ES5010G-2GS-8POE-150W-P(220VAC)
POE switch
User manual

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www.3onedata.com

ES5010G-2GS-8POE-150W-P(220VAC) user manual

Statement

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Revision History

Version No.	Date	Reason
V1.0.0	2014-9	Creating Documents

Notes

In reading this manual, please pay attention to the following symbols,

Information necessary to explain

Special attention

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CHAPTER 1 SUMMARIZE

1.1 Introduction

ES5010G-2GS-8POE-150W-P(220VAC) is Full gigabit , managed , 8-port Gigabit high power (IEEE 802.3at) PoE Switche,utilizing a compact factor which can be mounted in a 19-inch rack with rack-mounting kits or placed on desktop.

ES5010G-2GS-8POE-150W-P(220VAC): 8*10/100/1000M PoE ports,2*1000 Base-X SFP;1*Console port.

1.2 Features

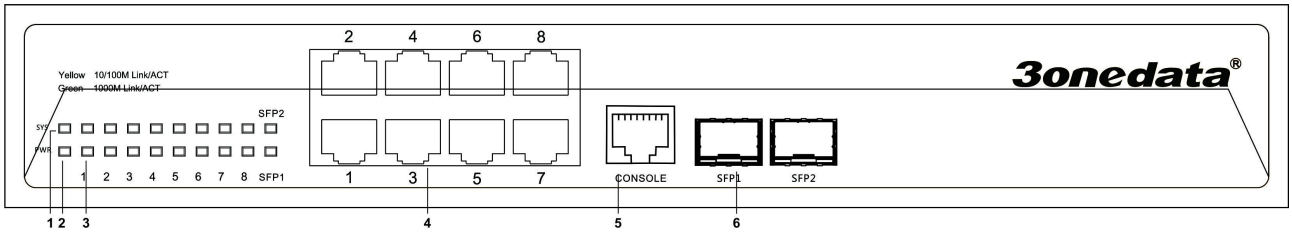
- Compatible with both IEEE802.3at(30W) and IEEE802.3af(15.4W), can supply power to PDs under these two standards
- Automatically detect and supply power to IEEE802.3at and IEEE 802.3af compliant powered devices(PDs)
- Advanced SAFC function, only supply power to IEEE 802.3af/at compliant PDs, no worry about damaging other private standard POE devices or devices without POE function
- Support port power supply prioritization, guarantee the continuous power supply of key nodes
- Up to 100m network cable transmitting distance
- Built-in PSE power supply module, plug-and play design, easy to install
- High security performance defending against power surge
- Support short-circuit protection function
- Energy-saving green design, support auto-switch to standby mode and auto-detect cable length.
- Support simple WEB management, easy to configure the functions of switches

CHAPTER 2 HARDWARE DESCRIPTION

2.1 Panel design

ES5010G-2GS-8POE-150W-P(220VAC)

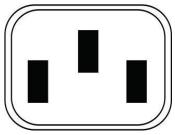
Front panel



Back panel

1. Power Indicator
2. System Indicator
3. LED indicator
4. 10Base-T /100Base-T/1000Base-TX port
5. CONSOLE port
6. 1000Base-FX SFP port
7. Power input socket

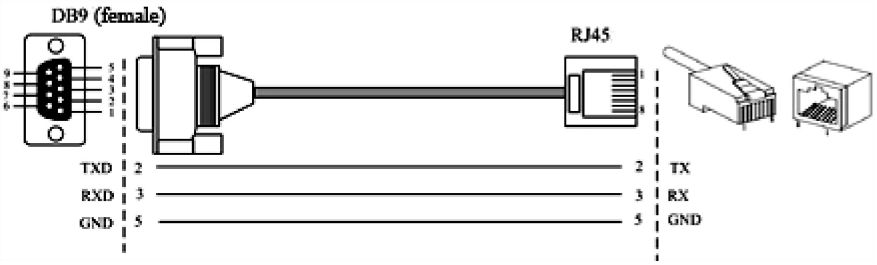
2.2 Power supply input



ES5010G-2GS-8POE-150W-P(220VAC) provides three power socket rear panel Used in the AC power input (220 VAC)

2.3 Console port

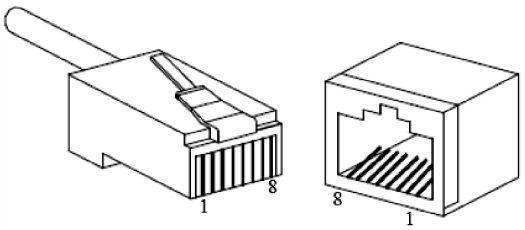
ES5010G-2GS-8POE-150W-P(220VAC) provided 1pcs procedure test port based in serial port. It adopts RJ45 interface, located in top panel, can configure the CLI command through RJ45 to DB9 female cable



2.4 Communication port

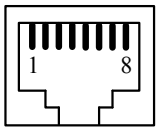
10Base-T /100Base-TX Ethernet port

10Base-T/100Base-TX/1000 Base-TX Ethernet port use in front panel, It is RJ45 port, the PIN define of RJ45 is as follows: connection adopt UTP or STP, the distance is no more than 100m, 1000Mbps use cat5e, 100Mbps use cat5, 10Mbps use cat3,4, 5.



RJ45 port support MDI/MDI-X self-adaption. In (MDI), PIN1, 2, 3, 4, 5, 6, 7, 8 connect corresponding, in (MDI-X) PIN1→3, 2→6, 3→1, 6→2, 4→7, 5→8, 7→4, 8→5. In MDI/MDI-X, 1000 Base-TX PIN define is as follows:

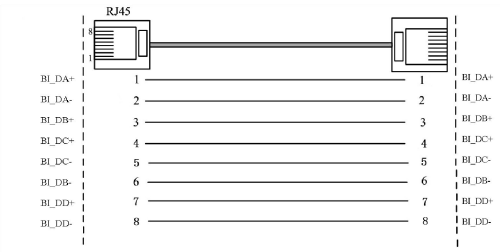
PIN	MDI	MDI-X
1	BI_DA+/TX+	BI_DB+/RX+
2	BI_DA-/TX-	BI_DB-/RX-
3	BI_DB+/RX+	BI_DA+/TX+
4	BI_DC+/—	BI_DD+/—
5	BI_DC-/—	BI_DD-/—
6	BI_DB-/RX-	BI_DA-/TX-
7	BI_DD+/—	BI_DC+/—
8	BI_DD-/—	BI_DC-/—



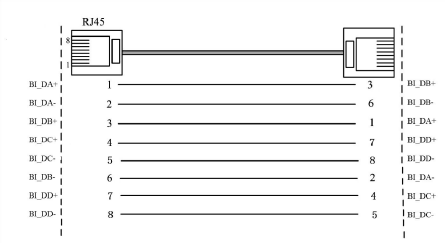
Information necessary to explain:

Note: “TX±”Transmitting data±, “RX±”receiving data±, “—”no use

MDI（**straight-through cable**）:



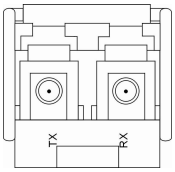
MDI-X（**Cross over cable**）:

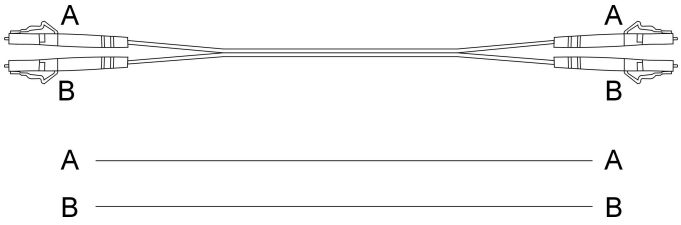


1000SFP fiber port(mini-GBIC)

1000BaseSFP fiber port adopts gigabit mini-GBIC transmission, can choice different SFP module according to different transfer distance. Fiber interface must use for pair, TX port is transmit side, must connect to RX(receive side). The fiber interface support loss line indicator.

Suppose: If you make your own cable, we suggest labeling the two sides of the same line with the same letter (A-to-A and B-to-B, shown as below, or A1-to-A2 and B1-to-B2).





2.5 LED Indicator

ES5010G-2GS-8POE-150W-P(220VAC) LED indicator light on the front panel .the function of each LED is described in the table as below:

LED	Indicator	Description
PWR	ON	Power connection regularly
	OFF	Power supply have no connection or unwonted
Sys	Blinking	Software running in the CPU
	Destroy/normally on	The software runs abnormally in the CPU
Link/ACT	ON	Established effective network connection
	Flashing	Network in activity statues
	OFF	Did not established effective network connection
	Yellow	The 10/100M ports auto-negotiate connected
	Green	The 1000Mbps ports auto-negotiate connected

2.6 Installation

Precautions

Please read the following precautions carefully before operation, to avoid damaging the device or causing body injuries.

1). Please remove the power socket before cleaning the switch. Don’ wipe the switch with wet cloth or wash the switch with liquid.

2). Don’t stock the device in damp environment or near water, to avoid water or moisture penetrating into the inner device.

3). Don't put the device on a unstable box or desk, the device will get damaged from falling.
4). Please keep good ventilation indoor, and make sure the heat dissipation function of switch works well.
5). The switch only works normally in suitable voltage. Please check the working voltage first.
6). Please don't open the switch enclosure randomly, especially when the switch is powered on, there is risk of electric shock.
7). Please wear anti-static wrist strap when change the interface board,to avoid the static electricity damage the board.

Check Installation Environment

The switch is for indoor use only, please pay attention to the following problems when install the switch in a cabinet or put the device directly on the desktop.

1) The air vents of switch must have enough space to dissipate the heat inside enclosure.
2) A good heat dissipation system in the cabinet or on the desktop.
3) The cabinet or desktop strong enough to support the weight of switch and installation accessories.
4) Safe ground connection for the cabinet or desktop.

Installation Tools

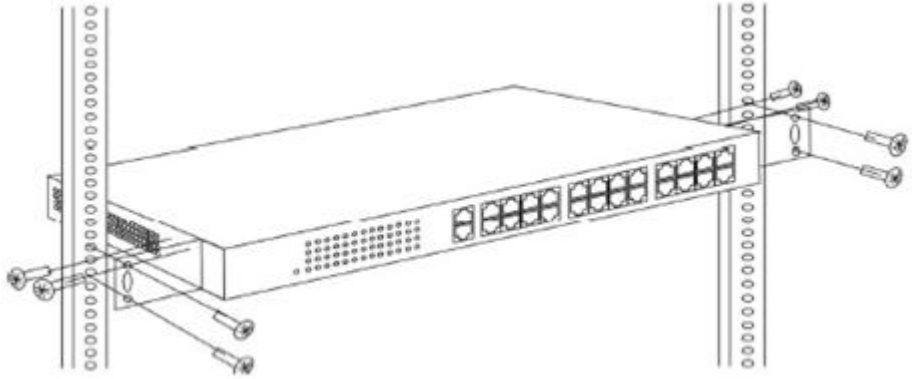
1) Flathead screw driver
2) Cross screw driver
3) Anti-static wrist strap

Installation

1.Install the Switch

1.1 Install the switch on a 19 inch standard cabinet

1) First fix the provided two L-shaped brackets on the two sides of switch.
2) Fix the switch on the rack with screws(screws are not provided).



1.2 Install the switch on the desktop

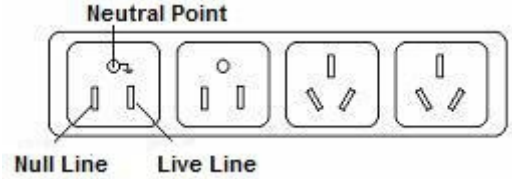
When there is no 19 inch standard cabinet, the switch is usually put on clean desktop. The operation is easier, please follow the below instructions:

1) Keep the desktop stable and safely grounded.
2) Set aside 10cm space around switch for heat dissipation.
3) Don't put any heavy device on the switch.

2.Connect the power cord and grounded cord

2.1 Select of AC Power Socket

The neutral one-phase 3-wire power socket is advised to adopt, or the multifunctional PC power socket. The neutral point of power supply must be well grounded, please check the grounded power supply before operation.



2.2 Connection of AC power cord

Step one: please connect one end of power cord to the power jack on the switch rear panel, Connect the other end to the AC power socket.

Step two: check the power indicator(PWR) on the front panel, if the LED is on, connection is Successful.

3.Test after Installation

Make sure the working voltage is the same with the rated voltage of switch.

Check the connection of grounded cord.

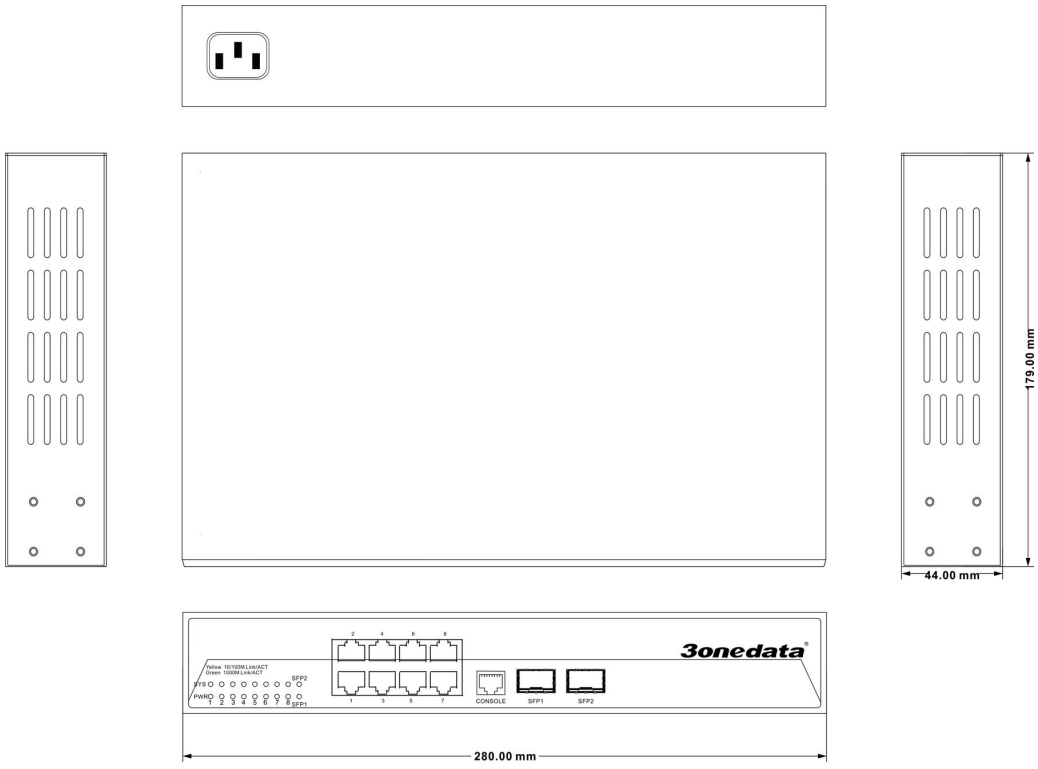
Check the connection of configuration cable and power input cord.

If the interface cable is partly deployed outdoor, please check the connection of anti-thunder AC power strip and interface anti-thunder device.

Chapter 3 Appearance and Dimension

3.1 Appearance

3.2 Dimension



CHAPTER 4 PACKLING LIST

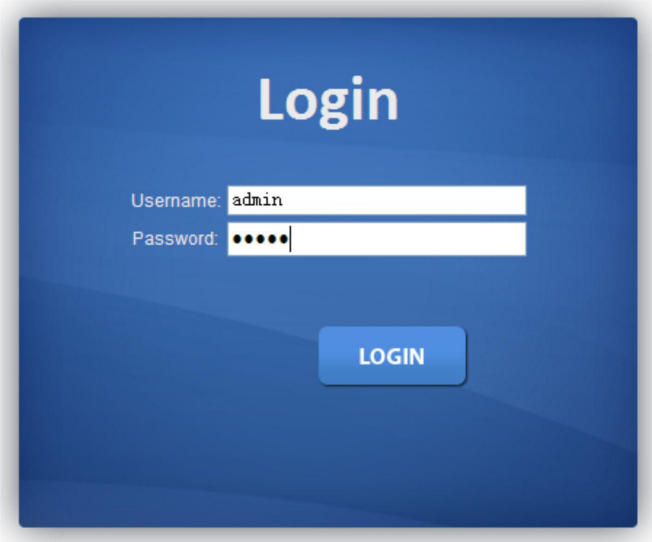
Please check the packaging and accessories by your first using. Please inform us or our distributor if your equipments have been damaged or lost any accessories, we will try our best to satisfy you.

Description	Quantity
POE switch	1
Power Cord	1
User manual	1
CD	1
Warranty card	1
Product Qualified Card	1

CHAPTER 5 Configure POE switch

5.1 User Login

Switch adopt Web-based interface management, the default IP is 192.168.255.1. Please make sure the IP address of PC is in the same network segment with that of switch,or the PC can't access to manage the switch. After the setting of IP address, please input 192.168.255.1 in the browser to access the configuration interface of switch.
The Web management interface consists of five parts, which are switch status, basic configuration, advanced configuration, network security, system maintenance.

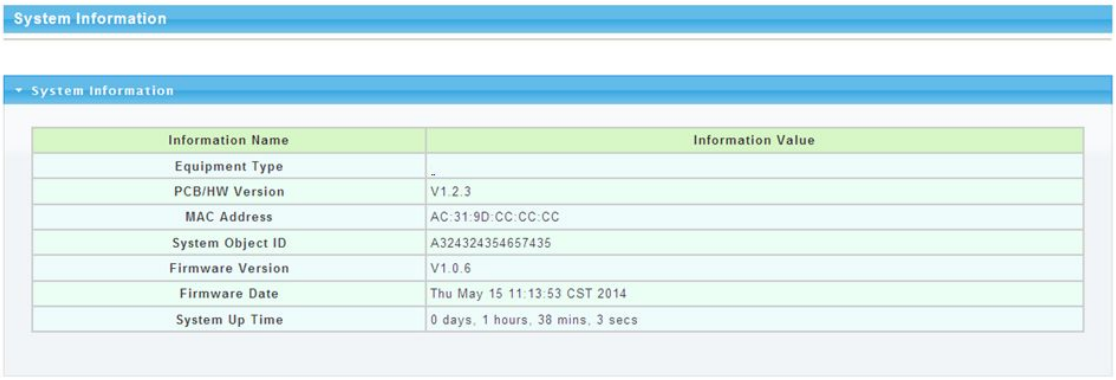


Picture5.1.1 Login Page

Enter user password in the above login page, the default password is admin. The system only support single user login, other logins will be refused until the user logs out.
If IP address conflict occurs, it suggests the latest user didn't log out successfully. Please reboot the device or try to log in again180s later.
It is advised to reset the IP address and password in first login, and make sure the switch is not configured in the same network segment with DHCP server or Internet Gateway device.

5.2 Switch Status

5.2.1 System Information

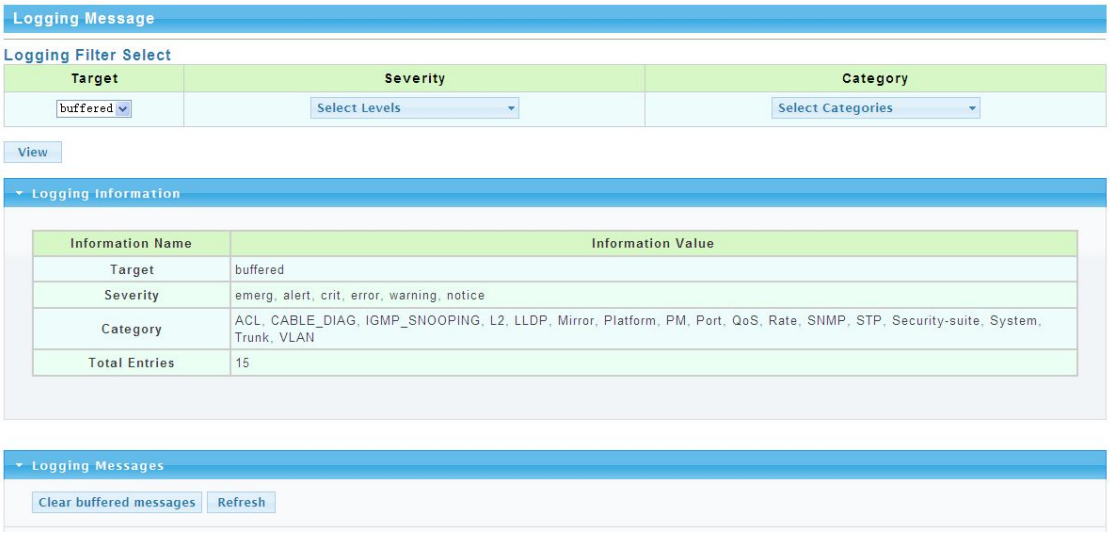


Picture 5.2.1 System Information

Device status can be checked in the above page, which contains: Device Model number(equipment type),

PCB/HW Version, MAC Address,Serial Number(System Object ID), Firmware Version, Firmware Updated Date, System Running Time(System Up Time).

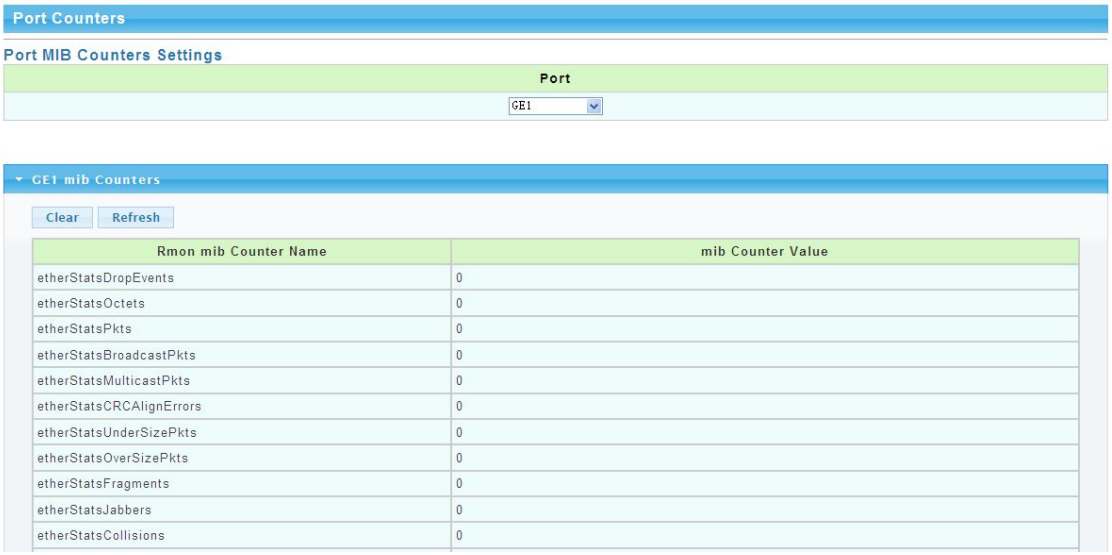
5.3 Logging Message



Picture 5.3.1 Logging Message

System log can be checked in above page. Maintenance technicians can check the history system log.

5.4 Port Counters



Picture 5.4.1 Port Counters

The above picture shows switch port statistics. Users can check the sent/received bytes,sent/received packets, wrongly sent/received packets. If there are too many wrong packets, it suggests the port has very poor working performance, the user need to examine the connection of network cable or the partner network card.

The current software version doesn't support real-time statistics refresh, please click "Refresh" button to get new statistics.

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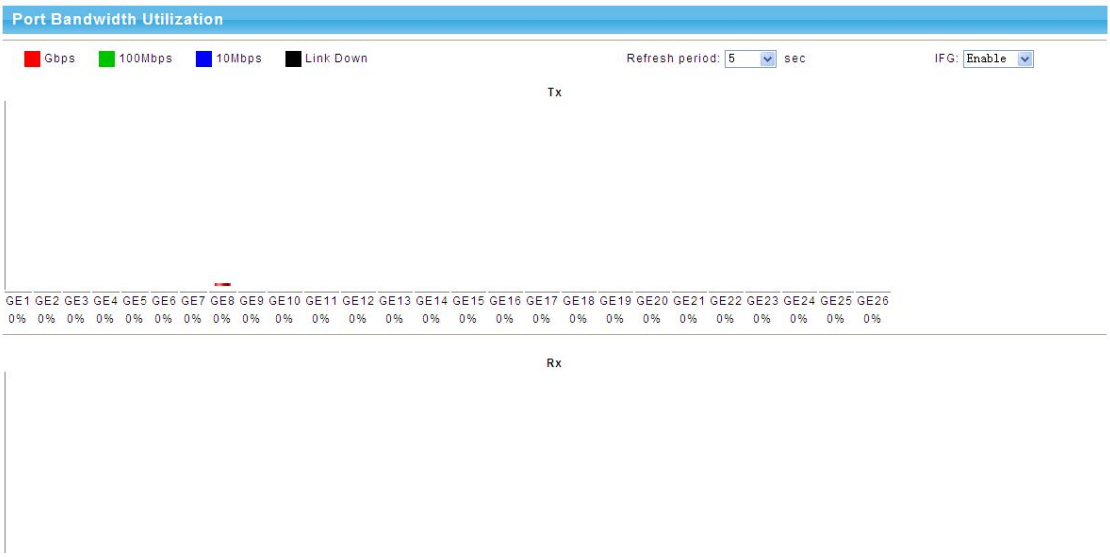
5.5 Port Status(Port Bandwidth Statistics)



Picture 5.5.1 Port Bandwidth Statistics

This page shows port bandwidth status. Users can check egress/ingress bandwidth in this page,including 1000Mbps, 100Mbps, 10Mbps.

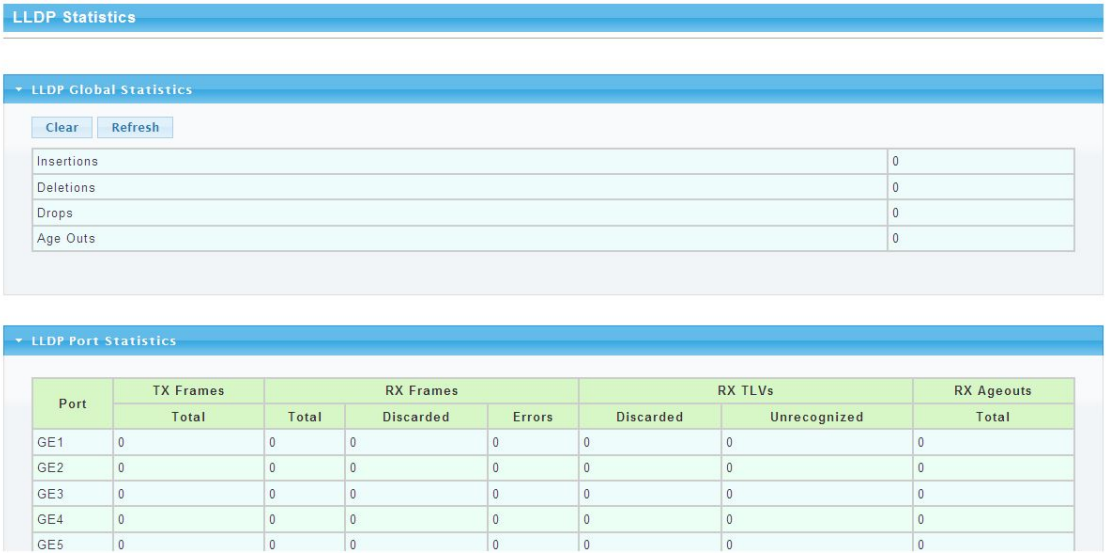
5.6 Link Aggregation

LAG	Name	Type	Link State	Active Member	Standby Member
LAG1	test 1	Static	DOWN	-	GE1-2
LAG2	test 2	Static	DOWN	-	GE3-6
LAG3		---	Not Present	-	-
LAG4		---	Not Present	-	-
LAG5		---	Not Present	-	-
LAG6		---	Not Present	-	-
LAG7		---	Not Present	-	-
LAG8		---	Not Present	-	-

Picture 5.6.1 Link Aggregation

In above Link Aggregation page, user can check the port aggregation information. Like aggregator group(LAG), link state, aggregator group member state(active/standby).

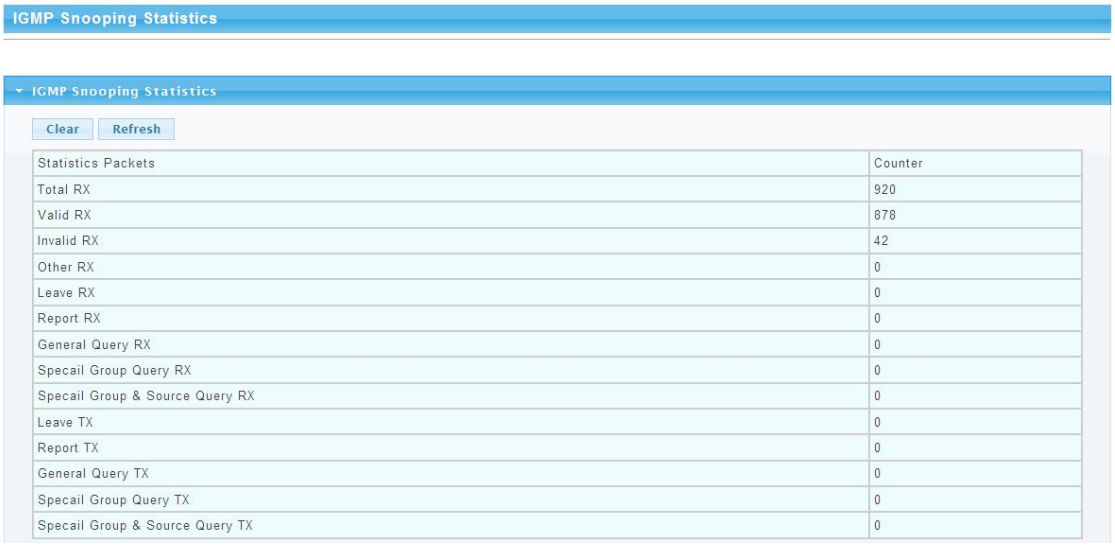
5.7 LLDP Statistics



Picture 8.7.1 LLDP Statistics

LLDP information can be checked in above page. When enable the LLDP(Link Layer Discovery Protocol) function, LLDP information of switch ports can be checked here.

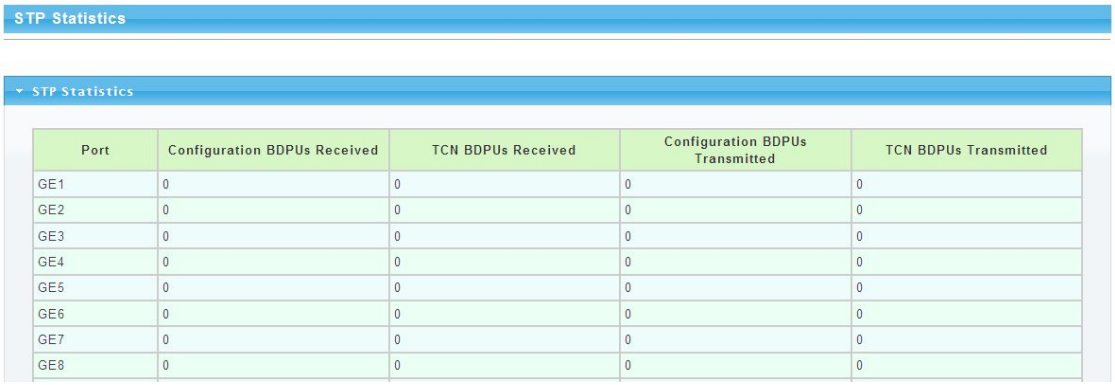
5.8 IGMP Statistics



Picture 5.8.1 IGMP Statistics

When the IGMP snooping function is enabled, IGMP information can be checked in above page.

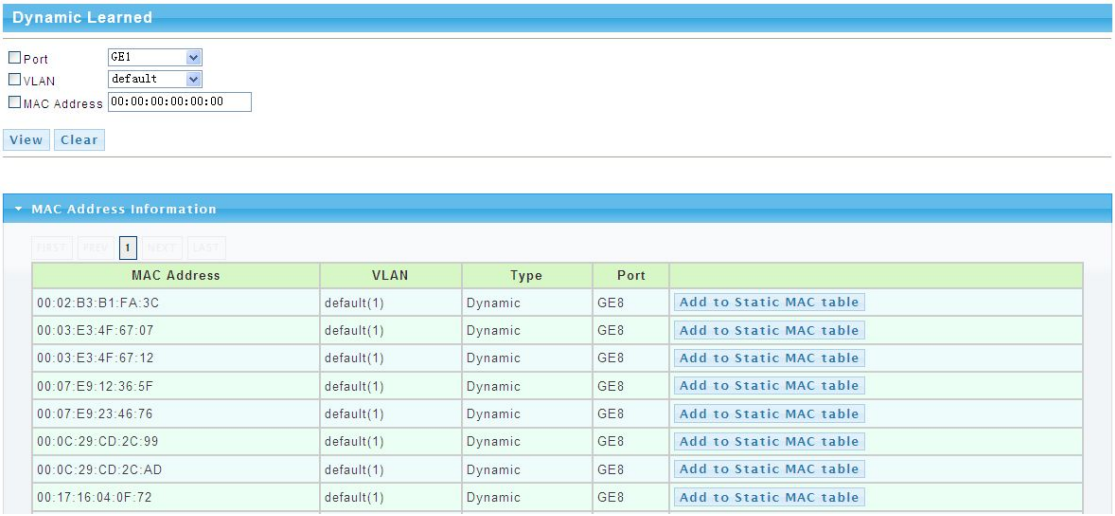
5.9 STP Statistics



Picture 5.9.1 STP Statistics

In above STP statistics page, users can check the BPDU packets of every port and every link aggregation STP.

5.10 MAC Address Table

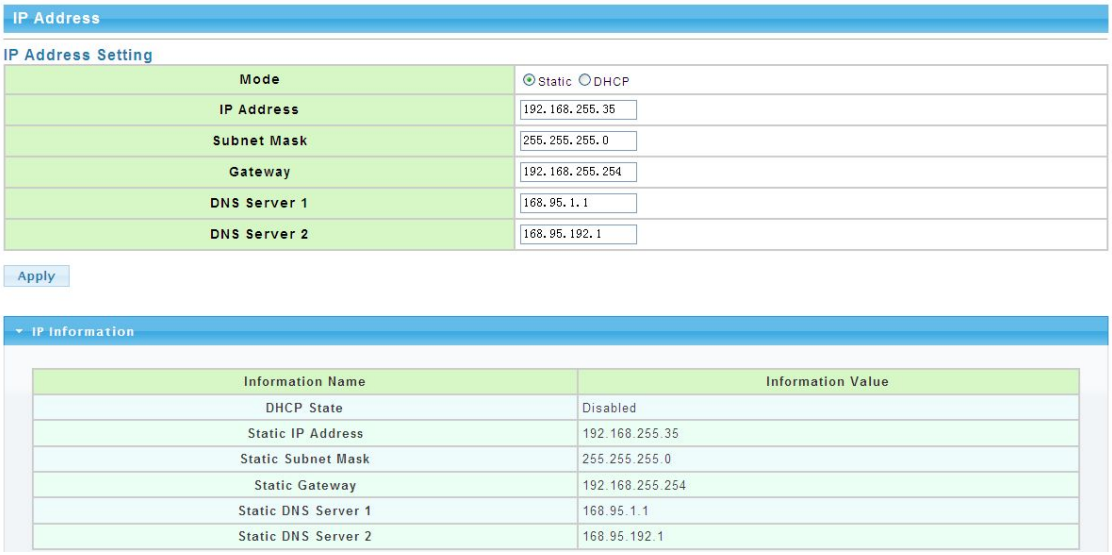


Picture 5.10.1 MAC Address Table

MAC address table and configuration can be checked in above page, users can add the showed dynamic MAC addresses to static MAC table.

Chapter 6 Basic Configuration

6.1 IP Configuration



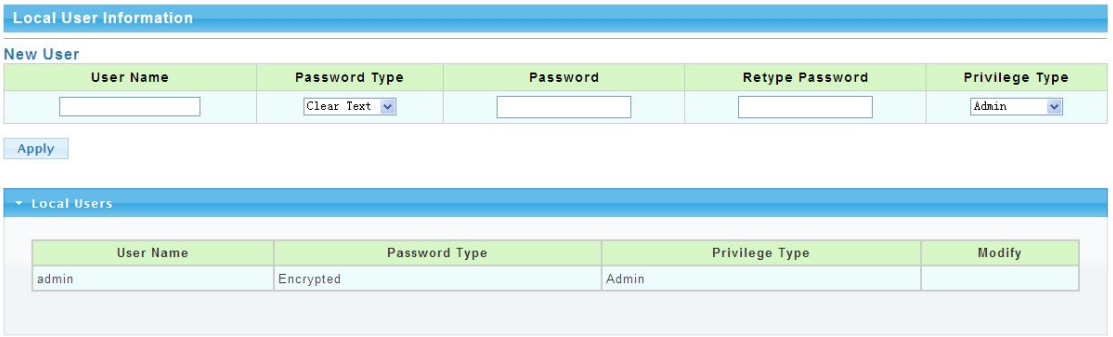
Picture 6.1.1 IP configuration

The above IP address configuration page can be used to configure the IP address of device management interface "Interface Vlan 1". The default IP address, subnet mask and gateway will be showed in the page. When revise the configuration, please press "save" to confirm new configuration. Press "reset" to back to original configuration.

Above configuration need to be done under default "Static" state,if switch the IP address mode to DHCP, IP address will be get dynamically. Please record the new IP address for future login.

Notice: Don't modify the subnet mask unless exceptional case, login problem will be caused by improper modification.

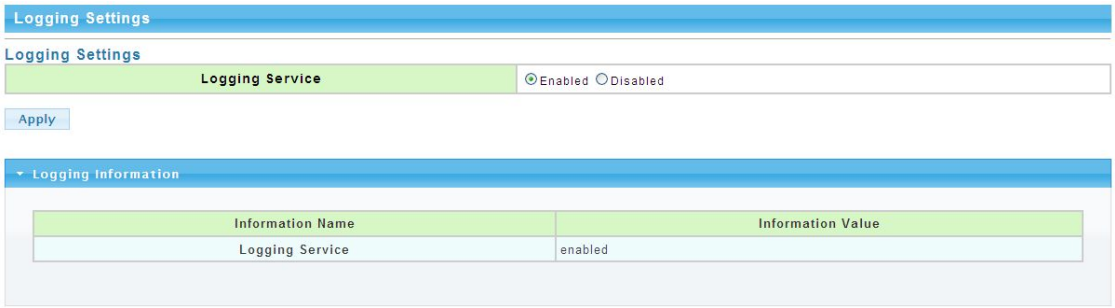
6.2 Account Configuration



Picture 6.2.1 Account configuration

Login password can be revised in this page, please remember the new password for future login.

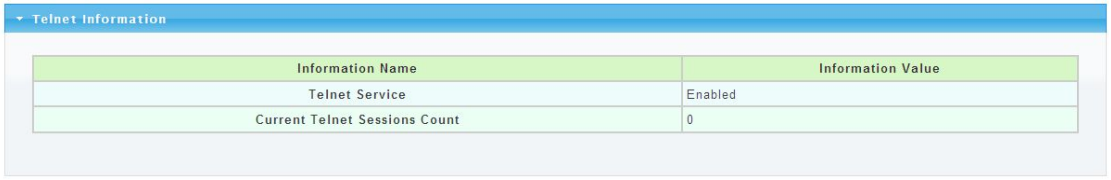
6.3 Logging Setting



Picture 6.3.1 Logging Setting

System log configuration is checked in above page. Remote log server can be configured, system log can be saved on the remote server as backup use. Enable or disable the remote backup function in this page, “server IP address” need to be entered manually.

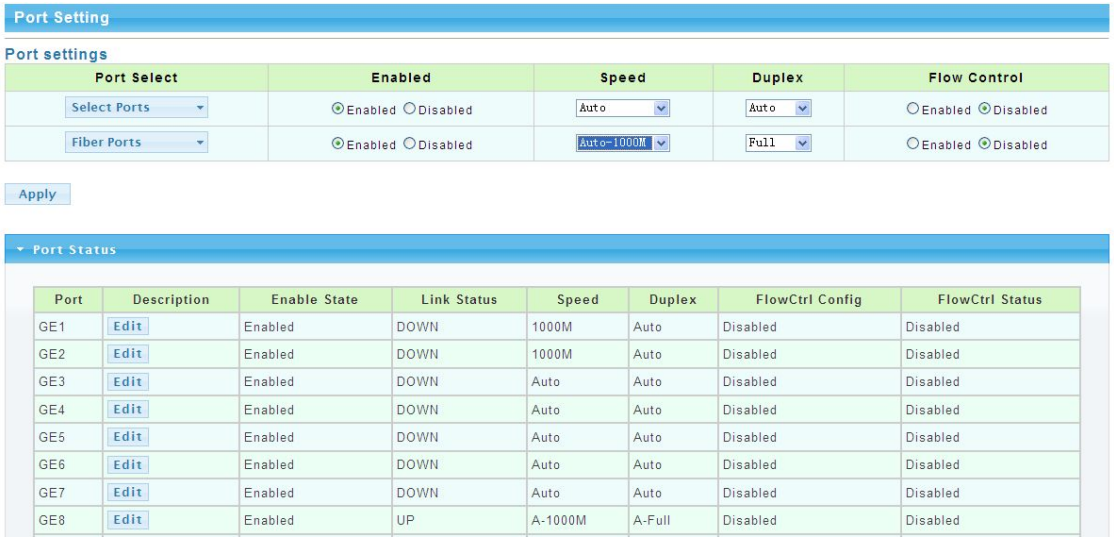
6.4 Telnet Configuration



Picture 6.4.1 Telnet Information

Please enable Telnet function in this page. When Telnet function enabled, the switch can be remotely managed by Telnet.

6.5 Port Setting



Picture 6.5.1 Port Setting

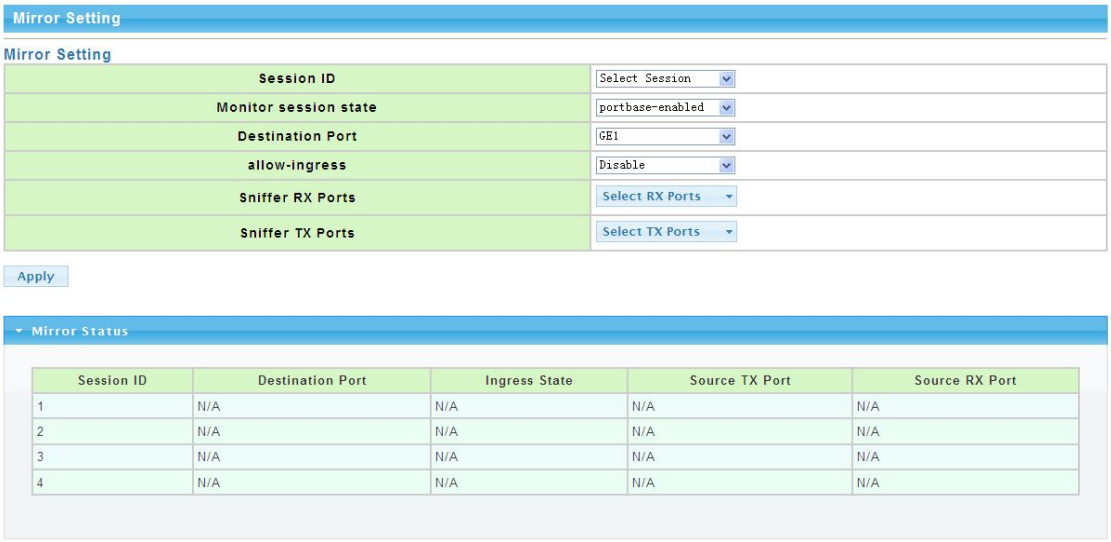
Port Status: The user can enable or disable a port in this page.Click “Enable” to open the port, click “Disable” to close the port, the default setting is “Enable”.

Port Mode: 6 modes can be configured:Auto-negotiation,10 Half,10 Full,100 Half, 100 Full and1000 Full. Default mode is Auto-negotiation, can be changed in pull-down list.

Flow Control: This function is defaulted closed, open it when needed.
Loop Detection:The function is defaulted closed, open it when needed.A port will be blocked to cut the loop when loop is detected.(Notice: the port link indicator in front panel will be still on when the port is blocked, for the physic connection is existed; while the link indicator on the top of web management pages will be off.)

Chapter7 Advanced Configuration

7.1 Port Mirror Configuration



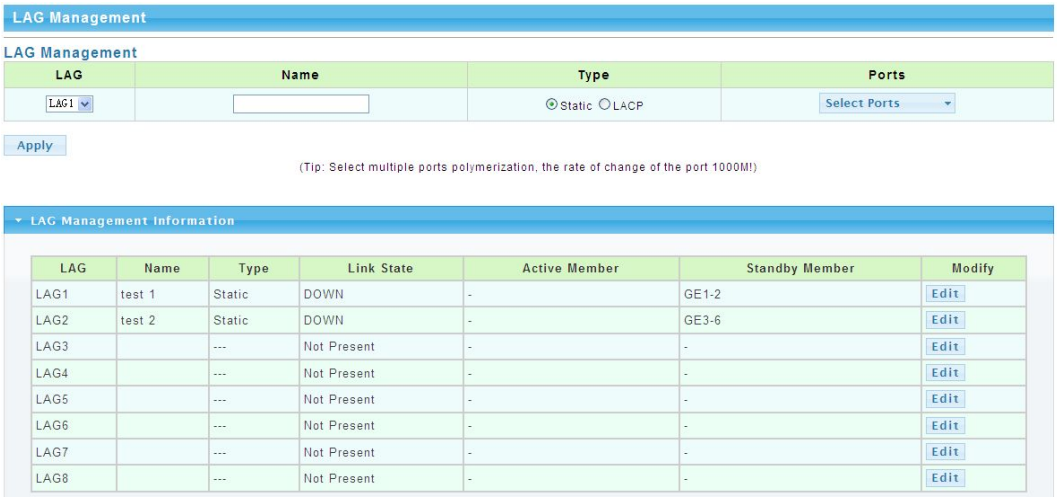
Picture 7.1.1 Port Mirror Configuration

Users can do Port Mirror Configuration in above page. Port mirroring is used on a network switch to send a copy of network packets or data traffic from some ports (or an entire VLAN) to a network monitoring connection on specified switch port. The original port is called Source Port, and the specified port is Mirroring Port. This is commonly used for network appliances that require monitoring of network traffic without influencing the normal working of every port, it's a convenient online-monitoring function.

All ports have mirroring function, but only one port can be configured as Mirroring Port. In the same system, there is only one mirroring port, while more than one Source Ports can be existed. When a port is configured as mirroring port, its corresponding port can't be configured as source port.

7.2 Port Aggregation

7.2.1 Static Aggregation

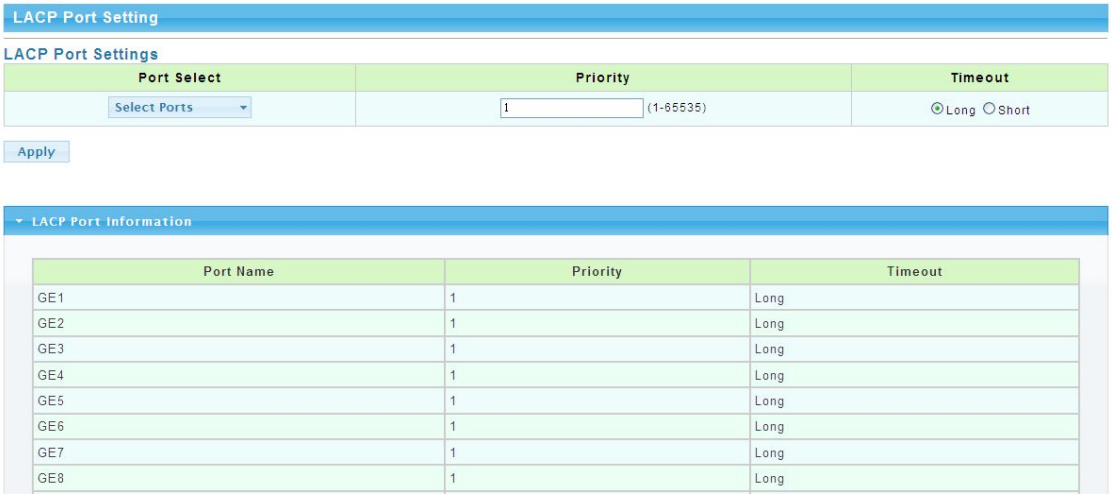


Picture7.2.1 Static Aggregation

Switches support 8 aggregation groups, each group contains maximum 8 ports. The members in the same

aggregation group should have same configuration for port forwarding rate mode and VLAN distribution.
If LACP function applied for some ports, then static aggregation can't be configured.
Notice: Static aggregation can't be configured when LACP function enabled.

7.2.2 LACP Setting

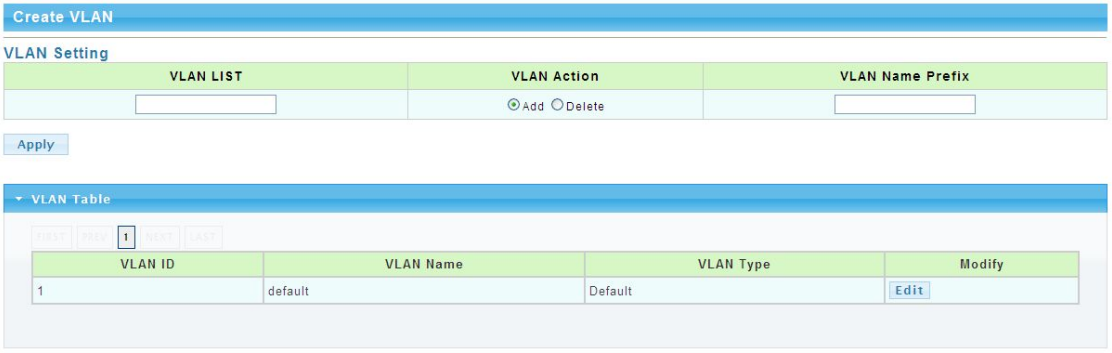


Picture 7.2.2 LACP Setting

When the LACP protocol is on, the aggregated devices interactively gather information through LACP. According to the parameters and status of each device, automatically receive and dispatch Data of matchable link aggregation. When the Aggregation is formed, switches keep in an aggregation link status, switches automatically adjusts link aggregation or dissolute when configuration changes.
If the port is configured as static aggregation, the dynamic LACP will be not available.
Notice: Static aggregation LACP function can't be used together.

7.3 VLAN Management

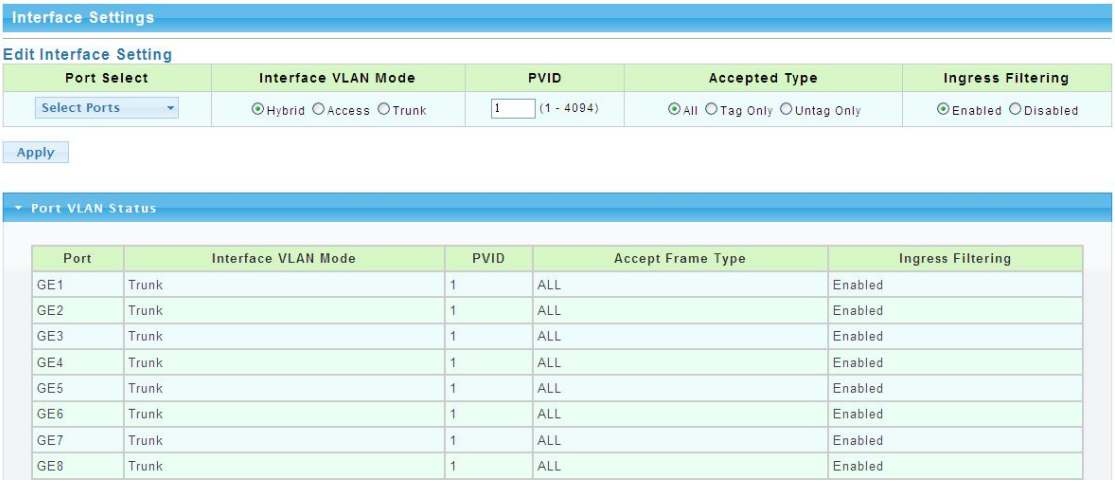
7.3.1 VLAN Setting



Picture 7.3.1 VLAN Setting

VLAN can be created or deleted in above page. Users can create a new VLAN and give a name to the VLAN.

7.3.2 VLAN Port Status



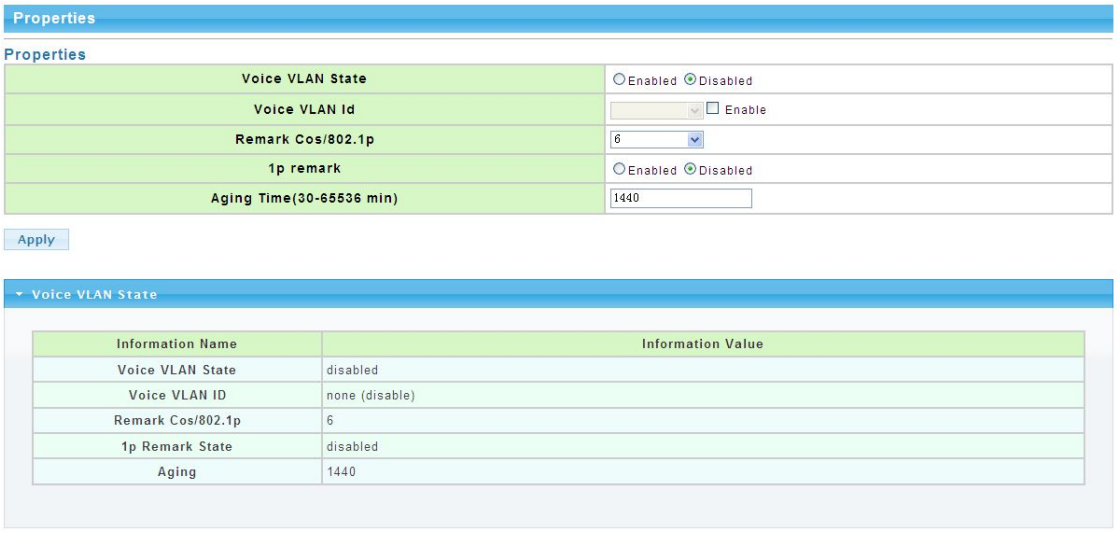
Picture 7.3.1 VLAN Port Status

Port features can be configured in above page. Users can create a VLAN and add ports to the VLAN list with specified mode. VLAN features and port parameters can be configured.

Ingress Filtering: enable ingress filtering function to abandon or forward unmatched VLAN packets. This function is default disable, the unmatched packet will be received. **Membership type:** tag refers to the port will receive tagged packets(and the VLAN ID in for tagged packet is not "0"); untag refers to the port receive untagged packets only.

7.4 Voice VLAN

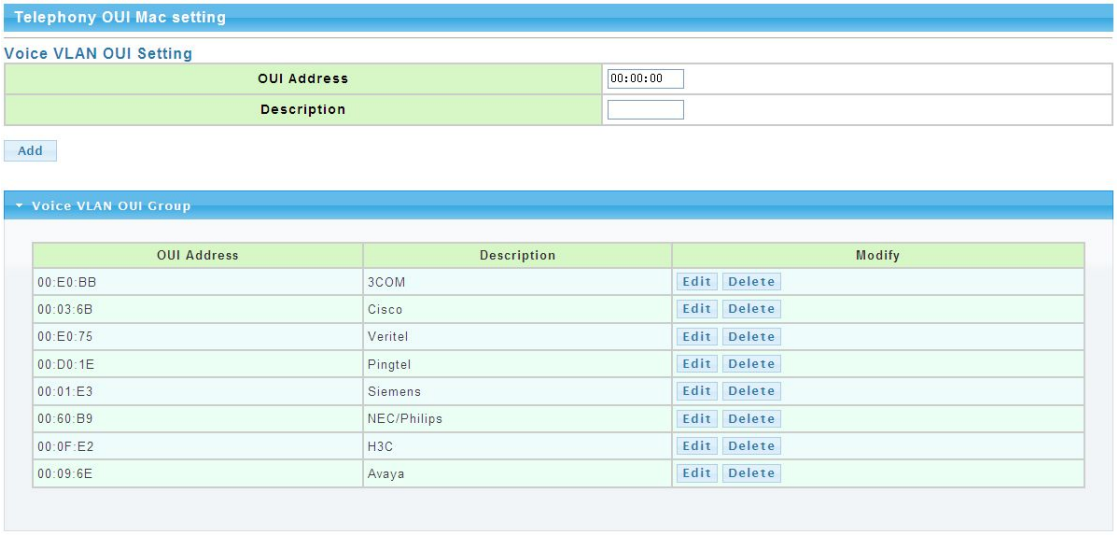
7.4.1 Voice VLAN



Picture 7.4.1 Voice Vlan

Voice VLAN is the VLAN for voice data flow. Create a Voice VLAN and add the ports connected with voice devices to Voice VLAN, Voice data flow can be centrally transmitted in Voice VLAN. Users can configure special QoS(Quality of Service) for the voice data flow, like configure a higher transmitting priority class to ensure a high quality connection.

7.4.2 Voice VLAN OUI



Picture 7.4.2 Voice Vlan OUI

Voice VLAN signify mode can be configured in this page, like Siemens AG phones、 Cisco phones、 H3C phones……

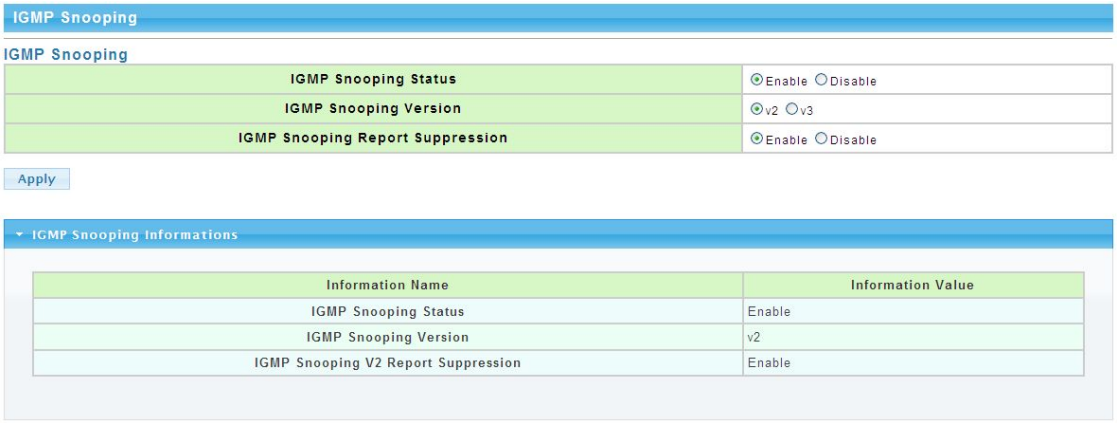
7.5 Multicast Configuration

Picture 7.5.1 Multicast Configuration

MLD Snooping is short for Multicast Listener Discovery Snooping, which is IPv6 multicast control mechanism for Layer 2 devices. The function is used to manage and control IPv6 multicast.

Multicast snooping configuration can be made in above page, enable or disable multicast snooping and define multicast snooping address range.

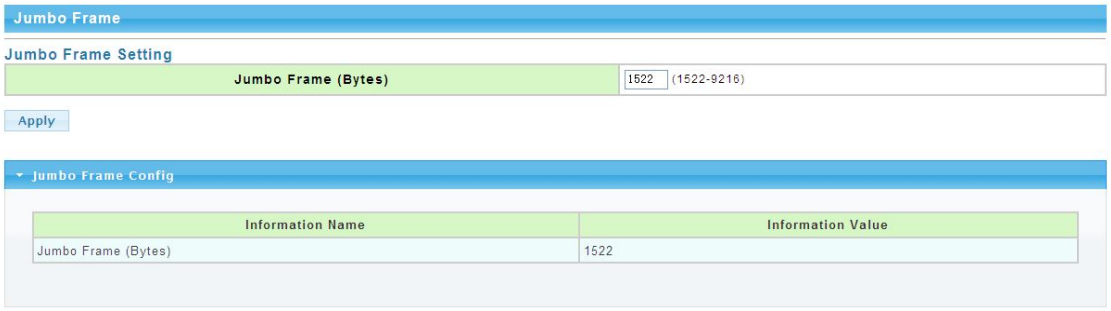
7.6 IGMP Snooping Configuration



Picture 7.6.1 IGMP Snooping

IGMP snooping configuration can be made in above page, enable or disable IGMP snooping and define IGMP snooping address range.

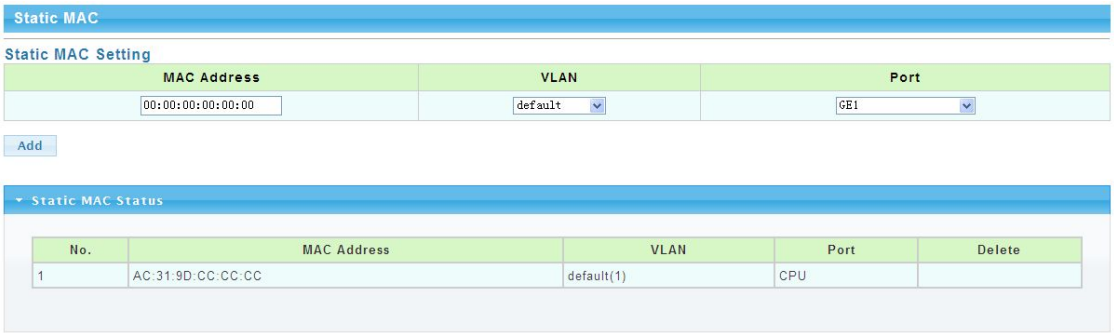
7.7 Jumbo Frame Configuration



Picture 7.7.1 Jumbo Frame Configuration

Generally, the max frame size for packet is 1518 Bytes, when packet is larger than this size, it will be processed in batch, 1518 Bytes as a unit. And users can also set a Jumbo Frame limitation in this page(from 1522 to 9216 Bytes), enable Jumbo Frames transmitted smoothly, reduce the load.

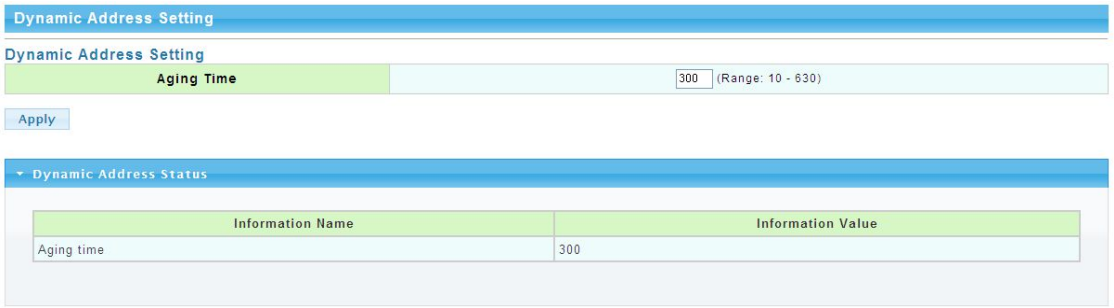
7.8 Static MAC Address Table



Picture 7.8.1 Static ARP Table

Static MAC address configuration can be manually made in this page. MAC items can be added according “port”,”VLAN ID”,”MAC address” and “IP address”.

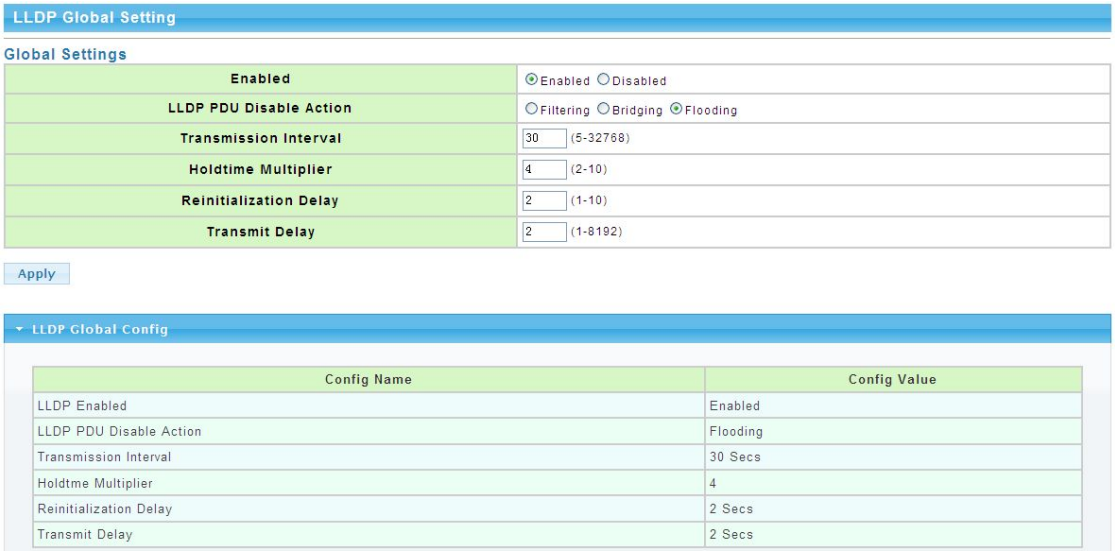
7.9 Dynamic MAC Address Configuration



Picture 7.9.1 Dynamic MAC Address Configuration

In above dynamic address setting page, users can check the aging time of MAC address.

7.10 LLDP Configuration



Picture 7.10.1 LLDP Configuration

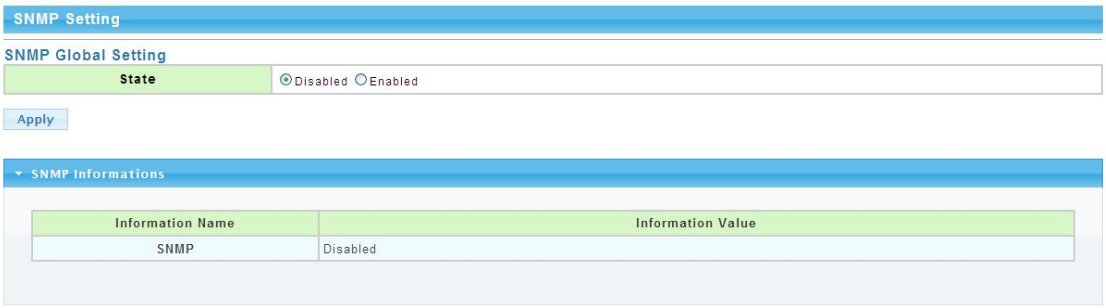
Switches support LLDP(Link Layer Discovery Protocol), which can define switch capacity, management address, device tags and port tags as different(TLV(type/length/value) and save them in LLDPDU (Link Layer Discovery Protocol Data Unit). These information will be released to the direct-connected neighbor device, neighbor devices will save these information based on MIB(Management Information Base) . These information will be used for network management system examination or judge link communication condition.

LLDP information can be configured in above page, including transmission interval,hold time Multiplier,retransmission delay and transmission delay.

Enable LLDP or Disable LLDP can be configured. Users can also configure the information transmitted to neighbor devices, like port description, system name, system description, system property and management address.

7.11 SNMP Configuration

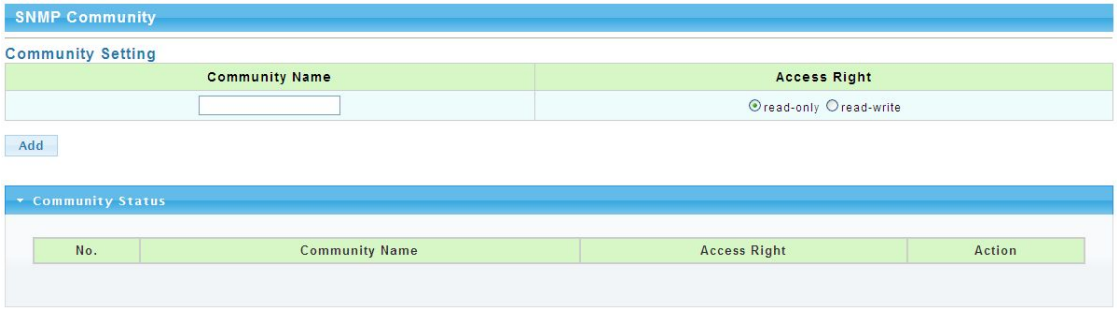
7.11.1 SNMP system configuration



Picture 7.11.1 SNMP System Configuration

SNMP(Simple Network Management Protocol) is Internet-standard protocol for managing devices on IP networks.It consists of a set of standards for network management, including anapplication layer protocol, a database schema, and a set of data objects. SNMP is used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

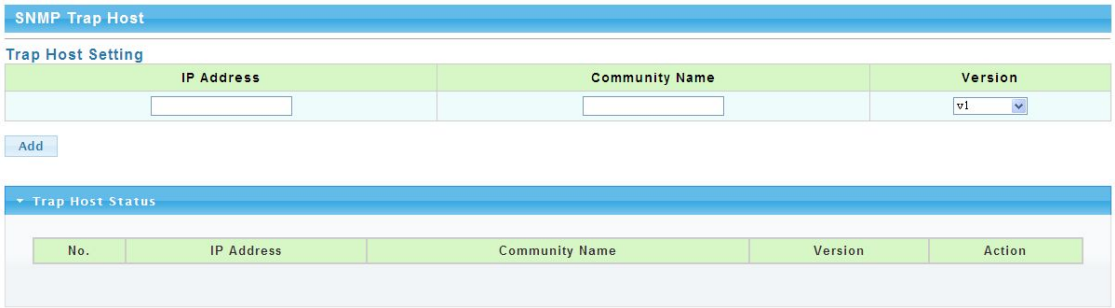
7.11.2 SNMP Community configuration



Picture 7.11.2 SNMP Community Configuration

Configure SNMP common identifiers, switches with same community identifier can make unified management.

7.11.3 Trap Configuration



Picture 7.11.3 Trap Configuration

SNMP trap is a message used in SNMP protocol, the device can send a trap message to SNMP manager when they experience a problem, rather than waiting for the polling of SNMP manager.

7.12 PoE Management

Trap Configuration

From above interface ,you can find “Enable/disable”to enable or disable PoE supply power to powered device.

From the Priority,you can find Low,Middle and High to ensure power output of the port with the highest priority.

You can check current currency from column“(mA)”,Voltage from column“（V）”

and power from column“(W)” and PoE output grade from column “(Class)”

The default setting is “0”for 0-13W PD, ”1” for less than 4W PD, “2” for 4-7W PD.

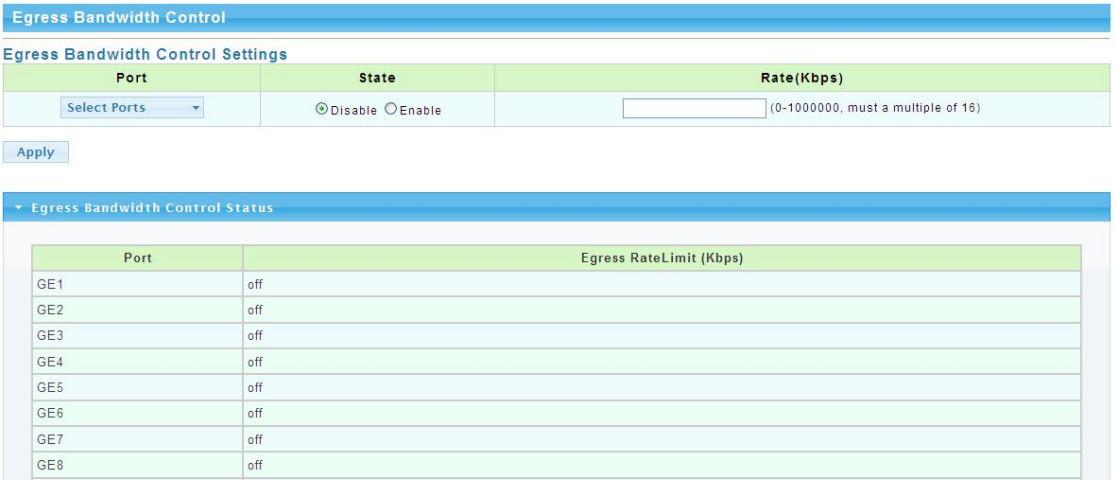
“3”for 7-13W PD,”4” for IEEE802.3at PD, “5,6” kept as potential grade.

You can find PoE supply power normally or not from “Status” column or LED indicators status from Front panel of the Switch.

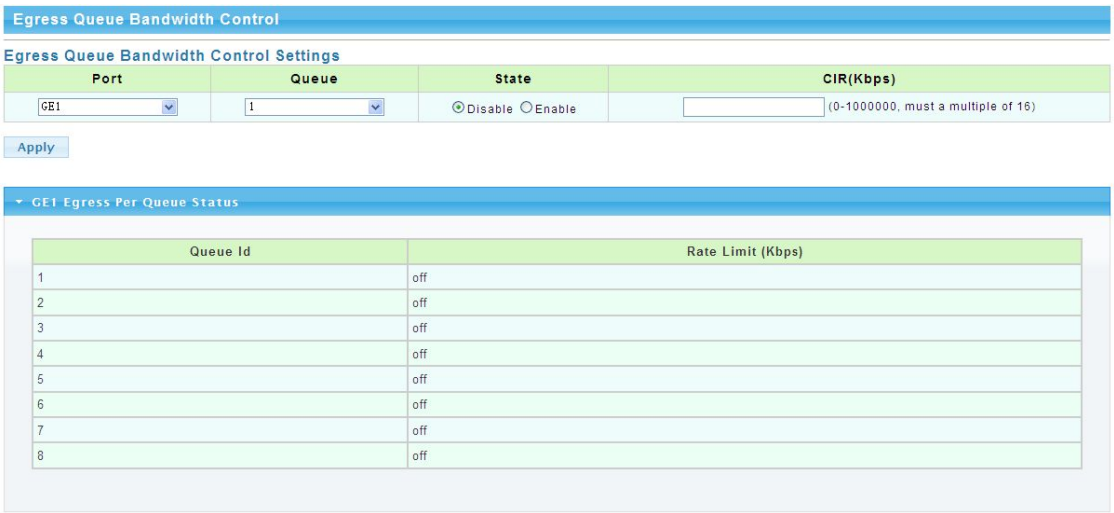
Chapter 8 Network Security

8.1 Port Limit Configuration

Picture 8.1.1 Ingress Bandwidth Control



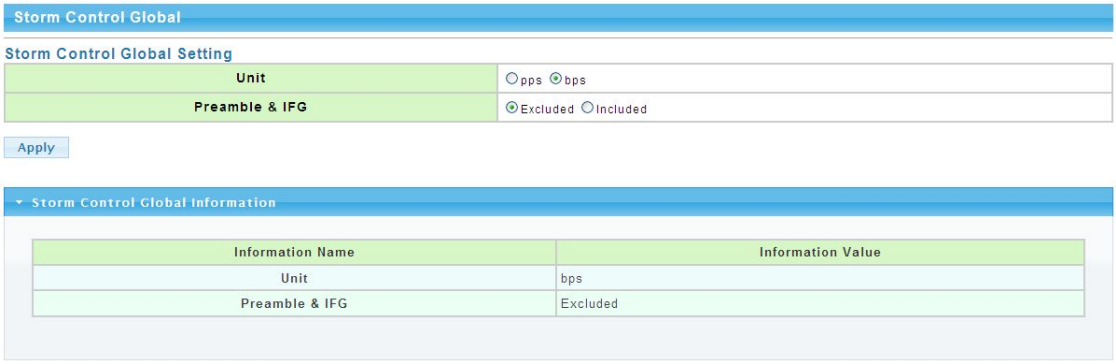
Picture 8.1.2 egress Bandwidth Control



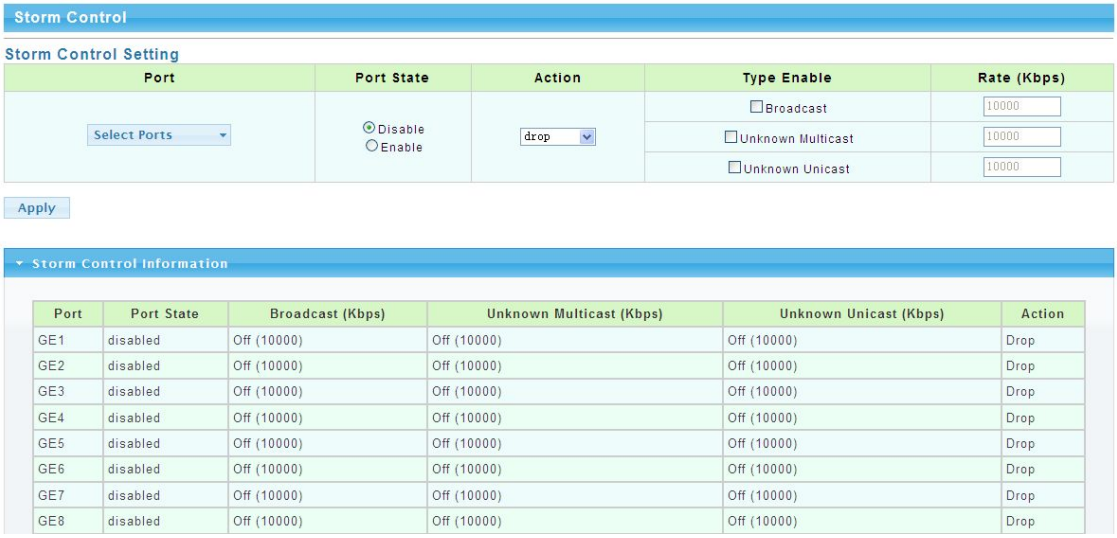
Picture 5.1.3 Egress Queue Bandwidth

Switch Bandwidth can be configured in above pages. Configurations include ingress/egress flow control, flow control priority class.

8.2 Storm Control



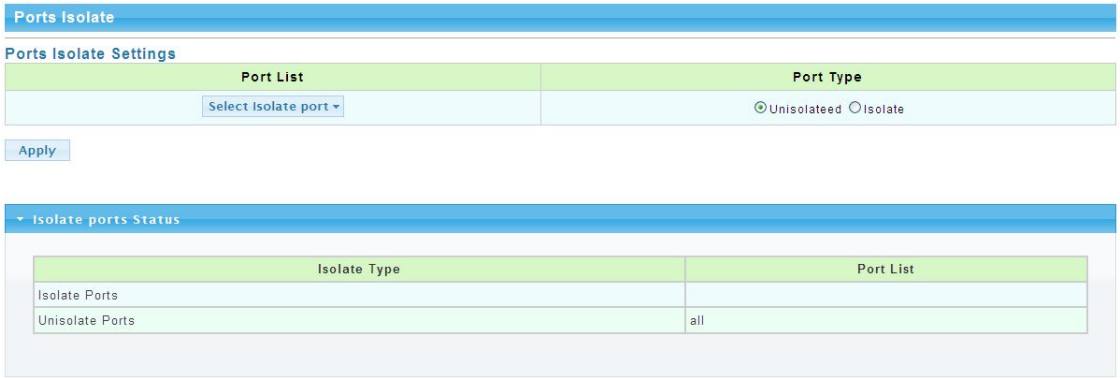
Picture 8.2.1 Storm control



Picture 8.2.2 Storm control Port Configuration

After enable the global situation storm control, please continue with function configuration. The switch supports multiple storm control modes, like broadcast storm control, unknown multicast storm control and unknown unitcast storm control.

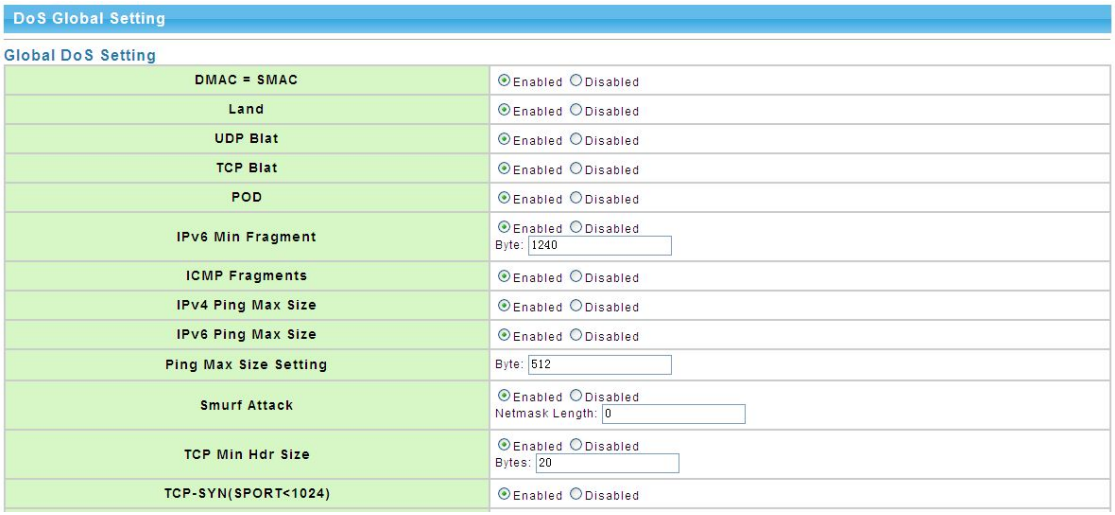
8.3 Port Isolation



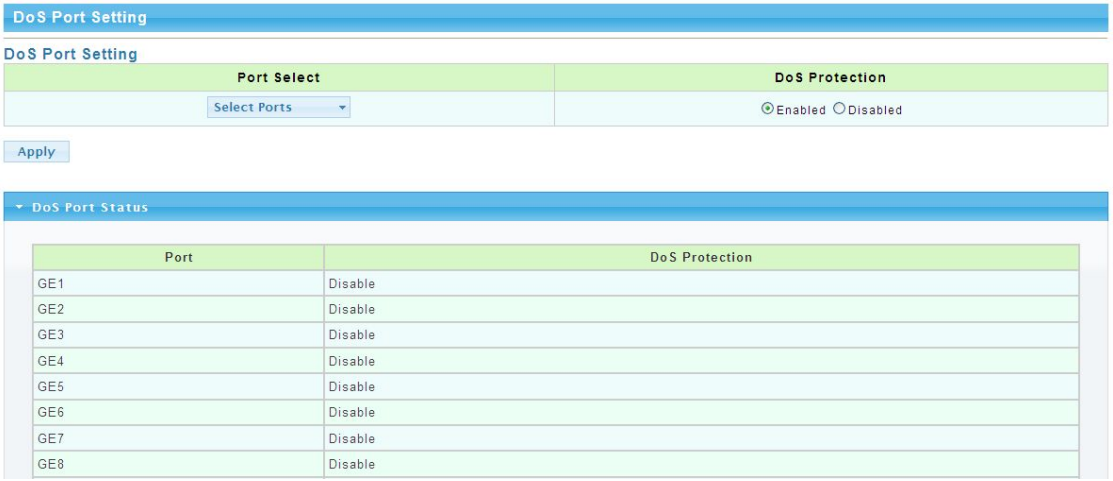
Picture 8.3.1 Port Isolation Configuration

In above port isolation page, isolated ports can be configured. Applying port isolation function to ensure port security.

8.4 DoS configuration



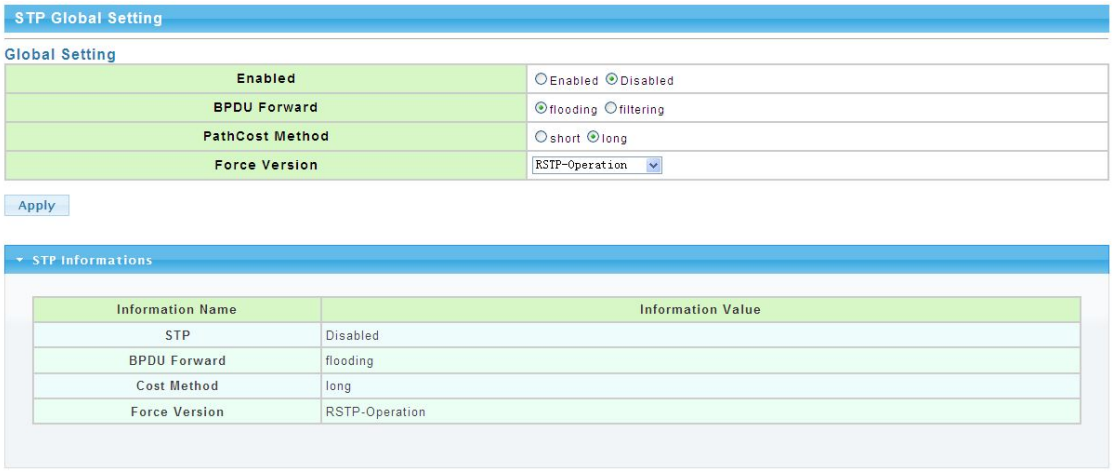
Picture 8.4.1 Global Dos Configuration



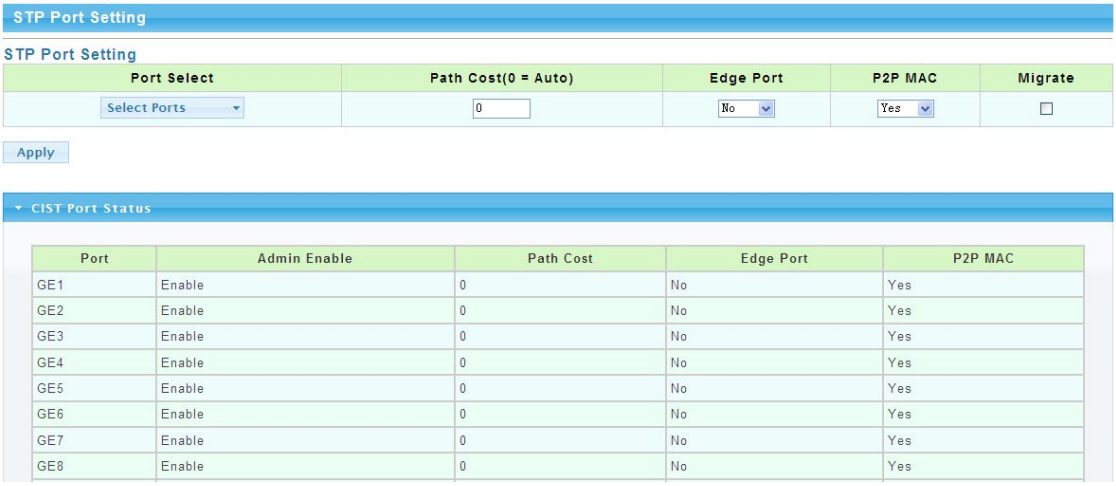
Picture 8.4.2 Dos Port Configuration

Dos is short for Denial of Service, what causes DoS problem is DoS attacks, which will block the normal network service. The most common DoS attacks are computer network bandwidth attack and connectivity attack. Please configure DoS information in above pages.

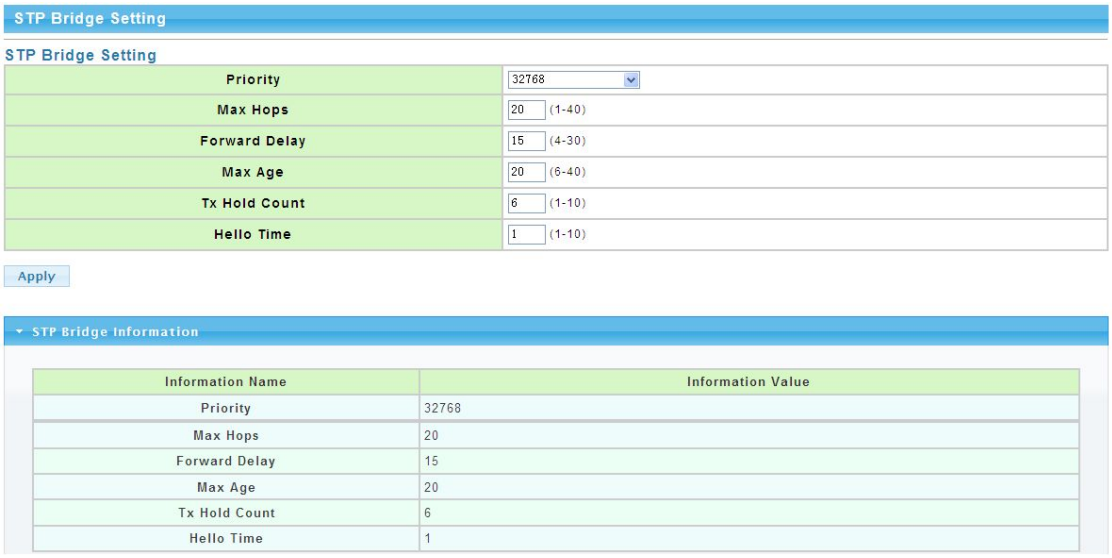
8.5 STP Configuration

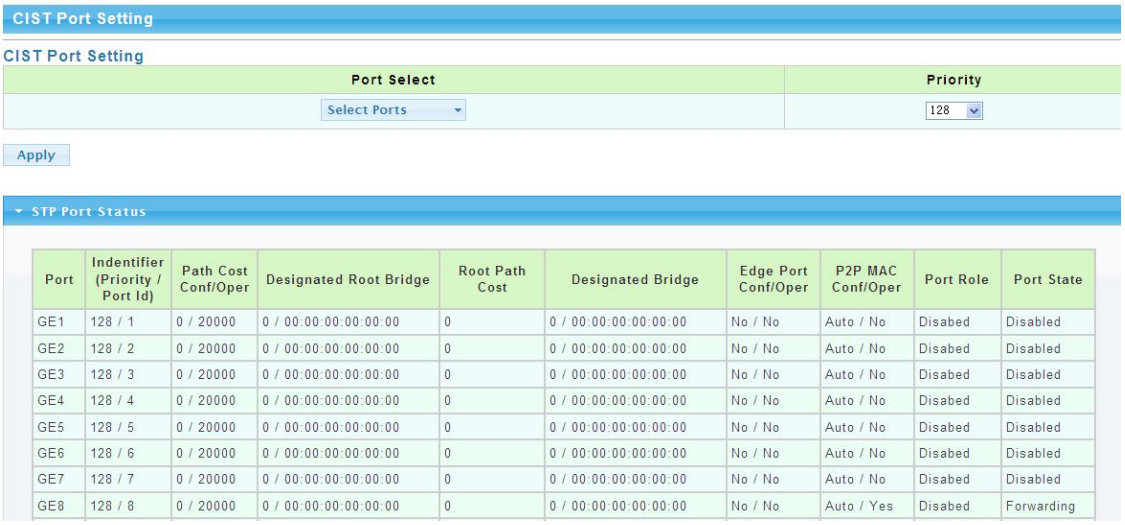


Picture8.5.1 STP Global configuration



Picture 8.5.2 STP Port configuration





Port	Indentifier (Priority / Port Id)	Path Cost Conf/Oper	Designated Root Bridge	Root Path Cost	Designated Bridge	Edge Port Conf/Oper	P2P MAC Conf/Oper	Port Role	Port State
GE1	128 / 1	0 / 20000	0 / 00:00:00:00:00:00	0	0 / 00:00:00:00:00:00	No / No	Auto / No	Disabled	Disabled
GE2	128 / 2	0 / 20000	0 / 00:00:00:00:00:00	0	0 / 00:00:00:00:00:00	No / No	Auto / No	Disabled	Disabled
GE3	128 / 3	0 / 20000	0 / 00:00:00:00:00:00	0	0 / 00:00:00:00:00:00	No / No	Auto / No	Disabled	Disabled
GE4	128 / 4	0 / 20000	0 / 00:00:00:00:00:00	0	0 / 00:00:00:00:00:00	No / No	Auto / No	Disabled	Disabled
GE5	128 / 5	0 / 20000	0 / 00:00:00:00:00:00	0	0 / 00:00:00:00:00:00	No / No	Auto / No	Disabled	Disabled
GE6	128 / 6	0 / 20000	0 / 00:00:00:00:00:00	0	0 / 00:00:00:00:00:00	No / No	Auto / No	Disabled	Disabled
GE7	128 / 7	0 / 20000	0 / 00:00:00:00:00:00	0	0 / 00:00:00:00:00:00	No / No	Auto / No	Disabled	Disabled
GE8	128 / 8	0 / 20000	0 / 00:00:00:00:00:00	0	0 / 00:00:00:00:00:00	No / No	Auto / Yes	Disabled	Forwarding

Picture 8.5.3 STP Bridge Configuration

STP configurations can be made in above pages. Users can choose from STP and RSTP modes according to different network requirements.

Chapter9 System Maintenance

9.1 Reboot Switch

Picture 9.1.1 Reboot Switch

Above page is used to reboot switch. When manage the switch, some configurations need to reboot the switch to take effect.

9.2 Factory Reset

Picture 9.2.1 Factory Reset

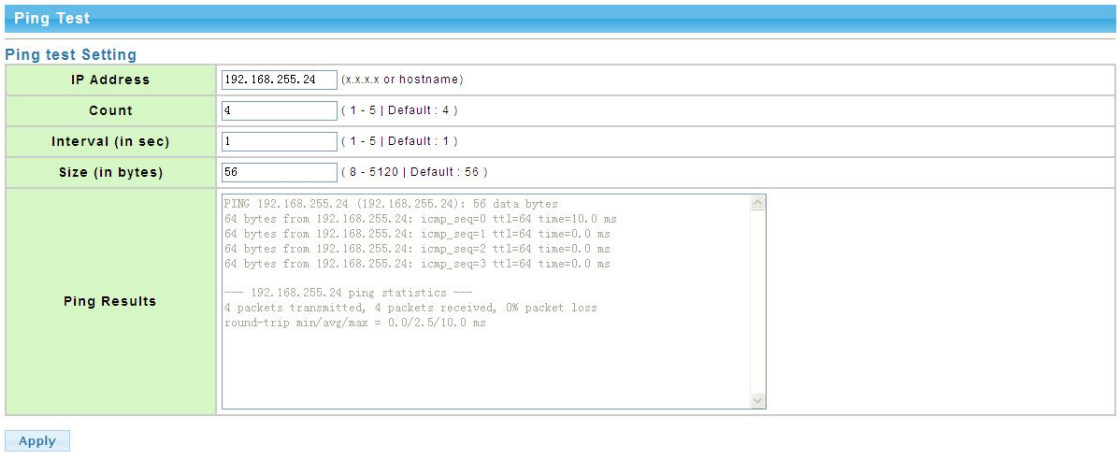
The switch support factory reset, press “restore” button to back factory default settings, including all configurations, IP address and management password.

9.3 Firmware Upgrading

Picture 9.3.1 Firmware Upgrading

Current system software version can be checked in this page, and new software upgrade can be made.

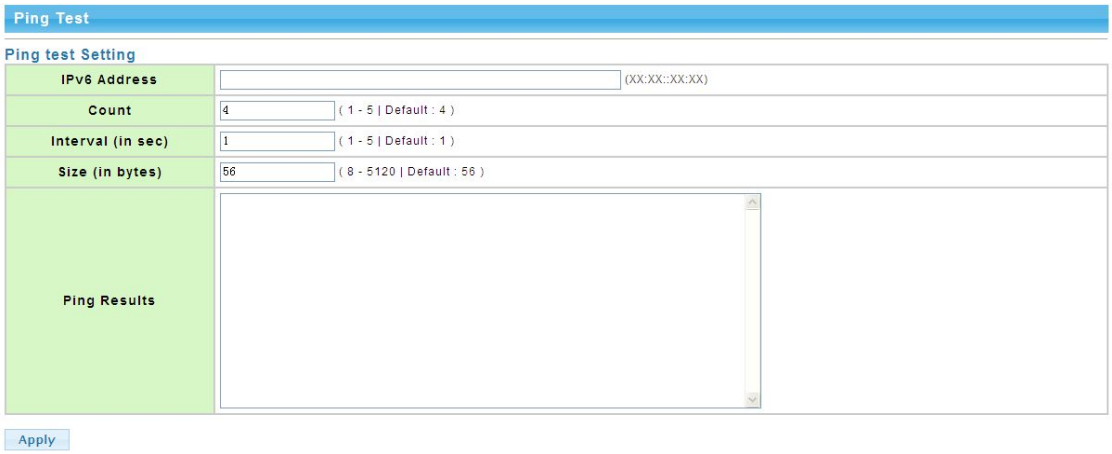
9.4 Ping Test



Picture 9.4.1 Ping Test Configuration

Ping test is to check if a specified Client can be reached, the function is the same with ping command under windows command lines. The IP addresses of switch and PC must be in same network segment.

9.5 IPv6 Ping Test



Picture 9.5.1 IPv6 Ping Test Configuration

Ping test is to check if a specified Client can be reached, the function is the same with ping command under windows command lines. The IP addresses of switch and PC must be in same network segment.

9.6 Network Cable Test

Picture 9.6.1 Network Cable Test

Users can test the twisted pair cable working status. Please select test ports then press “cooper test” to check the working status.

Appendix Trouble shooting

Problems	Reasons	Solutions
All LEDs are off when power on the switch	Power cord connection error or power supply failure	Check power cord connection and the power socket.
The LINK LED is unlit.	1. Network cable is damaged or the connection is not firm. 2. Wrong network cable type or the cable is longer than 100m.	Change the network cable.
Slower data transmitting and packets loss.	The communication pattern of switch and PDs are not matched.	Changed to matched pattern or configure to auto-negotiation pattern.
The network cable works in one port ,doesn't work in another new port.	There is no data transmitting from PD and the switch can't learn a new address to do communication.	Waiting for 120s, the swith will get auto-updated address or transmitting data from the PD, the switch will get address then.
All the "ACT" LEDs flash and the network rate slow down	Caused by broadcast storm.	1. Check if there is a loop problem, reasonably configure the network. 2. Check if there are large numbers of broadcast packets from specific sites.
Stop to work after working for a while.	1. Abnormal power supply. 2. Overheating.	1. Check power connection and the working voltage; 2. Check the working environment,including air hole and switch fan.
"PoE" LED indicators flash	1. PoE port doesn't work 2. PD is overloaded 3. The network cable is damaged.	Check the network cable, port connection or reduce the load of PDs.