch

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

### 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.



## Smart Managed GbE Switch

**VLAN Port Setting**

**Port Setting Table**

| <input type="checkbox"/> | Entry | Port | Mode   | PVID | Accept Frame Type | Ingress Filtering |
|--------------------------|-------|------|--------|------|-------------------|-------------------|
| <input type="checkbox"/> | 1     | GE1  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 2     | GE2  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 3     | GE3  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 4     | GE4  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 5     | GE5  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 6     | GE6  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 7     | GE7  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 8     | GE8  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 9     | GE9  | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 10    | GE10 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 11    | GE11 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 12    | GE12 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 13    | GE13 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 14    | GE14 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 15    | GE15 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 16    | GE16 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 17    | GE17 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 18    | GE18 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 19    | GE19 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 20    | GE20 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 21    | GE21 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 22    | GE22 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 23    | GE23 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 24    | GE24 | Hybrid | 1    | All               | Enabled           |
| <input type="checkbox"/> | 25    | GE25 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 26    | GE26 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 27    | GE27 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 28    | GE28 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 29    | LAG1 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 30    | LAG2 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 31    | LAG3 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 32    | LAG4 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 33    | LAG5 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 34    | LAG6 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 35    | LAG7 | Trunk  | 1    | All               | Enabled           |
| <input type="checkbox"/> | 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  | <p>Select the VLAN mode of the interface.</p> <p><b>Hybrid</b> : Support all functions as defined in IEEE802.1Q specification.</p> <p><b>Access</b> : Accepts only untagged frames and join an untagged VLAN.</p> <p><b>Trunk</b> : An untagged member of one VLAN at most, and is a tagged member of zero or more VLANs.</p> |

## Smart Managed GbE Switch

|                          |  |
|--------------------------|--|
| <b>PVID</b>              | Specify the port-based VLAN ID (1~4094). It's only available with hybrid and Trunk mode.             |
| <b>Accept Frame Type</b> | Specify the acceptable-frame-type of the specified interfaces. It's only available with Hybrid mode. |
| <b>Ingress Filtering</b> | 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.

- Status
- Network
- Port
- VLAN
  - Create VLAN
  - VLAN Configuration
  - Membership
  - Port Setting
  - Voice VLAN
    - Property
    - Voice OUI
- MAC Address Table
- Spanning Tree
- Discovery
- Multicast
- Security
- QoS
- Diagnostics
- Management

### VLAN > Voice VLAN > Property

State

☐ Enable

VLAN

None

CoS / 802.1p Remarking

8

Aging Time

1440

Sec (30 - 65536, default 1440)

Apply

#### Port Setting Table

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

Edit

## Smart Managed GbE Switch

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

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

Click "Edit" button to edit Property Port.

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

## Smart Managed GbE Switch

The screenshot shows the web interface of a Smart Managed GbE Switch. On the left is a navigation menu with categories like Status, Network, Port, VLAN, MAC Address Table, Spanning Tree, Discovery, Multicast, Security, QoS, Diagnostics, and Management. The 'VLAN' category is expanded, showing sub-items like VLAN, Voice VLAN, and Voice OUI (which is highlighted). The main content area is titled 'VLAN >> Voice VLAN >> Voice OUI'. It features a 'Voice OUI Table' with a 'Showing All entries' dropdown. The table has three columns: a checkbox, 'OUI', and 'Description'. It lists eight entries with checkboxes, OUI addresses, and manufacturer names. Below the table are 'Add', 'Edit', and 'Delete' buttons.

|                          | OUI      | Description |
|--------------------------|----------|-------------|
| <input type="checkbox"/> | 00:E0:BB | 3COM        |
| <input type="checkbox"/> | 00:03:6B | Cisco       |
| <input type="checkbox"/> | 00:E0:75 | Veritel     |
| <input type="checkbox"/> | 00:D0:1E | Pingtel     |
| <input type="checkbox"/> | 00:01:E3 | Siemens     |
| <input type="checkbox"/> | 00:60:B9 | NEC/Philips |
| <input type="checkbox"/> | 00:0F:E2 | H3C         |
| <input type="checkbox"/> | 00:09:6E | Avaya       |

| 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.

The screenshot shows the 'MAC Address Table > Dynamic Address' configuration page. On the left is a navigation menu with options: Status, Network, Port, VLAN, MAC Address Table (selected), Dynamic Address (selected), Static Address, Spanning Tree, Discovery, Multicast, Security, QoS, Diagnostics, and Management. The main content area has a title bar 'MAC Address Table > Dynamic Address'. Below it is a form for 'Aging Time' with a text input field containing '300' and a label 'Sec (10 - 630, default 300)'. There is an 'Apply' button below the input field. Below that is a section titled 'Dynamic Address Table'. It shows 'Showing All entries' and 'Showing 1 to 1 of 1 entries'. Below this is a table with columns: ☐ (checkbox), VLAN, MAC Address, and Port. The table contains one entry: ☐ 1 B8:97:5A:0D:10:FA GE12. At the bottom of the table are three buttons: 'Clear', 'Refresh', and 'Add Static 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. |
| VLAN        | Specify the VLAN to show or clear MAC entries.   |
| MAC Address | The MAC address to which packets will be forwarded.  |
| Port        | Interface for port number.   |

## 7.2 Static Address

Click **MAC Address Table>Static Address**

To display the static MAC address.

## Smart Managed GbE Switch

▼ Status

▼ Network

▼ Port

▼ VLAN

▼ **MAC Address Table**

Dynamic Address

**Static Address**

▼ Spanning Tree

▼ Discovery

▼ Multicast

▼ Security

▼ QoS

▼ Diagnostics

▼ Management

**MAC Address Table >> Static Address**

**Static Address Table**

Showing  entries

☐

VLAN

MAC Address

Port

Add

Edit

Delete

| 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 for 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.

**Spanning Tree Property**

**State** ☐ Enable

**Operation Mode** ☐ STP ☒ RSTP

**Path Cost** ☒ Long ☐ Short

**BPDU Handling** ☐ Filtering ☒ Flooding

**Priority** 32768 (0 - 61440, default 32768)

**Hello Time** 2 Sec (1 - 10, default 2)

**Max Age** 20 Sec (6 - 40, default 20)

**Forward Delay** 15 Sec (4 - 30, default 15)

**Tx Hold Count** 6 (1 - 10, default 6)

**Operational Status**

**Bridge Identifier** 32768-00:08:54:73:D6:0D

**Designated Root Bridge** 32768-00:08:54:73:D6:0D

**Root Port** N/A

**Root Path Cost** 0

**Topology Change Count** 0

**Last Topology Change** 0D/0H/0M/0S

Apply

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



## Smart Managed GbE Switch

|                      |   |
|----------------------|---|
| <b>BPDU Handling</b> | Specify the BPDU forward method when the STP is disabled.<br><b>Filtering</b> : Filter the BPDU when STP is disabled.<br><b>Flooding</b> : Flood the BPDU when STP is disabled.   |
| <b>Priority</b>      | 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. |
| <b>Hello Time</b>    | 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.   |
| <b>Max Age</b>       | Specify the time interval in seconds for a switch to wait the configuration messages, without attempting to redefine its own configuration.   |
| <b>Forward Delay</b> | 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 30 seconds.  |
| <b>TX Hold Count</b> | 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                                      |
|-----------------------------------|--|
| <b>Bridge Identifier</b>          | Bridge identifier of the switch.                 |
| <b>Designated Root Identifier</b> | Bridge identifier of the designated root bridge. |
| <b>Root Port</b>                  | Operational root port of the switch.             |
| <b>Root Path Cost</b>             | Operational root path cost.                      |
| <b>Topology Change Count</b>      | The number of the topology changes.              |
| <b>Last Topology Change</b>       | The last time for the topology change.           |

## 8.2 Port Setting

Click **STP>Port Setting**

Configure and display STP port settings.



# Smart Managed GbE Switch

| Spanning Tree - Port Setting  |       |      |         |           |          |                  |                            |           |            |                   |                    |                 |
|---|-------|------|---------|-----------|----------|------------------|----------------------------|-----------|------------|-------------------|--------------------|-----------------|
| Port Setting Table  |       |      |         |           |          |                  |                            |           |            |                   |                    |                 |
| <input type="checkbox"/>  | 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   | 8-00-00-00-00-00  | 128-1              | 20000           |
| <input type="checkbox"/>  | 2     | GE2  | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-2              | 20000           |
| <input type="checkbox"/>  | 3     | GE3  | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-3              | 20000           |
| <input type="checkbox"/>  | 4     | GE4  | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-4              | 20000           |
| <input type="checkbox"/>  | 5     | GE5  | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-5              | 20000           |
| <input type="checkbox"/>  | 6     | GE6  | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-6              | 20000           |
| <input type="checkbox"/>  | 7     | GE7  | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-7              | 20000           |
| <input type="checkbox"/>  | 8     | GE8  | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-8              | 20000           |
| <input type="checkbox"/>  | 9     | GE9  | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-9              | 20000           |
| <input type="checkbox"/>  | 10    | GE10 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-10             | 20000           |
| <input type="checkbox"/>  | 11    | GE11 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-11             | 20000           |
| <input type="checkbox"/>  | 12    | GE12 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Forwarding | 8-00-00-00-00-00  | 128-12             | 20000           |
| <input type="checkbox"/>  | 13    | GE13 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-13             | 20000           |
| <input type="checkbox"/>  | 14    | GE14 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-14             | 20000           |
| <input type="checkbox"/>  | 15    | GE15 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-15             | 20000           |
| <input type="checkbox"/>  | 16    | GE16 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-16             | 20000           |
| <input type="checkbox"/>  | 17    | GE17 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-17             | 20000           |
| <input type="checkbox"/>  | 18    | GE18 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-18             | 20000           |
| <input type="checkbox"/>  | 19    | GE19 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-19             | 20000           |
| <input type="checkbox"/>  | 20    | GE20 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-20             | 20000           |
| <input type="checkbox"/>  | 21    | GE21 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-21             | 20000           |
| <input type="checkbox"/>  | 22    | GE22 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-22             | 20000           |
| <input type="checkbox"/>  | 23    | GE23 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-23             | 20000           |
| <input type="checkbox"/>  | 24    | GE24 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-24             | 20000           |
| <input type="checkbox"/>  | 25    | GE25 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-25             | 20000           |
| <input type="checkbox"/>  | 26    | GE26 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-26             | 20000           |
| <input type="checkbox"/>  | 27    | GE27 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-27             | 20000           |
| <input type="checkbox"/>  | 28    | GE28 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-28             | 20000           |
| <input type="checkbox"/>  | 29    | LAG1 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-29             | 20000           |
| <input type="checkbox"/>  | 30    | LAG2 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-30             | 20000           |
| <input type="checkbox"/>  | 31    | LAG3 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-31             | 20000           |
| <input type="checkbox"/>  | 32    | LAG4 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-32             | 20000           |
| <input type="checkbox"/>  | 33    | LAG5 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-33             | 20000           |
| <input type="checkbox"/>  | 34    | LAG6 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-34             | 20000           |
| <input type="checkbox"/>  | 35    | LAG7 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-35             | 20000           |
| <input type="checkbox"/>  | 36    | LAG8 | Enabled | 20000     | 128      | Disabled         | Disabled                   | Disabled  | Disabled   | 8-00-00-00-00-00  | 128-36             | 20000           |
| <input type="button" value="Edit"/> <input type="button" value="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. |

## Smart Managed GbE Switch

Edit STP port setting

| Field                 | Description   |
|-----------------------|---|
| <b>State</b>          | Enable/Disable the STP on the specified port  |
| <b>Path Cost</b>      | Specify the STP path cost on the specified port.  |
| <b>Priority</b>       | Specify the STP priority on the specified port.   |
| <b>Edge Port</b>      | Specify the edge mode.<br><b>Enable</b> : Force to true state (as link to a host)<br><b>Disable</b> : Force to false state (as link to a bridge)<br>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. |
| <b>Point-to-Point</b> | Specify the Point-to-Point port configuration:<br><b>Auto</b> : The state is depended on the duplex setting of the port.<br><b>Enable</b> : Force to true state.<br><b>Disable</b> : 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.

# Smart Managed GbE Switch

Status

Network

Port

VLAN

MAC Address Table

Spanning Tree

Property

Port Setting

Statistics

Discovery

LLDP

Multicast

Security

QoS

Diagnostics

Management

Spanning Tree >> Statistics

Statistics Table

Refresh Rate 0 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

## Smart Managed GbE Switch

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

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

View STP Port Statistics.

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

The screenshot shows the 'Discovery > LLDP > Property' configuration page. The left sidebar contains a tree view with categories like Status, Network, Port, VLAN, MAC Address Table, Spanning Tree, Discovery (expanded), Multicast, Security, QoS, Diagnostics, and Management. Under 'Discovery', 'LLDP' is expanded, and 'Property' is selected. The main content area has a title bar 'LLDP' and the following settings:

|                               |  |
|-------------------------------|--|
| <b>State</b>                  | <input checked="" type="checkbox"/> Enable   |
| <b>LLDP Handling</b>          | <input type="radio"/> Filtering<br><input type="radio"/> Bridging<br><input checked="" type="radio"/> Flooding |
| <b>TLV Advertise Interval</b> | 30 Sec (5 - 32767, default 30)   |
| <b>Hold Multiplier</b>        | 4 (2 - 10, default 4)  |
| <b>Reinitializing Delay</b>   | 2 Sec (1 - 10, default 2)  |
| <b>Transmit Delay</b>         | 2 Sec (1 - 8191, default 2)  |

An 'Apply' button is located at the bottom of the settings area.

| Field                | Description   |
|----------------------|---|
| <b>State</b>         | Enable/Disable LLDP protocol on this switch   |
| <b>LLDP Handling</b> | Select LLDP PDU handling action to be filtered, bridging or flooded when LLDP is globally disabled.<br><b>Filtering</b> : Deletes the packet. |

## Smart Managed GbE Switch

|                               |   |
|-------------------------------|---|
|                               | <b>Bridging</b> : (VLAN-aware flooding) Forwards the packet to all VLAN members.<br><b>Flooding</b> : Forwards the packet to all ports. |
| <b>TLV Advertise Interval</b> | Select the interval at which frames are transmitted. The default is 30 seconds, and the valid range is 5~32767 seconds.                 |
| <b>Hold Multiplier</b>        | Select the multiplier on the transmit interval to assign to TTL (range 2~10, default=4).  |
| <b>Reinitialization Delay</b> | Select the delay before a re-initialization (range 1~10 seconds, default=2).  |
| <b>Transmit Delay</b>         | Select the delay after an LLDP frame is sent (range 1~8191 seconds, default=2).   |

### 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**



## Smart Managed GbE Switch

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

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

## Smart Managed GbE Switch

| 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 user needs detail information, select the port, then click **detail**.

| Field          | Description  |
|----------------|--|
| Port           | Port Name  |
| Mandatory TLVs | Total mandatory TLV byte size.<br>Status is sent or overloading. |
| 802.3 TLVs     | Total 802.3 TLVs byte size.<br>Status is sent or overloading.    |
| Optional TLVs  | Total Optional TLV byte size.<br>Status is sent or overloading.  |
| 802.1 TLVs     | Total 802.1 TLVs byte size.<br>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.



# Smart Managed GbE Switch

Status

Network

Port

VLAN

MAC Address Table

Spanning Tree

Discovery

LLDP

Property

Port Setting

Packet View

Local Information

Neighbor

Statistics

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Security

QoS

Diagnostics

Management

Discovery >> LLDP >> Local Information

Device Summary

|                        |                   |
|------------------------|-------------------|
| Chassis ID Subtype     | MAC address       |
| Chassis ID             | 00:08:54:73:D6:0D |
| 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     |
| <input type="radio"/> | 20    | GE20 | Normal     |
| <input type="radio"/> | 21    | GE21 | Normal     |
| <input type="radio"/> | 22    | GE22 | Normal     |
| <input type="radio"/> | 23    | GE23 | Normal     |
| <input type="radio"/> | 24    | GE24 | Normal     |
| <input type="radio"/> | 25    | GE25 | Normal     |
| <input type="radio"/> | 26    | GE26 | Normal     |
| <input type="radio"/> | 27    | GE27 | Normal     |
| <input type="radio"/> | 28    | GE28 | Normal     |

Detail

| 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 of the switch.  |

## Smart Managed GbE Switch

|                               |  |
|-------------------------------|--|
| <b>Description</b>            |  |
| <b>Capabilities Supported</b> | Primary functions of the device, such as Bridge, WLAN AP, or Router. |
| <b>Capabilities Enabled</b>   | Primary enabled functions of the device.                             |
| <b>Port ID Subtype</b>        | Type of the port identifier that is shown.                           |
| <b>LLDP Status</b>            | LLDP Tx and Rx abilities.  |

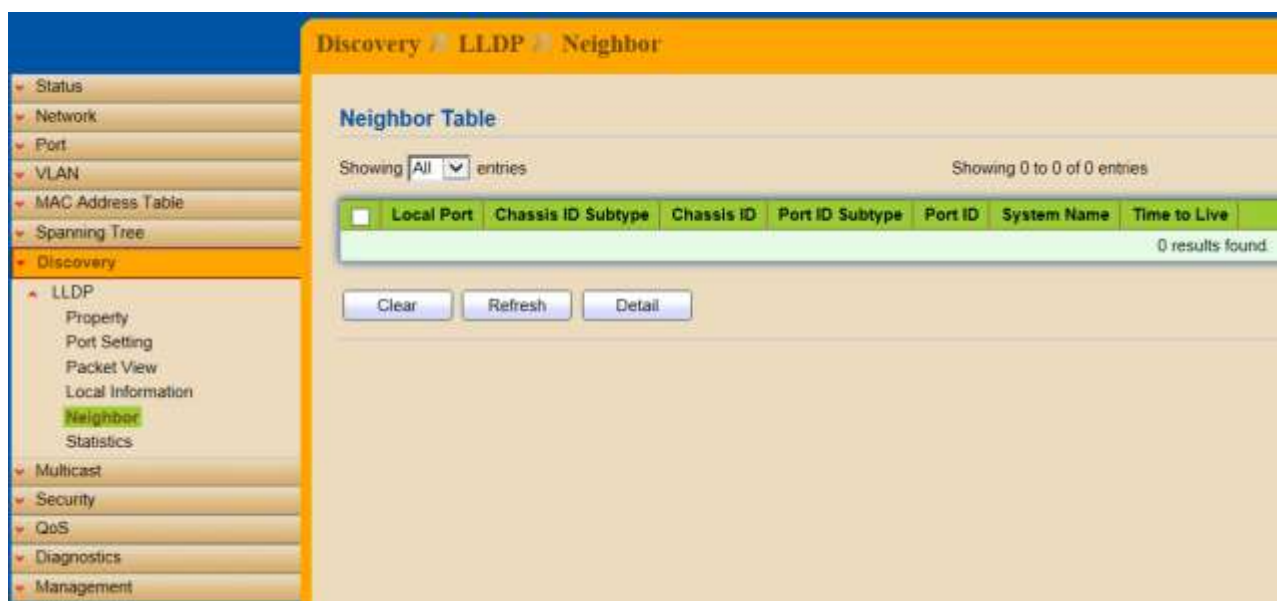
Click “detail” button on the page to view detail information of the selected port.

### 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  |
|---------------------------|--|
| <b>Local Port</b>         | Number of the local port to which the neighbor is connected. |
| <b>Chassis ID Subtype</b> | Type of chassis ID (for example, MAC address)                |
| <b>Chassis ID</b>         | Identifier of the 802 LAN neighboring device's chassis.      |
| <b>Port ID Subtype</b>    | Type of the port identifier that is shown.                   |
| <b>Port ID</b>            | Identifier of port.  |
| <b>System Name</b>        | Published name of the switch.                                |

## Smart Managed GbE Switch

|                     |  |
|---------------------|--|
| <b>Time to Live</b> | 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.

**Discovery >> LLDP >> Statistics**

**Global Statistics**

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

Clear
Refresh

**Statistics Table**

|                          | Entry | Port | Transmit Frame | Receive Frame |         |       | Receive TLV |              | Neighbor Timeout |
|--------------------------|-------|------|----------------|---------------|---------|-------|-------------|--------------|------------------|
|                          |       |      | Total          | Total         | Discard | Error | Discard     | Unrecognized |                  |
| <input type="checkbox"/> | 1     | GE1  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 2     | GE2  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 3     | GE3  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 4     | GE4  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 5     | GE5  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 6     | GE6  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 7     | GE7  | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 8     | GE8  | 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                |
| <input type="checkbox"/> | 26    | GE26 | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 27    | GE27 | 0              | 0             | 0       | 0     | 0           | 0            | 0                |
| <input type="checkbox"/> | 28    | GE28 | 0              | 0             | 0       | 0     | 0           | 0            | 0                |

Clear
Refresh

## Smart Managed GbE Switch

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

## 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  |
|---------------------------------|--|
| <b>Unknown Multicast Action</b> | Set the unknown multicast action<br><b>Flood</b> : flood the unknown multicast data.<br><b>Drop</b> : drop the unknown multicast data.<br><b>Forward to Router port</b> : forward the unknown multicast data to router port. |
| <b>IPv4</b>                     | Set the IPv4 multicast forward method.<br><b>MAC-VID</b> : forward method dmac+vid.<br><b>DIP-VID</b> : forward method dip+vid.  |

#### 10.1.2 Group Address

Click **Multicast>General >Group Address**

## Smart Managed GbE Switch

To display Multicast General Group web page.

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

The screenshot shows the web interface of a Smart Managed GbE Switch. On the left is a navigation menu with categories like Status, Network, Port, VLAN, MAC Address Table, Spanning Tree, Discovery, Multicast, Security, QoS, Diagnostics, and Management. The 'Multicast' category is expanded, showing sub-items: General Property, Group Address (highlighted), Router Port, IGMP Snooping, and others. The main content area is titled 'Multicast >> General >> Group Address'. Below this title is a 'Group Address Table' section. It includes a 'Showing' dropdown set to 'All' and 'entries'. Below the dropdown is a table with columns: a checkbox, VLAN, Group Address, Member, Type, and Life (Sec). The table is currently empty. Below the table are four buttons: Add, Edit, Delete, and Refresh.

| 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.<br><b>Available Port</b> : Optional port member<br><b>Selected Port</b> : Selected port member |

## Smart Managed GbE Switch

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.<br><b>Available Port</b> : Optional port member<br><b>Selected Port</b> : Selected port member |

### 10.1.3 Router Port

Click **Multicast>General >Router Port**

To display Multicast router port table web page.

This page shows all router port information.

The screenshot shows the web interface of a Smart Managed GbE Switch. On the left is a navigation sidebar with a tree view. The 'Multicast' category is expanded, and 'Router Port' is selected. The main content area has a header 'Multicast >> General >> Router Port' and a title 'Router Port Table'. Below the title, it says 'Showing All entries' with a dropdown arrow. A table with three columns is visible: 'VLAN', 'Member', and 'Life (Sec)'. The table is currently empty. Below the table is a 'Refresh' button.

| Field  | Description               |
|--------|---------------------------|
| VLAN   | The VLAN ID router entry. |
| Member | Router Port member.       |

## Smart Managed GbE Switch

|            |                                      |
|------------|--------------------------------------|
| 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  |
|-------------------------------|--|
| <b>State</b>                  | Set the enabling status of IGMP Snooping functionality<br><b>Enable</b> : If Checked Enable IGMP Snooping, else is Disabled IGMP Snooping.                                     |
| <b>Version</b>                | Set the IGMP Snooping version<br><b>IGMPv2</b> : Only support to process IGMP v2 packet.<br><b>IGMPv3</b> : Support v3 basic and v2.   |
| <b>Report Suppression</b>     | Set the enabling status of IGMP v2 report suppression.<br><b>Enable</b> : If Checked Enable IGMP Snooping v2 report suppression, else Disable the report suppression function. |
| <b>VLAN</b>                   | The IGMP entry VLAN ID.  |
| <b>Operation Status</b>       | The enable status of IGMP Snooping VLAN functionality.   |
| <b>Router Port Auto Learn</b> | The enabling status of IGMP Snooping router port auto learning   |



## Smart Managed GbE Switch

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

Click "Edit" to edit VLAN Setting.

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

Operational Status.

| Field                              | Description  |
|------------------------------------|--|
| <b>Status</b>                      | Operational IGMP Snooping status, unless both IGMP Snooping global and IGMP Snooping enable the status, will be enabled. |
| <b>Query Robustness</b>            | Operational Query Robustness.  |
| <b>Query Interval</b>              | Operational Query Interval.  |
| <b>Query Max Response Interval</b> | Operational Query Max Response Interval.   |

## Smart Managed GbE Switch

|                                   |   |
|-----------------------------------|---|
| <b>Last Member Query Counter</b>  | Operational Last Member Query Count.    |
| <b>Last Member Query Interval</b> | Operational Last Member Query Interval. |

### 10.2.2 Querier

Click **Multicast>IGMP Snooping >Querier**

To display IGMP Snooping Querier setting web page.

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

| <input type="checkbox"/> | VLAN | State    | Operational Status | Version | Querier Address |
|--------------------------|------|----------|--------------------|---------|-----------------|
| <input type="checkbox"/> | 1    | Disabled | Disabled           |         |                 |

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

Click “Edit” to edit IGMP Snooping Querier.

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

## Smart Managed GbE Switch

### 10.2.3 Statistics

Click **Multicast>IGMP Snooping >Statistics**

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

**Multicast » IGMP Snooping » Statistics**

| Receive Packet              |   |
|-----------------------------|---|
| Total                       | 5 |
| Valid                       | 0 |
| InValid                     | 5 |
| 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 |

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  |

## Smart Managed GbE Switch

|                                    |  |
|------------------------------------|--|
| <b>Special Group Query</b>         | IGMP special group general query packet            |
| <b>Source-specific Group Query</b> | IGMP special source and group general query packet |

### Transmit Packet

| Field                              | Description   |
|------------------------------------|---|
| <b>Leave</b>                       | IGMP leave packet   |
| <b>Report</b>                      | IGMP join and report packet   |
| <b>General Query</b>               | IGMP general query packet includes querier transmit general query packet.             |
| <b>Special Group Query</b>         | IGMP special group query packet includes querier transmit special group query packet. |
| <b>Source-specific Group Query</b> | 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 allows user to change Management VLAN connection.

Security >> Management Access >> Management VLAN

Management VLAN 1 - default

Note: Change Management VLAN may cause connection interrupted

Apply

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

### 11.1.2 Management Service

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

This page allows user to change management services related configurations.

## Smart Managed GbE Switch

**Security » Management Access » Management Service**

**Management Service**

|       |  |
|-------|--|
| HTTP  | <input checked="" type="checkbox"/> Enable |
| HTTPS | <input type="checkbox"/> Enable            |
| SNMP  | <input checked="" type="checkbox"/> Enable |

**Session Timeout**

|         |                                 |                             |
|---------|---------------------------------|-----------------------------|
| Console | <input type="text" value="0"/>  | Min (0 - 65535, default 0)  |
| HTTP    | <input type="text" value="10"/> | Min (0 - 65535, default 10) |
| HTTPS   | <input type="text" value="10"/> | Min (0 - 65535, default 10) |

Apply

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

## 11.2 Protected Port

Click **Security>Protected Port**

This page allows user to configure protected port setting to prevent the selected ports from communicating 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.

## Smart Managed GbE Switch

### Security » Protected Port

#### Protected Port Table

| <input type="checkbox"/> | 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 |

Edit

| Field | Description   |
|-------|---|
| Port  | Port Name   |
| State | Port protected admin state.<br><b>Protected</b> : Port is protected.<br><b>Unprotected</b> : Port is unprotected. |

Click "Edit" to edit the protected port.

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

## Smart Managed GbE Switch

|              |  |
|--------------|--|
| <b>State</b> | Port protected admin state.<br><b>Protected</b> : Enable protecting function.<br><b>Unprotected</b> : 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



## Smart Managed GbE Switch

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

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

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

## 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.

## Smart Managed GbE Switch

### Security >> DoS >> Property

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

## Smart Managed GbE Switch

|                                |  |
|--------------------------------|--|
| <b>DMAC=SMAC</b>               | Drops the packets if the destination MAC address is equal to the source MAC address.   |
| <b>Null Scan Attack</b>        | Drops the packets with NULL scan.  |
| <b>X-Mas Scan Attack</b>       | Drops the packets if the sequence number is zero, and the FIN, URG and PSH bits are set.   |
| <b>TCP SYN-FIN Attack</b>      | Drops the packets with SYN and FIN bits set.   |
| <b>TCP SYN-RST Attack</b>      | Drops the packets with SYN and RST bits set.   |
| <b>ICMP Fragment</b>           | Drops the fragmented ICMP packets.   |
| <b>TCP-SYN(SPORT&lt;1024)</b>  | Drops SYN packets with sport less than 1024.   |
| <b>TCP Fragment (Offset=1)</b> | Drops the TCP fragment packets with offset equals to one.  |
| <b>Ping Max Size</b>           | Specify the maximum size of the ICMPv4/ICMPv6 ping packets. The valid range is from 0 to 65535 bytes, and the default value is 512 bytes.                                      |
| <b>IPv4 Ping Max Size</b>      | Checks the maximum size of ICMP ping packets, and drops the packets larger than the maximum packet size.   |
| <b>IPv6 Ping Max Size</b>      | Checks the maximum size of ICMPv6 ping packets, and drops the packets larger than the maximum packet size  |
| <b>TCP Min Hdr Size</b>        | Checks the minimum TCP header and drops the TCP packets with the header smaller than the minimum size. The length range is from 0 to 31 bytes, and default length is 20 bytes. |
| <b>IPv6 Min Fragment</b>       | Checks the minimum size of IPv6 fragments, and drops the packets smaller than the minimum size. The valid range is from 0 to 65535 bytes, and default value is 1240 bytes.     |
| <b>Smurf Attack</b>            | Avoid smurf attack. The length range of the netmask is from 0 to 32 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.

## Smart Managed GbE Switch

Status

Network

Port

VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

Management Access

Management VLAN

Management Service

Protected Port

Storm Control

DoS

Property

Port Setting

QoS

Diagnostics

Management

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 |

Edit

| 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 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.

| Field             | Description  |
|-------------------|--|
| <b>State</b>      | Set checkbox to enable/disable QoS.  |
| <b>Trust Mode</b> | <p>Select QoS trust mode.</p> <p><b>CoS</b> : Traffic is mapped to queues based on the CoS field in the VLAN tag, or based on the per-port default CoS value (if there is no VLAN tag on the incoming packet), the actual mapping of the CoS to queue can be configured on port setting dialog.</p> <p><b>DSCP</b> : All IP traffic is mapped to queues based on the DSCP field in the IP header. The actual mapping of the DSCP to queue can be configured on the DSCP mapping page. If traffic is not IP traffic, it is mapped to the best effort queue.</p> <p><b>CoS-DSCP</b> : Uses the trust CoS mode for non-IP traffic and trust DSCP mode for IP traffic.</p> <p><b>IP Precedence</b> : Traffic is mapped to queues based on the IP precedence. The actual mapping of the IP precedence to queue can be configured on the IP Precedence mapping page.</p> |

# Smart Managed GbE Switch

## Port Setting Table

Port Setting Table

| <input type="checkbox"/> | 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      |

Edit

## Smart Managed GbE Switch

| Field                     | Description   |
|---------------------------|---|
| Port                      | Port name   |
| CoS                       | Port default CoS priority value for the selected ports.   |
| Trust                     | Port trust state<br><b>Enable</b> : Traffic will follow trust mode in global setting.<br><b>Disable</b> : Traffic will always use best efforts.         |
| Remarking (CoS)           | Port CoS remarking admin state.<br><b>Enable</b> : CoS remarking is enabled<br><b>Disable</b> : CoS remarking is disabled                               |
| Remarking (DSCP)          | Port DSCP remarking admin state.<br><b>Enable</b> : DSCP remarking is enabled<br><b>Disable</b> : DSCP remarking is disabled                            |
| Remarking (IP Precedence) | Port IP Precedence remarking admin state.<br><b>Enable</b> : IP Precedence remarking is enabled<br><b>Disable</b> : 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

## Smart Managed GbE Switch

Priority, the priority sets the order in which queues are serviced, starting with queue\_8 (the highest priority queue) and going to the next lower queue when each queue is completed.

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

**QoS >> General >> Queue Scheduling**

**Queue Scheduling Table**

| Queue | Method                           |                       |        |                   |
|-------|----------------------------------|-----------------------|--------|-------------------|
|       | Strict Priority                  | WRR                   | Weight | WRR Bandwidth (%) |
| 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"/> | 9      |                   |
| 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



## Smart Managed GbE Switch

802.1p priority in their VLAN tags. For incoming untagged packets, the 802.1p priority will be the default CoS/802.1p priority assigned to the ingress ports.

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

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

### CoS to Queue Mapping

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

Apply

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

### Queue to CoS Mapping

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

Apply

## Smart Managed GbE Switch

| 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.

**QoS » General » DSCP Mapping**

**DSCP to Queue Mapping**

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

Apply

## Smart Managed GbE Switch

| Field        | Description                     |
|--------------|---------------------------------|
| <b>DSCP</b>  | DSCP value                      |
| <b>Queue</b> | Select Queue ID for DSCP value. |

**Queue to DSCP Mapping**

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

Apply

Queue to DSCP Mapping

| Field        | Description                     |
|--------------|---------------------------------|
| <b>Queue</b> | Queue ID                        |
| <b>DSCP</b>  | 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.

## Smart Managed GbE Switch

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

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

### 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

### Queue to IP Precedence Mapping

| 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**

| <input type="checkbox"/> | 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 |             |

## Smart Managed GbE Switch

| Field           | Description   |
|-----------------|---|
| Port            | Port name   |
| Ingress (State) | Port ingress rate limit state<br><b>Enable</b> : Ingress rate limit is enabled.<br><b>Disable</b> : 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<br><b>Enable</b> : Egress rate limit is enabled.<br><b>Disable</b> : 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 needs to be assigned. |
| Egress  | Set checkbox to enable/disable egress rate limit. If egress rate limit is enabled, rate limit value needs to be assigned.   |

### 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

## Smart Managed GbE Switch

| Field           | Description   |
|-----------------|---|
| Port            | Port name   |
| Queue 1 (State) | Port egress queue 1 rate limit state.<br><b>Enable</b> : Egress queue rate limit is enable.<br><b>Disable</b> : 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.<br><b>Enable</b> : Egress queue rate limit is enable.<br><b>Disable</b> : 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.<br><b>Enable</b> : Egress queue rate limit is enable.<br><b>Disable</b> : 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.<br><b>Enable</b> : Egress queue rate limit is enable.<br><b>Disable</b> : 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.<br><b>Enable</b> : Egress queue rate limit is enable.<br><b>Disable</b> : 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.<br><b>Enable</b> : Egress queue rate limit is enable.<br><b>Disable</b> : 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.<br><b>Enable</b> : Egress queue rate limit is enable.<br><b>Disable</b> : 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.<br><b>Enable</b> : Egress queue rate limit is enable.<br><b>Disable</b> : 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 needs to be assigned. |
| Queue 2 | Set checkbox to enable/disable egress queue 2 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned. |
| Queue 3 | Set checkbox to enable/disable egress queue 3 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned. |
| Queue 4 | Set checkbox to enable/disable egress queue 4 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned. |
| Queue 5 | Set checkbox to enable/disable egress queue 5 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned. |

## Smart Managed GbE Switch

|                |   |
|----------------|---|
| <b>Queue 6</b> | Set checkbox to enable/disable egress queue 6 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned. |
| <b>Queue 7</b> | Set checkbox to enable/disable egress queue 7 rate limit. If egress rate limit is enabled, rate limit value needs to be assigned. |
| <b>Queue 8</b> | Set checkbox to enable/disable egress queue 8 rate limit. If egress rate limit is enabled, rate limit value needs 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.

**Diagnostics >> Logging >> Property**

|                         |   |
|-------------------------|---|
| <b>State</b>            | <input checked="" type="checkbox"/> Enable  |
| <b>Console Logging</b>  |   |
| <b>State</b>            | <input checked="" type="checkbox"/> Enable  |
| <b>Minimum Severity</b> | Notice <input type="button" value="v"/><br>Note: Emergency, Alert, Critical, Error, Warning, Notice |
| <b>RAM Logging</b>      |   |
| <b>State</b>            | <input checked="" type="checkbox"/> Enable  |
| <b>Minimum Severity</b> | Notice <input type="button" value="v"/><br>Note: Emergency, Alert, Critical, Error, Warning, Notice |
| <b>Flash Logging</b>    |   |
| <b>State</b>            | <input type="checkbox"/> Enable   |
| <b>Minimum Severity</b> | Notice <input type="button" value="v"/><br>Note: Emergency, Alert, Critical, Error, Warning, Notice |

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

## Smart Managed GbE Switch

### 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 Remove Server

Click **Diagnostics>Logging >Remote Server**

To display the Remote Logging Server web page.

**Diagnostics >> Logging >> Remote Server**

**Remote Server Table**

| <input type="checkbox"/> | Entry | Server Address | Server Port | Facility | Minimum Severity |
|--------------------------|-------|----------------|-------------|----------|------------------|
|                          |       |                |             |          |                  |

| Field            | Description  |
|------------------|--|
| Server Address   | The IP address of the remote logging server.   |
| Server Port      | 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. |
| Minimum Severity | The minimum severity<br><b>Emergency</b> : System is not usable.   |

## Smart Managed GbE Switch

|  |  |
|--|--|
|  | <b>Alert</b> : Immediate action is needed.<br><b>Critical</b> : System is in the critical condition.<br><b>Error</b> : System is in error condition.<br><b>Warning</b> : System warning has occurred.<br><b>Notice</b> : System is functioning properly, but a system notice has occurred.<br><b>Informational</b> : Device information.<br><b>Debug</b> : Provides detailed information about an event. |
|--|--|

## 13.2 Mirroring

Click **Diagnostics>Mirroring**

To display the Port Mirroring web page.

**Diagnostics >> Mirroring**

**Mirroring Table**

|                       | Session ID | State    | Monitor Port | Ingress Port | Egress Port |
|-----------------------|------------|----------|--------------|--------------|-------------|
| <input type="radio"/> | 1          | Disabled | ---          | ---          | ---         |
| <input type="radio"/> | 2          | Disabled | ---          | ---          | ---         |
| <input type="radio"/> | 3          | Disabled | ---          | ---          | ---         |
| <input type="radio"/> | 4          | Disabled | ---          | ---          | ---         |

Edit

\*\*\* Allow the monitor port to send or receive normal packets

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

## Smart Managed GbE Switch

### 13.2 Ping

Click **Diagnostics>Ping**

To display the Diagnostic Ping functionality web page.

**Diagnostics >> Ping**

|                       |   |
|-----------------------|---|
| <b>Address Type</b>   | <input checked="" type="radio"/> Hostname<br><input type="radio"/> IPv4<br><input type="radio"/> IPv6 |
| <b>Server Address</b> | <input type="text"/>  |
| <b>Count</b>          | <input type="checkbox"/> User Defined<br><input type="text" value="4"/> Sec (1 - 65535)               |

**Ping** **Stop**

**Ping Result**

| Packet Status          |        |
|------------------------|--------|
| <b>Status</b>          | N/A    |
| <b>Transmit Packet</b> | 0      |
| <b>Receive Packet</b>  | 0      |
| <b>Packet Lost</b>     | 0%     |
| Round Trip Time        |        |
| <b>Min</b>             | 0.0 ms |
| <b>Max</b>             | 0.0 ms |
| <b>Average</b>         | 0.0 ms |

| 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.

**Diagnostics >> Copper Test**

Port
GE1
▼

Copper Test

### Copper Test Result

| Cable Status  |     |
|---------------|-----|
| <b>Port</b>   | N/A |
| <b>Result</b> | N/A |
| <b>Length</b> | 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:<br><b>OK</b> : Correctly terminated pair.<br><b>Short Cable</b> : Shorted pair.<br><b>Open Cable</b> : Open pair, no link partner.<br><b>Impedance Mismatch</b> : Terminating impedance is not in the reference range. |
| Length | Distance in meter from the port to the location on the cable where the fault was discovered.  |

## 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  |
|------------------|--|
| <b>Username</b>  | User name of the account.  |
| <b>Privilege</b> | Select privilege level for new account.<br><b>Admin</b> : Allow to change switch settings. Privilege value equals to 15.<br><b>User</b> : 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  |
|-------------------------|--|
| <b>Username</b>         | User name of the account.  |
| <b>Password</b>         | Set password of the account.   |
| <b>Confirm Password</b> | Set the same password of the account as in “Password” field  |
| <b>Privilege</b>        | Select privilege level for new account.<br><b>Admin</b> : Allow to change switch settings. Privilege value equals to 15.<br><b>User</b> : 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   |
|-----------------|---|
| <b>Action</b>   | Firmware operations<br><b>Upgrade</b> : Upgrade firmware from remote host to DUT.<br><b>Backup</b> : Backup firmware image from DUT to remote host.   |
| <b>Method</b>   | Firmware upgrade/backup method<br><b>TFTP</b> : Using TFTP to upgrade/backup firmware.<br><b>HTTP</b> : Using WEB browser to upgrade/backup firmware. |
| <b>Filename</b> | Use browser to upgrade firmware, you should select firmware image file on your host PC.   |

Upgrade Firmware through TFTP.

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

## Smart Managed GbE Switch

|                       |  |
|-----------------------|--|
| <b>Server Address</b> | Specify TFTP server address.                   |
| <b>Filename</b>       | Firmware image file name on remote TFTP server |

### Backup Firmware through HTTP

| Field           | Description   |
|-----------------|---|
| <b>Action</b>   | Firmware operations<br><b>Upgrade</b> : Upgrade firmware from remote host to DUT.<br><b>Backup</b> : Backup firmware image from DUT to remote host.   |
| <b>Method</b>   | Firmware upgrade/backup method<br><b>TFTP</b> : Using TFTP to upgrade/backup firmware.<br><b>HTTP</b> : Using WEB browser to upgrade/backup firmware. |
| <b>Filename</b> | Firmware partition need to backup<br><b>Image0</b> : Firmware image in flash partition 0.<br><b>Image1</b> : Firmware image in flash partition 1.     |

### Backup Firmware through TFTP

| Field                 | Description  |
|-----------------------|--|
| <b>Action</b>         | Firmware operations<br><b>Upgrade</b> : Upgrade firmware from remote host to DUT.<br><b>Backup</b> : Backup firmware image from DUT to remote host.                      |
| <b>Method</b>         | Firmware upgrade/backup method<br><b>TFTP</b> : Using TFTP to upgrade/backup firmware.<br><b>HTTP</b> : Using WEB browser to upgrade/backup firmware.                    |
| <b>Filename</b>       | Firmware partition need to backup<br><b>Image0</b> : Firmware image in flash partition 0.<br><b>Image1</b> : Firmware image in flash partition 1.                        |
| <b>Address Type</b>   | Specify TFTP server address type<br>Hostname : Use domain name as server address<br><b>IPv4</b> : Use IPv4 as server address<br><b>IPv6</b> : Use IPv6 as server address |
| <b>Server Address</b> | Specify TFTP server address  |
| <b>Firmware</b>       | 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.



## Smart Managed GbE Switch

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

|                      |   |
|----------------------|---|
| <b>Action</b>        | <input checked="" type="radio"/> Upgrade<br><input type="radio"/> Backup  |
| <b>Method</b>        | <input type="radio"/> TFTP<br><input checked="" type="radio"/> HTTP   |
| <b>Configuration</b> | <input checked="" type="radio"/> Running Configuration<br><input type="radio"/> Startup Configuration<br><input type="radio"/> RAM Log<br><input type="radio"/> Flash Log |
| <b>Filename</b>      | <input type="text"/> <input type="button" value="瀏覽..."/>   |

### Upgrade Configuration through HTTP

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

### Upgrade Configuration through TFTP.

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

## Smart Managed GbE Switch

### Backup Configuration through HTTP

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

### Backup Configuration through TFTP.

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

## Smart Managed GbE Switch

**Management >> Configuration >> Save Configuration**

|                  |  |
|------------------|--|
| Source File      | <input checked="" type="radio"/> Running Configuration |
| Destination File | <input checked="" type="radio"/> Startup Configuration |

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

### 14.4 SNMP

#### 14.4.1 Community

Click **Management>SNMP>Community**

To display and configure the SNMP community settings.

**Management >> SNMP >> Community**

**Community Table**

Showing  entries

|                          |           |        |
|--------------------------|-----------|--------|
| <input type="checkbox"/> | Community | Access |
|--------------------------|-----------|--------|

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

#### 14.4.2 Trap Event

Click **Management>SNMP>Trap Event**

## Smart Managed GbE Switch

To display and configure the SNMP trap event.

| Management >> SNMP >> Trap Event |  |
|----------------------------------|--|
| Authentication Failure           | <input checked="" type="checkbox"/> Enable |
| Link Up / Down                   | <input checked="" type="checkbox"/> Enable |
| Cold Start                       | <input checked="" type="checkbox"/> Enable |
| Warm Start                       | <input checked="" type="checkbox"/> Enable |

Apply

| 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/v3 notification.

| Management >> SNMP >> Notification |                |         |      |           |
|------------------------------------|----------------|---------|------|-----------|
| Notification Table                 |                |         |      |           |
| Showing <span>All</span> entries   |                |         |      |           |
| <input type="checkbox"/>           | Server Address | Version | Type | Community |
|                                    |                |         |      |           |

For SNMPv1,2 Notification, SNMP Community needs to be defined.

Add Delete

## Smart Managed GbE Switch

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

## Product Specifications

|                          |  |
|--------------------------|--|
| <b>Standard</b>          | IEEE802.3, IEEE802.3u, and IEEE802.3ab<br>IEEE 802.3x flow control<br>IEEE 802.1Q<br>IEEE 802.3az Energy Efficient Ethernet(EEE)<br>IEEE802.3af, IEEE802.3at |
| <b>Interface</b>         | 24* 10/100/1000Mbps PoE+ RJ-45 NWAY ports<br>4* SFP 100/1000Mbps ports<br>1* Reset button  |
| <b>Transmission Mode</b> | 10/100Mbps: Full-duplex, Half-duplex<br>1000Mbps: Full-duplex  |
| <b>MAC Address Table</b> | 8192   |
| <b>Jumbo Frame</b>       | 10K Bytes  |
| <b>Buffer Memory</b>     | 524.8KBytes  |
| <b>Temperature</b>       | Operating: 0°C ~ 50°C (32°F ~122°F)  |
| <b>Humidity</b>          | Operating: 10% ~ 90% RH, non-condensing  |
| <b>LED Indications</b>   | 1*Power LED(Green)<br>1*System LED(Green)<br>24*10/100/1000M Link/Act LEDs(Orange/Green)<br>24*PoE+ Link LEDs (Green)<br>4*SFP Link/Act LEDs( Green/Orange ) |
| <b>Power Supply</b>      | Internal Switching PSU, 100~240VAC, 50~60Hz, Rating 6.0A Max   |
| <b>Dimensions</b>        | 441*310*45 mm  |
| <b>Certification</b>     | CE – EMC /FCC/VCCI CLASS A, LVD  |