CERIO Corporation

CS-2224-24P

PoE CS-2000 Series 2 Combo Gigabit + 24 port 10/100Mbps

Web Managed PoE+ Switch

User's Manual

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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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1. Introduction

The **CERIO CS-2224-24P** Web Managed is a powerful high-performance 24 port POE Fast Ethernet switch and support 2 combo Gigabit UTP/SFP uplink ports. The models compliant to POE IEEE 802.3af, it defines new green power saving idea on PSE Port. That can solve the limitation of the power outlet location and offer the system relocation easily. **CS-2224-24P layer 2 Web Management switch** support Remote on/off control by PoE. And support Port-base VLAN and IEEE802.1q tag-base VLAN based on ports & VIDs, and bandwidth control and security support MAC /TCP/UDP Filter etc.

The **CS-2224-24P** case is designed for small office and can be upgrade to 1U" chassis .It is ideal for micro-segmenting large networks into smaller, connected subnets for improved performance, enabling the bandwidth demanding multimedia and imaging applications. You could easily connect a POE Wireless AP or a VoIP phone or IPCAM to this switch without looking outlets for them. Over current protection and circuit shorting protection are also supported to ensure the safety. That high power device provides easy installation and the limitation of the power outlet location and offers the system relocation easily.

1.1 Feature

- Complying with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-SX/LX IEEE-802.3af PoE,IEEE802.3at POE+
- 24port 10/100Mbps TX Auto-Negotiation Ethernet Switch , Have 24 Port PSE/ PoE function, compliant with IEEE-802.3af class3 /class2/class1 and IEEE802.3at
- Support 2 combo Gigabit UTP/SFP uplink ports and IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-SX/LX
- Supporting PoE+ Green power Management by Link up mode to auto detect the level class of Power device, budgets power output for each port. and Power down mode to auto detect no link/ standby of Power device
- Supporting the power up to 30Watt/15.4Watt/7.5Watt/4Watt for each PSE/PoE port
- Full/Half-Duplex capability on each TX port , Auto-learning networking configurations
- Supports Store & Forward architecture and performs forwarding and filtering
- Supporting the flow control: back pressure for Half-duplex and IEEE 802.3x for Full-duplex mode
- Broadcast storm control and supporting store & forward operation
- Non-blocking & Non-head-of-line blocking full-wire speed forwarding
- Supports TP interface Auto MDIX function for auto TX/RX swap

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- Automatic Source MAC Address Learning and Aging
- Supports up to 4K MAC addresses
- Up to 3.5M bits buffer
- VLAN and IEEE802.1Q tag-base VLAN based on ports & VIDs; add/remove/modify tag
- IEEE802.3ad Link Aggregation Port trunking(up to 3 groups and Max. 4 ports in each group)
- Provide IGMP v1/v2 snooping function
- Support QOS Class Quality of service (COS), port- based, 802.1q priority tag based, IP TOS based, TCP/UDP port bases, 4 queues for per port WRR/FIFS algorithm
- Support bandwidth control and Broadcast Storm Control
- Supports port mirroring and Spanning Tree functions.
- Per port MAC address base filtering and TCP/UDP filtering
- Supports file backup and recovery
- SNMP v1 , SNMP v2C support and Web-based management interface

1.2 Package Contents

Before you start to install this switch, please verify your package that contains the following items:

CS-2224-24P Main Unit	**x1**
CD Manual	**x1**
Power Code	**x1**
19” Mount Brackets	**x1**
Warranty Card	**x1**

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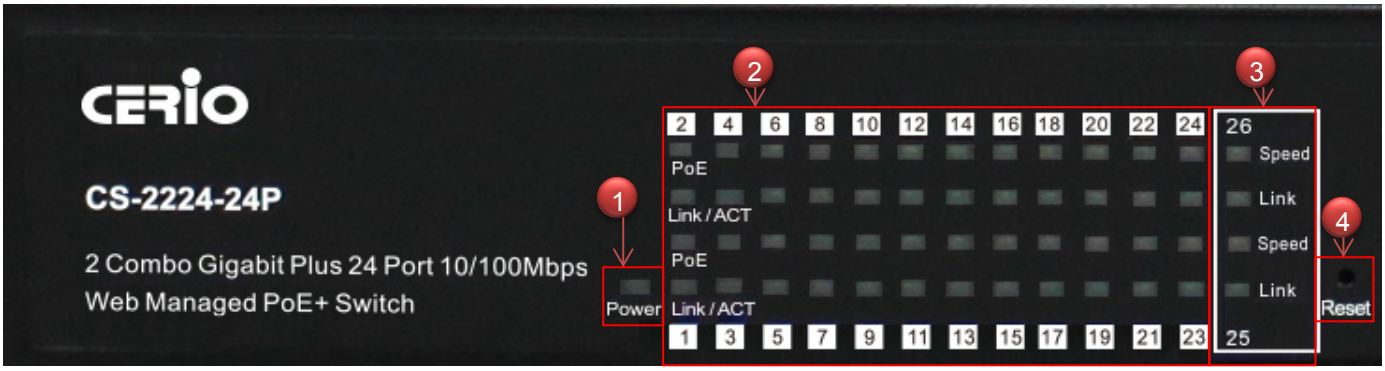
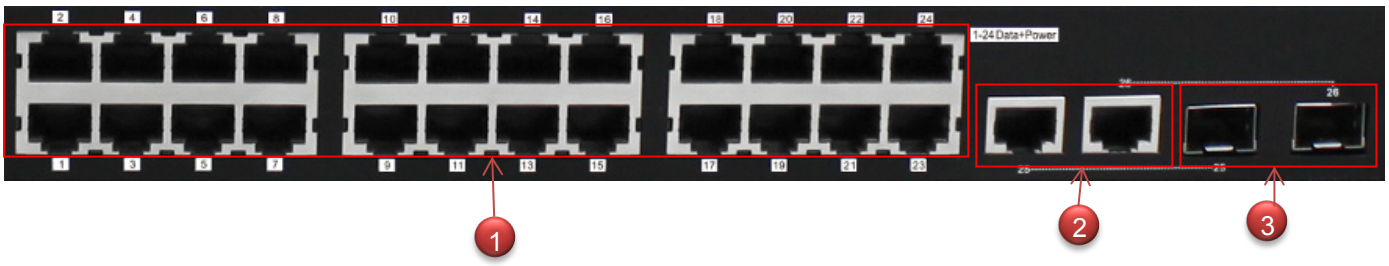
1.3 Front Panel

LED Indicators of 24 Port 10/100Mps + 2 giga Switch



1) Power LED the color is Yellow
2) 24 Port PoE and Ethernet Link/ACT LED, Port is linked to Power Device the PoE Lights up LED, Port is data linked the Link/ACT Lights up LED, The Link / ACT Flashing represent 10/100Mbps for data activating
3) 2 Port Giga linked LED, Port is linked to Giga Device the Speed Lights up LED. Port is data linked the Link/ACT Lights up LED, The Link / ACT Flashing represent 10/100/1000Mbps for data activating
4) Hardware Reset to default button, hold down for about 10 seconds, until LED flashes rapidly, Release will return to the default

24 port + 2 Giga port



1) 24 10/100Mbps PoE Ethernet Port
2) 2 Giga Ethernet Port
3) 2 Fiber Port

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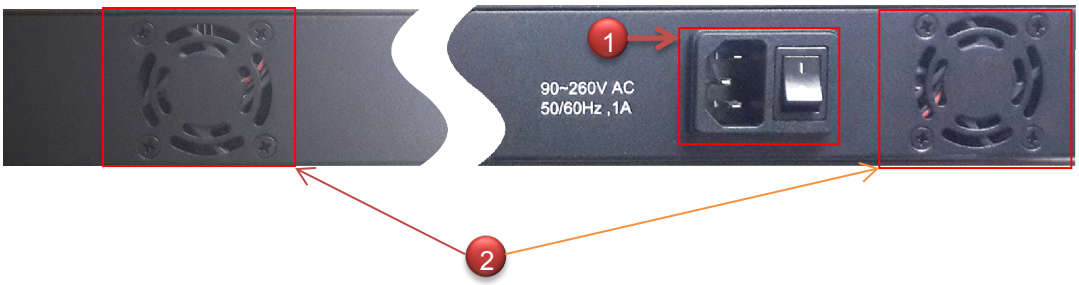
1.4 Rear Panel Layout

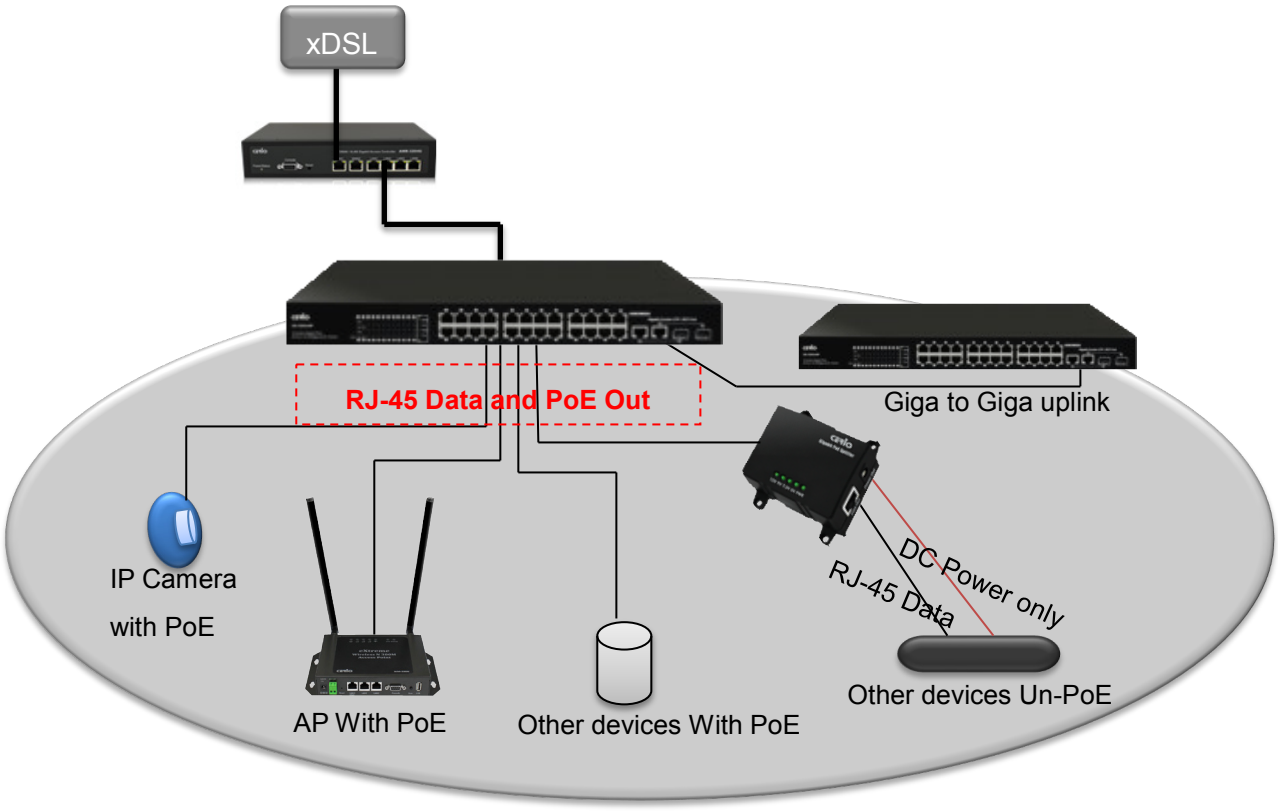


1) AC input (100-240V/AC, 50-60Hz) UL Safety)
2) Two radiator fan

1.5 Connections

Switch/Hub to this 8 Port with 8 Port Fast Ethernet PoE Switch

This switch provides automatic crossover detection functionality for any port. It is simple and friendly to up-link to another switch without crossover cable.



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PC/Other devices to this 24 Port Fast Ethernet PoE Switch
Via a twisted pair cable straight through, this switch can be connected to PCs, servers and other network devices.

Power Device to this 24 Port with 24 Port Fast Ethernet PoE Switch and getting 48V power source through Cat. 5/6 cables
Using Cat. 5/6 twisted-pair cable to connect Power Device to the port 1~24 of this switch, and then this switch will supply 48V power to Power Device over Cat. 5/6 twisted-pair cable. Please be noted Power Device should also comply with IEEE 802.3af/ IEEE802.3at. and the PoE Power Max. 30Watt each PSE/PoE port

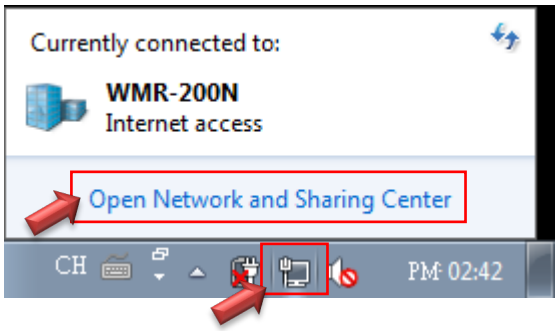
2. Software Configuration

CS-2224-24P supports web-based configuration. Upon the completion of hardware installation, **CS-2224-24P** 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-2224-24P** for accessing the system. Do not duplicate the IP Address used here with IP Address of **CS-2224-24P** 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"**



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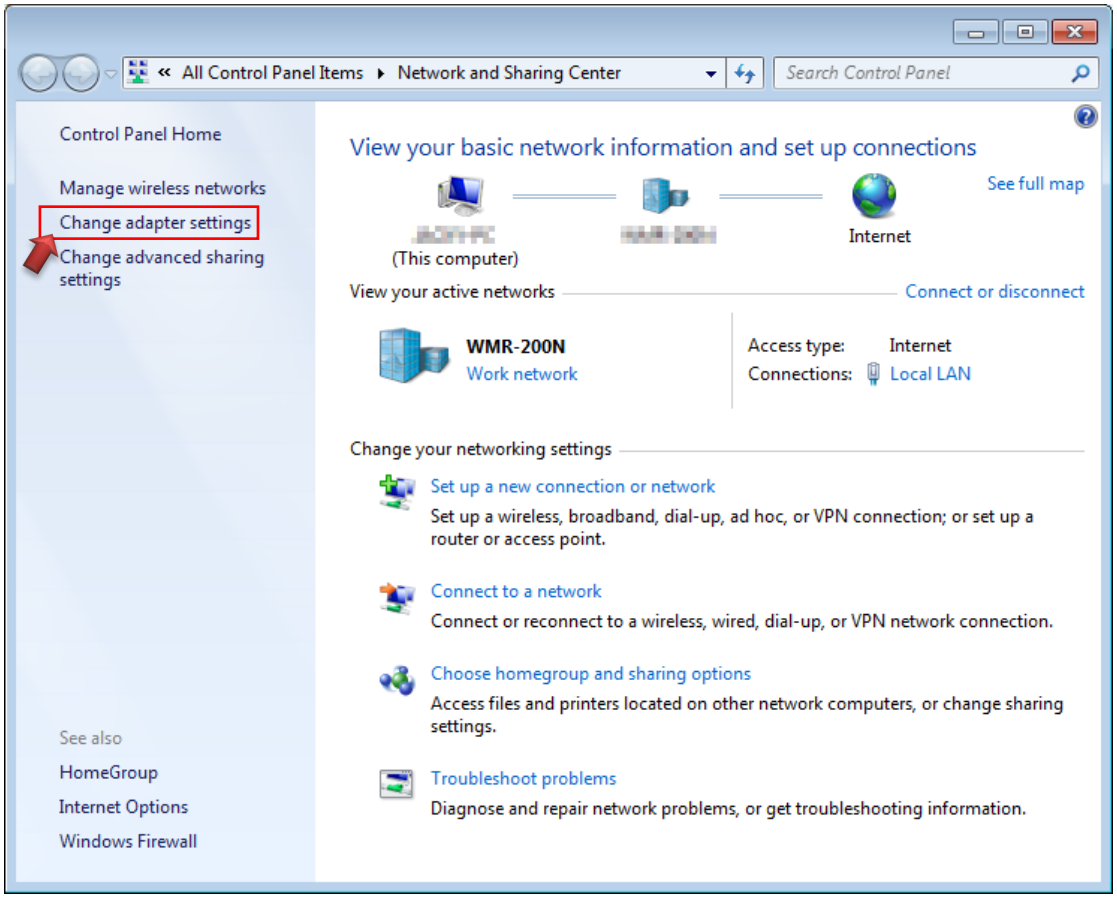
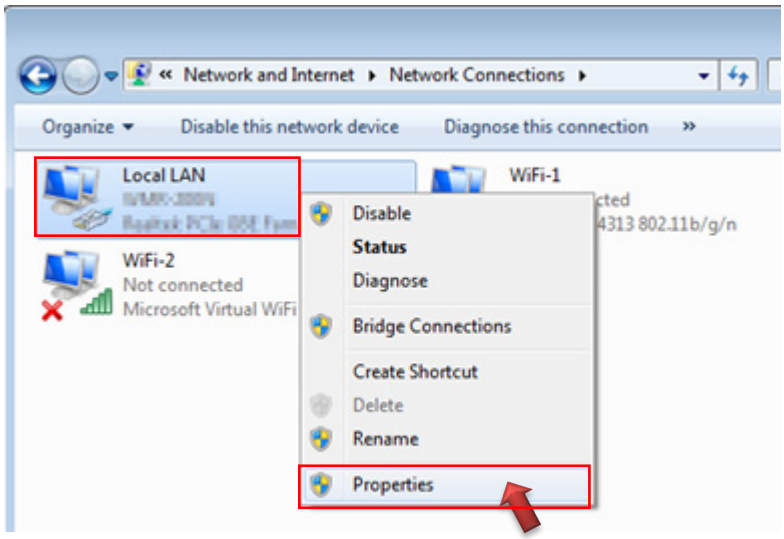
Step 2 :

In the Network and Sharing Center page, Please click on the left side of **"Change adapter setting"** button



Step 3 :

In **"Change adapter setting"** Page. Please find Local LAN and Click the right button on the mouse and Click **"Properties"**



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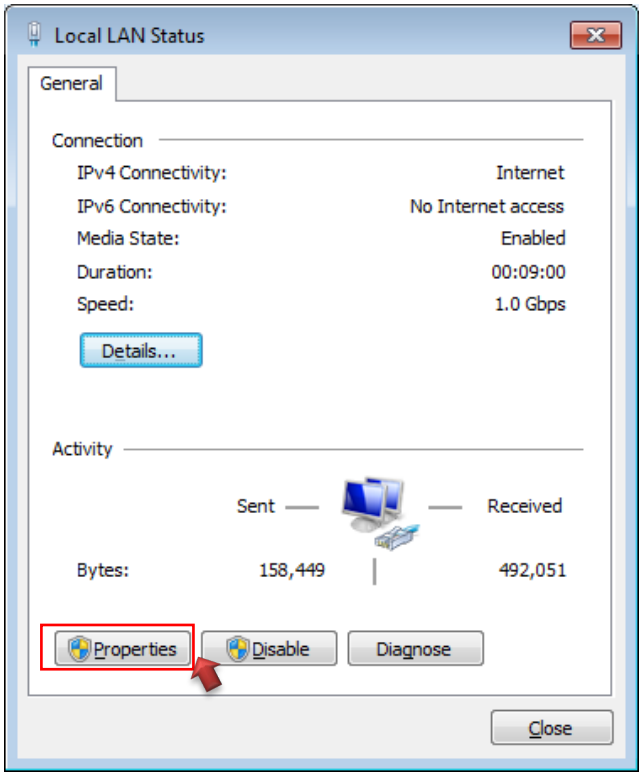
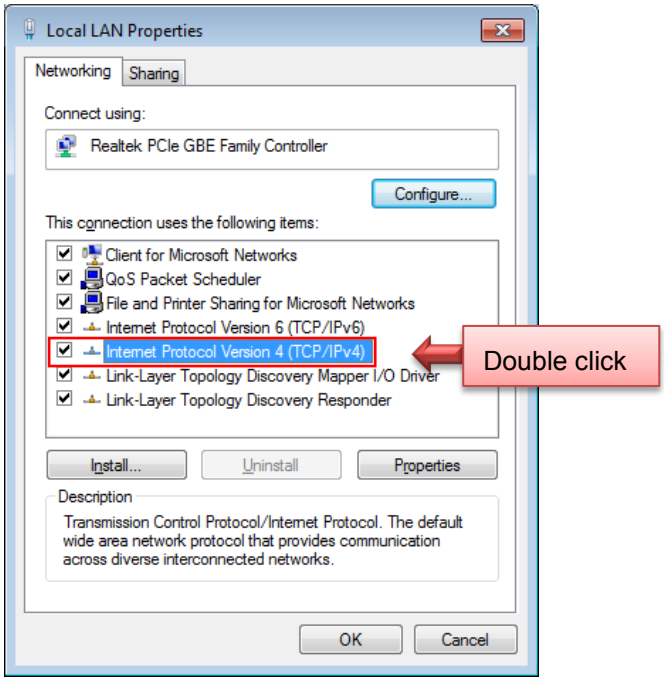
Step 4 :

In **“Properties”** page, please Click **“Properties”** button to TCP/IP setting



Step 5 :

In Properties page to setting IP address, please find **“Internet Protocol Version 4 (TCP/IPv4)”** and double click or click **“Install”** button.



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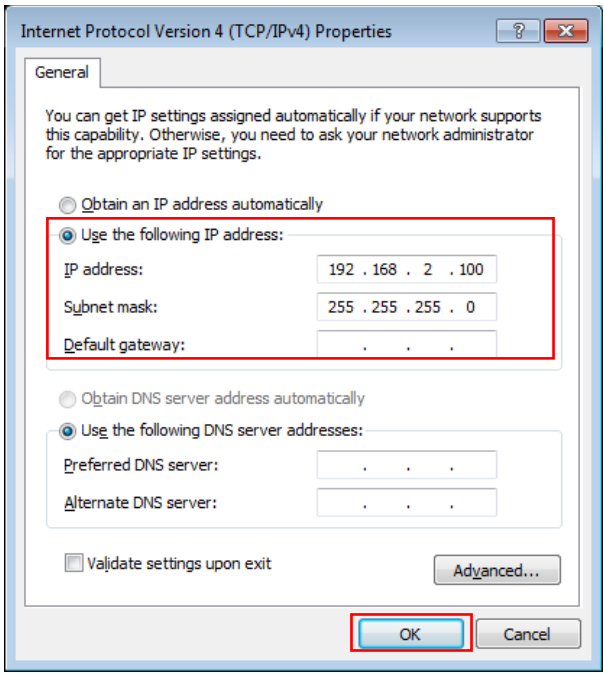
Step 6 :

Select **"Use the following IP address"**, and fix in IP Address : 192.168.2.X

ex. The X is any number by 1 to 253

Subnet mask : 255.255.255.0

And Click **"OK"** to complete the fixed computer IP setting



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.

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2.1 System login username and password information

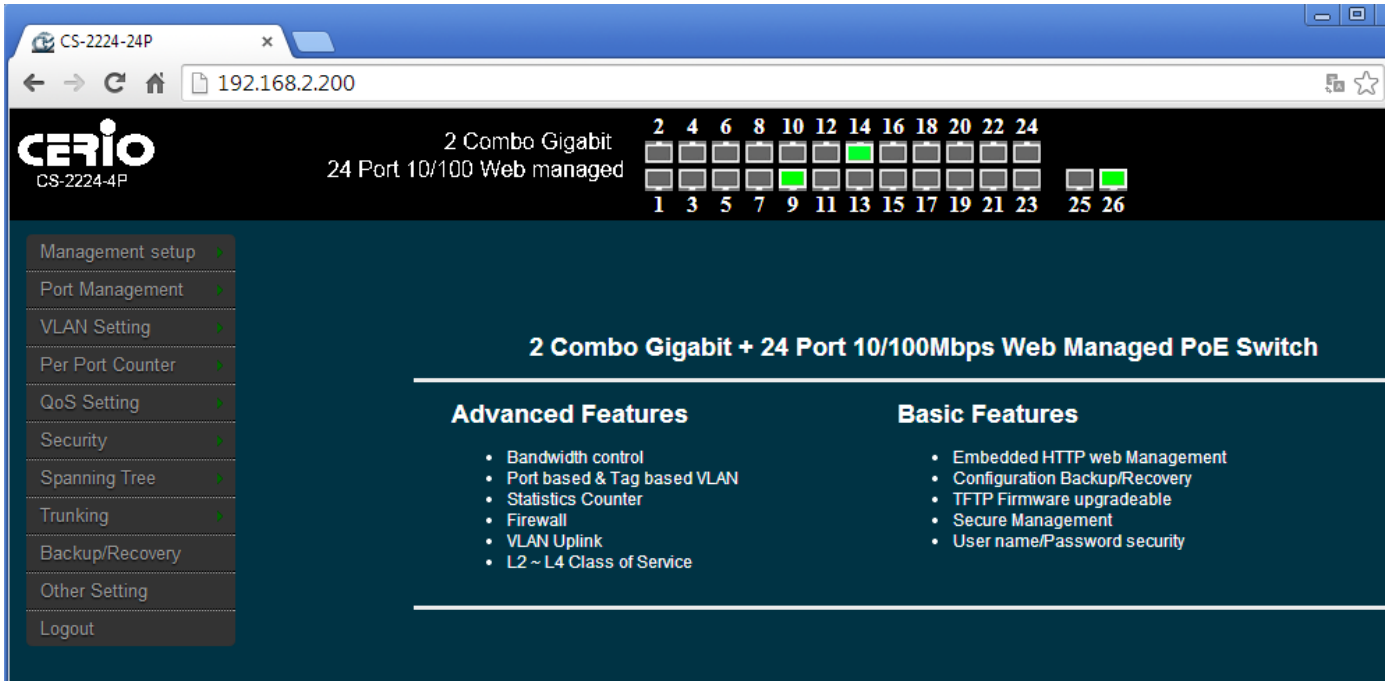
The **CS-2224-24P** web switch default IP is 192.168.2.200

Into 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 shows up. Select one of the configurations by clicking the icon.



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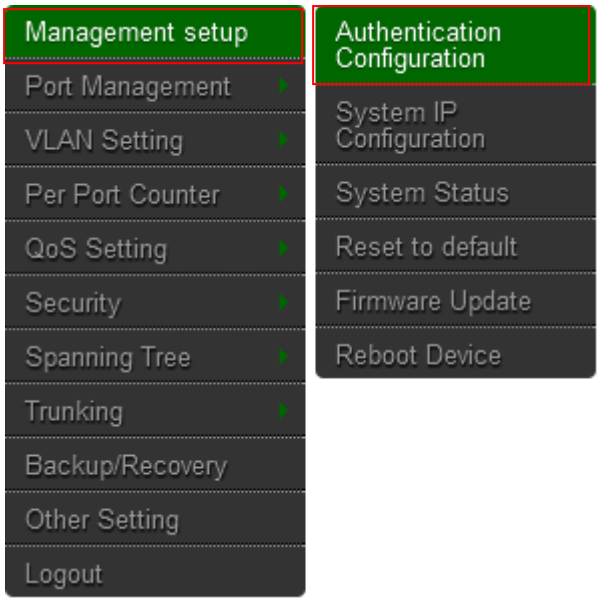
3. Management

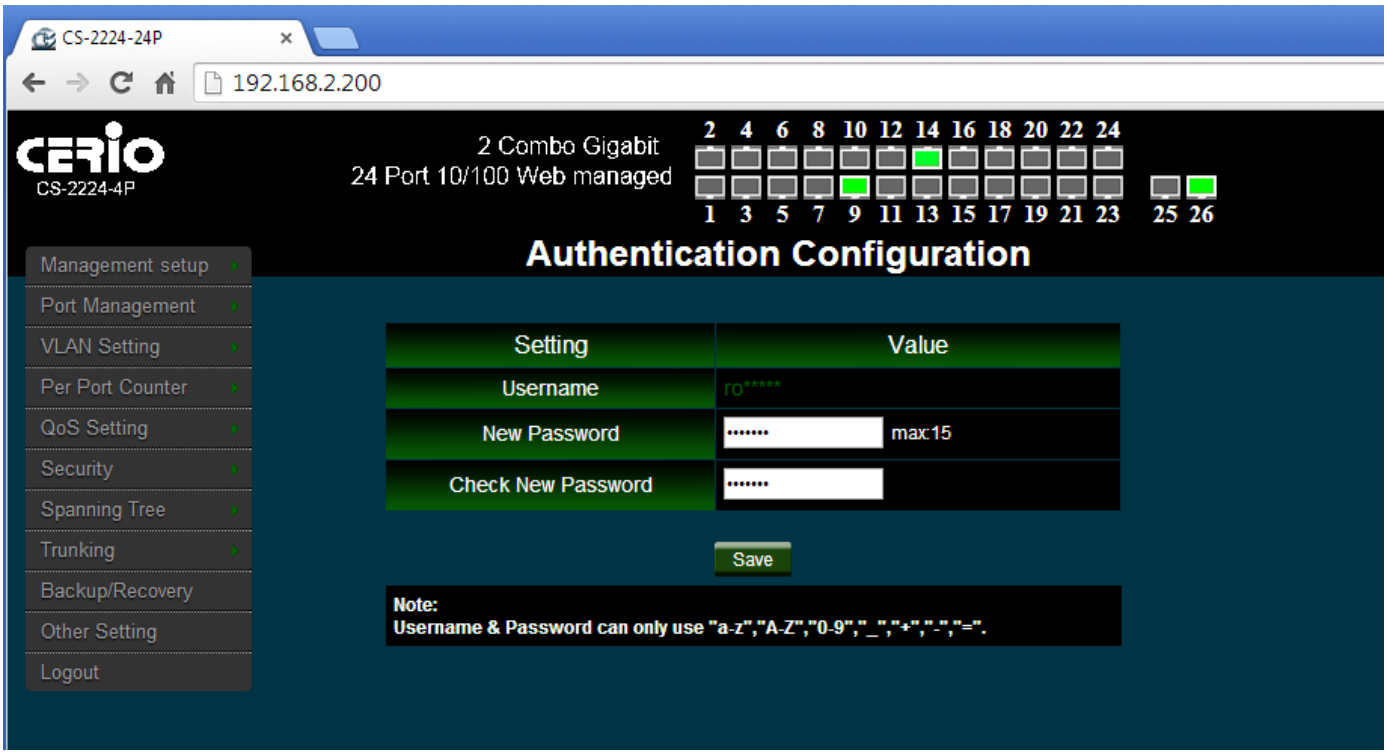
3.1 Authentication Configuration

This page allows the user to change the user name and the password.

Please click **Management setup → Authentication Configuration**



Login as administrator user is root and the password is allowed to change its own password.



- **Username :** Management account is “root”
- **New Password :** Enter a new password if desired (max. 15)

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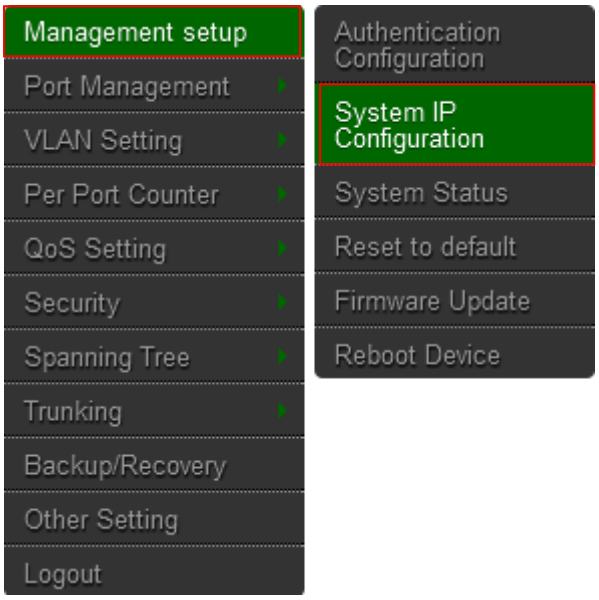
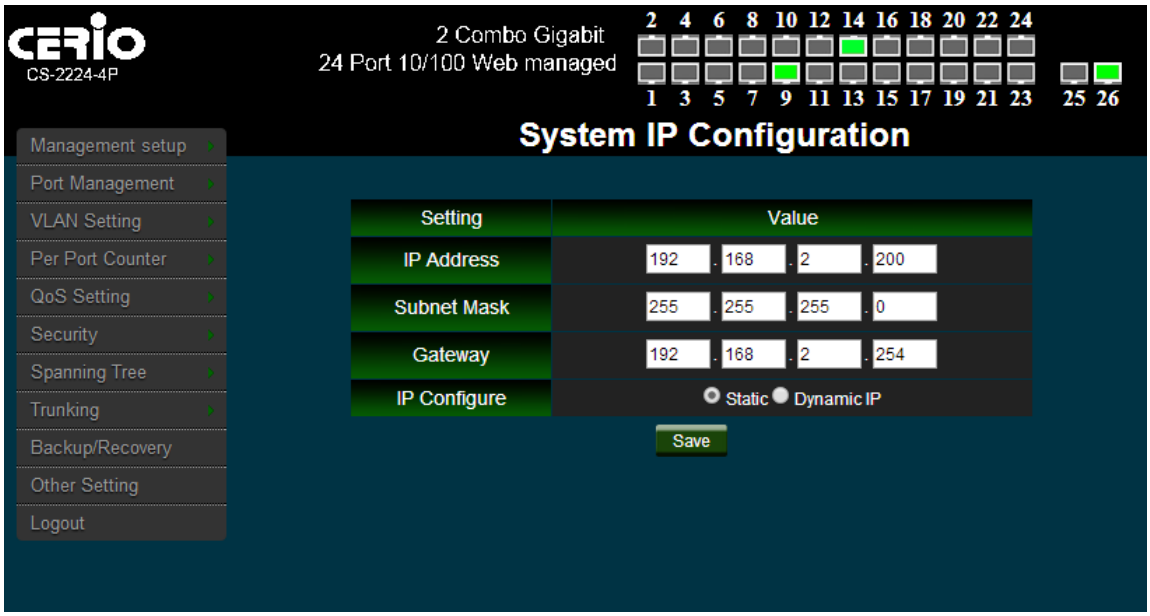
➢ **Check New Password :** Enter the same new password again to check.

Click "***Save"*** button to save your changes. Click ***Reboot*** button to activate your changes

3.2 System IP Configuration

Here are the instructions for how to setup the local IP Address and Netmask.
Please click **Management setup → System IP Configuration**





➢ **System IP Configuration :** The administrator can manually setup the system IP address.

- **IP Address :** The IP address of the system; default IP address is 192.168.2.254

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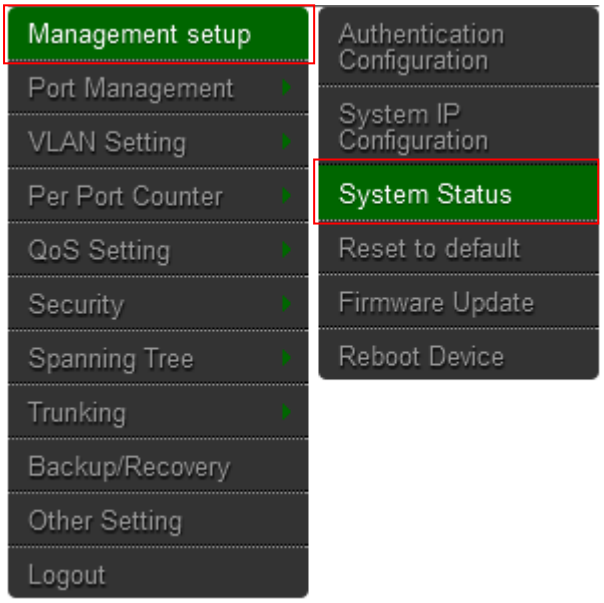
- **IP Netmask :** The Subnet mask of the system; default Netmask is 255.255.255.0
- **Gateway :** Configure the network gateway address
- **IP Configure :** The administrator can manually setup the system IP address when static IP is available/ preferred.
- **Dynamic IP:** This configuration type is applicable when the **CS-2224-24P** is connected to a network with the presence of a DHCP server; all related IP information will be provided by the DHCP server automatically.

Click "***Save"*** button to save your changes. Click ***Reboot*** button to activate your changes

3.3 System Status

MAC address and system version will be shown on the screen. And setting login time out
Please click **Management setup → System Status**



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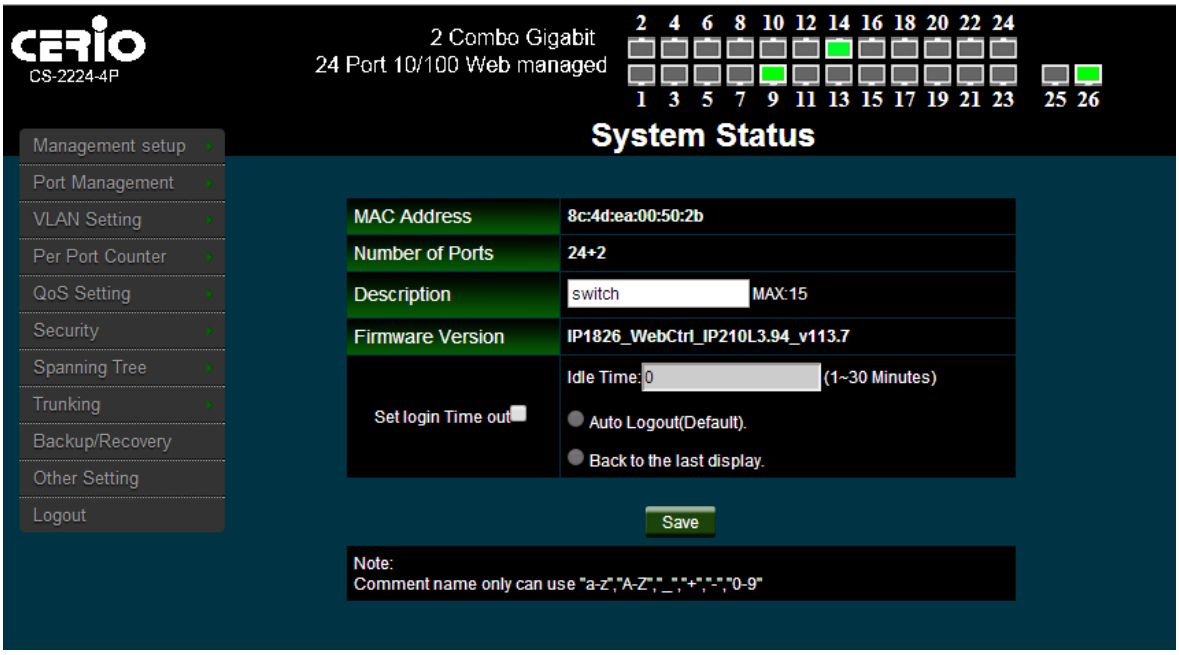

- **MAC Address:** MAC address of the display system
- **Number of Ports:** Display **CS-2224-24P** the Ethernet posts information
- **Description:** Provide description of the system.
- **Firmware version:** Show currently the **CS-2224-24P** of system software version and software date
- **Set login Time out:** set Idle Time(1~30 Minutes)

Click "***Save"*** button to save your changes. Click ***Reboot*** button to activate your changes

3.4 Reset to default

Please click **Management setup → Reset to default**

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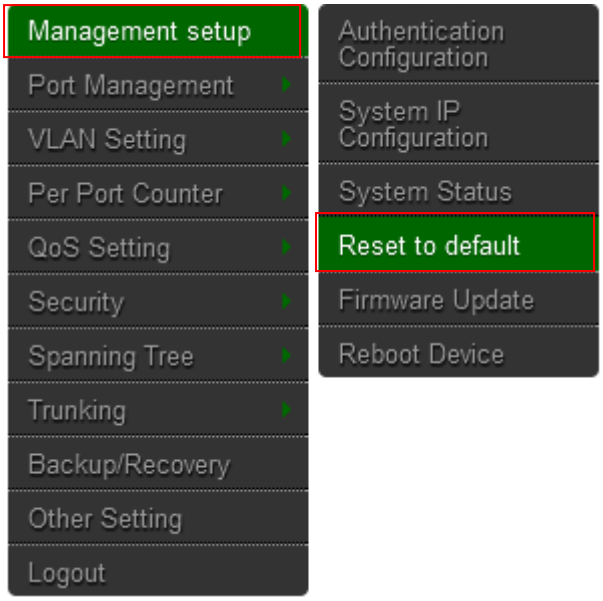

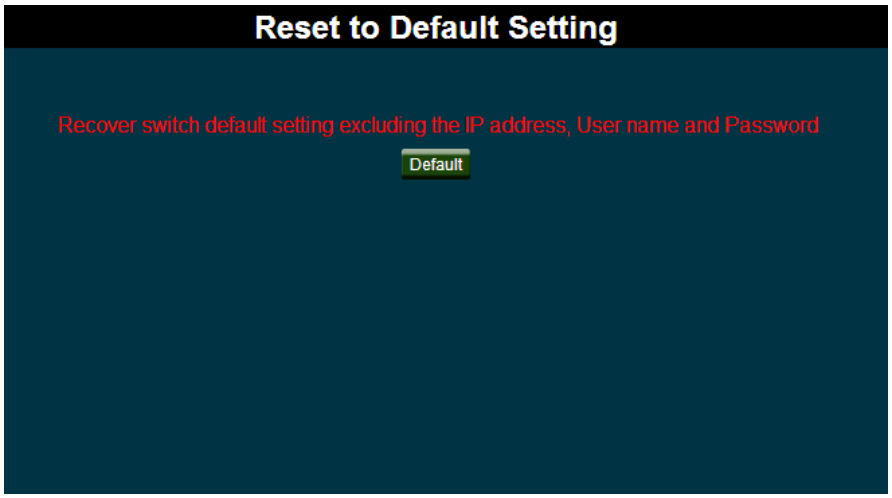

Click ***Default*** button to reset back to the factory default settings and expect **Successful** loading message**.** Then, click ***Reboot*** button to activate.

Notice

Recover switch default setting excluding the IP address, User name and Password.

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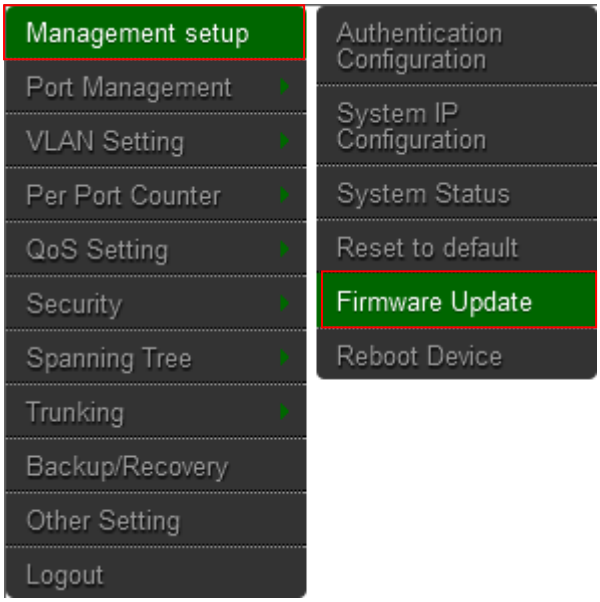
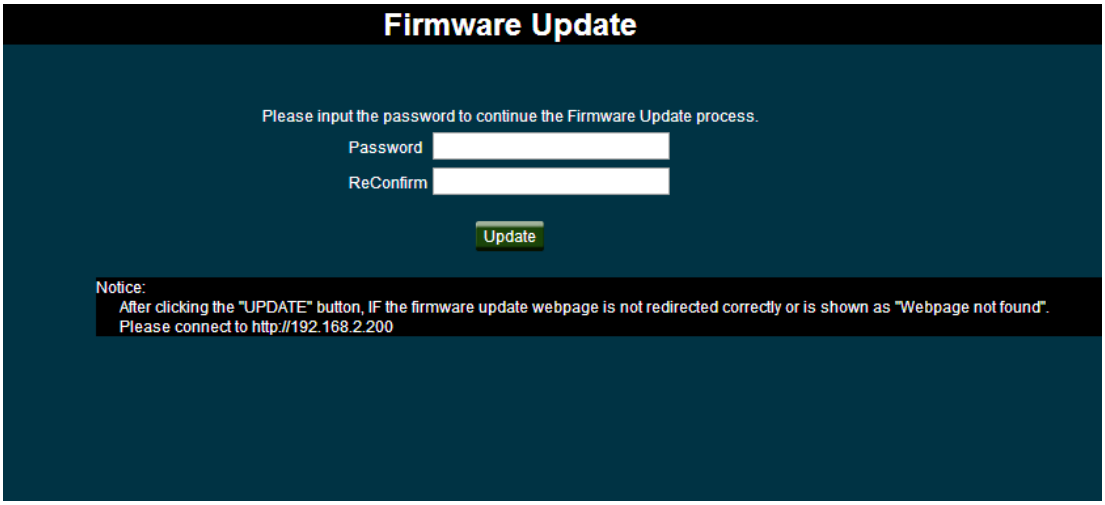
3.5 Firmware Update

Firmware is the main software image that system needs to respond to requests and to manage real time operations. Firmware upgrades are sometimes required to include new features or bugs fix. It takes around 2 minutes to upgrade due to complexity of firmware. To upgrade system firmware, click Browse button to locate the new firmware, and then click Upgrade button to upgrade.

Please click **Management setup → Firmware Update**





Password : Enter administrator password

Notice

Do not interrupt during firmware upgrade including power on/off as this may damage system.

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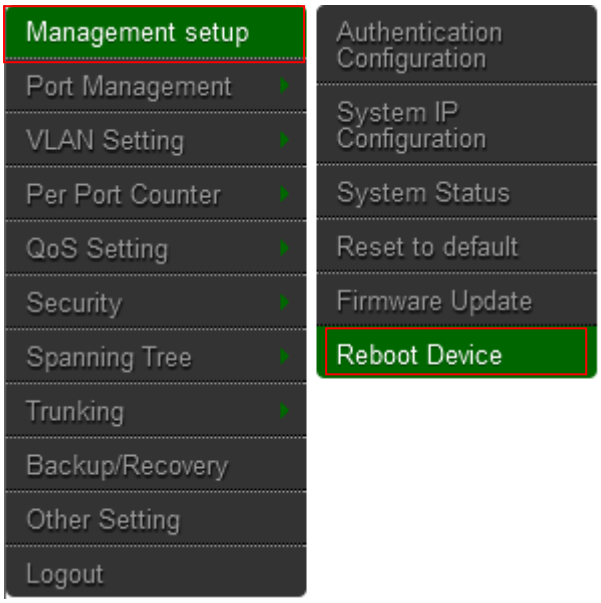
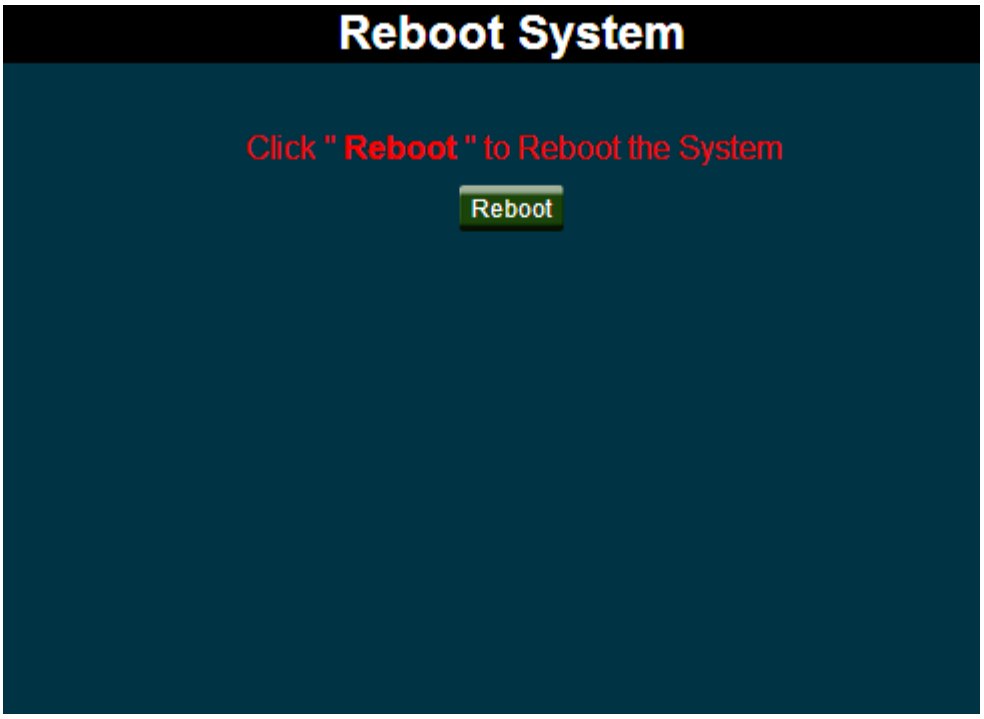
3.6 Reboot Device

This function allows user to restart system with existing or most current settings when changes are made. Click **Reboot** button to proceed and take around one minute to complete.

Please click **Management setup** → **Reboot Device**





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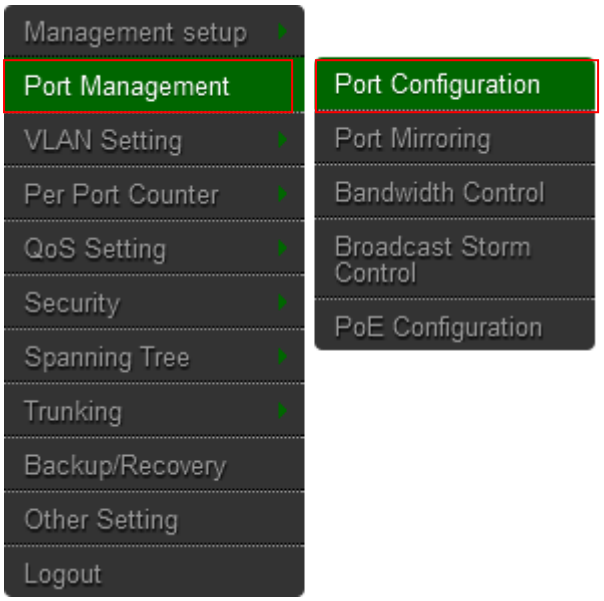
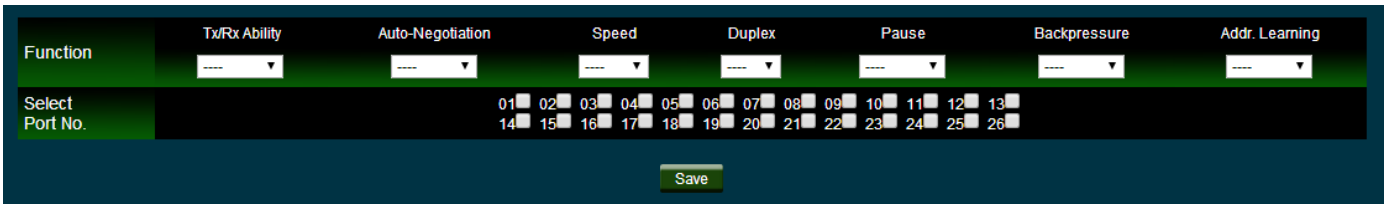
4. Port Management

4.1 Port Configuration

Please click **Port Management → Port Configuration**





Function:

- **Tx Cap Ability:** enable/disable for the selected port.
- **Auto-Negotiation:** enable/disable Auto-Negotiation.
- **Speed:** 10M, 100M or 1000M mode for the selected port.
- **Duplex:** Full or Half-Duplex mode for the selected port.
- **Pause:** enable/disable for the selected port.
- **Backpressure:** enable/disable for the selected port.
- **Addr. Learning:** enable/disable for the selected port.

After press the **" Save "**, the setting of **"Port Configuration"** is finished.

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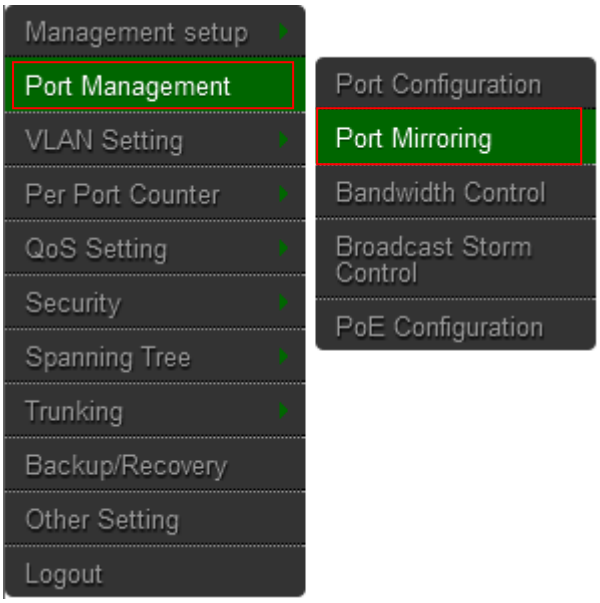
4.2 Port Mirroring

Port Mirroring is used to mirror traffic, RX, TX or TX&RX, from Source port to Destination port for analysis.

Please click **Port Management → Port Mirroring**



- **Destination port:** you can choose port 1 to port 26.
- **Source port:** by clicking the checking box of the port.

Click **"Save"** to save the setting.

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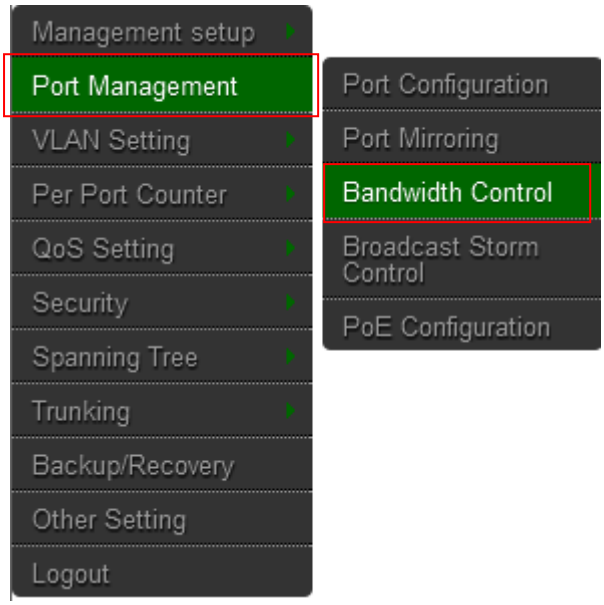
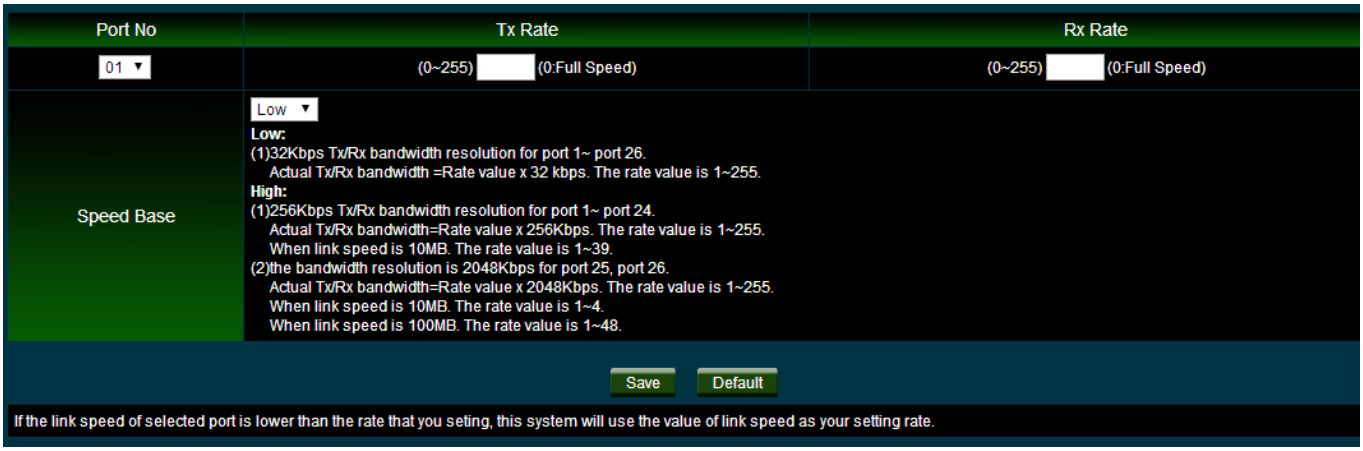
4.3 Bandwidth Control

If the link speed of selected port is lower than the rate that you setting, this system will use the value of link speed as your setting rate.

Please click **Port Management → Bandwidth Control**





- **Port No.:** you can choose port 1 to port 26.
- **TX Rate:** set the transmission rate of the selected port. (0:Full speed; 1~255:Specified bandwidth.)
- **RX Rate:** set the receiving rate of the selected port. (0: Full speed; 1~255: Specified bandwidth.)
- **Speed Base :**
  - **Low:** 32Kbps Tx/Rx bandwidth resolution for port 1~ port 26.
    (Actual Tx/Rx bandwidth=Rate value x 32 Kbps, The rate value is 1~255.)
  - **High:**
    1) 256Kbps Tx/Rx bandwidth resolution for port 1~ port 24.

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(Actual Tx/Rx bandwidth=Rate value x 256 Kbps, The rate value is 1~255.)

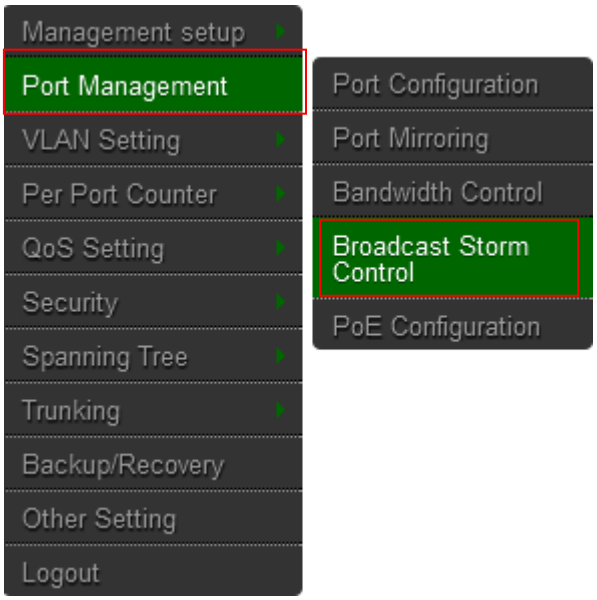
2) The bandwidth resolution is 2048Kbps for port 25, port 26.
(Actual Tx/Rx bandwidth=Rate value x 2048 Kbps, The rate value is 1~255.)

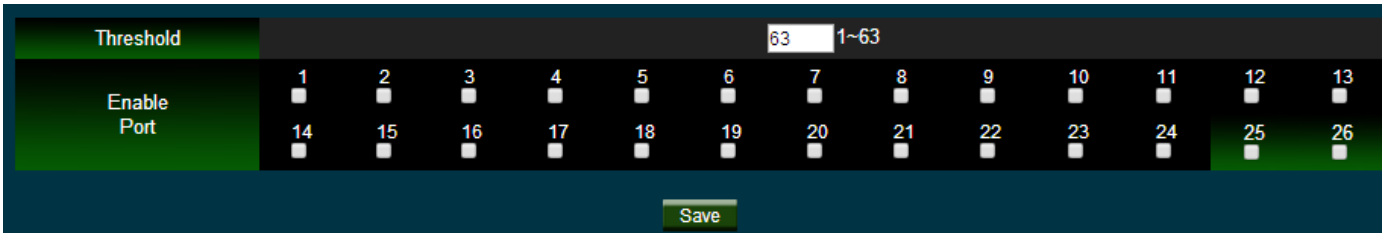
Click **"Save"** to save the setting.

4.4 Broadcast Storm Control

This value indicates the number of broadcast packet which is allowed to enter each port in one time unit. One time unit is 50us for Gigabit speed, 500 us for 100Mbps speed and 5000us for 10Mbps speed.

Please click **Port Management → Broadcast Storm Control**





- **Threshold:** Set the threshold from 1~63.
- **Enable Port:** Per port to define the status of broadcast packets.

Notice

This effect may be not significant for long broadcast packet, since the broadcast packet count passing through the switch in a time unit is probably less than the specified number.

Click **"Save"** to confirm the setting.

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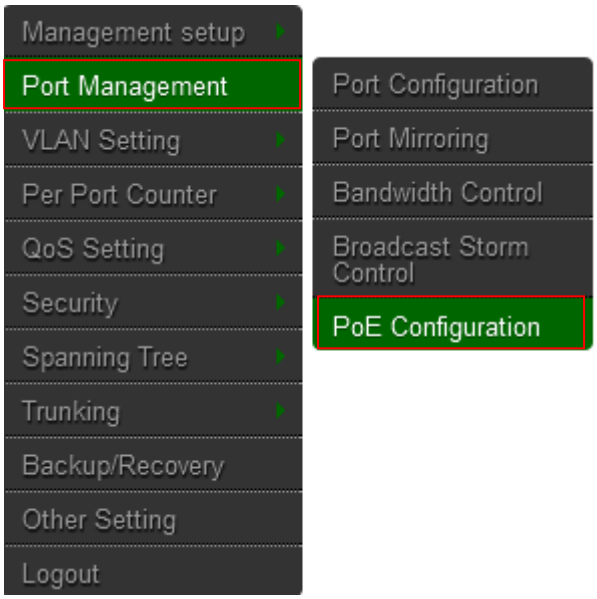
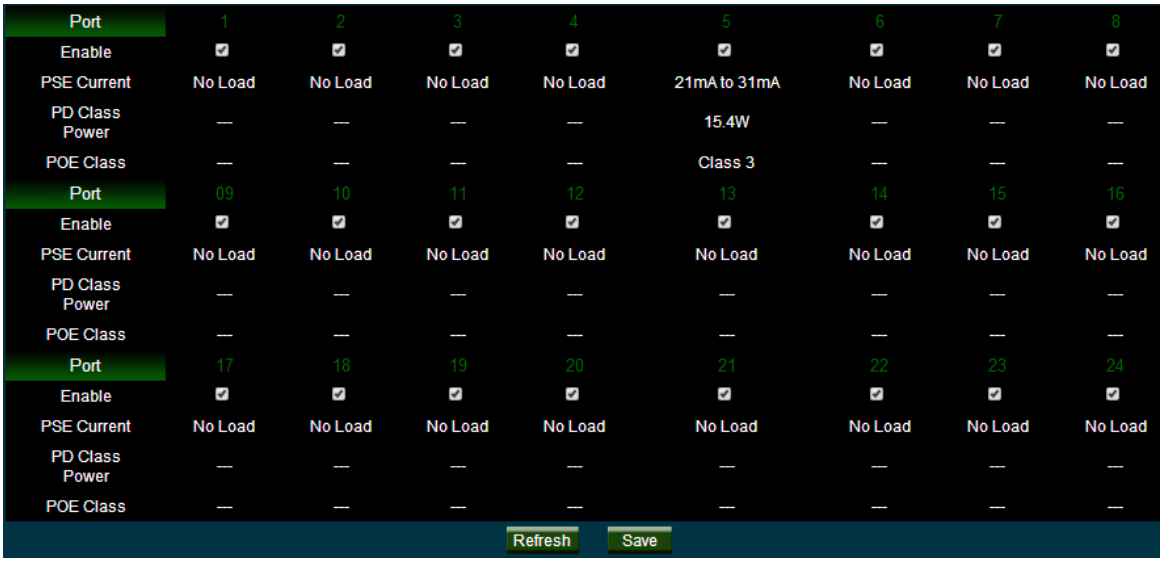
4.5 PoE

Remote access and monitor the attached PD (Powered Device) status by using Enable/Disable function.

Please click **Port Management → PoE Configuration**





- **Enable:** POE of the port is able to supply power to the attached PD (Powered Device)
- **PSE Current & Minimum Output Power:** The status of the port current and minimum output power.
- **POE class**: each POE port will detect the class of the attached PD (Powered Device)

Click **"Save"** to confirm and finish the setting.

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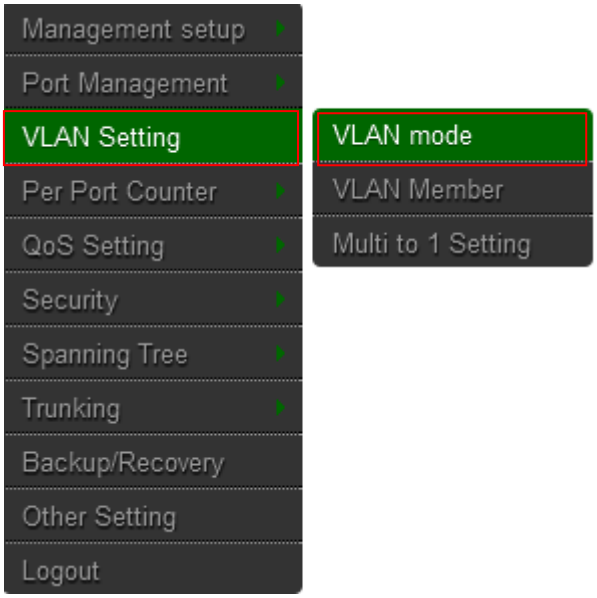
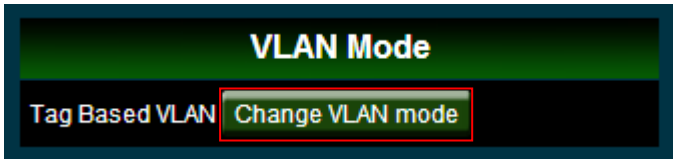
5. VLAN Setting

5.1 VLAN Mode

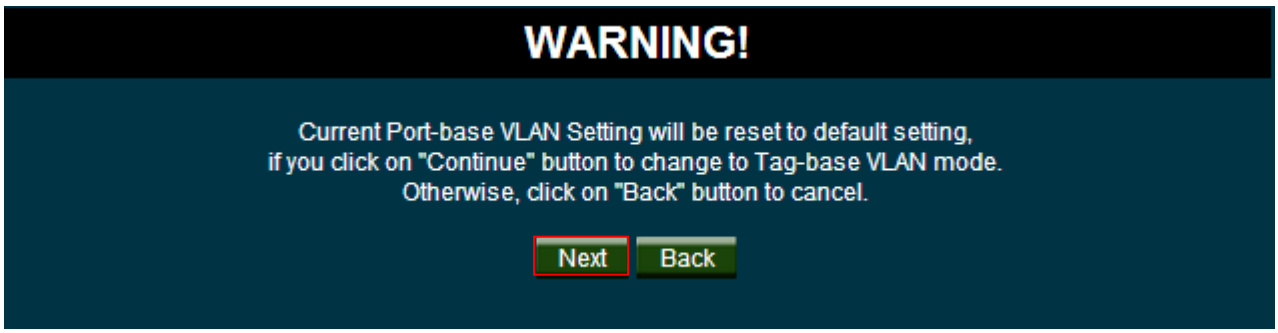
There are two VLAN modes: Port Based VLAN and Tag Based VLAN.

Please click **VLAN Setting → VLAN mode**





Click **"Change VLAN mode"** button to select the mode.



Click **"Next"** Enter the settings page.

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It supports three types of insertion/removal of tags in packet on assigned VLAN Group.

- **Tag:** Insert port's tag for egress packets.
- **No Change:** Don't change for egress packets.
- **UnTag:** Remove port's tag for egress packets.

Notice

1. Link partner is a network interface card; it probably cannot recognize the VLAN tag. In this case, it is strongly recommended the network administrator to remove the VLAN tag of the corresponding port.
2. If the Port Based VLAN function is enabled, Tag Based VLAN and Multi to 1 setting function will be disabled automatically.

Click **"Save"** to confirm and finish the setting.

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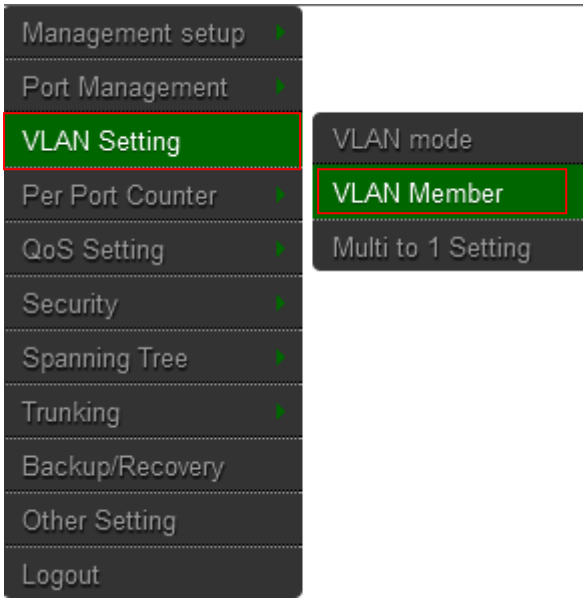
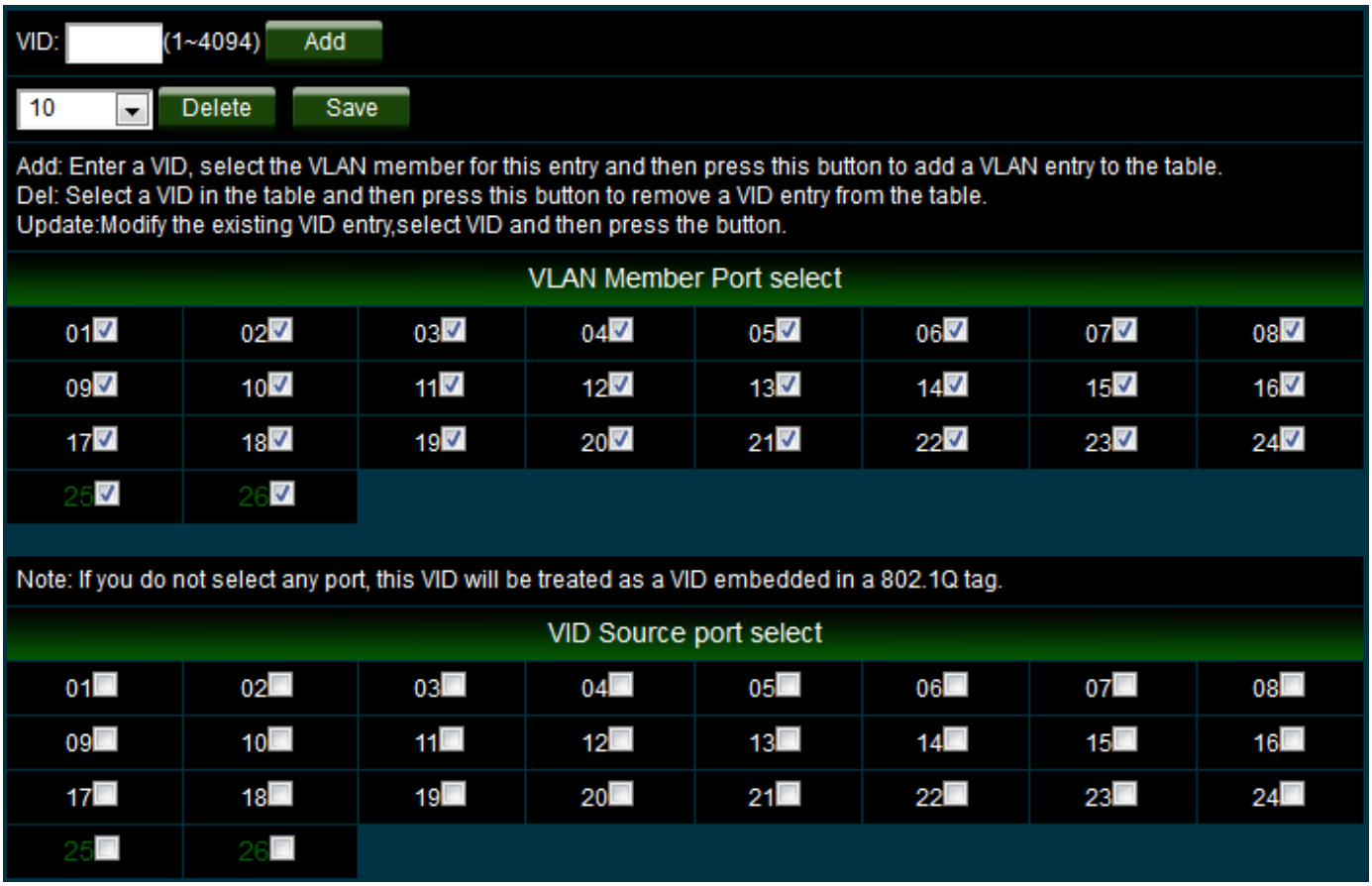
5.2 VLAN Member Setting (Tag Based)

You can select a port group.

Please click **VLAN Setting → VLAN Member**





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- **VID:** Enter a VID, select the VLAN member for this entry and then press this button to add a VLAN entry to the table.
- **Delete:** Select a VID in the table and then press this button to remove a VID entry from the table.
- **Save:** Modify the existing VID entry, select VID and then press the button.

Notice

If you do not select any port, this VID will be treated as a VID embedded in a 802.1Q tag.

Port VID Map.

Port	01	02	03	04	05	06	07	08
VID	---	---	---	---	---	---	---	---
Port	09	10	11	12	13	14	15	16
VID	---	---	---	---	---	---	---	---
Port	17	18	19	20	21	22	23	24
VID	---	---	---	---	---	---	---	---
Port	25	26						
VID	---	---						

VLAN MEMBER

VID \ Port	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
10	-	v	v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	v	v

VLAN MEMBER

- The Port VID map and tag VLAN Member information.

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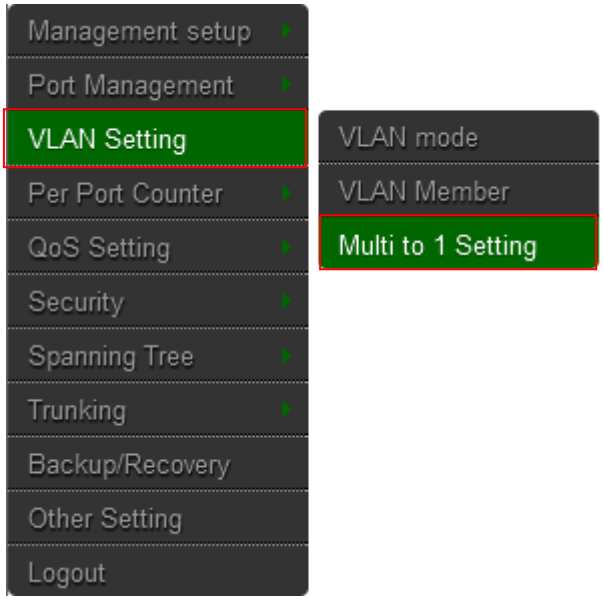
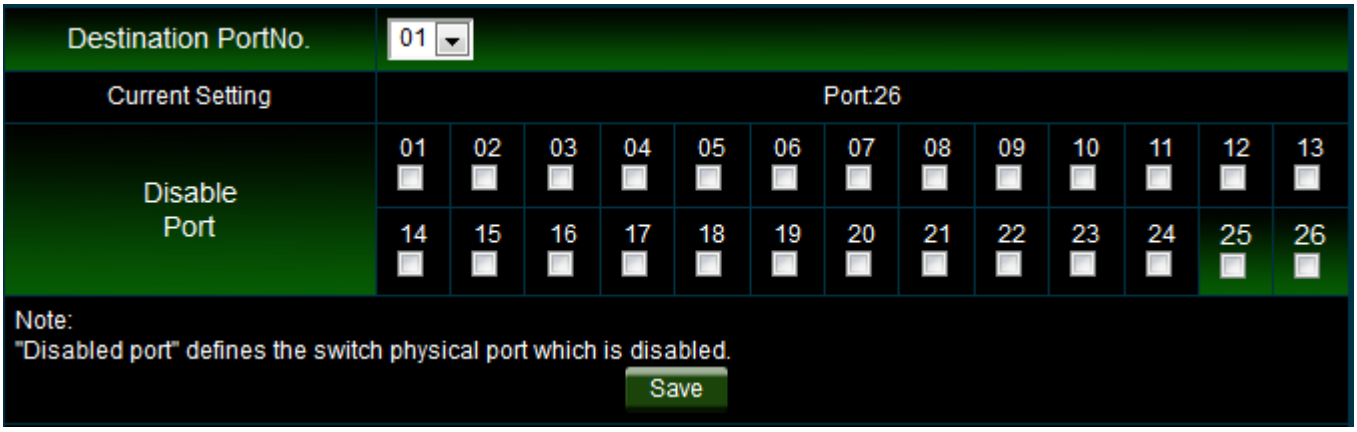
5.3 Multi to 1 Setting

This is a special design for easily setting the switch VLAN into “VLAN per Port“.

Please click **VLAN Setting → Multi to 1 setting**





- **Destination Port No.:** Choose a port of “Destination Port No”.
- **Current Setting:** Display currently set of Destination port No. information
- **“Disable Port”:** choose the port which you don’t want to use

Notice

1. Disable port can’t be the same as the destination port
2. After this setting, all ports can only connect to destination ports.

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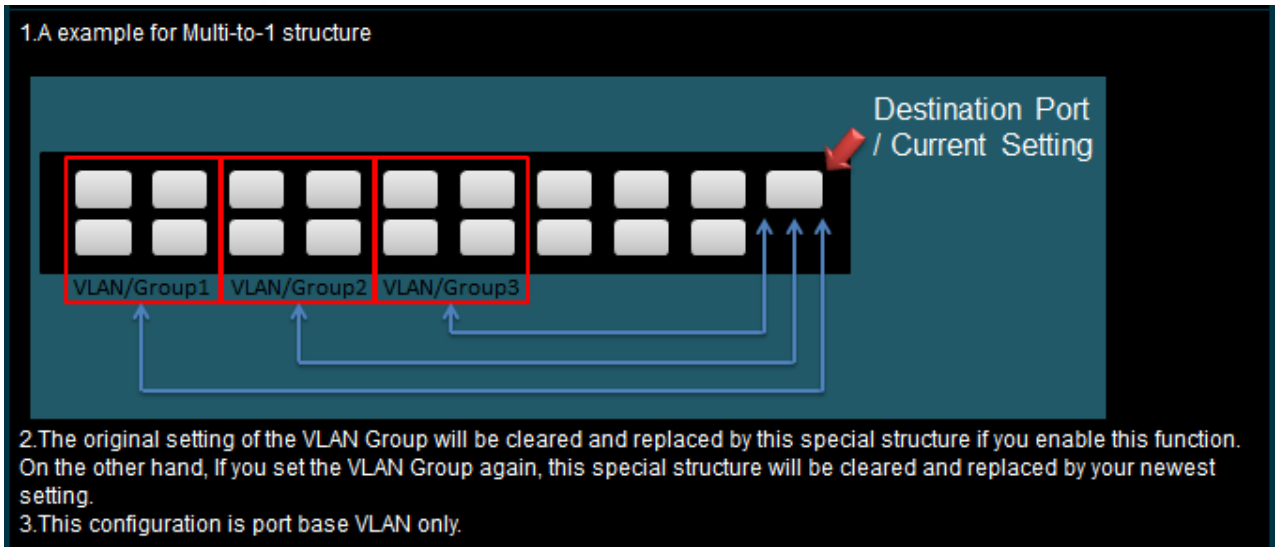
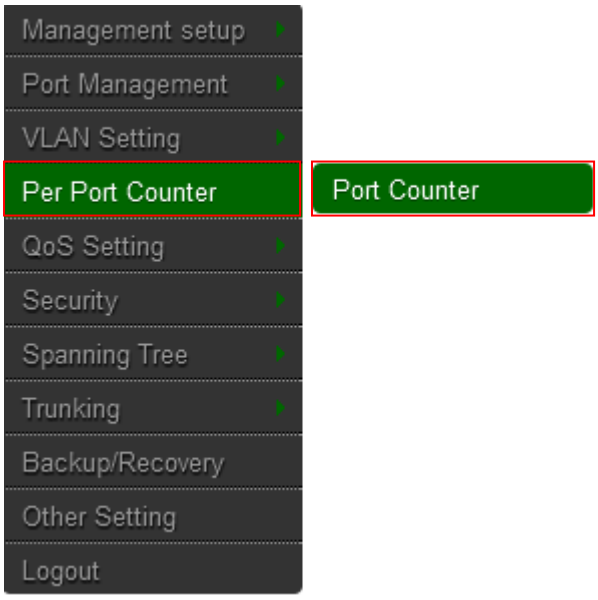
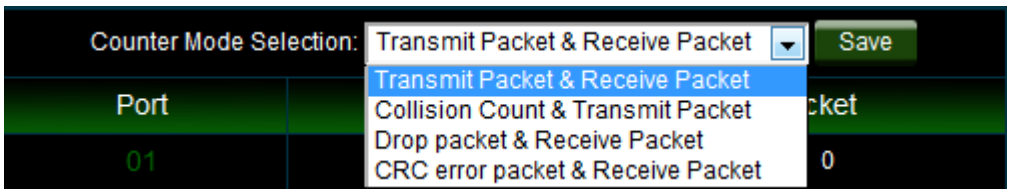


6. Per Port Counter

You can read the transmitting and receiving packet of the connecting port.

Please click **Per Port → Port Counter**





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Counter Mode Selection

- **Transmit Packet & Receive Packet:** Display 1 to 26 ports of Transmit Packet and Receive Packet information.
- **Collision Count & Transmit Packet:** Display 1 to 26 ports of Collision Count and Transmit Packet information.
- **Drop Packet & Receive Packet:** Display 1 to 26 ports of Drop Packet and Receive Packet information.
- **CRC error Packet & Receive Packet:** Display 1 to 26 ports of CRC error Packet and Receive Packet information
- **Clear:** Clear all the information to recalculate
- **Refresh:** Update the all Information

7. QoS Setting

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.

7.1 Priority Mode

Each switch port has four types of outbound traffic queues based on priority: First-In-First-Out, All-High-before-Low and Weight-Round-Robin.

The queue priority determines the order of exit for packets in the queue. For example, packets in a high priority queue leave the switch before packets in other queues.

Please click **QoS Setting→ Priority Mode**

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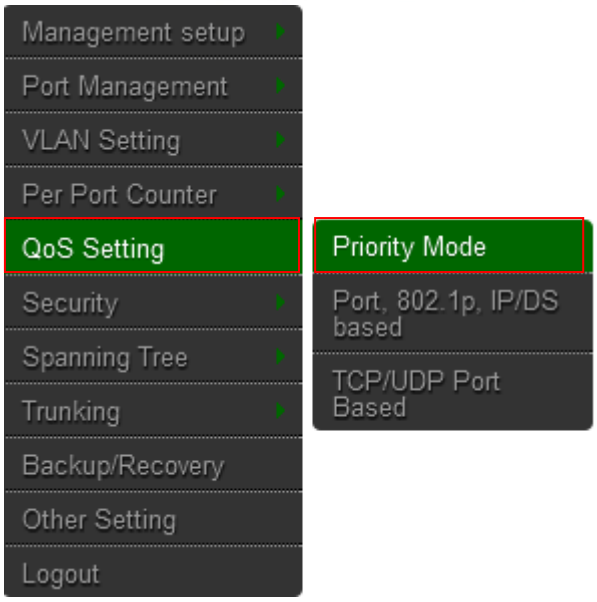
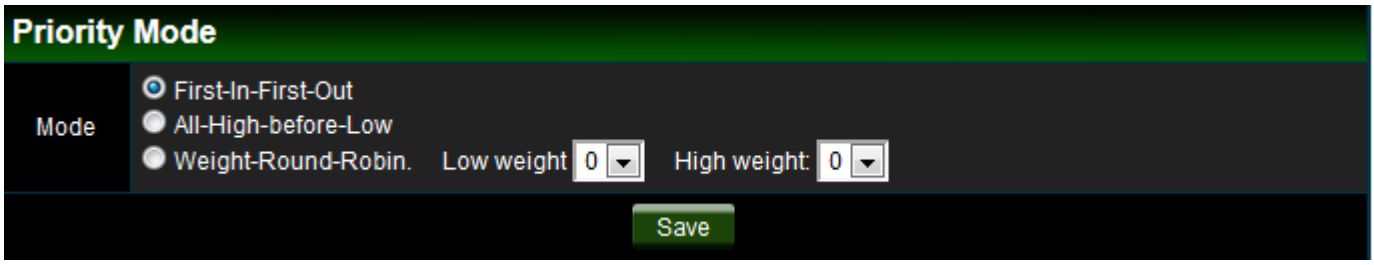


There are three Priority Modes to select.



- **First-in-First-Out:** The first receiving packet will be firstly transmitted.
- **All-High-before-Low:** All packets will be assigned to either Q2 (high) piority queue or Q1 (low) priority queue.
- **Weight-Round-Robin:** set the ratio of the transmitting packet for the low priority to high priority.

Notice

When the queue weight is set to "0", it will be treated as "8"
The "low wieght" and "high weight" means the ratio of the packet in the transmit queue. For example,
If "low weight" and "high weight" are set to "3" and "5", the ratio of the trasmit packet for the low priority to high priority is 3/5.

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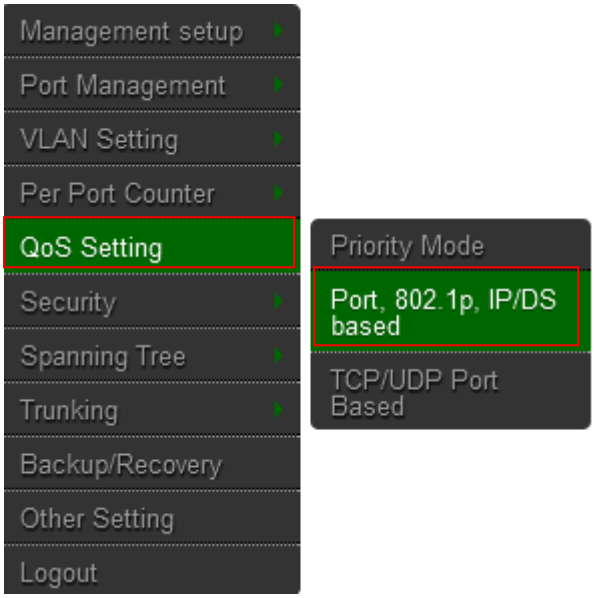
7.2 Class of Service

You can set QoS mode of per port by different bases.

Please click **QoS Setting→ Port, 802.1p, IP/DS based**



As long as any of three COS schemes(802.1p,IP TOS/DS or Port Base) is mapped to "high", the data packet will be treated as the high priority.

Enable is High Priority

Port No.\Mode	Port Base	VLAN Tag	IP / DS	Port No.\Mode	Port Base	VLAN Tag	IP / DS
1	☐	☐	☐	14	☐	☐	☐
2	☐	☐	☐	15	☐	☐	☐
3	☐	☐	☐	16	☐	☐	☐
4	☐	☐	☐	17	☐	☐	☐
5	☐	☐	☐	18	☐	☐	☐
6	☐	☐	☐	19	☐	☐	☐
7	☐	☐	☐	20	☐	☐	☐
8	☐	☐	☐	21	☐	☐	☐
9	☐	☐	☐	22	☐	☐	☐
10	☐	☐	☐	23	☐	☐	☐
11	☐	☐	☐	24	☐	☐	☐
12	☐	☐	☐	25	☐	☐	☐
13	☐	☐	☐	26	☐	☐	☐

Save

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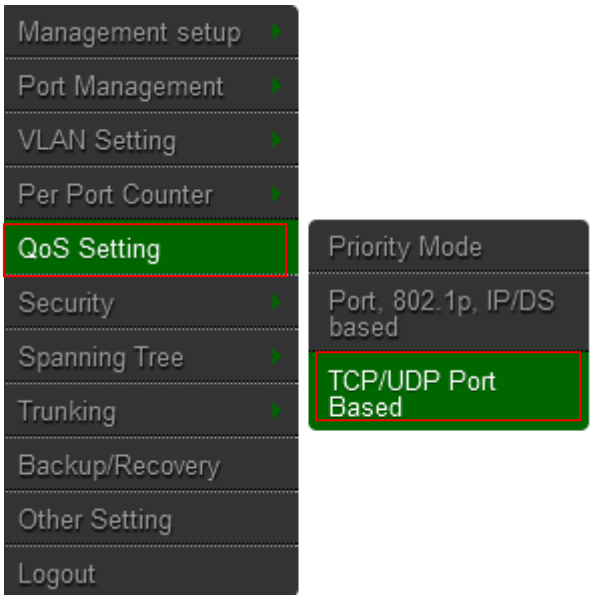
7.3 Class of Service Configuration

Please click **QoS Setting→ TCP/UDP Port Based**



Base on different protocol, you can choose four different types of Class of Service for each TCP/UDP port number -First-in-First-out, Discard, High Priority or Law Priority to control the incoming packet.

The Class of Service for TCP/UDP port number allows the network administrator to assign the specific application to a priotity queue.

- **F-I-F-O:** The incoming packet will be forwared in first-in-first-out scheme.
- **Discard:** The incoming packet will be discarded at the source port.

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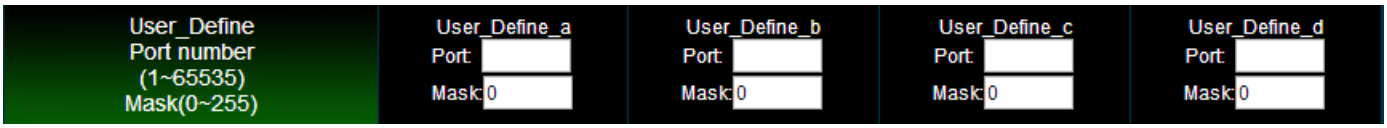
- **High:** The incoming packet will be forwareded with the high priority.
- **Low:** The incoming packet will be forwareded with the Low priority.



- The mask defines which bit is ignored within the IP address bit 0 ~ bit 7.
  For example, UDP/TCP port = 65535 and mask = 5,this means 65530, 65531, 65534 and 65535 are all taken into account. UDP/TCP port =65535 and mask=0, this means only 65535 is taken into account.

- **TCP/UDP Port QoS function:** When the "override" item is selected, the Port_based, Tag_based, IP TOS_based, CoS listed above will be ignored.

Click **"Save"** to confirm and finish the setting.

8. Security

8.1 MAC address Binding

Set special MAC address to activate on the selected port
Please click **Security → MAC Address Binding**

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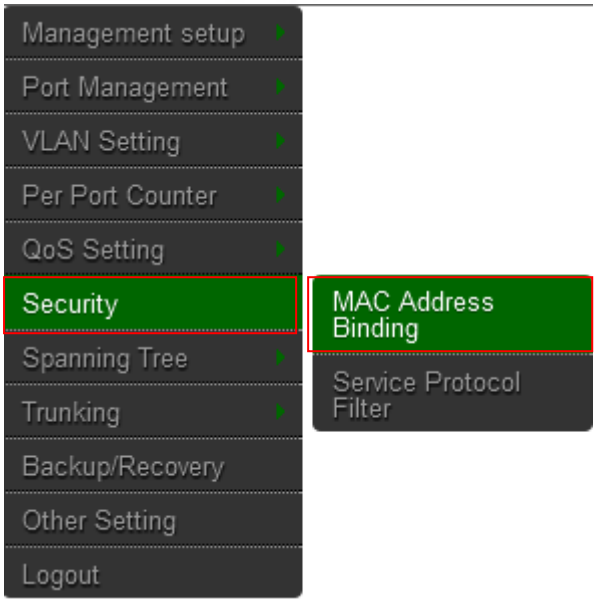
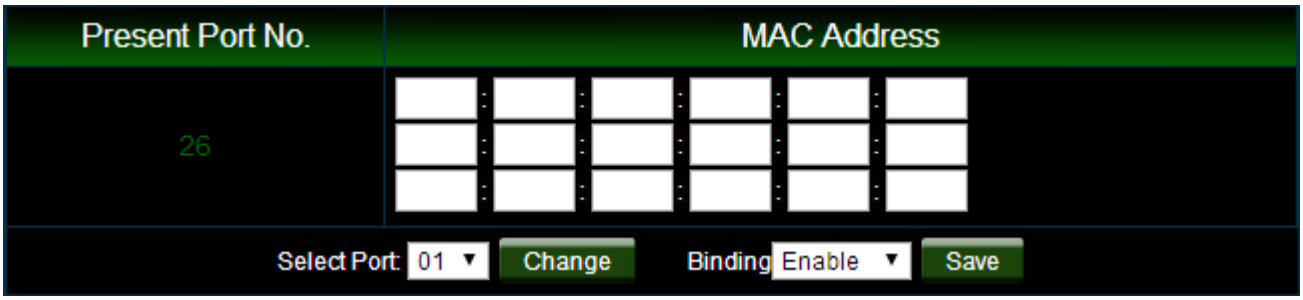


If you setting and enable the binding MAC address in access control list, The port only allow MAC address on the access control list.



The single port you can setting three MAC address.

- **MAC Address:** Enter MAC address
- **Select:** Select Port to binding MAC address(you can select 1~26 port)
- **Binding:** [Enable] Allow the packet with the specified source MAC address to enter this port.

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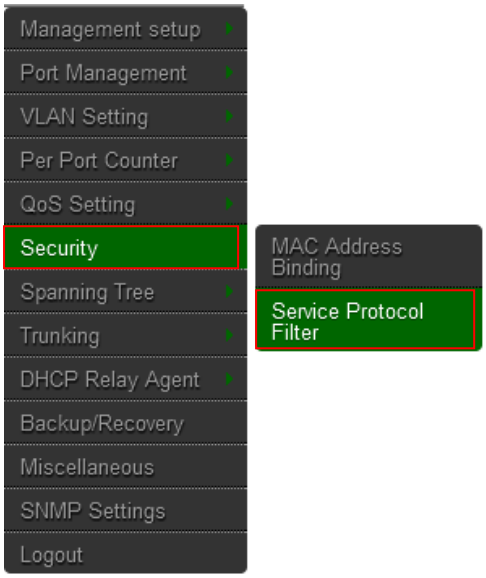
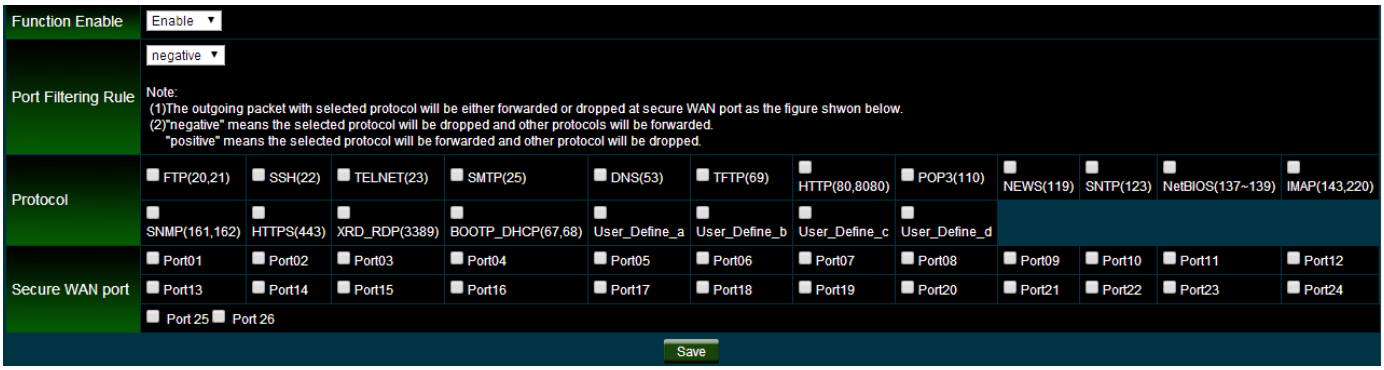
8.2 Service Protocol Filter

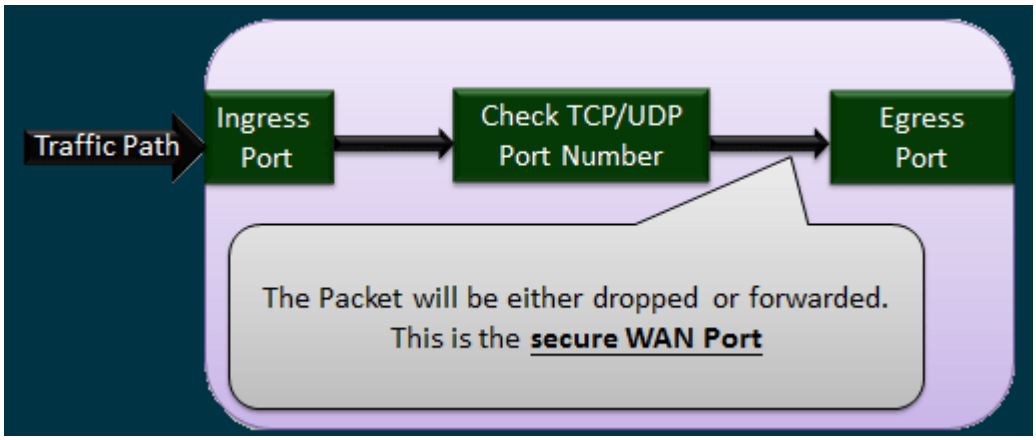
You can enable or disable this function of per port.

Please click **Security → Service Protocol Filter**





- **Function:** setting Disable / Enable the function.
- **Port Filtering Rule:** The outgoing packet with selected protocol will be either forwarded or dropped at secure WAN port as the figure shown below.



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- **"negative"** means the selected protocol will be dropped and other protocols will be forwarded.
- **"positive"** means the selected protocol will be forwarded and other protocol will be dropped.

➢ **Protocol:** choose protocols which you want.

➢ **Secure WAN Port:** choose secure ports which you want.

Notice

1. The secure WAN port should be set at the physical port which is connected to the server.
2. Once this function is enabled, the switch will check the destination TCP/UTP port number at the outgoing direction of the secure WAN port.

** If the condition matches, this packet will be dropped or forwarded.

3. The description of Secure WAN port is shown on the bottom of this screen.

Click **"Save"** to confirm and finish the setting.

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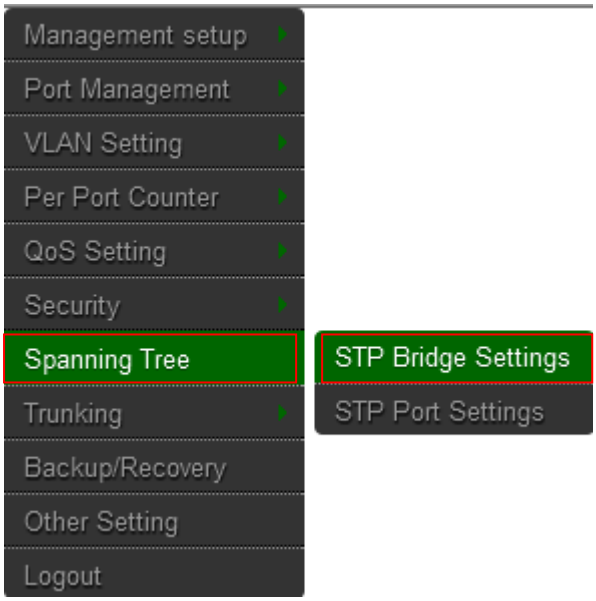
9. Spanning Tree

Spanning Tree Protocol(STP) 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 STP costs change, or if one network segment in the STP 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.

9.1 STP Bridge Settings

This setting is to avoid the loop network.

Please click **Spanning Tree → STP Bridge Setting**



Spanning Tree Settings

STP Mode	Bridge Priority (0~61440)	Hello Time (1~10 Sec)	Max Age (6~40 Sec)	Forward Delay (4~30 Sec)

Save

Note:
2*(Forward Delay-1) >= Max Age, Max Age >= 2*(Hello Time+1)
Bridge Priority must be multiplies of 4096

Note: If you enable the MAC address binding function, the address leaning function will be disabled automatically. Then both RSTP/STP and address learning will be affected.

Bridge Status

STP Mode	Bridge ID	Hello Time	Max Age	Forward Delay
RSTP	32768:8C 4D EA 00 50 2B	2	20	15

Root Status

Root ID	Hello Time	Max Age	Forward Delay
I'm the root bridge!	2	20	15

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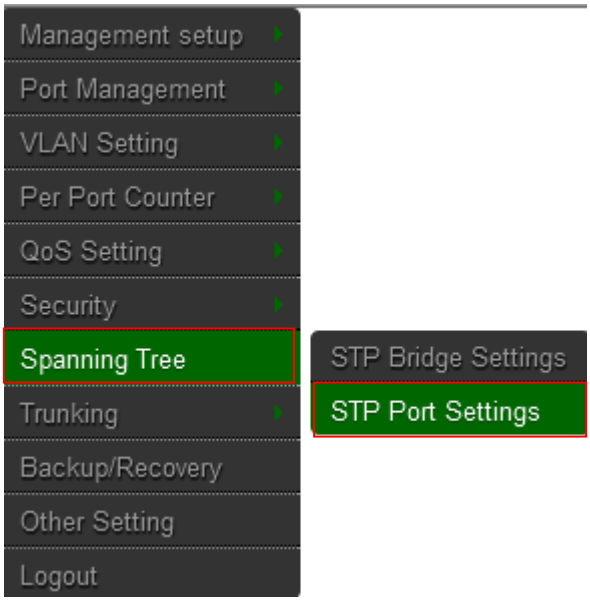
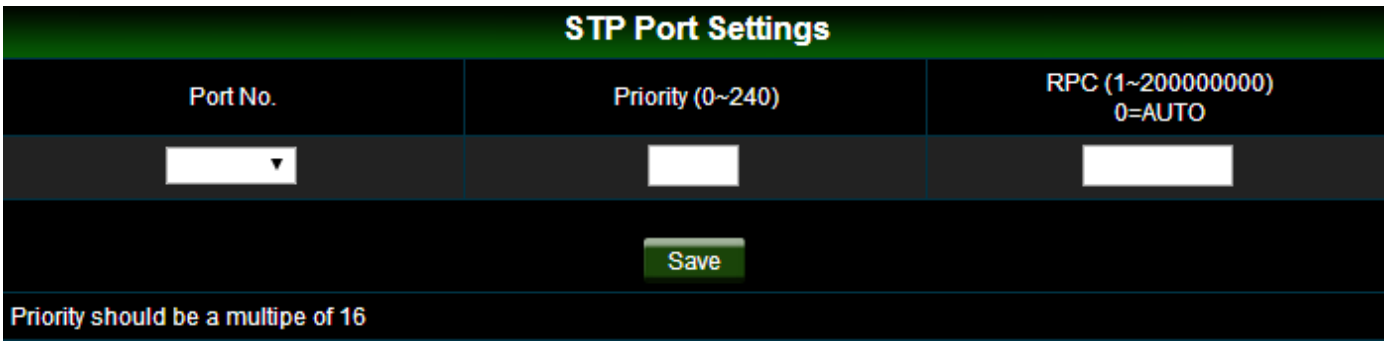
- **STP Mode:** choose “Disable”, “STP” or “RSTP”
- **Bridge Priority:** Set the priority of the Bridge.
- **Hello Time:** Provides the time period between root bridge configuration messages.
- **Max Age:** Indicates when the current configuration message should be deleted.
- **Forward Delay:** Provides the length of time that bridges should wait before transitioning to a new state after a topology change. (If a bridge transitions too soon, not all network links might be ready to change their state, and loops can result.)

Click **“Save”** to confirm and finish the setting.

9.2 STP Port Setting

Please click **Spanning Tree → STP Port Setting**





- **Port No.:** Choose Port 1 ~ Port 26

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- **Priority:** Setting 0~ 240
- **RPC:** The RPC= Root Path Cost: 0 = AUTO. When the loop is found, the STP/RSTP will calculate the cost of its path.

STP Port Status

STP Port Status						
Port No.	RPC	Priority	State	Status	Designated Bridge	Designated Po
1	Auto:200000	0x80	Designated Port	Forwarding	--	--
2	Auto:0	0x80	--	Disable	--	--
3	Auto:0	0x80	--	Disable	--	--
4	Auto:0	0x80	--	Disable	--	--
5	Auto:0	0x80	--	Disable	--	--
6	Auto:0	0x80	--	Disable	--	--
7	Auto:200000	0x80	Designated Port	Forwarding	--	--
8	Auto:0	0x80	--	Disable	--	--
9	Auto:0	0x80	--	Disable	--	--
10	Auto:0	0x80	--	Disable	--	--
11	Auto:0	0x80	--	Disable	--	--
12	Auto:0	0x80	--	Disable	--	--
13	Auto:0	0x80	--	Disable	--	--
14	Auto:0	0x80	--	Disable	--	--
15	Auto:0	0x80	--	Disable	--	--
16	Auto:0	0x80	--	Disable	--	--
17	Auto:0	0x80	--	Disable	--	--
18	Auto:0	0x80	--	Disable	--	--
19	Auto:0	0x80	--	Disable	--	--
20	Auto:0	0x80	--	Disable	--	--
21	Auto:0	0x80	--	Disable	--	--
22	Auto:0	0x80	--	Disable	--	--
23	Auto:0	0x80	--	Disable	--	--
24	Auto:0	0x80	--	Disable	--	--
25	Auto:0	0x80	--	Disable	--	--
26	Auto:20000	0x80	Designated Port	Forwarding	--	--

10. Trunking (Link aggregation)

Link aggregation 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.

Link aggregation is designed to increase bandwidth by implementing outgoing/incoming load sharing among the member ports in an aggregation group. Link aggregation group also allows for port redundancy, which improves connection reliability.

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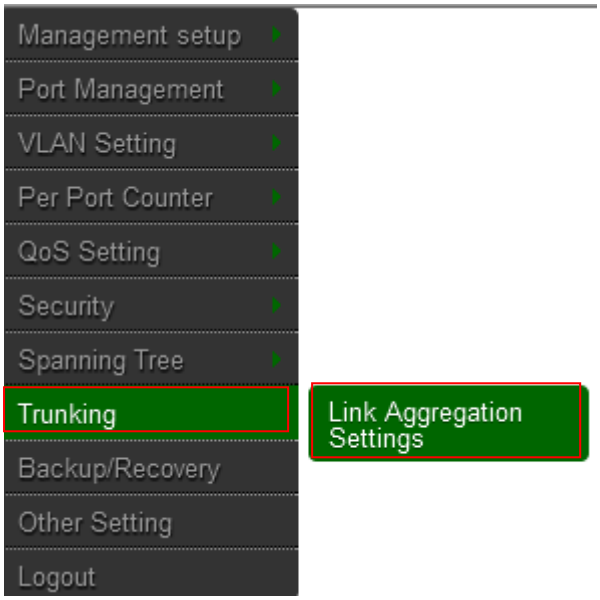
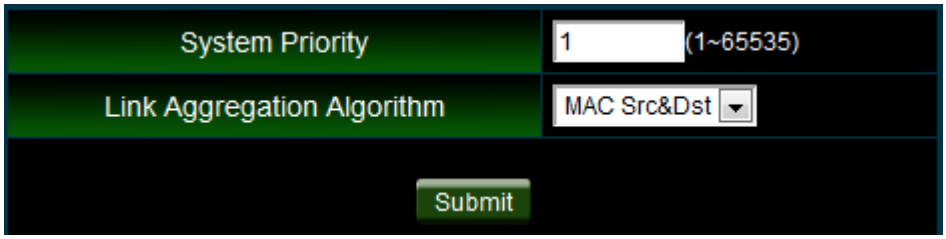
Please click **Trunking → Link Aggregation Setting**



There are two groups to choose and each group is 4 ports and the third group is for 2 ports.



This standard describes the Link Aggregation Control Protocol (LACP), a mechanism for allowing ports on both sides of a redundant link to configure themselves into a trunk link (aggregate link), without the need for manual configuration of the ports into trunk groups.
When you enable link aggregation on a group of Brocade ports, the Brocade ports can negotiate with the ports at the remote ends of the links to establish trunk groups.

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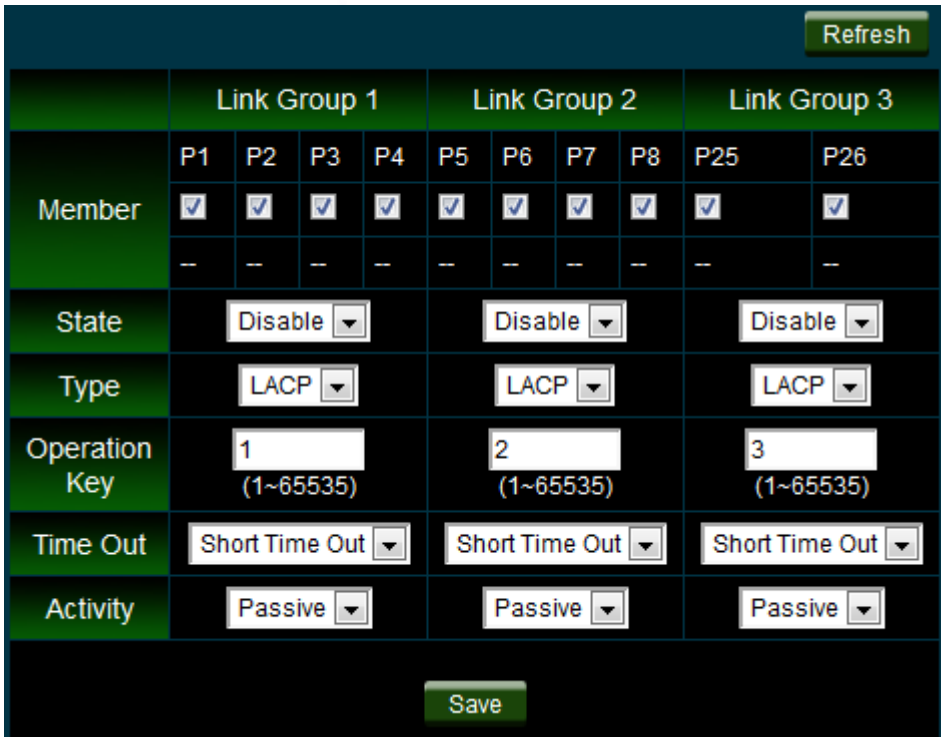

- **Member:** Choose link group port.
- **State:** Choose Enable / Disable the link group function.
- **Type:** The IEEE 802.3ad Link Aggregation Control Protocol (LACP) enables the dynamic aggregation of physical links and The Link Aggregation Control Protocol (LACP) is defined in IEEE 802.3ad. It uses link aggregation control protocol data units (LACPDUs) for information exchange between LACP-enabled devices. With the usage of preserved fields in LACPDUs, LACP can deliver extended functions in addition to its basic functions.
  - **Static:** switch and switch between must be fixed and setting Link Aggregation Group(LAG) function.
  - **LACP:** switch sides set to LACP mode, The ports on the switch through asking way to check whether to join LAG, If there to join LAG, LACP connection can be achieved, otherwise they skipped LACP connection.
- **Activity:** Both switches use “LACP” to configure the Trunk, at least one of them should be “Active”.
  - **Active**：Set the port in this category will take the initiative to ask link port whether the LACP trunk. If yes, Join the Manage Connections in LACP
  - **Passive**：The main can reply to active, and passive connectivity to reach LACP.

Click **“Save”** to confirm and finish the setting

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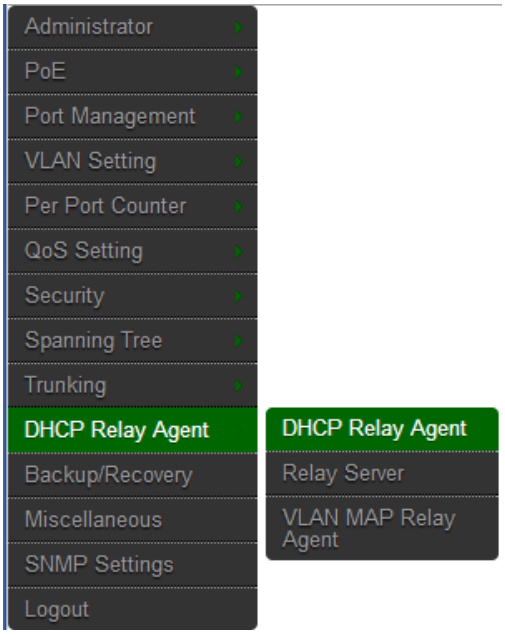
11. DHCP Relay Agent

11.1 DHCP Relay Agent

Since DHCP clients request IP addresses via broadcast messages, the DHCP server and clients must be on the same subnet. Therefore, a DHCP server must be available on each subnet. It is not practical.

DHCP relay agent solves the problem. Via a relay agent, DHCP clients communicate with a DHCP server on another subnet to obtain configuration parameters. Thus, DHCP clients on different subnets can contact the same DHCP server for ease of centralized management and cost reduction.

Please click **DHCP Relay Agent → DHCP Relay Agent**



- **DHCP Relay State:** Select DHCP Relay function Disable or Enable.
- **DHCP Relay Hops Count Limit (1-16):** The maximum numbers of DHCP relay agents that will handle DHCP relayed traffic. The maximum value is 16 hops.

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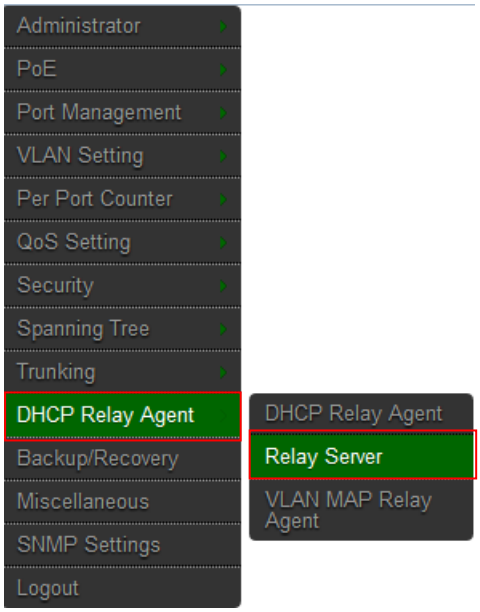
- **DHCP Relay Option 82 State:** The DHCP Information option (Option 82) is commonly used in metro or large enterprise deployments to provide additional information on "physical attachment" of the client. Option 82 is supposed to be used in distributed DHCP server/relay environment, where relays insert additional information to identify the client's point of attachment. You can select the function Disable or Enable.

Notice	Your DHCP server must be configured to accept DHCP option 82. If the server is not configured for DHCP option 82, the server does not use the DHCP option 82 information in the requests sent to it when it formulates its reply messages

Click **"Save"** to confirm and finish the setting.

11.2 Relay Server

Enter DHCP Server IP address. Please click **DHCP Relay Agent → Relay Server**



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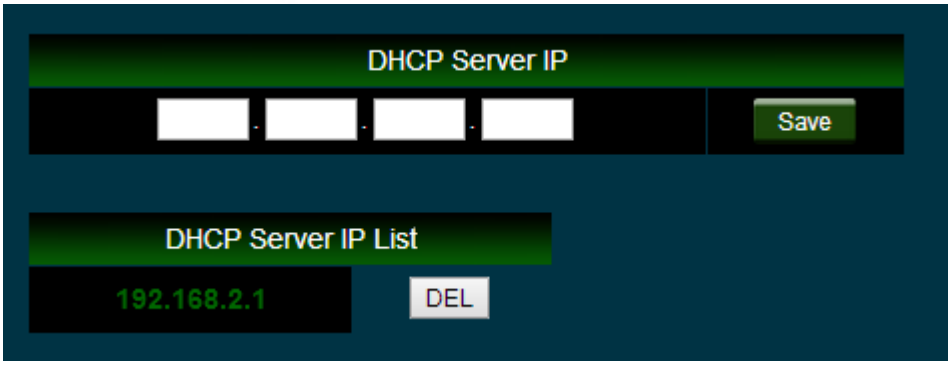

Click **"Save"** to confirm and finish the setting.

11.3 VLAN MAP Relay Agent

Please click **DHCP Relay Agent → VLAN MAP Relay Agent**

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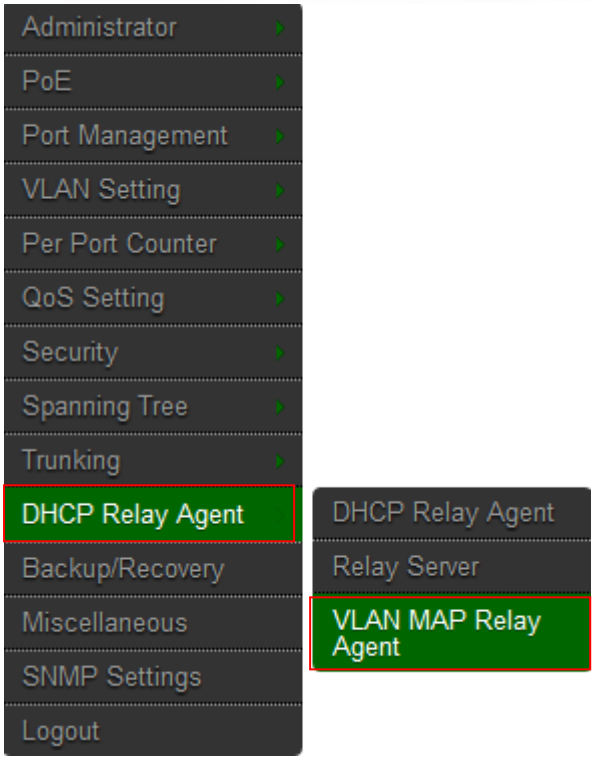

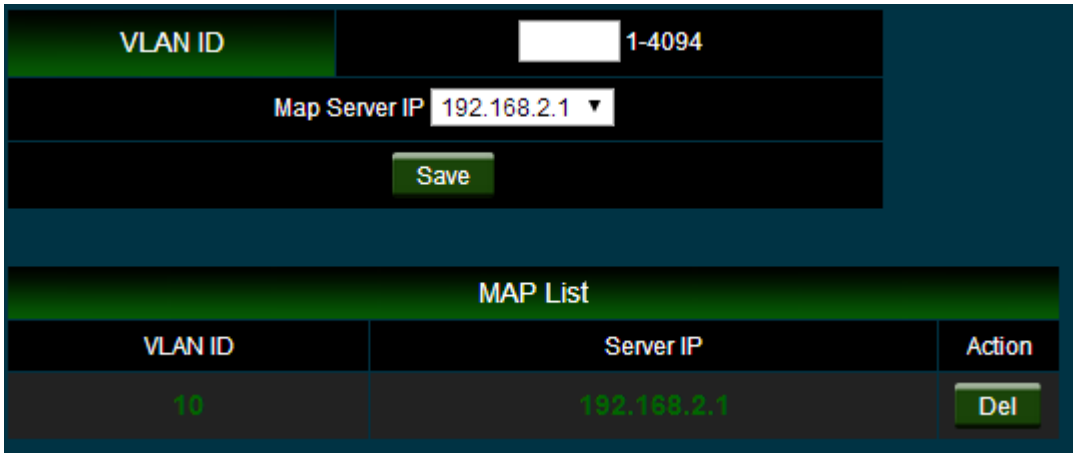

- **VLAN ID:** Please Enter VLAN 10 number.
- **Map Server IP:** If setting the completed of Relay Server function, The Map server IP you can select IP address.

Click **"Save"** to confirm and finish the setting.

12. Backup/Recovery

Please click **Trunking → Link Aggregation Setting**

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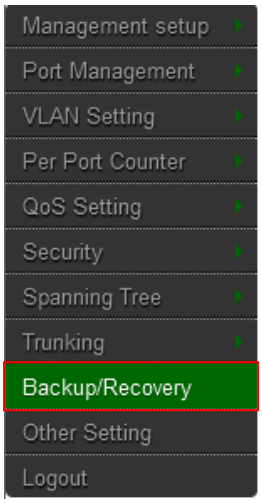

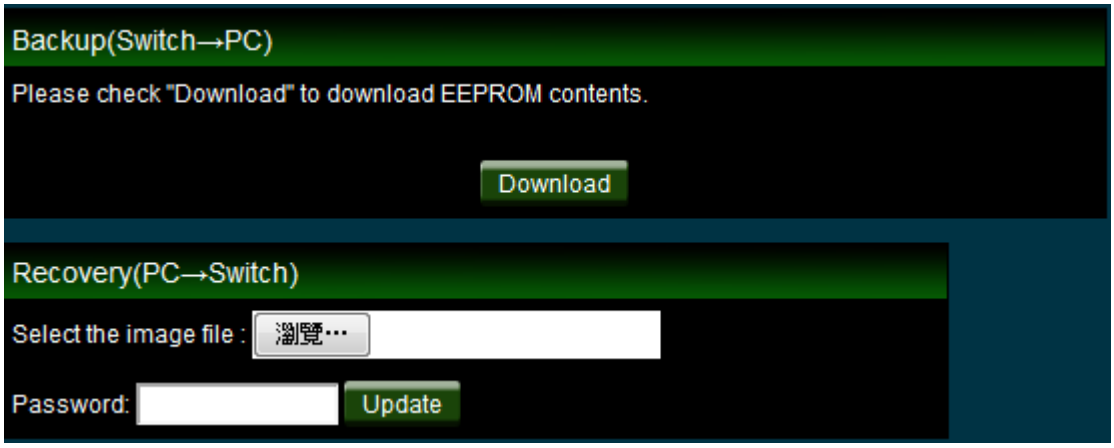

- **Backup:** Click **"Download"** to confirm the setting.
- **Recovery:** Selects a file and key in the password → Click **"Update"** to confirm the setting.

Notice

The Update password is by login password, the login default password is by "default"

13. Other Setting

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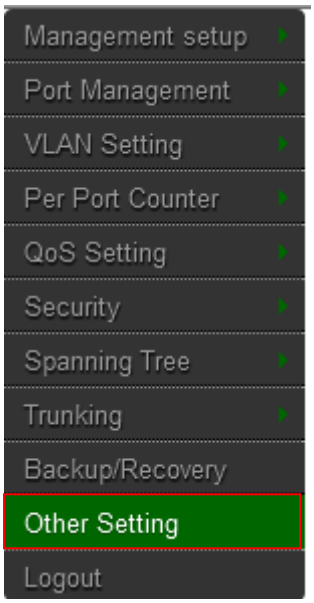
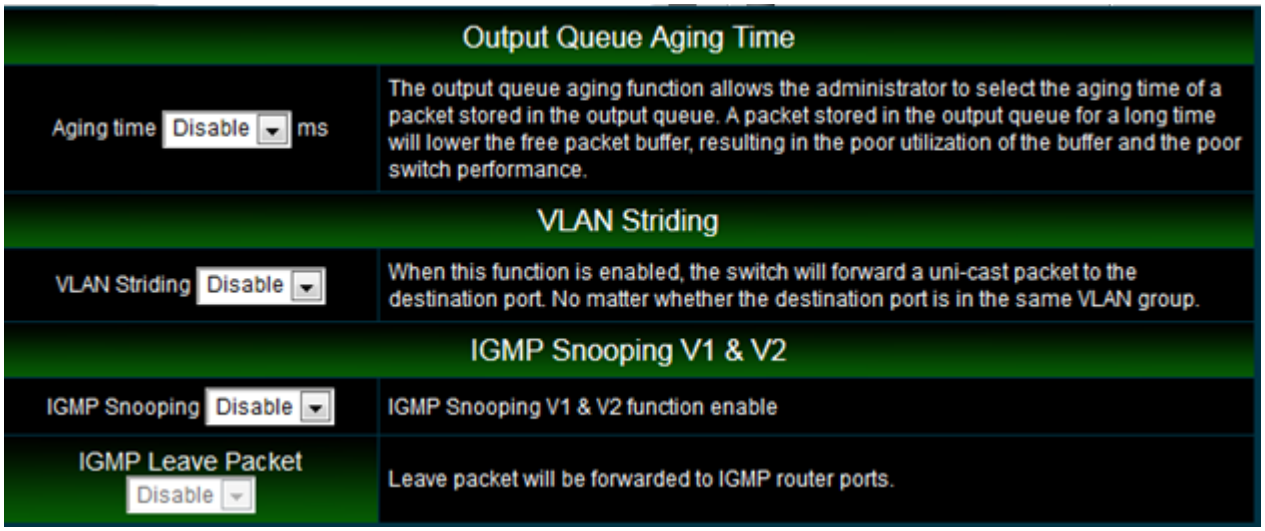
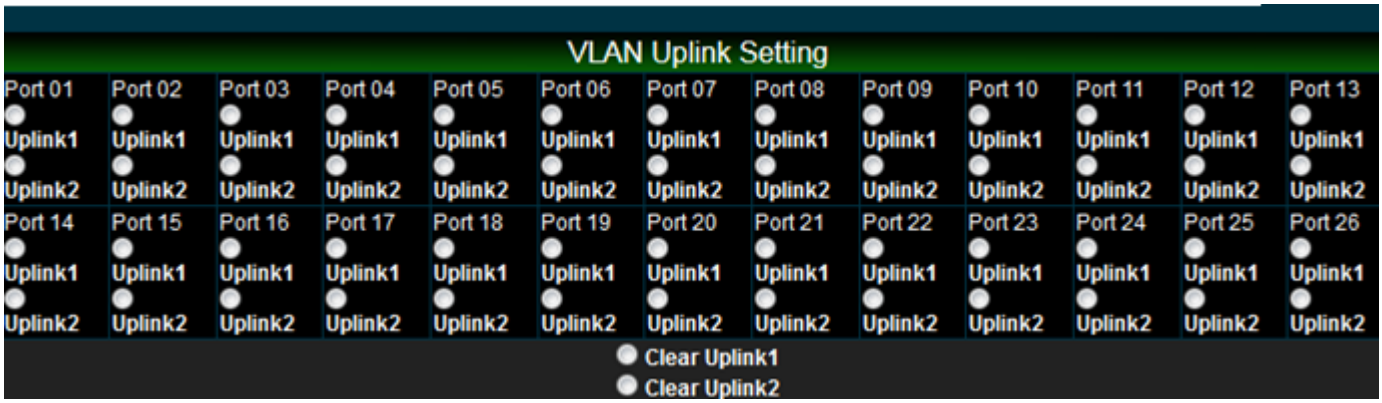
The function you can setting Aging time / VLAN Striding / and IGMP Snooping etc.
Please click **Other Setting**







- **Output Queue Aging Time:** Choose Aging time is 200/400/600/800ms or disable etc. The output queue aging function allows the administrator to select the aging time of a packet

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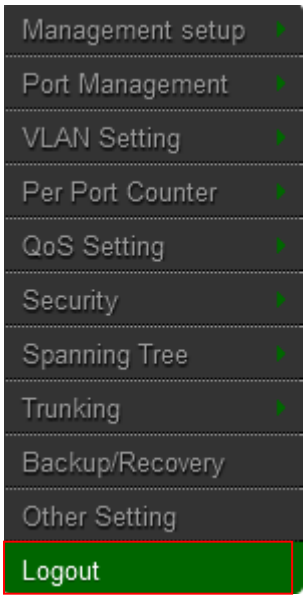
stored in the output queue. A packet stored in the output queue for a long time will lower the free packet buffer, resulting in the poor utilization of the buffer and the poor switch performance.

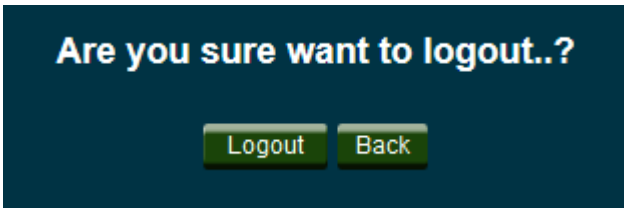
- **VLAN Striding:** You can choose VLAN Striding disable or enable function. When this function is enabled, the switch will forward a uni-cast packet to the destination port. No matter whether the destination port is in the same VLAN group.
- **IGMP Snooping V1 & V2:** You can choose IGMP Snooping disable or enable function. After enable IGMP, will use both V1 and V2 function. If enable IGMP Snooping function, you can choose disable or enable the IGMP Leave Packet. Mainly allows Leave packet will be forwarded to IGMP router ports.
- **VLAN Uplink Setting:** Set “uplink1 or uplink2” or “Clear uplink1” or “Clear uplink2”

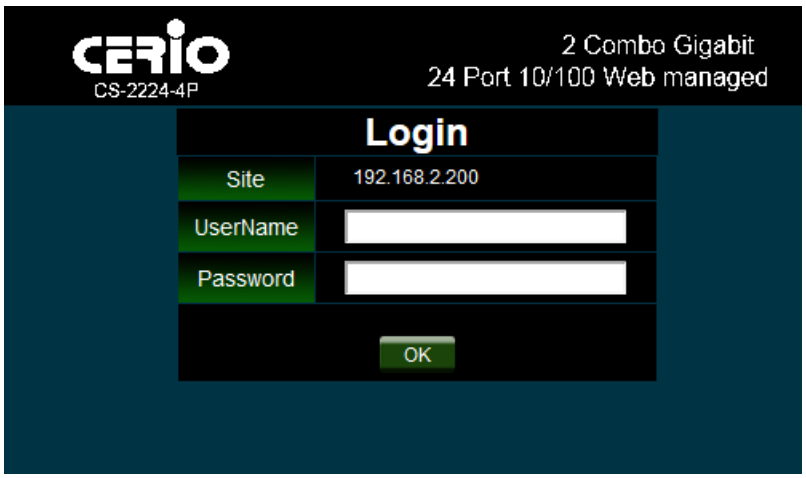
Click **“Save”** to confirm and finish the setting.

14. Logout

Click **“Logout”** The system will logout and automatically go to the login page.







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Specifications

	Standards & Hardware Specifications
Standards Conformance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-SX/LX IEEE 802.3x Flow Control IEEE 802.3af Power over Ethernet (15.4 Watt PoE+) IEEE 802.3at Power over Ethernet Plus (30 Watt PoE+)
Port Configuration	24 ports RJ-45 connectors for 10/100 BASE-TX and PSE/ PoE function 2 port Gigabit Combo SFP/ RJ-45
Media Access Protocol	CSMA / CD
Network Media	10BASE –T: UTP Cat. 3 or up, 100BASE-TX: UTP Cat. 5 or up, 1000BASE-T: UTP Cat. 5 or up
Transmission Method	Store and Forward
MAC Address Table	4K
Built-in Buffer	3.5Mbits
Data Transfer Rate	10/100Mbps (Half-duplex), 20/200Mbps (Full-duplex) 1000Mbps (Half-duplex), 2000Mbps (Full-Duplex)
Auto MDI/MDIX	Yes
LED Indicators	Per Port:(TX): Link/Act , Per Unit: Power
Internal Bus Speed	8.8Gbps
	Switch Specifications
Link Aggregation	up to 3 groups and 0-3,4-7 ports ,Gigabit 1-2 ports in each group
Priority Queue	IEEE Class of Service (4 Queues)
Port Mirror	Supported
Bandwidth Control	Supported
Spanning Tree(STP)	Supported
***Rapid spanning Tree* (RSTP)**	Supported
IGMP Snooping	v1 and v2
MAC Filter	Supported

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DHCP Relay Agent	Supported
VLAN	IEEE802.1Q Tagging VLAN , Port-Based ,Tag based VLAN
SNMP	V1 / v2c supported

Environmental & Mechanical Characteristics

Power Consumption	380Watt share per Port PoE Device connected) for all ports . 15 Watt (max. with no PoE Device connected)
Power Requirement	AC 90~260VAC, 50-60Hz Auto-sensing

Power Requirement

Operating Temperature	0° to 50° C
Storage Temperature	-20° to 90° C
Operating Humidity	10% to 90% non-condensing
Storage Humidity	10% to 90% non-condensing
Dimension (W x D x H)	325 x 440 x 44 mm
Weight	3.875Kg
Certification	FCC, CE, RoHS-compliant

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