

## CERIO Corporation

### CS-2008G-8P

PoE CS-2000 Series - 8 Port

**10/100/1000M Gigabit Web Managed PoE+ Switch**  
**( 150Watt Power )**



## 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 radiate 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 may be required to take adequate measures.

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## 1. Introduction

### 1.1 Front Panel



- 1) MAX PoE (budget expended) LED light.
- 2) Power and System status LED light.
- 3) Reset to default button. (Long press the “Reset” button with a pin for 10 seconds, when the LED starts to flash, the reset process starts.)
- 4) 8 PoE Ports and Ethernet status LED light.
- 5) 8 Gigabit Ethernet Ports.

### 1.2 Rear Panel Layout



- AC input (100-240V/AC, 50-60Hz), UL Safety

## 2. Software Configuration

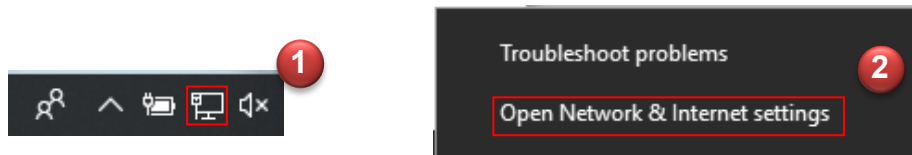
CS-2008G-8P supports web-based configuration. Please refer to the following steps:

### 2.1 Example of windows PC Setup.

The following setup uses a Windows PC, user OS may vary

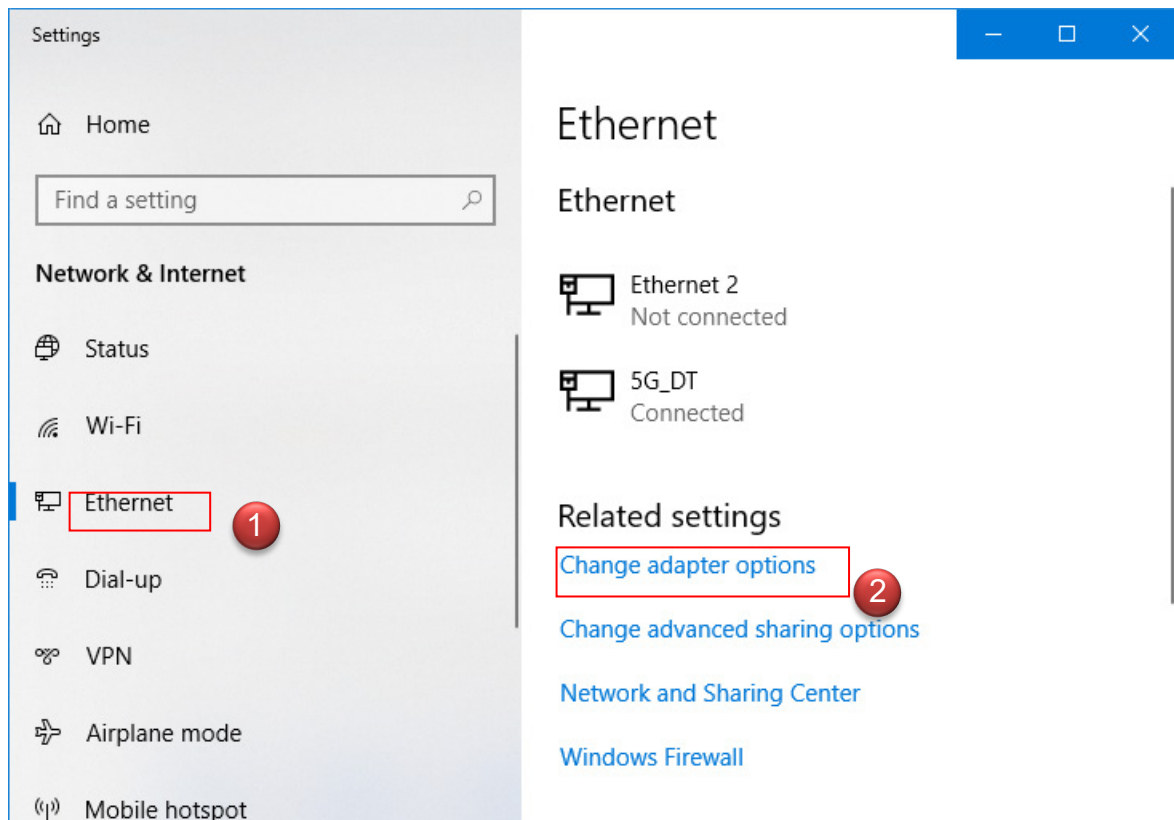
#### Step 1 :

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



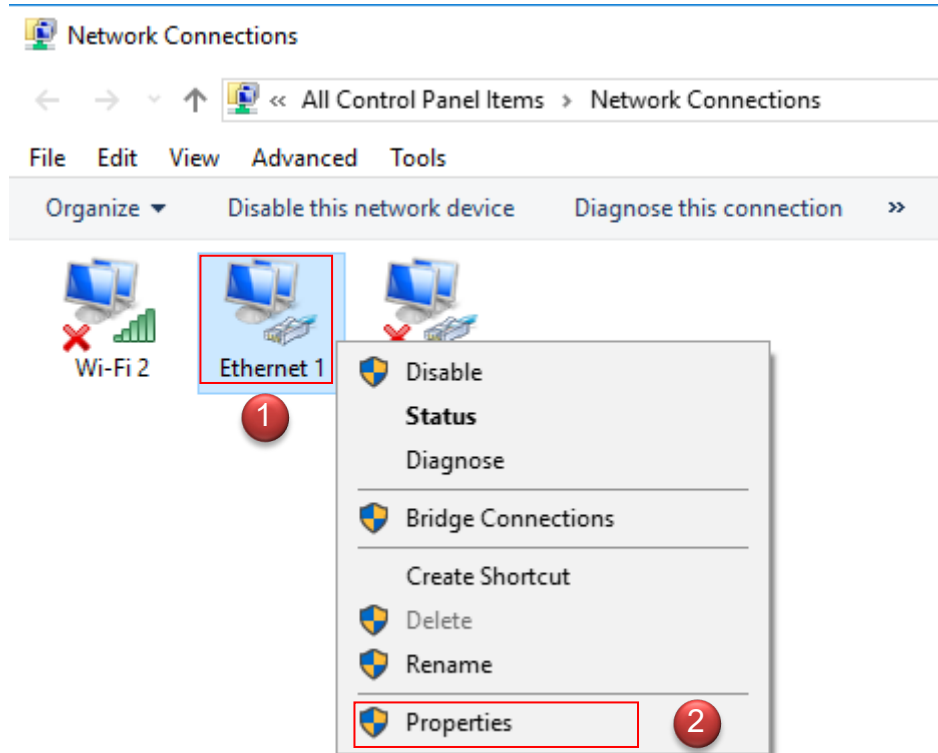
#### Step 2 :

After click left side "Ethernet" function, click on the right side “Change adapter options.”



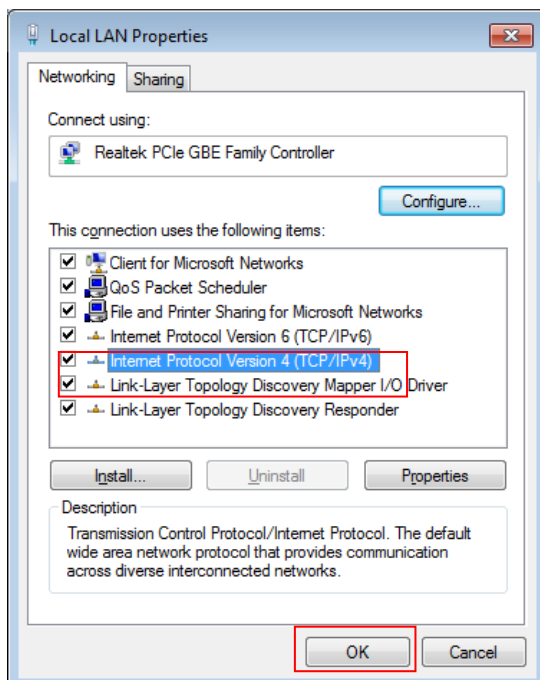
### Step 3 :

In “Change adapter options” Page, please find Ethernet (Local LAN) and Click the right button of the mouse and Click “Properties”



### Step 4 :

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



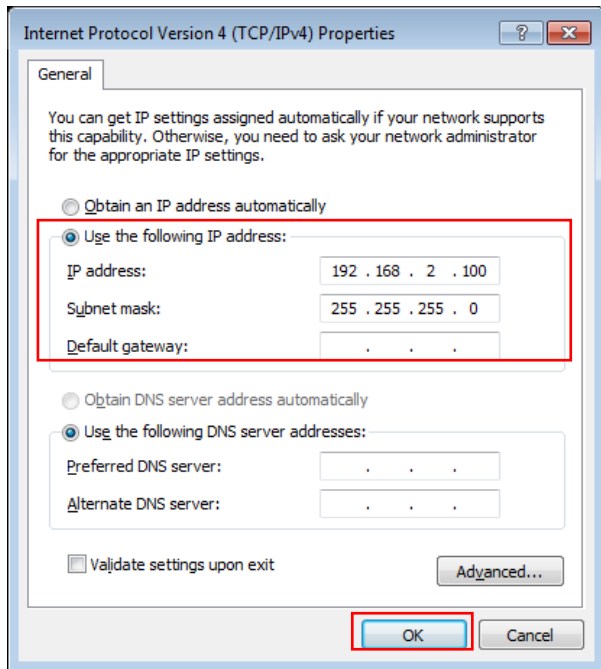
## Step 5:

Select **"Use the following IP address,"** and fill in IP Address as: 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 the computer IP settings

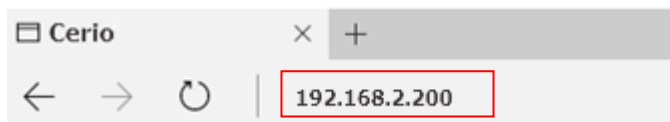


## Step 6:

### Open Web Browser

Launch as web browser to access the web management interface of system by entering the default IP Address, <http://192.168.2.254>, in the URL field, and then press Enter. (IE 7 or later version, or similar web browser is recommended.)

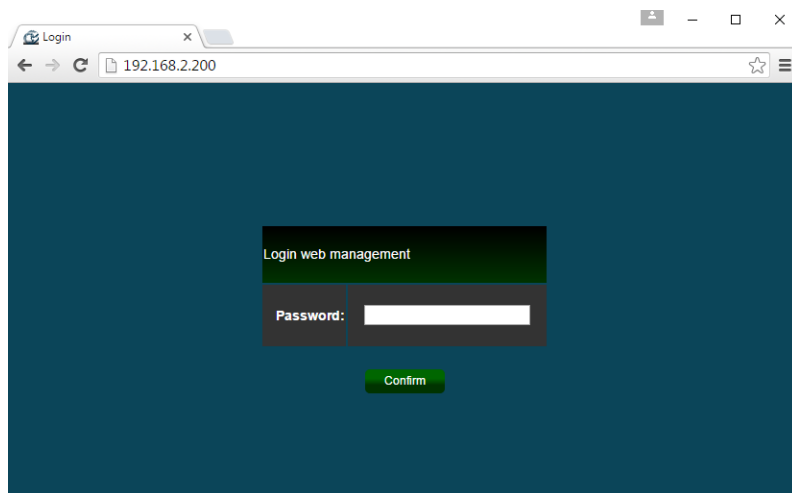
*System login Overview page will appear after successful login.*





## 2.2 System login

The **CS-2008G-8P** web switch default IP is 192.168.2.200



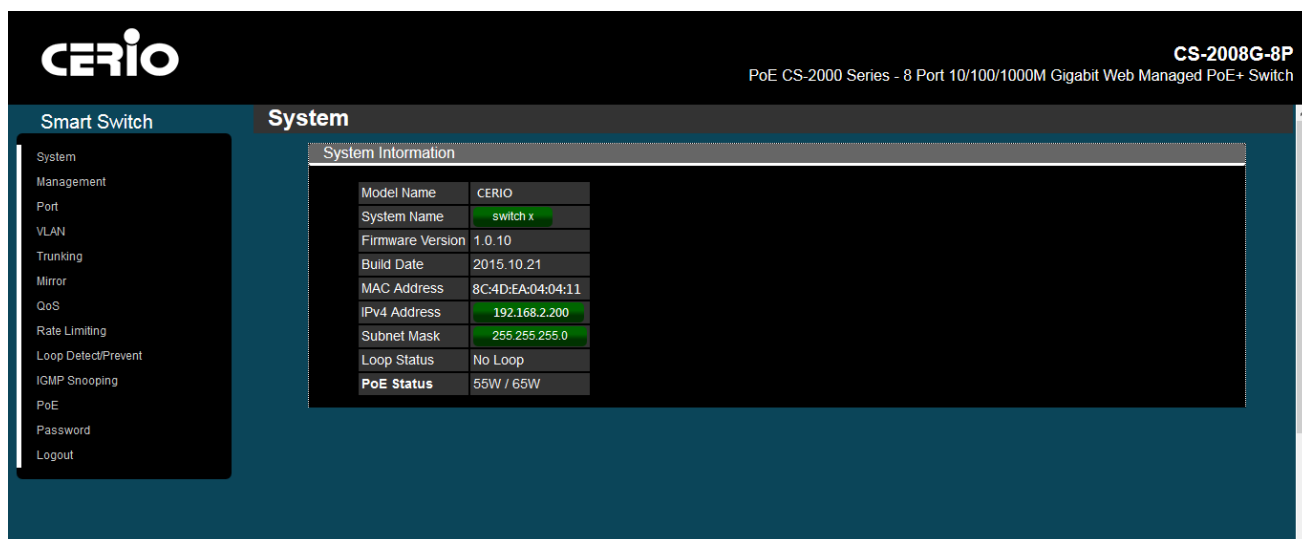
Login to the management page as follows, please enter “Password”

- **Default IP Address:** 192.168.2.200
- **Default Password:** default

Password	default
----------	---------

Press “Confirm” to Login

After Login, the page will display system information.





### 3. System

In this page, administrator can monitor switch information and modify network IP / mask.

Model Name	CS-2008G-8P
Device Name	switch x
Firmware Version	1.0.10
Build Date	2015.10.21
MAC Address	8C:4D:EA:04:04:04
IPv4 Address	192.168.2.200
Subnet Mask	255.255.255.0
Loop Status	No Loop
PoE Status	55W / 65W

- **Model Name:** Display switch model name.
- **Device Name:** Administrator can modify the system name.
- **Firmware Version:** Display system firmware version.
- **Build Date:** Display firmware release date.
- **MAC Address:** Display the system MAC Address.
- **IPv4 Address:** Display system IP address of the recent system, administrator can click the button to change system IP address.
- **Subnet Mask:** Display network Mask, administrator can click the button to change Mask.
- **Loop Status:** Display network infrastructure whether or not there is loop. (reference 11 Loop function)
- **PoE Status:** Display PoE used power.

Apply					
Port	Link Status	TX	RX	Loop Status	Loop Unlock
1	1000 Mbps	6835	12183	0	<input type="checkbox"/>
2	1000 Mbps	181	69	0	<input type="checkbox"/>
3	1000 Mbps	61	14	0	<input type="checkbox"/>
4	Down	0	0	1	<input type="checkbox"/>
5	Down	0	0	0	<input type="checkbox"/>
6	Down	0	0	0	<input type="checkbox"/>
7	1000 Mbps	13042	7436	0	<input type="checkbox"/>
8	Down	0	0	0	<input type="checkbox"/>
Clear Counters					

This page also has status of each port, showing “Link Status,” transmitted frames “TX,” and received frames “RX” counts.

Administrator can click on “Clear Counters” to clear TX, RX counts.

## 4. Management

In this page, administrator can reboot or reset the system to default settings. Users can also backup or restore device settings, and also upgrade firmware from this page:

The screenshot displays the CERIO Management web interface. It is divided into three main sections:

- System:** Contains two buttons: "Reset" (labeled "Reset to default:") and "Reboot" (labeled "Reboot system:").
- Configuration Restore/Backup:** Contains a "Path:" input field, a "Select file:" button with a file explorer icon and the text "未選擇檔案。", a "Restore" button, and a "Backup system Profile:" button with the text "Backup".
- Firmware Upgrade:** Contains a "Path:" input field, a "Select firmware file:" button with a file explorer icon and the text "未選擇檔案。", and an "Upgrade" button.

### System

- **Reset to default:** Administrator can click the button to reset the system as default settings.
- **Reboot system:** Administrator can click the button to reboot the system.

### Configuration

- **Path:** Display path of the configuration file for restoration.
- **Select file:** Administrator can click button to find the configuration file in the computer.
- **Backup system Profile:** Administrator can click the “瀏覽... or browse” button to backup system profile, and the configuration profile will be saved to download files of the PC.

### Firmware Upgrade

- **Path:** Display path of the firmware file in the computer.
- **Select firmware file:** Administrator can click the “瀏覽... or browse” button to find the firmware file in the PC.

## 5. VLAN

In the VLAN function, administrator can set IEEE 802.1q i.e., Tag Based VLAN or Port Based VLAN. System default is tag based VLAN. VLAN or virtual local area network is any broadcast domain that is partitioned and isolated in a computer network at the data link layer.

### IEEE 802.1Q VLAN

Select VLAN Type

☐ IEEE 802.1Q VLAN
   
☒ Port-Based VLAN

PVID Configurations

Apply

Port	01	02	03	04	05	06	07	08
PVID	1	1	1	1	1	1	1	1

IEEE 802.1Q VLAN Configurations

Maximum number of IEEE 802.1Q VLAN : 8

Create New VLAN

VLAN ID	Non-Member	Tag Egress Member	Untag Egress Member	Modify	Delete						
	01	02	03			04	05	06	07	08	
1										Modify	Delete

Click on bottom to change member state or remove vlan.

- **PVID:** Administrator can set Port tag or VLAN ID
- **802.1Q VLAN:** Administrator can set tag number for 802.1Q VLAN.

PVID: "PVID" let exiting data packages or Egress with the set tag(s).

IEEE 802.1Q standard defines a system of VLAN tagging for Ethernet frames and the accompanying procedures to be used by switches in handling such frames. The standard also contains provisions for a QoS prioritization scheme.

"IEEE 802.1Q VLAN Configurations" can let the admin to Tag/Untag Egress Member for exiting data packages per port. The port can also be set as Non-Member port.

## Port-Based VLAN

Administrator can set Group for Port VALN.

**Change VLAN Type**

☒ IEEE 802.1Q VLAN
   
☐ Port-Based VLAN

Maximum number of Port-Based VLAN : 4

Apply

Add VLAN

Group ID	Member Port								Delete
	01	02	03	04	05	06	07	08	
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Delete

Click on checkbox to change group member.  
A port can belong to only one group !

Grouping ID:

- Click on the checkbox of the port number to group ports.
- Click on "Apply"

Each Port can belong to only one group!

## Add VLAN

Administrator can add VLAN and choose ports to the Group.

**Port-Based VLAN**

Apply

Maximum number of Port-Based VLAN : 4

Group ID	Member Port							
	01	02	03	04	05	06	07	08
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click on checkbox to choose group member.

Add VLAN:

- Click on the checkbox of the port number to group ports.
- Click on "Apply"

## 6. Trunking

The trunking function supports 802.3ad (LACP, Link Aggregation Control Protocol.)

Link Aggregation Control Protocol (LACP) can aggregate multiple Ethernet ports together to form a logical aggregation group. To upper layer entities, all the physical links of an aggregation group are a single logical link.


LACP Setup

LACP Global State	Enable ▾	
Link Aggregation Algorithm	MAC SA ▾	
Link Group Activity	Active ▾	
Link Group Member	Port 7	Port 8
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Apply

If Trunking enable, Please verify VLAN configurations in trunk port.


- **LACP Global State:** Administrator can Enable/Disable the function.
- **Link Aggregation Algorithm:** Administrator can select SA or DA or SA+DA for the MAC Frame.



**MAC DA:** Destination Address  
**MAC SA:** Source Address  
**Layer2 Packet Frame :** The following example

Preamble	SFD	DA	SA	Ether type	Payload	.....
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- **Link Group Activity:** Administrator can select active/passive of the Link Group Activity.



To properly use LACP, the two switches must have one switch enable "active" function or both enable "active", Administrator can't set "passive" in the two switch

- **Link Group Member:** If LACP function is enabled, the Link Group members will be auto-displayed.

## 7. Mirror

Port mirroring function can mirror Ingress/Egress traffic, the packet can mirror to Destination port and for analysis.

Mirror Port setup

☒ Enable Mirror

Mirror To Port 8 ▾ Apply

Port	None	Ingress	Egress	Mirror Both
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- **Enable Mirror:** Administrator can check to start mirror function.
- **Mirror To:** Administrator can mirror traffic to select port.
- **List:** Administrator can selected mirror type by “Ingress” or “Egress.”



## 8. 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.

Administrator can “Disable QoS” service; or can select 802.1p/ “Port-Based QoS” or “IEEE 802.1p QoS” function. The default is “Disable QoS.”

Select QoS Type

☐ Disable QoS  
☐ Port-Based QoS  
☒ IEEE 802.1p QoS

Priority	0(low)	1	2	3	4	5	6	7(height)	weight
Queue0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Queue1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Queue2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Queue3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8


Select QoS Type

- **Disable QoS:** Administrator can disable QoS function.
- **Port-Based QoS:** Administrator can use Port-Based mode to manage traffic.
- **IEEE 802.1q QoS:** Administrator can use IEEE 802.1q mode to manage traffic.

**Port-Based QoS:**

Administrator can set Queue (weight) QoS by Port.

Port	1	2	3	4	5	6	7	8	weight
Queue0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Queue1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Queue2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Queue3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8

**Notice**

Queue0 is Low Priority, Queue3 is High Priority.



## IEEE 802.1q QoS

Administrator can set Queue (weight) QoS by Tag VLAN.

Port	1	2	3	4	5	6	7	8	weight
Queue0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Queue1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Queue2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Queue3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8



Queue0 is Low Priority, Queue3 is High Priority.

## 9. Rate Limiting

The rate limiting function can be configured to limit the rate of traffic on a particular interface.

Administrator can to click “**Edit**” button to set rate limiting for each ports.

Port	Ingress rate	Egress rate
1	no limit	no limit
2	no limit	no limit
3	no limit	no limit
4	no limit	no limit
5	no limit	no limit
6	no limit	no limit
7	no limit	no limit
8	no limit	no limit
<b>Edit</b>		

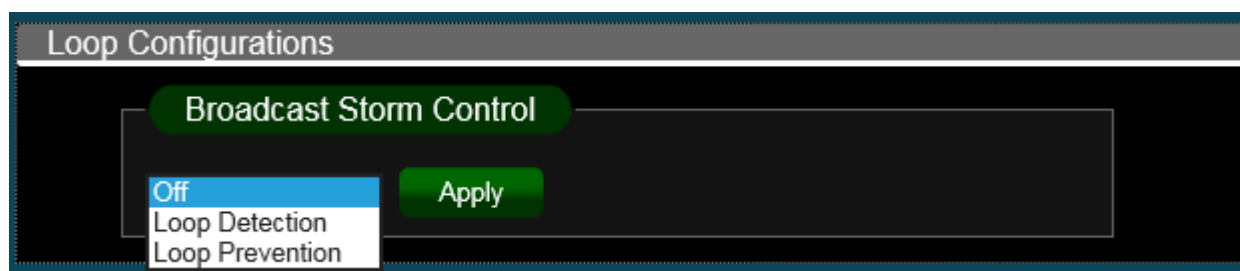
Port	Ingress rate	Egress rate
1	no limit ▾	no limit ▾
2	no limit ▾	no limit ▾
3	no limit ▾	no limit ▾
4	no limit ▾	no limit ▾
5	no limit ▾	no limit ▾
6	no limit ▾	no limit ▾
7	no limit ▾	no limit ▾
8	no limit ▾	no limit ▾
<b>Apply</b>		

- **Port:** Display Port list.
- **Ingress/ Egress rate:** Administrator can set ingress or egress for rate limiting.

## 10. Loop Detection / Prevention

Loop detection / Prevention can be used in a network topology to prevent or detect Layer 2 loops that occur due to misconfigurations.

When a loop occurs, Administrator can go to user manual “System” (section 3.) to monitor loop status, and tick off to do Loop Unlock for the desired ports.



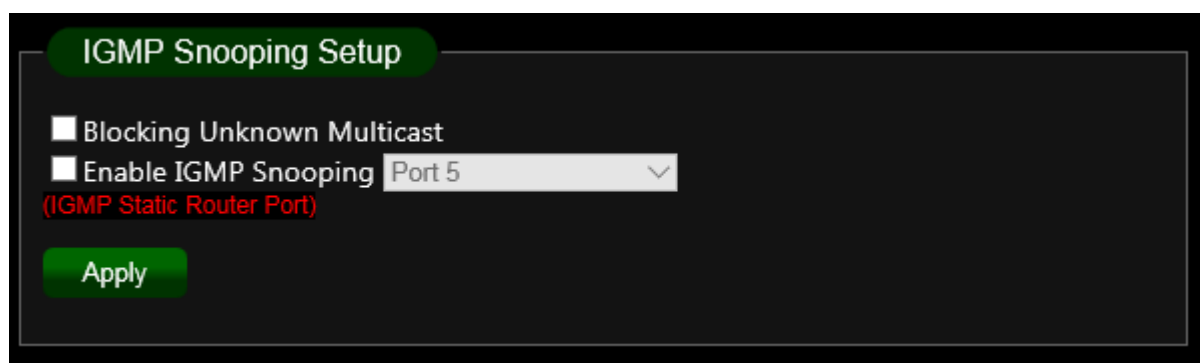
- **Off:** Administrator can disable loop detection or prevention function.
- **Loop Detection:** Administrator can select and use “Loop Detection” mode to detect network situation. (2 Port LDE-s will be off by loop Port.)
- **Loop Prevention:** Administrator can select and use “Loop Prevention” mode to prevent network looping. When Loop Prevention function is used, Administrator can close one loop line in the “3. System” Page.

Apply					
Port	Link Status	TX	RX	Loop Status	Loop Unlock
1	Down	626686	623371	1	<input checked="" type="checkbox"/>
2	1000 Mbps	1254009	1048	0	<input type="checkbox"/>
3	Down	830481	1053	0	<input type="checkbox"/>
4	Down	643022	640956	1	<input type="checkbox"/>
5	Down	0	0	0	<input type="checkbox"/>
6	Down	0	0	0	<input type="checkbox"/>
7	1000 Mbps	1269733	15967	0	<input type="checkbox"/>
8	Down	0	0	0	<input type="checkbox"/>
Clear Counters					

## 11. 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.

Administrator can enable "Blocking Unknown Multicast" or IGMP Snooping by port (set as the static router port.)



- **Blocking Unknown Multicast:** Administrator can enable Blocking unknown multicast addresses.
- **Enable IGMP Snooping:** To alleviate the burden of IGMP queries.

**Notice**

When LACP function is enable, the last two port (7 & 8) can't set to " Static Router Port ".


## 12. PoE

The function can monitor PoE used power status / Module Temperature and PoE voltage status.  
Administrator can control PoE usage per port through On/Off option.

POE Global Settings	
POE Total Power	65W
POE MAX LED Power	92W
POE IC Real Temperature	42°C (MAX : 158°C )
POE vmain voltage low setting	42V
POE vmain voltage	52V
POE vport voltage	52V

### POE Global Settings :

The function can monitor PoE used power status / Module Temperature and PoE voltage status.

 <b>Notice</b>	POE Total Power = 65W ( x2 unit Design)
	POE MAX LED Power = 92W ( 70% )


PoE Control / Status		
Port	Power Status	Real Power(W)
1	Turn on ▾	0
2	Turn off ▾	0
3	Turn on ▾	0
4	Turn off ▾	0
5	Turn off ▾	0
6	Turn off ▾	0
7	Turn off ▾	0
8	Turn on ▾	0
<div>Apply</div>		
Turned on:2 Total Power:0 W		

### POE Control / Status :

Administrators can control PoE usage per port through On/Off option.

## 13. Password

Administrator can change the Switch login password on this page. The default login password is default



The image shows a 'Change Password' form with a dark background. At the top left is a green button labeled 'Change Password'. Below it are three white input fields: 'Old Password:', 'New Password:', and 'Confirm New Password:'. At the bottom left is a green button labeled 'Save'.

**Note:**  
Password can only use "a-z", "A-Z", "0-9" and the length is at least 4, max is 15.

## 14. Logout

Clicking the logout button will log the administrator out of the management page.