

## **CERIO Corporation**

### **CS-2408G**

**8 Port 10/100/1000M Gigabit Web Managed Switch with 4  
Combo Gigabit Ports**

### **User's Manual**

## FCC Warning

This device has been tested and found to comply with limits for a Class A digital device, pursuant to Part 2 and 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 radiates radio frequency energy and, if not installed and used in accordance with the user's manual, may cause interference in which case user will be required to correct the interference at his own expense.

## CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user many be required to take adequate measures.

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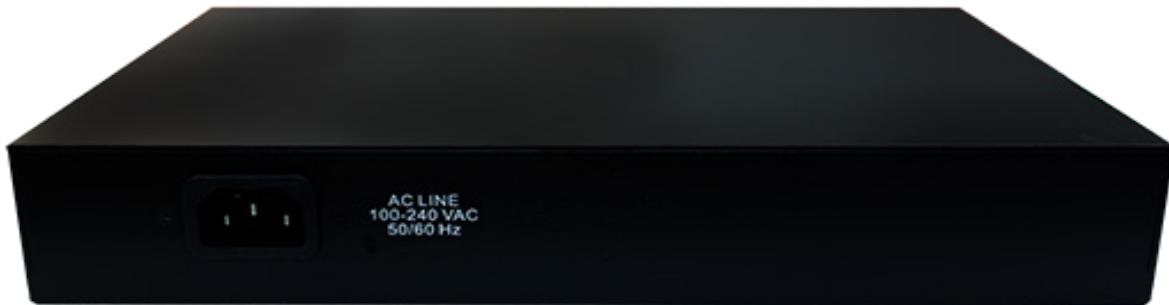
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## 1. Introduction

### 1.1 Front Panel



### 1.2 Rear Panel Layout



## 2. Software Configuration

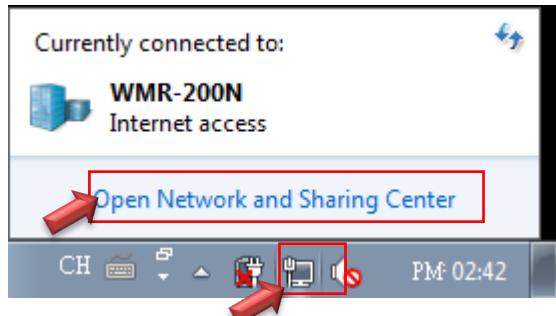
CS-2408G supports web-based configuration. Upon the completion of hardware installation, CS-2408G can be configured through a PC/NB by using its web browser such as Internet Explorer 6.0 or later.

Set the IP segment of the administrator's computer to be in the same range as CS-2408G for accessing the system. Do not duplicate the IP Address used here with IP Address of CS-2408G or any other device within the network. **Please refer to the following steps**

## Example of Segment: (Windows 7)

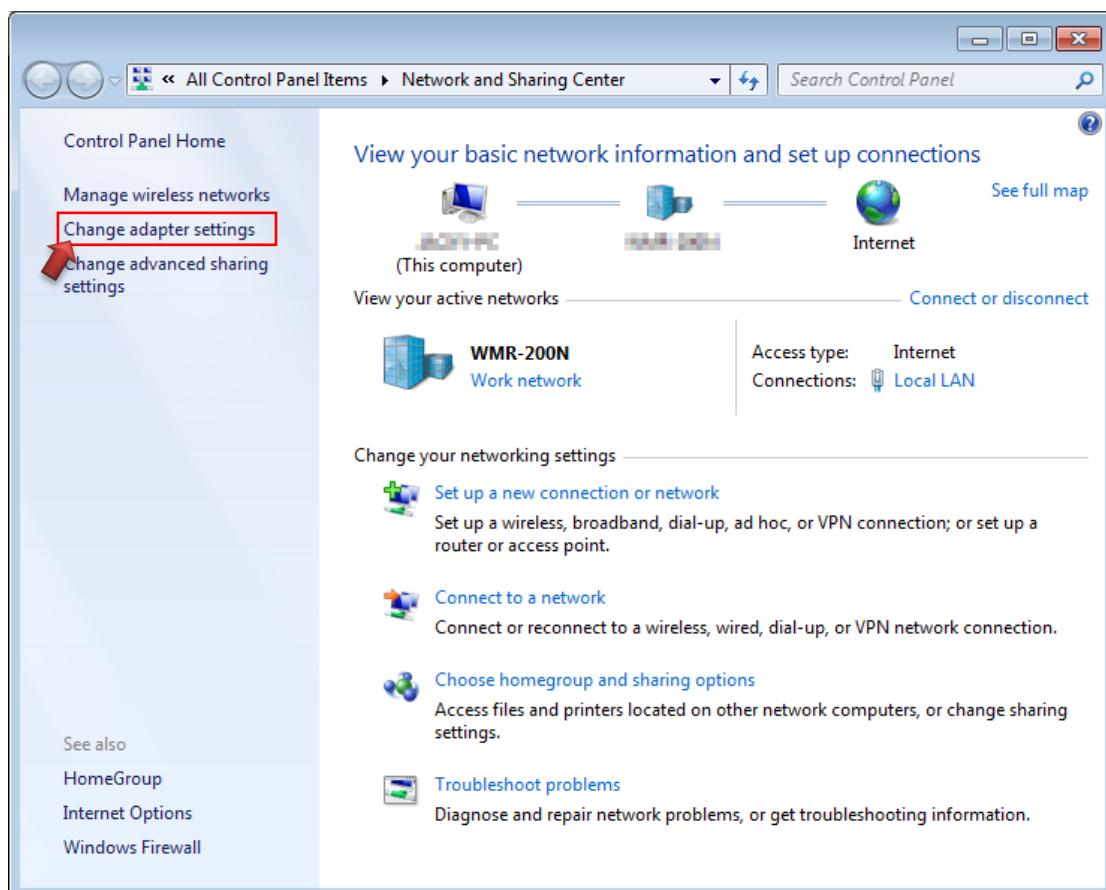
### Step 1 :

Please click on the computer icon in the bottom right window, and click “Open Network and Sharing Center”



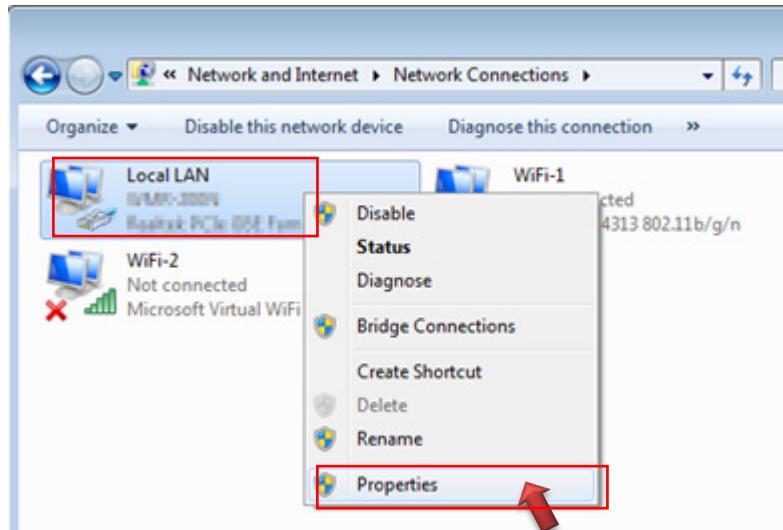
### Step 2 :

In the Network and Sharing Center page, click on the left side of “Change adapter setting” button



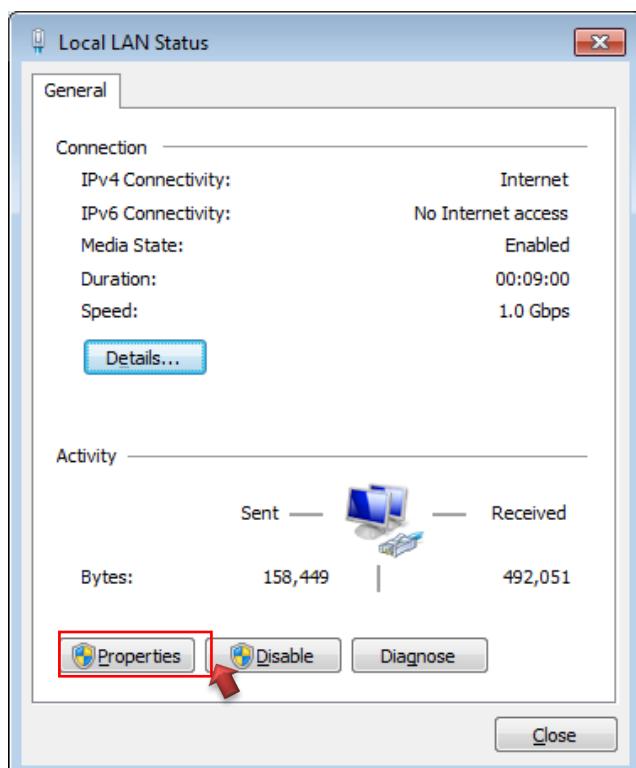
### Step 3 :

In “Change adapter setting” Page, right click on Local LAN then select “Properties”



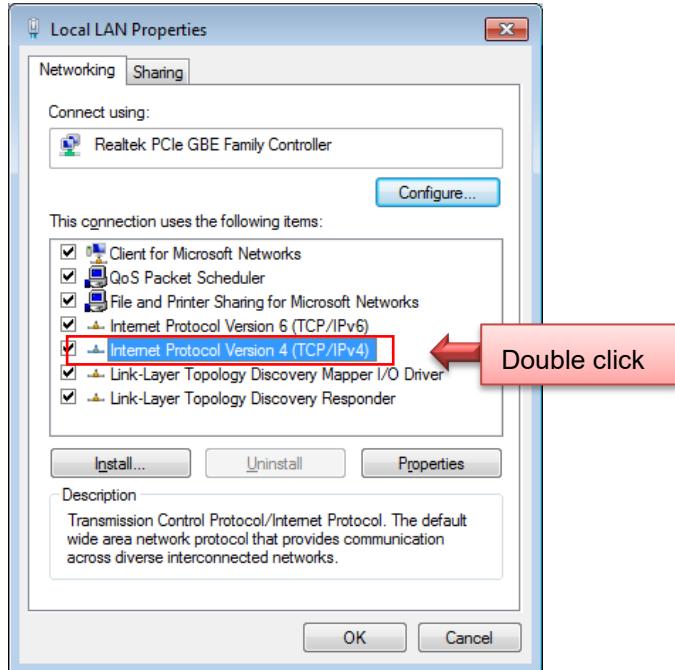
### Step 4 :

In the “Properties” page, click the “Properties” button to open TCP/IP setting



## Step 5 :

In Properties page for setting IP addresses, find “Internet Protocol Version 4 (TCP/IPv4)” and double click to open TCP/IPv4 Properties window



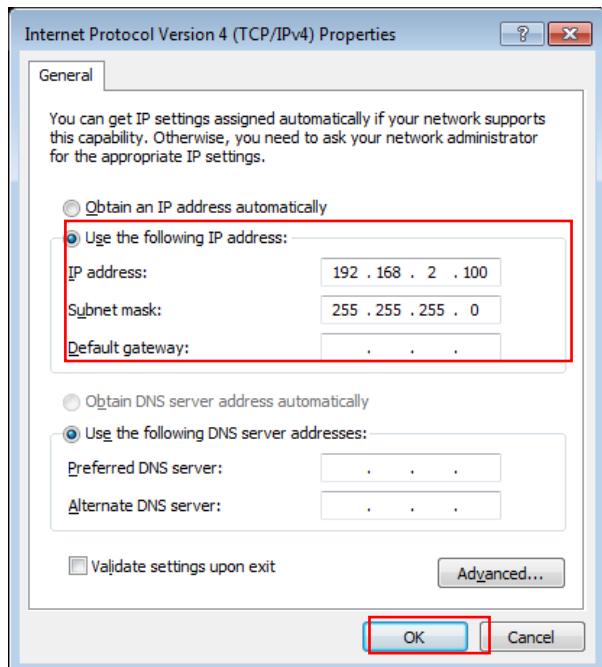
## Step 6 :

Select “Use the following IP address”, and fix in IP Address to: 192.168.2.X

ex. The X is any number from 1 to 253

Subnet mask : 255.255.255.0

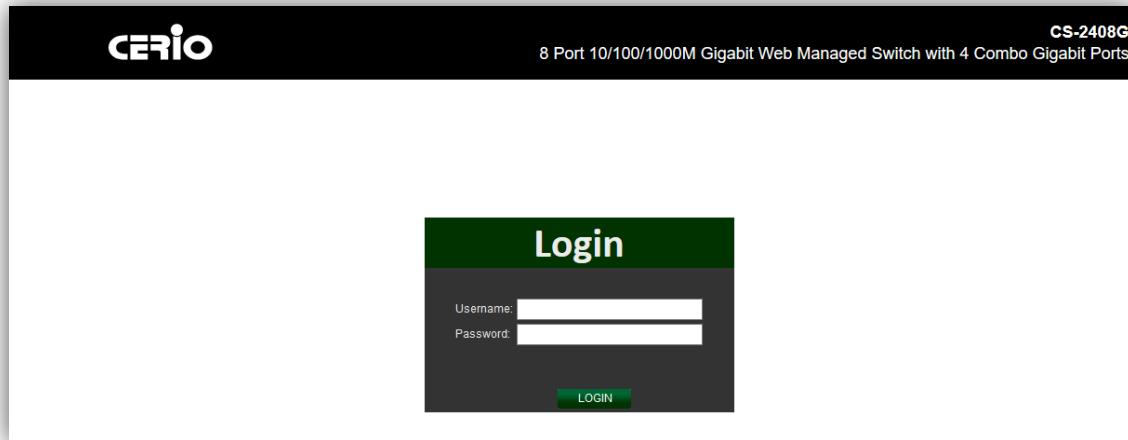
And Click "OK" to complete fixing the computer IP settings



## Step 7 :

### Open Web Browser

Without a valid certificate, users may encounter the following problem in IE7 when they try to access system's WMI (<https://192.168.2.200>). There will be a "Certificate Error", because the browser treats system as an illegal website.



*System login Overview page will appear after successful login.*

### System login username and password information

The **CS-2424G** web switch default IP is 192.168.2.200

Enter the management page as follows, please enter Username and password

- Default IP Address: 192.168.2.200
- Default Username and Password

Management Account	Root Account
Username	root
Password	default

After the authentication procedure, the home page will show up. Select one of the configurations by clicking the icon.

**CS-2408G**  
8 Port 10/100/1000M Gigabit Web Managed Switch with 4 Combo Gigabit Ports

Save | Logout | Reboot

### Status / System Information

**Status**

- System Information
- Logging Message
- Port
- Link Aggregation
- MAC Address Table

**Network**

**VLAN**

**MAC Address Table**

**Spanning Tree**

**Discovery**

**Multicast**

**Security**

**QoS**

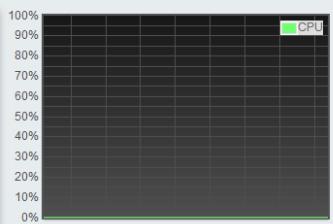
**Diagnostics**

**Management**

**System Information**

Model	CS-2408G
System Name	Switch
System Location	Default
System Contact	Default
MAC Address	00:E0:4C:11:3F:50
IPv4 Address	192.168.2.200
IPv6 Address	fe80::2e0:4cff:fe11:3f50/64
System OID	1.3.6.1.4.1.27282.3.2.10
System Uptime	0 day, 0 hr, 34 min and 52 sec
Current Time	2000-01-01 08:34:52 UTC+8
Loader Version	2.1.3.46351

**CPU**



**MEM**



## 3. Status

### 3.1 System Information

This administrator can check CS-2408G system information from.

**Status / System Information**

**Status**

- System Information
- Logging Message
- Port
- Link Aggregation
- MAC Address Table

**Network**

**VLAN**

**MAC Address Table**

**Spanning Tree**

**Discovery**

**Multicast**

**Security**

**QoS**

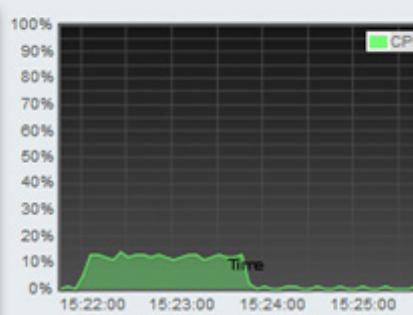
**Diagnostics**

**Management**

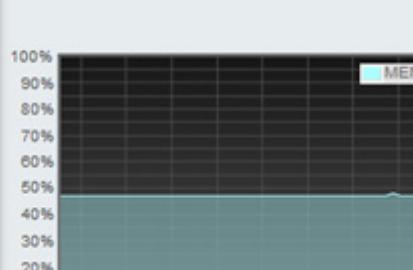
**System Information**

Model	CS-2408G
System Name	Switch
System Location	Default
System Contact	Default
MAC Address	8C:4D:E4:00:11:22
IPv4 Address	192.168.2.200
IPv6 Address	fe80::2e0:4cff:fe11:3f50/64
System OID	1.3.6.1.4.1.27282.3.2.10
System Uptime	0 day, 0 hr, 34 min and 52 sec
Current Time	2000-01-01 08:34:52 UTC+8
Loader Version	2.1.3.46351
Loader Date	Apr 07 2017 - 11:08:58
Firmware Version	1.00.01
Firmware Date	May 02 2017 - 14:54:38
Telnet	Disabled
SSH	Disabled

**CPU**

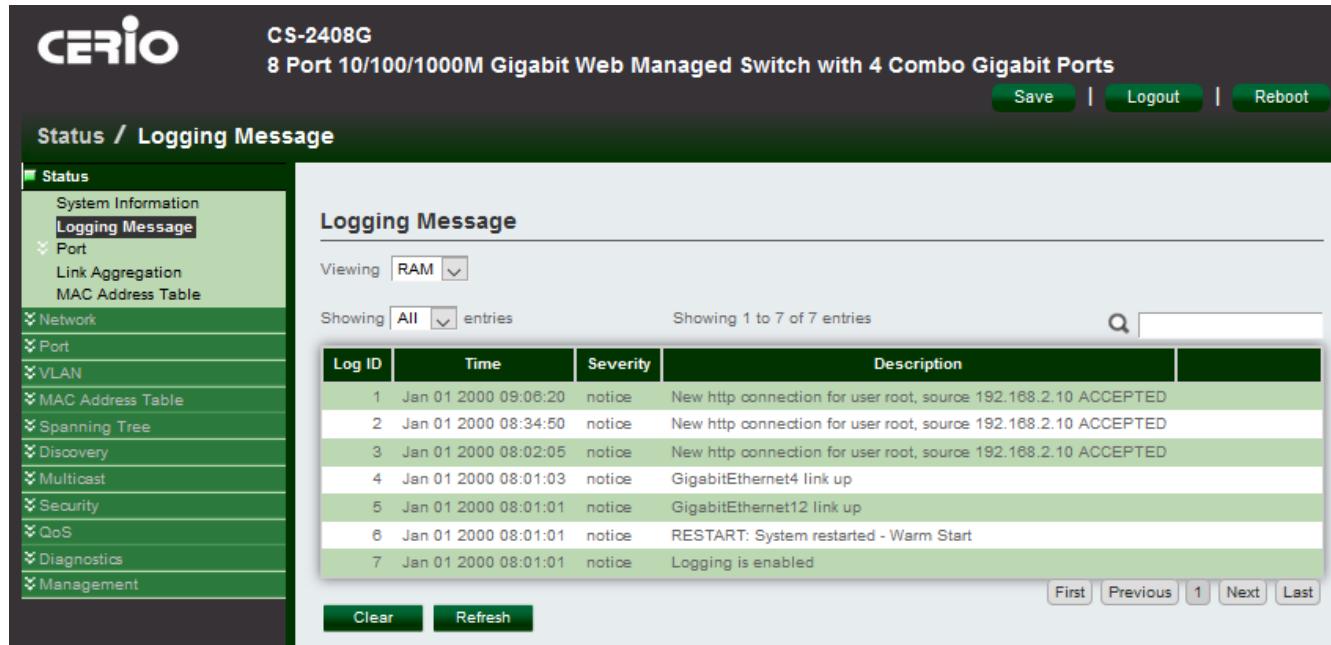


**MEM**



## 3.2 Logging Message

Administrator can viewing RAM or Flash message



Log ID	Time	Severity	Description
1	Jan 01 2000 09:06:20	notice	New http connection for user root, source 192.168.2.10 ACCEPTED
2	Jan 01 2000 08:34:50	notice	New http connection for user root, source 192.168.2.10 ACCEPTED
3	Jan 01 2000 08:02:05	notice	New http connection for user root, source 192.168.2.10 ACCEPTED
4	Jan 01 2000 08:01:03	notice	GigabitEthernet4 link up
5	Jan 01 2000 08:01:01	notice	GigabitEthernet12 link up
6	Jan 01 2000 08:01:01	notice	RESTART: System restarted - Warm Start
7	Jan 01 2000 08:01:01	notice	Logging is enabled

## 3.3 Port

### 3.3.1 Statistics

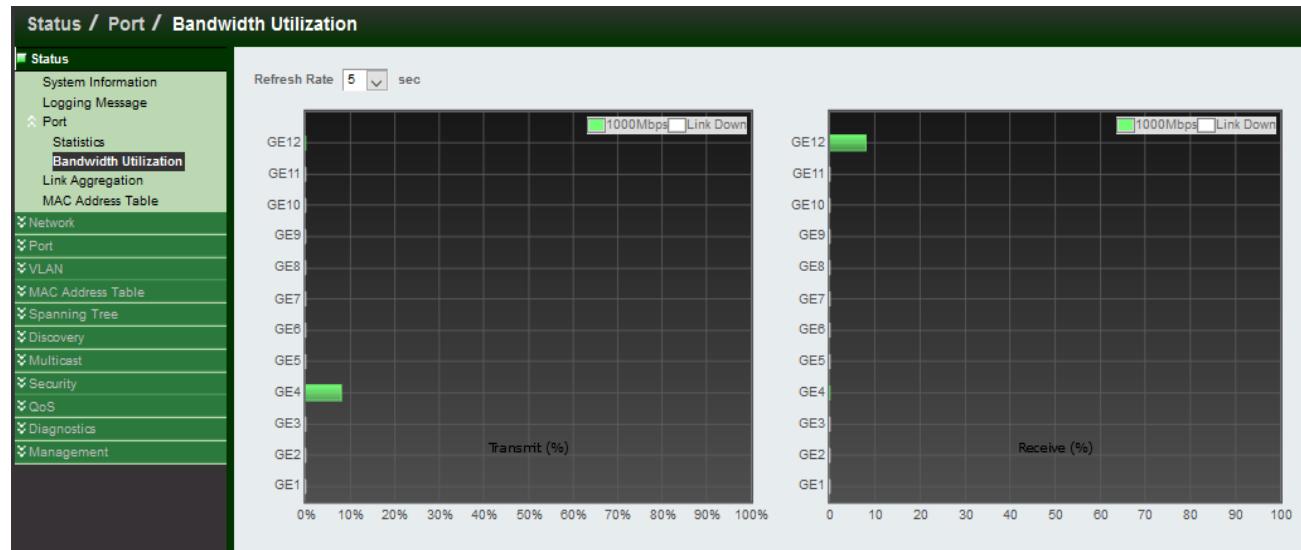
The status support MIB Counter function, Administrator can choose specific port to monitor "Interface", "Etherlike" and "RMON" information.

Port	<input type="button" value="GE1"/> <input type="button" value="▼"/>
MIB Counter	<input type="radio"/> All <input type="radio"/> Interface <input type="radio"/> Etherlike <input type="radio"/> RMON
Refresh Rate	<input type="radio"/> None <input type="radio"/> 5 sec <input checked="" type="radio"/> 10 sec <input type="radio"/> 30 sec

- **Port:** Administrator can select specific port.
- **MIB Counter:** Administrator can choose MIB type.
- **Refresh Rate:** Administrator can choose seconds to monitor.

### 3.3.2 Bandwidth Utilization

Administrator can instantly watch TX/RX traffic for all port.



### 3.4 Link Aggregation Table

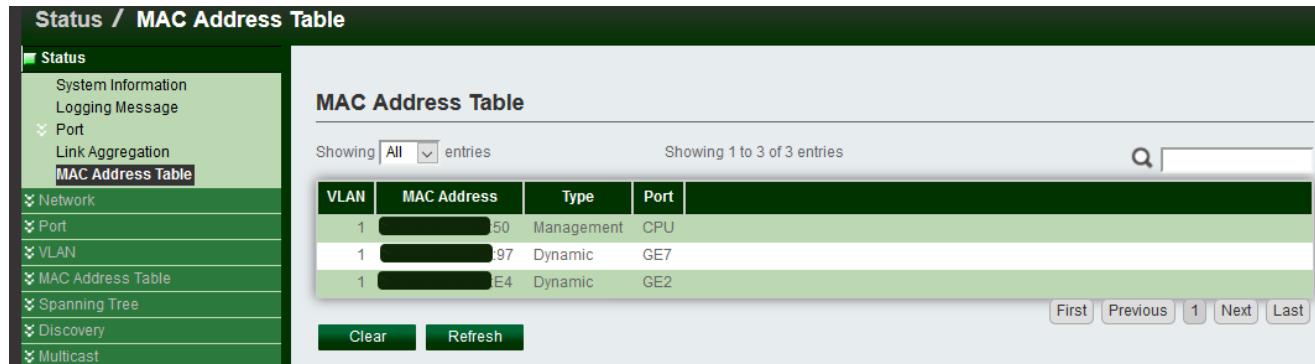
If administrator have set 5.2 Link Aggregation functions, when can monitor LACP status in this page.

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	Test-1	Static	Down		GE9-GE10	
LAG 8	Test	LACP	Down		GE11-GE12	

- **LAG:** Link Aggregation Group.
- **Name:** LAG name.
- **Type:** LAG used type.
- **Link Status:** Display whether it working.
- **Active Member:** Display that active member by sending LACP data units (LACPDUs).
- **Inactive Member:** Display that interfaces member by sending LACP data units (LACPDUs).

## MAC Address Table

Administrator can monitor all connection used MAC address of the port.



VLAN	MAC Address	Type	Port
1	50	Management	CPU
1	97	Dynamic	GE7
1	E4	Dynamic	GE2

- **VLAN:** Display VLAN number.
- **MAC Address:** Display device MAC address information.
- **Type:** Display connected type.
- **Port:** Display port number.

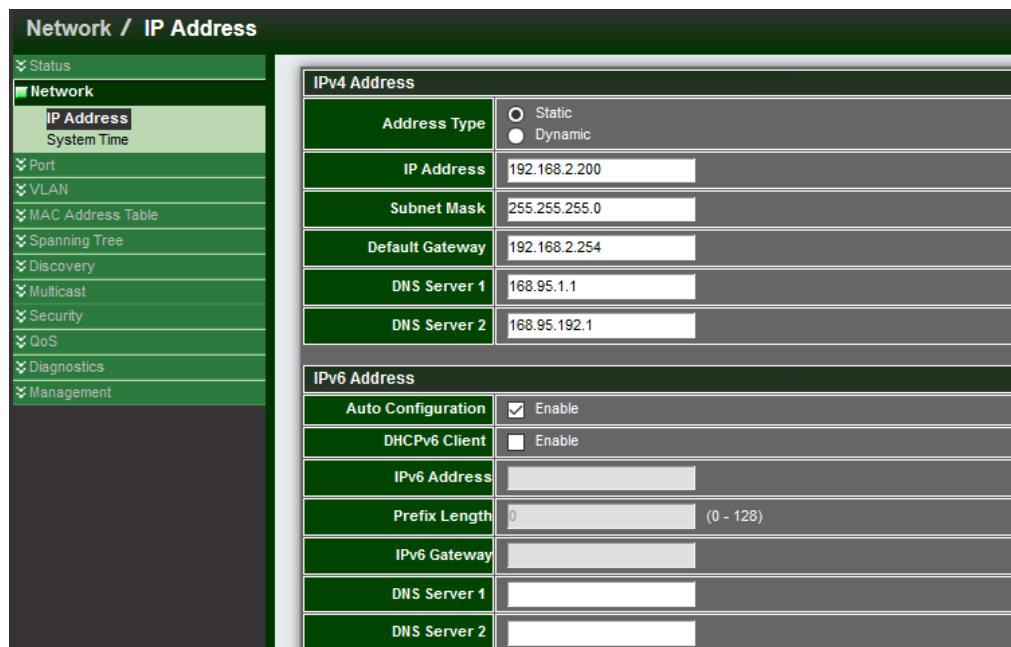
## 4. Network

Administrator can set IPv4/v6 address and system time of the switch.

### 4.1 IP Address

Administrator can set IP address / Subnet Mask / Gateway and DNS in this page.

The Switch default IP address is 192.168.2.200.



IPv4 Address	
Address Type	<input checked="" type="radio"/> Static <input type="radio"/> Dynamic
IP Address	192.168.2.200
Subnet Mask	255.255.255.0
Default Gateway	192.168.2.254
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	(empty)
Prefix Length	0 (0 - 128)
IPv6 Gateway	(empty)
DNS Server 1	(empty)
DNS Server 2	(empty)

**#IPv4 Address:**

- **Address Type:** Administrator can choose Static or dynamic of the IP address type.
- **IP Address:** Administrator can set IP address of the switch.
- **Subnet Mask:** Set Mask for IP address.
- **Default Gateway:** Set IP address for Gateway.
- **DNS1/2:** Set IP address for DNS.

**#IPv6 Address:**

- **Auto configuration:** Administrator can choose Enable or Disable.
- **DHCP IPv6 client:** Administrator can choose Enable or Disable.
- **IPv6 Address/Prefix Length/IPv6 Gateway:** If administrator to disable “auto configuration” function then administrator can manual set this functions.

## 4.2 System Time

Administrator can set system time for the switch.

Network / System Time																			
<div style="background-color: #336633; color: white; padding: 5px;"> <span style="font-size: 1em;">▼ Status</span>  <span style="font-size: 1em;">■ Network</span>            IP Address  <b>System Time</b>  <span style="font-size: 1em;">▼ Port</span>  <span style="font-size: 1em;">▼ VLAN</span>  <span style="font-size: 1em;">▼ MAC Address Table</span>  <span style="font-size: 1em;">▼ Spanning Tree</span>  <span style="font-size: 1em;">▼ Discovery</span>  <span style="font-size: 1em;">▼ Multicast</span>  <span style="font-size: 1em;">▼ Security</span>  <span style="font-size: 1em;">▼ QoS</span>  <span style="font-size: 1em;">▼ Diagnostics</span>  <span style="font-size: 1em;">▼ Management</span> </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Source</td> <td style="width: 85%;"> <input checked="" type="radio"/> SNTP  <input type="radio"/> From Computer  <input type="radio"/> Manual Time         </td> </tr> <tr> <td>Time Zone</td> <td>UTC +8:00 <input type="button" value="▼"/></td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; padding-top: 5px;"><b>SNTP</b></td> </tr> <tr> <td>Address Type</td> <td> <input checked="" type="radio"/> Hostname  <input type="radio"/> IPv4         </td> </tr> <tr> <td>Server Address</td> <td><input type="text"/></td> </tr> <tr> <td>Server Port</td> <td>123 <small>(1 - 65535, default 123)</small></td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; padding-top: 5px;"><b>Manual Time</b></td> </tr> <tr> <td>Date</td> <td><input type="text" value="2017-05-08"/> YYYY-MM-DD</td> </tr> <tr> <td>Time</td> <td><input type="text" value="16:10:05"/> HH:MM:SS</td> </tr> </table>	Source	<input checked="" type="radio"/> SNTP <input type="radio"/> From Computer <input type="radio"/> Manual Time	Time Zone	UTC +8:00 <input type="button" value="▼"/>	<b>SNTP</b>		Address Type	<input checked="" type="radio"/> Hostname <input type="radio"/> IPv4	Server Address	<input type="text"/>	Server Port	123 <small>(1 - 65535, default 123)</small>	<b>Manual Time</b>		Date	<input type="text" value="2017-05-08"/> YYYY-MM-DD	Time	<input type="text" value="16:10:05"/> HH:MM:SS
Source	<input checked="" type="radio"/> SNTP <input type="radio"/> From Computer <input type="radio"/> Manual Time																		
Time Zone	UTC +8:00 <input type="button" value="▼"/>																		
<b>SNTP</b>																			
Address Type	<input checked="" type="radio"/> Hostname <input type="radio"/> IPv4																		
Server Address	<input type="text"/>																		
Server Port	123 <small>(1 - 65535, default 123)</small>																		
<b>Manual Time</b>																			
Date	<input type="text" value="2017-05-08"/> YYYY-MM-DD																		
Time	<input type="text" value="16:10:05"/> HH:MM:SS																		

- **Source:** Administrator can choose update time by SNTP / From computer or Manal Time.
- **Time Zone:** Set time zone.
- **SNTP:** If administrator chooses use SNTP mode then need to set time server address.
- **Manual Time:** If administrator chooses to manual time then can manual set this system time.
- **Daylight Saving Time:** Administrator can Disable or Enable daylight saving time function.

## 5. Port

### 5.1 Port setting

Administrator can disable port or set port speed and flow control.

Port / Port Setting

Q
**Port Setting Table**

	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	Up	Auto (1000M)	Auto (Full)	Disabled (Disabled)
<input type="checkbox"/>	8	GE8	1000M Copper		Enabled	Up	Auto (1000M)	Auto (Full)	Disabled (Disabled)
<input type="checkbox"/>	9	GE9	1000M Combo Copper		Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	10	GE10	1000M Combo Copper		Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	11	GE11	1000M Combo Copper		Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	12	GE12	1000M Combo Copper		Enabled	Down	Auto	Auto	Disabled

State	<input checked="" type="checkbox"/> Enable
Speed	<input type="radio"/> Auto <input type="radio"/> 10M <input type="radio"/> Auto - 10M <input type="radio"/> 100M <input type="radio"/> Auto - 100M <input type="radio"/> 1000M <input type="radio"/> Auto - 1000M <input type="radio"/> Auto - 10M/100M
Duplex	<input type="radio"/> Auto <input type="radio"/> Full <input type="radio"/> Half
Flow Control	<input type="radio"/> Auto <input type="radio"/> Enable <input checked="" type="radio"/> Disable

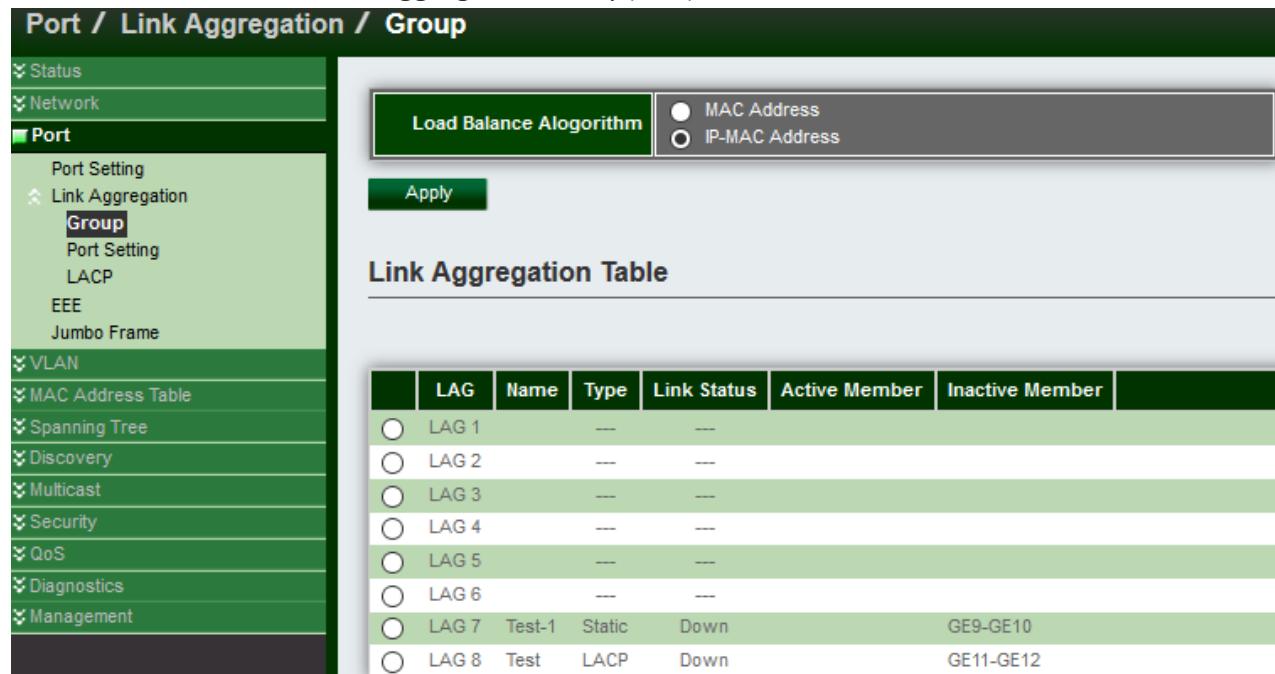
- **State:** Administrator can choose enable or disable Port.
- **Speed:** Administrator can manual set port speed or auto detection.
- **Duplex:** Administrator can manual set full/Half or Auto.
- **Flow Control:** Administrator can choose Enable or Disable or Auto.

## 5.2 Link Aggregation

### 5.2.1 Group

Administrator can set 8 Link Aggregation Group(LAG)

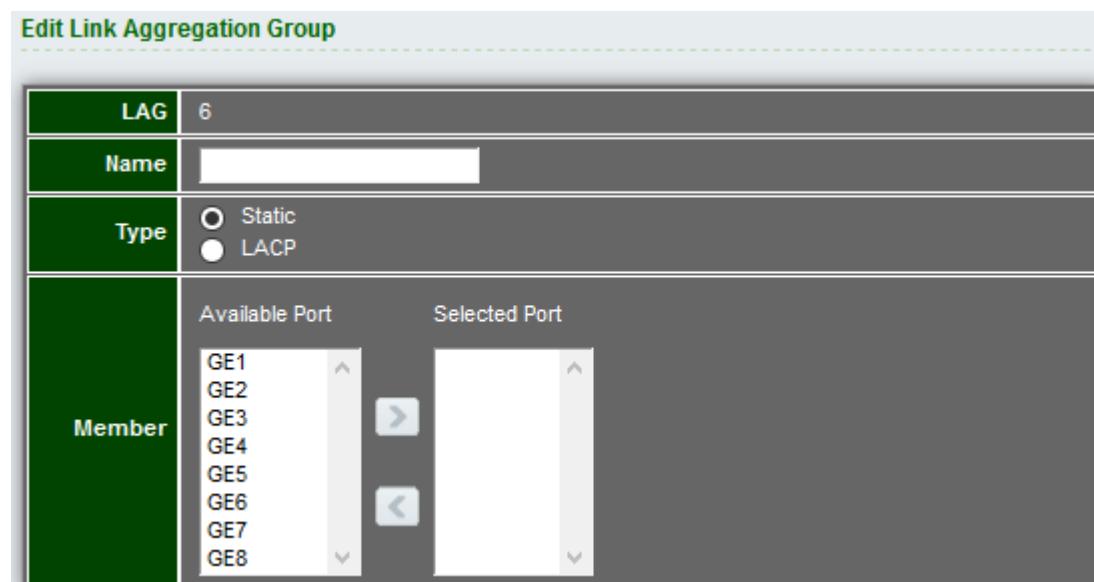
**Port / Link Aggregation / Group**



LAG	Name	Type	Link Status	Active Member	Inactive Member
LAG 1		---	---		
LAG 2		---	---		
LAG 3		---	---		
LAG 4		---	---		
LAG 5		---	---		
LAG 6		---	---		
LAG 7	Test-1	Static	Down		GE9-GE10
LAG 8	Test	LACP	Down		GE11-GE12

- **Load Balance Alogorithm:** Administrator can choose Load Balance Alogorithm by MAC or IP Address.

**Edit Link Aggregation Group**



LAG	6																		
Name	<input type="text"/>																		
Type	<input checked="" type="radio"/> Static <input type="radio"/> LACP																		
Member	<table border="1"> <thead> <tr> <th>Available Port</th> <th>Selected Port</th> </tr> </thead> <tbody> <tr> <td>GE1</td> <td></td> </tr> <tr> <td>GE2</td> <td></td> </tr> <tr> <td>GE3</td> <td></td> </tr> <tr> <td>GE4</td> <td></td> </tr> <tr> <td>GE5</td> <td></td> </tr> <tr> <td>GE6</td> <td></td> </tr> <tr> <td>GE7</td> <td></td> </tr> <tr> <td>GE8</td> <td></td> </tr> </tbody> </table>	Available Port	Selected Port	GE1		GE2		GE3		GE4		GE5		GE6		GE7		GE8	
Available Port	Selected Port																		
GE1																			
GE2																			
GE3																			
GE4																			
GE5																			
GE6																			
GE7																			
GE8																			

- **LAG:** Display LAG number.
- **Name:** Administrator can set the application name.

- **Type:** Administrator can choose Static or LACP type. If used “static” the number of ports on both sides of the switch is fixed, every entity network connection can't error, and otherwise it will not be able to connect successfully.  
If both sides of the switch are set LACP mode then both sides of the port will ask to check whether to join the LAG group, if yes then use LACP connection, if no then skip LACP check.
  - **Member:** Administrator can choose ports for member.

### 5.2.2 Port Setting

Administrator can set speed and flow control for Link Aggregation Group(LAG).

Port / Link Aggregation / Port Setting								
Port Setting Table								
	LAG	Type	Description	State	Link Status	Speed	Duplex	Flow Control
<input type="checkbox"/>	LAG 1			Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	LAG 2			Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	LAG 3			Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	LAG 4			Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	LAG 5			Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	LAG 6			Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	LAG 7	eth1000M	Test-1	Enabled	Down	Auto	Auto	Disabled
<input type="checkbox"/>	LAG 8	eth1000M	Test	Enabled	Down	Auto	Auto	Disabled

Edit Port Setting	
Port	LAG6
Description	
State	<input checked="" type="checkbox"/> Enable
Speed	<input type="radio"/> Auto <input type="radio"/> 10M <input type="radio"/> Auto - 10M <input type="radio"/> 100M <input type="radio"/> Auto - 100M <input type="radio"/> 1000M <input type="radio"/> Auto - 1000M <input type="radio"/> 10000M <input type="radio"/> Auto - 10M/100M
Flow Control	<input type="radio"/> Auto <input type="radio"/> Enable <input type="radio"/> Disable

### 5.2.3 LACP

The LACP can aggregate multiple Ethernet ports together to form a logical aggregation group. To upper layer entities, all the physical links in an aggregation group are a single logical link.

**Port / Link Aggregation / LACP**

<ul style="list-style-type: none"> <li>❖ Status</li> <li>❖ Network</li> <li><b>Port</b> <ul style="list-style-type: none"> <li>Port Setting</li> <li>Link Aggregation           <ul style="list-style-type: none"> <li>Group</li> <li>Port Setting</li> <li><b>LACP</b></li> </ul> </li> <li>EEE</li> <li>Jumbo Frame</li> </ul> </li> <li>❖ VLAN</li> <li>❖ MAC Address Table</li> <li>❖ Spanning Tree</li> <li>❖ Discovery</li> <li>❖ Multicast</li> <li>❖ Security</li> <li>❖ QoS</li> <li>❖ Diagnostics</li> <li>❖ Management</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">System Priority</td> <td style="width: 40%; text-align: center;">32768</td> <td style="width: 50%; text-align: right;">(1 - 65535, default 32768)</td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>Apply</b></td> </tr> </table> <p><b>LACP Port Setting Table</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 10%;">Entry</th> <th style="width: 10%;">Port</th> <th style="width: 10%;">Port Priority</th> <th style="width: 10%;">Timeout</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/></td><td>1</td><td>GE1</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>2</td><td>GE2</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>3</td><td>GE3</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>4</td><td>GE4</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>5</td><td>GE5</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>6</td><td>GE6</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>7</td><td>GE7</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>8</td><td>GE8</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>9</td><td>GE9</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>10</td><td>GE10</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>11</td><td>GE11</td><td>1</td><td>Long</td></tr> <tr><td><input type="checkbox"/></td><td>12</td><td>GE12</td><td>1</td><td>Long</td></tr> </tbody> </table>	System Priority	32768	(1 - 65535, default 32768)	<b>Apply</b>				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
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### 5.3 EEE

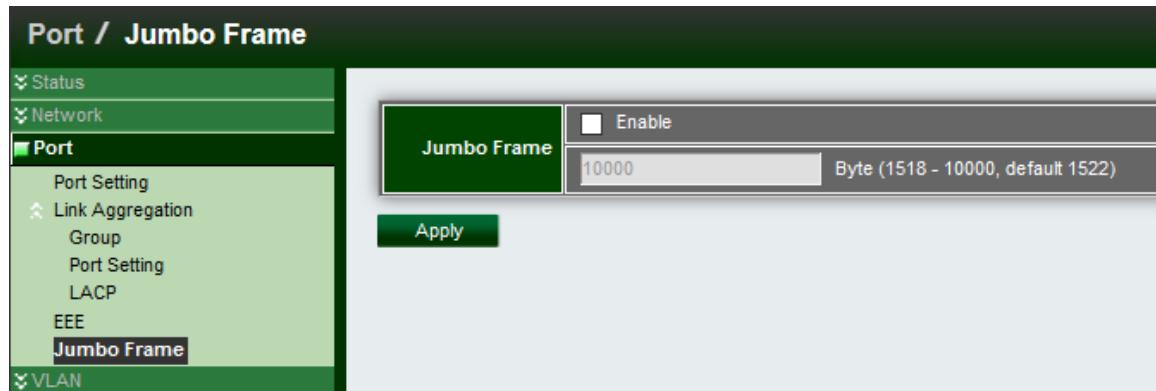
This switch support Energy-efficient Ethernet(EEE) function. Administrator can choose Enable or Disable EEE function. The default is “Disable”.

**Port / EEE**

<ul style="list-style-type: none"> <li>❖ Status</li> <li>❖ Network</li> <li><b>Port</b> <ul style="list-style-type: none"> <li>Port Setting</li> <li>Link Aggregation           <ul style="list-style-type: none"> <li>Group</li> <li>Port Setting</li> <li>LACP</li> </ul> </li> <li><b>EEE</b></li> <li>Jumbo Frame</li> </ul> </li> <li>❖ VLAN</li> <li>❖ MAC Address Table</li> <li>❖ Spanning Tree</li> <li>❖ Discovery</li> <li>❖ Multicast</li> <li>❖ Security</li> <li>❖ QoS</li> <li>❖ Diagnostics</li> <li>❖ Management</li> </ul>	<p><b>EEE Setting Table</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 10%;">Entry</th> <th style="width: 10%;">Port</th> <th style="width: 10%;">State</th> <th style="width: 10%;">Operational Status</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/></td><td>1</td><td>GE1</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>2</td><td>GE2</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>3</td><td>GE3</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>4</td><td>GE4</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>5</td><td>GE5</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>6</td><td>GE6</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>7</td><td>GE7</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>8</td><td>GE8</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>9</td><td>GE9</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>10</td><td>GE10</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>11</td><td>GE11</td><td>Disabled</td><td>Disabled</td></tr> <tr><td><input type="checkbox"/></td><td>12</td><td>GE12</td><td>Disabled</td><td>Disabled</td></tr> </tbody> </table>		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
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<input type="checkbox"/>	12	GE12	Disabled	Disabled																																																														

## 5.4 Jumbo Frame

Administrator can set Jumbo Frame for switch.

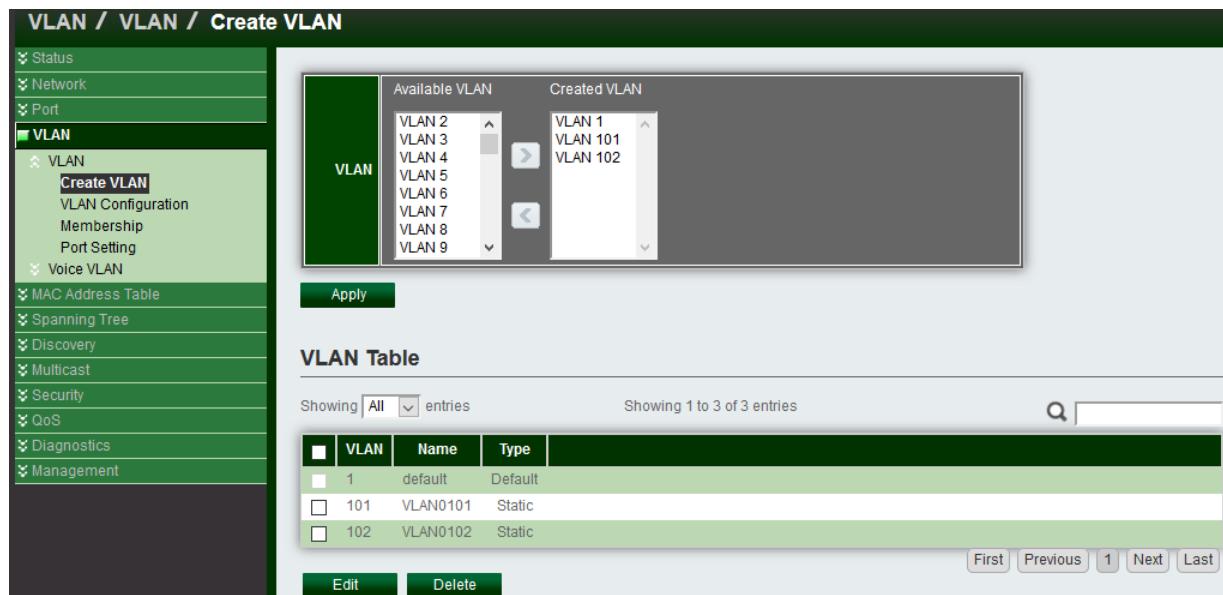


## 6. VLAN

Administrator can set IEEE 802.1q Tag Based VLAN or Port Based VLAN. System default is VLAN1 Port based (PVID).

### 6.1 Create VLAN

Administrator can select VLAN number in Available VLAN list, this VLAN number based on IEEE 802.1q standard. Available VLAN list can be multiple choices.



- **VLAN:** Administrator can select VLANs number go to Created VLAN table and click "Apply" button then complete the create VLANs, after complete will display VLANs list in below table.

- **VLAN Table:** Administrator can checkbox VLAN to edit or delete, if check and click "edit" button then administrator can manual modify name description for this VLAN.

**Edit VLAN Name**

Name	VLAN0101
Apply	Close

## 6.2 VLAN Configuration Table

Administrator can choose set Excluded / Forbidden / Tagged / Untagged function in membership table of the Port and LAG.

**VLAN / VLAN / VLAN Configuration**

VLAN Configuration Table							
VLAN	default						
Entry	Port	Mode	Membership				PVID
1	GE1	Trunk	<input type="radio"/> Excluded	<input checked="" type="radio"/> Forbidden	<input type="radio"/> Tagged	<input type="radio"/> Untagged	<input type="checkbox"/>
2	GE2	Trunk	<input type="radio"/> Excluded	<input checked="" type="radio"/> Forbidden	<input type="radio"/> Tagged	<input type="radio"/> Untagged	<input type="checkbox"/>
3	GE3	Trunk	<input type="radio"/> Excluded	<input checked="" type="radio"/> Forbidden	<input type="radio"/> Tagged	<input type="radio"/> Untagged	<input type="checkbox"/>
4	GE4	Trunk	<input type="radio"/> Excluded	<input checked="" type="radio"/> Forbidden	<input type="radio"/> Tagged	<input type="radio"/> Untagged	<input type="checkbox"/>
5	GE5	Trunk	<input type="radio"/> Excluded	<input type="radio"/> Forbidden	<input type="radio"/> Tagged	<input checked="" type="radio"/> Untagged	<input checked="" type="checkbox"/>
6	GE6	Trunk	<input type="radio"/> Excluded	<input type="radio"/> Forbidden	<input type="radio"/> Tagged	<input checked="" type="radio"/> Untagged	<input checked="" type="checkbox"/>
7	GE7	Trunk	<input type="radio"/> Excluded	<input type="radio"/> Forbidden	<input type="radio"/> Tagged	<input checked="" type="radio"/> Untagged	<input checked="" type="checkbox"/>
8	GE8	Trunk	<input type="radio"/> Excluded	<input type="radio"/> Forbidden	<input type="radio"/> Tagged	<input checked="" type="radio"/> Untagged	<input checked="" type="checkbox"/>
9	GE9	Trunk	<input type="radio"/> Excluded	<input type="radio"/> Forbidden	<input type="radio"/> Tagged	<input checked="" type="radio"/> Untagged	<input checked="" type="checkbox"/>
10	GE10	Trunk	<input type="radio"/> Excluded	<input type="radio"/> Forbidden	<input type="radio"/> Tagged	<input checked="" type="radio"/> Untagged	<input type="checkbox"/>

- **VLAN:** Administrator can click drop down menu to choose VLAN and set.

## 6.3 Membership Table

Display all port setting information. Administrator can checkbox and click “Edit” button to modify VLAN type. (*Note: Number=VLAN number, F=Forbidden, T=Tagged, U=Untagged, P=PVID*)

**VLAN / VLAN / Membership**

Membership Table					
	Entry	Port	Mode	Administrative VLAN	Operational VLAN
<input type="checkbox"/>	1	GE1	Trunk	1UP, 10F, 101T, 102F	1FP, 10F, 101T, 102F
<input type="checkbox"/>	2	GE2	Trunk	1F, 10F, 101UP, 102F	1F, 10F, 101UP, 102F
<input type="checkbox"/>	3	GE3	Trunk	1UP, 10T, 11T, 101F, 102T	1FP, 10T, 11T, 101F, 102T
<input type="checkbox"/>	4	GE4	Trunk	1F, 10T, 11F, 101F, 102UP	1F, 10T, 11F, 101F, 102UP
<input type="checkbox"/>	5	GE5	Trunk	1UP, 10T	1UP, 10T
<input type="checkbox"/>	6	GE6	Trunk	1UP, 10T	1UP, 10T
<input type="checkbox"/>	7	GE7	Trunk	1UP	1UP
<input type="checkbox"/>	8	GE8	Trunk	1UP	1UP
<input type="checkbox"/>	9	GE9	Trunk	1UP	1UP
<input type="checkbox"/>	10	GE10	Trunk	1UP	1UP
<input type="checkbox"/>	11	GE11	Trunk	1UP	1UP
<input type="checkbox"/>	12	GE12	Trunk	1UP, 101T, 102T	1UP, 101T, 102T

## 6.4 Port Setting

Administrator can set Access / Trunk / Hybrid for VLAN ports.

**VLAN / VLAN / Port Setting**

Port Setting Table						
	Entry	Port	Mode	PVID	Accept Frame Type	Ingress Filtering
<input type="checkbox"/>	1	GE1	Access	101	Untag Only	Enabled
<input type="checkbox"/>	2	GE2	Trunk	101	All	Enabled
<input type="checkbox"/>	3	GE3	Trunk	4095	All	Enabled
<input type="checkbox"/>	4	GE4	Trunk	102	All	Enabled
<input type="checkbox"/>	5	GE5	Trunk	1	All	Enabled
<input type="checkbox"/>	6	GE6	Trunk	1	All	Enabled
<input type="checkbox"/>	7	GE7	Trunk	1	All	Enabled
<input type="checkbox"/>	8	GE8	Trunk	1	All	Enabled
<input type="checkbox"/>	9	GE9	Trunk	1	All	Enabled
<input type="checkbox"/>	10	GE10	Trunk	1	All	Enabled
<input type="checkbox"/>	11	GE11	Trunk	1	All	Enabled

<b>Port</b>	GE1
<b>Mode</b>	<input type="radio"/> Hybrid <input checked="" type="radio"/> Access <input type="radio"/> Trunk
<b>PVID</b>	101 (1 - 4094)
<b>Accept Frame Type</b>	<input type="radio"/> All <input type="radio"/> Tag Only <input checked="" type="radio"/> Untag Only
<b>Ingress Filtering</b>	<input checked="" type="checkbox"/> Enable

- **Hybrid:** Suitable for the inclusion of non VLANs and VLANs in the network environment.
- **Access:** Suitable for the Switch and device connection in VLAN network environment.
- **Trunk:** Suitable Switch and Switch connection in VLAN network environment.

## 6.5 Voice VLAN

Voice VLAN allows you to enhance VoIP service by configuring ports to carry IP Voice traffic from IP phones on a specific VLAN. VoIP traffic has a preconfigured OUI prefix in the source MAC address. Administrator can set VLAN ID in the range of 1 to 4094.

### 6.5.1 Property

VLAN / Voice VLAN / Property

▼ Status

▼ Network

▼ Port

VLAN

▼ VLAN

Voice VLAN

Property

Voice OUI

▼ MAC Address Table

▼ Spanning Tree

▼ Discovery

▼ Multicast

▼ Security

▼ QoS

▼ Diagnostics

▼ Management

<b>State</b>	<input type="checkbox"/> Enable
<b>VLAN</b>	VLAN0103
<b>CoS / 802.1p Remarking</b>	<input checked="" type="checkbox"/> Enable
<b>Aging Time</b>	6
<b>Apply</b>	

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

- **State:** Administrator can choose Enable or Disable this function.
- **VLAN:** Administrator can choose VLAN.
- **CoS / 802.1P Remarking:** Administrator can set CoS 802.1p priority level for the VLAN.
- **Aging Time:** Administrator can set aging time for this rule.

V1.0a

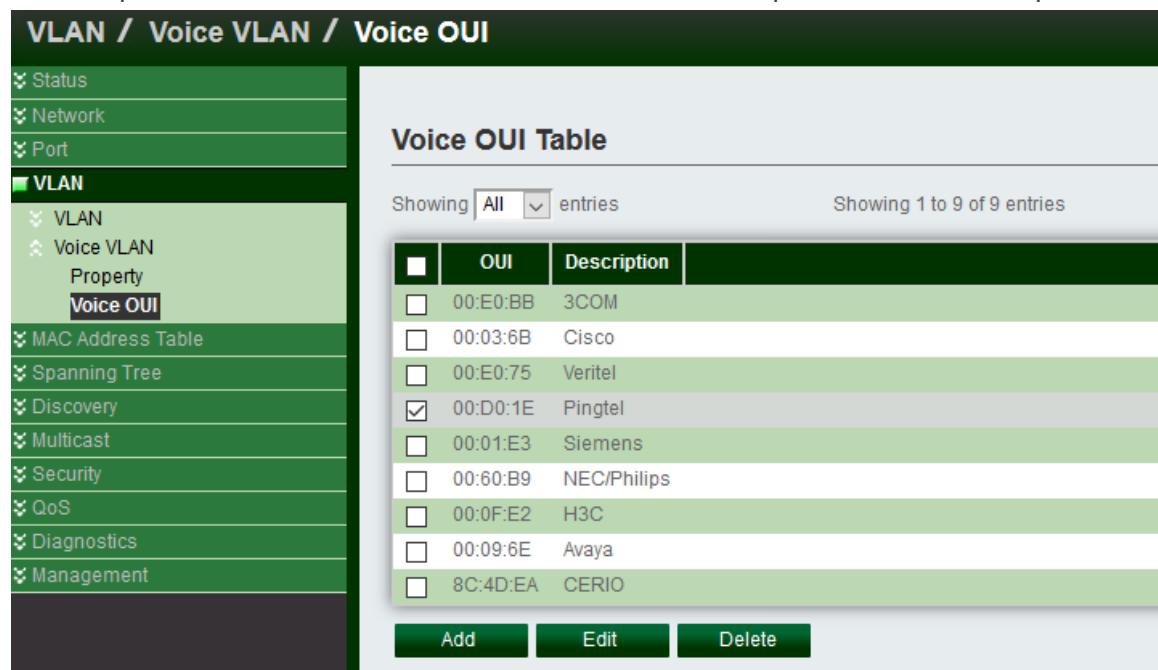
 www.cerio.cc

 +(886) 2-8911-6160

 issales@cerio.com.tw

### 6.5.2 Voice OUI

Organizationally Unique Identifiers (OUI) is the first three bytes of a MAC Address, while the last three bytes contain a unique station ID. Administrator can add a specific manufacturer with the OUI. Once the OUI is added, all traffic received on voice VLAN ports from the specific IP phone with a listed OUI is forwarded on the voice VLAN. Unlike the telephony OUI mode that detects voice devices based on telephony OUI, Auto Voice VLAN mode depends on auto smart port to dynamically add the ports to the voice VLAN. The default has set 8 companies for the voice phone.



	OUI	Description
<input type="checkbox"/>	00:E0:BB	3COM
<input type="checkbox"/>	00:03:6B	Cisco
<input type="checkbox"/>	00:E0:75	Veritel
<input checked="" 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
<input type="checkbox"/>	8C:4D:EA	CERIO

Administrator can create new OUI or modify or delete OUI in table

Click “**Add**” button can create new OUI.

Click “**Edit**” button can modify OUI data.

Click “**Delete**” button can delete OUI data.

## 7. MAC Address Table

### 7.1 Dynamic Address

This page can display MAC address for connected device. Administrator can set aging time for connected port.

**MAC Address Table / Dynamic Address**

<input checked="" type="checkbox"/> Status
<input checked="" type="checkbox"/> Network
<input checked="" type="checkbox"/> Port
<input checked="" type="checkbox"/> VLAN
<input checked="" type="checkbox"/> MAC Address Table
<input checked="" type="checkbox"/> <b>Dynamic Address</b>
<input type="checkbox"/> Static Address
<input checked="" type="checkbox"/> Spanning Tree
<input checked="" type="checkbox"/> Discovery
<input checked="" type="checkbox"/> Multicast
<input checked="" type="checkbox"/> Security
<input checked="" type="checkbox"/> QoS
<input checked="" type="checkbox"/> Diagnostics
<input checked="" type="checkbox"/> Management

Aging Time  Sec (10 - 630, default 300)

**Dynamic Address Table**

Showing All entries Showing 1 to 2 of 2 entries

<input type="checkbox"/>	VLAN	MAC Address	Port
<input type="checkbox"/>	1	8C:4D:EA:04:F5:97	GE12
<input type="checkbox"/>	1	9C:B6:54:44:87:E4	GE7

**Buttons:** Clear, Refresh, Add Static Address

When administrator select checkbox MACs address and click “**Add Static Address**” button then selected MAC address will move to “**Static Address**” function.

## 7.2 Static Address

If administrator fixed an MAC address in the port then device MAC address will bind in the port, if device connection other port will can't working only connection bind port.

**MAC Address Table / Static Address**

<input checked="" type="checkbox"/> Status
<input checked="" type="checkbox"/> Network
<input checked="" type="checkbox"/> Port
<input checked="" type="checkbox"/> VLAN
<input checked="" type="checkbox"/> MAC Address Table
<input checked="" type="checkbox"/> <b>Dynamic Address</b>
<input checked="" type="checkbox"/> <b>Static Address</b>
<input checked="" type="checkbox"/> Spanning Tree
<input checked="" type="checkbox"/> Discovery
<input checked="" type="checkbox"/> Multicast
<input checked="" type="checkbox"/> Security
<input checked="" type="checkbox"/> QoS
<input checked="" type="checkbox"/> Diagnostics
<input checked="" type="checkbox"/> Management

**Static Address Table**

Showing All entries Showing 1 to 1 of 1 entries

<input type="checkbox"/>	VLAN	MAC Address	Port
<input type="checkbox"/>	1	9C:B6:54:44:87:E4	GE7

**Buttons:** Add, Edit, Delete

## 8. Spanning Tree

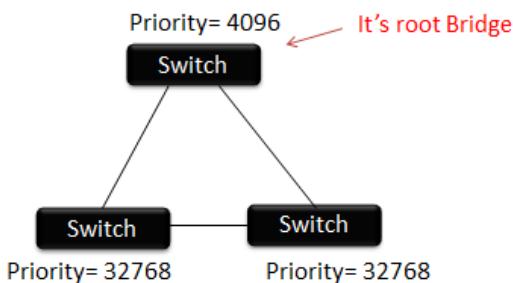
Spanning Tree function allows only one active path at a time between any two network devices (this prevents the loops) but establishes the redundant links as a backup if the initial link should fail. If Spanning Tree costs change, or if one network segment in the Spanning Tree becomes unreachable, the spanning tree algorithm reconfigures the spanning tree topology and reestablishes the link by activating the standby path. Without spanning tree in place, it is possible that both connections may be simultaneously live, which could result in an endless loop of traffic on the LAN.

### 8.1 Property

**Spanning Tree / Property**

<input type="checkbox"/> Status <input type="checkbox"/> Network <input type="checkbox"/> Port <input type="checkbox"/> VLAN <input type="checkbox"/> MAC Address Table <input checked="" type="checkbox"/> Spanning Tree <span style="background-color: black; color: white; padding: 2px;">Property</span> <a href="#">Port Setting</a> <a href="#">Statistics</a>  <input type="checkbox"/> Discovery <input type="checkbox"/> Multicast <input type="checkbox"/> Security <input type="checkbox"/> QoS <input type="checkbox"/> Diagnostics <input type="checkbox"/> Management	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"><b>State</b></td> <td style="text-align: center;"><input type="checkbox"/> Enable</td> </tr> <tr> <td style="text-align: center;"><b>Operation Mode</b></td> <td style="text-align: center;"><input checked="" type="radio"/> STP <input type="radio"/> RSTP</td> </tr> <tr> <td style="text-align: center;"><b>Path Cost</b></td> <td style="text-align: center;"><input checked="" type="radio"/> Long <input type="radio"/> Short</td> </tr> <tr> <td style="text-align: center;"><b>BPDU Handling</b></td> <td style="text-align: center;"><input checked="" type="radio"/> Filtering <input type="radio"/> Flooding</td> </tr> <tr> <td style="text-align: center;"><b>Priority</b></td> <td style="text-align: center;">32768 (0 - 61440, default 32768)</td> </tr> <tr> <td style="text-align: center;"><b>Hello Time</b></td> <td style="text-align: center;">2 Sec (1 - 10, default 2)</td> </tr> <tr> <td style="text-align: center;"><b>Max Age</b></td> <td style="text-align: center;">20 Sec (6 - 40, default 20)</td> </tr> <tr> <td style="text-align: center;"><b>Forward Delay</b></td> <td style="text-align: center;">15 Sec (4 - 30, default 15)</td> </tr> <tr> <td style="text-align: center;"><b>Tx Hold Count</b></td> <td style="text-align: center;">6 (1 - 10, default 6)</td> </tr> </table>	<b>State</b>	<input type="checkbox"/> Enable	<b>Operation Mode</b>	<input checked="" type="radio"/> STP <input type="radio"/> RSTP	<b>Path Cost</b>	<input checked="" type="radio"/> Long <input type="radio"/> Short	<b>BPDU Handling</b>	<input checked="" type="radio"/> Filtering <input type="radio"/> Flooding	<b>Priority</b>	32768 (0 - 61440, default 32768)	<b>Hello Time</b>	2 Sec (1 - 10, default 2)	<b>Max Age</b>	20 Sec (6 - 40, default 20)	<b>Forward Delay</b>	15 Sec (4 - 30, default 15)	<b>Tx Hold Count</b>	6 (1 - 10, default 6)
<b>State</b>	<input type="checkbox"/> Enable																		
<b>Operation Mode</b>	<input checked="" type="radio"/> STP <input type="radio"/> RSTP																		
<b>Path Cost</b>	<input checked="" type="radio"/> Long <input type="radio"/> Short																		
<b>BPDU Handling</b>	<input checked="" type="radio"/> Filtering <input type="radio"/> Flooding																		
<b>Priority</b>	32768 (0 - 61440, default 32768)																		
<b>Hello Time</b>	2 Sec (1 - 10, default 2)																		
<b>Max Age</b>	20 Sec (6 - 40, default 20)																		
<b>Forward Delay</b>	15 Sec (4 - 30, default 15)																		
<b>Tx Hold Count</b>	6 (1 - 10, default 6)																		

- **State:** Administrator can choose Enable or Disable this function.
- **Operation Mode:** Administrator can choose use STP or RSTP.
- **Path Cost:** Administrator can choose STP judgment use Path cost for Long or Short.
- **BPDU Handling:** When the Switch receives the BPDU frame, Administrator can choose the BPDU Handling mode for Filtering or Flooding.
- **Priority:** Administrator can set bridge priority, default is 32768. The lower value(priority) is the root bridge.



- **Hello Time:** The hello time is the time between each bridge protocol data unit (BPDU) that is sent on a port. This time is equal to 2 seconds (sec) by default, but you can tune the time to be between 1 and 10 sec.
- **Max. Age / Forward delay :**  $2 * (\text{Forward Delay} - 1) \geq \text{Max Age} \geq 2 * (\text{Hello Time} + 1)$
- **TX hold Count:** When STP/RSTP use Tx hold count to configure the BPDU burst size by specifying the transmit hold count value. Default is before pausing for 6 second, administrator can set range 1~10.

## 8.2 Port Setting

Spanning Tree / Port Setting														
Port Setting Table														
	Entry	Port	State	Path Cost	Priority	BPDU Filter	BPDU Guard	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	Disabled	Disabled	0:00:00:00:00:00	128-1	20000
<input type="checkbox"/>	2	GE2	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-2	20000
<input type="checkbox"/>	3	GE3	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-3	20000
<input type="checkbox"/>	4	GE4	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-4	20000
<input type="checkbox"/>	5	GE5	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-5	20000
<input type="checkbox"/>	6	GE6	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-6	20000
<input type="checkbox"/>	7	GE7	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-7	20000
<input type="checkbox"/>	8	GE8	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-8	20000
<input type="checkbox"/>	9	GE9	Enabled	20000	128	Disabled	Disabled	Disabled	Enabled	Designated	Forwarding	4096-00:E0:4C:11:3F:50	128-9	20000
<input type="checkbox"/>	10	GE10	Enabled	20000	128	Disabled	Disabled	Disabled	Enabled	Backup	Discarding	4096-00:E0:4C:11:3F:50	128-10	20000
<input type="checkbox"/>	11	GE11	Enabled	20000	128	Disabled	Disabled	Enabled	Enabled	Designated	Forwarding	4096-00:E0:4C:11:3F:50	128-11	20000
<input type="checkbox"/>	12	GE12	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-12	20000
<input type="checkbox"/>	13	LAG1	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-13	20000
<input type="checkbox"/>	14	LAG2	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-14	20000
<input type="checkbox"/>	15	LAG3	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-15	20000
<input type="checkbox"/>	16	LAG4	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-16	20000
<input type="checkbox"/>	17	LAG5	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-17	20000
<input type="checkbox"/>	18	LAG6	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-18	20000
<input type="checkbox"/>	19	LAG7	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-19	20000
<input type="checkbox"/>	20	LAG8	Enabled	20000	128	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	0:00:00:00:00:00	128-20	20000

**Spanning Tree / Port Setting**

<ul style="list-style-type: none"> <li>❖ Status</li> <li>System Information</li> <li>Logging Message</li> <li>❖ Port</li> <li>Link Aggregation</li> <li>MAC Address Table</li> <li>❖ Network</li> <li>❖ Port</li> <li>❖ VLAN</li> <li>❖ MAC Address Table</li> <li>❖ Spanning Tree</li> <li>Property</li> <li><b>Port Setting</b></li> <li>Statistics</li> <li>❖ Discovery</li> <li>❖ Multicast</li> <li>❖ Security</li> <li>❖ QoS</li> <li>❖ Diagnostics</li> <li>❖ Management</li> </ul>	<table border="1" style="width: 100%;"> <tr> <td style="padding: 5px;"><b>State</b></td> <td style="padding: 5px;"><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td style="padding: 5px;"><b>Path Cost</b></td> <td style="padding: 5px;"><input type="text" value="0"/> (0 - 200000000) (0 = Auto)</td> </tr> <tr> <td style="padding: 5px;"><b>Priority</b></td> <td style="padding: 5px;">128 <input type="button" value="▼"/></td> </tr> <tr> <td style="padding: 5px;"><b>Edge Port</b></td> <td style="padding: 5px;"><input type="checkbox"/> Enable</td> </tr> <tr> <td style="padding: 5px;"><b>BPDU Filter</b></td> <td style="padding: 5px;"><input type="checkbox"/> Enable</td> </tr> <tr> <td style="padding: 5px;"><b>BPDU Guard</b></td> <td style="padding: 5px;"><input type="checkbox"/> Enable</td> </tr> <tr> <td style="padding: 5px;"><b>Point-to-Point</b></td> <td style="padding: 5px;"> <input type="radio"/> Auto  <input checked="" type="radio"/> Enable  <input type="radio"/> Disable       </td> </tr> <tr> <td colspan="2" style="padding: 5px;"><b>Port State</b> Disabled</td> </tr> <tr> <td colspan="2" style="padding: 5px;"><b>Designated Bridge</b> 0-00:00:00:00:00:00</td> </tr> <tr> <td colspan="2" style="padding: 5px;"><b>Designated Port ID</b> 128-1</td> </tr> <tr> <td colspan="2" style="padding: 5px;"><b>Designated Cost</b> 20000</td> </tr> <tr> <td colspan="2" style="padding: 5px;"><b>Operational Edge</b> False</td> </tr> <tr> <td colspan="2" style="padding: 5px;"><b>Operational Point-to-Point</b> False</td> </tr> </table>	<b>State</b>	<input checked="" type="checkbox"/> Enable	<b>Path Cost</b>	<input type="text" value="0"/> (0 - 200000000) (0 = Auto)	<b>Priority</b>	128 <input type="button" value="▼"/>	<b>Edge Port</b>	<input type="checkbox"/> Enable	<b>BPDU Filter</b>	<input type="checkbox"/> Enable	<b>BPDU Guard</b>	<input type="checkbox"/> Enable	<b>Point-to-Point</b>	<input type="radio"/> Auto <input checked="" type="radio"/> Enable <input type="radio"/> Disable	<b>Port State</b> Disabled		<b>Designated Bridge</b> 0-00:00:00:00:00:00		<b>Designated Port ID</b> 128-1		<b>Designated Cost</b> 20000		<b>Operational Edge</b> False		<b>Operational Point-to-Point</b> False	
<b>State</b>	<input checked="" type="checkbox"/> Enable																										
<b>Path Cost</b>	<input type="text" value="0"/> (0 - 200000000) (0 = Auto)																										
<b>Priority</b>	128 <input type="button" value="▼"/>																										
<b>Edge Port</b>	<input type="checkbox"/> Enable																										
<b>BPDU Filter</b>	<input type="checkbox"/> Enable																										
<b>BPDU Guard</b>	<input type="checkbox"/> Enable																										
<b>Point-to-Point</b>	<input type="radio"/> Auto <input checked="" type="radio"/> Enable <input type="radio"/> Disable																										
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<b>Designated Cost</b> 20000																											
<b>Operational Edge</b> False																											
<b>Operational Point-to-Point</b> False																											

- **State:** Administrator can set Enable or Disable.
- **Path Cost:** Path Cost (1-200000000) This parameter is used determine the best path between devices. Therefore, lower values should be assigned to ports attached to faster media, and higher values assigned to ports with slower media. (Path cost takes precedence over port priority.) Note that when the Path Cost Method is set to short, the maximum path cost is 65,535. Range: 1-200000000, (set 0 = Auto, default is 0).
- **Priority:** If the path cost for all ports on a switch is the same, the port with the highest priority (i.e., lowest value) will be configured as an active link in the Spanning Tree. Where more than one port is assigned the highest priority, the port with lowest numeric identifier will be enabled. Range: 0-240, default is 128.
- **Edge Port:** Use portfast, if this port connection end-station of device then administrator can enable the function will be can't receive BPDU.
- **BPDU Filter / BPDU Guard:** If this port has set Trunk function then this port can't be enabled Edge Port / BPDU Filter / BPDU Guard otherwise Trunk will not working normally.

## 8.3 Statistics Table

Spanning Tree / Statistics						
Statistics Table						
			Receive BPDU		Transmit BPDU	
	Entry	Port	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	48	0
<input type="checkbox"/>	7	GE7	0	0	0	0
<input type="checkbox"/>	8	GE8	0	0	0	0
<input type="checkbox"/>	9	GE9	2	0	50	0
<input type="checkbox"/>	10	GE10	50	0	2	0
<input type="checkbox"/>	11	GE11	0	0	50	0
<input type="checkbox"/>	12	GE12	0	0	0	0
<input type="checkbox"/>	13	LAG1	0	0	0	0
<input type="checkbox"/>	14	LAG2	0	0	0	0
<input type="checkbox"/>	15	LAG3	0	0	0	0
<input type="checkbox"/>	16	LAG4	0	0	0	0
<input type="checkbox"/>	17	LAG5	0	0	0	0
<input type="checkbox"/>	18	LAG6	0	0	0	0
<input type="checkbox"/>	19	LAG7	0	0	0	0
<input type="checkbox"/>	20	LAG8	0	0	0	0

If administrator set “8.1 Property Operation” is STP mode then will display Receive / Transmit BPDU status in the page.

## 9. Discovery(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.

LLDP information is sent by devices from each of their interfaces at a fixed interval, in the form of an Ethernet frame. Each frame contains one LLDP Data Unit (LLDPDU). Each LLDPDU is a sequence of type-length-value (TLV) structures.

## 9.1 Property

**Discovery / LLDP / Property**

LLDP	
<b>State</b>	<input checked="" type="checkbox"/> Enable <input type="radio"/> Filtering <input type="radio"/> Bridging <input 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)

**Apply**

- **State:** Administrator can choose Enable or disable this LLDP function.
- **LLDP Handling:** If cancel checkbox then administrator can choose Filtering / Bridging / Flooding for LLDP handling.
- **TLV Advertise Interval:** Set LLDPDU Send Interval period (range 5-32760, default is 30)
- **Hold Multiplier:** Set Hold value (Range 2-10, default is 4). Administrator can control the aging time of local information on the neighbor device by configuring the value of the Hold multiplier.  
 $TTL=Hold\ multiplier * TLV\ Advertise\ Interval.$
- **Reinitializing Delay:** Set this value will be delayed for a period of time to be initialized, to avoid frequent changed when the port use LLDP mode, default value is 2.
- **Transmit Delay:** Set this value main purpose is to be local device to send LLDPDU delay time to a neighbor device. To avoid frequent changes in local configuration caused by frequent transmission of LLDPDUs, default value is 2.

## 9.2 Port Setting

Administrator can configure each port of the LLDPDU Transmit / Receive / Normal or Disable the mode and choose from "Optional TLV" list send the TLV type of port.

### Discovery / LLDP / Port Setting

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
  - LLDP
    - Property
    - Port Setting**
    - Packet View
    - Local Information
    - Neighbor
    - Statistics
  - Multicast
  - Security
  - QoS
  - Diagnostics
  - Management

### Port Setting Table

	Entry	Port	Mode	Selected TLV
<input type="checkbox"/>	1	GE1	Normal	802.1 PVID
<input type="checkbox"/>	2	GE2	Normal	802.1 PVID
<input type="checkbox"/>	3	GE3	Normal	802.1 PVID
<input type="checkbox"/>	4	GE4	Normal	802.1 PVID
<input type="checkbox"/>	5	GE5	Normal	802.1 PVID
<input type="checkbox"/>	6	GE6	Normal	802.1 PVID
<input type="checkbox"/>	7	GE7	Normal	802.1 PVID
<input type="checkbox"/>	8	GE8	Normal	802.1 PVID
<input type="checkbox"/>	9	GE9	Normal	802.1 PVID
<input type="checkbox"/>	10	GE10	Normal	802.1 PVID
<input type="checkbox"/>	11	GE11	Normal	802.1 PVID
<input type="checkbox"/>	12	GE12	Normal	802.1 PVID

Port	GE1-GE12												
Mode	<input type="radio"/> Transmit <input type="radio"/> Receive <input checked="" type="radio"/> Normal <input type="radio"/> Disable												
Optional TLV	<table border="1"> <tr><td>Available TLV</td><td>Selected TLV</td></tr> <tr><td>Port Description</td><td>802.1 PVID</td></tr> <tr><td>System Name</td><td></td></tr> <tr><td>System Description</td><td></td></tr> <tr><td>System Capabilities</td><td></td></tr> <tr><td>802.3 MAC-PHY</td><td></td></tr> </table>	Available TLV	Selected TLV	Port Description	802.1 PVID	System Name		System Description		System Capabilities		802.3 MAC-PHY	
Available TLV	Selected TLV												
Port Description	802.1 PVID												
System Name													
System Description													
System Capabilities													
802.3 MAC-PHY													
802.1 VLAN Name	<table border="1"> <tr><td>Available VLAN</td><td>Selected VLAN</td></tr> <tr><td>VLAN 1</td><td></td></tr> </table>	Available VLAN	Selected VLAN	VLAN 1									
Available VLAN	Selected VLAN												
VLAN 1													

- **Mode:** Administrator can choose Transmit(TX) / Receive(RX) or Normal(TX+RX) and Disable, if choose disable will don't send and receive LLDPDU.
- **Optional TLV:** Administrator can be configuration information into different TLV, encapsulates LLDPDU and issued to the neighbor device.
- **802.1 VLAN Name:** Administrator can choose VLAN group.

## 9.3 Packet View Table

Administrator can select which port to view and click on the "Detail" button to view the information of the LLDP packet on the selected port.

**Discovery / LLDP / Packet View**

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery**
  - LLDP
    - Property
    - Port Setting
    - Packet View**
    - Local Information
    - Neighbor
    - Statistics
- Multicast
- Security
- QoS
- Diagnostics
- Management

**Packet View Table**

	Entry	Port	In-Use (Bytes)	Available (Bytes)	Operational Status
<input type="radio"/>	1	GE1	48	1440	Not Overloading
<input type="radio"/>	2	GE2	48	1440	Not Overloading
<input type="radio"/>	3	GE3	48	1440	Not Overloading
<input type="radio"/>	4	GE4	48	1440	Not Overloading
<input type="radio"/>	5	GE5	48	1440	Not Overloading
<input type="radio"/>	6	GE6	48	1440	Not Overloading
<input type="radio"/>	7	GE7	48	1440	Not Overloading
<input type="radio"/>	8	GE8	48	1440	Not Overloading
<input type="radio"/>	9	GE9	48	1440	Not Overloading
<input type="radio"/>	10	GE10	49	1439	Not Overloading
<input type="radio"/>	11	GE11	49	1439	Not Overloading
<input type="radio"/>	12	GE12	49	1439	Not Overloading

Port	GE1
<b>Mandatory TLVs</b>	
Size (Bytes)	21
Operational Status	Transmitted
<b>802.3 TLVs</b>	
Size (Bytes)	0
Operational Status	Transmitted
<b>Optional TLVs</b>	
Size (Bytes)	0
Operational Status	Transmitted
<b>802.1 TLVs</b>	
Size (Bytes)	8
Operational Status	Transmitted
<b>Total</b>	
In-Use (Bytes)	48
Available (Bytes)	1440

## 9.4 Local Information

Administrator can select which port to view and click on the "detail" button to view the information of the local device as well as the information of selected port LLDP property.

<b>Chassis ID Subtype</b>	MAC address
<b>Chassis ID</b>	8C:4D:EA:11:22:33
<b>System Name</b>	Switch
<b>System Description</b>	8 Port 10/100/1000M Gigabit Web Managed Switch with 4 Combo Gigabit Ports
<b>Supported Capabilities</b>	Bridge
<b>Enabled Capabilities</b>	Bridge
<b>Port ID</b>	GE2
<b>Port ID Subtype</b>	Local
<b>Port Description</b>	

Management Address Table				
Address Subtype	Address	Interface Subtype	Interface Number	
IPv4	192.168.2.200	System Port Number	0	
IPv6	fe80::2e0:4cff:fe11:3f50	System Port Number	0	

MAC/PHY Detail	
Auto-Negotiation Supported	True
Auto-Negotiation Enabled	True
Auto-Negotiation Advertised Capabilities	1000baseTFD , 100baseTXFD , 100baseTX , 10baseTFD , 10baseT
Operational MAU Type	dot3MauType10GigBaseLX4

802.3 Detail	
802.3 Maximum Frame Size	1522

802.3 Link Aggregation	
Aggregation Capability	Capable
Aggregation Status	Not aggregated
Aggregation Port ID	0

## 9.5 Neighbor

If use 2 switch and open LLDP function, will identify device for the LLDP neighbors and the neighbors of the summary attribute will show in Neighbor Table.

**Discovery / LLDP / Neighbor**

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
  - LLDP
    - Property
    - Port Setting
    - Packet View
    - Local Information
    - Neighbor**
    - Statistics
- Multicast
- Security
- QoS
- Diagnostics
- Management

**Neighbor Table**

Showing All  entries      Showing 0 to 0 of 0 entries

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

## 9.6 Statistics

This page can display Transmit / Receive Frame / Receive TLV and Neighbor timeout information's.

**Discovery / LLDP / Statistics**

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
  - LLDP
    - Property
    - Port Setting
    - Packet View
    - Local Information
    - Neighbor**
    - Statistics
- Multicast
- Security
- QoS
- Diagnostics
- Management

**Global Statistics**

Insertions	0
Deletions	0
Drops	0
AgeOuts	0

**Statistics Table**

<input type="checkbox"/>	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	0
<input type="checkbox"/>	2	GE2	420	0	0	0	0	0	0	0
<input type="checkbox"/>	3	GE3	0	0	0	0	0	0	0	0
<input type="checkbox"/>	4	GE4	0	0	0	0	0	0	0	0
<input type="checkbox"/>	5	GE5	0	0	0	0	0	0	0	0
<input type="checkbox"/>	6	GE6	0	0	0	0	0	0	0	0
<input type="checkbox"/>	7	GE7	222	0	0	0	0	0	0	0
<input type="checkbox"/>	8	GE8	0	0	0	0	0	0	0	0
<input type="checkbox"/>	9	GE9	0	0	0	0	0	0	0	0
<input type="checkbox"/>	10	GE10	0	0	0	0	0	0	0	0
<input type="checkbox"/>	11	GE11	0	0	0	0	0	0	0	0
<input type="checkbox"/>	12	GE12	426	0	0	0	0	0	0	0

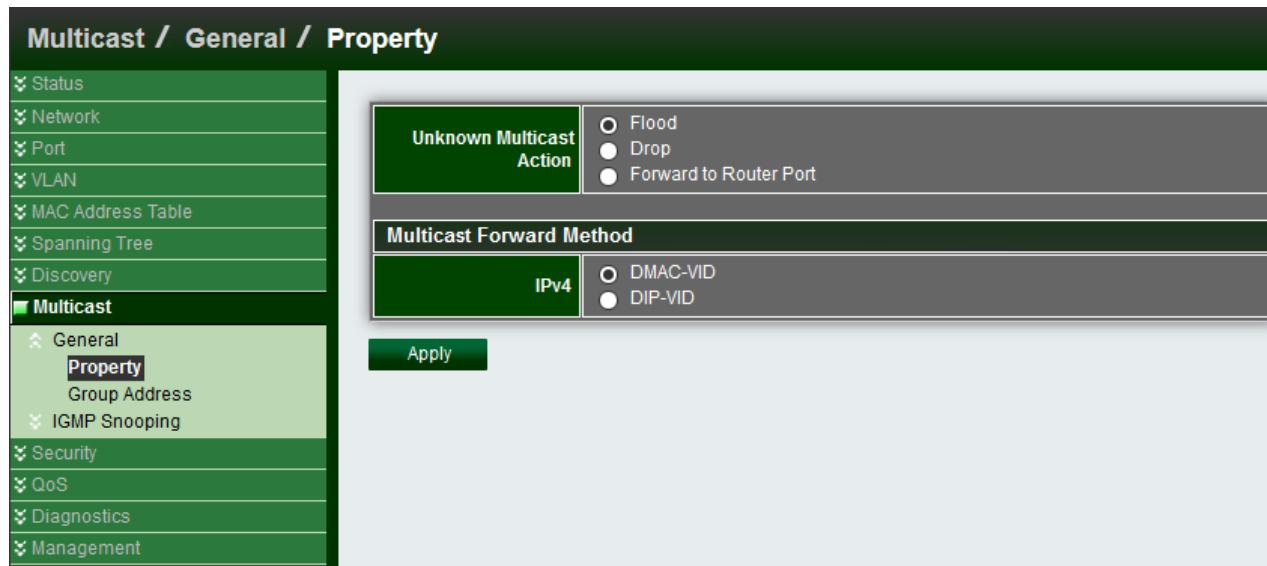
## 10. Multicast

Multicast is the only type of IPv4 multicast that is supported by the Ethernet gateway.

### 10.1 General

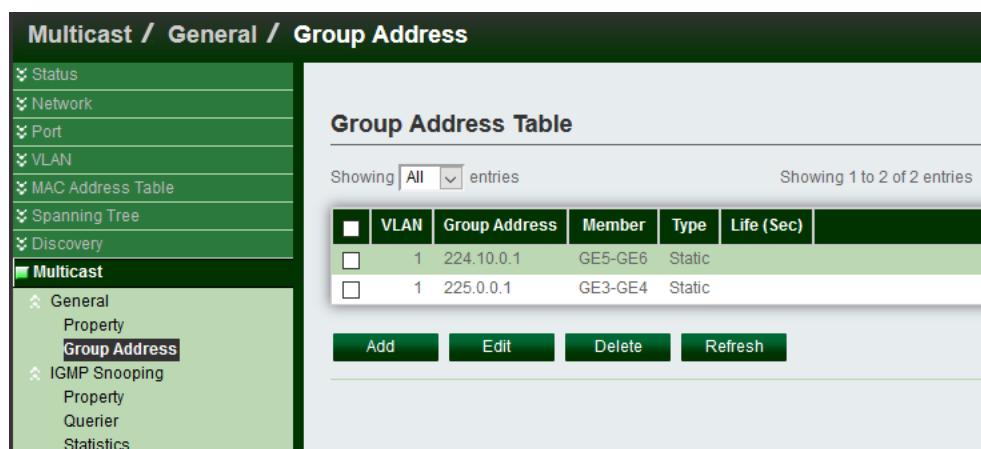
#### 10.1.1 Property

This page can be configured with unknown multicast action, administrator can set the forwarding method is based on the DMAC or the DIP, the function implements high performance data transfer from point to multipoint in network will be reduce the loading on the network.



#### 10.1.2 Group Address

The multicast address range is 224.0.0.0 to 239.255.255.255 and forms the Class D range which is made up of the high order bits 1110 followed by the 28 bit multicast group ID. There is no subletting with these Class D addresses. A multicast group can have a permanently-assigned address or the group may be Transient.



	VLAN	Group Address	Member	Type	Life (Sec)
<input type="checkbox"/>	1	224.10.0.1	GE5-GE6	Static	
<input type="checkbox"/>	1	225.0.0.1	GE3-GE4	Static	

## 10.2 IGMP snooping

IGMP snooping is the process of listening to Internet Group Management Protocol (IGMP) network traffic. The feature allows a network switch to listen in on the IGMP conversation between hosts and routers. By listening to these conversations the switch maintains a map of which links need which IP multicast streams. Multicasts may be filtered from the links which do not need them and thus controls which ports receive specific multicast traffic. The IGMP snooping support v2 & v3, administrator can forward or drop Unknown Multicast.

### 10.2.1 Property

Multicast / IGMP Snooping / Property																					
<input type="checkbox"/> Status <input type="checkbox"/> Network <input type="checkbox"/> Port <input type="checkbox"/> VLAN <input type="checkbox"/> MAC Address Table <input type="checkbox"/> Spanning Tree <input type="checkbox"/> Discovery <input checked="" type="checkbox"/> Multicast <ul style="list-style-type: none"> <li><input type="checkbox"/> General</li> <li><input checked="" type="checkbox"/> Property</li> <li><input type="checkbox"/> Group Address</li> <li><input type="checkbox"/> IGMP Snooping               <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Property</li> <li><input type="checkbox"/> Querier</li> <li><input type="checkbox"/> Statistics</li> </ul> </li> </ul> <input type="checkbox"/> Security <input type="checkbox"/> QoS <input type="checkbox"/> Diagnostics <input type="checkbox"/> Management	<table border="1" style="width: 100%;"> <tr> <td style="padding: 5px;">State</td> <td style="padding: 5px;"><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td style="padding: 5px;">Version</td> <td style="padding: 5px;"><input type="radio"/> IGMPv2 <input checked="" type="radio"/> IGMPv3</td> </tr> <tr> <td style="padding: 5px;">Report Suppression</td> <td style="padding: 5px;"><input checked="" type="checkbox"/> Enable</td> </tr> </table> <p style="text-align: center;"><b>Apply</b></p>	State	<input checked="" type="checkbox"/> Enable	Version	<input type="radio"/> IGMPv2 <input checked="" type="radio"/> IGMPv3	Report Suppression	<input checked="" type="checkbox"/> Enable														
State	<input checked="" type="checkbox"/> Enable																				
Version	<input type="radio"/> IGMPv2 <input checked="" type="radio"/> IGMPv3																				
Report Suppression	<input checked="" type="checkbox"/> Enable																				
VLAN Setting Table																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">#</th> <th style="width: 10%;">VLAN</th> <th style="width: 15%;">Operational Status</th> <th style="width: 10%;">Router Port Auto Learn</th> <th style="width: 10%;">Query Robustness</th> <th style="width: 10%;">Query Interval</th> <th style="width: 10%;">Query Max Response Interval</th> <th style="width: 10%;">Last Member Query Counter</th> <th style="width: 10%;">Last Member Query Interval</th> <th style="width: 10%;">Immediate Leave</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td>Disabled</td> <td>Enabled</td> <td style="text-align: center;">2</td> <td style="text-align: center;">125</td> <td style="text-align: center;">10</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td>Disabled</td> </tr> </tbody> </table> <p style="text-align: center;"><b>Edit</b></p>	#	VLAN	Operational Status	Router Port Auto Learn	Query Robustness	Query Interval	Query Max Response Interval	Last Member Query Counter	Last Member Query Interval	Immediate Leave	1	1	Disabled	Enabled	2	125	10	2	1	Disabled	
#	VLAN	Operational Status	Router Port Auto Learn	Query Robustness	Query Interval	Query Max Response Interval	Last Member Query Counter	Last Member Query Interval	Immediate Leave												
1	1	Disabled	Enabled	2	125	10	2	1	Disabled												

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

- **State:** Administrator can choose Enable or Disable this function.
- **Router Port Auto Learn:** Administrator can enable Router Port Auto Learn.
- **Immediate leave:** Immediate leave for the specified VLAN. Administrator enable immediate leave will host tracking is started, which allows the switch to track the hosts that send membership reports. The switch can then determine when the last host on an interface leaves the multicast group and immediately stop forwarding multicast traffic to the interface.
- **Query Robustness:** Administrator can configure IGMP Snooping for Query Robustness.
- **Query Interval:** Administrator can configure IGMP Snooping for Query Interval.
- **Query Max Response Interval:** Administrator can configure IGMP Snooping for Query Max Response Interval
- **Last Member Query Counter:** The number of times, from 1 through 7, that the router sends group- or group-source-specific queries upon receipt of a message indicating a leave.
- **Last Member Query Interval:** Last Member Query Interval set 1 is average of about 150 milliseconds. Administrator can configure value 1~25. This Last Member Query Interval is in order to avoid the impact of higher rates of IGMP leave messages.
- **Operational Status:** Display IGMP snooping configuration information.

### 10.2.2 Querier

Administrator can choose created VLAN to enable or disable the IGMP Snooping query function. When select checkbox and click "Edit" button will be go to set IGMP Snooping version, this function can get IGMP Snooping query device regularly to VLAN local segments in all hosts and routers send IGMP Snooping general query packets, to the query segment which multicast group members.

Querier Table					
	VLAN	State	Operational Status	Version	Querier Address
<input type="checkbox"/>	1	Disabled	Disabled		
<input type="button" value="Edit"/>					

VLAN	1
State	<input type="checkbox"/> Enable
Version	<input checked="" type="radio"/> IGMPv2 <input type="radio"/> IGMPv3

### 10.2.3 Statistics

Display Receive / Transmit Packet information of IGMP snooping.

Receive Packet	
Total	17
Valid	2
InValid	15
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

## 11. Security

### 11.1 RADIUS

Administrator can be configuration RADIUS to connection RADIUS Server.

Security / RADIUS

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
- Multicast
- Security
  - RADIUS**
  - TACACS+
  - AAA
    - Method List
    - Login Authentication
  - Management Access
    - Management VLAN
    - Management Service
  - Authentication Manager
    - Protected Port
    - Storm Control
  - DoS

**Use Default Parameter**

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

Apply

**RADIUS Table**

Showing  entries      Showing 1 to 1 of 1 entries

	Server Address	Server Port	Priority	Retry	Timeout	Usage
<input type="checkbox"/>	192.168.2.1	1812	23760	3	3	802.1X

Server Address	192.168.2.1
Server Port	<input type="text" value="1812"/> (0 - 65535, default 1812)
Priority	<input type="text" value="23760"/> (0 - 65535)
Key String	<input checked="" type="checkbox"/> Use Default <input type="text"/>
Retry	<input checked="" type="checkbox"/> Use Default <input type="text" value="3"/> (1 - 10, default 3)
Timeout	<input checked="" type="checkbox"/> Use Default <input type="text" value="3"/> Sec (1 - 30, default 3)
Usage	<input type="radio"/> Login <input type="radio"/> 802.1X <input type="radio"/> All

V1.0a

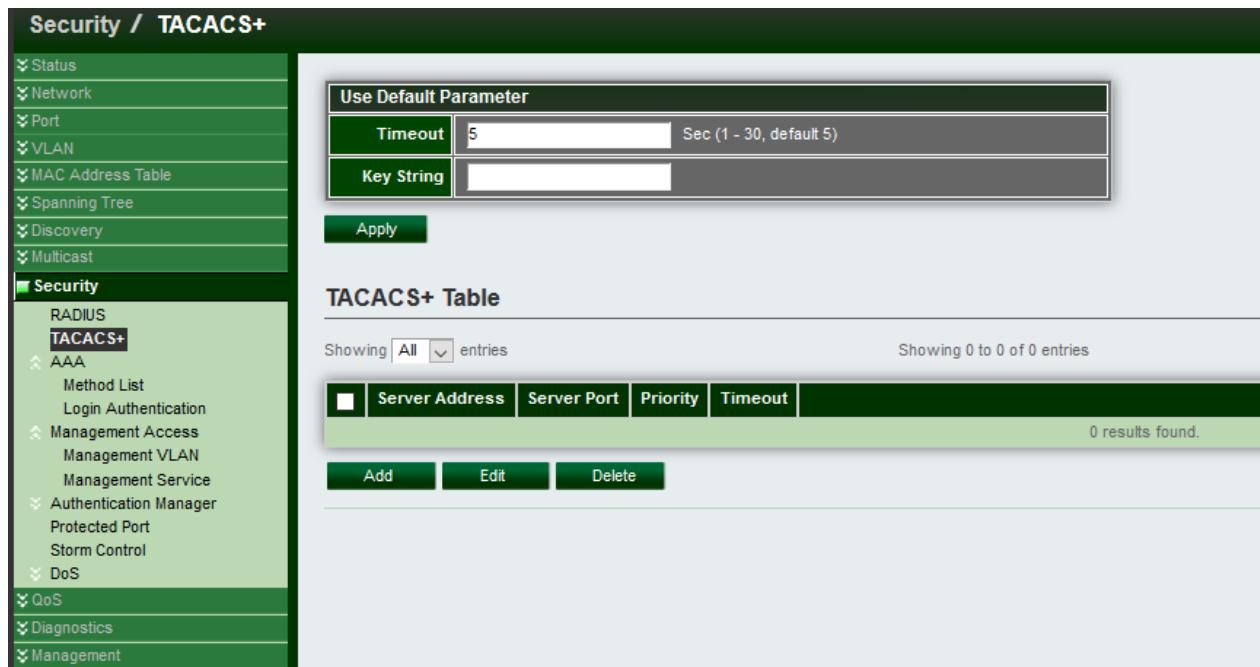
 www.cerio.cc

 +(886) 2-8911-6160

 issales@cerio.com.tw

## 11.2 TACACS+

Administrator can be configuration TACACS+ to connection TACACS+ Server.

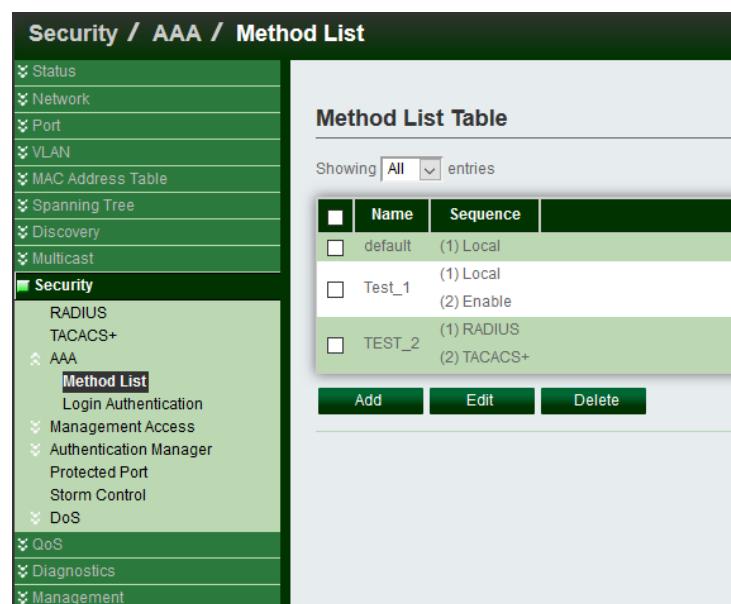


	Server Address	Server Port	Priority	Timeout
0 results found.				

## 11.3 AAA

### 11.3.1 Method List

Administrator can set groups of AAA security, each group have 4 method table, each method can select 1 of 6 type which contains Empty / None / Local / Enable / RADIUS and TACACS+



	Name	Sequence
<input type="checkbox"/>	default	(1) Local
<input type="checkbox"/>	Test_1	(2) Enable
<input type="checkbox"/>	TEST_2	(1) RADIUS (2) TACACS+

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

- **Empty:** Close authentication type of this method.
- **None:** Don't use authentication.
- **Local:** System login account use local system authentication in "menu -> management -> user Account".
- **Enable:**
- **RADIUS:** System login account use remote RADIUS server authentication.
- **TACACS+:** System login account use remote TACACS+ server authentication.

### 11.3.2 Login Authentication

When administrator has created security groups in "AAA=>method" then administrator can select different security group in service port.

**Security / AAA / Login Authentication**

Security / AAA / Login Authentication

Status  
 Network  
 Port  
 VLAN  
 MAC Address Table  
 Spanning Tree  
 Discovery  
 Multicast  
**Security**  
 RADIUS  
 TACACS+  
**AAA**  
 Method List  
**Login Authentication**  
 Management Access  
 Authentication Manager  
 Protected Port  
 Storm Control  
 DoS

Console: Test\_1 (1) Local (2) Enable  
 Telnet: TEST\_2 (1) RADIUS (2) TACACS+  
 SSH: default (1) Local  
 HTTP: default (1) Local  
 HTTPS: default (1) Local

Apply

## 11.4 Management Access

### 11.4.1 Management VLAN

When created VLAN function then administrator can select a specific VLAN, only allow this VLAN can to enter the UI management page.

**Security / Management Access / Management VLAN**

<ul style="list-style-type: none"> <li>❖ Status</li> <li>❖ Network</li> <li>❖ Port</li> <li>❖ VLAN</li> <li>❖ MAC Address Table</li> <li>❖ Spanning Tree</li> <li>❖ Discovery</li> <li>❖ Multicast</li> <li><b>Security</b> <ul style="list-style-type: none"> <li>RADIUS</li> <li>TACACS+</li> <li>❖ AAA</li> <li>❖ Management Access           <ul style="list-style-type: none"> <li><b>Management VLAN</b></li> <li>Management Service</li> </ul> </li> <li>❖ Authentication Manager</li> <li>Protected Port</li> <li>Storm Control</li> <li>❖ DoS</li> </ul> </li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Management VLAN</td> <td style="width: 85%; text-align: center;">1 - default</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 5px;">Note: Change Management VLAN may cause connection interrupted</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;"><b>Apply</b></td> </tr> </table>	Management VLAN	1 - default	Note: Change Management VLAN may cause connection interrupted		<b>Apply</b>	
Management VLAN	1 - default						
Note: Change Management VLAN may cause connection interrupted							
<b>Apply</b>							

### 11.4.2 Management Service

Administrator can select enable Telnet / SSH / HTTP / HTTPS / SNMP by different protocol to login service and configuration login timeout limit and password error retry count limit.

**Security / Management Access / Management Service**

<ul style="list-style-type: none"> <li>❖ Status</li> <li>❖ Network</li> <li>❖ Port</li> <li>❖ VLAN</li> <li>❖ MAC Address Table</li> <li>❖ Spanning Tree</li> <li>❖ Discovery</li> <li>❖ Multicast</li> <li><b>Security</b> <ul style="list-style-type: none"> <li>RADIUS</li> <li>TACACS+</li> <li>❖ AAA</li> <li>❖ Management Access           <ul style="list-style-type: none"> <li><b>Management VLAN</b></li> <li><b>Management Service</b></li> </ul> </li> <li>❖ Authentication Manager</li> <li>Protected Port</li> <li>Storm Control</li> <li>❖ DoS</li> </ul> </li> <li>❖ QoS</li> <li>❖ Diagnostics</li> <li>❖ Management</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="background-color: #006633; color: white; text-align: left; padding: 5px;">Management Service</td> </tr> <tr> <td style="width: 15%;">Telnet</td> <td style="width: 85%;"><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td>SSH</td> <td><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td>HTTP</td> <td><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td>HTTPS</td> <td><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td>SNMP</td> <td><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td colspan="2" style="background-color: #006633; color: white; text-align: left; padding: 5px;">Session Timeout</td> </tr> <tr> <td>Console</td> <td>10</td> <td>Min (0 - 65535, default 10)</td> </tr> <tr> <td>Telnet</td> <td>10</td> <td>Min (0 - 65535, default 10)</td> </tr> <tr> <td>SSH</td> <td>10</td> <td>Min (0 - 65535, default 10)</td> </tr> <tr> <td>HTTP</td> <td>50</td> <td>Min (0 - 65535, default 10)</td> </tr> <tr> <td>HTTPS</td> <td>10</td> <td>Min (0 - 65535, default 10)</td> </tr> <tr> <td colspan="2" style="background-color: #006633; color: white; text-align: left; padding: 5px;">Password Retry Count</td> </tr> <tr> <td>Console</td> <td>3</td> <td>(0 - 120, default 3)</td> </tr> <tr> <td>Telnet</td> <td>3</td> <td>(0 - 120, default 3)</td> </tr> <tr> <td>SSH</td> <td>3</td> <td>(0 - 120, default 3)</td> </tr> <tr> <td colspan="2" style="background-color: #006633; color: white; text-align: left; padding: 5px;">Silent Time</td> </tr> <tr> <td>Console</td> <td>0</td> <td>Sec (0 - 65535, default 0)</td> </tr> <tr> <td>Telnet</td> <td>0</td> <td>Sec (0 - 65535, default 0)</td> </tr> <tr> <td>SSH</td> <td>0</td> <td>Sec (0 - 65535, default 0)</td> </tr> </table>	Management Service		Telnet	<input checked="" type="checkbox"/> Enable	SSH	<input checked="" type="checkbox"/> Enable	HTTP	<input checked="" type="checkbox"/> Enable	HTTPS	<input checked="" type="checkbox"/> Enable	SNMP	<input checked="" type="checkbox"/> Enable	Session Timeout		Console	10	Min (0 - 65535, default 10)	Telnet	10	Min (0 - 65535, default 10)	SSH	10	Min (0 - 65535, default 10)	HTTP	50	Min (0 - 65535, default 10)	HTTPS	10	Min (0 - 65535, default 10)	Password Retry Count		Console	3	(0 - 120, default 3)	Telnet	3	(0 - 120, default 3)	SSH	3	(0 - 120, default 3)	Silent Time		Console	0	Sec (0 - 65535, default 0)	Telnet	0	Sec (0 - 65535, default 0)	SSH	0	Sec (0 - 65535, default 0)
Management Service																																																				
Telnet	<input checked="" type="checkbox"/> Enable																																																			
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Telnet	0	Sec (0 - 65535, default 0)																																																		
SSH	0	Sec (0 - 65535, default 0)																																																		

- **Session Timeout:** After login management page, in the set time if not session then system will auto timeout, administrator need re-login.
- **Password Retry Count:** If login error reaches the set value then login page will be kicked out, administrator need reopen the login page.
- **Silent Time:** This function to be matched "Password Retry Count" function, if login error reaches the set value within then set value of silent time will can't be reopen login page until the set time end.

## 11.5 Authentication Manager

### 11.5.1 Property

Administrator can select use 802.1x authentication.

Security / Authentication Manager / Property

Status
Network
Port
VLAN
MAC Address Table
Spanning Tree
Discovery
Multicast

**Security**

- RADIUS
- TACACS+
- AAA
- Management Access
- Authentication Manager**
- Property
- Port Setting
- Sessions
- Protected Port
- Storm Control
- DoS

**QoS**

**Diagnostics**

**Management**

Port Mode Table

	Entry	Port	Authentication Type	Host Mode	Method	Guest VLAN	VLAN Assign Mode
			802.1x				
<input type="checkbox"/>	1	GE1	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	2	GE2	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	3	GE3	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	4	GE4	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	5	GE5	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	6	GE6	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	7	GE7	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	8	GE8	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	9	GE9	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	10	GE10	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	11	GE11	Disabled	Multiple Authentication	RADIUS	Disabled	Static
<input type="checkbox"/>	12	GE12	Enabled	Multiple Authentication	RADIUS , Local	Disabled	Static

Edit

## 11.5.2 Port Setting

Administrator can set authentication method by Ports.

**Security / Authentication Manager / Port Setting**

Port Setting Table												
■	Entry	Port	Port Control	Reauthentication	Max Hosts	Common Timer			802.1x Parameters			
						Reauthentication	Inactive	Quiet	TX Period	Supplicant Timeout	Server Timeout	Max Request
<input type="checkbox"/>	1	GE1	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	2	GE2	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	3	GE3	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	4	GE4	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	5	GE5	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	6	GE6	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	7	GE7	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	8	GE8	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	9	GE9	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	10	GE10	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	11	GE11	Disabled	Disabled	256	3600	60	60	30	30	30	2
<input type="checkbox"/>	12	GE12	Force Authorized	Enabled	256	3600	60	60	30	30	30	2

**Edit**

<b>Port</b>	GE12
<b>Authentication Type</b>	<input checked="" type="checkbox"/> 802.1x
<b>Host Mode</b>	<input type="radio"/> Multiple Authentication <input type="radio"/> Multiple Hosts <input type="radio"/> Single Host
<b>Method</b>	Available Method      Select Method <div style="display: flex; align-items: center;"> <div style="flex: 1; border: 1px solid #ccc; padding: 5px; margin-right: 10px;"></div> <div style="border: 1px solid #ccc; padding: 5px; border-radius: 5px; position: relative;"> <span style="position: absolute; right: -10px; top: -10px;">^</span> <span style="position: absolute; left: -10px; top: -10px;">^</span> <span style="position: absolute; right: -10px; bottom: -10px;">v</span> <span style="position: absolute; left: -10px; bottom: -10px;">v</span> </div> <div style="flex: 1; border: 1px solid #ccc; padding: 5px; margin-left: 10px;">           RADIUS            Local         </div> </div>
<b>Guest VLAN</b>	<input type="checkbox"/> Enable
<b>VLAN Assign Mode</b>	<input type="radio"/> Disable <input type="radio"/> Reject <input type="radio"/> Static

- **Port:** Display selected port number.
- **Authentication Type:** Administrator can enable or disable authentication for 802.1 x protocol.
- **Host Mode:** Administrator has three mode can choose for Multiple Authentication / Multiple Hosts and Single Host.
- **Guest VLAN:** Administrator can enable or disable the Guest VLAN.
- **VLAN Assign Mode:** Administrator can select Reject or Static for VLAN Assign mode or disable the function.

### 11.5.3 Sessions

Display session information of authentication.

**Security / Authentication Manager / Sessions**

**Sessions Table**

Showing All entries Showing 0 to 0 of 0 entries

	Session ID	Port	MAC Address	Current Type	Status	Operational Information				Authorized Information		
						VLAN	Session Time	Inactived Time	Quiet Time	VLAN	Reauthentication Period	Inactive Timeout
0 results found.												

**Clear** **Refresh**

## 11.6 Protected Port

Administrator can select ports to protected

**Security / Protected Port**

**Protected Port Table**

	Entry	Port	State
<input type="checkbox"/>	1	GE1	Unprotected
<input type="checkbox"/>	2	GE2	Unprotected
<input type="checkbox"/>	3	GE3	Unprotected
<input type="checkbox"/>	4	GE4	Unprotected
<input type="checkbox"/>	5	GE5	Unprotected
<input type="checkbox"/>	6	GE6	Unprotected
<input type="checkbox"/>	7	GE7	Unprotected
<input type="checkbox"/>	8	GE8	Protected
<input type="checkbox"/>	9	GE9	Unprotected
<input type="checkbox"/>	10	GE10	Unprotected
<input type="checkbox"/>	11	GE11	Unprotected
<input type="checkbox"/>	12	GE12	Unprotected

**Edit Protected Port**

Port	GE1-GE12
State	<input checked="" type="checkbox"/> Protected

**Apply** **Close**

- **State:** Administrator can click checkbox to enable or disable of protected ports.

## 11.7 Storm Control

This function can prevent broadcast storms, administrator can choose ports to enable or disable or prevent storms. When choose enable, administrator can set safe value of broadcast / Multicast / Unicast, if over safety value in ports then system can according to action drop or shutdown this ports.

Security / Storm Control

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
- Multicast
- Security**

  - RADIUS
  - TACACS+
  - AAA
    - Method List
    - Login Authentication
  - Management Access
  - Authentication Manager
  - Protected Port
  - Storm Control**
  - DoS

- QoS
- Diagnostics
- Management

**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

Port	GE1-GE12
State	<input type="checkbox"/> Enable
Broadcast	<input type="checkbox"/> Enable  10000 Kbps (16 - 1000000, default 10000)
Unknown Multicast	<input type="checkbox"/> Enable  10000 Kbps (16 - 1000000, default 10000)
Unknown Unicast	<input type="checkbox"/> Enable  10000 Kbps (16 - 1000000, default 10000)
Action	<input checked="" type="radio"/> Drop <input type="radio"/> Shutdown

## 11.8 DoS

DoS attack (denial-of-service) is a cyber-attack where the perpetrator seeks to make a machine or network resource unavailable to its intended users by temporarily or indefinitely disrupting services of a host connected to the Internet. Denial of service is typically accomplished by flooding the targeted machine or resource with superfluous requests in an attempt to overload systems and prevent some or all legitimate requests from being fulfilled.

## 11.8.1 Property

Administrators can enable and set security values to guard against DoS

Status

Network

Port

VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

RADIUS

TACACS+

AAA

Method List

Login Authentication

Management Access

Authentication Manager

Protected Port

Storm Control

DoS

Property

Port Setting

QoS

Diagnostics

Management

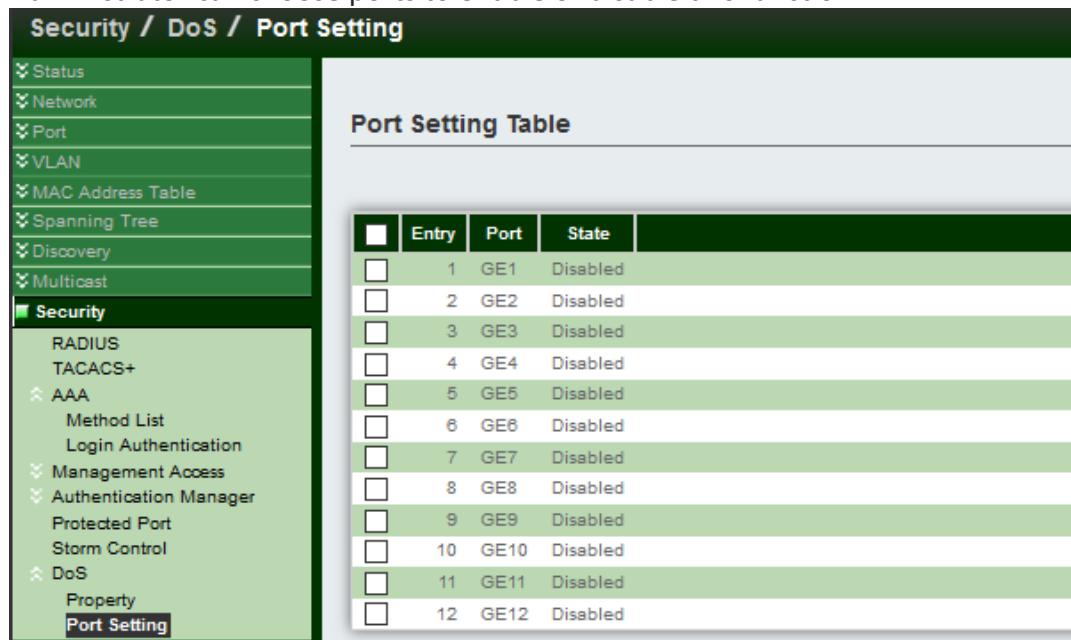
POD	<input checked="" type="checkbox"/> Enable
Land	<input checked="" type="checkbox"/> Enable
UDP Blat	<input checked="" type="checkbox"/> Enable
TCP Blat	<input checked="" type="checkbox"/> Enable
DMAC = SMAC	<input checked="" type="checkbox"/> Enable
Null Scan Attack	<input checked="" type="checkbox"/> Enable
X-Mas Scan Attack	<input checked="" type="checkbox"/> Enable
TCP SYN-FIN Attack	<input checked="" type="checkbox"/> Enable
TCP SYN-RST Attack	<input checked="" type="checkbox"/> Enable
ICMP Fragment	<input checked="" type="checkbox"/> Enable
TCP-SYN	<input checked="" type="checkbox"/> Enable <small>Note: Source Port &lt; 1024</small>
TCP Fragment	<input checked="" type="checkbox"/> Enable <small>Note: Offset = 1</small>

Ping Max Size	<input checked="" type="checkbox"/> Enable IPv4 <input checked="" type="checkbox"/> Enable IPv6 <input type="text" value="512"/> Byte (0 - 65535, default 512)
TCP Min Hdr size	<input checked="" type="checkbox"/> Enable <input type="text" value="20"/> Byte (0 - 31, default 20)
IPv6 Min Fragment	<input checked="" type="checkbox"/> Enable <input type="text" value="1240"/> Byte (0 - 65535, default 1240)
Smurf Attack	<input checked="" type="checkbox"/> Enable <input type="text" value="0"/> Netmask Length (0 - 32, default 0)

## 11.8.2 Port Setting

Administrator can choose ports to enable or disable this function.



	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



Port	GE1-GE12
State	<input checked="" type="checkbox"/> Enable

**Edit Port Setting**

**Apply**   **Close**

## 12. QoS

Quality of Service (QoS) prioritizes network traffic and manages available bandwidth so that the most important traffic goes first. QoS is implemented as rules or policies that prioritize packets, optionally change information in the packet header, and assign them to outbound port queues based on their priority.

### 12.1 Property

Administrator can set enable or disable QoS function. This switch implements two priority modes based on port, on cos and on DSCP. The port priorities are labeled as CoS0~7.

**QoS / General / Property**

Port Setting Table								
■	Entry	Port	CoS	Trust	Remarkering			
					CoS	DSCP	IP Precedence	
1	GE1	0	Enabled	Disabled	Disabled	Disabled	Disabled	
2	GE2	0	Enabled	Disabled	Disabled	Disabled	Disabled	
3	GE3	0	Enabled	Disabled	Disabled	Disabled	Disabled	
4	GE4	0	Enabled	Disabled	Disabled	Disabled	Disabled	
5	GE5	0	Enabled	Disabled	Disabled	Disabled	Disabled	
6	GE6	0	Enabled	Disabled	Disabled	Disabled	Disabled	
7	GE7	0	Enabled	Disabled	Disabled	Disabled	Disabled	
8	GE8	0	Enabled	Disabled	Disabled	Disabled	Disabled	
9	GE9	0	Enabled	Disabled	Disabled	Disabled	Disabled	
10	GE10	0	Enabled	Disabled	Disabled	Disabled	Disabled	
11	GE11	0	Enabled	Disabled	Disabled	Disabled	Disabled	
12	GE12	0	Enabled	Disabled	Disabled	Disabled	Disabled	
13	LAG1	0	Enabled	Disabled	Disabled	Disabled	Disabled	
14	LAG2	0	Enabled	Disabled	Disabled	Disabled	Disabled	
15	LAG3	0	Enabled	Disabled	Disabled	Disabled	Disabled	

Port	GE1-GE12,LAG1-LAG8
CoS	0 (0 - 7)
Trust	<input checked="" type="checkbox"/> Enable
<b>Remarkering</b>	
CoS	<input type="checkbox"/> Enable
DSCP	<input type="checkbox"/> Enable
IP Precedence	<input type="checkbox"/> Enable

**Apply**    **Close**

## 12.2 Queue Scheduling

This “queue scheduling” function support WRR and Strict Priority two method.

The following picture shows an example description of Queue Scheduling. When you select the combined SP and WRR queueing method, this switch schedules traffic in queue 7 and queue 6 first, based on the strict priority queueing method. When there is no traffic in queue 7 and queue 6, the device schedules the other queues in round-robin fashion from the highest priority queue to the lowest priority queue (Q0 through Q5).

**QoS / General / Queue Scheduling**

☰ Status  
 ☰ Network  
 ☰ Port  
 ☰ VLAN  
 ☰ MAC Address Table  
 ☰ Spanning Tree  
 ☰ Discovery  
 ☰ Multicast  
 ☰ Security  
**QoS**  
 ☰ General  
 Property  
**Queue Scheduling**  
 CoS Mapping  
 DSCP Mapping  
 IP Precedence Mapping  
 ☰ Rate Limit

Queue	Method			
	Strict Priority	WRR	Weight	WRR Bandwidth (%)
1	<input type="radio"/>	<input checked="" type="radio"/>	3	11.54%
2	<input type="radio"/>	<input checked="" type="radio"/>	3	11.54%
3	<input type="radio"/>	<input checked="" type="radio"/>	3	11.54%
4	<input type="radio"/>	<input checked="" type="radio"/>	4	15.38%
5	<input type="radio"/>	<input checked="" type="radio"/>	5	19.23%
6	<input type="radio"/>	<input checked="" type="radio"/>	8	30.77%
7	<input checked="" type="radio"/>	<input type="radio"/>	13	
8	<input checked="" type="radio"/>	<input type="radio"/>	15	

**Apply**

- **Strict Priority:** The function assigns the maximum weights to each queue, to cause the queuing mechanism to serve as many packets in one queue as possible before moving to a lower queue.
- **WRR:** Weight Round Robin Scheduling is like waiting in line, Packets in all the queues are sent in order based on the weight value for each queue.
- **Weight:** Administrator can set weight priority queue.

## 12.3 CoS Mapping

CoS to Queue mapping or Queue to CoS Mapping is queue schedule method and bandwidth allocation, it is possible to achieve the desired QoS in a network.

**QoS / General / CoS Mapping**

- ❖ Status
- ❖ Network
- ❖ Port
- ❖ VLAN
- ❖ MAC Address Table
- ❖ Spanning Tree
- ❖ Discovery
- ❖ Multicast
- ❖ Security
- QoS**
  - ❖ General
  - Property
  - Queue Scheduling
  - CoS Mapping**
  - DSCP Mapping
  - IP Precedence Mapping
  - ❖ Rate Limit
- ❖ Diagnostics
- ❖ Management

**CoS to Queue Mapping**

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

**Queue to CoS Mapping**

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

**Apply**

CoS (0 to 7)	Queue(1 to 8)	Description
7 is highest	8 is highest priority	
0	2	Background
1	1	Best Effort
2	3	Excellent Effort
3	4	Critical Application LVS phone SIP
4	5	Video
5	6	Voice Cisco IP phone default
6	7	Interwork Control LVS phone RTP
7	8	Network Control

## 12.4 DSCP Mapping

This DSCP values range from 0 through 63, whereas the internal forwarding priority values range from 1 through 8. Any DSCP value within a given range is mapped to the same internal forwarding priority value. These include the CS (Class Selector), AF (Assured Forwarding) and EF (Expedited Forwarding). For example, a packet with a DSCP tag value of 1 can be assigned to the High queue.

**QoS / General / DSCP Mapping**

- ❖ Status
- ❖ Network
- ❖ Port
- ❖ VLAN
- ❖ MAC Address Table
- ❖ Spanning Tree
- ❖ Discovery
- ❖ Multicast
- ❖ Security
- QoS**
  - ❖ General
    - Property
    - Queue Scheduling
    - CoS Mapping
    - DSCP Mapping**
    - IP Precedence Mapping
  - ❖ Rate Limit
- ❖ Diagnostics
- ❖ Management

**DSCP to Queue Mapping**

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

**Queue to DSCP Mapping**

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

## 12.5 IP Precedence to Queue Mapping

The IP Precedence standard uses the first 3 bits of the ToS byte to mark packets with 8 levels of priority, numbered 0-7, with 0 being the lowest priority and 7 the highest. Because IP Precedence and ToS use different bits in the ToS byte to mark the priority of a packet, they can co-exist in the same packet header without interfering with each other.

### 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**

## 12.6 Rate Limit

The rate limiting function can be configured to limit of Ingress/Egress traffic on a particular interface. Administrator can set Ingress/Egress rate limiting in Ports. The usage rate is 16 to 1000000 Kbps

### QoS / Rate Limit / Ingress / Egress Port

**Ingress / Egress Port Table**

■	Entry	Port	Ingress		Egress	
			State	Rate (Kbps)	State	Rate (Kbps)
	1	GE1	Disabled		Disabled	
	2	GE2	Disabled		Disabled	
	3	GE3	Disabled		Disabled	
	4	GE4	Disabled		Disabled	
	5	GE5	Disabled		Disabled	
	6	GE6	Disabled		Disabled	
	7	GE7	Disabled		Disabled	
	8	GE8	Disabled		Disabled	
	9	GE9	Disabled		Disabled	
	10	GE10	Disabled		Disabled	
	11	GE11	Disabled		Disabled	
	12	GE12	Disabled		Disabled	

<b>Port</b>	GE1-GE12
<b>Ingress</b>	<input type="checkbox"/> Enable <input type="text" value="1000000"/> Kbps (16 - 1000000)
<b>Egress</b>	<input type="checkbox"/> Enable <input type="text" value="1000000"/> Kbps (16 - 1000000)

## 13. Diagnostics

### 13.1 Logging

#### 13.1.1 Property

This function support log message includes Console / RAM / Flash message send to remote log server. Administrator can enable or disable this function.

**Diagnostics / Logging / Property**

<ul style="list-style-type: none"> <li><input type="checkbox"/> Status</li> <li><input type="checkbox"/> Network</li> <li><input type="checkbox"/> Port</li> <li><input type="checkbox"/> VLAN</li> <li><input type="checkbox"/> MAC Address Table</li> <li><input type="checkbox"/> Spanning Tree</li> <li><input type="checkbox"/> Discovery</li> <li><input type="checkbox"/> Multicast</li> <li><input type="checkbox"/> Security</li> <li><input type="checkbox"/> QoS</li> <li><b><input checked="" type="checkbox"/> Diagnostics</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Logging           <ul style="list-style-type: none"> <li><b>Property</b></li> <li>Remote Server</li> <li>Mirroring</li> <li>Ping</li> <li>Copper Test</li> </ul> </li> </ul> </li> <li><input type="checkbox"/> Management</li> </ul>	<table border="1"> <tr> <td><b>State</b></td> <td><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td colspan="2"><b>Console Logging</b></td> </tr> <tr> <td><b>State</b></td> <td><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td><b>Minimum Severity</b></td> <td> <input style="width: 100px;" type="text" value="Notice"/> </td> </tr> <tr> <td colspan="2">Note: Emergency, Alert, Critical, Error, Warning, Notice</td> </tr> <tr> <td colspan="2"><b>RAM Logging</b></td> </tr> <tr> <td><b>State</b></td> <td><input checked="" type="checkbox"/> Enable</td> </tr> <tr> <td><b>Minimum Severity</b></td> <td> <input style="width: 100px;" type="text" value="Notice"/> </td> </tr> <tr> <td colspan="2">Note: Emergency, Alert, Critical, Error, Warning, Notice</td> </tr> <tr> <td colspan="2"><b>Flash Logging</b></td> </tr> <tr> <td><b>State</b></td> <td><input type="checkbox"/> Enable</td> </tr> <tr> <td><b>Minimum Severity</b></td> <td> <input style="width: 100px;" type="text" value="Notice"/> </td> </tr> <tr> <td colspan="2">Note: Emergency, Alert, Critical, Error, Warning, Notice</td> </tr> </table>	<b>State</b>	<input checked="" type="checkbox"/> Enable	<b>Console Logging</b>		<b>State</b>	<input checked="" type="checkbox"/> Enable	<b>Minimum Severity</b>	<input style="width: 100px;" type="text" value="Notice"/>	Note: Emergency, Alert, Critical, Error, Warning, Notice		<b>RAM Logging</b>		<b>State</b>	<input checked="" type="checkbox"/> Enable	<b>Minimum Severity</b>	<input style="width: 100px;" type="text" value="Notice"/>	Note: Emergency, Alert, Critical, Error, Warning, Notice		<b>Flash Logging</b>		<b>State</b>	<input type="checkbox"/> Enable	<b>Minimum Severity</b>	<input style="width: 100px;" type="text" value="Notice"/>	Note: Emergency, Alert, Critical, Error, Warning, Notice	
<b>State</b>	<input checked="" type="checkbox"/> Enable																										
<b>Console Logging</b>																											
<b>State</b>	<input checked="" type="checkbox"/> Enable																										
<b>Minimum Severity</b>	<input style="width: 100px;" type="text" value="Notice"/>																										
Note: Emergency, Alert, Critical, Error, Warning, Notice																											
<b>RAM Logging</b>																											
<b>State</b>	<input checked="" type="checkbox"/> Enable																										
<b>Minimum Severity</b>	<input style="width: 100px;" type="text" value="Notice"/>																										
Note: Emergency, Alert, Critical, Error, Warning, Notice																											
<b>Flash Logging</b>																											
<b>State</b>	<input type="checkbox"/> Enable																										
<b>Minimum Severity</b>	<input style="width: 100px;" type="text" value="Notice"/>																										
Note: Emergency, Alert, Critical, Error, Warning, Notice																											

- Minimum Severity: Administrator can choose message type to monitor.

### 13.1.2 Remote Server

When the creation is complete then system log messages will send to remote log servers.

**Diagnostics / Logging / Remote Server**

Entry	Server Address	Server Port	Facility	Minimum Severity
1	192.168.2.50	514	Local 0	Debug

Add    Edit    Delete

**Remote Server Table**

**Navigation:**

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
- Multicast
- Security
- QoS
- Diagnostics**
  - Logging
  - Property
  - Remote Server**
  - Mirroring
  - Ping
  - Copper Test
- Management

## 13.2 Mirroring

Mirroring function can mirror Rx/Tx traffic, Packet can mirror to destination port and for analysis.

**Diagnostics / Mirroring**

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

**Mirroring Table**

**Navigation:**

- Status
- Network
- Port
- VLAN
- MAC Address Table
- Spanning Tree
- Discovery
- Multicast
- Security
- QoS
- Diagnostics**
  - Logging
  - Property
  - Remote Server**
  - Mirroring**
  - Ping
  - Copper Test
- Management

Edit

Allow the monitor port to send or receive normal packets

Session ID	1	
State	<input type="checkbox"/> Enable	
Monitor Port	GE1 <input type="button" value="▼"/>	
	<input type="checkbox"/> Send or Receive Normal Packet	
Ingress Port	Available Port	Selected Port
	GE1 GE2 GE3 GE4 GE5 GE6 GE7 GE8	<input type="button" value="&gt;"/> <input type="button" value="&lt;"/>
Egress Port	Available Port	Selected Port
	GE1 GE2 GE3 GE4 GE5 GE6 GE7 GE8	<input type="button" value="&gt;"/> <input type="button" value="&lt;"/>

- **Mirroring Port:** Administrator can choose a mirroring Port.
- **Ingress Port:** Administrator can choose mirrored ports for ingress.
- **Egress Port:** Administrator can choose mirrored ports for egress.

### 13.3 Ping

Administrators can use this ping function to check connected device whether is active. This ping function support IPv4 and IPv6 protocol.

Diagnostics / Ping

Status

Network

Port

VLAN

MAC Address Table

Spanning Tree

Discovery

Multicast

Security

QoS

Diagnostics

Logging

Property

Remote Server

Mirroring

Ping

Copper Test

Management

Address Type

Hostname
  IPv4
  IPv6

Server Address

User Defined

Count

4 Sec (1 - 65535)

Ping Result

Packet Status	
Status	N/A
Transmit Packet	0

V1.0a

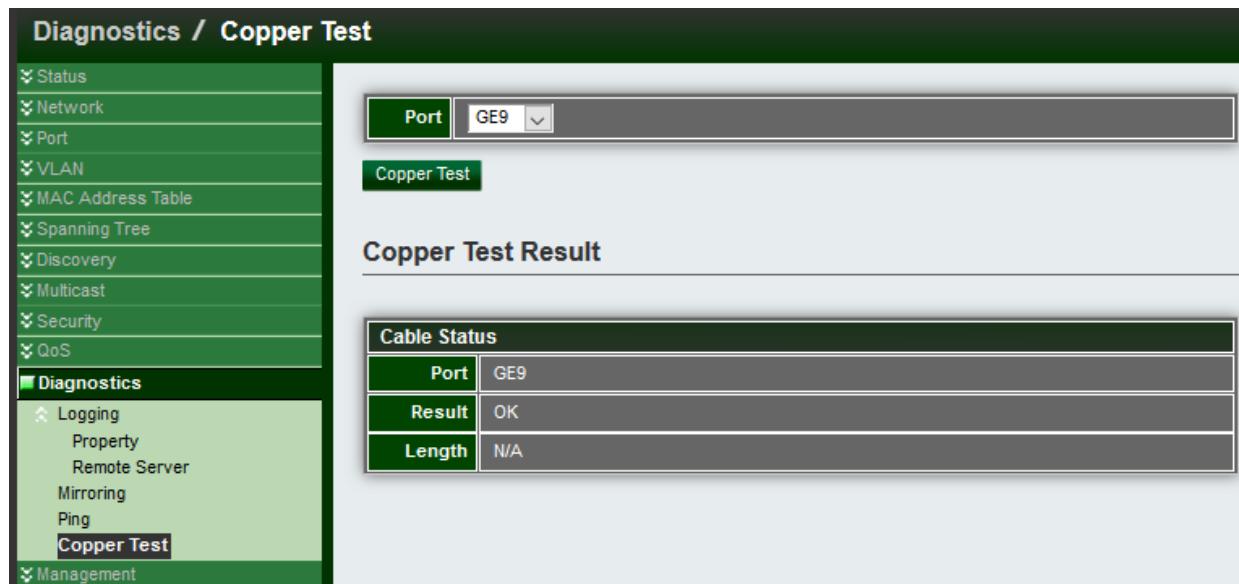
 www.cerio.cc

 +(886) 2-8911-6160

 issales@cerio.com.tw

## 13.4 Copper Test

Administrator can use this function check port Result whether is working, if working then display OK.



**Diagnostics / Copper Test**

Port: GE9

Copper Test

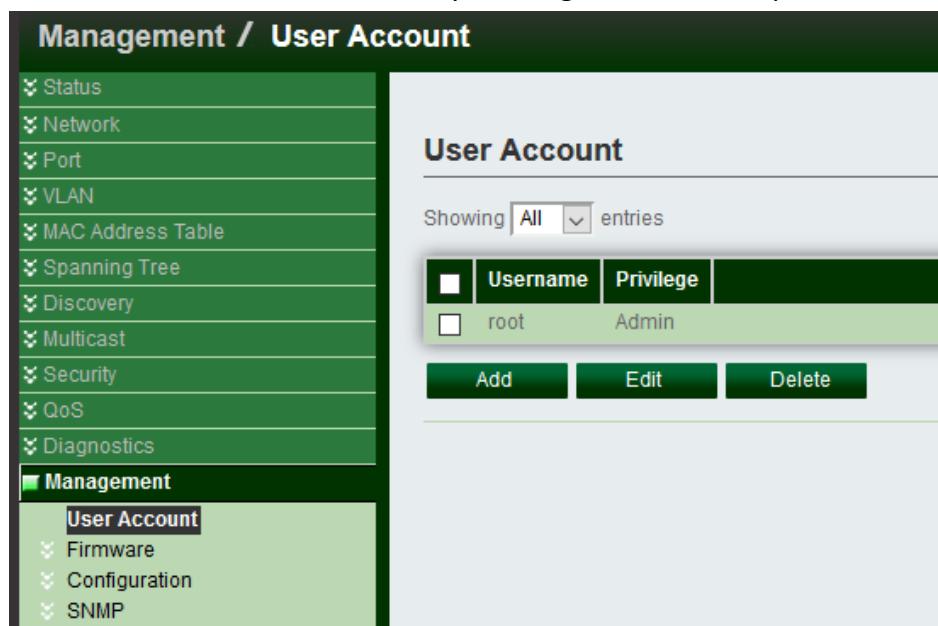
**Copper Test Result**

Cable Status	
Port	GE9
Result	OK
Length	N/A

## 14. Management

### 14.1 User Account

Administrator can added or modify user login account and password.



**Management / User Account**

User Account

Showing All entries

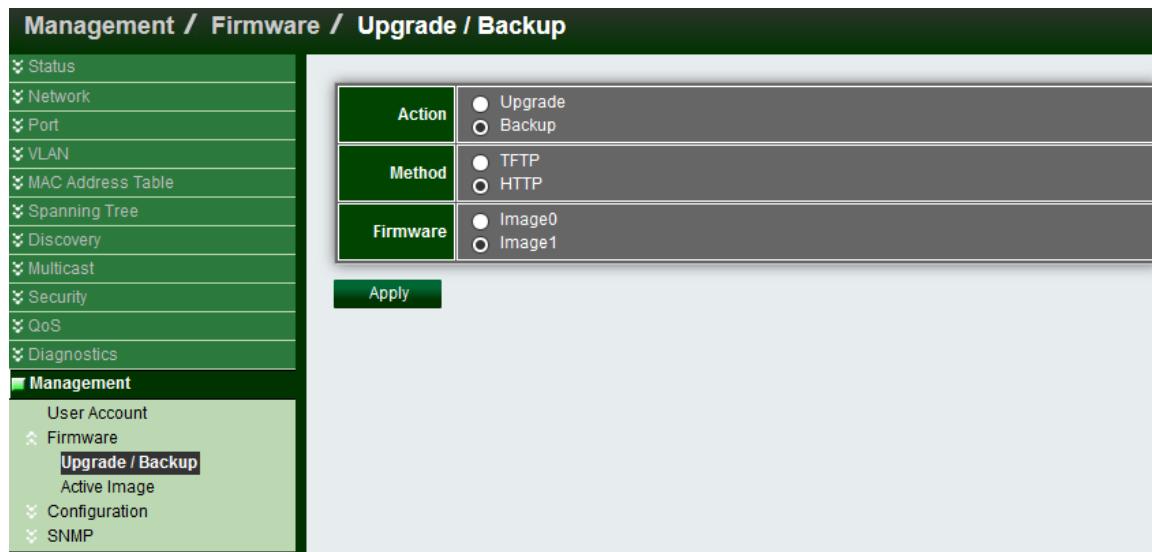
	Username	Privilege
<input type="checkbox"/>	root	Admin

Add Edit Delete

## 14.2 Firmware

### 14.2.1 Upgrade / Backup

Administrator can upgrade or backup firmware, method can choose use TFTP or HTTP protocol. If choose backup then administrator can choose firmware image to backup.

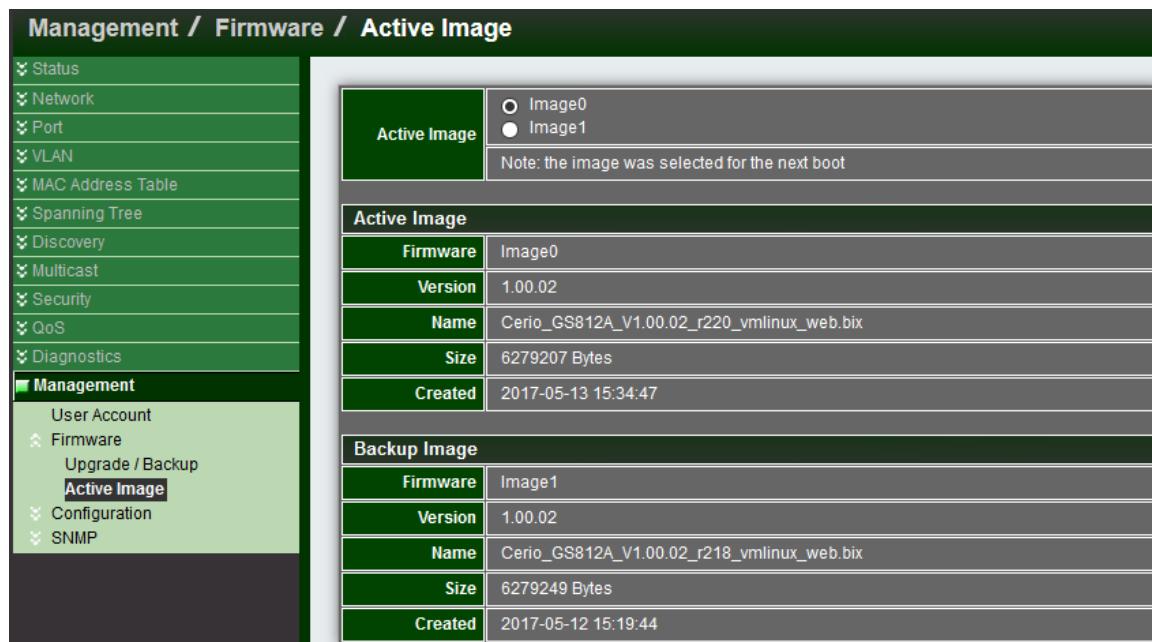


Action	<input checked="" type="radio"/> Upgrade <input type="radio"/> Backup
Method	<input checked="" type="radio"/> TFTP <input type="radio"/> HTTP
Firmware	<input checked="" type="radio"/> Image0 <input type="radio"/> Image1

**Apply**

### 14.2.2 Active Image

If the Switch has upload multiple firmware in system then administrator can choose a firmware to do system default start.



Active Image	<input type="radio"/> Image0 <input checked="" type="radio"/> Image1
Note: the image was selected for the next boot	

<b>Active Image</b>	
Firmware	Image0
Version	1.00.02
Name	Cerio_GS812A_V1.00.02_r220_vmlinux_web.bix
Size	6279207 Bytes
Created	2017-05-13 15:34:47

<b>Backup Image</b>	
Firmware	Image1
Version	1.00.02
Name	Cerio_GS812A_V1.00.02_r218_vmlinux_web.bix
Size	6279249 Bytes
Created	2017-05-12 15:19:44

## 14.3 Configuration

### 14.3.1 Upgrade / Backup

Administrator can backup system configuration file to PC or upload configuration file to Switch system.

**Management / Configuration / Upgrade / Backup**

Action	<input type="radio"/> Upgrade <input checked="" type="radio"/> Backup
Method	<input type="radio"/> TFTP <input type="radio"/> HTTP
Configuration	<input type="radio"/> Running Configuration <input type="radio"/> Startup Configuration <input type="radio"/> Backup Configuration <input type="radio"/> RAM Log <input type="radio"/> Flash Log
Filename	<input type="button" value="瀏覽..."/> 未選擇檔案。

**Apply**

**Management**

- User Account
- Firmware
  - Upgrade / Backup
  - Active Image
- Configuration
  - Upgrade / Backup**
  - Save Configuration
- SNMP

### 14.3.2 Save Configuration

This Functions purpose is to backup current configuration, restore prior configuration or reset back to factory default configurations.

**Management / Configuration / Save Configuration**

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

**Apply** **Restore Factory Default**

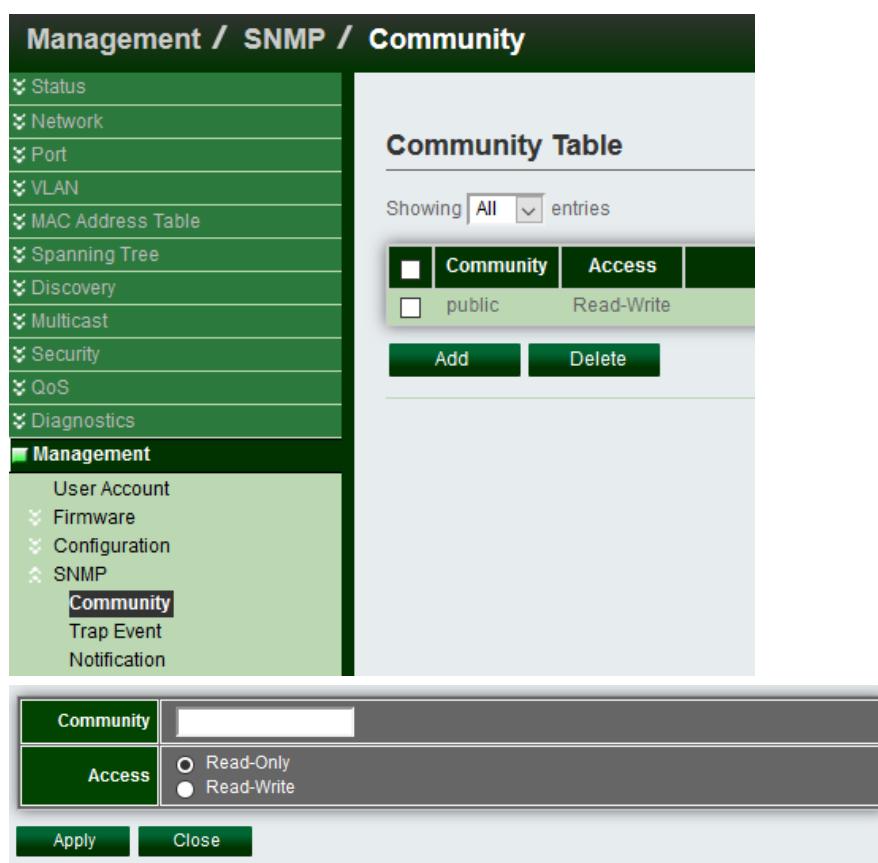
**Management**

- User Account
- Firmware
- Configuration
  - Upgrade / Backup
  - Save Configuration**
- SNMP

## 14.4 SNMP

### 14.4.1 Community

Indicates the community read access string to permit access to SNMP agent. The allowed string length is 0 to 255, and the allowed content is the ASCII characters from 33 to 126. The field is applicable only when SNMP version is SNMPv1 or SNMPv2c. If SNMP version is SNMPv3, the community string will be associated with SNMPv3 communities table. It provides more flexibility to configure security name than a SNMPv1 or SNMPv2c community string. In addition to community string, a particular range of source addresses can be used to restrict source subnet.



Community	Access
public	Read-Write

Administrator can create Read-Only or Read-Write of the community in SNMP.

- **Read-Only:** Administrator can enable a remote device to retrieve "read-only" information from a device.
- **Read-Write:** Can be mainly used in requests for information from a device and to modify settings on that device.

## 14.4.2 Trap Event

Administrator can choose SNMP Trap Event Type to monitor

**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**

**Status**

**Network**

**Port**

**VLAN**

**MAC Address Table**

**Spanning Tree**

**Discovery**

**Multicast**

**Security**

**QoS**

**Diagnostics**

**Management**

User Account

Firmware

Configuration

SNMP

Community

**Trap Event**

Notification

## 14.4.3 Notification

Administrator can configuration SNMPv1 / SNMPv2 and server IP address.

<b>Address Type</b>	<input type="radio"/> Hostname <input checked="" type="radio"/> IPv4 <input type="radio"/> IPv6
<b>Server Address</b>	<input type="text"/>
<b>Version</b>	<input type="radio"/> SNMPv1 <input checked="" type="radio"/> SNMPv2
<b>Type</b>	<input type="radio"/> Trap <input checked="" type="radio"/> Inform
<b>Community</b>	<input type="text"/> public <input type="button" value="▼"/>