8-Port Gigabit + 2-Port Gigabit SFP L2 Managed PoE Switch

User Manual

Ver 1.1 | 04/12/2023

Table of Contents

1. Product Introduction

Congratulations on your purchasing of the 8-Port Gigabit + 2-Port Gigabit SFP L2 Managed PoE Switch. Before you install and use this product, please read this manual carefully for full exploiting the functions of this product.

1.1. Product Overview

The Switch is a new generation designed for high security and high performance network the second layer switch. Provides eight 10/100/1000Mbps self-adaption RJ45 port, and two 100/1000Mbps SFP ports, all ports support wire-speed forwarding, can provide you with larger network flexibility. All ports support Auto MDI/MDIX function.The Switch with a low-cost, easy-to-use, high performance upgrade your old network to a 1000Mbps Gigabit network.

The Switch Support VLAN ACL based on port, easily implement network monitoring, traffic regulation, priority tag and traffic control. Support traditional STP/RSTP/MSTP 2 link protection technology; greatly improve the ability of fault tolerance, redundancy backup to ensure the stable operation of the network. Support ACL control based on the time, easy control the access time accurately. Support 802.1x authentication based on the port and MAC, easily set user access. Perfect QOS strategy and plenty of VLAN function, easy to maintenance and management, meet the networking and access requirements of small and medium-sized enterprises, intelligent village, hotel, office network and campus network.

The Switch all UTP ports support PoE power supply function, support IEEE802.3at standard, 802.3af downward compatibility, power supply equipment for Ethernet, can automatically detect identification standard of electrical equipment, and through the cable for the power supply.

1.2. Features

- Comply with 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3x, IEEE 802.3z, IEEE802.1Q ,IEEE802.1p, IEEE802.3af, IEEE802.3at
- Supports PoE power up to 30W for each PoE port, total power up to 140W for all PoE ports
- 8 x 10/100/1000Mbps Auto MDI/MDI-X Ethernet port
- 2 x 100/1000Mbps SFP port
- 8K entry MAC address table of the switch with auto-learning and auto-aging
- Supports IEEE802.3x flow control for Full-duplex Mode and backpressure for Half-duplex Mode
- Support Web interface management
- supports QoS (quality of service), port mirror, Link aggregation protocol
- LED indicators for monitoring Power,System,link/activity, PoE

1.3. External Component Description

1.3.1. Front Panel

The front panel of the Switch consists of a reset button, a series of LED indicators, 8 x 10/100/1000Mbps RJ-45 ports, two SFP ports and a console port.

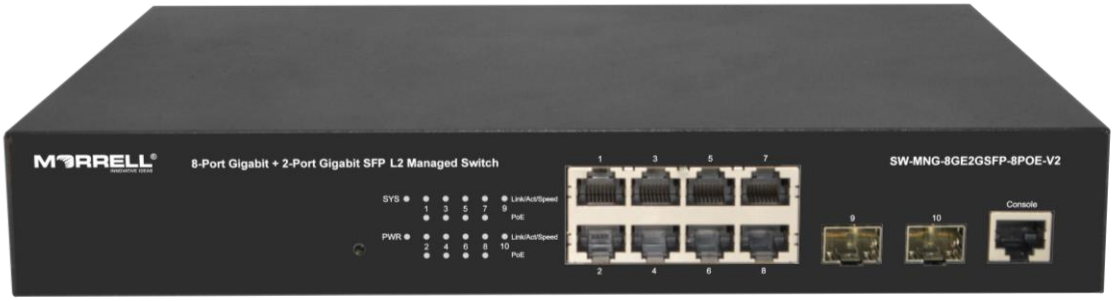


Figure 1 - Front Panel

Reset button (Reset):

Keep the device powered on and push a paper clip into the hole. Press down the button for 5 seconds to restore the Switch to its original factory default settings.

LED indicators:

The LED Indicators will allow you to monitor, diagnose and troubleshoot any potential problem with the Switch, connection or attached devices.

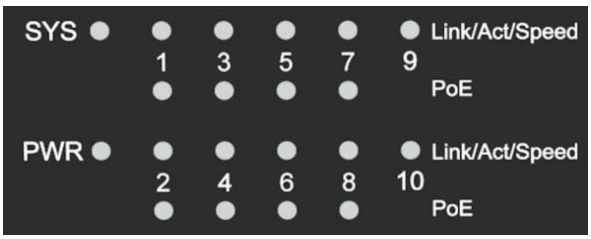


Figure 2 - LED Indicator

The following chart shows the LED indicators of the Switch along with explanation of each indicator.

LED Indicator	Faceplate Marker	Status	Indication
Power Indicator	PWR	Off	Power Off
		Solid green	Power On
System Indicator	SYS	Off	System not started
		Blinking green	System is normal

10/100/1000 BASE-T adaptive Ethernet port indicators (1-8)	Link/Act/ Speed	Off	The port is NOT connected.
		Solid green	The port is connected at 1000Mbps.
		Solid orange	The port is connected at 100/10Mbps.
		Blinking	The port is transmitting or receiving data.
SFP port indicators (9-10)	Link/Act	Off	The port is NOT connected.
		Solid green	The port is connected
		Blinking	The port is transmitting or receiving data.
PoE status indicators (1-8)	PoE	Off	No PD is connected to the corresponding port, or no power is supplied according to the power limits of the port
		Solid orange	A Powered Device is connected to the port, which supply power successfully.
		Blinking	The PoE power circuit may be in short or the power current may be overloaded

10/100/1000 Mbps RJ-45 ports (1~8):

Designed to connect to the device with a bandwidth of 10Mbps, 100Mbps, 1000Mbps. Each has a corresponding Link/Act/Speed indicator and PoE indicator.

SFP ports (9, 10):

The interface card provides an interface so that you can insert a transceiver module (SFP) into the interface and connect it to the interface of another switch with cables. Each has a corresponding Link/Act LED.

Console port (Console):

Designed to connect with the serial port of a computer or terminal for monitoring and configuring the Switch.

1.3.2. Rear Panel

The rear panel of the Switch contains one AC power connector, Grounding Terminal and Fan heat-sink shown as below.

Figure 3 - Rear Panel

AC Power Connector:

Power is supplied through an external AC power adapter. It supports AC 100~240V, 50/60Hz.

Grounding Terminal:

Located on the right side of the power supply connector, use wire grounding to lightning protection.

Fan heat-sink :

The fan heat sink is located on the midst of the switch. It is used for fan ventilation. Please do not block.

1.4. Package Contents

Before installing the Switch, make sure that the following the "packing list" listed OK. If any part is lost and damaged, please contact your local agent immediately. In addition, make sure that you have the tools install switches and cables by your hands.

- One 8-Port Gigabit + 2-Port Gigabit SFP L2 Managed PoE Switch.
- One Installation Component.
- One AC power cord.
- One User Manual.

2. Installing and Connecting the Switch

This part describes how to install your Ethernet Switch and make connections to it. Please read the following topics and perform the procedures in the order being presented.

2.1. Installation

Please follow the following instructions in avoid of incorrect installation causing device damage and security threat.

- Put the Switch on stable place or desktop in case of falling damage.
- Make sure the Switch works in the proper AC input range and matches the voltage labeled on the Switch.
- To keep the Switch free from lightning, do not open the Switch's shell even in power failure.
- Make sure that there is proper heat dissipation from and adequate ventilation around the Switch.
- Make sure the cabinet to enough back up the weight of the Switch and its accessories.

2.1.1. Desktop Installation

Sometimes users are not equipped with the 19-inch standard cabinet. So when installing the Switch on a desktop, please attach these cushioning rubber feet provided on the bottom at each corner of the Switch in case of the external vibration. Allow adequate space for ventilation between the device and the objects around it.

2.1.2. Rack-mountable Installation in 19-inch Cabinet

The Switch can be mounted in an EIA standard-sized, 19-inch rack, which can be placed in a wiring closet with other equipment. To install the Switch, please follow these steps:

A. attach the mounting brackets on the Switch's side panels (one on each side) and secure them with the screws provided.

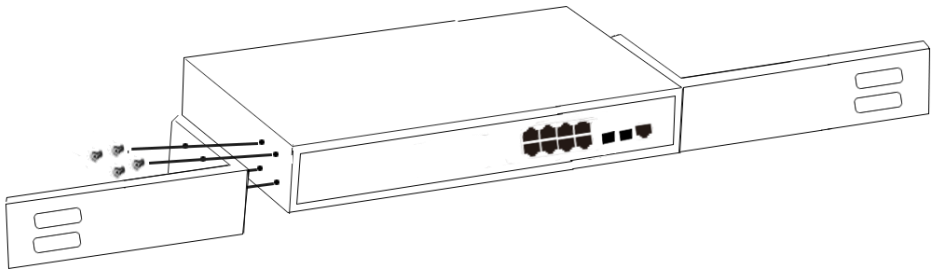


Figure 4 - Bracket Installation

B. Use the screws provided with the equipment rack to mount the Switch on the rack and tighten it.

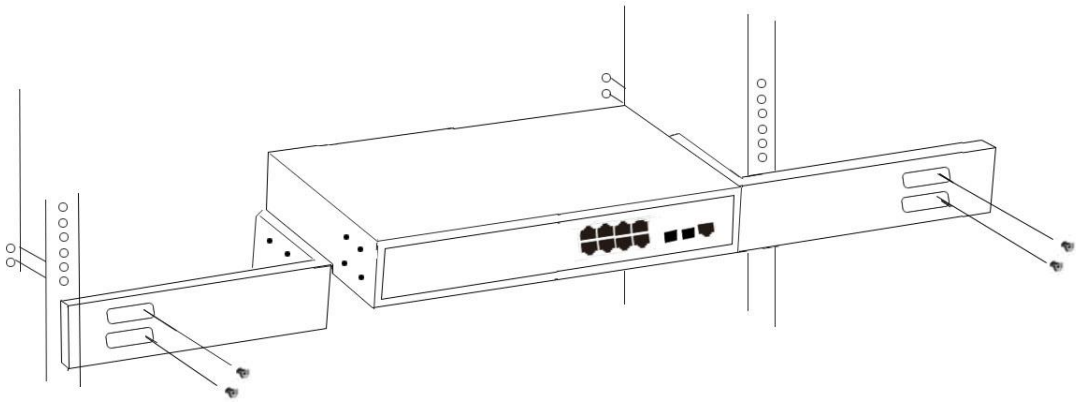


Figure 5 - Rack Installation

2.1.3. Power on the Switch

The Switch is powered on by the AC 100-240V 50/60Hz internal high-performance power supply. Please follow the next tips to connect:

AC Electrical Outlet:

It is recommended to use single-phase three-wire receptacle with neutral outlet or multifunctional computer professional receptacle. Please make sure to connect the metal ground connector to the grounding source on the outlet.

AC Power Cord Connection:

Connect the AC power connector in the back panel of the Switch to external receptacle with the included power cord, and check the power indicator is ON or not. When it is ON, it indicates the power connection is OK.

2.2. Connect Computer (NIC) to the Switch

Please insert the NIC into the computer, after installing network card driver, please connect one end of the twisted pair to RJ-45 jack of your computer, the other end will be connected to any RJ-45 port of the Switch, the distance between Switch and computer is around 100 meters. Once the connection is OK and the devices are power on normally, the LINK/ACT/Speed status indicator lights corresponding ports of the Switch.

2.3. Switch connection to the PD

1-8 Ports with PoE indicator have PoE power supply function, it can make PD devices, such as internet phone, network camera, wireless access point work. You only need to connect the Switch PoE port directly connected to the PD port by network cable.

3. How to Login the Switch

3.1. Switch to End Node

Use standard Cat.5/5e Ethernet cable (UTP/STP) to connect the Switch to end nodes as described below. Switch ports will automatically adjust to the characteristics (MDI/MDI-X, speed, duplex) of the device to which is connected.

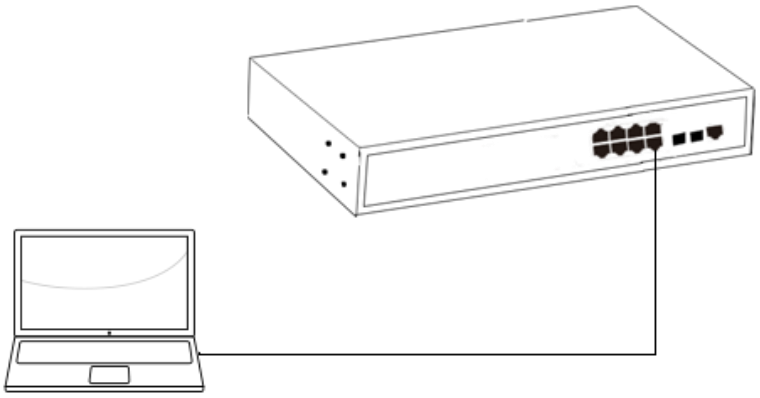


Figure 6 - Connect PC to Switch

Please refer to the LED Indicators. The LINK/ACT/Speed LEDs for each port lights on when the link is available.

3.2. How to Login the Switch

As the Switch provides Web-based management login, you can configure your computer’s IP address manually to log on to the Switch. The default settings of the Switch are shown below.

Parameter	Default Value
Default IP address	192.168.0.1
Default user name	admin
Default password	admin

You can log on to the configuration window of the Switch through following steps:

1.Connect the Switch with the computer NIC interface.

2.Power on the Switch.

3.Check whether the IP address of the computer is within this network segment: 192.168.0.xxx ("xxx" ranges 2~254), for example, 192.168.0.100.

4.Open the browser, and enter http://192.168.0.1 and then press "Enter". The Switch login window appears, as shown below.

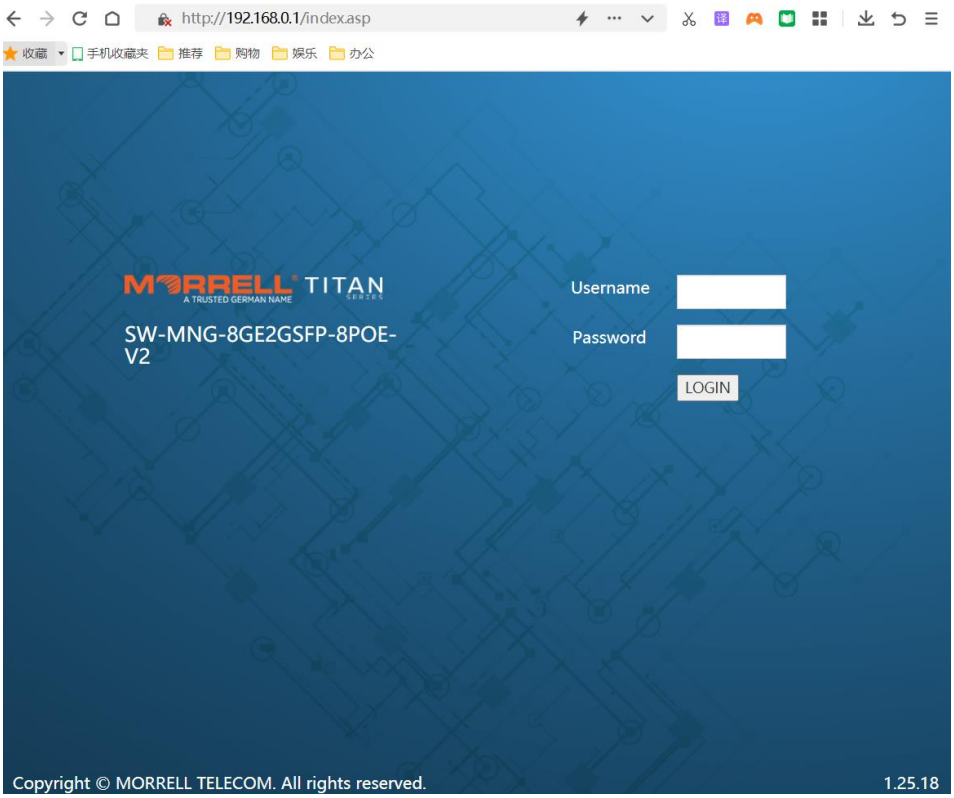
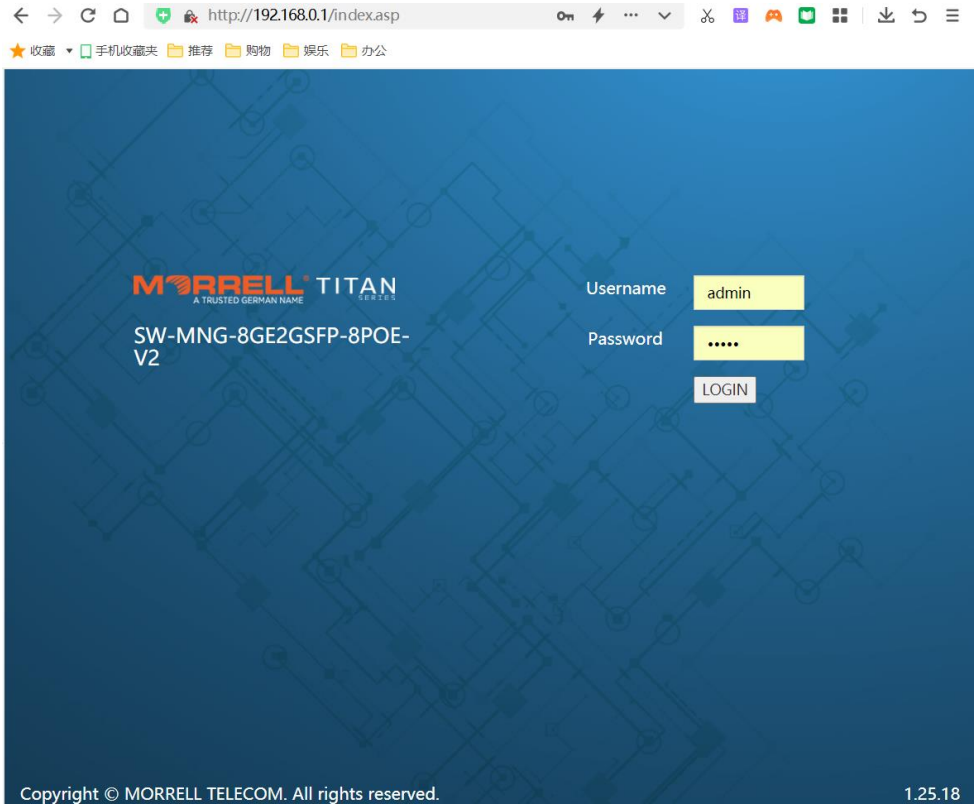


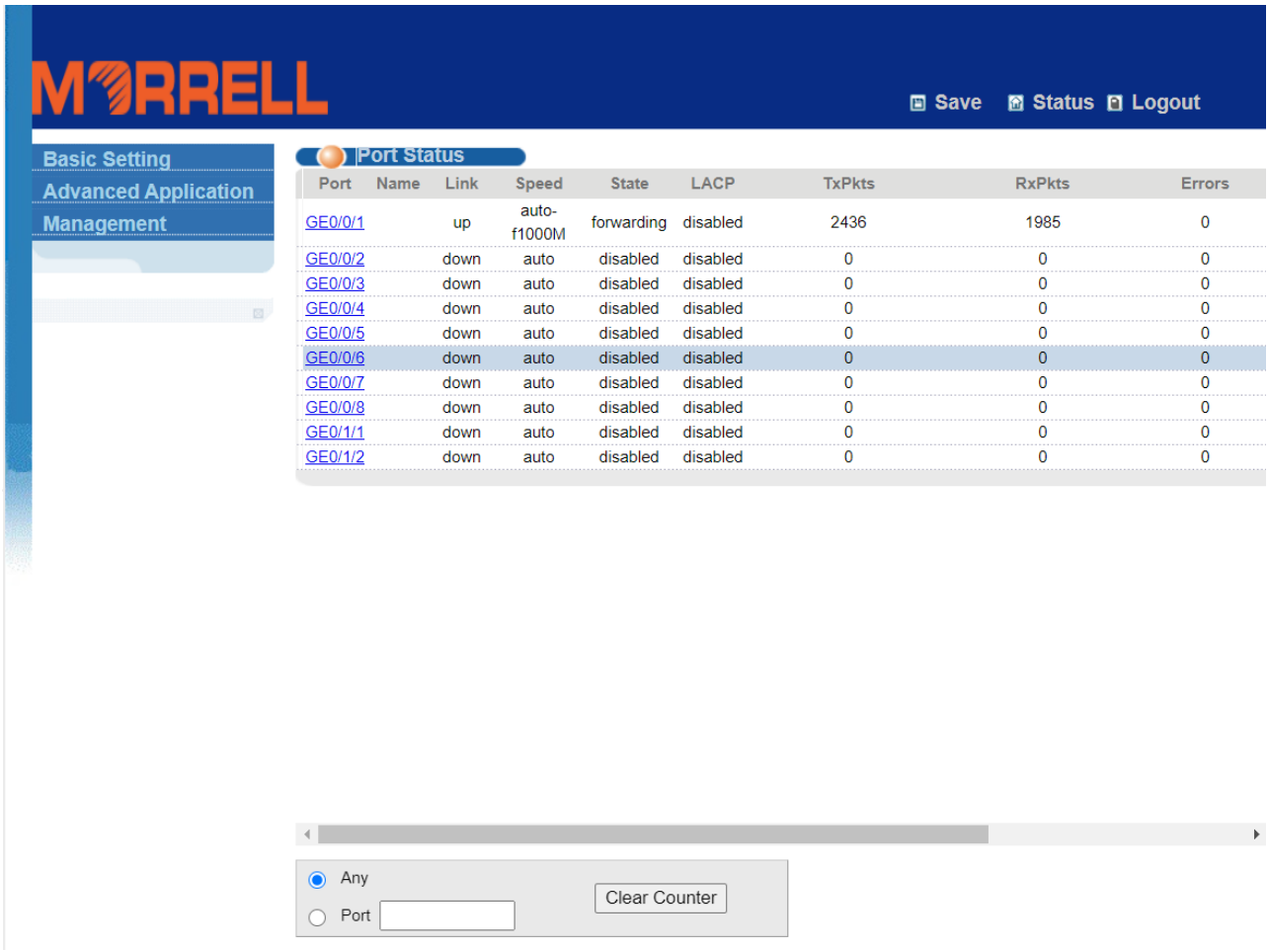
Figure 7- Login Windows

5. Switching language to English .Enter the Username and Password (The factory default Username is **admin** and Password is **admin**), and then click "**LOGIN**" to log in to the Switch configuration window.



4. WEB Configuration Guide

Switch configuration interface consists of 3 main areas, areas for the status bar at the top, the area on the left menu bar, right the main configuration window. Select the different functions in the function menu bar, you can modify all settings in the main configuration window.

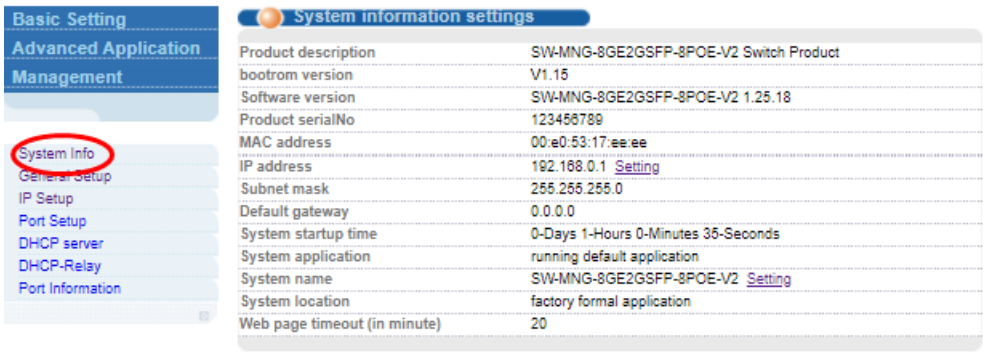


4.1. Basic Setting

Choose Basic Setting, and the following page appears. There are "**System Info**", "**General Setup** ", "**IP Setup**", "**Port Setup**","**DHCP server**", "**DHCP-Relay**",and "**Port information**" configuration web pages.

4.1.1. System Info

Selecting "**Basic Setting>System Information settings**" in the navigation bar, you can view the basic information of System and configure the IP address and System name.



【Parameter Description】

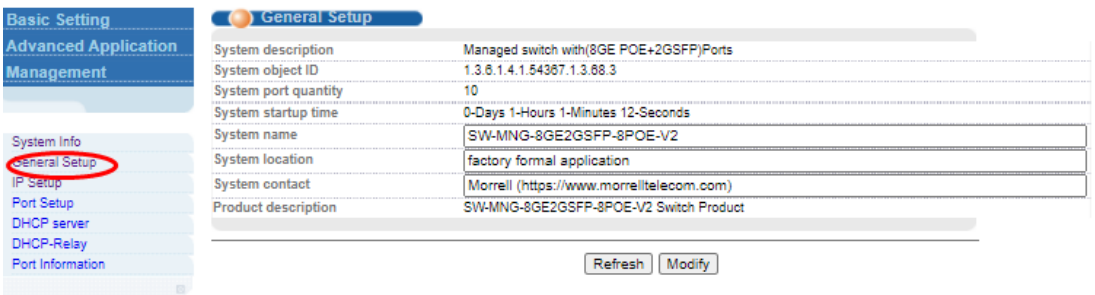
Parameter	Description
Product description	Brief description of device type.
Software version	Show switch's current Software version.
MAC address	Show switch's physical address
IP address	The management IP of Switch
Subnet mask	Config the corresponding subnet mask of the IP address specified above. The default is 255.255.255.0.
Default gateway	Specify a gateway address for the switch.
System name	System name
System location	Specify the system location

【Instructions】

You can view and configure Running System status.

4.1.2. General Setup

Selecting "**Basic Setting**>**General Setup**" in the navigation bar, you can view the basic information of Switch, Such as System description and so on. You can also modify System name, System contact and System location.

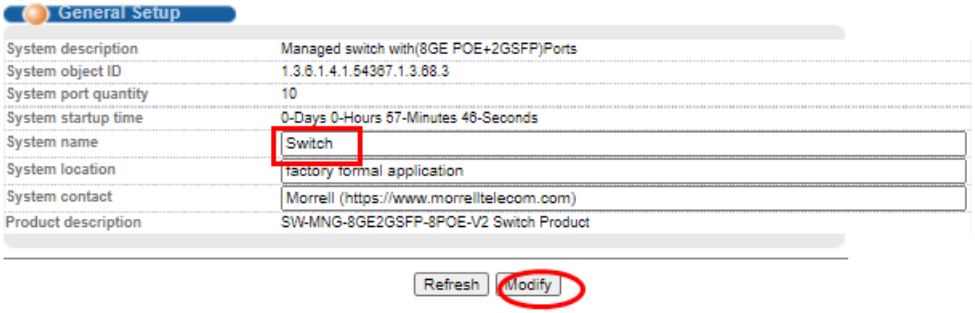


【Parameter Description】

Parameter	Description
System name	System name
System Location	Specify the system location
System contact	Including company or related URL
Product description	Brief description of device type.

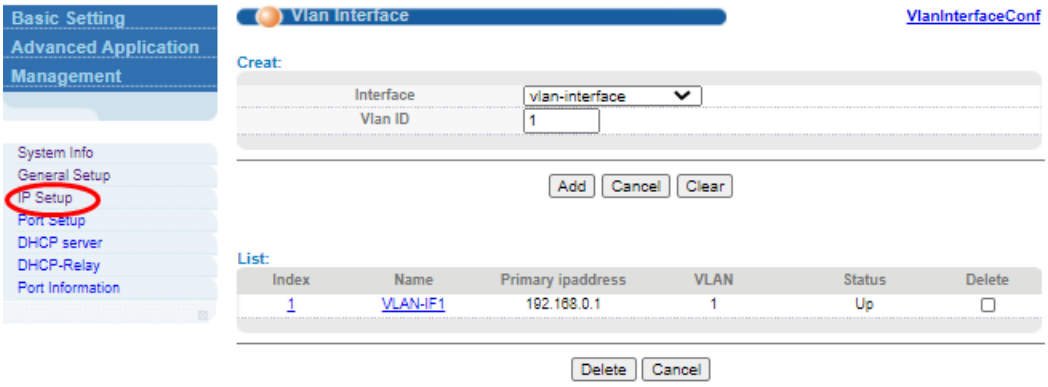
【Configuration example】

Such as: Setting System name as Switch.



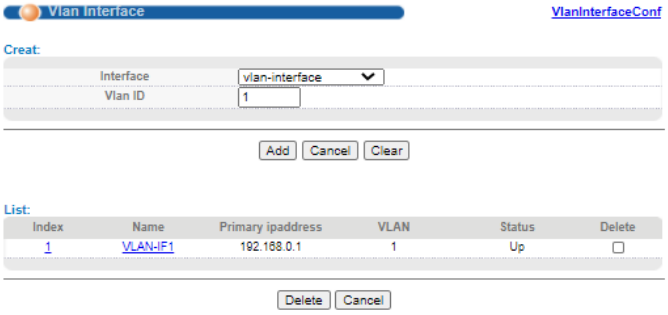
4.1.3. IP Setup

Selecting "**Basic Setting**>**IP Setup**" in the navigation bar, you can configure IP.



4.1.3.1. Vlan interface

Selecting "**Basic Setting**>**IP Setup**>**Vlan interface**" in the navigation bar, you can configure Vlan interface.

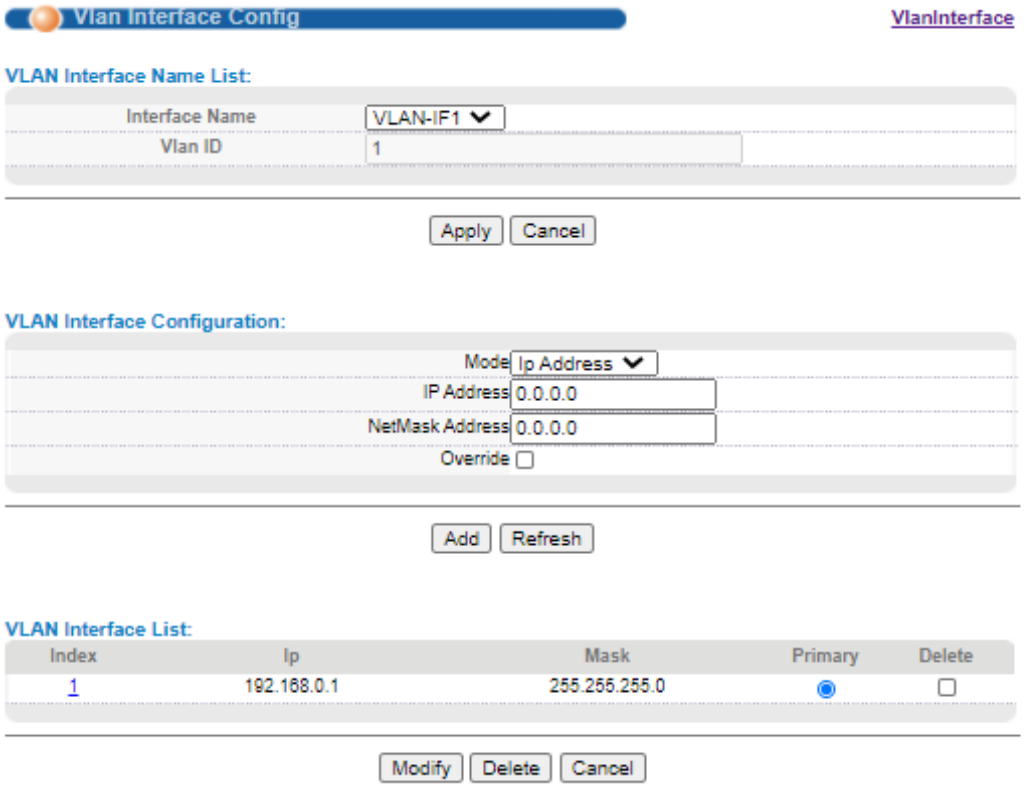


【Parameter Description】

Parameter	Description
Interface	Selecting the interface: vlan-interface Supervlan-interface
Vlan ID	You can specify the vlan ID
Name	The name of interface

4.1.3.2. Vlan interface Config

Selecting "**Basic Setting**>**IP Setup**>**Vlan interface Config**" in the navigation bar, you can configure Vlan interface Config.

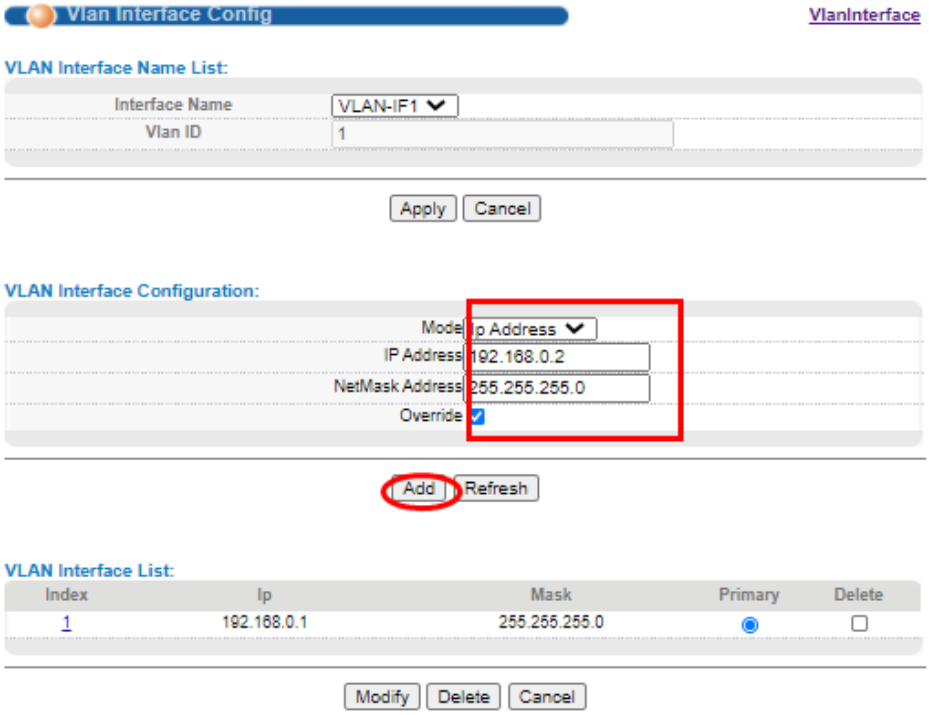


【Parameter Description】

Parameter	Description
Interface name	Name of interface
Vlan ID	You can specify the vlan ID
IP Address	User login in Switch using the IP Address
Override	You can override former original primary IP or not

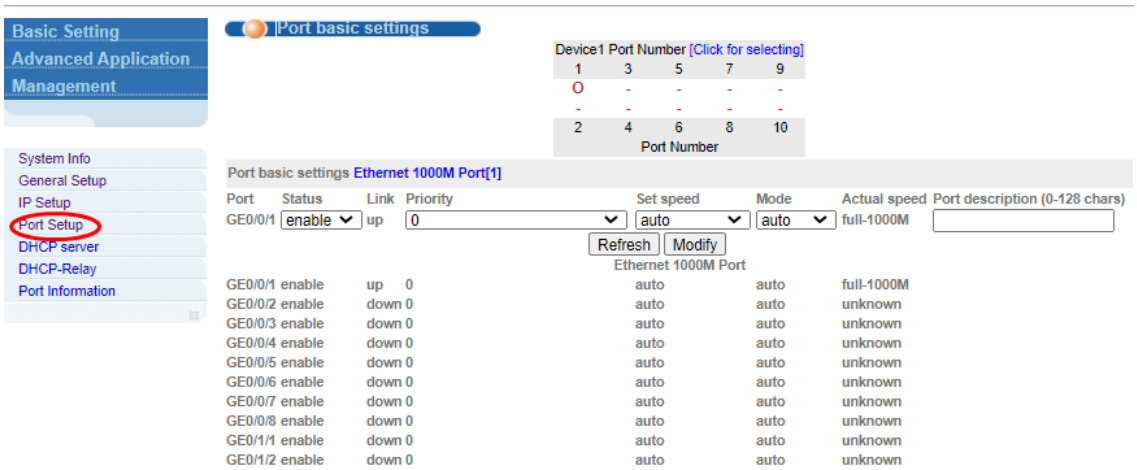
【Configuration example】

Such as: Setting IP address as 192.168.0.2 and mask as 255.255.255.0.And then selecting override.



4.1.4. Port Setup

Selecting "**Basic Setting**>**Port Setup**" in the navigation bar, you can configure the related parameter of port.



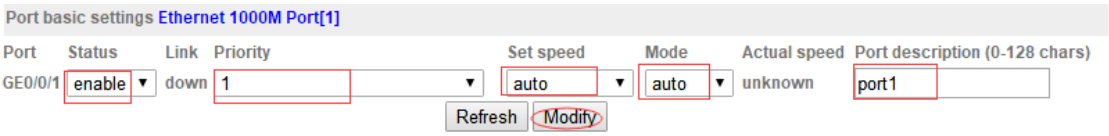
【Parameter Description】

Parameter	Description
Port	Port number
status	Choose whether to close link port
link	Status:Down or up

Parameter	Description
priority	Set port priority, the range of 0-7
Set speed	Choose the following modes: full-10、half-10、auto-10、full-100、half-100、auto-100、full-1000、half-1000、auto
Mode	Choose the following kinds: Auto、slave、master
Actual speed	The actual speed of the port
Port description	The port is described

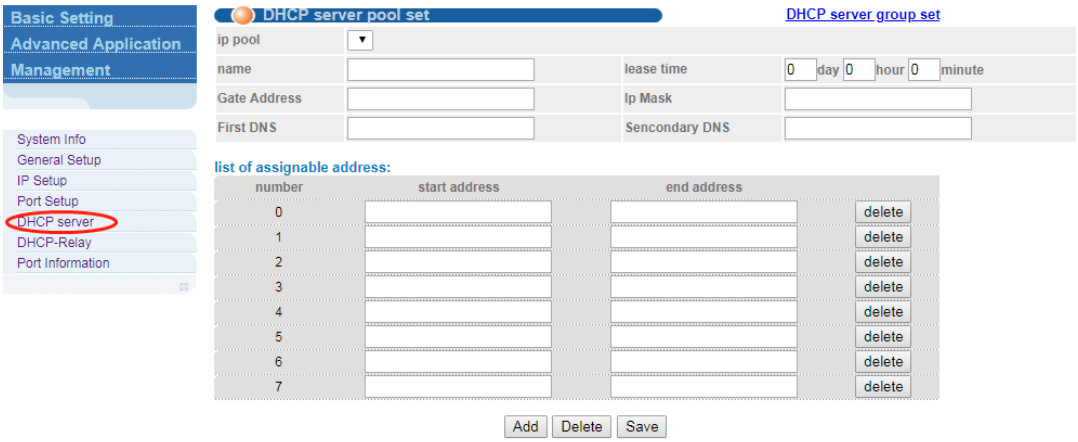
【Configuration example】

Such as: Configure the related parameters for port 1, Status is “enable", Priority is “1", Set speed is “auto", Mode is “auto", Port description is “port 1".



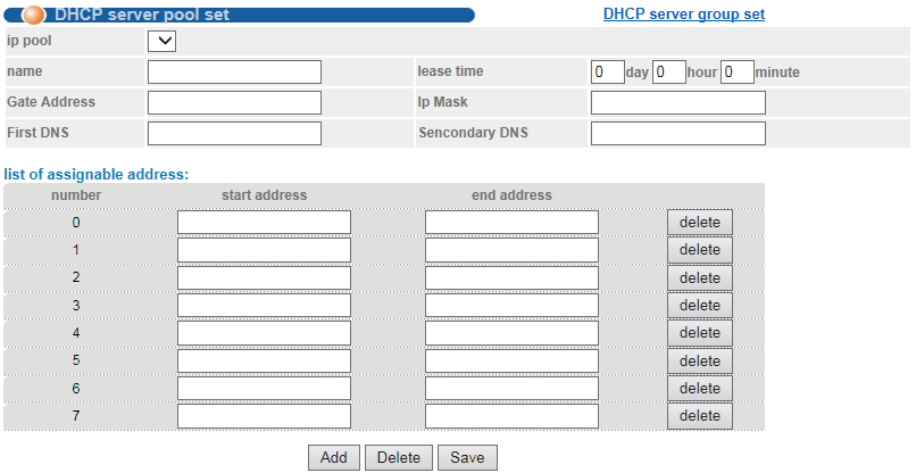
4.1.5. DHCP Server

Selecting “**Basic Setting**>**DHCP Server**" in the navigation bar, you can configure DHCP server pool and DHCP server group.



4.1.5.1. DHCP server pool set

Selecting “**Basic Setting**>**DHCP server**>**DHCP server pool set**" in the navigation bar, you can configure DHCP Server pool set.

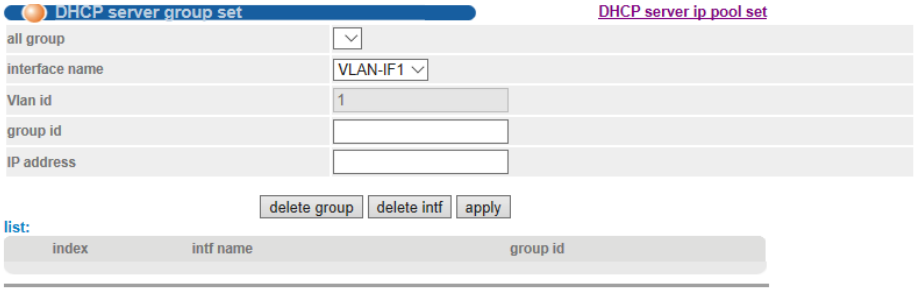


【Parameter Description】

Parameter	Description
ip pool	ip pool ID
name	Set the name of ip pool
lease time	Set lease time
Gate Address	Set Gate Address
Ip Mask	Set Ip Mask
First DNS	Set First DNS
Secondary DNS	Set Secondary DNS
Start address	Set Start address
End address	End Start address

4.1.5.2. DHCP server group set

Selecting "**Basic Setting**>**DHCP server**>**DHCP server group set**" in the navigation bar, you can configure DHCP Server group.

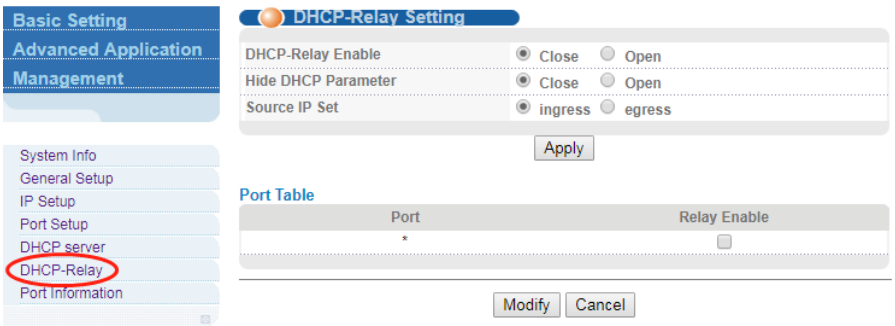


【Parameter Description】

Parameter	Description
group id	DHCP server group id
IP address	DHCP server IP address

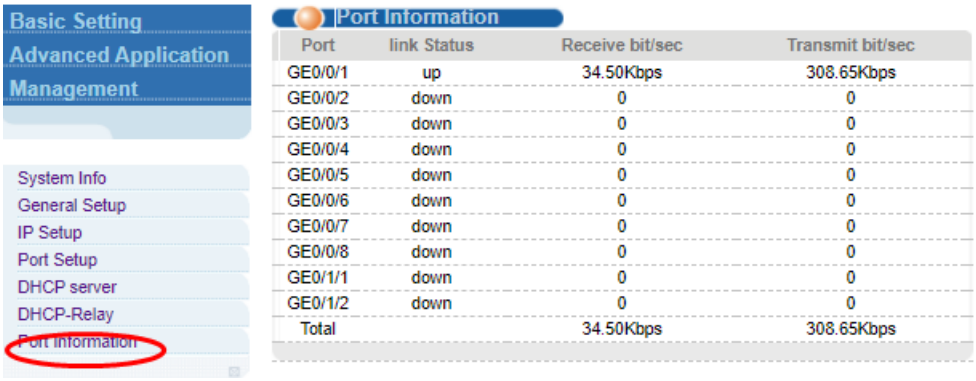
4.1.6. DHCP-Relay

Selecting “**Basic Setting**>**DHCP-Relay**" in the navigation bar, you can You can turn on the DHCP relay function, Hidden DHCP Server. Set the source IP used.



4.1.7. Port Information

Selecting “**Basic Setting**>**Port Information**" in the navigation bar, you can view the port information.



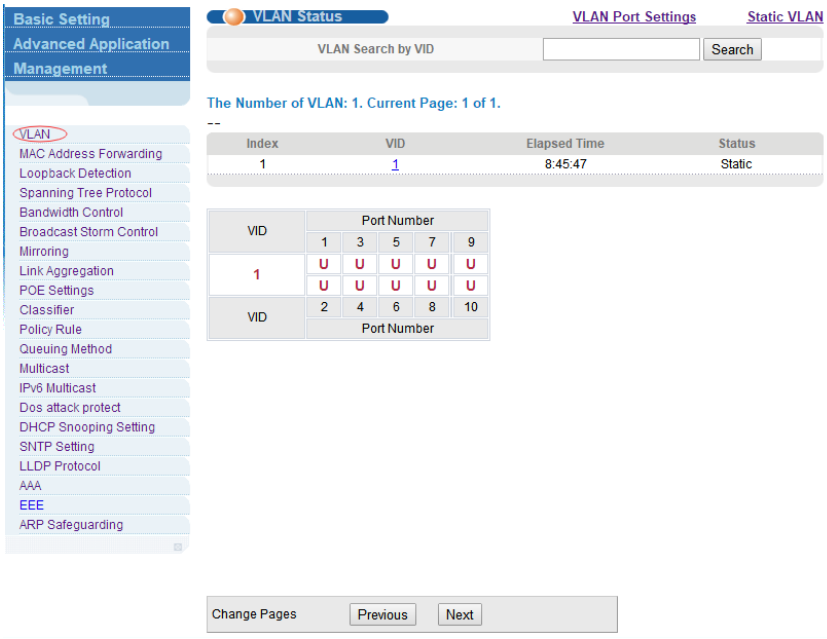
Port	link Status	Receive bit/sec	Transmit bit/sec
GE0/0/1	up	34.50Kbps	308.65Kbps
GE0/0/2	down	0	0
GE0/0/3	down	0	0
GE0/0/4	down	0	0
GE0/0/5	down	0	0
GE0/0/6	down	0	0
GE0/0/7	down	0	0
GE0/0/8	down	0	0
GE0/1/1	down	0	0
GE0/1/2	down	0	0
Total		34.50Kbps	308.65Kbps

4.2. Advanced Application

Choose Advanced Application, and the following page appears. There are "**VLAN**", "**MAC Address Forwarding**","**Loopback Detection**","**Spanning Tree Protocol**","**Bandwidth Control**", "**Broadcast Storm Control**", "**Mirroring**", "**Link Aggregation**", "**PoE Settings**", "**Classifier**", **Policy Rule**", "**Queuing Method**", "**Multicast**", "**IPv6 Multicast**", "**Dos attack protect**", **DHCP Snooping Setting**" , "**SNTP Setting**", "**LLDP Protocol**" , "**AAA**", "**EEE**" and "**ARP Safeguarding**" configuration web pages.

4.2.1. VLAN

Selecting "**Advanced Application**>**VLAN**" in the navigation bar, you can configure VLAN.



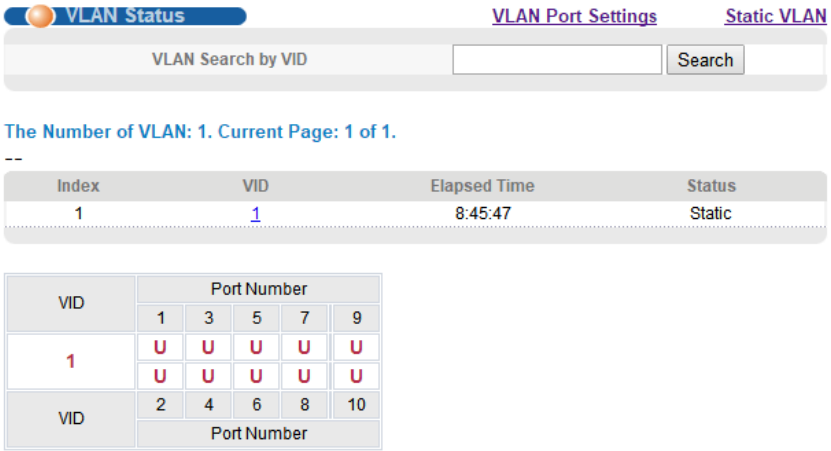
【Instructions】

The traditional Ethernet is a data network communication technology basing on CSMA/CD (Carrier Sense Multiple Access/Collision Detect) via shared communication medium. Through the traditional Ethernet, the overfull hosts in LAN will result in serious collision, flooding broadcasts, poor performance or even breakdown of the Internet. Though connecting the LANs through switches can avoid the serious collision, the flooding broadcasts cannot be prevented, which will occupy plenty of bandwidth resources, causing potential serious security problems.

A Virtual Local Area Network (VLAN) is a network topology configured according to a logical scheme rather than the physical layout. The VLAN technology is developed for switches to control broadcast in LANs. By creating VLANs in a physical LAN, you can divide the LAN into multiple logical LANs, each of which has a broadcast domain of its own. Hosts in the same VLAN communicate with one another as if they are in a LAN. However, hosts in different VLANs cannot communicate with one another directly. Therefore, broadcast packets are limited in a VLAN. Hosts in the same VLAN communicate with one another via Ethernet whereas hosts in different VLANs communicate with one another through the Internet devices such as Router, the Layer3 switch, etc. The following figure illustrates a VLAN implementation.

4.2.1.1. VLAN Status

Selecting "**Advanced Application**>**VLAN**>**VLAN Status**", in the navigation bar, you can view VLAN status.

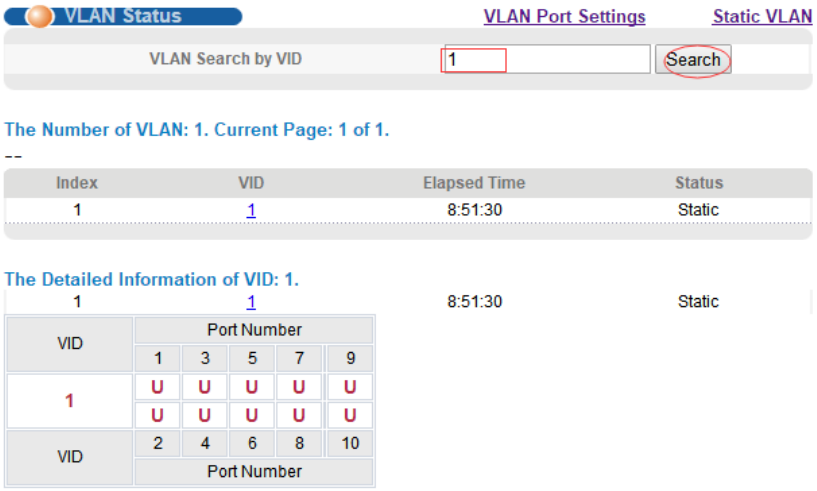


【Parameter Description】

Parameter	Description
VLAN Status	View all vlans configured in the device
VLAN Search by VID	Enter VID to view the specified VLAN

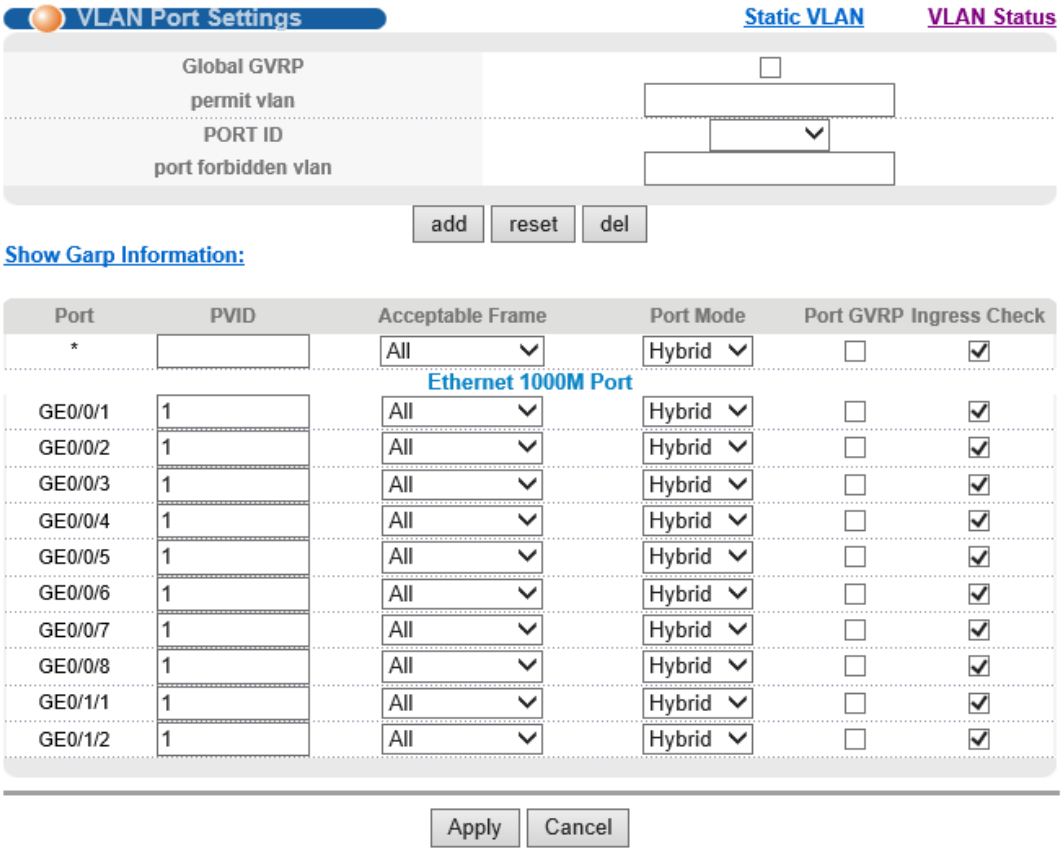
【Configuration example】

Such as: View the VLAN of VID as “1".



4.2.1.2. VLAN Port Settings

Selecting “**Advanced Application**>**VLAN**>**VLAN Port Settings**", in the navigation bar, you can set VLAN port.



【Parameter Description】

Parameter	Description
PVID	The PVID of the port can be modified, the default port PVID is "1"
Acceptable Frame	Choose the following kinds: All or Tagged only
Port Mode	Choose the following modes: Hybrid: The port can be either a tag member or untag member in a VLAN and can be a member port for multiple vlans. Trunk: The port can only be an tag member in a VLAN and can be a member port for multiple vlans Access: The port can only be a member of untag in VLAN and the port can only be in a VLAN.
Port GVRP	Select open or close GVRP, dynamic VLAN learning function, port mode must be Trunk mode
Ingress Check	Open port filtering function. If the port settings only receive the Tagged type of message, if the Ingress Check function is opened, the Untagged type of message will be discarded when the port receives the message of the untagged type of message, otherwise it can be forwarded. The default port filtering function opens.

【Instructions】

Hybrid port to packet:

Receives a packet, judge whether there is a VLAN information: if there is no play in port PVID, exchanged and forwarding, if have, whether the Hybrid port allows the VLAN data into: if can be forwarded, or discarded (untag on port configuration is not considered, untag configuration only work when to send it a message).

Hybrid port to send packet:

1. Determine the VLAN in this port attributes (disp interface can see the port to which VLAN untag, which VLAN tag).

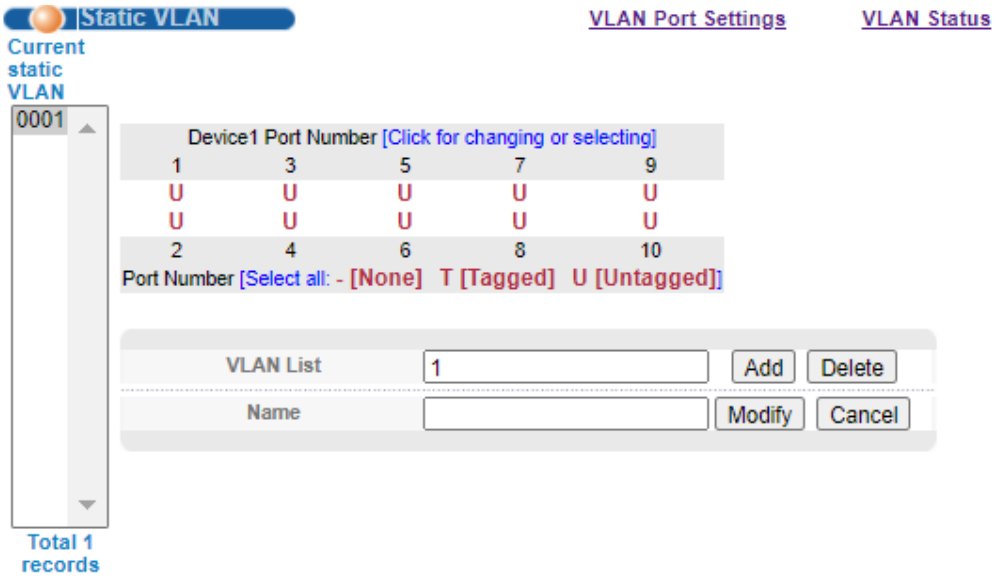
2. If it is untag stripping VLAN information, send again, if the tag is sent directly.

【Configuration example】

Such as: The PVID of port 1 is set to “1", the frame type is set to “All", the port mode is set to “Hybrid", and the port GVRP is not turned on and the entry inspection function is opened.

4.2.1.3. Static VLAN

Selecting "**Advanced Application**>**Static VLAN**" in the navigation bar, you can configure Static VLAN.



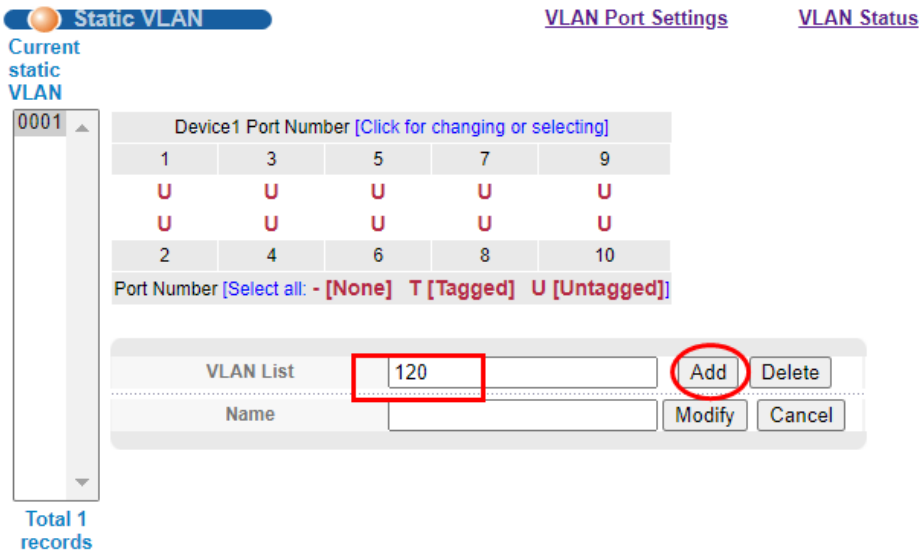
【Parameter Description】

Parameter	Description
VLAN List	VLAN Group ID
Name	VLAN Group name

【Configuration example】

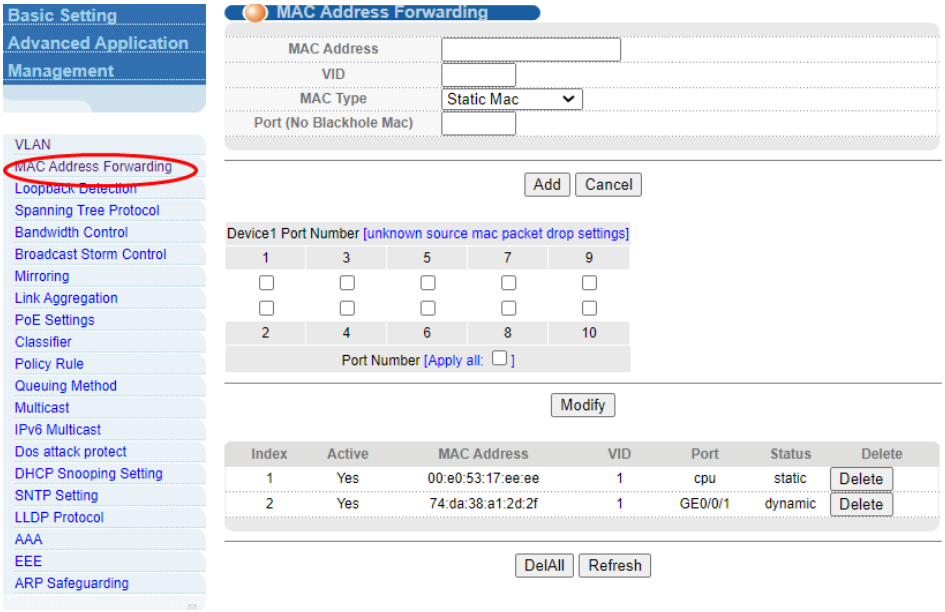
Add and delete VLAN members

Such as: Adding a new VLAN, VLAN Group ID 120 contains non-untag member port 1-4. Tag member port 5-8. The user can modify the port member by clicking on the white area below the port number;



4.2.2. MAC Address Forwarding

Selecting "**Advanced Application**>**MAC Address Forwarding**" in the navigation bar, you can configure MAC Address Forwarding.



【Parameter Description】

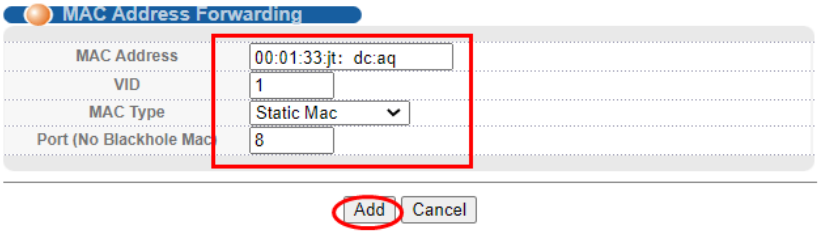
Parameter	Description
MAC Type	MAC Type:Static MAC、Dynamic MAC、Blackhole MAC、Permanent MAC

【Instructions】

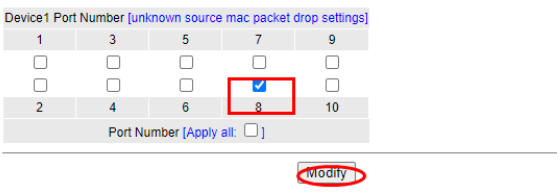
Blackhole MAC: If a PC's MAC address is configured on a switch to be a blackhole MAC, then the PC's package will be discarded by the switch and not forwarded to the network.

【Configuration example】

1. MAC Address Forwarding

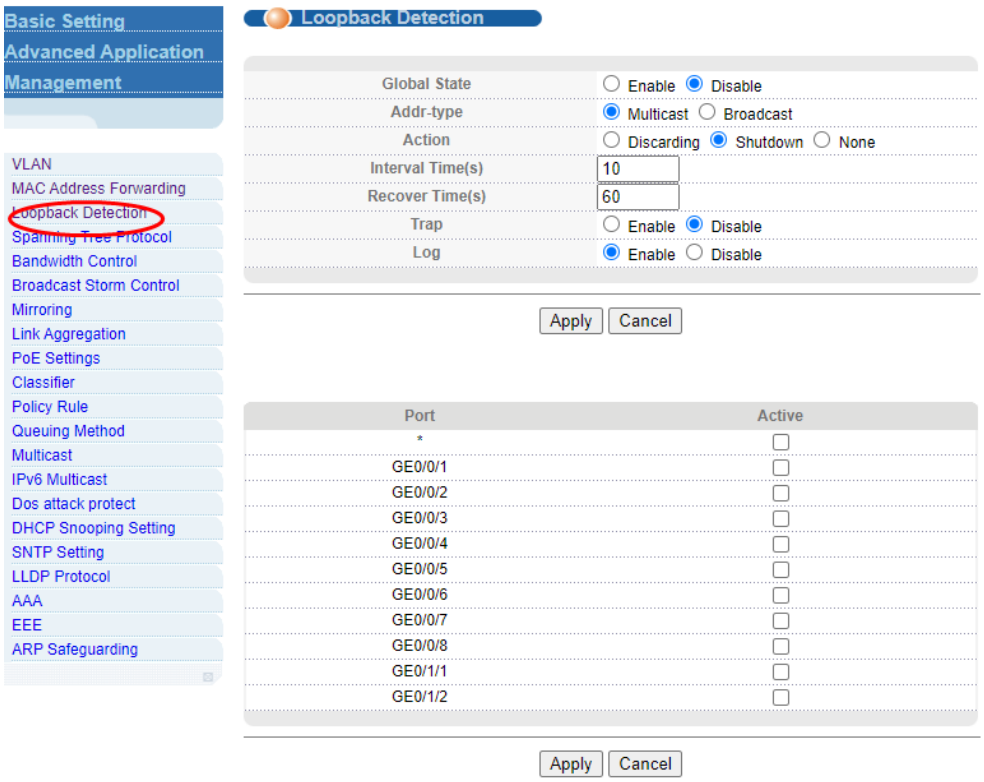


2. Unknown source mac packet drop settings.



4.2.3. Loopback Detection

Selecting "**Advanced Application**>**Loopback Detection**", in the navigation bar, you can configure Loopback Detection.Loopback Detection allows the switch to detect loops in the network. When a loop is detected on a port, the switch will display an alert on the management interface and further block the corresponding port according to your configurations.

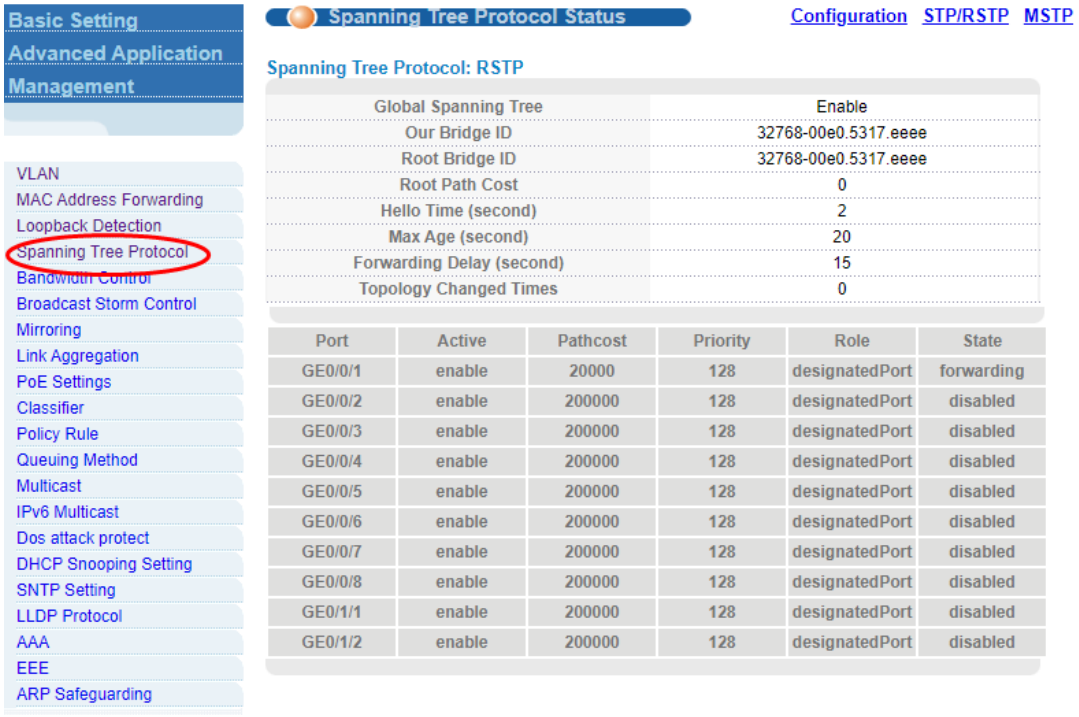


【Parameter Description】

Parameter	Description
Interval Times	Set the interval of sending loopback detection packets.
Recover Times	Set the recovery time globally

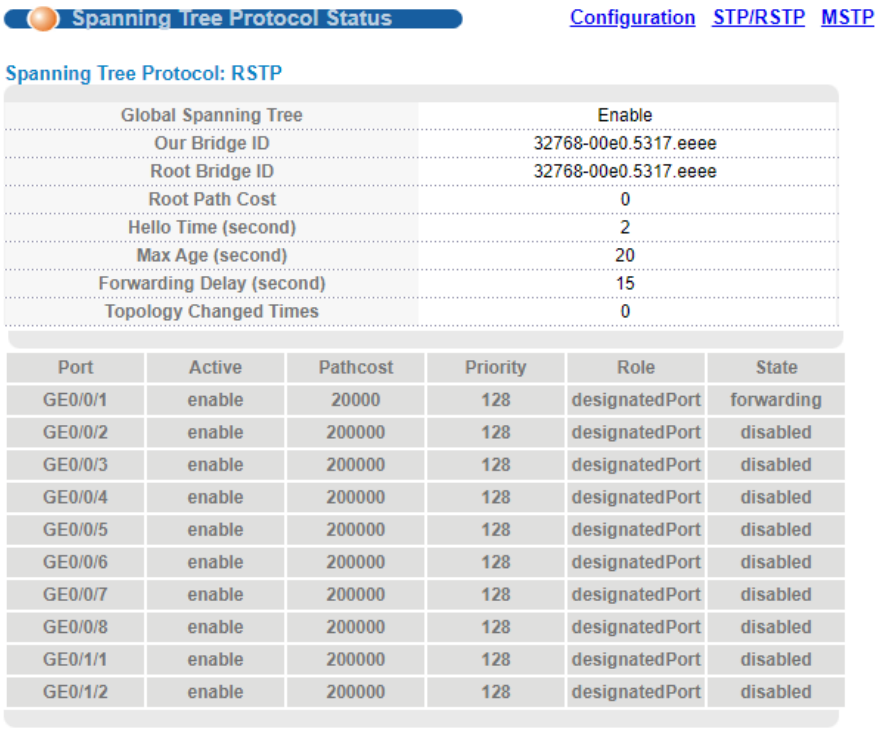
4.2.4. Spanning Tree Protocol

Selecting "**Advanced Application**>**Spanning Tree Protocol**", in the navigation bar, you can configure spanning tree protocol.STP (Spanning Tree Protocol), subject to IEEE 802.1D standard, is to disbranch a ring network in the Data Link layer in a local network. Devices running STP discover loops in the network and block ports by exchanging information, in that way, a ring network can be disbranched to form a tree-topological ring-free network to prevent packets from being duplicated and forwarded endlessly in the network.



4.2.4.1. Spanning Tree Protocol Status

Selecting "**Advanced Application**>**Spanning Tree Protocol**>**Spanning Tree Protocol status**"; in the navigation bar, you can view spanning tree protocol status.

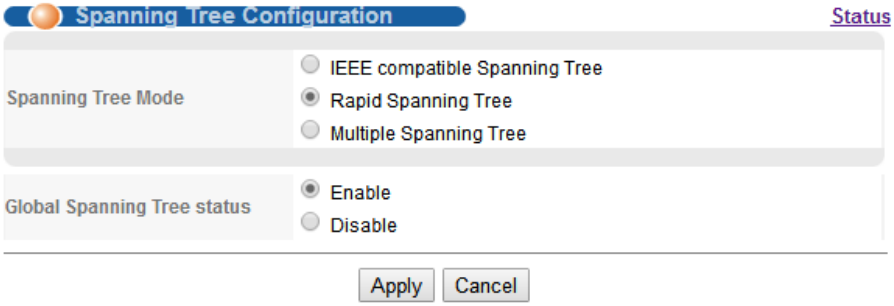


【Parameter Description】

Parameter	Description
Root Path Cost	Configure Root Path Cost
Hello time(second)	Switches sends bpdu in packet interval
Max age(second)	Ports are not yet received a message in the time, will initiate topology changes
Forwarding delay(second)	The state of the port switch time
Topology changed times	The number of topology changes

4.2.4.2. Spanning Tree Configuration

Selecting "**Advanced Application**>**Spanning Tree Protocol**>**Spanning Tree configuration**", in the navigation bar, you can configure spanning tree.

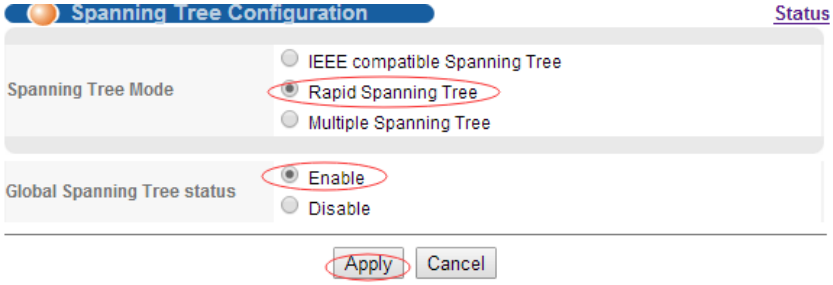


【Parameter Description】

Parameter	Description
Spanning Tree Mode	Spanning tree mode: IEEE Compatible Spanning Tree Rapid Spanning Tree Multiple Spanning Tree
Global Spanning Tree Status	Select open or close Global Spanning

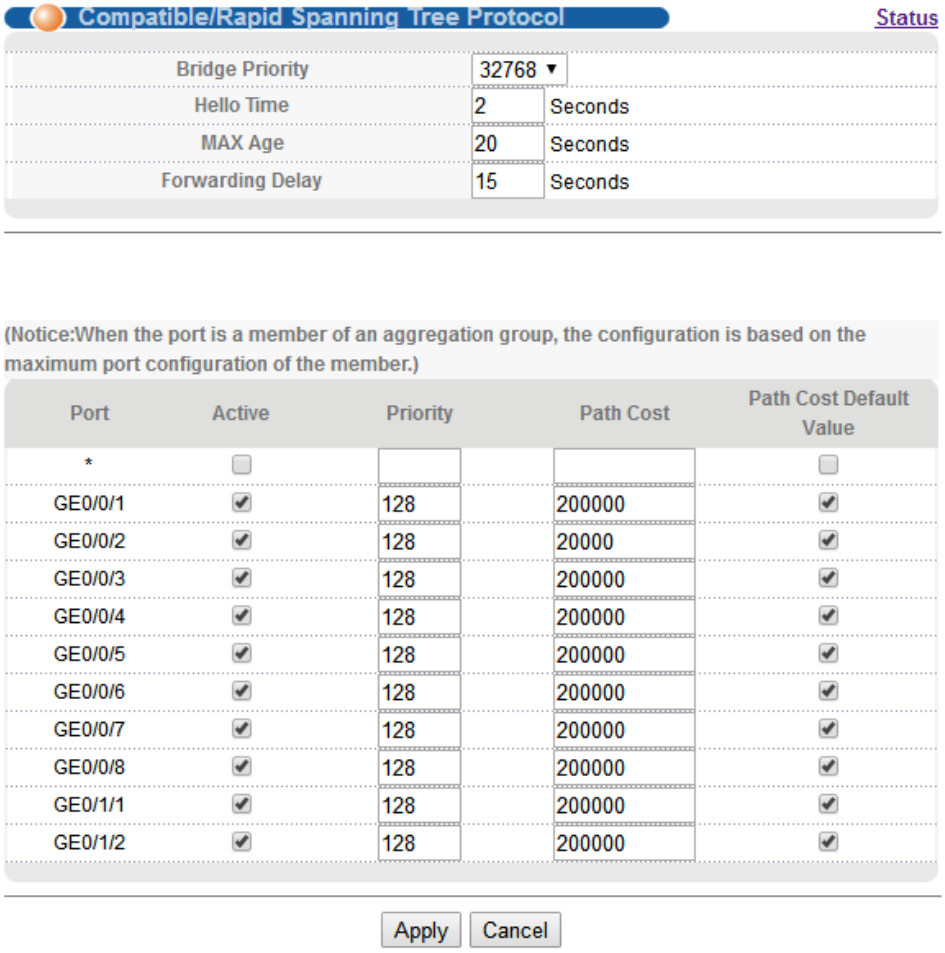
【Configuration example】

Such as: Spanning Tree Mode as "Rapid Spanning Tree", open Global Spanning.



4.2.4.3. Compatible/Rapid Spanning Tree Protocol

Selecting "**Advanced Application**>**Spanning Tree Protocol**>**Compatible / Rapid Spanning Tree Protocol**", in the navigation bar, you can configure Compatible/Rapid Spanning Tree Protocol.



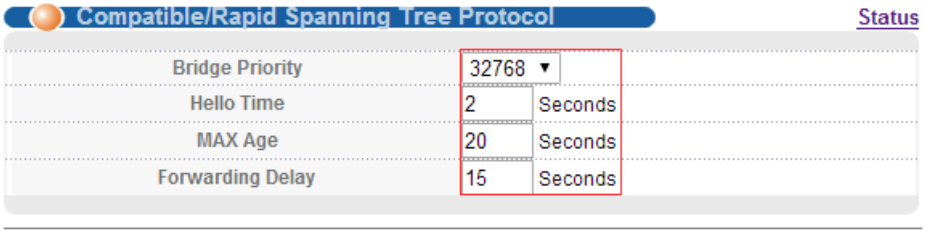
【Parameter Description】

Parameter	Description
Bridge Priority	Set bridge priority, the default instance bridge priority for 32768
Hello Time	Switches sends bpdu in packet interval
Max Age	Ports are not yet received a message in the time, will initiate topology changes
Forwarding Delay	The state of the port switch time
Port Priority	Set port instance priority, defaults to 128
Path Cost	Configure port costs

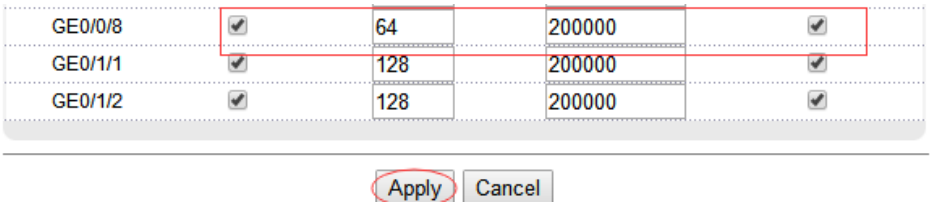
【Configuration example】

Such as:

1. Configure the bridge priority as 32768, the Hello Time is 2 seconds, the MAX Age is 20 seconds, and the Forwarding Delay is 15 seconds.

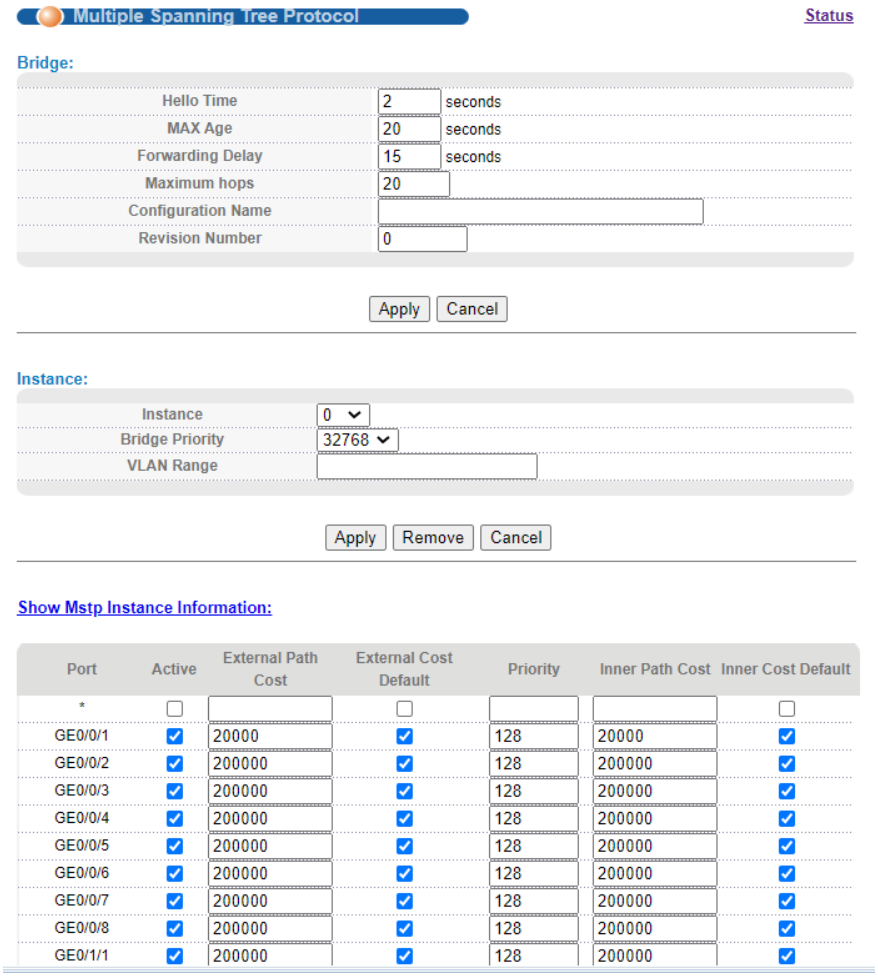


2. The priority of port 8 is 64, and the path cost is 200000.



4.2.4.4. Multiple Spanning Tree Protocol

Selecting "**Advanced Application** > **Spanning Tree Protocol** > **MSTP** > **Multiple Spanning Tree Protocol**", in the navigation bar, you can configure Multiple Spanning Tree Protocol.

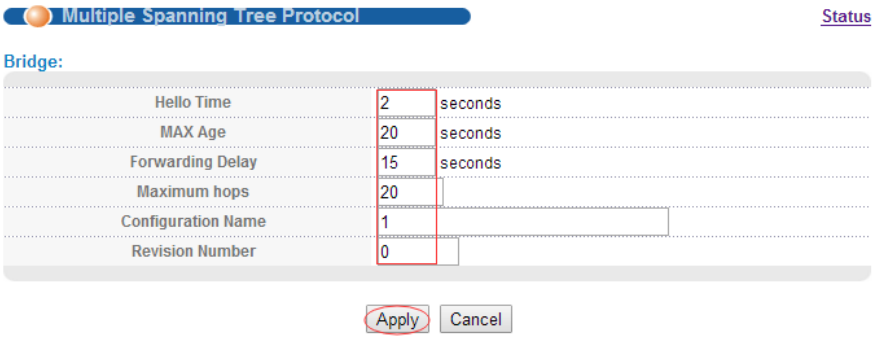


【Parameter Description】

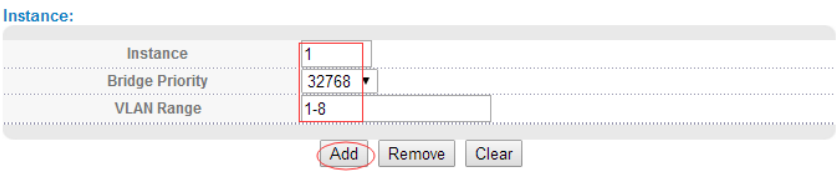
Parameter	Description
Hello Time	Switches sends bpdu in packet interval
Max age	Ports are not yet received a message in the time, will initiate topology changes
Forwarding Delay	The state of the port switch time
Maximum Hops	Set the maximum number of hops that BPDUs can support in the spanning tree
Configuration Name	Fill in configuration name
Revision Number	Set revision number
Instance	Instance number
Bridge Priority	Priority setting bridge example, the default instance bridge priority for 32768
VLAN Range	Set VLAN range
Priority	Set port instance priority, defaults to 128
Inner Path Cost	Configure port costs

【Configuration example】

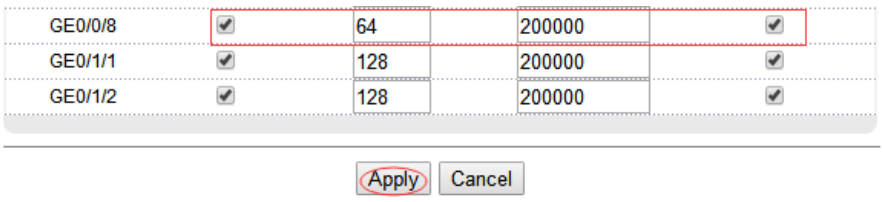
1. Bridge:



2. Instance:

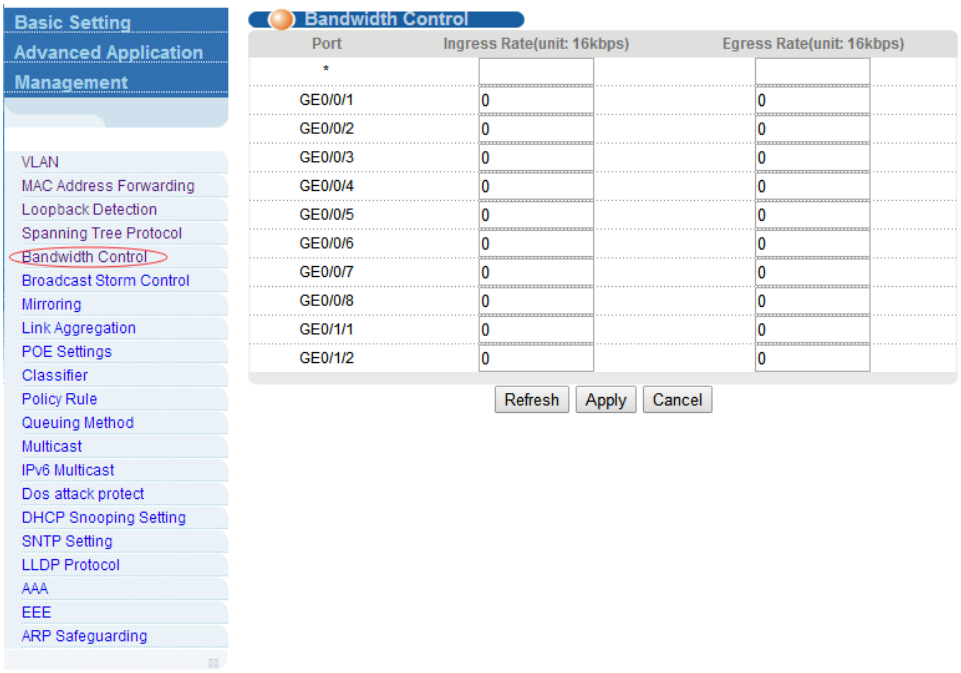


3. The priority of port 8 is 64, and the path cost is 200000.



4.2.5. Bandwidth Control

Selecting "**Advanced Application**>**Bandwidth Control**", in the navigation bar, you can configure Bandwidth Control.

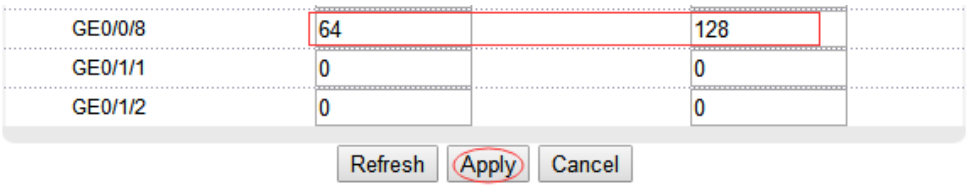


【Instructions】

1 Mbit/s = 1000 Kbit/s = 1000 / 8 KB/s = 125 KB/s. That is, the theoretical rate of 1M bandwidth is 125 KB/s.

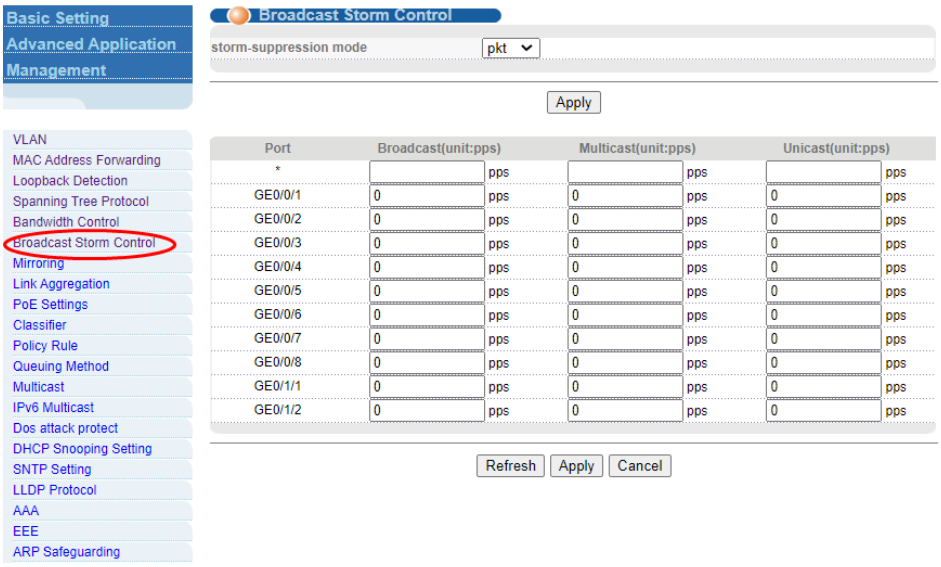
【Configuration example】

Such as: Configure port-8 Ingress Rate is 64kbps, Egress Rate is 128kbps.



4.2.6. Broadcast Storm Control

Selecting "**Advanced Application**>**Broadcast Storm Control**"; in the navigation bar, you can configure Broadcast Storm Control.



【Parameter Description】

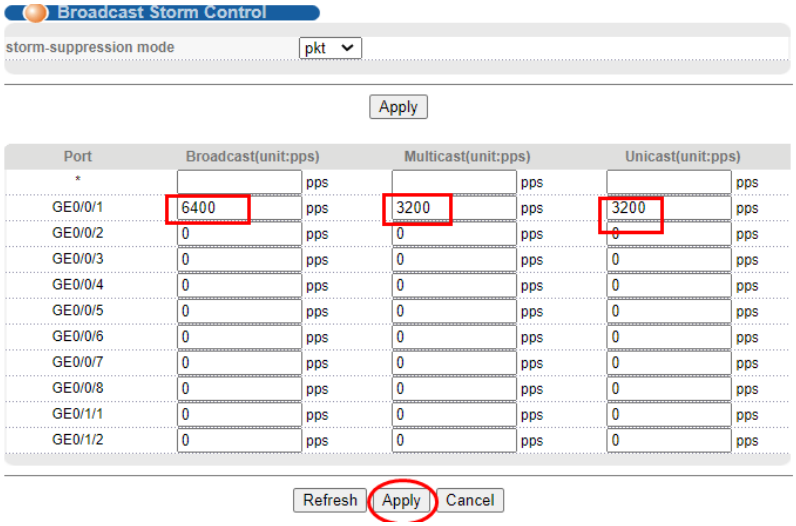
Parameter	Description
Broadcast	Broadcast rate limitation(the range of: 64-32000000, unit: pps, you must enter multiple of 64, default to 49984)
Multicast	Multicast rate limitation(the range of: 64-32000000, unit: pps, you must enter multiple of 64, default to 49984)
Unicast	Unicast rate limitation(the range of: 64-32000000, unit: pps, you must enter multiple of 64, default to 49984)

【Instructions】

1 Mbit/s = 1000 Kbit/s = 1000 / 8 KB/s = 125 KB/s. That is, the theoretical rate of 1M bandwidth is 125 KB/s.

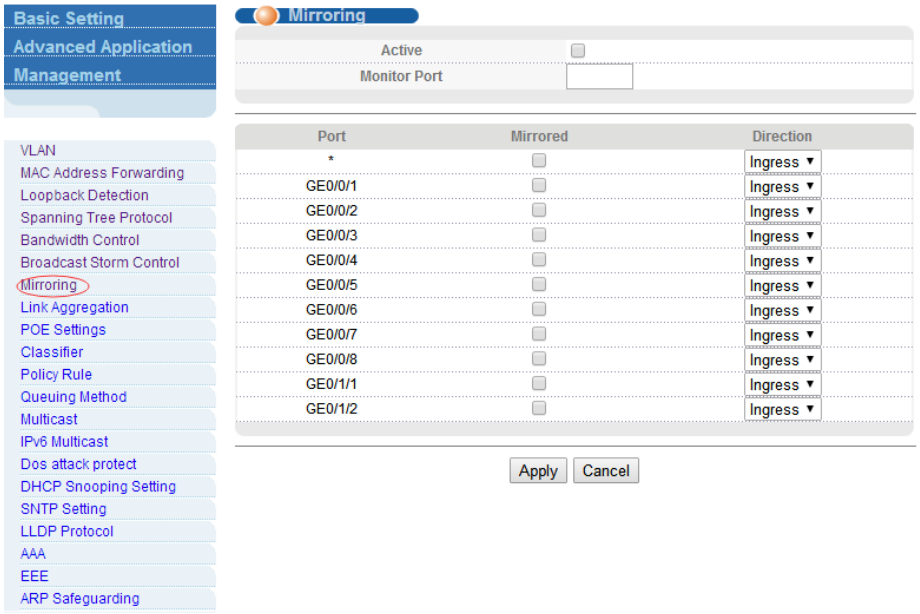
【Configuration example】

Such as: Set Port1 broadcast as 6400 pps, multicast as 3200 pps, unicast as 3200 pps.



4.2.7. Mirroring

Selecting "**Advanced Application**>**Mirroring**", in the navigation bar, you can configure mirroring.

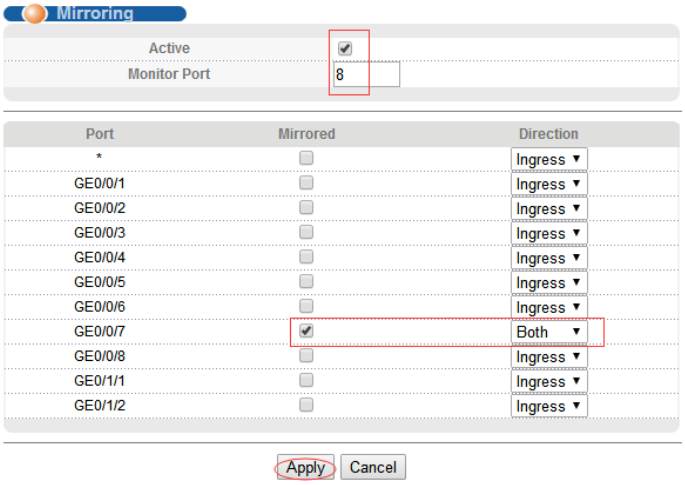


【Parameter Description】

Parameter	Description
Active	Select open or close Mirroring
Monitor Port	Set up the monitoring port and forward the flow data of the source port to the message analyzer to analyze the message and then forward to the monitoring port
Mirrored	Check the box to configure the mirror source port
Direction	Configure the direction of the mirror message, choose: Ingress, Egress, Both

【Configuration example】

Such as: Open mirroring, configure monitoring port is port 8, the source port is port 7, and the mirror message is in both direction.

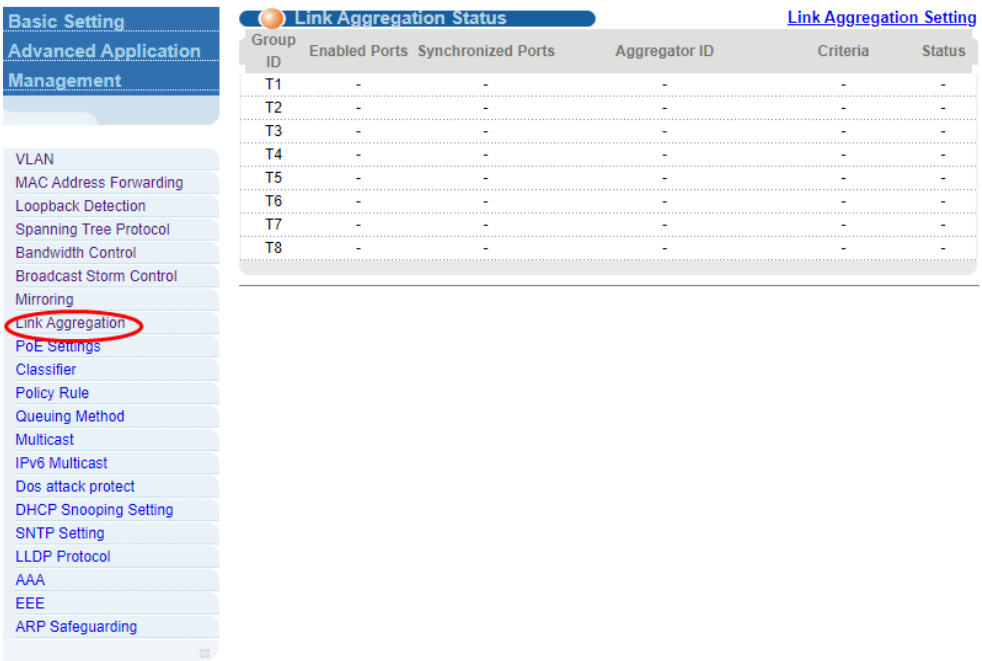


4.2.8. Link Aggregation

Selecting "**Advanced Application**>**Link Aggregation**", in the navigation bar, you can configure link aggregation.With the LAG (Link Aggregation Group) function, you can aggregate multiple physical ports into a logical interface to increase link bandwidth and configure the backup ports to enhance the connection reliability. You can configure LAG in two ways:

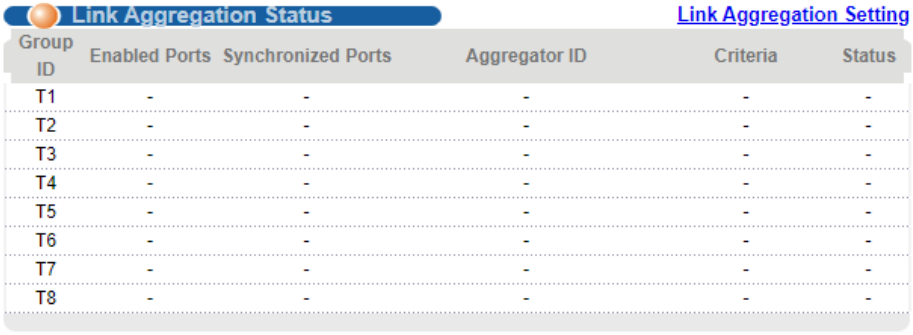
• Static LAG: The member ports are manually added to the LAG.

• LACP (Link Aggregation Control Protocol): The switch uses LACP to implement dynamic link aggregation and disaggregation by exchanging LACP packets with its partner. LACP extends the flexibility of the LAG configuration.



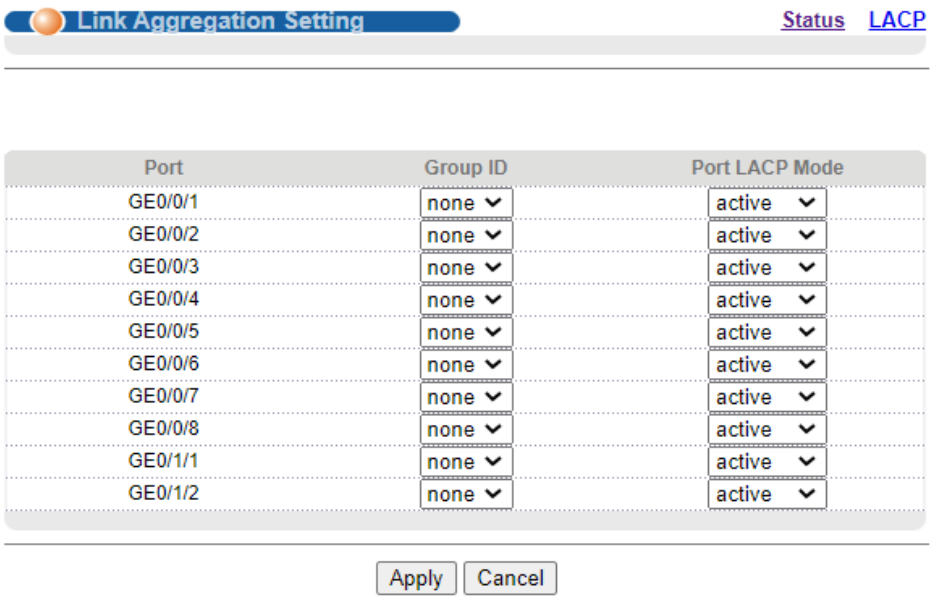
4.2.8.1. Link Aggregation status

Selecting "**Advanced Application**>**Link Aggregation**>**Link Aggregation Status**", in the navigation bar, you can view link aggregation status, you can view Group ID, Enabled Ports, Synchronized Ports, Aggregator ID, Criteria, Status.



4.2.8.2. Link Aggregation Setting

Selecting "**Advanced Application**>**Link Aggregation**>**Link Aggregation Setting**", in the navigation bar, you can set Link Aggregation.

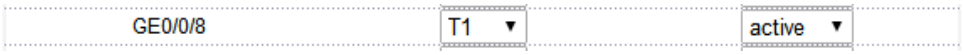


【Parameter Description】

Parameter	Description
Group ID	Add the port to the specified Aggregation Group ID
Port LACP mode	Configure port aggregation(static/active/passive)
Criteria	Configure the Aggregation Group load balancing (src-mac/dst-mac/src-dst-mac/src-ip/dst-ip/src-dst-ip)

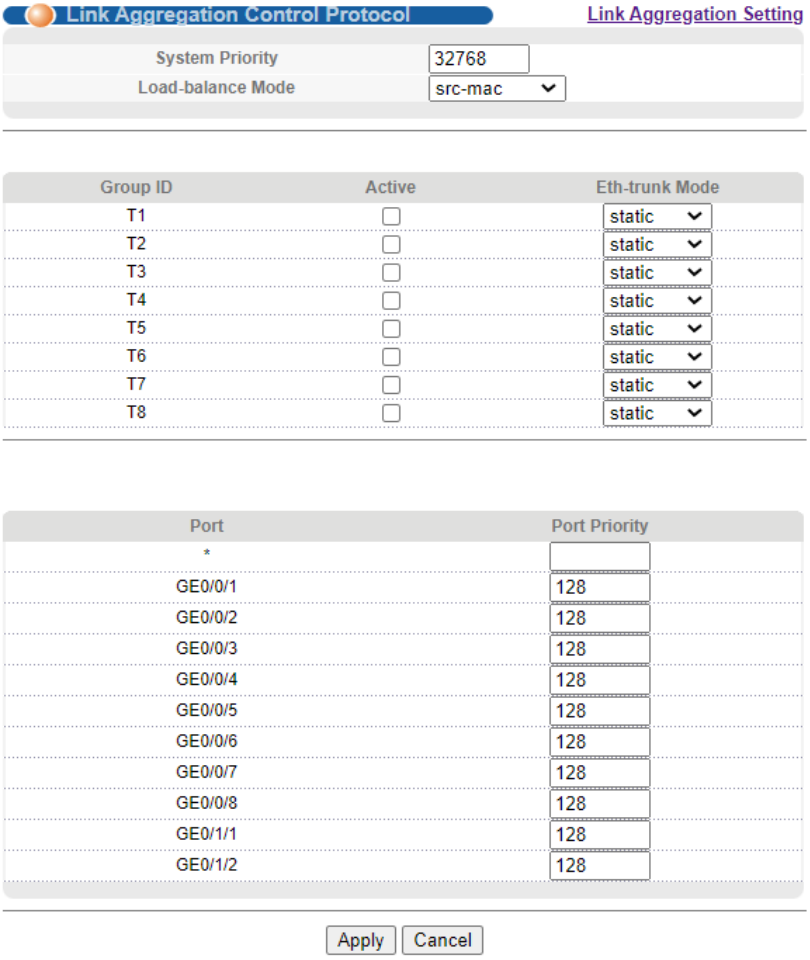
【Configuration example】

Such as: configure parameter of Aggregation Group port-8.



4.2.8.3. Link Aggregation Control Protocol

Selecting "**Advanced Application**>**Link Aggregation**>**Link Aggregation Control Protocol**", in the navigation bar, you can configure Link Aggregation Control Protocol.



【Parameter Description】

Parameter	Description
System priority	Aggregation group system priority, the default is 32768(the range of 1-65535)

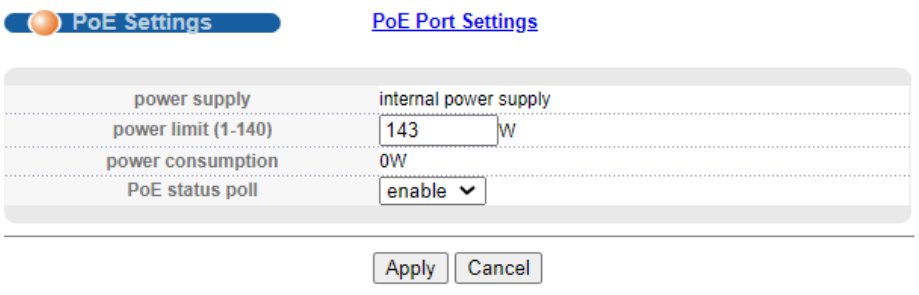
Parameter	Description
Load-balance Mode	Configure the Aggregation Group load balancing src-mac dst-mac src-dst-mac src-ip dst-ip src-dst-ip

4.2.9. POE Settings

Selecting “**Advanced Application**>**POE Settings**", you can configure POE.

4.2.9.1. POE Settings

Selecting “**Advanced Application**>**POE Settings**", you can configure POE.

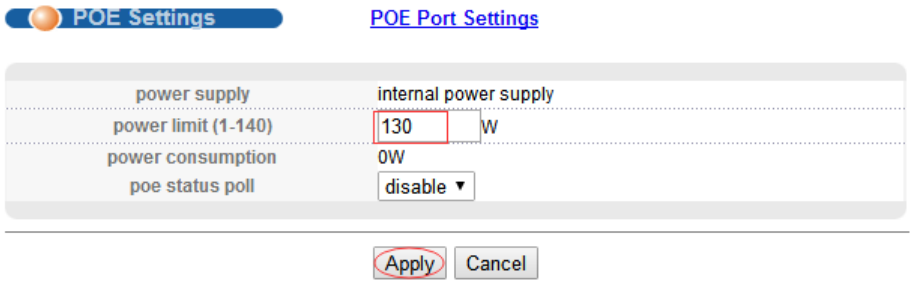


【Parameter Description】

Parameter	Description
power limit	The power of switch POE can be limited

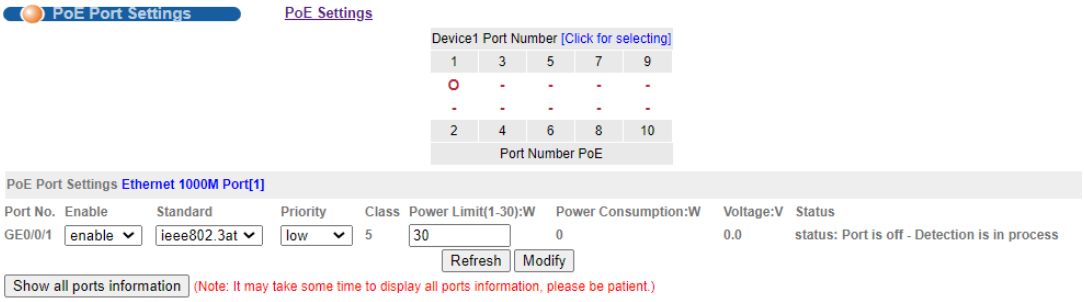
【Configuration example】

Such as: set power limit is 130W.



4.2.9.2. POE Port Settings

Selecting "**Advanced Application**>**POE Port Settings**", in the navigation bar, you can configure POE Port.

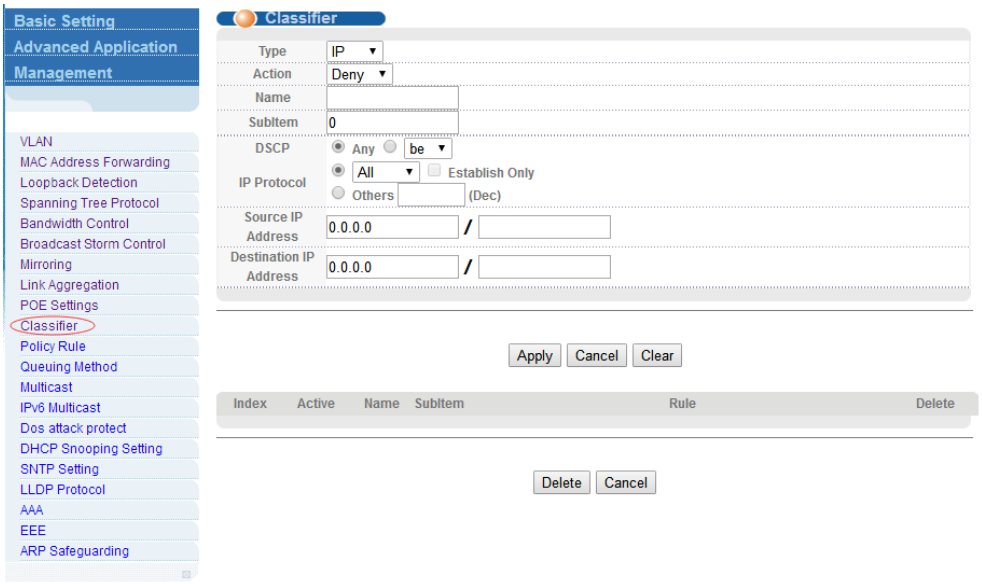


【Parameter Description】

Parameter	Description
Enable	Turn the port POE power on and off and the default is open
Standard	Configure ieee802.3af, ieee802.3at mode, default to ieee802.3at
Priority	Configure port Priority low, critical, high, the default priority is low
Power limit	The power of switch POE can be limited

4.2.10. Classifier

Selecting "**Advanced Application**>**Classifier**", in the navigation bar, you can configure Classifier.

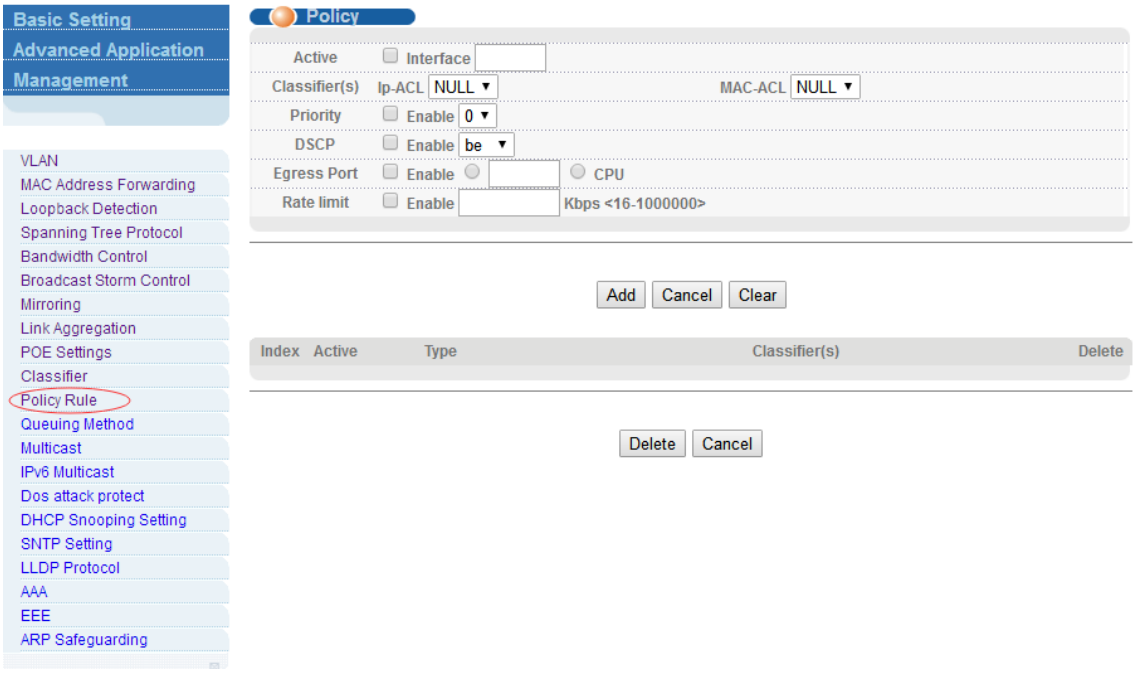


【Parameter Description】

Parameter	Description
Active	Active Classifier(Deny or Permit)
Type	Select Type: IP or MAC
Action	Select Action: Permit or Deny

4.2.11. Policy Rule

Selecting "**Advanced Application**>**Policy Rule**", in the navigation bar, you can configure Policy Rule.

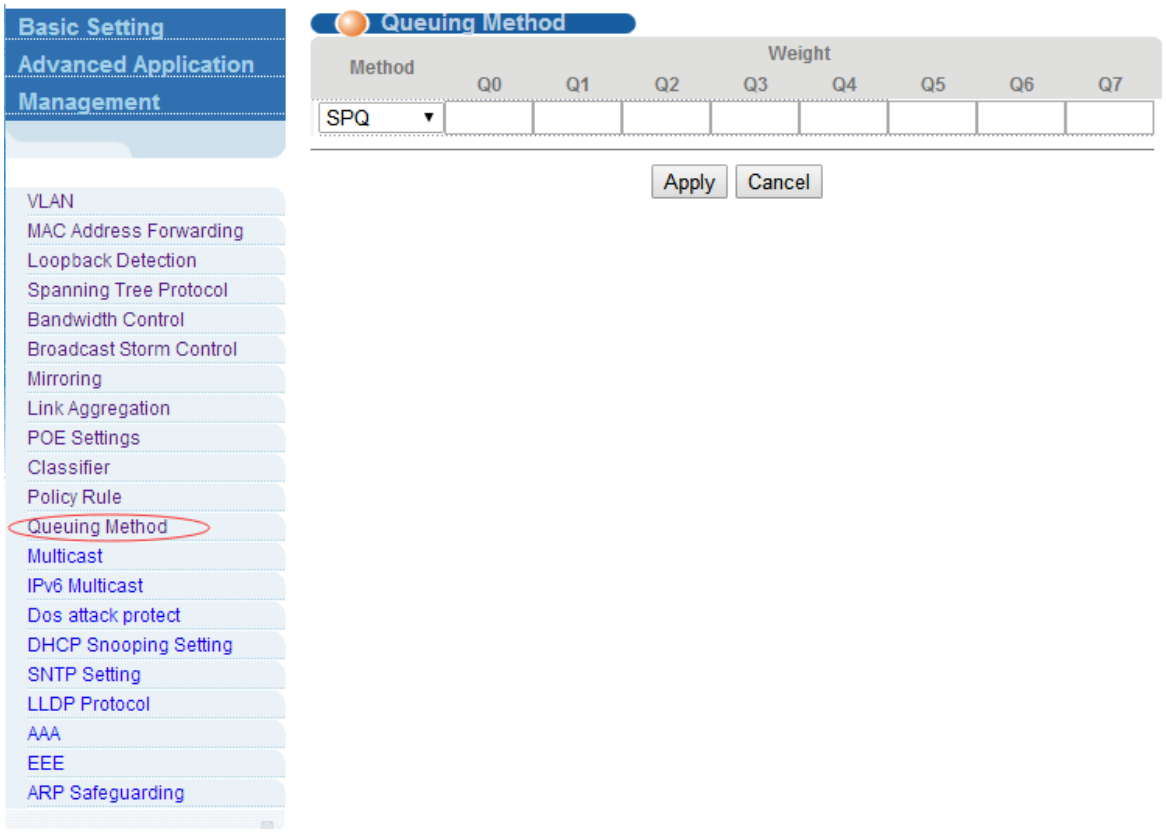


【Parameter Description】

Parameter	Description
Active	Active Classifier
Classifier(s)	The classification rules must be matched
Priority	Whether to enable priority and set priority
DSCP	Whether to enable DSCP
Egress Port	Specified entry port
Rate limit	Specified limit rate

4.2.12. Queuing Method

Selecting "**Advanced Application**>**Queuing Method**", in the navigation bar, you can configure queuing method.



【Parameter Description】

Parameter	Description
Method	Five method: SPQ,WRR,SP+WRR,WFQ,SP+WFQ

【Instructions】

➢ SP(Strict-Priority）and WRR (Weighted Round Robin).

1）Strict Priority Queueing

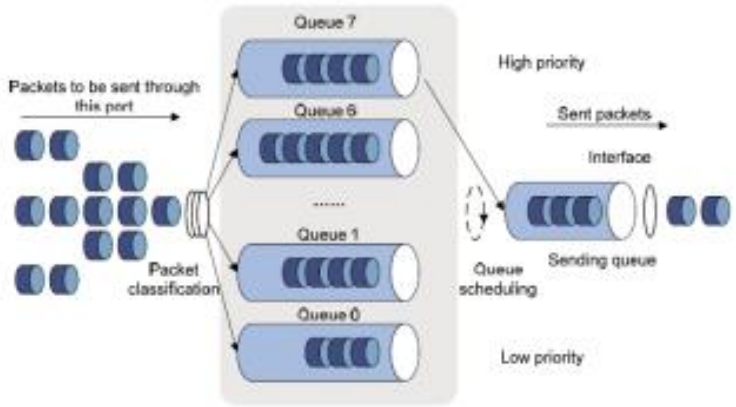
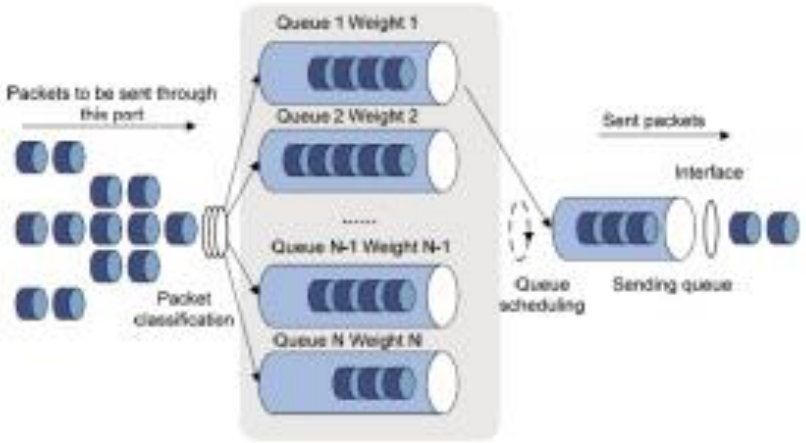


Diagram for SP queuing

Strict Priority Queueing is specially designed to meet the demands of critical services or applications. Critical services or applications such as voice are delay-sensitive and thus require to be dequeued and sent first before packets in other queues are dequeued on a congested network. For example, 4 egress queues 3, 2, 1 and 0 with descending priority are configured on a port.Then under SP algorithm, the port strictly prioritizes packets from higher priority queue over those from lower priority queue. Namely, only after packets in highest priority queue are emptied, can packets in lower priority queue be forwarded. Thus High-priority packets are always processed before those of less priority. Medium-priority packets are always processed before low-priority packets. The lowest priority queue would be serviced only when highest priority queues had no packets buffered.Disadvantages of SP: The SP queueing gives absolute priority to high-priority packets over low-priority traffic; it should be used with care. The moment a higher priority packet arrived in its queue, however, servicing of the lower priority packets would be interrupted in favor of the higher priority queue or packets will be dropped if the amount of high-priority traffic is too great to be emptied within a short time.

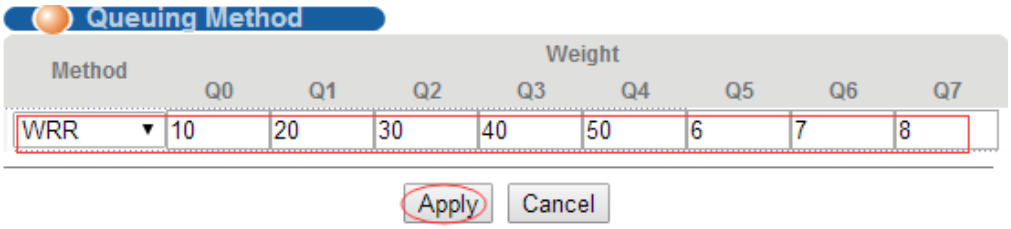
2）WRR



WRR queue scheduling algorithm ensures every queue a guaranteed service time by taking turns to schedule all queues. Assume there are 4 egress queues on the port. The four weight values (namely, w3, w2, w1, and w0) indicate the proportion of resources assigned to the four queues respectively. On a 100M port, if you set the weight values of WRR queue-scheduling algorithm to 25, 15, 5 and 5(corresponding to w3, w2, w1, and w0 respectively). Then the queue with the lowest priority can be

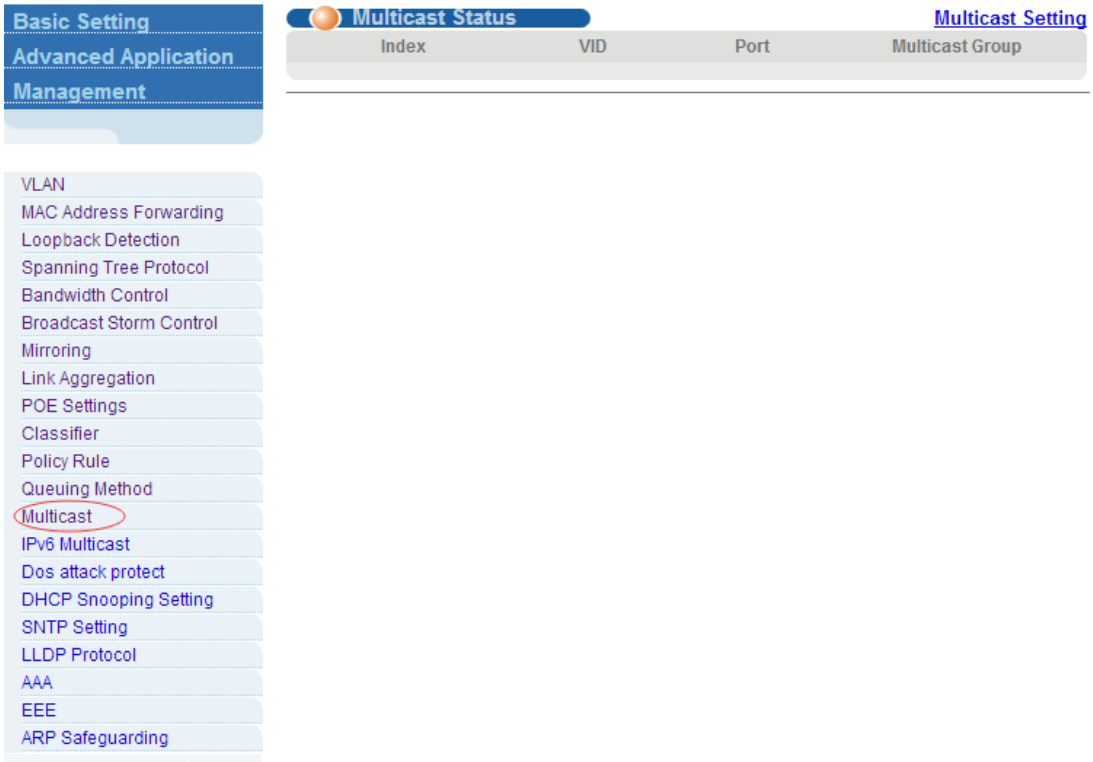
ensured of, at least, 10 Mbps bandwidth, thus avoiding the disadvantage of SP queue-scheduling algorithm that packets in low-priority queues may not be served during a long time. Another advantage of WRR queue-scheduling algorithm is that though the queues are scheduled in turn, the service time for each queue is not fixed, that is to say, when a queue is emptied, the next queue will be scheduled immediately. Thus, bandwidth resources are fully utilized.

【Configuration Example】



4.2.13. Multicast

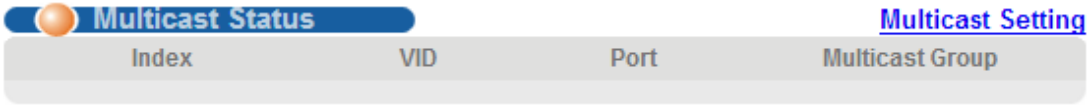
Selecting "**Advanced Application**>**Multicast**", in the navigation bar, you can configure Multicast.



4.2.13.1. Multicast Status

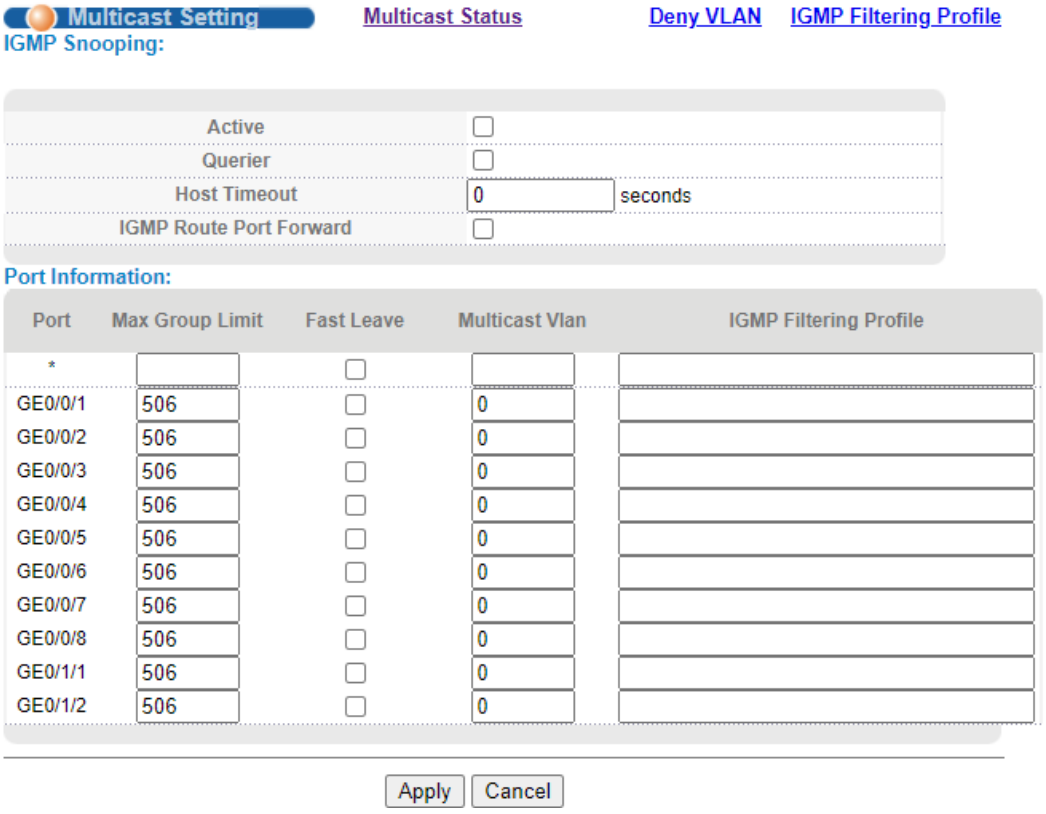
Selecting "**Advanced Application**>**Multicast**>**Multicast Status**", in the navigation bar, you can view all multicast. This includes the static configuration and the multicast that is learned through the

IGMP-Snooping protocol.



4.2.13.2. Multicast Settings

Selecting "**Advanced Application**>**Multicast**>**Multicast Settings**", in the navigation bar, you can set multicast.



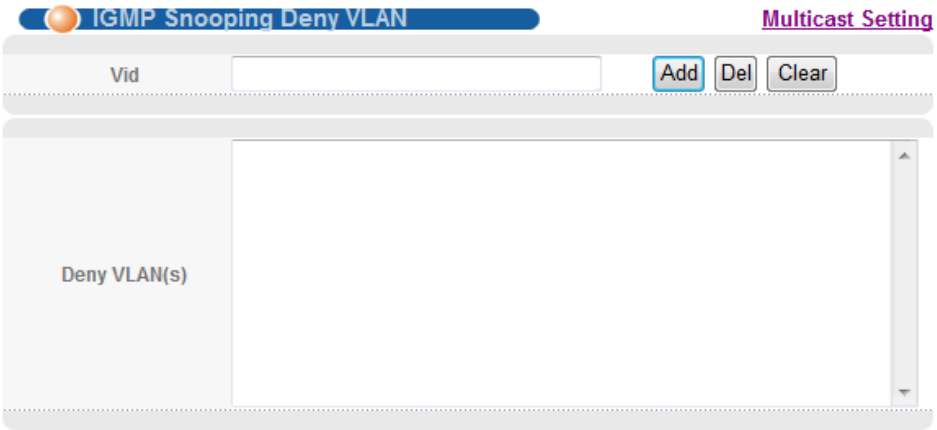
【Parameter Description】

Parameter	Description
Active	Open IGMP-snooping
Querier	Open IGMP-snooping timed query function
Host Timeout	Configure the dynamic group sowing time (default 300s)
IGMP Route Port Forward	Open IGMP Route Port Forward
Max Group Limit	Max learning group of configuration port (default 1020)
Fast Leave	Open port quick exit function (i.e., when the port receives the IGMP and leaves the message, immediately remove the port

Parameter	Description
	from the reshuffle group)
Multicast Vlan	The configuration group multicast the default VLAN
IGMP Filtering Profile	The configuration port refers to the multicast preview, which can only be learned to the group broadcast group that is allowed in the group broadcast preview, and cannot be learned to the multicast group which is forbidden by the group broadcast preview

4.2.13.3. IGMP Snooping Dney VLAN

Selecting "**Advanced Application**>**Multicast**>**IGMP Snooping Dney VLAN**", in the navigation bar, you can preview the banned group broadcast group, unable to learn the multicast group that is prohibited by the group preview.

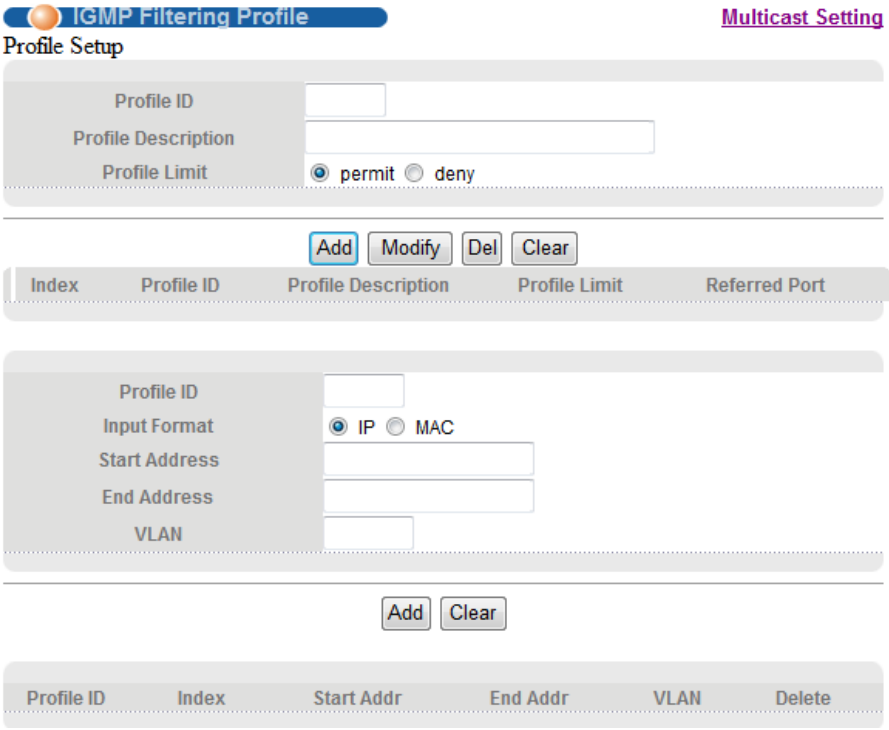


【Parameter Description】

Parameter	Description
Vid	Vlan's ID

4.2.13.4. IGMP Filtering Profile

Selecting “**Advanced Application**>**Multicast**>**IGMP Filtering Profile**", in the navigation bar, you can add and remove the preview feature of the modified group.

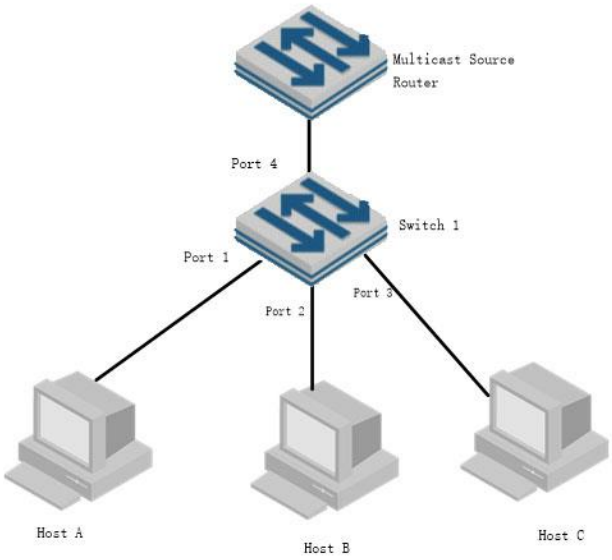


【Parameter Description】

Parameter	Description
Profile ID	The range of 1-128
Profile Limit	Profile rules can be permit or deny
Input Format	The preview address can be configured to be either IP or MAC

【Configuration example】

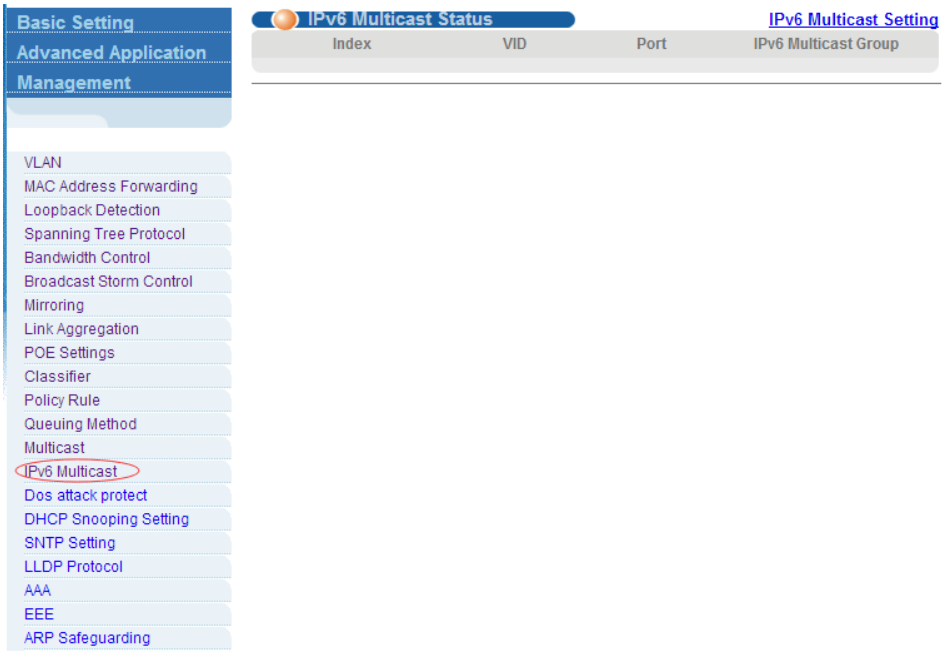
As shown in the figure, the host-A, host-B and host-C belong to VLAN2, VLAN3 and VLAN4 respectively.The configuration enables the three hosts to receive the data of the multicast group with the group address of 224.0.1.1 ~ 224.0.1.3.



1. Enable igmp-snooping function.
2. Add different ports to different vlans.
3. The host sends the report message to the switch, and the switch learns to multicast group.
4. The multicast source router sends a query message to the switch, which will learn the routing port table entry.
5. The multicast source router sends a multicast traffic stream to the switch and the switch distribute it to the hosts.

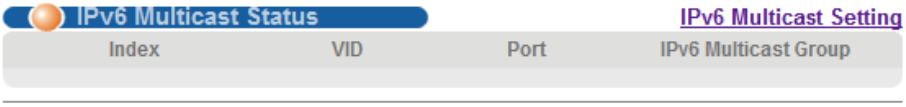
4.2.14. IPv6 Multicast

Selecting “**Advanced Application**>**IPv6 Multicast**", in the navigation bar, you can configure IPv6 Multicast.



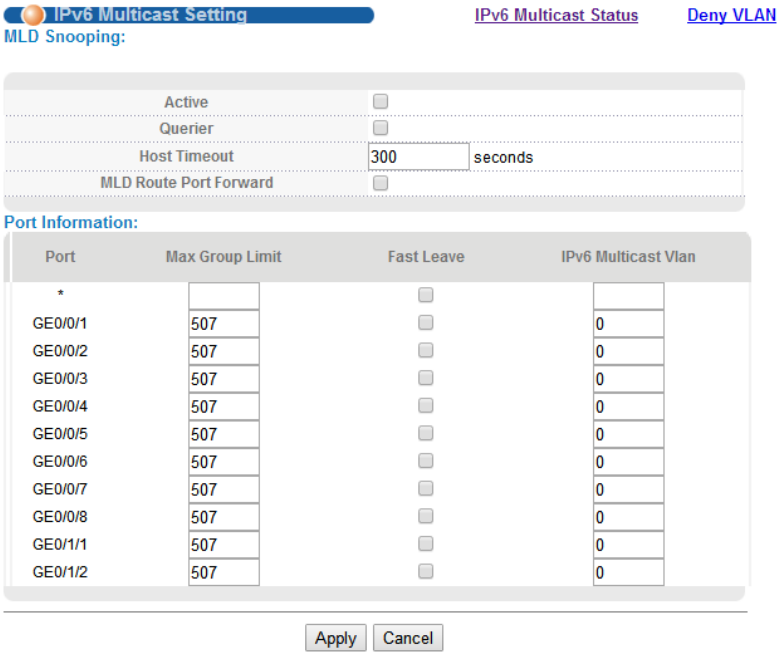
4.2.14.1. IPv6 Multicast Status

Selecting "**Advanced Application**>**IPv6 Multicast**>**IPv6 Multicast Status**", in the navigation bar, you can view all IPv6 Multicast groups.



4.2.14.2. IPv6 Multicast Setting

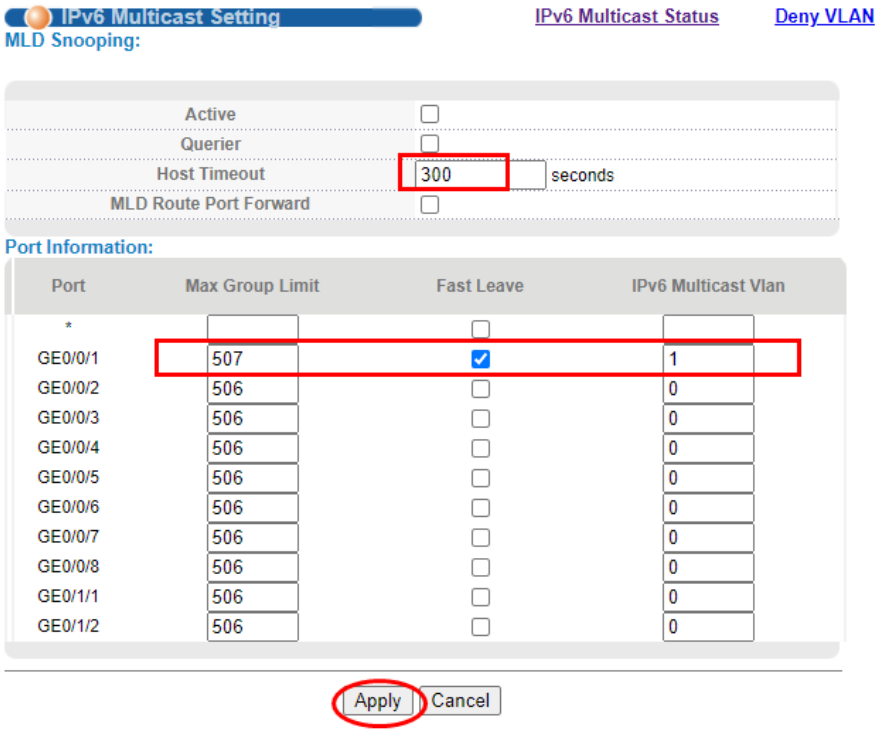
Selecting "**Advanced Application**>**IPv6 Multicast**>**IPv6 Multicast Setting**", in the navigation bar, you can configure IPv6 Multicast.



【Parameter Description】

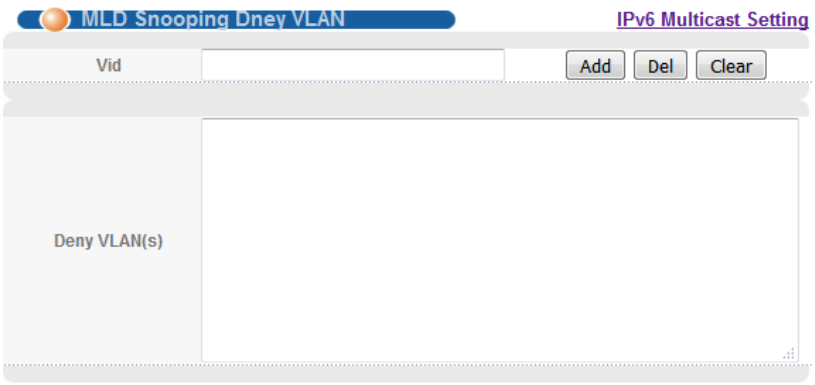
Parameter	Description
Active	Enable or disable MLD snooping
Querier	Enable or disable MLD snooping timed Querier
Host Timeout	Configure Dynamic IPv6 multicast aging time (default 300s)
MLD Route Port Forward	Enable or disable MLD Route Port Forward
Max Group Limit	Configure maximum learning IPv6 Multicast message of port(default 1020)
Fast Leave	Enable or disable Fast Leave (That is, when the port receives IGMP leave message, the port is deleted immediately from the IPv6 multicast group)
IPv6 Multicast VLAN	Configure IPv6 multicast default VLAN

【Configuration Example】



4.2.14.3. MLD Snooping Dney VLAN

Selecting "**Advanced Application**>**IPv6 Multicast**>**MLD Snooping Dney VLAN**", in the navigation bar, you can configure MLD Snooping Dney VLAN.

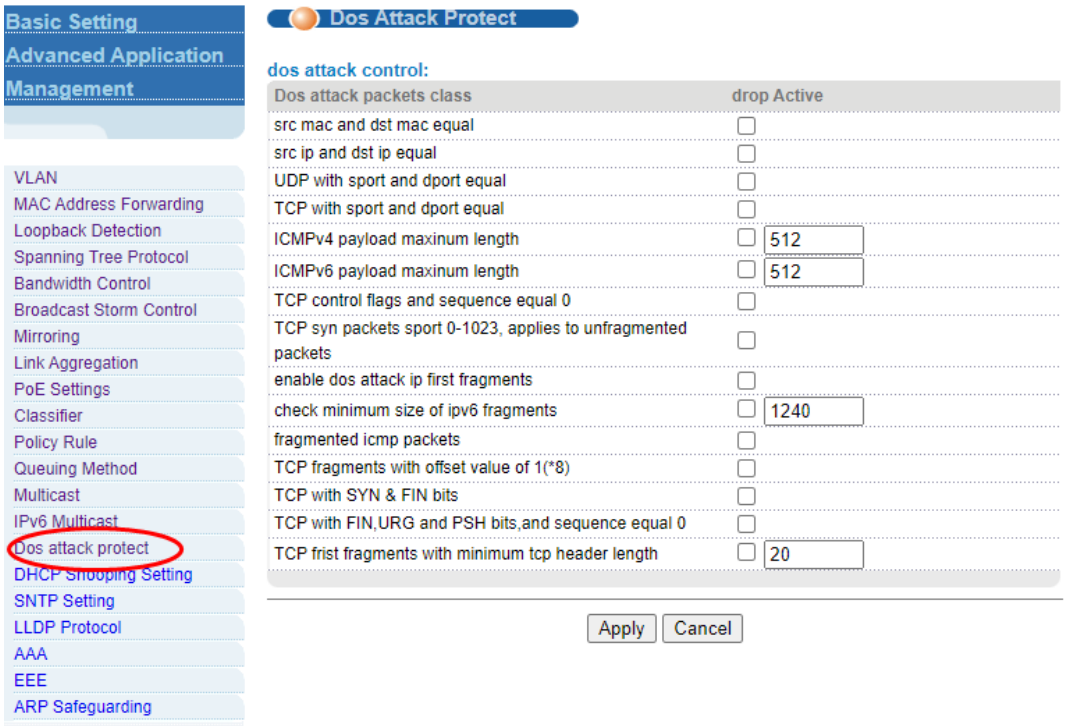


【Parameter Description】

Parameter	Description
Vid	Vlan ID

4.2.15. Dos attack protect

Selecting "**Advanced Application**>**Dos attack protect**", in the navigation bar, you can configure dos attack protect.

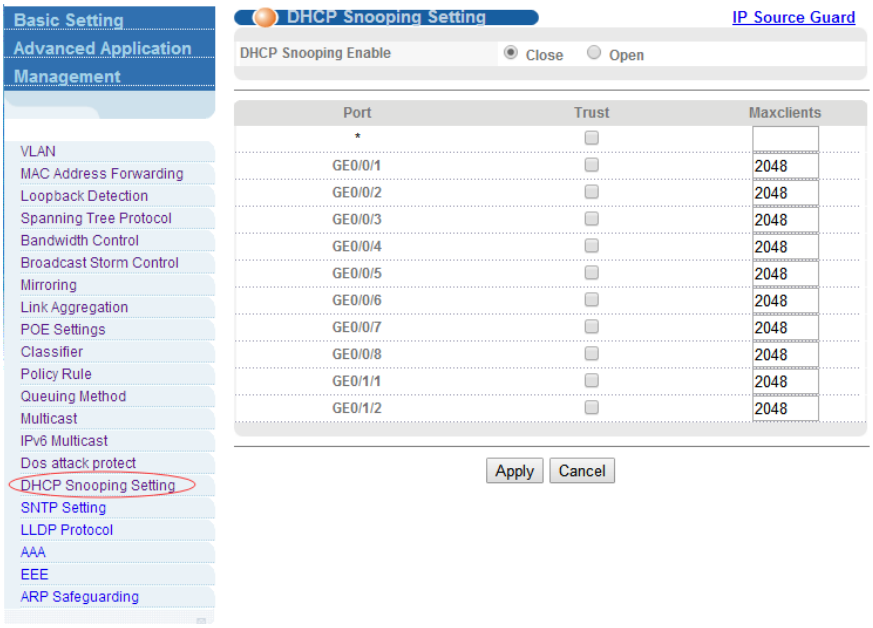


【Parameter Description】

Parameter	Description
dos attack control	The DOS attack is controlled by the discarding behavior of the corresponding message

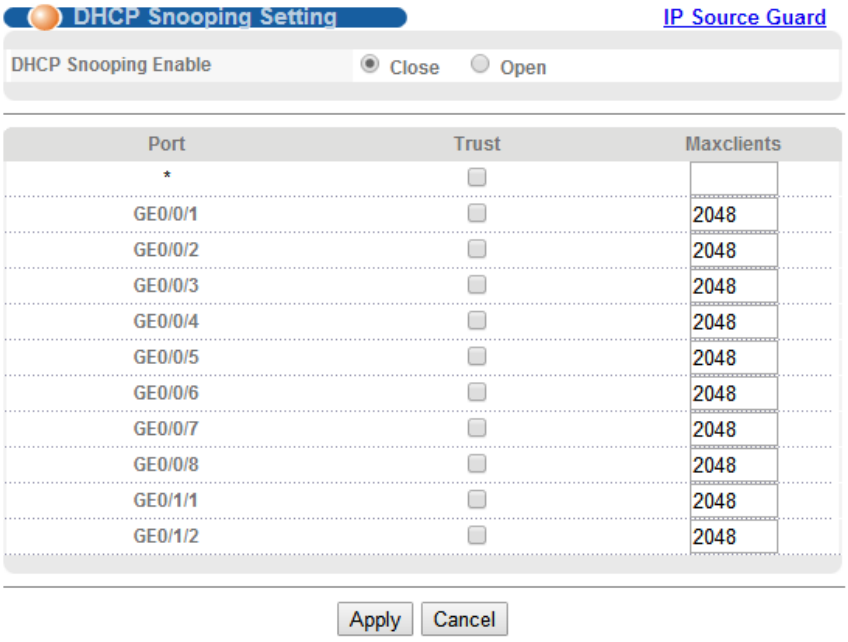
4.2.16. DHCP Snooping Setting

Selecting "**Advanced Application**>**DHCP Snooping Setting**", in the navigation bar, you can configure DHCP Snooping.



4.2.16.1. DHCP Snooping Setting

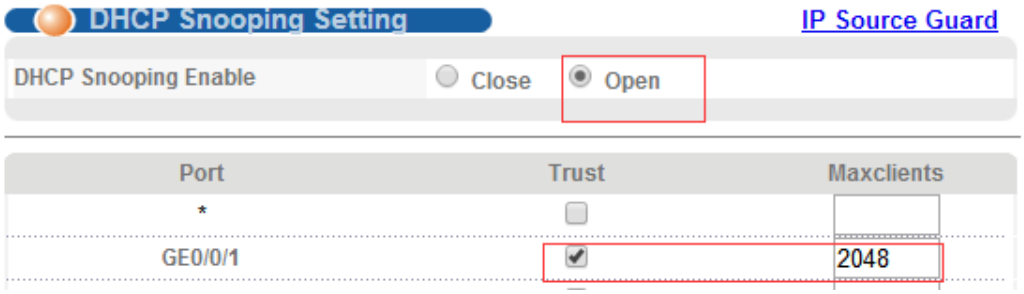
Selecting "**Advanced Application**>**DHCP Snooping Setting**>**DHCP Snooping Setting**", in the navigation bar, you can configure DHCP Snooping.Nowadays, the network is getting larger and more complicated. The amount of the PCs always exceeds that of the assigned IP addresses. The wireless network and the laptops are widely used and the locations of the PCs are always changed. Therefore, the corresponding IP address of the PC should be updated with a few configurations. DHCP (Dynamic Host Configuration Protocol, the network configuration protocol optimized and developed basing on the BOOTP, functions to solve the above mentioned problems.



【Parameter Description】

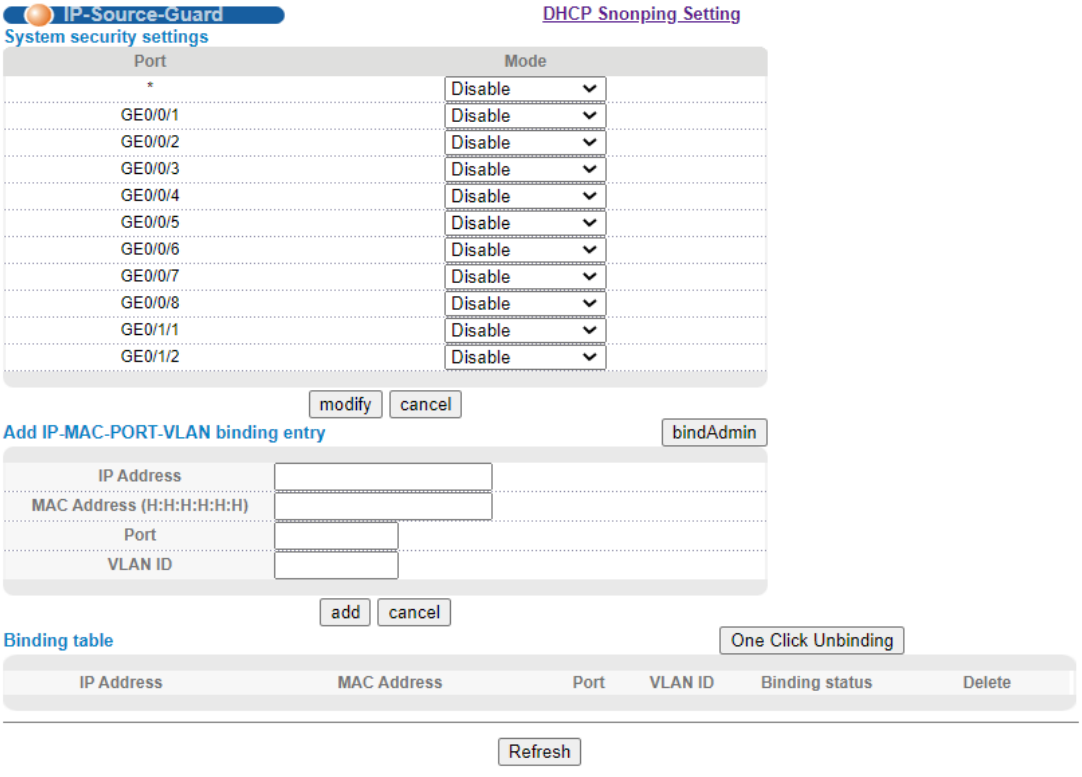
Parameter	Description
DHCP Snooping Enable	Enable or disable DHCP Snooping serve
Trust	Enable or disable the DHCP Snooping port trust property state
Maxclients	Set Maxclients

【Configuration Example】



4.2.16.2. IP Source Guard

Selecting "**Advanced Application**>**DHCP Snooping Setting**>**IP Source Guard**", in the navigation bar, you can configure IP Source Guard.



【Parameter Description】

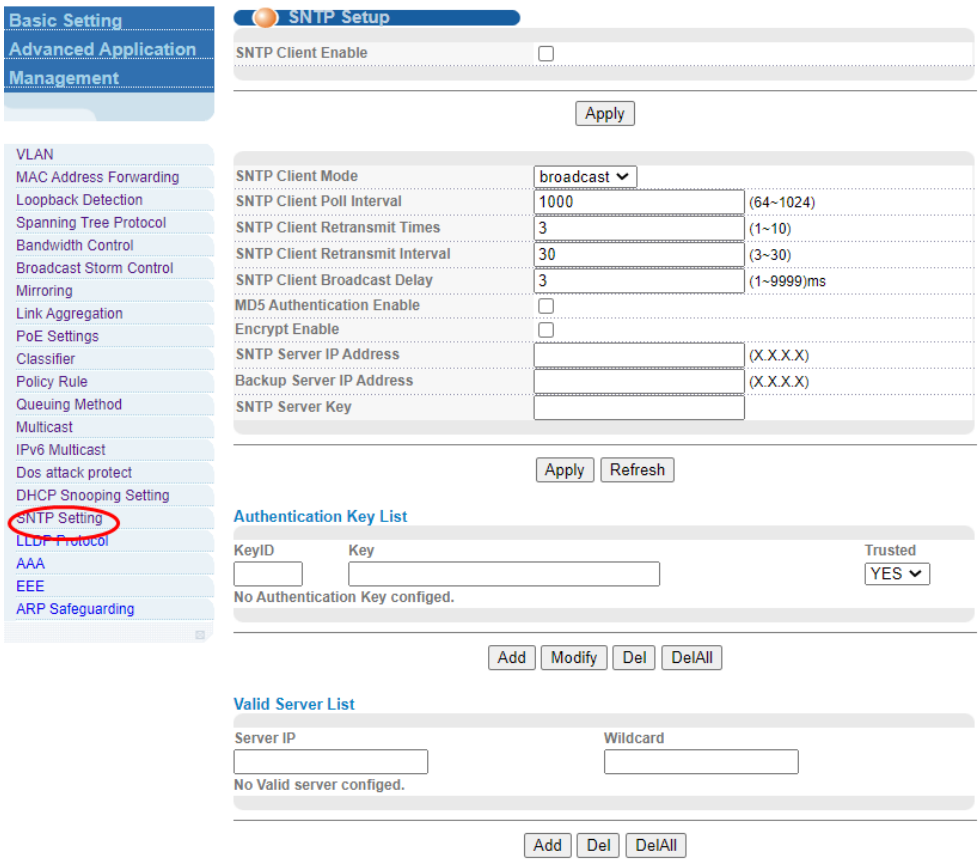
Parameter	Description
Disable unbinding entry to access network	Enable or Disable unbinding entry to access network

【Instructions】

If you want to access shall be binding and switch the IP address of the same network segment.

4.2.17. SNTP Setting

Selecting "**Advanced Application**>**SNTP Setting**", in the navigation bar, you can configure SNTP.



【Parameter Description】

Parameter	Description
SNTP Client Enable	Enable or disable SNTP Client
SNTP Client Mode	SNTP Client Mode: broadcast, anycast multicast

Parameter	Description
	unicast
SNTP Client Poll Interval	It's interval that SNTP Client sends requests to SNTP Server
SNTP Client Retransmit Times	If SNTP Client does not receive a response within a certain period of time after sending a request,it will resend the request until the number of retransmissions exceeds the set value
SNTP Client Retransmit Interval	It's interval that SNTP Client resends requests to SNTP Server
SNTP Server IP Address	Set SNTP Server IP Address
Valid Server List Server IP	SNTP only receives the messages from Valid Server List Server IP configured
SNTP Client Enable	Enable or disable SNTP Client
SNTP Client Mode	SNTP Client Mode: broadcast, anycast multicast unicast
SNTP Client Poll Interval	It's interval that SNTP Client sends requests to SNTP Server
SNTP Client Retransmit Times	If SNTP Client does not receive a response within a certain period of time after sending a request,it will resend the request until the number of retransmissions exceeds the set value
Valid Server List Server IP	SNTP only receives the messages from Valid Server List Server IP configured

【Instructions】

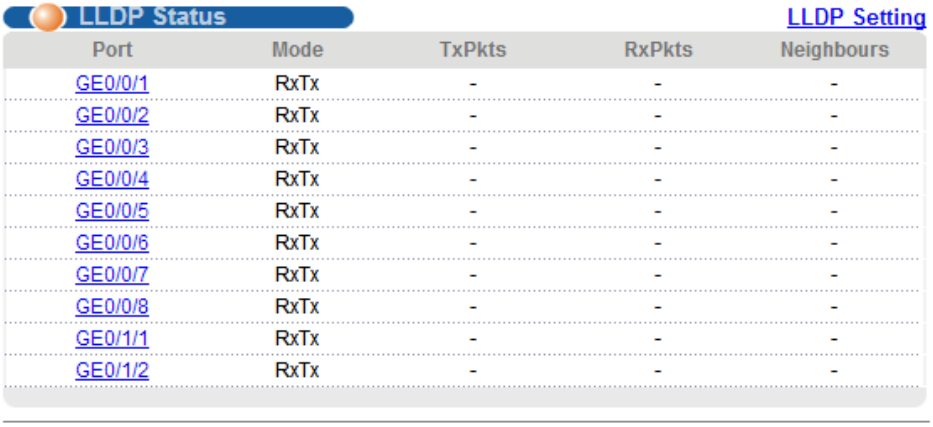
SNTP Client receives and transmits messages from any SNTP Server when work mode of SNTP Client is broadcast or multicast.Local time cannot be synchronized to standard time if there is a malicious attack server (which provides incorrect time).

4.2.18. LLDP Protocol

Selecting "**Advanced Application**>**LLDP Protocol**", in the navigation bar, you can configure LLDP.

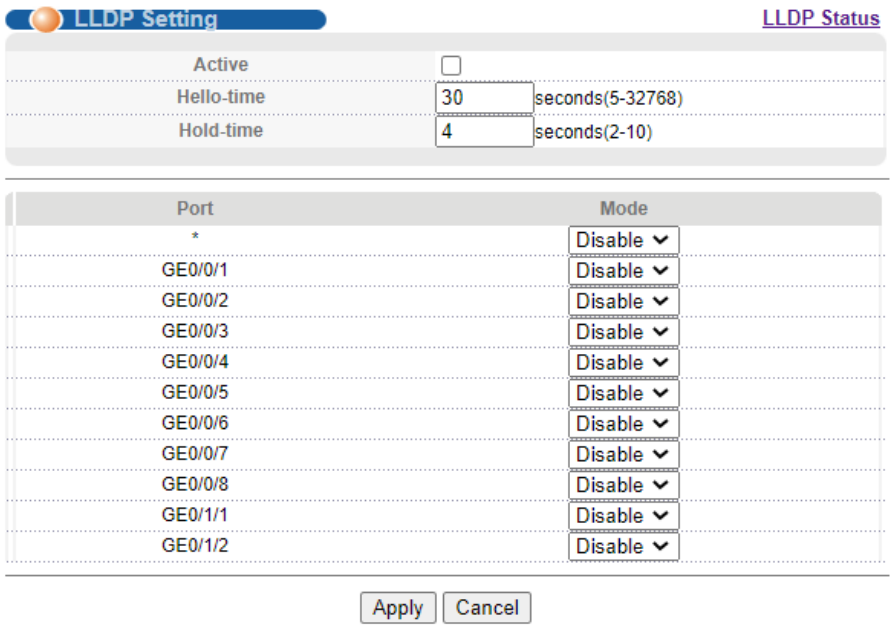
4.2.18.1. LLDP Status

Selecting "**Advanced Application**>**LLDP Protocol**>**LLDP Status**", in the navigation bar, you can view LLDP staus.



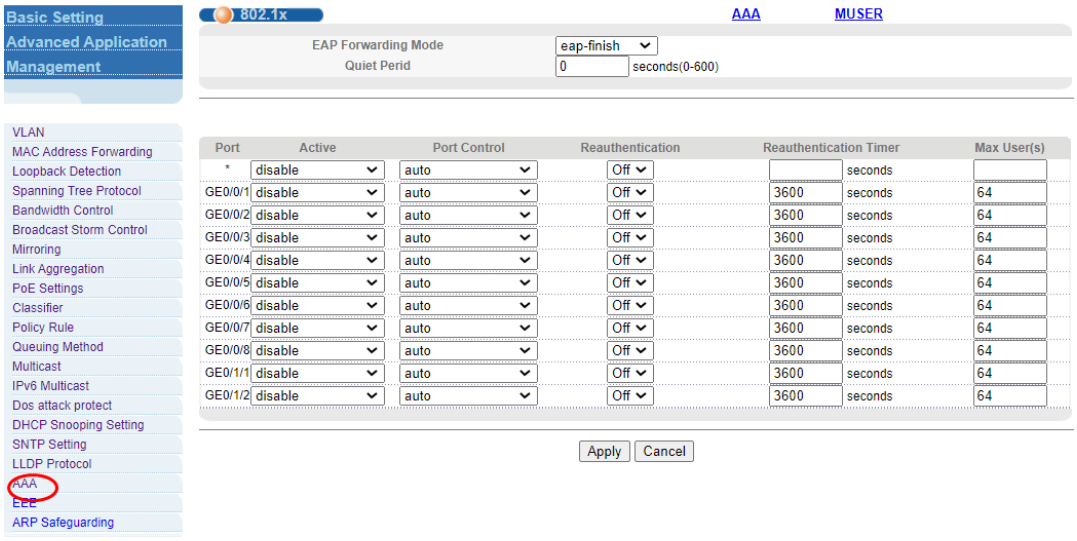
4.2.18.2. LLDP Setting

Selecting "**Advanced Application**>**LLDP Protocol**>**LLDP Setting**", in the navigation bar, you can configure LLDP.



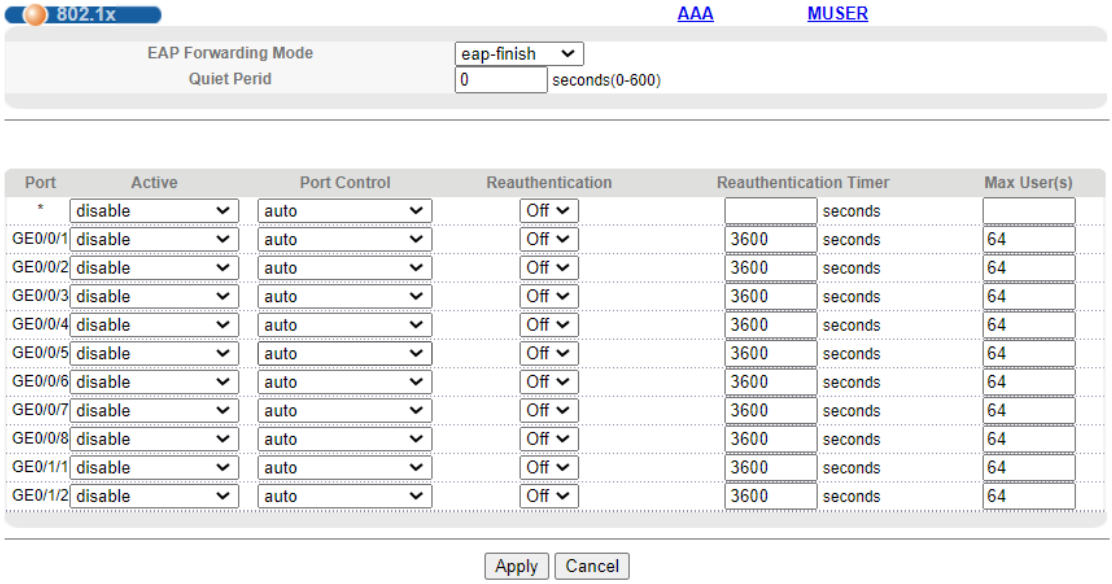
4.2.19. AAA

Selecting "**Advanced Application**>**AAA**", in the navigation bar, you can configure AAA.



4.2.19.1. 802.1x

Selecting "**Advanced Application**>**AAA**>**802.1x**", in the navigation bar, you can configure 802.1x.



【Parameter Description】

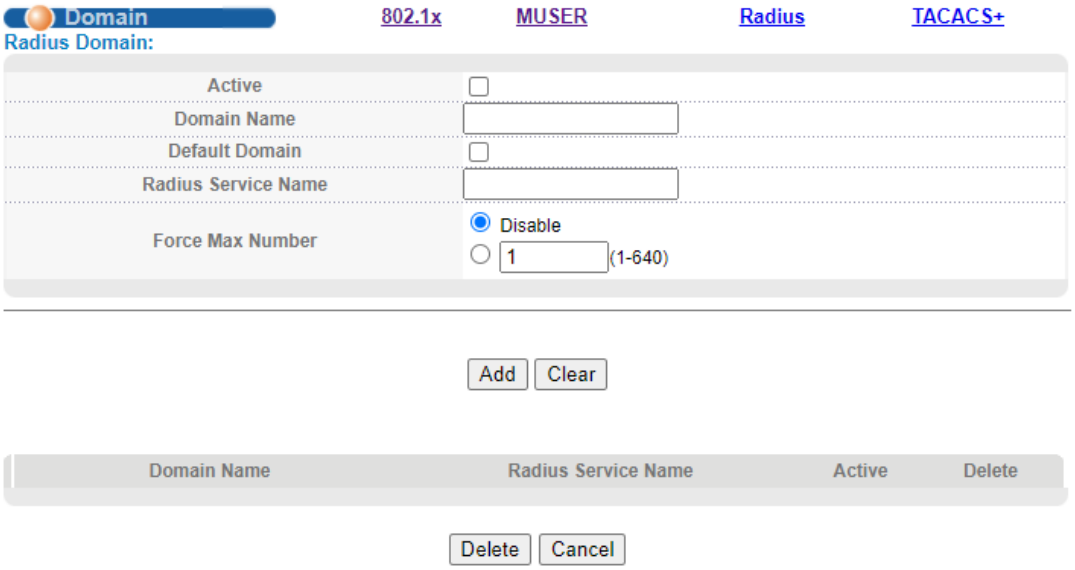
Parameter	Description
EAP Forwarding Mode	EAP Forwarding Mode :eap-finish,Eap-tansfer
Quiet Period	If the same user fails to log in more than the allowed value, he or she will not be allowed to try to log in at a certain time
Active	Active:disable, portbased(multi) , portbased(single) , Macbased
Port Control	Port Control:auto , Forceauthorized , Forceunauthorized

Parameter	Description
Reauthentication	After user authentication is passed, the port can be configured to reauthenticate or periodically re-authenticate
Reauthentication Timer	Time range of Reauthentication Timer: 10-3600 seconds
Max user(s)	The maximum number of users: 1-100

【Configuration Example】

4.2.19.2. Domain

Selecting "**Advanced Application**>**AAA**> **Domain**", in the navigation bar, you can configure Domain.



【Parameter Description】

Parameter	Description
Active	Enable or disable radius domain
Domain Name	Set domain name
Radius Server Name	Set Radius Server name
Force Max Number	Maximum number of user connections range: 1-640

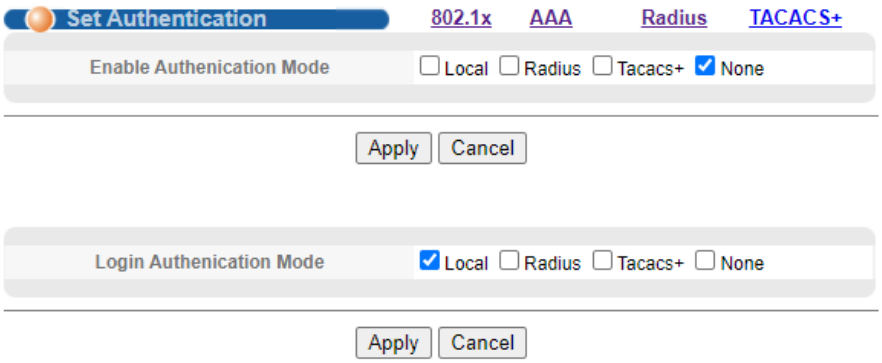
【Instructions】

It needs to provide user name and password when the client is authenticated. The user name information generally includes the ISP information of user, domain and the ISP one-to-one

correspondence, the main information domain is the domain of the user is authenticated and accounted by which RADIUS server.

4.2.19.3. Set Authentication

Selecting "**Advanced Application**>**AAA**>**Set Authentication**", in the navigation bar, you can configure Remote Authentication.

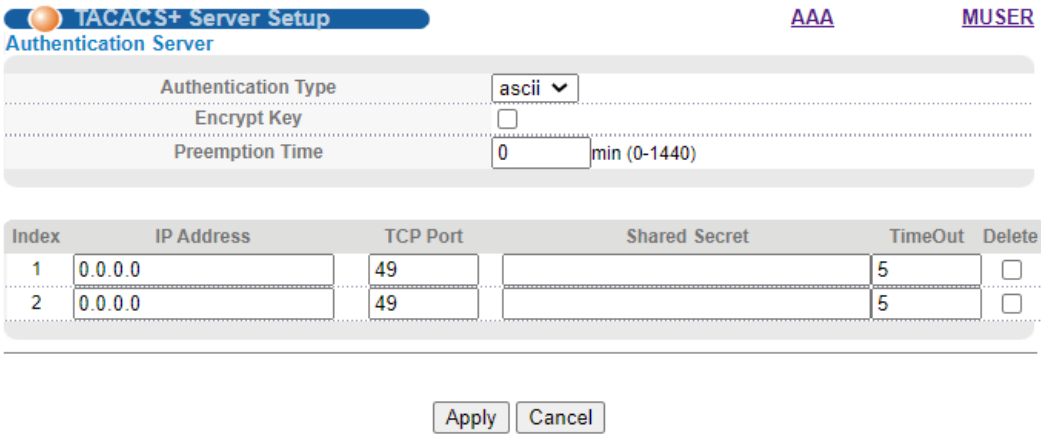


【Parameter Description】

Parameter	Description
Authenication Mode	Authenication Mode: Local, Radius, Tacacs+

4.2.19.4. TACACS+ Server Setup

Selecting "**Advanced Application**>**AAA**>**TACACS+ Server Setup**", in the navigation bar, you can configure TACACS+ Server Setup.

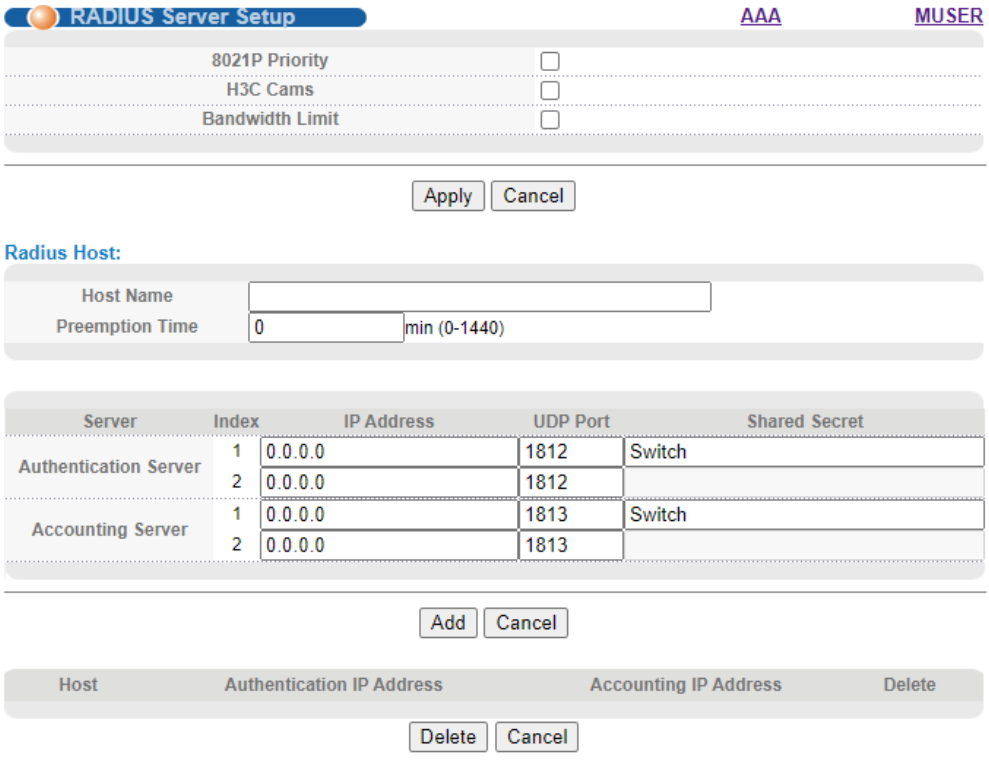


【Parameter Description】

Parameter	Description
Authenication Type	Authenication Mode: ascii, Chap, pap
Preemption Time	The time range of Preemption Time: 0-1440 minutes

4.2.19.5. Radius Server Setup

Selecting "**Advanced Application**>**AAA**>**Radius Server Setup**", in the navigation bar, you can configure Radius Server Setup.

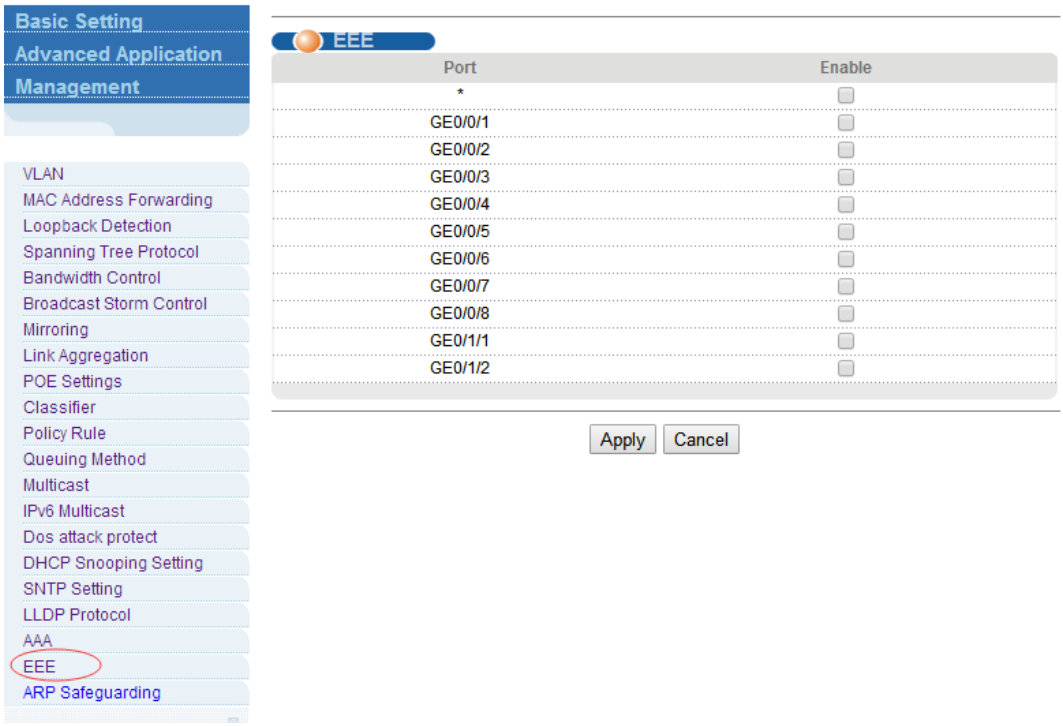


【Parameter Description】

Parameter	Description
8021P Priority	After this function is turned on, if the user authentication is pass, it will modify the PVID of the user's port.
H3C Cams	In this feature, you can configure the version information of transmitting clients to the radius server through the radius attribute client-version.
Bandwidth limit	After this function is turned on, if the user authentication is pass, it will modify the Bandwidth of the user's port.

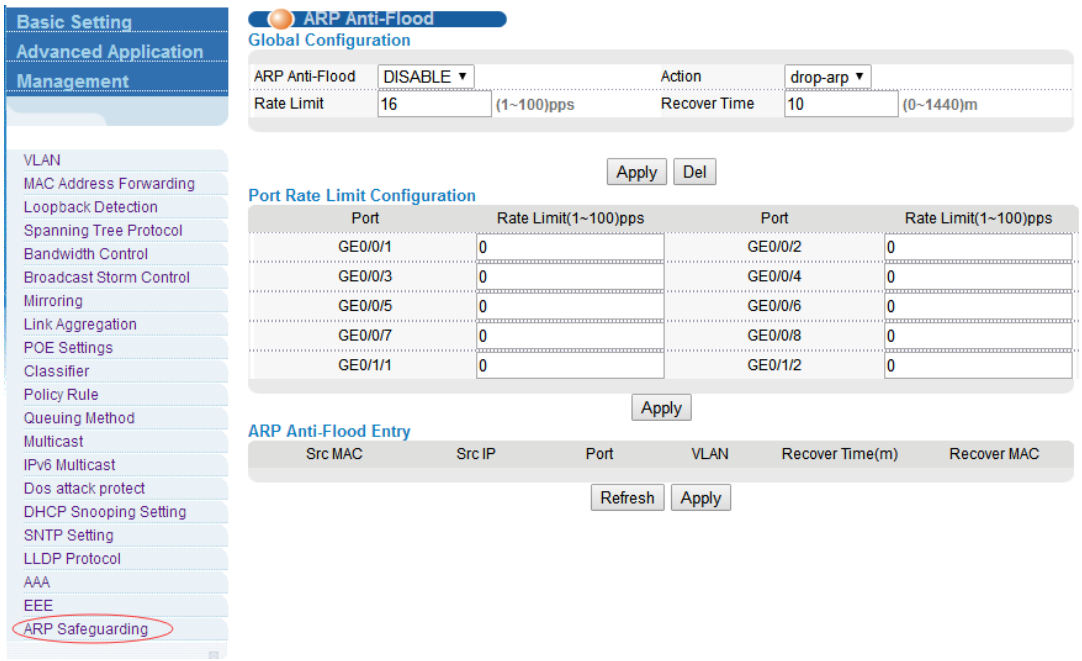
4.2.20. EEE

Selecting "**Advanced Application**>**EEE**", in the navigation bar,It could enable or disable the energy-efficient-ethernet function of interface in EEE web page.



4.2.21. ARP Safeguarding

Selecting "**Advanced Application**>ARP Safeguarding", The page can be configured to prevent arp flooding.



【Parameter Description】

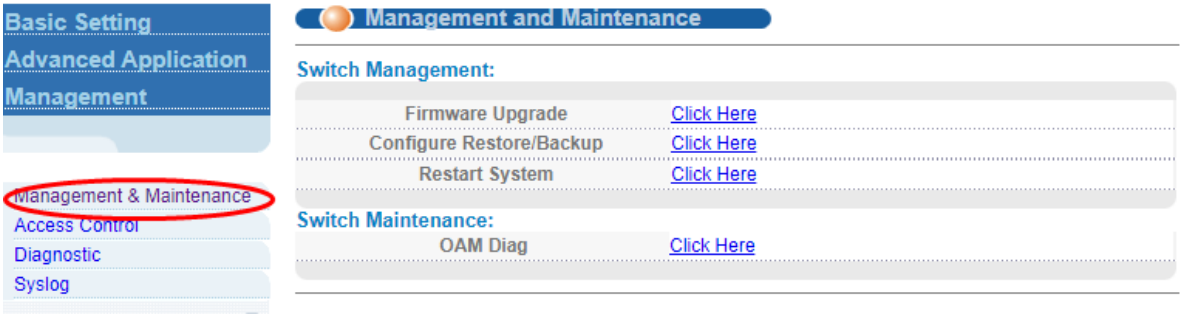
Parameter	Description
Global Configuration	Enable or disable ARP Anti-flood
Port Rate Limit	It can set Arp message speed limit for specific interface. If it exceeds the speed limit, it is considered to be under attack.

4.3. Management

Choose Management, and the following page appears. There are "**Management & Maintenance**", "**Access Control** ", "**Diagnostic**", "**Syslog**", configuration web pages.

4.3.1. Management &Maintenance

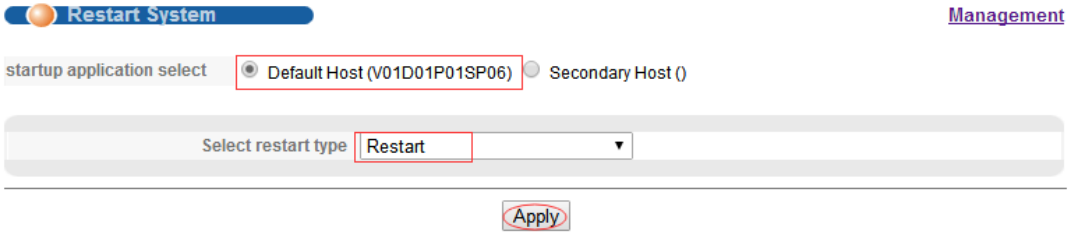
Selecting "**Management**> **Management & Maintenance**", in the navigation bar, you can Upgrade Firmware , Restart System and Maintenance switch.



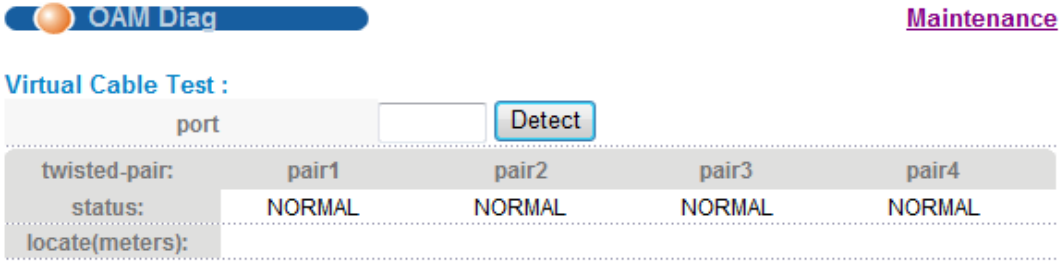
【Configuration Example】

1.Firmware Upgrade

2.Restart system. Restart type: Restart, Restart with Factory Defaults.

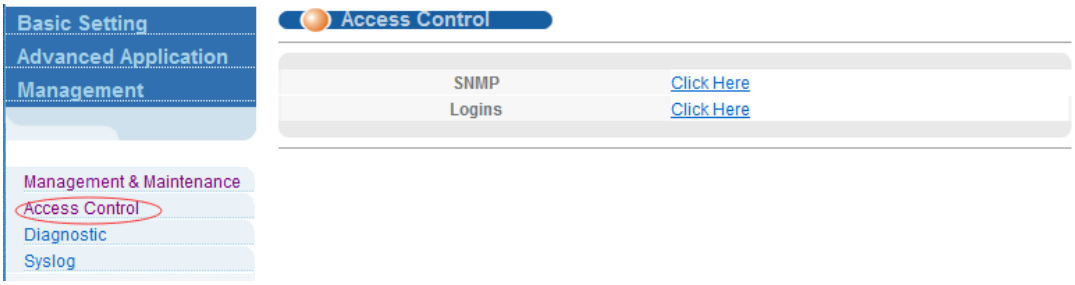


3.OAM Diag, Virtual cable can be tested.



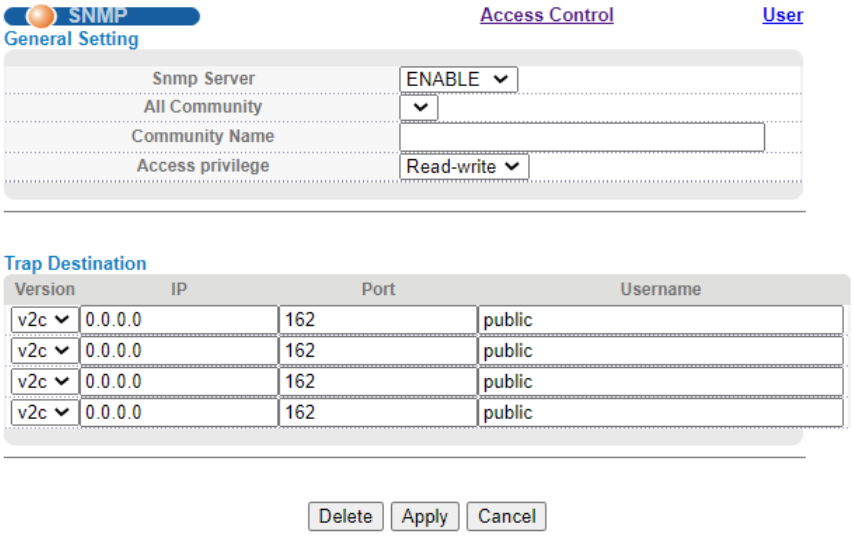
4.3.2. Access Control

Selecting "**Management**> **Access Control**", in the navigation bar, you can set SNMP and Logins.



4.3.2.1. SNMP

Selecting "**Management**> **Access Control**>**SNMP**", in the navigation bar, you can configure SNMP.

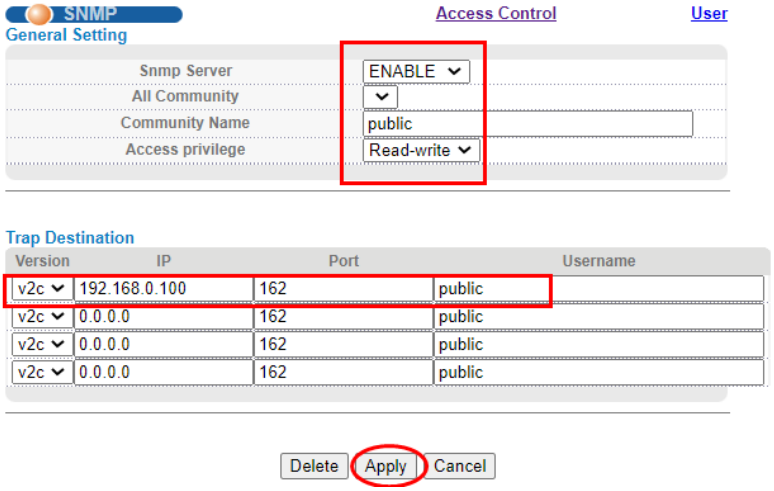


【Parameter Description】

Parameter	Description
Community Name	Community string, is equal to the NMS and Snmp agent communication between the password
Access privilege	Read-only: specify the NMS (Snmp host) of MIB variables can only be read, cannot be modified Read- write: specify the NMS (Snmp host) of MIB variables can only read, can also be modified
Version	Set version: v1, v2c, v3
IP	Set the IP address of the trap host

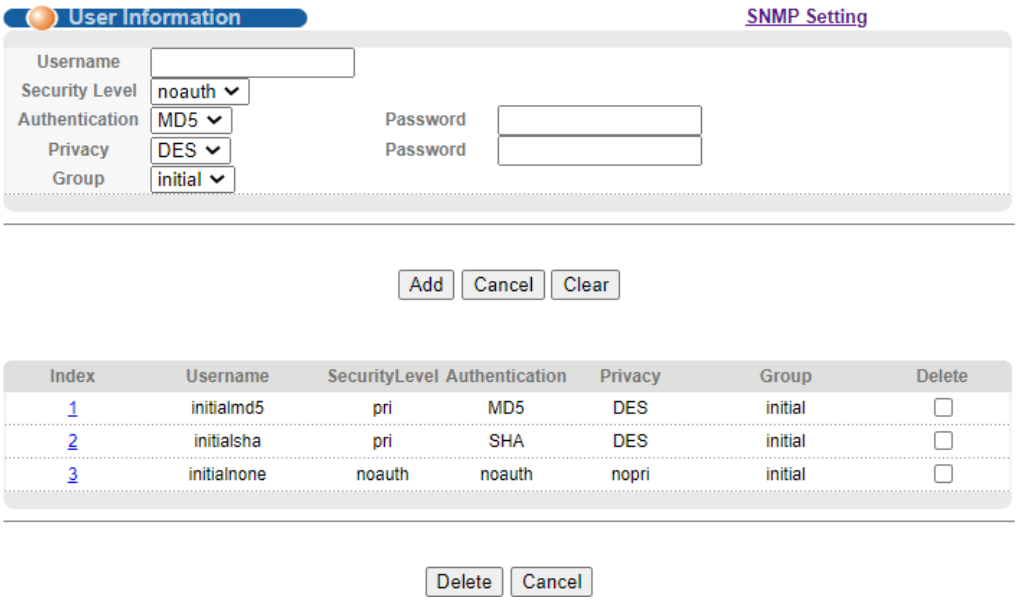
【Configuration Example】

Such as: Add a group name public community, access to Read-Write. Set host 192.168.0.100 to receive trap messages. The specified version is v2c.



4.3.2.2. User Information

Selecting "**Management**> **Access Control**>**User Information**", in the navigation bar, you can add user, set Security Level, Authentication, Privacy, Group, Password.

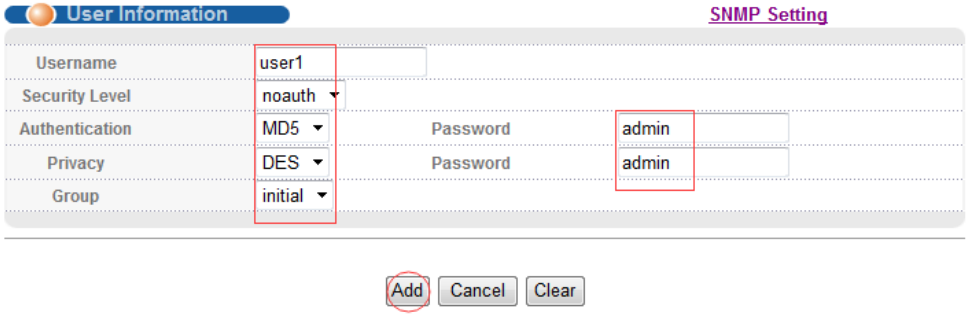


【Parameter Description】

Parameter	Description
Username	Snmp username
Security Level	Noauth、Auth、Pri
Authentication	MD5 SHA
Privacy	DES Privacy
Group	User group name
Password	Encrypted password

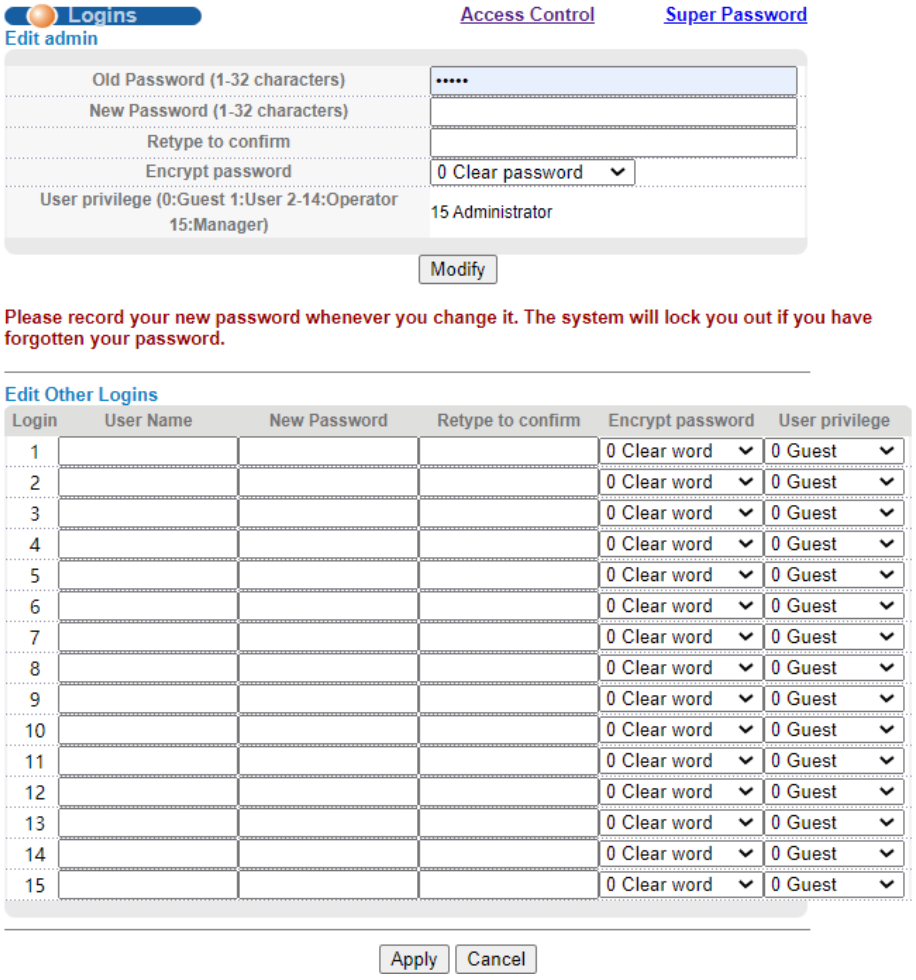
【Configuration Example】

Such as: Add group initial, add username user1.



4.3.2.3. Logins

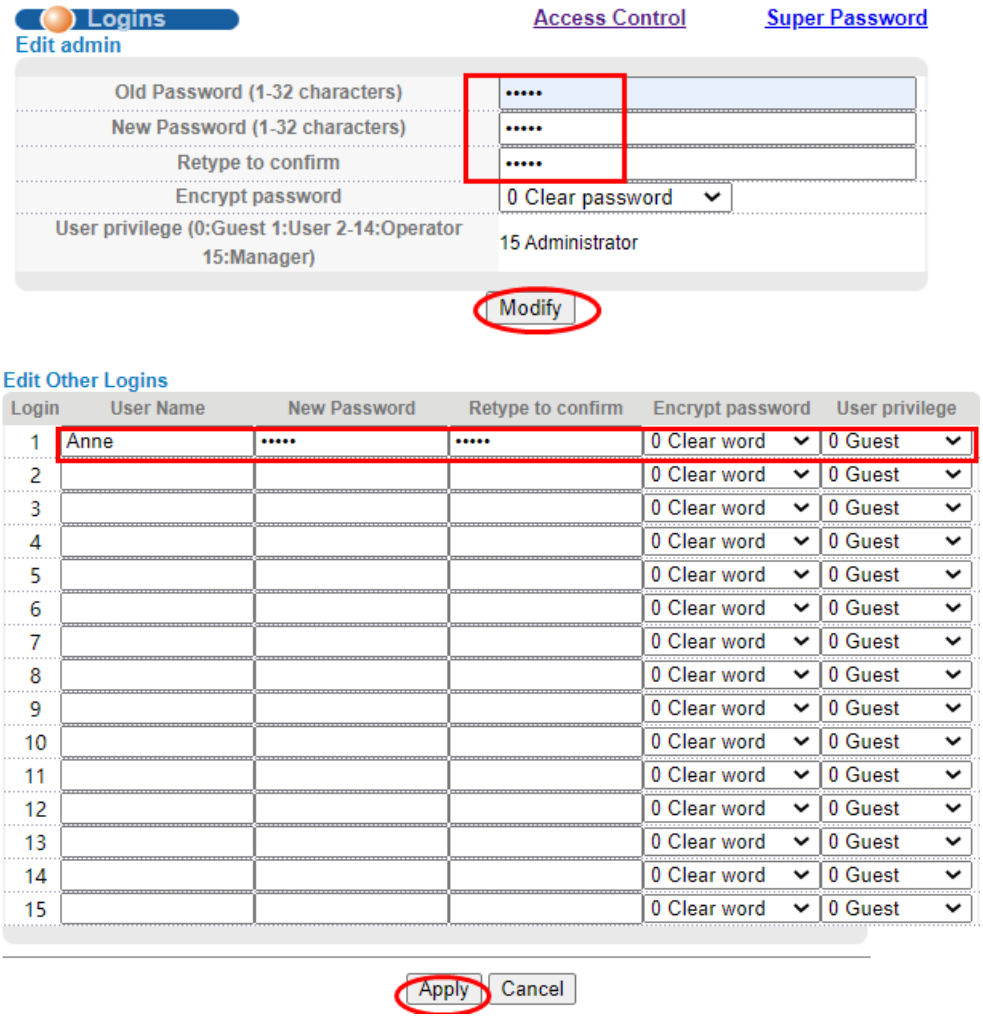
Selecting "**Management**>**Access Control**>**Logins**", in the navigation bar, you can modify admin password, configurable ordinary users.



【Parameter Description】

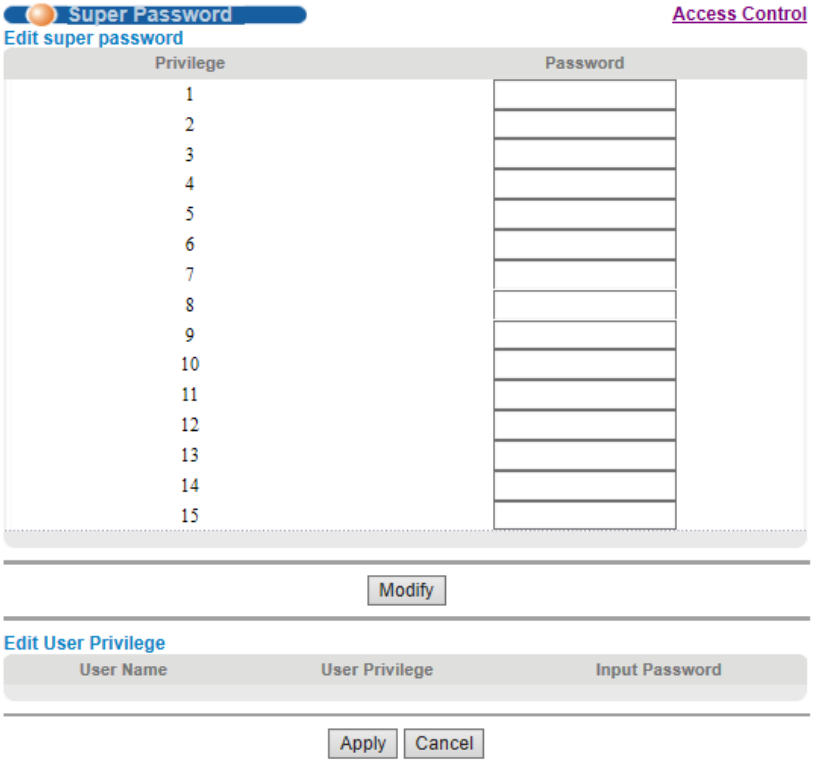
Parameter	Description
User privilege	0-1: Normal 2-15: administrator

【Configuration Example】



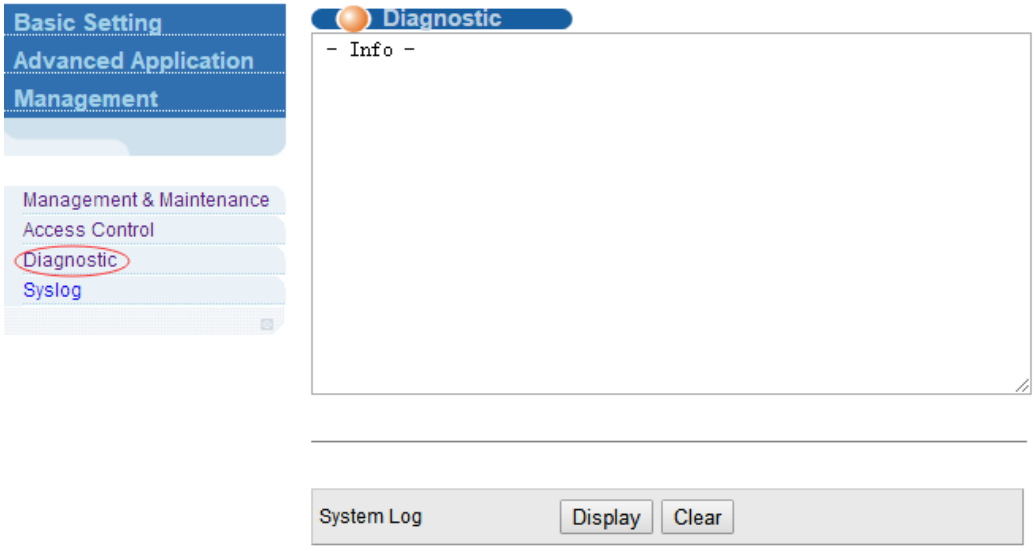
4.3.2.4. Super Password

Selecting "**Management**>**Access Control**>**Super Password**", in the navigation bar, you can set Super Password.



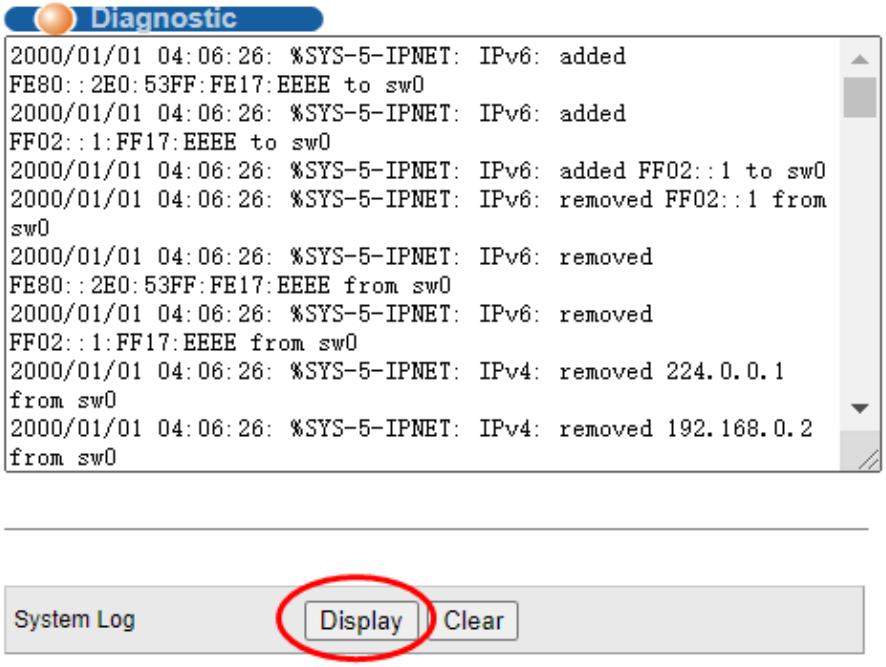
4.3.3. Diagnostic

Selecting "**Management**> **Diagnostic**", in the navigation bar, you can Display or Clear System Log.



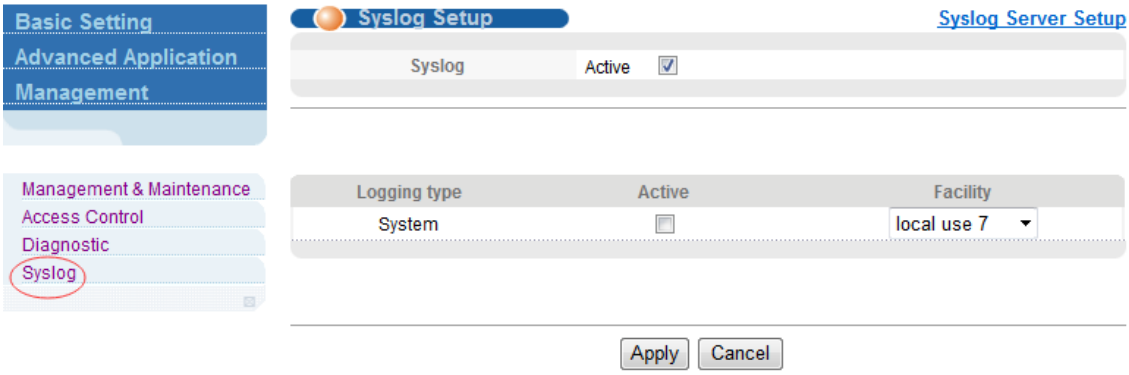
【Configuration Example】

Such as: Display System Log.



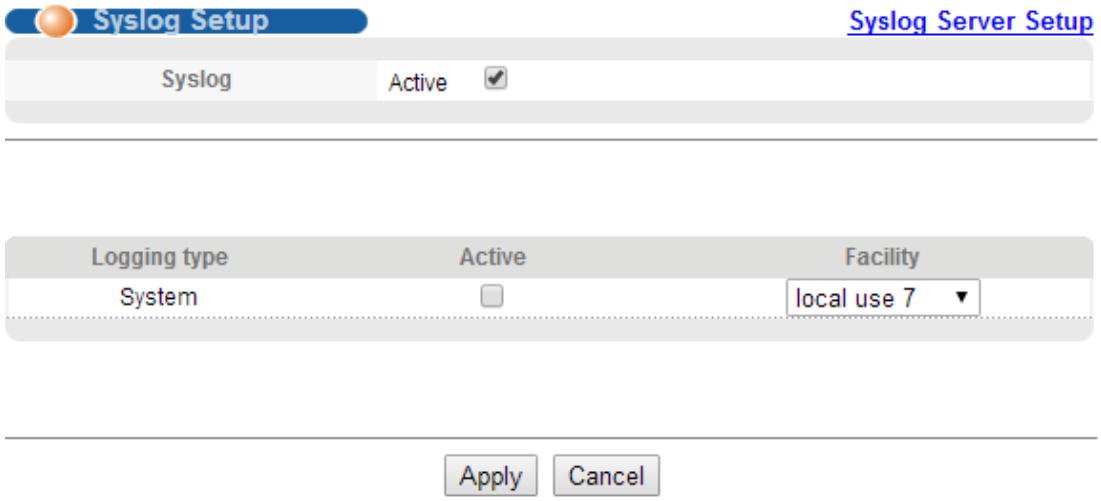
4.3.4. Syslog

Selecting “**Management**> **Syslog**", in the navigation bar, you can configure syslog.



4.3.4.1. Syslog Setup

Selecting “**Management**>**Syslog**>**Syslog Setup**", in the navigation bar, you can start the logging function globally and the logging function of the corresponding module.

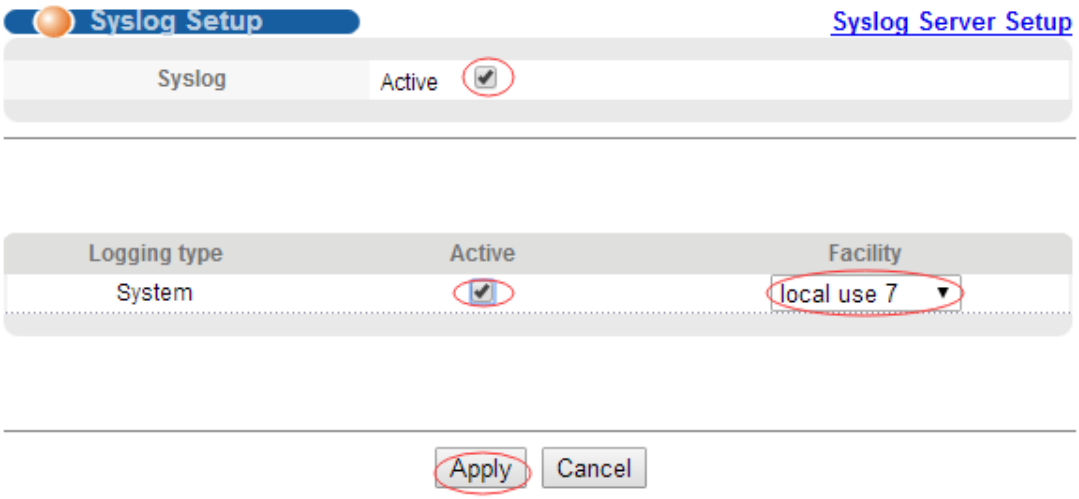


【Parameter Description】

Parameter	Description
Facility	local use 0-7 kernel userlevel mail system sercurity_1-2 sysogd lineprinter Networknews uucp clock_1-2 ftp logaudit logalert

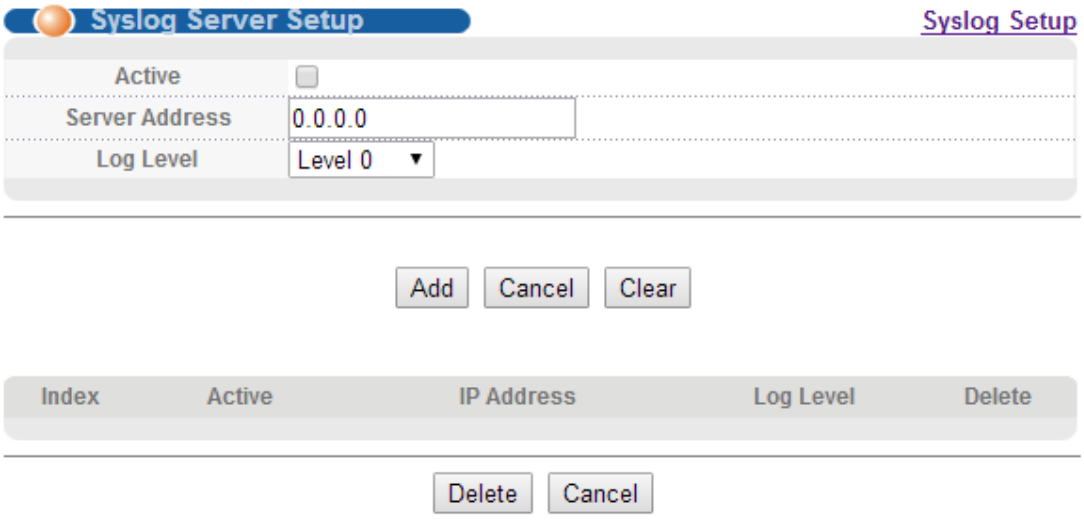
【Configuration Example】

Such as:



4.3.4.2. Syslog Server Setup

Selecting "**Management**>**Syslog**>**Syslog Server Setup**", in the navigation bar, you can set syslog server.



【Parameter Description】

Parameter	Description
Server Address	Syslog Server Address
Log Level	Level 0 Level 0-1 Level 0-2 Level 0-3 Level 0-4 Level 0-5

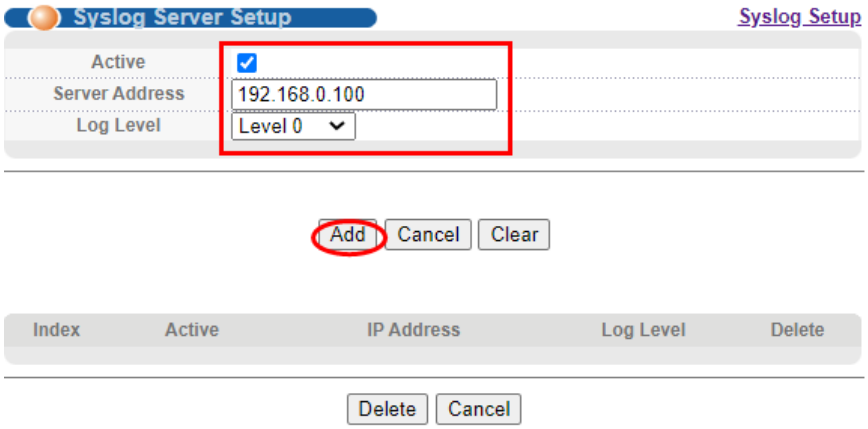
Parameter	Description
	Level 0-6 Level 0-7
Server Address	Syslog Server Address

【Instructions】

Open the log switch, set up the syslog server, and the system log will be automatically pushed to the server.

【Configuration Example】

Such as: 1)set server address is 192.168.0.100.



Appendix: Technical Specifications

Hardware Specifications		
Standards and Protocols		IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3x, IEEE 802.3z, IEEE802.1Q , IEEE802.1p, IEEE802.3af, IEEE802.3at
Interface		8 x 10/100/1000Mbps Auto-Negotiation ports 2 x 100/1000Mbps SFP port 1 x Console port
Network Media		10BASE-T: UTP category 3,4,5 cable (maximum 100m) 100BASE-Tx: UTP category 5,5e cable (maximum 100m) 1000BASE-T: UTP category 5e,6 cable (maximum 100m) 1000Base-SX:62.5μm/50μm MMF(2m~550m) 1000Base-LX:62.5μm/50μm MMF(2m~550m) or 10μm SMF（2m~5000m)
Transfer Method		Store-and-Forward
MAC Address Table		8K
Switching Capacity		20Gbps
Packet Forwarding Rate		14.88Mbps
Packet Buffer		4.1Mbit
Jumbo Frame		10KByte
PoE Ports(RJ45)		8* PoE ports compliant with 802.3at/af
Power Pin Assignment		1/2(+), 3/6(-)
PoE Budget		140W
Indicators	**Per Device**	Power：Green.　System：Green
	Per Port	Link/Act/Speed：Green(1000Mbps)/Orange(100/10Mbps) . PoE：Orange
Power Consumption		Maximum: 163.2w(220V/50Hz）
Dimensions（L×W×H）		280*180*44mm
Environment		Operating Temperature: 0℃~45℃ Storage Temperature: -40℃~70℃ Operating Humidity: 5%~95% non-condensing Storage humidity: 5%~95% non-condensing

Hardware Specifications

Basic function

- Ethernet Setup
- STP/RSTP/MSTP
- Storm-control
- Port Monitor
- Port rate-limit
- MAC filtering
- Link Aggregation(static,Lacp)
- Jumbo Frame
- Port security
- Bandwidth Control

Three layers of functional

- The ARP deception, the network cheating
- Filtering the IP port
- Static binding IP and MAC
- Arp trust port
- Static routing capacity
- Ping and Traceroute

The security policy

- ACE capacity
- ACL
- QoS
- DAI

VLAN

- Port based VLAN,Private VLAN
- MAC based VLAN
- Voice VLAN
- Gvrp
- 802.1Q VLAN

Safety features

- Radius
- Tacacs+
- Preventing DOS attacks
- dot1x
- The gateway ARP deception

Application protocol

- DHCP Relay
- DHCP snooping
- DHCP Client
- FTP/TFTP

Management

- HTTP WEB
- Telnet
- SSH
- Console

Other function

- LLDP
- IGMP Snooping
- SNMPV1,V2c,V3
- RMON（1,2,3,9）
- Virtual stack

POE Management

- POE Status
- Poe open/Poe close
- The port priority