ICS5000-C48GP6XS

Layer 3 Industrial Ethernet Switch

User Manual

Document Version: 01

Issue Date: 31/05/2023

Preface

Layer 2 Industrial Ethernet Switch User Manual has introduced this switch:

- Product features
- Product network management configuration
- Overview of related principles of network management

Audience

This manual applies to the following engineers:

- Network administrators
- Technical support engineers
- Network engineer

Text Format Convention

Format	Description
" "	Words with “” represent the interface words. Such as: “Port No.“.
>	Multi-level path is separated by ">". Such as opening the local connection path description: Open "Control Panel> Network Connection> Local Area Connection".
Light Blue Font	It represents the words clicked to achieve hyperlink. The font color is as follows: ‘Light Blue’.

Symbols

Format	Description
 Notice	Remind the announcements in the operation, improper operation may result in data loss or equipment damage.
 Warning	Pay attention to the notes on the mark, improper operation may cause personal injury.
 Note	Conduct a necessary supplements and explanations for the description of operation content.
 Key	Configuration, operation, or tips for device usage.

Format	Description
 Tips	Pay attention to the operation or information to ensure success device configuration or normal working.

Revision Record

Version No.	Date	Revision note
01	31/05/2023	Product release

Contents

1 How to Login the Switch

1.1 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.

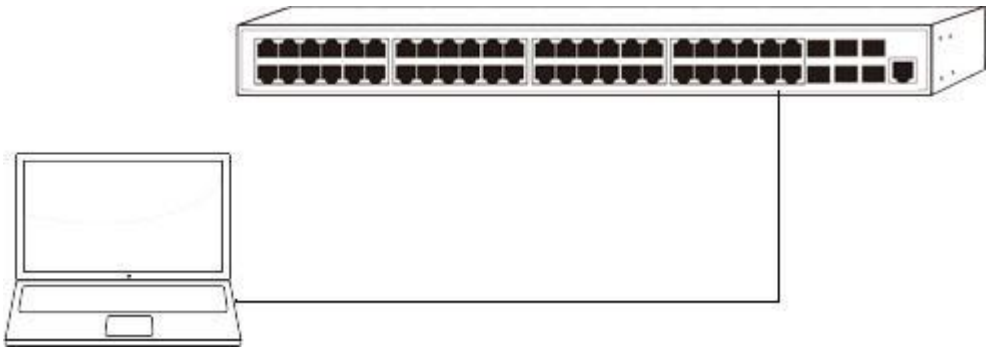


Figure 6 - Connect PC to Switch

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

1.2 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	192.168.2.1

Default user name	admin
Default password	123456789

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

Step 1. Connect the Switch with the computer NIC interface.

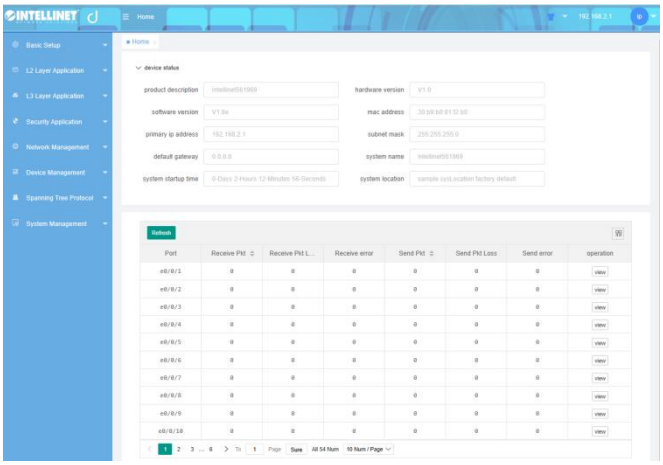
Step 2. Power on the Switch.

Step 3. Check whether the IP address of the computer is within this network segment: 192.168.2.xxx ("xxx" ranges 2~254), for example, 192.168.2.100.

Step 4. Open the browser, and enter http://192.168.2.1 and then press "Enter". The Switch login window appears, as shown below.

Figure 7- Login Windows

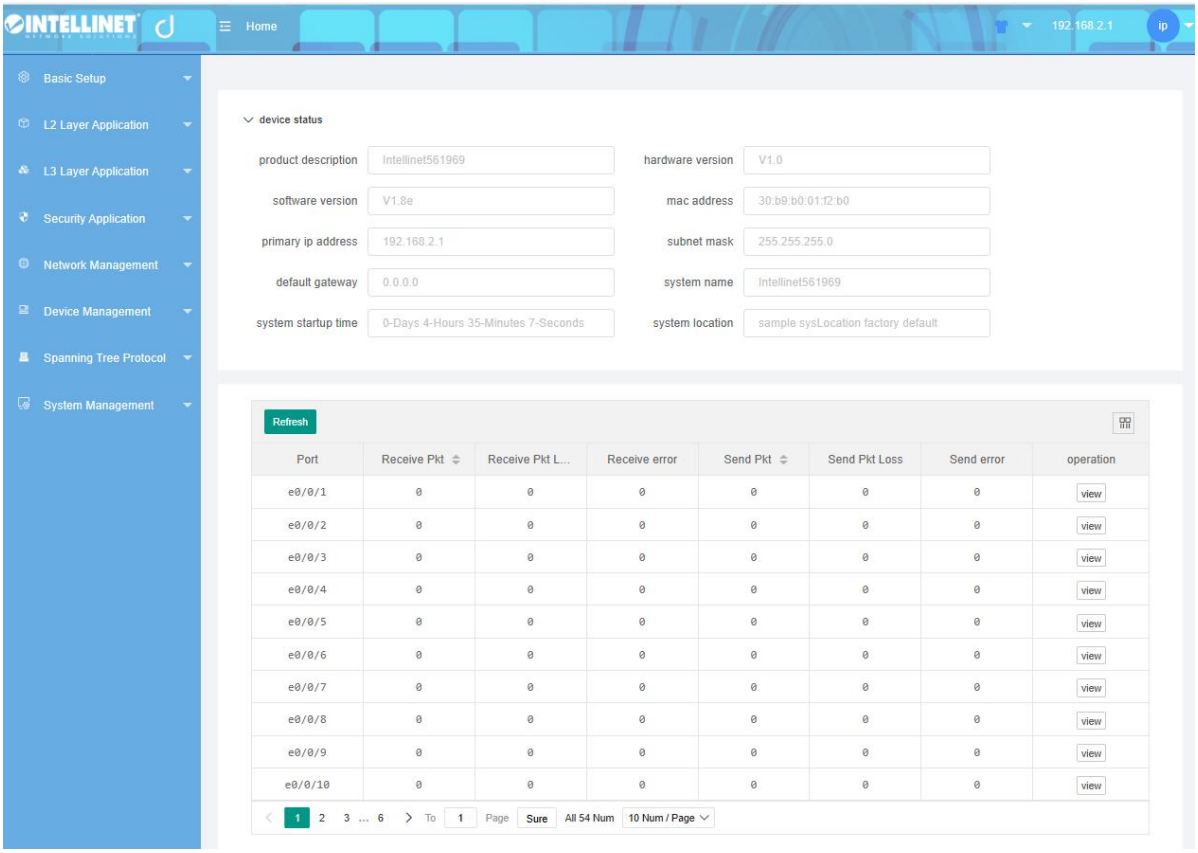
Step 5. Enter the Username and Password (The factory default Username is admin and Password is 123456789,the initial password is the same as the serial number),and then click "Login" to log in to the Switch configuration window .



Step 6. end

2 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.

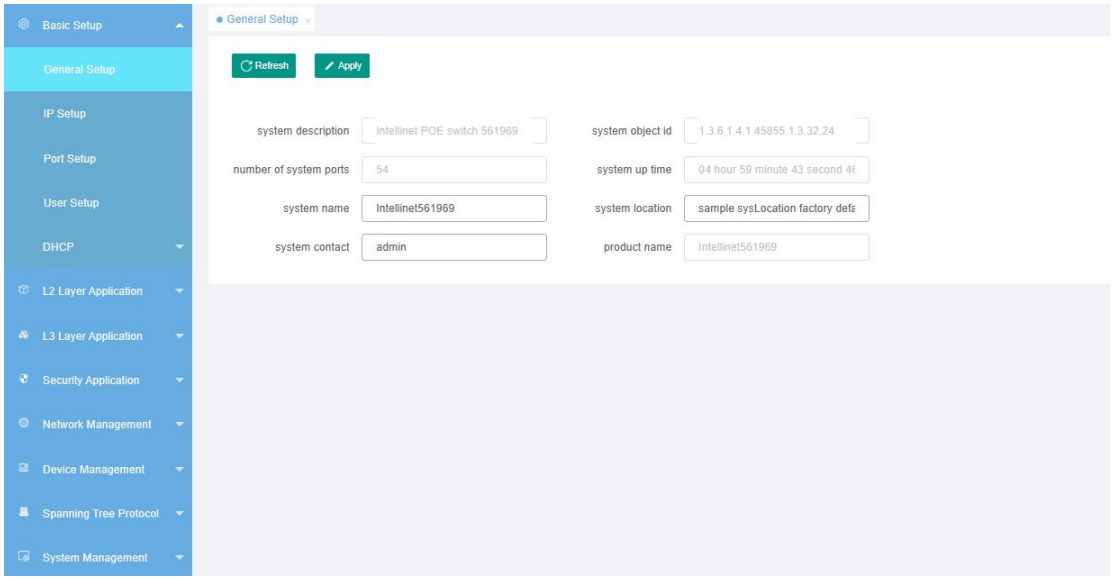


2.1 Basic Setup

Choose Basic Setup, and the following page appears. There are , "**General Setup** ", "**IP Setup**", "**Port Setup**" , "**User Setup**" ,and "**DHCP**" configuration web pages.

2.1.1 General Setup

Selecting “**Basic Setup**>**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 description	Brief description of device type.
System name	System name
System Location	Specify the system location

Parameter	Description
System contact	Including company or related URL

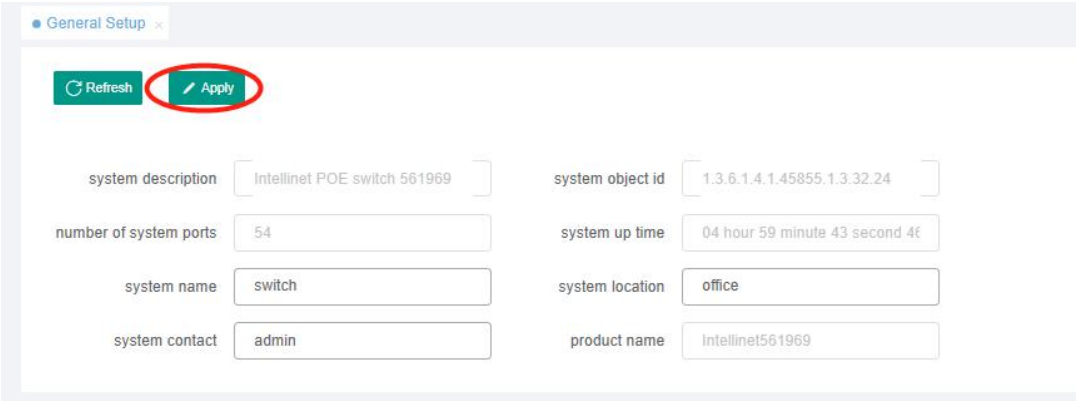
【Configuration example】

To configure general system information:

1. Click Basic Setup > General Setup.

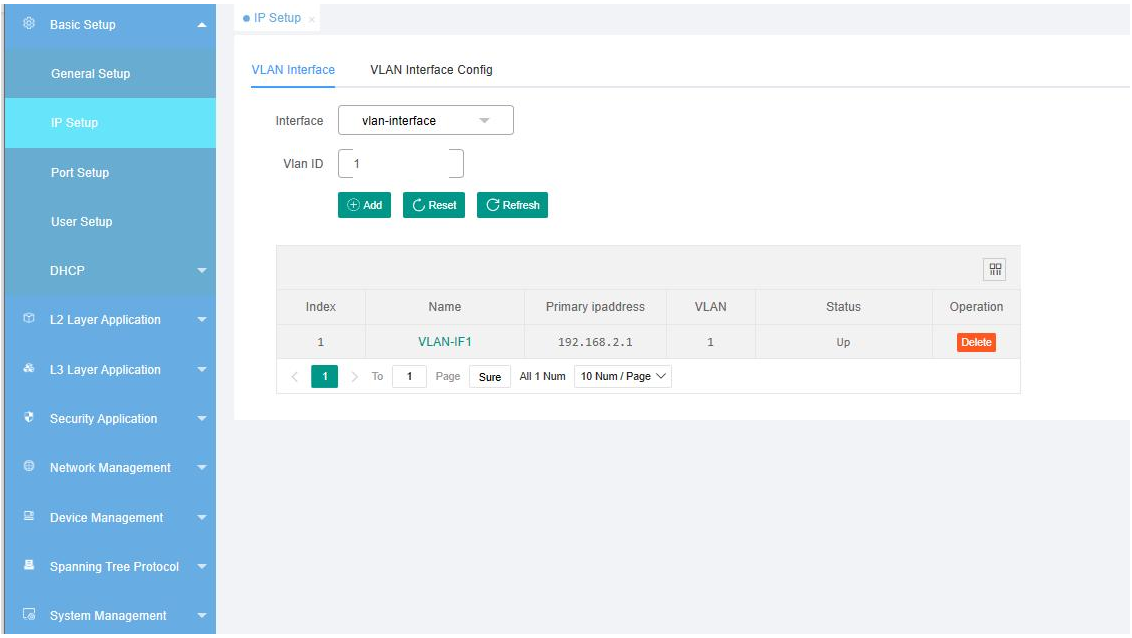
2. Specify the system name as Switch, location as office, and contact information as admin for the system administrator.

3. Click Apply.



2.1.2 IP Setup

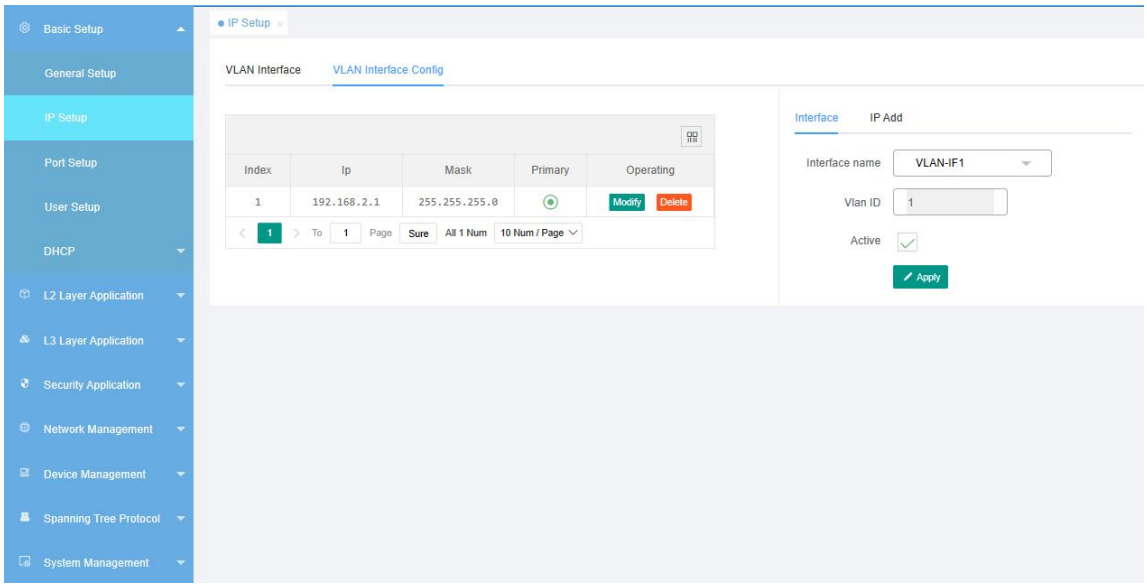
Selecting “**Basic Setup**>**IP Setup**" in the navigation bar, you can add VLAN interfaces and configure VLAN interfaces.



【Parameter Description】

Parameter	Description
Interface	Vlan-interface or supervlan-interface This parameter is optional.
Vlan ID	Vlan label

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

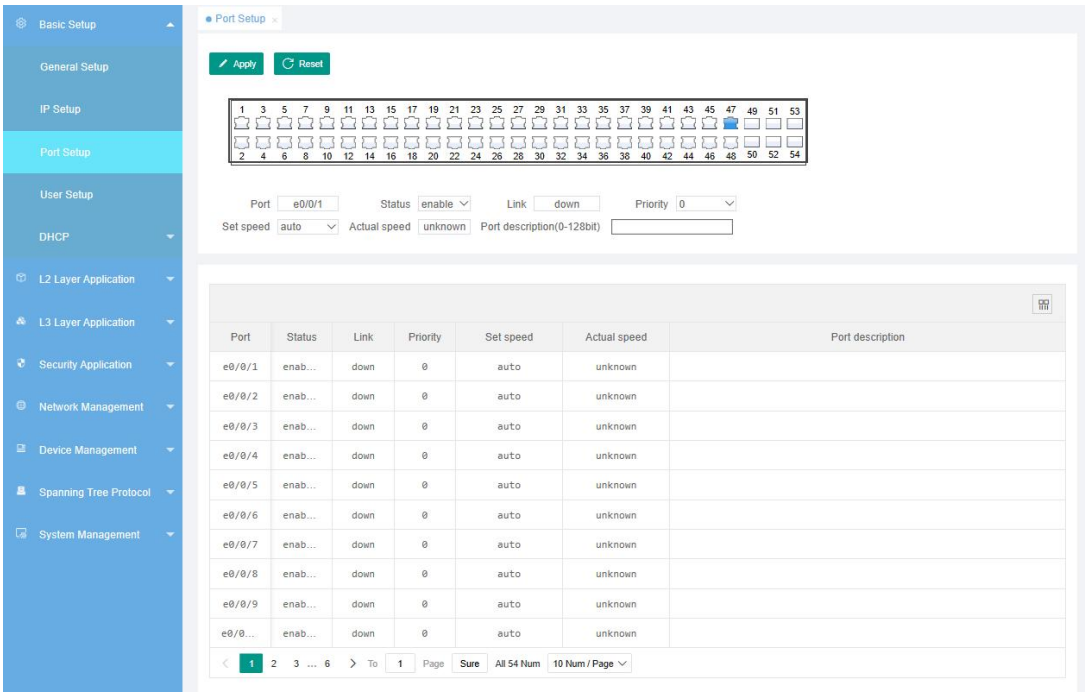


【Parameter Description】

Parameter	Description
IP address	Secure IP address for the user to log in
Mask	Specifies the subnet mask
Interface name	Name of interface
Vlan ID	You can specify the vlan ID

2.1.3 Port Setup

Selecting “**Basic Setup**>**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
Priority	Set port priority, the range of 0-7
Set speed	Default auto ,choose the following modes: full-10 half-10 auto-10 full-100 half-100 auto-100 full-1000

Parameter	Description
	full-10G auto
Actual speed	The actual speed of the port
Port description	The port is described

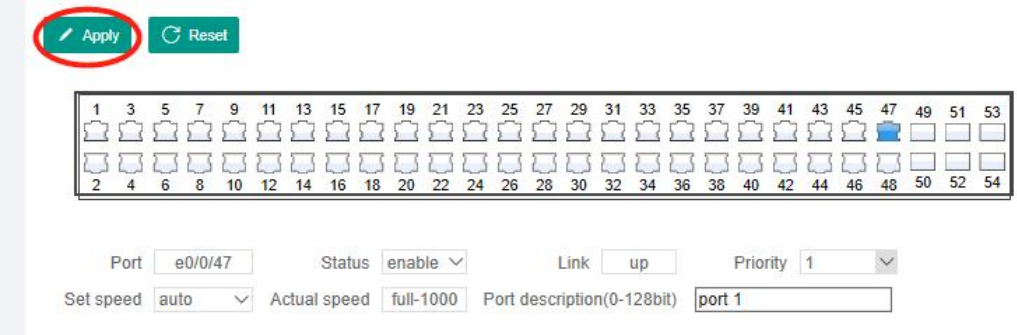
【Configuration example】

To configure static routes:

1.Click Basic Setup > Port Setup

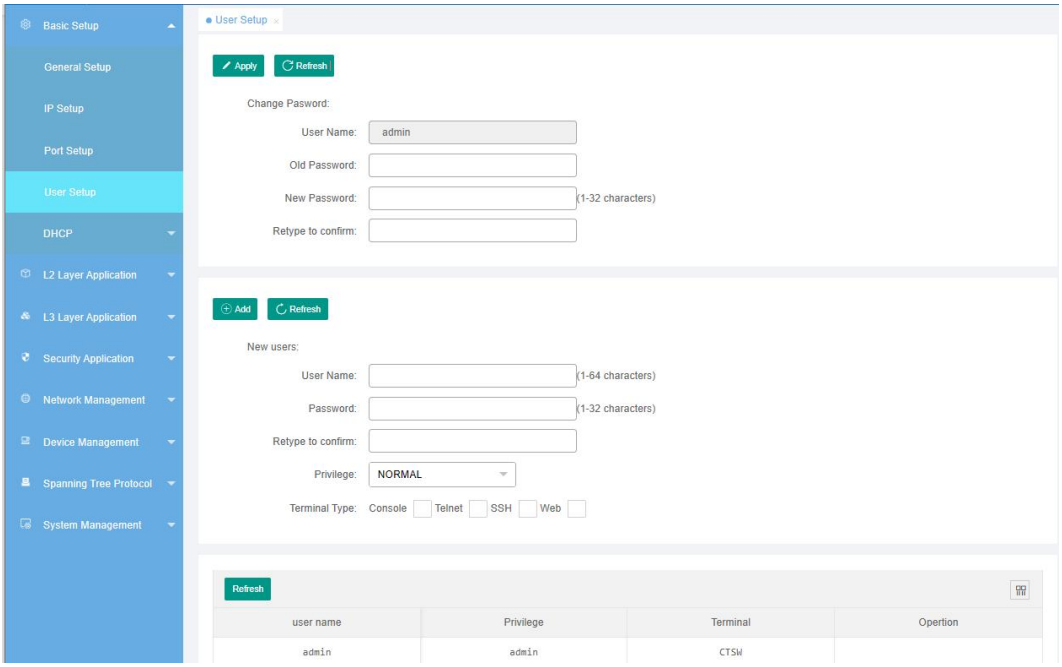
2.Configure the related parameters for port 47, Status is “enable", Priority is “1", Set speed is “auto", Mode is “auto", Port description is “port 1".

3.Click Modify.



2.2 User Setup

Selecting “**Basic Setup**>**User Setup**" , in the navigation bar, you can change the login password of the switch and add a new user.



【Parameter Description】

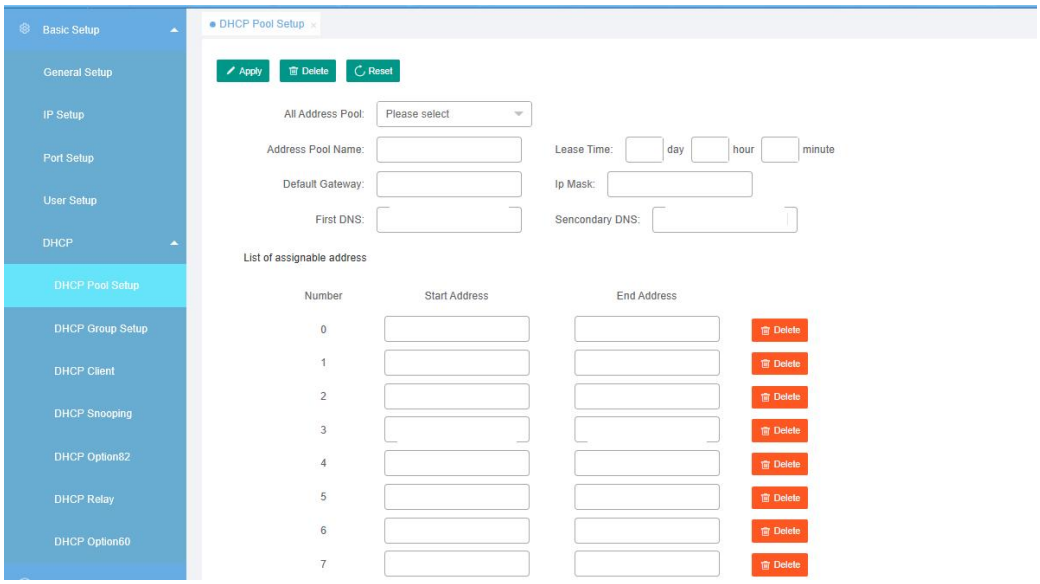
Parameter	Description
Username	Input usage name
Password	Encrypted password
Retype to confirm	Reconfirm password
Privilege	Select Normal or ADMIN
Terminal Type	Select console/Telnet /SSH/Web

2.2.1 DHCP

Selecting“**Basic Setup**>**DHCP** " in the navigation bar, you can configure DHCP Pool Setup, DHCP Group Setup, DHCP Client, DHCP Snooping, DHCP Option82, DHCP Relay and DHCP Option60.

2.2.1.1 DHCP Pool Setup

Selecting“**Basic Setup**>**DHCP** >**DHCP Pool Setup**" in the navigation bar, you can create, edit, or delete a DHCP Pool address setup.



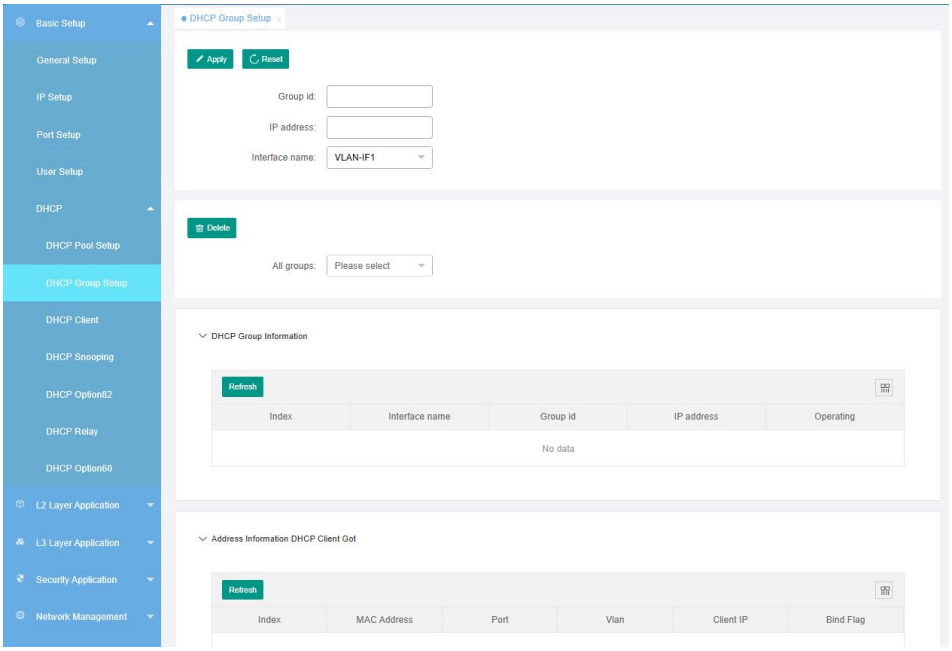
【Parameter Description】

Parameter	Description
All Address Pool	Set the pool ID
Address Pool Name	Set the name of ip pool
Lease time	The lease period and day can be set to three digits, and the hour and day can be divided into two digits

Parameter	Description
Default Gateway	Configure the gateway corresponding to the address in the address pool
Ip Mask	Set Ip Mask
First DNS	DNS server address assigned to the DHCP client
Secondary DNS	Set Secondary DNS
Start address	Set Start address
End address	End Start address

2.2.1.2 DHCP Group Setup

Selecting“**Basic Setup**>**DHCP** >**DHCP Group Setup**" in the navigation bar, you can reference the interface configuration on the DHCP server and view the group and client to obtain the address information.

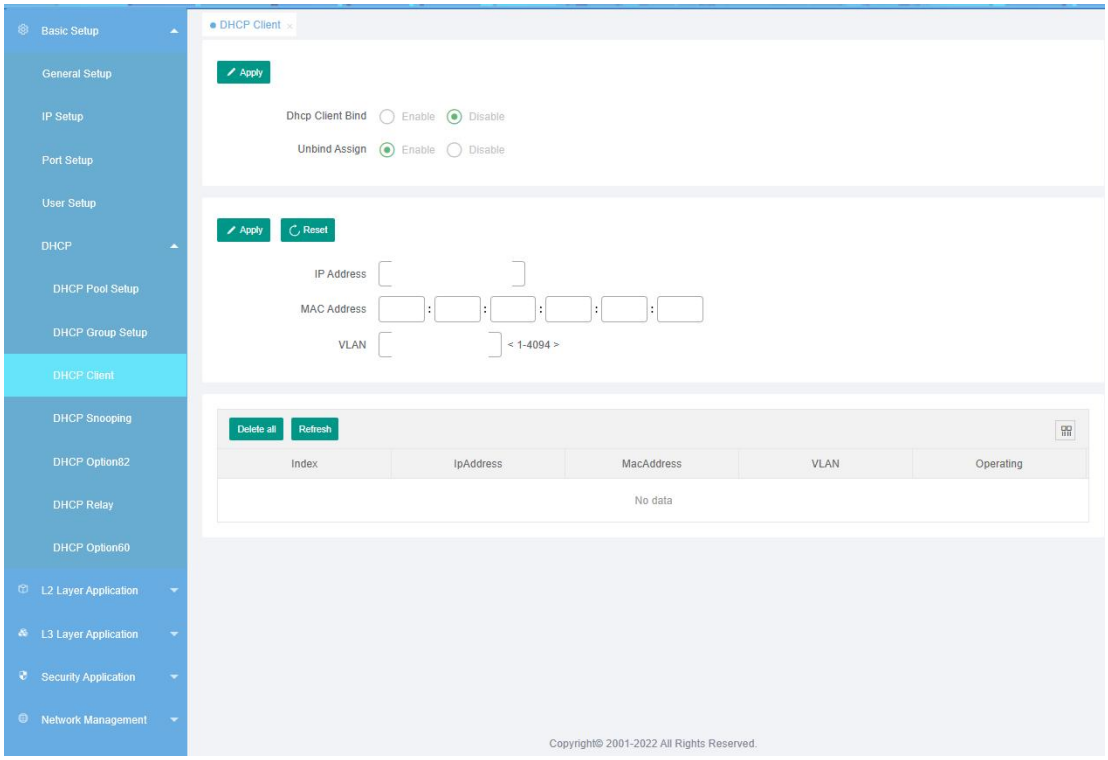


【Parameter Description】

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

2.2.1.3 DHCP Client

Selecting“**Basic Setup**>**DHCP** >**DHCP Client**" in the navigation bar, you can set client binding and binding entries.



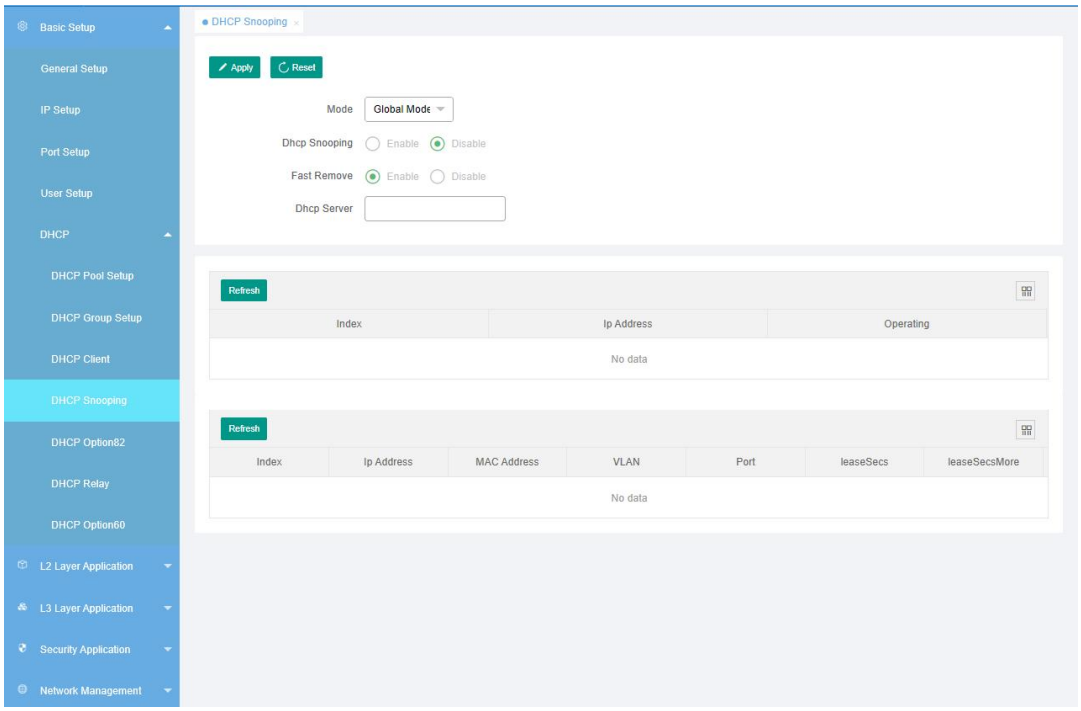
【Parameter Description】

Parameter	Description
Dhcp Client Bind	Select Enable or disable
Unbind Assign	Select Enable or disable
IP Address	IP address of the bound entry

Parameter	Description
MAC Address	MAC address of the bound entry
VLAN	VLAN bound to the entry. The value ranges from 1 to 4094

2.2.1.4 DHCP Snooping

Selecting“**Basic Setup**>**DHCP** >**DHCP Snooping**" in the navigation bar, you can set the mode, DHCP Snooping, fast deletion, and DHCP server.



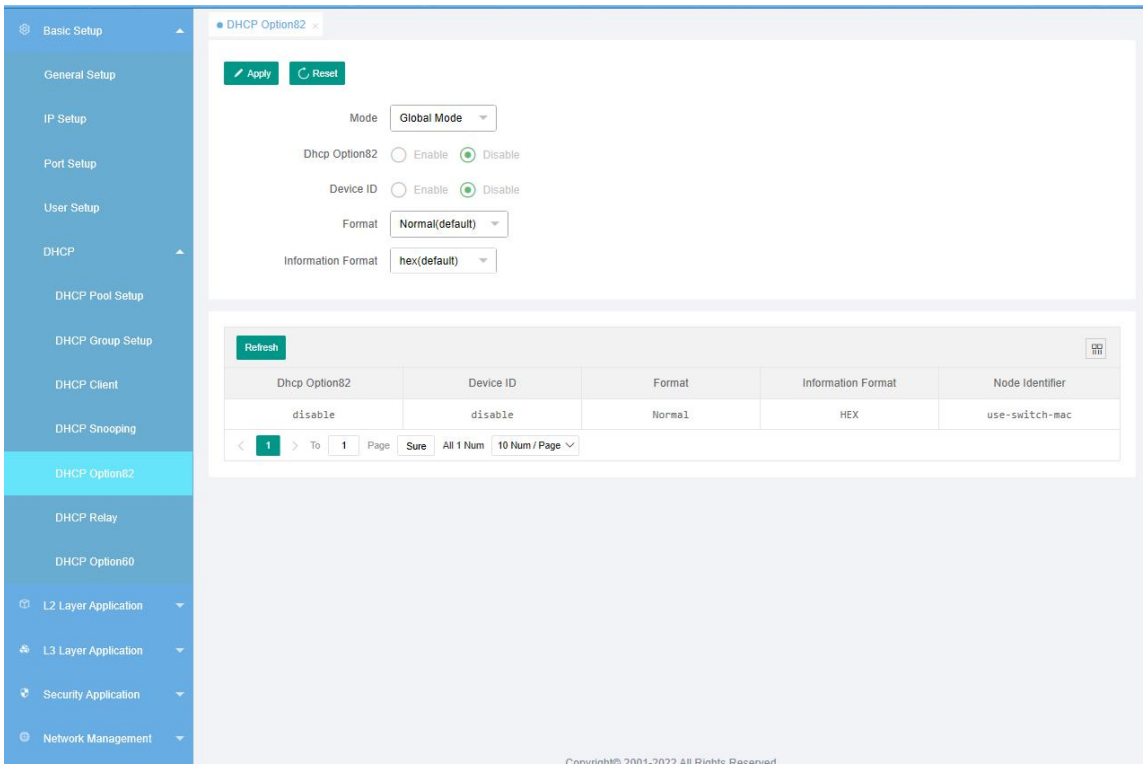
【Parameter Description】

Parameter	Description
Mode	Global Mode, VLAN Mode, and Port Mode are available.

Parameter	Description
Dhcp Snooping	Select Enable or disable
Fast Remove	Select Enable or disable
Dhcp Server	Set the IP address of the DHCP server
Trust Mode	Select Enable or disable
Vlan Id	Vlan label
Max Learn Num	The value ranges from 0 to 9999. The default value is 2048.

2.2.1.5 DHCP Option82

Selecting“**Basic Setup**>**DHCP** >**DHCP Option82**" in the navigation bar, you can configure option82 mode, option field format, etc.

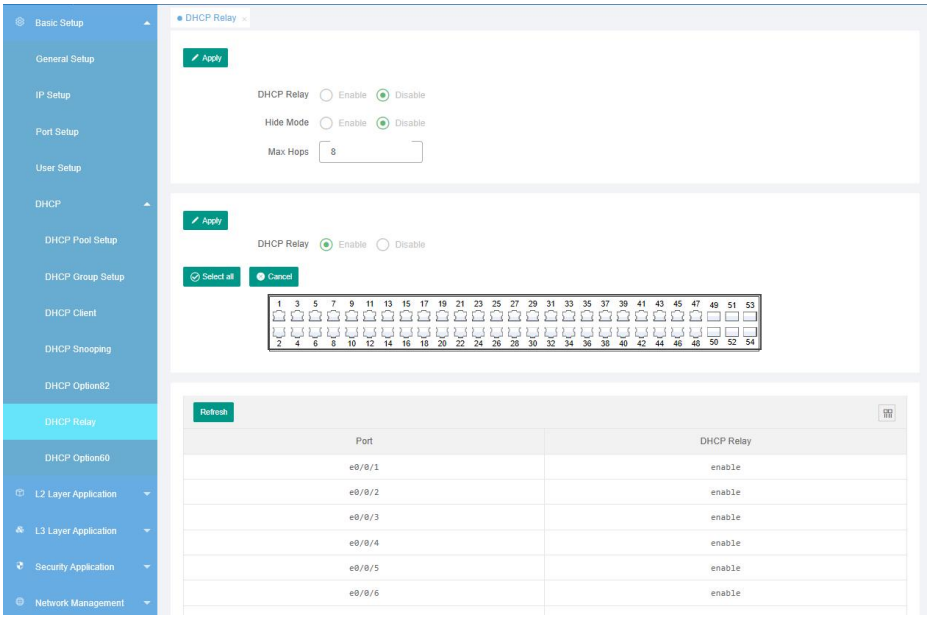


【Parameter Description】

Parameter	Description
Mode	Global Mode, VLAN Mode, and Port Mode are available.
Dhcp Option82	Select Enable or disable
Device ID	Select Enable or disable
Format	Normal(default), User - defined format, and Verbose are optional
Information Format	hex (default),ascii format The two formats are optional
Strategy	Replace(default), Drop, and Keep are optional

2.2.1.6 DHCP Relay

Selecting“**Basic Setup**>**DHCP** >**DHCP Relay**" in the navigation bar, you can configure **DHCP Relay** globally and on ports, and maximum number of hidden mode.

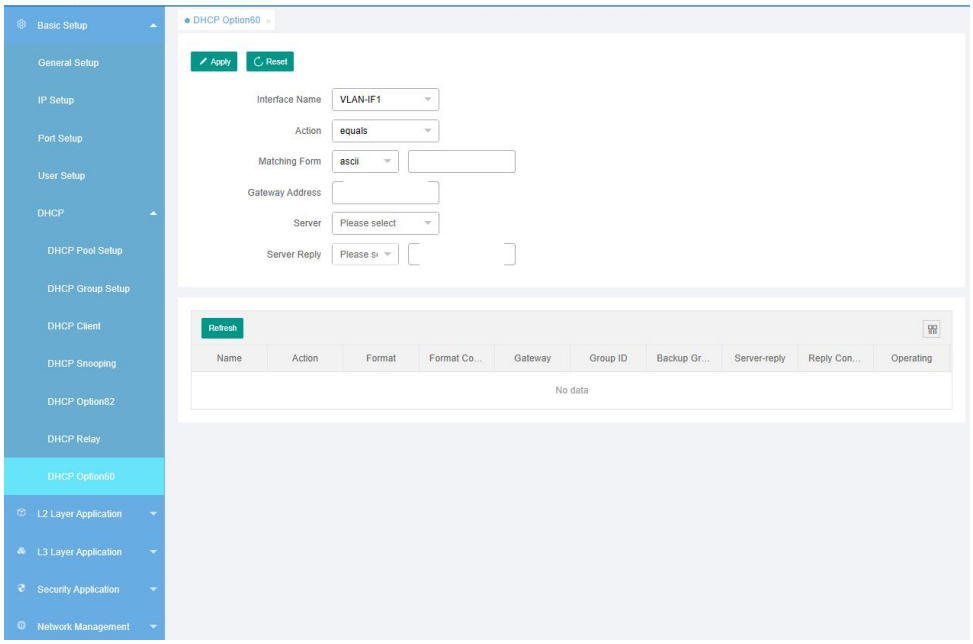


【Parameter Description】

Parameter	Description
DHCP Relay	Select Enable or disable
Hide Mode	Select Enable or disable
Max Hops	The value is an integer , ranging from 1 to 16
DHCP Relay	Port DHCP Relay,select Enable or disable

2.2.1.7 DHCP Option60

Selecting“**Basic Setup**>**DHCP** >**DHCP Option60**" in the navigation bar, you can configure the application interface, action, matching mode, gateway address, and server reply.



【Parameter Description】

Parameter	Description
Interface Name	Select the interface to which option60 is applied from the created interface
Action	Select equals or starts-with

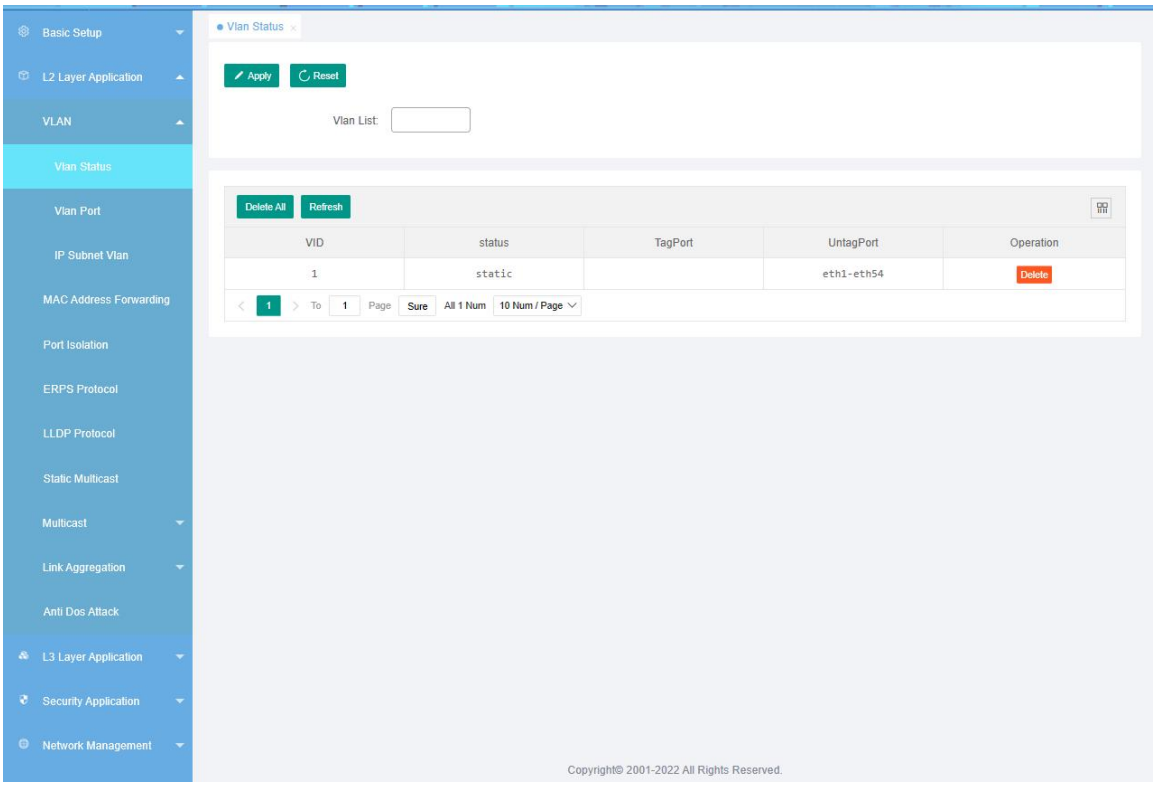
Parameter	Description
Matching Form	Select ascii or hex
Gateway Address	Gateway IP Address
Server	Select dhcp-serve or server-reply
Server Reply	Select ascii or hex

2.3 L2 Layer Application

Choose L2 Layer Application, and the following page appears. There are "**VLAN**", "**MAC Address Forwarding**",“**Port Isolation**",“**ERPS Protocol**",“**LLDP Protocol**",“**Static Multicast**", “**Multicast**", “**Link Aggregation**" and “**Anti Dos Attack**" configuration web pages.

2.3.1 VLAN

Selecting “**L2 Layer Application>VLAN**" in the navigation bar, you can configure Vlan Status, Vlan Port, and IP Subnet Vlan.



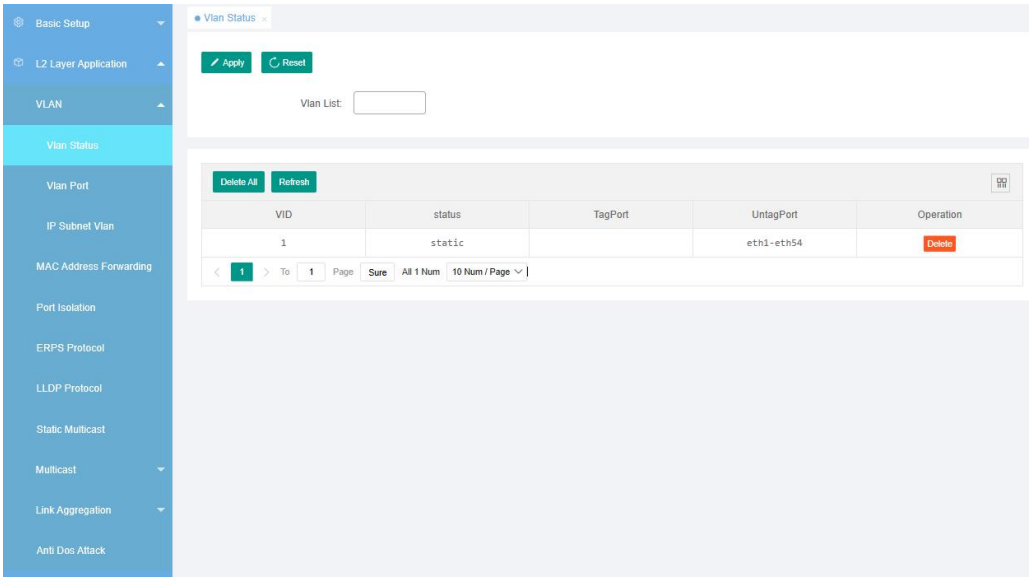
【Instructions】

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.

2.3.1.1 VLAN Status

Selecting “**L2 Layer Application**>**VLAN**>**VLAN Status**", in the navigation bar, you can set the Vlan List and add VID.

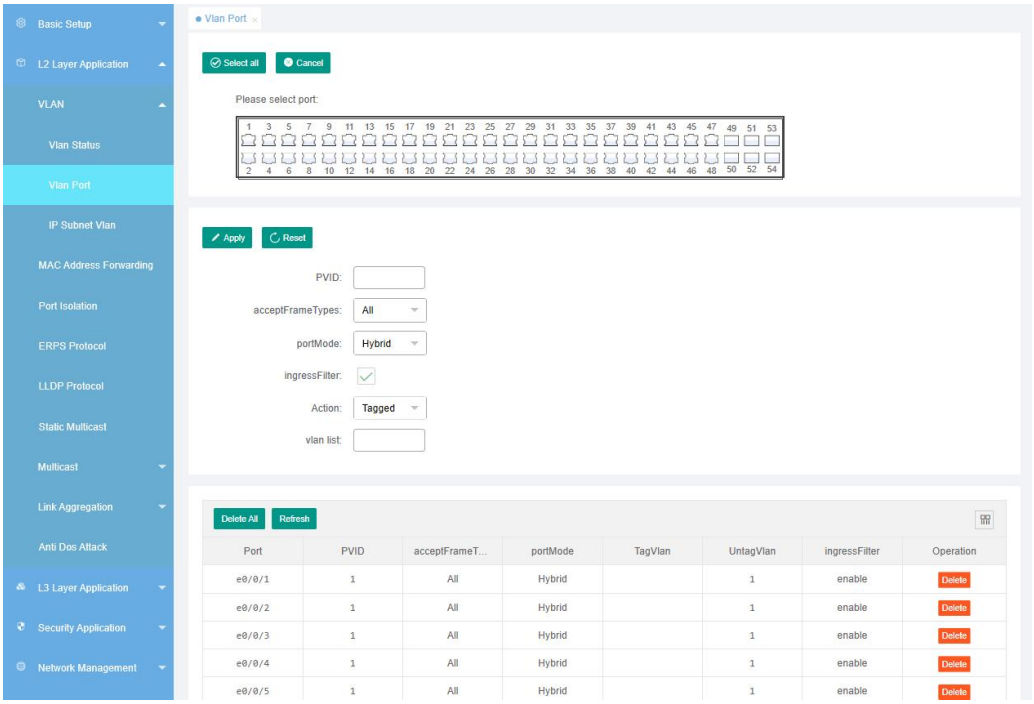


【Parameter Description】

Parameter	Description
VLAN Status	View all vlans configured in the device
Vlan List	Add VID

2.3.1.2 VLAN Port

Selecting “**L2 Layer Application**>**VLAN**>**VLAN Port** ", 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"
acceptFrameTypes	Choose the following kinds: All,Tagged only andUntagged 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.
ingressFilter	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.

Parameter	Description
Action	There are three attributes: Remove, Tagged, and Untagged.

【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).

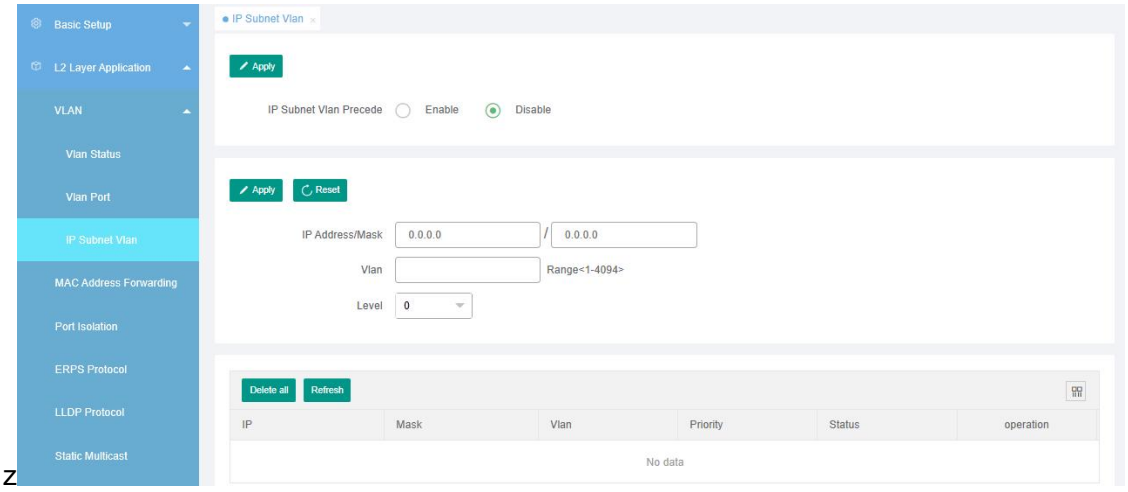
Hybrid port to send packet:

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.

2.3.1.3 IP Subnet Vlan

Selecting“**L2 Layer Application**>**VLAN**>**IP Subnet Vlan**" in the navigation bar, you can set the IP subnet Vlan priority, IP address/mask, Vlan, and priority.



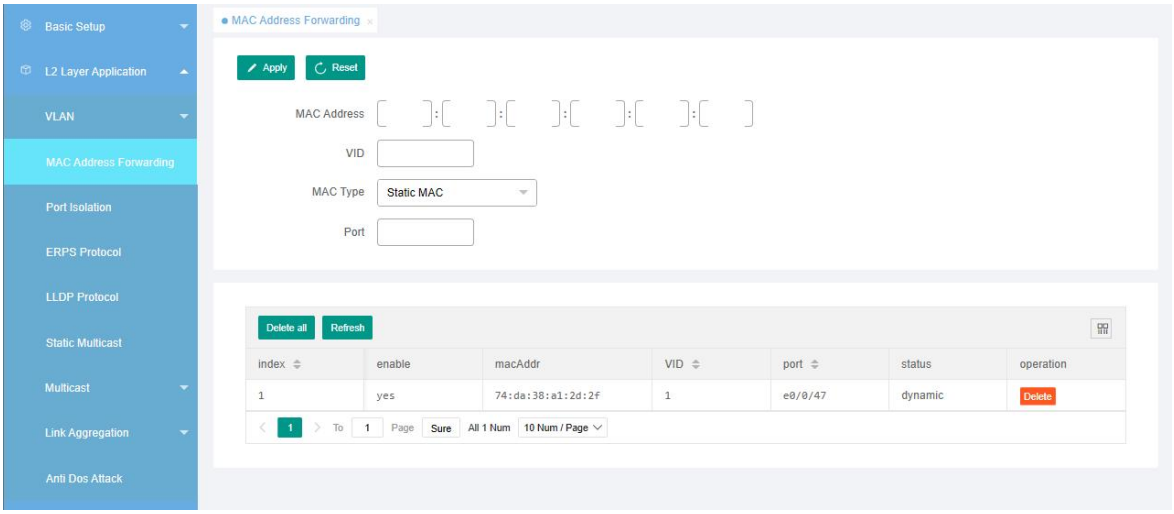
【Parameter Description】

Parameter	Description
IP Subnet Vlan Precede	Select Enable or disable

Parameter	Description
IP Address/Mask	Set the IP address and mask
Vlan	Set Vlan ID. The value ranges from 1 to 4094.
Level	Set the Vlan priority. The value ranges from 0 to 7

2.3.2 MAC Address Forwarding

Selecting “**L2 Layer Application**>**MAC Address Forwarding**" in the navigation bar, you can set the MAC address, VID, MAC type, and port (non-blackhole MAC) .



【Parameter Description】

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

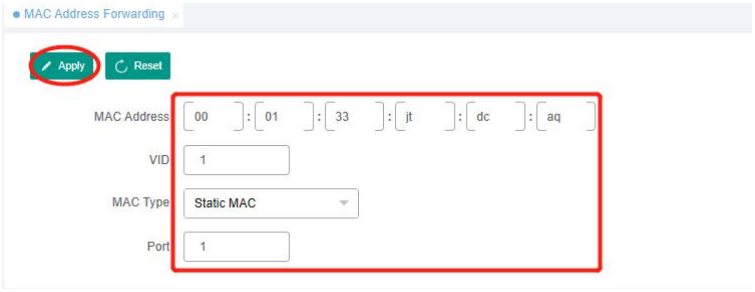
【Instructions】

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】

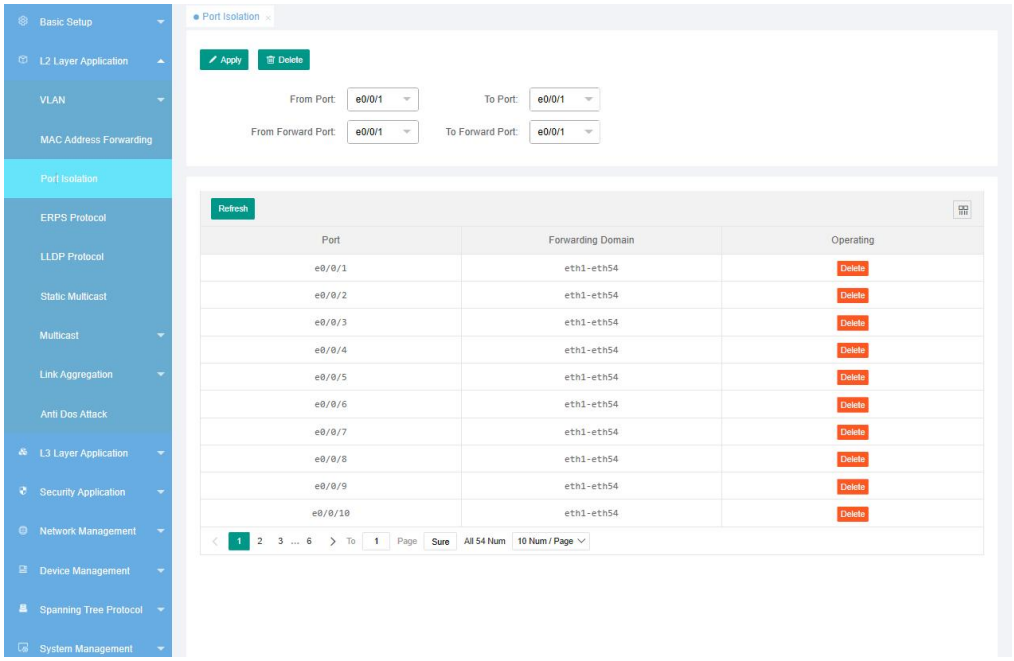
1. Click L2 Layer Application > MAC Address Forwarding.

2. MAC Address Forwarding



2.3.3 Port Isolation

Selecting“**L2 Layer Application**>**Port Isolation**", in the navigation bar, you can set and delete the forwarding port.



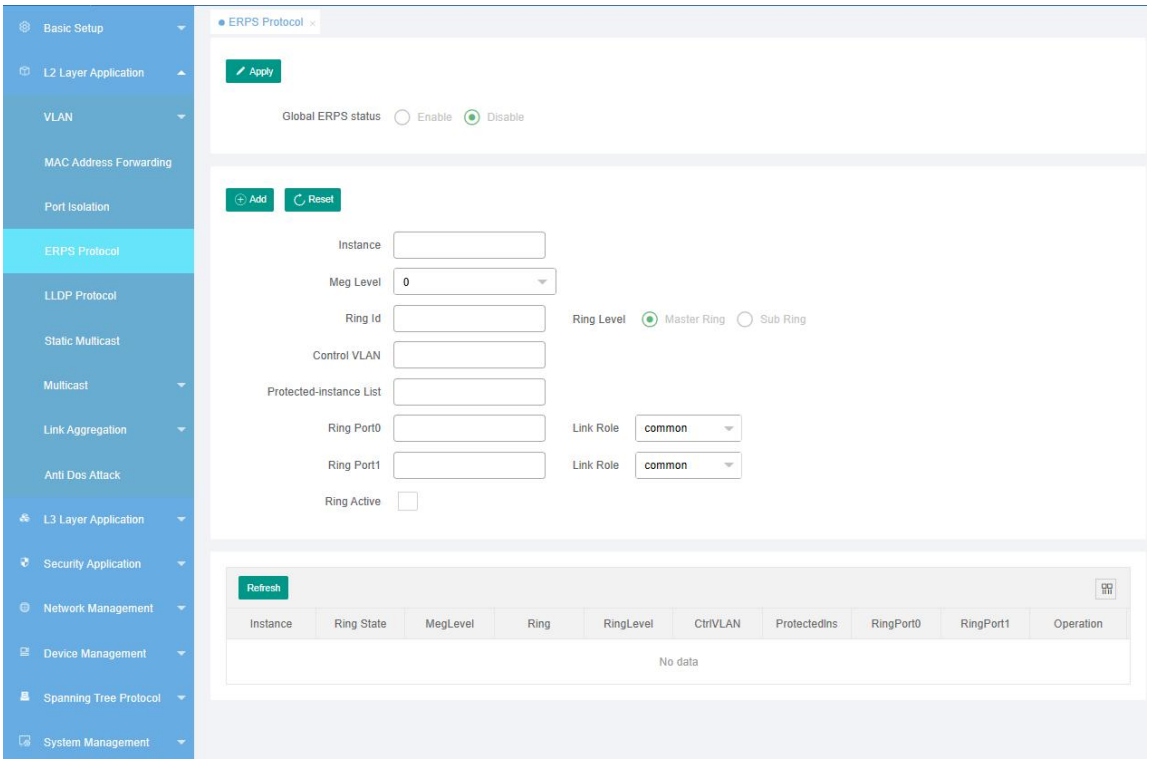
【Parameter Description】

Parameter	Description
From Port， To Port	Select the configured port range
From Forward Port， To Forward Port	Configure the forwarding port range for the selected port

Parameter	Description
Delete	Restore the default configuration of the current port. Most ports are forwarding ports

2.3.4 ERPS Protocol

Selecting “**L2 Layer Application**>**ERPS Protocol**", in the navigation bar, you can configure Global ERPS status.



【Parameter Description】

Parameter	Description
Global ERPS status	Enable or disable the ERPS function globally
Instance	Instance ID The value ranges from 0 to 15
Meg Level	The value ranges from 0 to 7
Ring Id	Value range: 1 to 239.

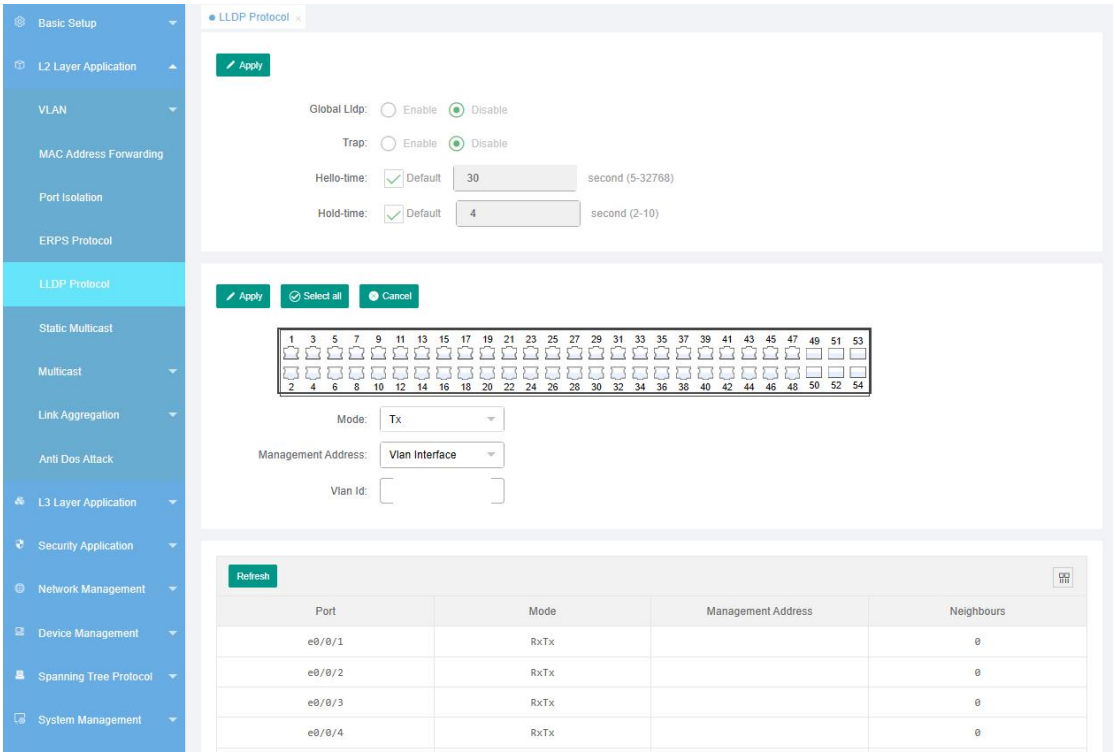
Parameter	Description
	Ring level: Default primary ring
Control VLAN	In the ERPS ring, the control VLAN is used to transmit ERPS packets and must be set to a vlan not created on the device
Protected-instance List	The service vlan to be protected is the vlan mapping in the mstp instance. The value ranges from 0 to 15
Ring Port0	The port number of the erps link
Ring Port1	The port number of the erps link
Ring Active	The erps ring was enabled

【Instructions】

An ERPS ring has only one RPL owner port, as determined by the user configuration, to prevent loops in the ERPS ring by blocking the RPL owner port from forwarding user traffic. When the device where the RPL owner port resides receives a fault message and learns that other nodes or links on the ERPS ring are faulty, the device automatically releases the RPL owner port and recovers the receiving and sending of traffic through the port to ensure that traffic is not interrupted.

2.3.5 LLDP Protocol

Selecting“**L2 Layer Application**>**LLDP Protocol**", in the navigation bar, you can set global LLDP, Trap, Hello-time, Hold-time, port, mode, and management address.

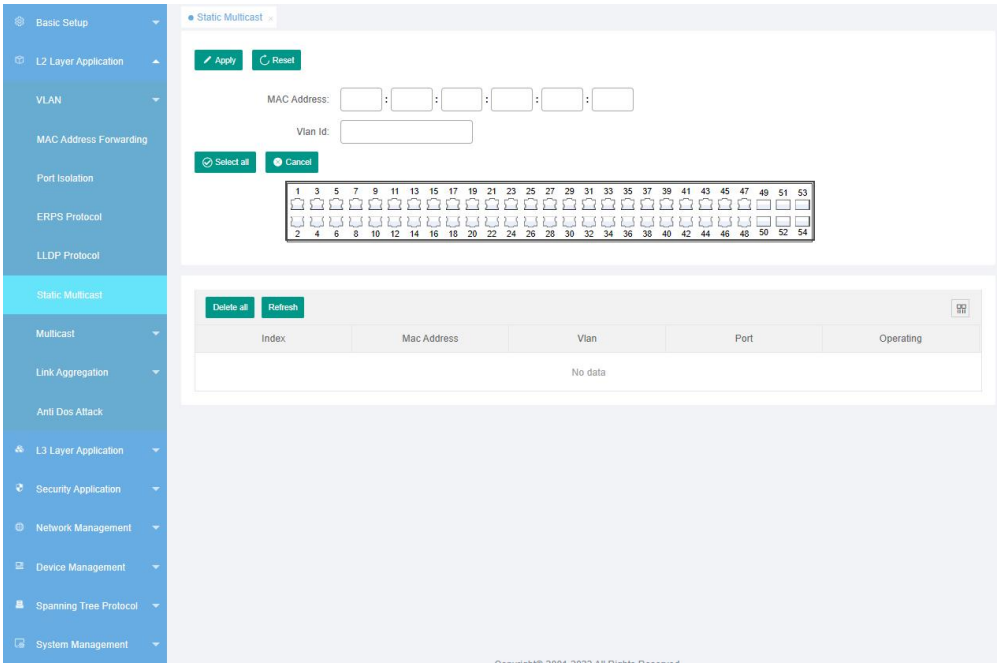


【Parameter Description】

Parameter	Description
Global Lldp	Select Enable or disable
Trap	Select Enable or disable
Hello-time	The value ranges from 5 to 32768 seconds. The default value is 30 seconds
Hold-time	The value ranges from 2 to 10 seconds. The default value is 4 seconds
Port	You can select one or more ports at the same time
Mode	Four modes are available: Tx, Rx, TxRx, and Disable
Management Address	Select Vlan interface or SuperVlan interface

2.3.6 Static Multicast

Selecting “**L2 Layer Application**>**Static Multicast",** in the navigation bar, you can set the MAC address, Vlan number, and port number.

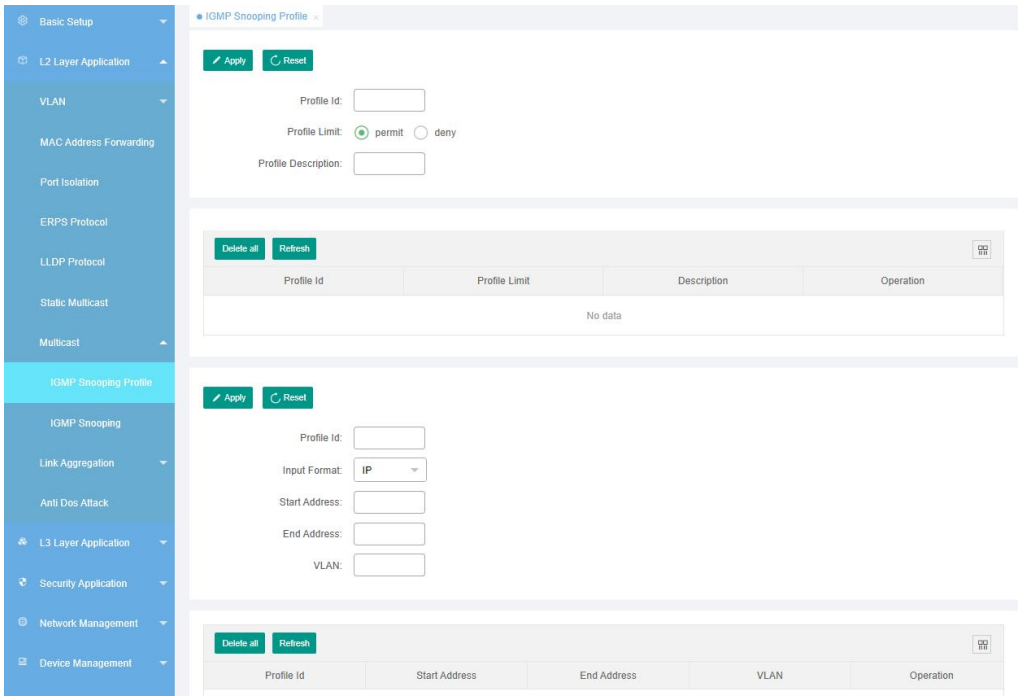


【Parameter Description】

Parameter	Description
MAC Address	Set the MAC address
Vlan Id	Set the Vlan Id
Port	Select a static multicast port

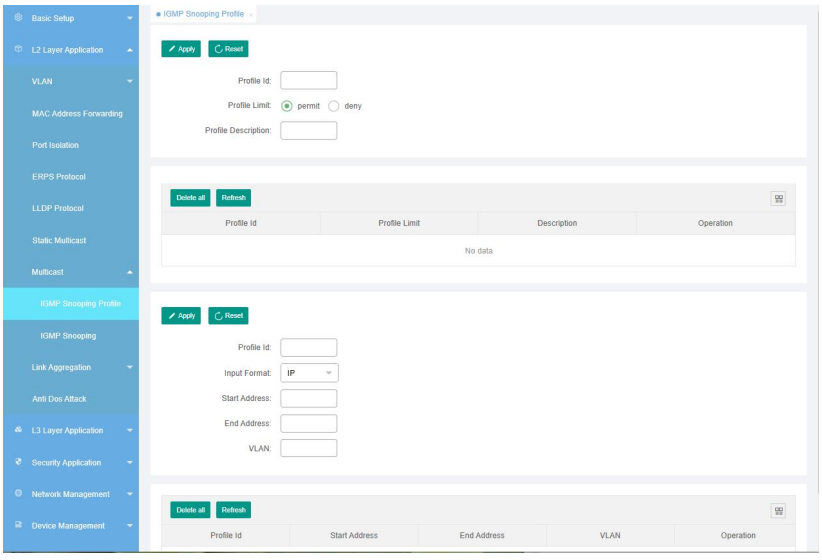
2.3.7 Multicast

Selecting “**L2 Layer Application**>**Multicast**", in the navigation bar, you can configure IGMP Snooping Profile and IGMP Snooping.



2.3.7.1 IGMP Snooping Profile

Selecting "**L2 Layer Application**>**Multicast**>**IGMP Snooping Profile**", in the navigation bar, you can set the configuration ID, configuration restriction, configuration description, and input format.



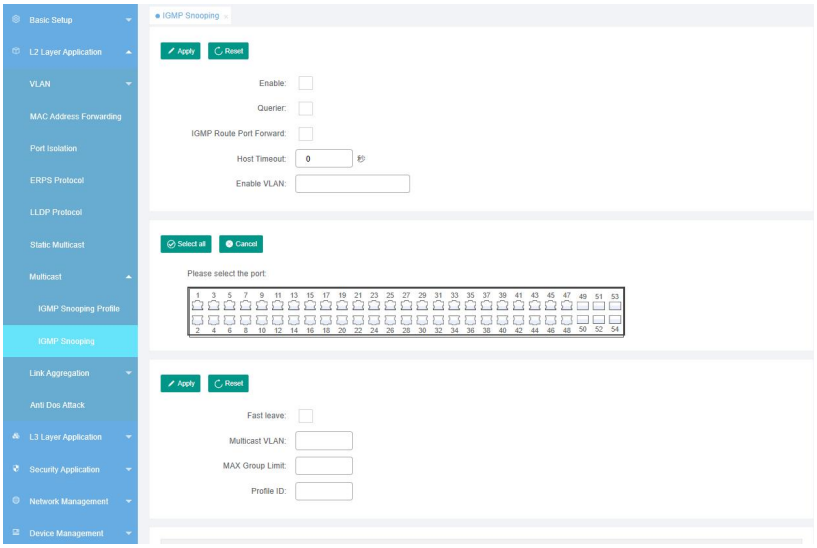
【Parameter Description】

Parameter	Description
Profile Id	ID ranges from 1 to 128.

Parameter	Description
Profile Limit	Preview rules can be allowed or denied
Input Format	The preview address can be an IP address or a MAC address

2.3.7.2 IGMP Snooping

Selecting "**L2 Layer Application**>**Multicast**>**IGMP Snooping** ", in the navigation bar, you can set the enable, query, IGMP route port forwarding, host timeout, enable VLAN, fast leave, multicast Vlan, maximum group limit, and filter setting ID.



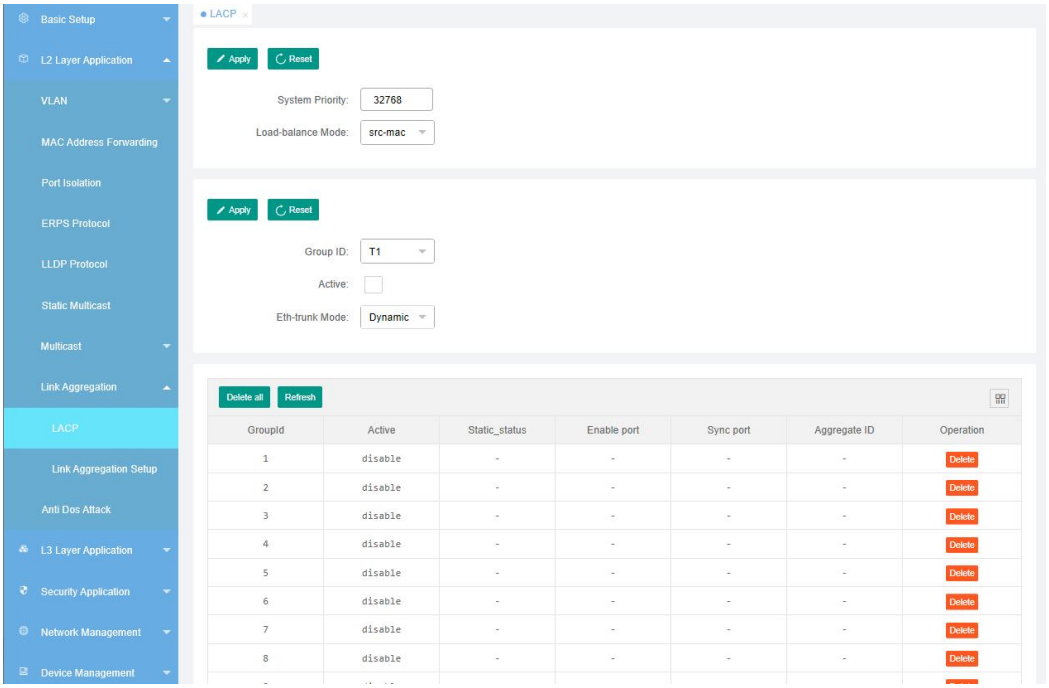
【Parameter Description】

Parameter	Description
Enable	Enable IGMP Snooping
Querier	Enable the IGMP Snooping timer query.
IGMP Route Port Forward	Enable the routing and forwarding function
Host Timeout	The dynamic IPv6 multicast aging time is specified
Fast leave	Enable the quick port exit function.

Multicast VLAN	Configuring an IPv6 Multicast VLAN (1 to 4094)
MAX Group Limit:	Configure the maximum number of IPv6 multicast packets that a port can learn (1024 by default).

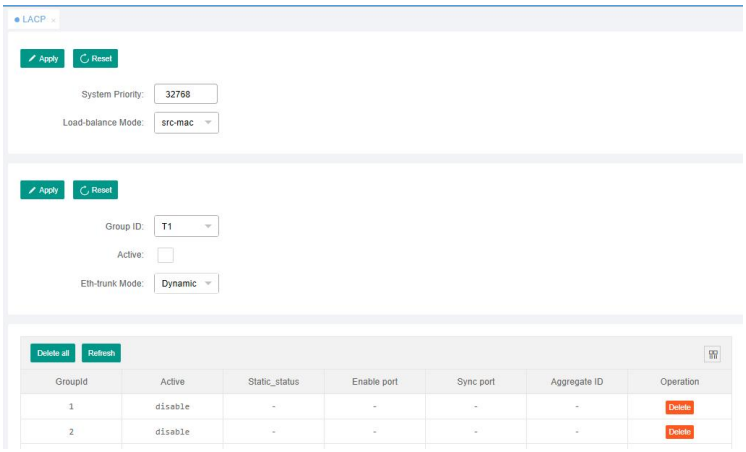
2.3.8 Link Aggregation

Selecting “**L2 Layer Application**>**Link Aggregation**", in the navigation bar, includes LACP and link aggregation Settings.



2.3.8.1 LACP

Selecting “**L2 Layer Application**>**Link Aggregation**>**LACP** ", in the navigation bar, you can set the system priority, load balancing policy, aggregation group number, and aggregation group mode.

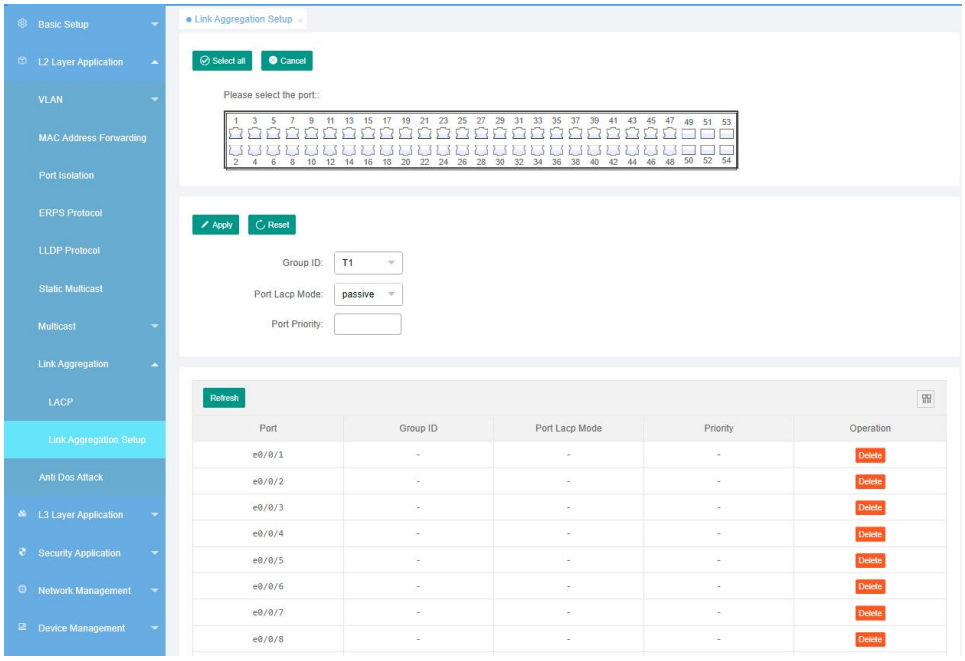


【Parameter Description】

Parameter	Description
System Priority	Configure the system priority of the aggregation group. The default priority is 32768 (priority range: 1 to 65535).
Load-balance Mode	Configure the load balancing policy. The default value is src-mac (including src-mac , dst-mac, src-dst-mac, src-ip, dst-ip, and src-dst-ip).
Group ID	Add a port to a specified aggregation group (T1 to T16).
Eth-trunk Mode	There are Dynamic and Static modes.

2.3.8.2 Link Aggregation Setup

Selecting "**L2 Layer Application**>**Link Aggregation**>**Link Aggregation Setup**", in the navigation bar, you can set the aggregation group ID, port lacp mode, and port priority.

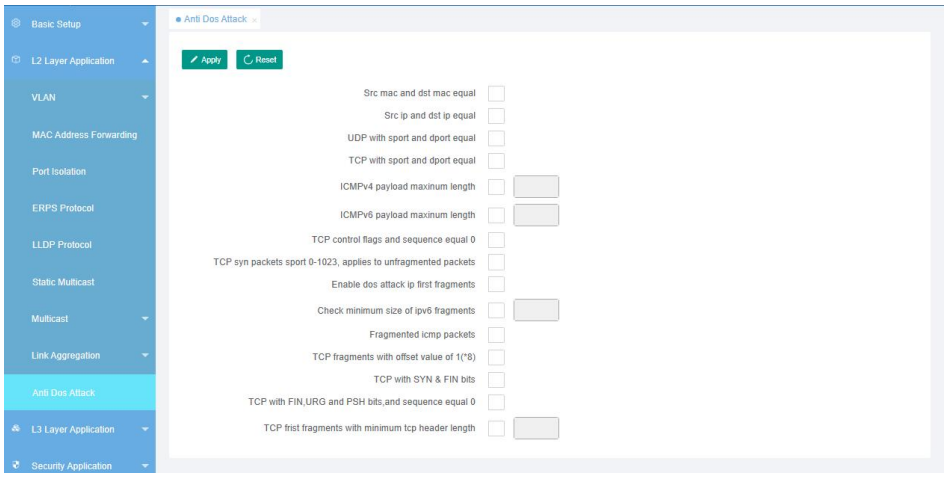


【Parameter Description】

Parameter	Description
Group ID	Add the port to the specified Aggregation Group ID
Port LACP mode	The LACP mode of a port can be active or passive active mode: In active mode, the port initiates LACP negotiation. passive mode: In passive mode, a port responds only to LACP negotiation.
Port Priority	The priority ranges from 1 to 65535

2.3.9 Anti Dos Attack

Selecting “**L2 Layer Application**>**Anti Dos Attack**", you can set the maximum load length of ICMPv4, maximum load length of ICMPv6, minimum fragment size detection of iPv6, and minimum tcp header length of the first fragment of a tcp packet.



【Parameter Description】

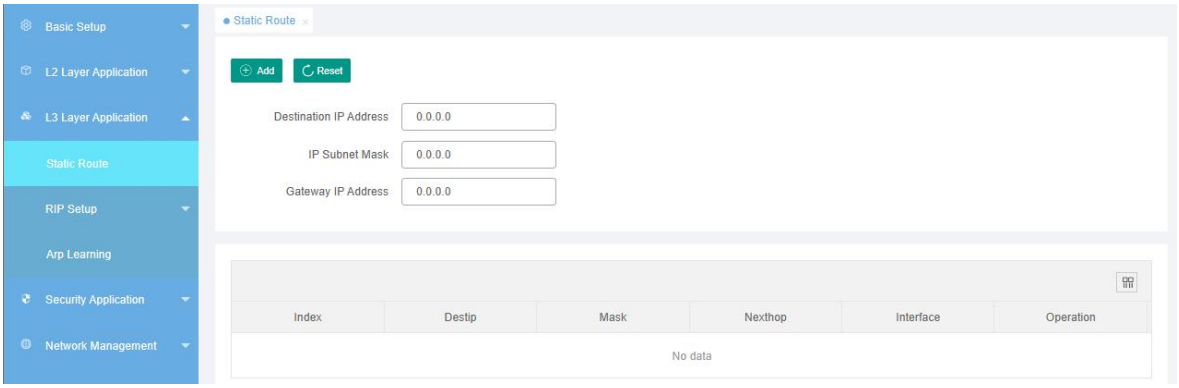
Parameter	Description
ICMPv4 payload maximum length	The value contains 0 to 16384 characters
ICMPv6 payload maximum length	The value contains 0 to 16384 characters
Check minimum size of ipv6 fragments	The fragment size ranges from 0 to 16384.
TCP first fragments with minimum tcp header length	The value contains 0 to 255 characters

2.4 L3 Layer Application

Choose L3 Layer Application, and the following page appears. There are "**Static Route**", "**RIP Setup** "and "**Arp Learning**" configuration web pages.

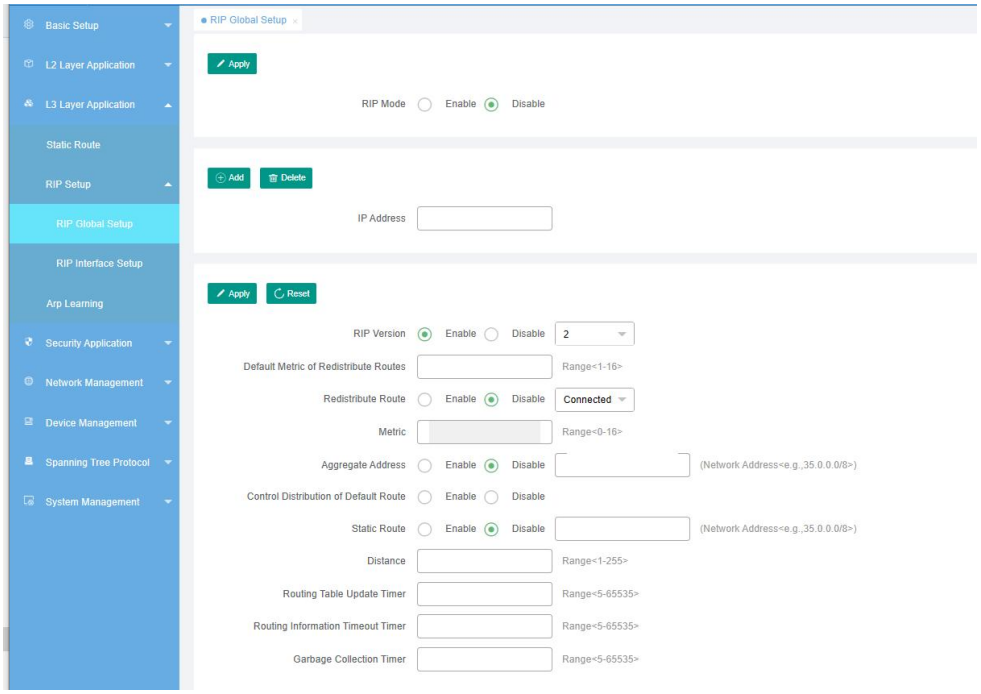
2.4.1 Static Route

Selecting "**L3 Layer Application**>**Static Route**", in the navigation bar, you can set the destination IP address, IP mask, and next hop.



2.4.2 RIP Setup

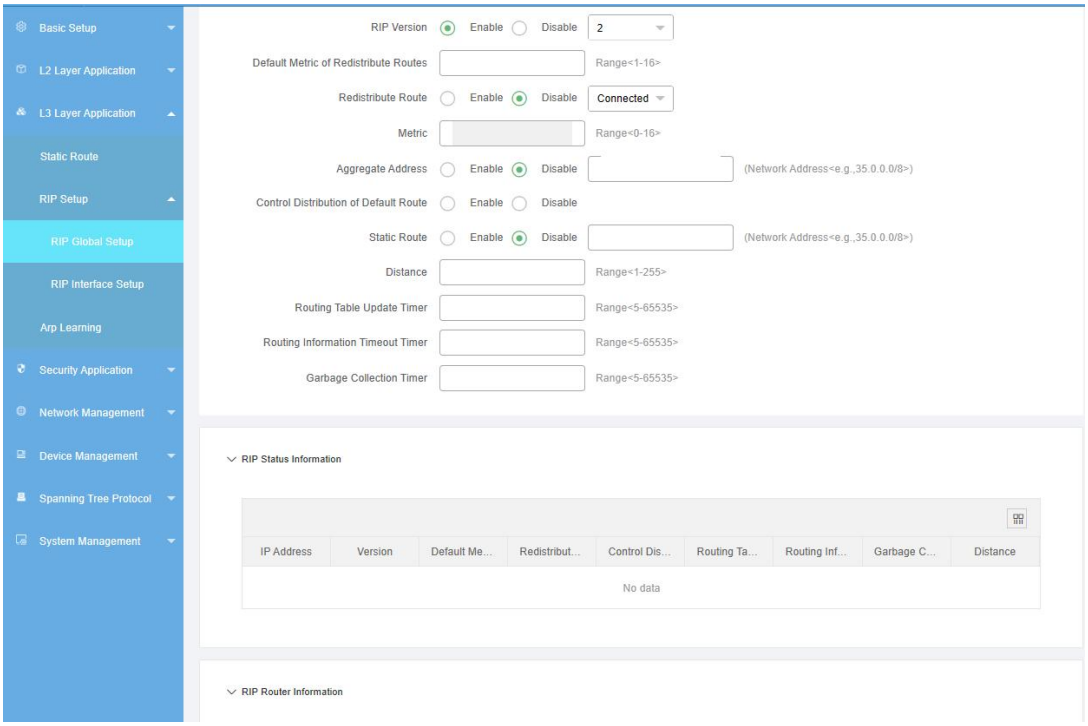
Selecting "**L3 Layer Application**>**RIP Setup**", you can set RIP Global Setup and RIP Interface Setup.



2.4.2.1 RIP Global Setup

Selecting "**L3 Layer Application**>**RIP Setup**>**RIP Global Setup**", you can configure RIP Mode,IP Address,Default Metric of Redistribute Routes,Metric,Aggregate Address,Static

Route,Distance,Routing Table Update Timer,Routing Information Timeout Timer,Garbage Collection Tim,and so on.



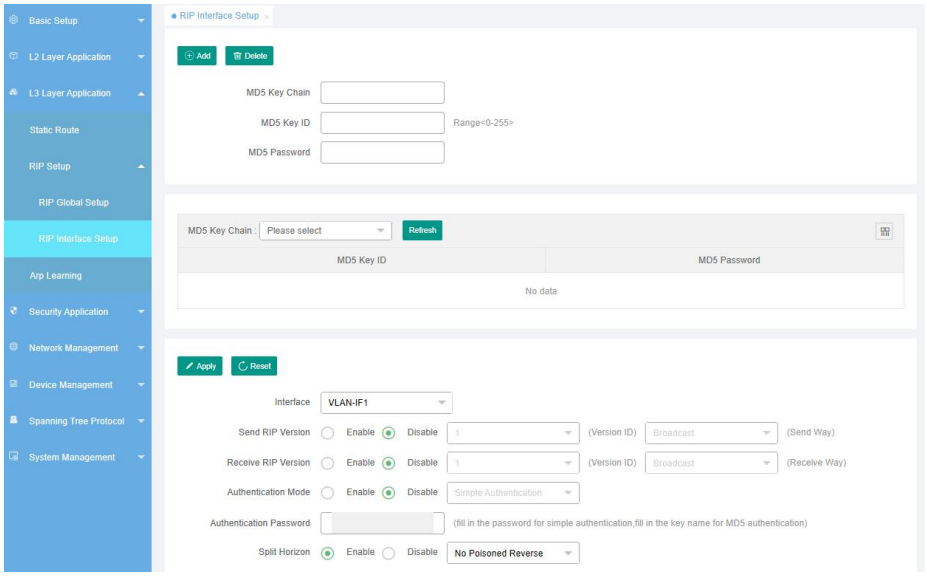
【Parameter Description】

Parameter	Description
RIP Mode	Set RIP Mode Enable or Disable
IP Address	Add IP Address
RIP Version	Set RIP Version Enable or Disable
Default Metric of Redistribute Routes	Set Default Metric of Redistribute Routes ,ranges from 1 to 16.
Redistribute Route	Set Redistribute Route Enable or Disable
Metric	Set Metric ranges from 1 to 16.
Distance	Set Distance ranges from 1 to 255.

Routing Table Update Timer	Set Routing Table Update Timer ,ranges from 5 to 65535.
Routing Information Timeout Timer	Set Routing Information Timeout Timer ,ranges from 5 to 65535.
Garbage Collection Timer	Set Garbage Collection Timer ranges from 5 to 65535.

2.4.2.2 RIP Interface Setup

Selecting“**L3 Layer Application**>**RIP Setup**>**RIP Interface Setup**", in the navigation bar, you can you can configure RIP Interface Setup .

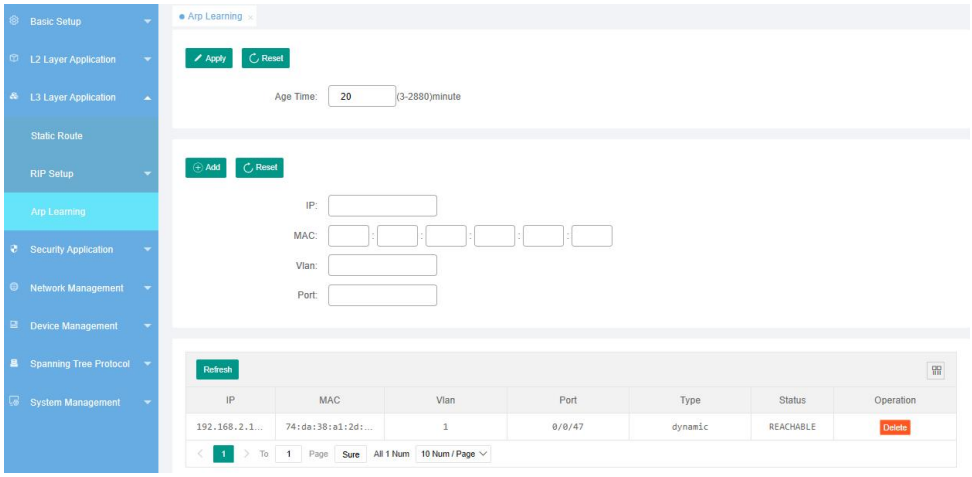


【Parameter Description】

Parameter	Description
MD5 Key ID	Setting MD5 Key ID,range from 0 to 255.
Authentication Password	Setting Authentication Password,fill in the password for simple authentication,fill in the key name for MD5 authentication

2.4.3 Arp Learning

Selecting “**L3 Layer Application**>**Arp Learning**", you can set the aging time, IP address, MAC address, Vlan, and Port.

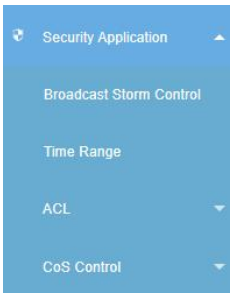


【Parameter Description】

Parameter	Description
Age Time	The aging time ranges from 3 to 2880 minutes

2.5 Security Application

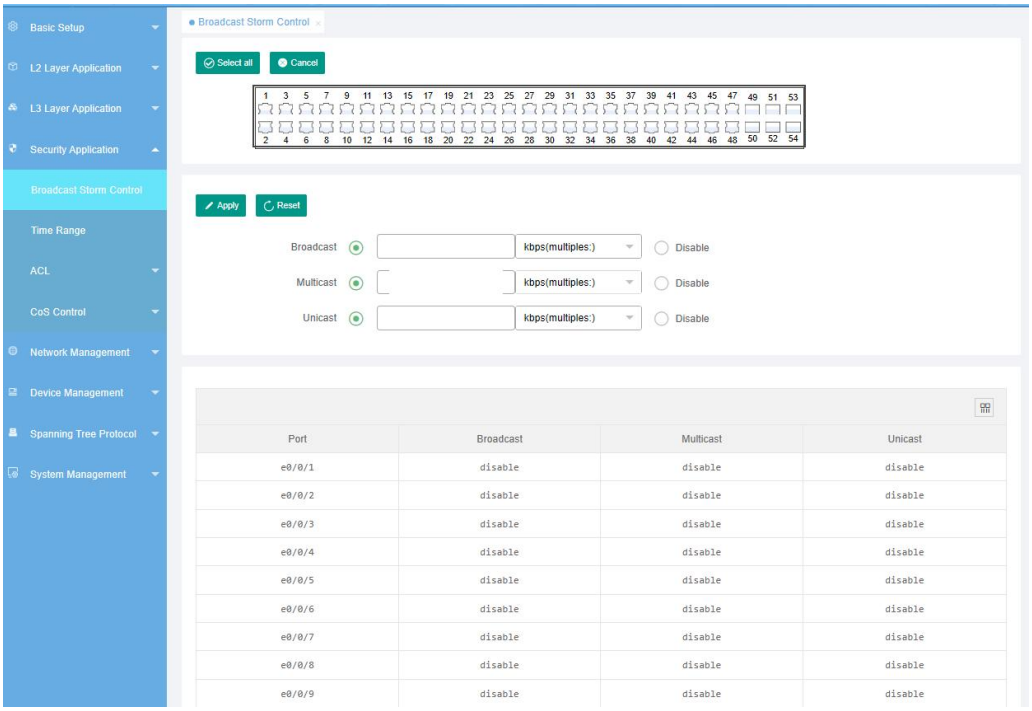
Choose Security Application, and the following page appears. There are "**Broadcast Storm Control**", "**Time Range**",“**ACL**" and “**CoS Control**" configuration web pages.



2.5.1 Broadcast Storm Control

Selecting “**Security Application**>**Broadcast Storm Control**", in the navigation bar, you can set

broadcast, multicast, and unicast.

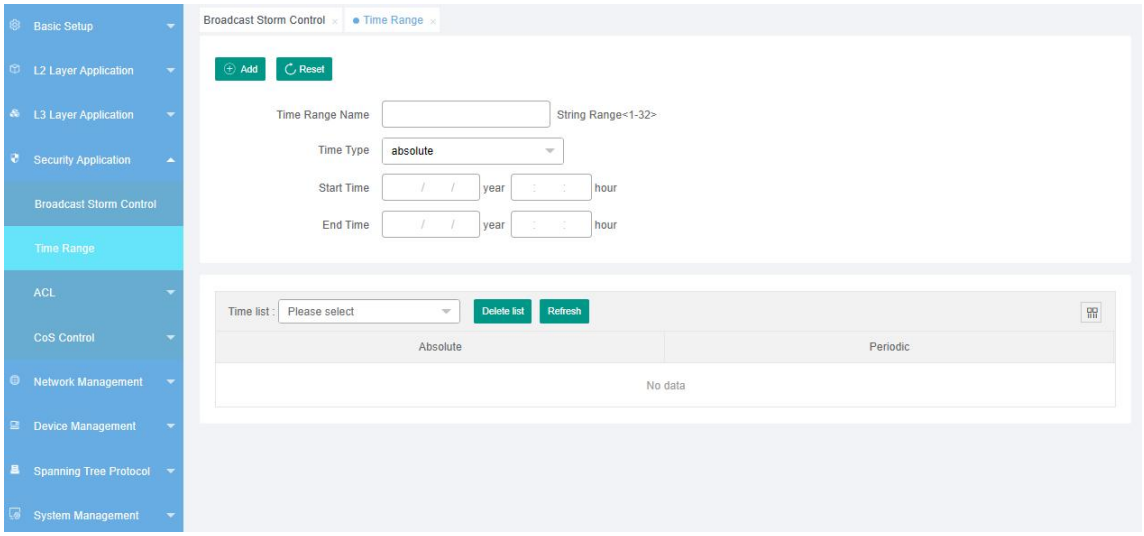


【Parameter Description】

Parameter	Description
Broadcast	Broadcast rate limit (pps (multiples: 1) /kbps (multiples: 16).
Multicast	Multicast t rate limit (pps (multiples: 1) /kbps (multiples: 16).
Unicast	Unicast t rate limit (pps (multiples: 1) /kbps (multiples: 16).

2.5.2 Time Range

Selecting “**Security Application**>**Time Range**", in the navigation bar, you can set the time range name, time type, start period, and end period.

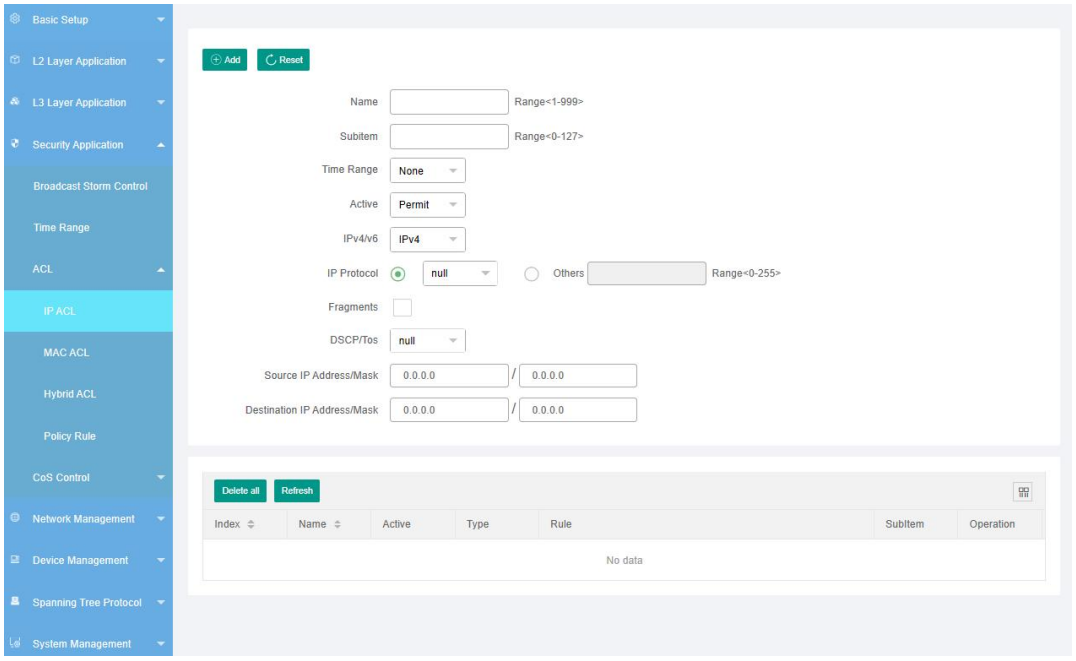


【Parameter Description】

Parameter	Description
Time Range Name	Name time range The value contains 1 to 32 characters.
Time Type	Choose absolute time and periodic time.

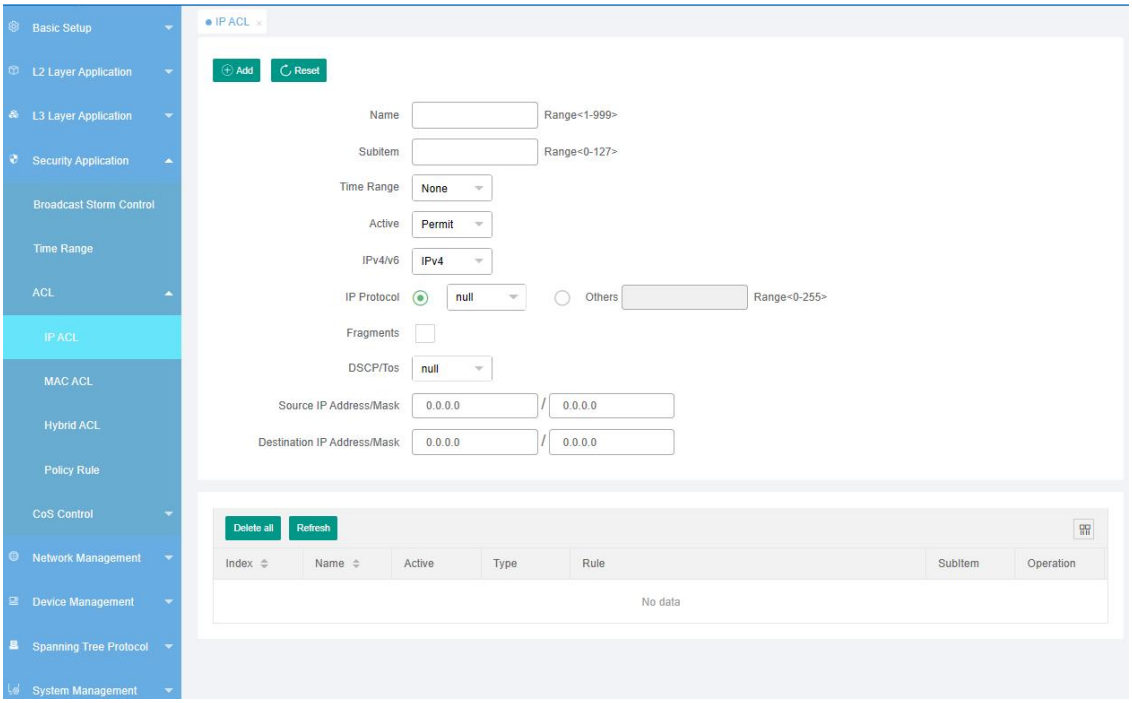
2.5.3 ACL

Selecting “**Security Application>ACL**", in the navigation bar, you can set IP ACL, MAC ACL, Hybrid ACL and Policy Rule.



2.5.3.1 IP ACL

Selecting "**Security Application**>**ACL**>**IP ACL**", in the navigation bar, you can set IP name, subitem, time range, action, IPv4/v6, IP protocol, and DSCP/Tos.



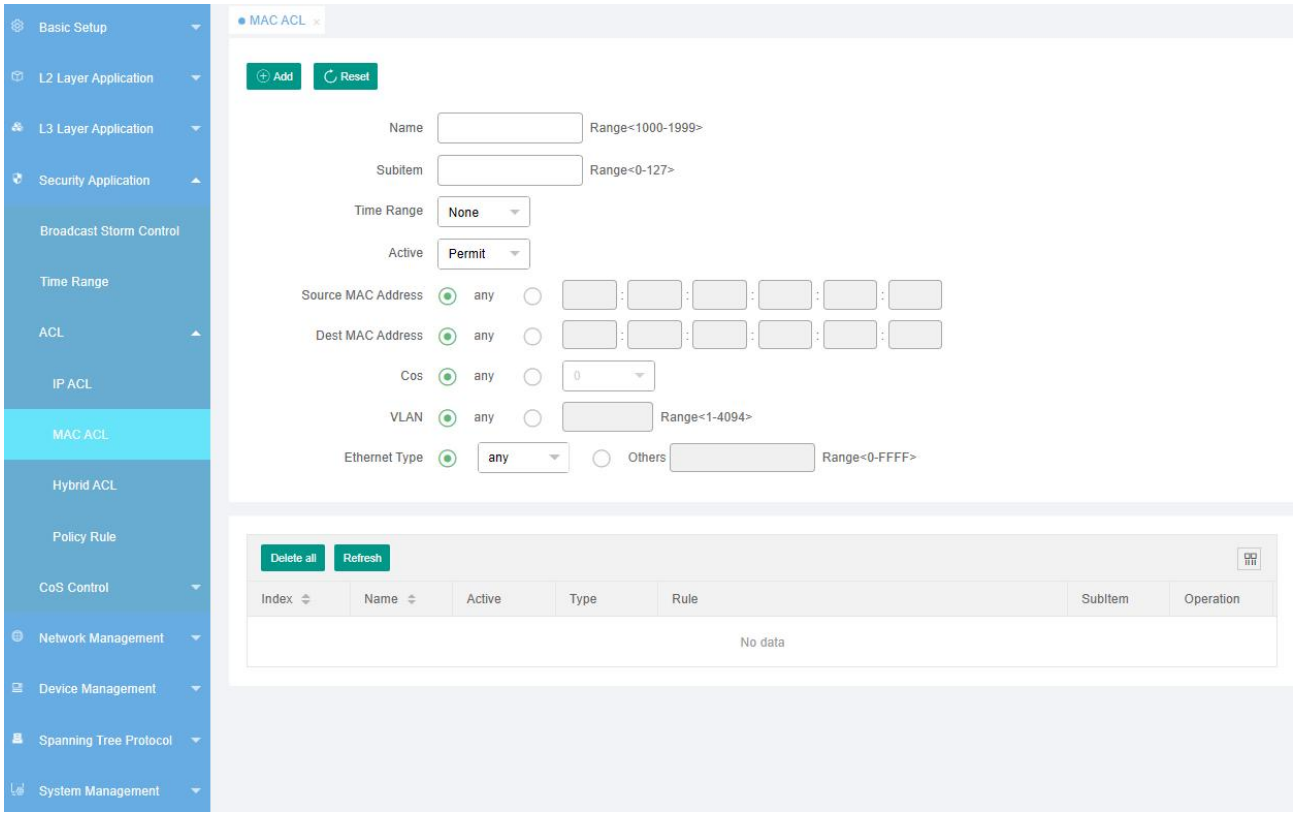
【Parameter Description】

Parameter	Description

Name	The range of 1-999
Subitem	The range of 0-127
Active	Choose to permit or deny
IPv4/v6	Choose to IPv4 or IPv6
IP Protocol	IPv4 protocols include null、gre、icmp、igmp、ipinip、ospf、tcp and udp IPv6 protocols include null、gre、icmpv6、ipinip、ospf、tcp and udp
DSCP/Tos	The value can be null, DSCP, or Tos/Precedence.

2.5.3.2 MAC ACL

Selecting "**Security Application**>**ACL**>**MAC ACL**", in the navigation bar, you can set the name, subitem, time range ,active, source MAC address, dest MAC address, priority, VLAN, and Ethernet type.

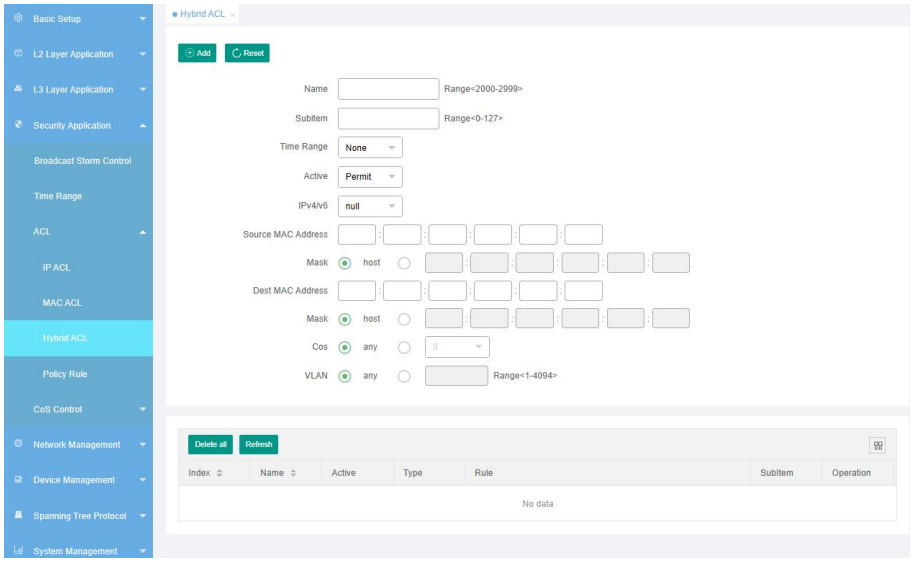


【Parameter Description】

Parameter	Description
Name	The range of 1000-1999
Subitem	The range of 0-127
Active	Choose to permit or deny
Source MAC Address	Set source MAC address
Dest MAC Address	Set dest MAC address
Cos	The priority ranges from 0 to 7.
VLAN	Set the VLAN. The value ranges from 1 to 4094.
Ethernet Type	The Ethernet type can be any, arp, ip, or rarp.

2.5.3.3 Hybrid ACL

Selecting “**Security Application>ACL>Hybrid ACL**", in the navigation bar, you can set name, subitem, time range, active, IPv4/v6, source MAC address, dest MAC address, priority, and VLAN.

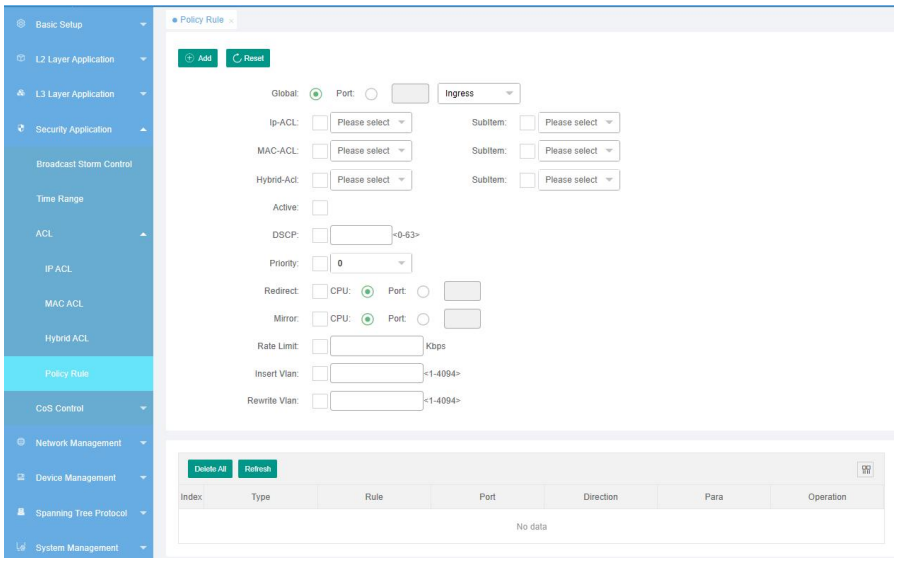


【Parameter Description】

Parameter	Description
Name	The range of 2000-2999
Subitem	The range of 0-127
Active	Choose to permit or deny
IPv4/v6	Choose to IPv4 or IPv6
Source MAC Address	Set source MAC address
Dest MAC Address	Set dest MAC address
Cos	The priority ranges from 0 to 7.
VLAN	Set the VLAN. The value ranges from 1 to 4094.

2.5.3.4 Policy Rule

Selecting“**Security Application>ACL>Policy Rule**", in the navigation bar, you can set global/port, IP-ACL, MAC-ACL, Hybrid-ACL, active, DSCP, priority, redirect, mirror, rate limit, insert VLAN, and rewrite VLAN.

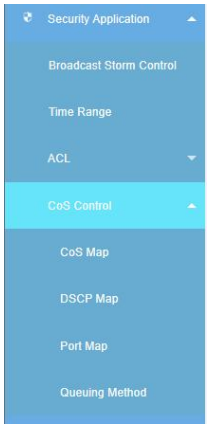


【Parameter Description】

Parameter	Description
Active	Activate the configured policy
DSCP	The range of 0-63
Priority	The priority ranges from 0 to 7.
Redirect	The value can be CPU or port. The default CPU is used
Mirror	The value can be CPU or port. The default CPU is used
Rate Limit	Set rate limit
Insert Vlan	Insert Vlan ranges from 1 to 4094
Rewrite Vlan	Rewrite Vlan ranges from 1 to 4094

2.5.4 CoS Control

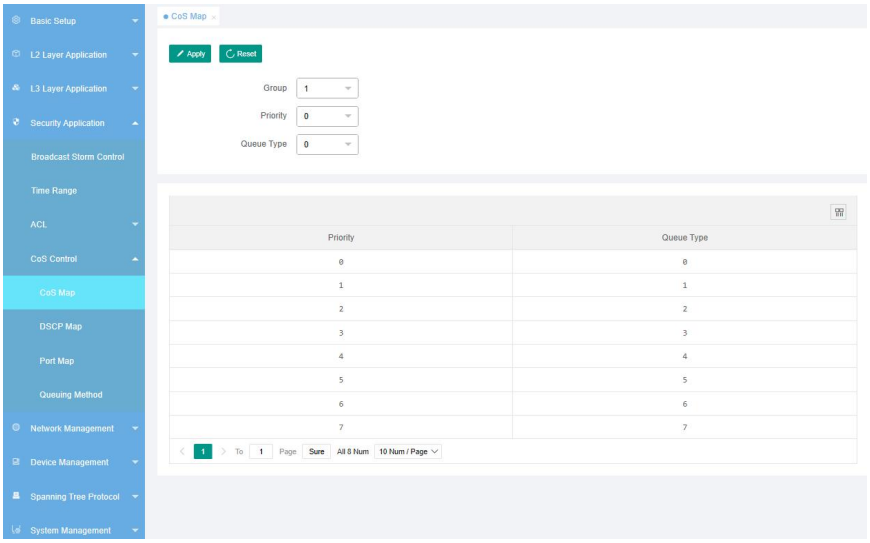
Selecting “**Security Application**>**CoS Control**", in the navigation bar, you can set CoS MAP, DSCP MAP, Port MAP, and Queue Method.



2.5.4.1 CoS MAP

Selecting “**Security Application**>**CoS Control**>**CoS MAP**", in the navigation bar, you can set

groups, priorities, queue types, and so on.

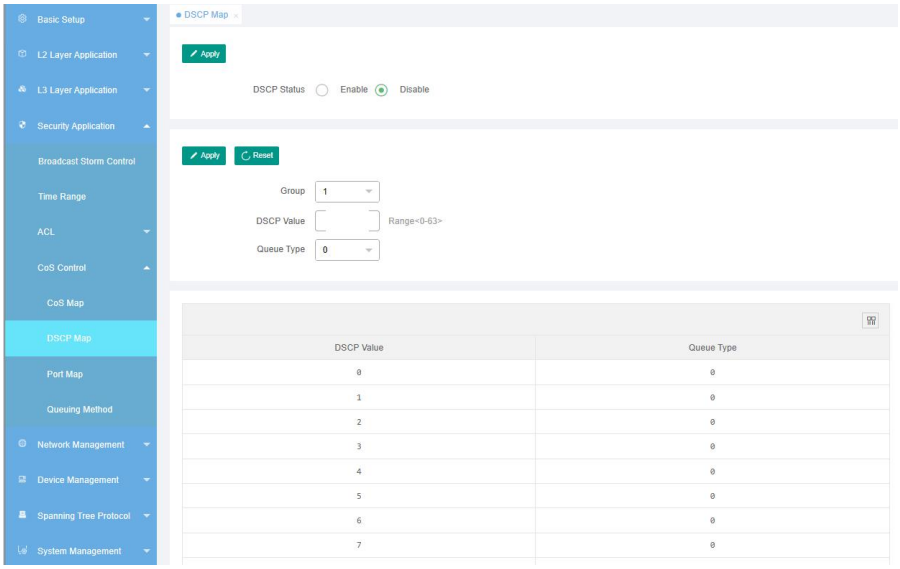


【Parameter Description】

Parameter	Description
Group	Set the group number and select the group.
Priority	The priority ranges from 0 to 7.
Queue Type	Queue Type ranges from 0 to 7.

2.5.4.2 DSCP MAP

Selecting “**Security Application**>**CoS Control**>**DSCP MAP**", in the navigation bar, you can set the DSCP status, group, DSCP value, and queue type.

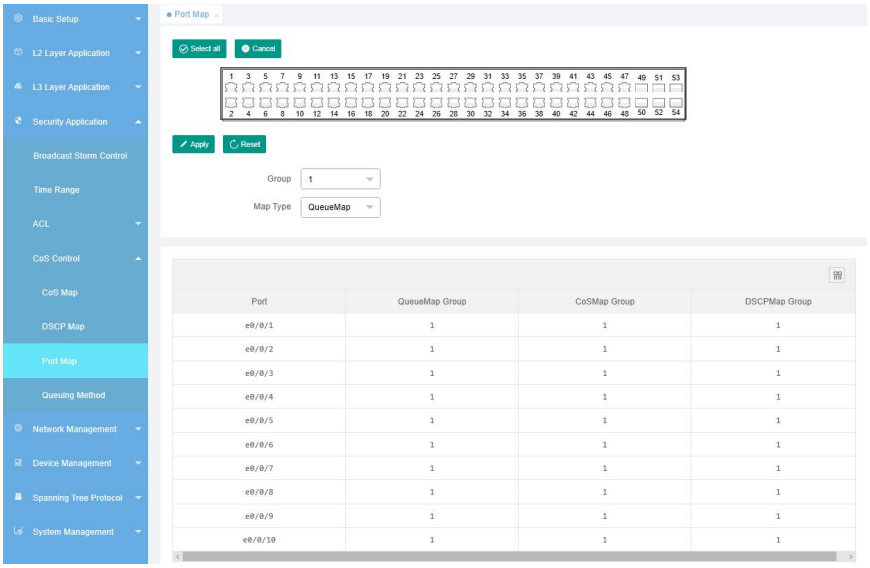


【Parameter Description】

Parameter	Description
DSCP Status	The DSCP status is enabled or disabled
DSCP Value	DSCP Value ranges from 0 to 63.
Queue Type	Queue Type ranges from 0 to 7.

2.5.4.3 Port Map

Selecting “**Security Application**>**CoS Control**>**Port MAP**", in the navigation bar, you can set ports, groups, and mapping types.

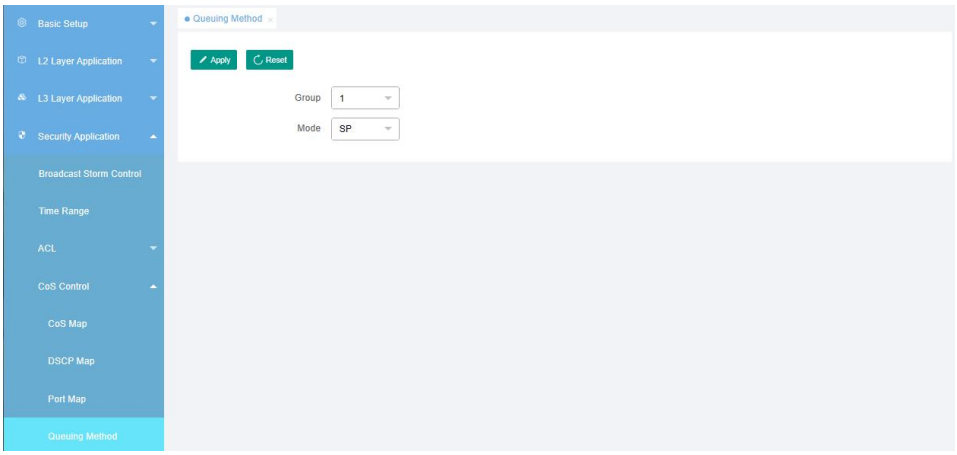


【Parameter Description】

Parameter	Description
Port	Select the port to be mapped
Map Type	There are QueueMap, CoSMap, and DSCPMap.

2.5.4.4 Queuing Method

Selecting "**Security Application>CoS Control>Queuing Method**", in the navigation bar, you can set groups and modes.



【Parameter Description】

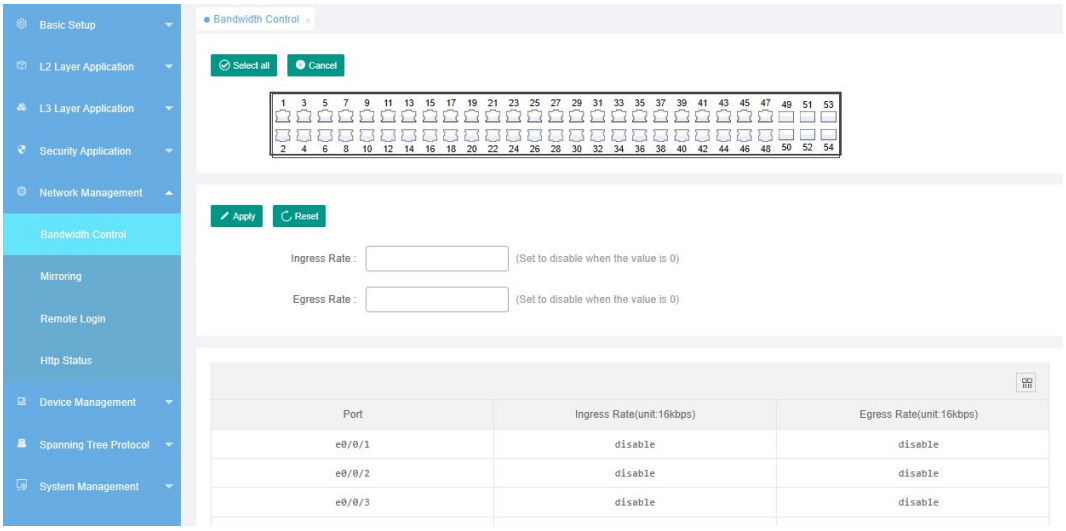
Parameter	Description
Mode	There are five modes: SP, WRR, SP+WRR, WFQ, and SP+WFQ.

2.6 Network Management

Choose Network Management, and the following page appears. There are "**Bandwidth Control**", "**Mirroring**","**Remote Login**" and "**Http Status**" configuration web pages.

2.6.1 Bandwidth Control

Selecting "**Network Management>Bandwidth Control**", in the navigation bar, you can set the port, Ingress Rate , and Egress Rate.

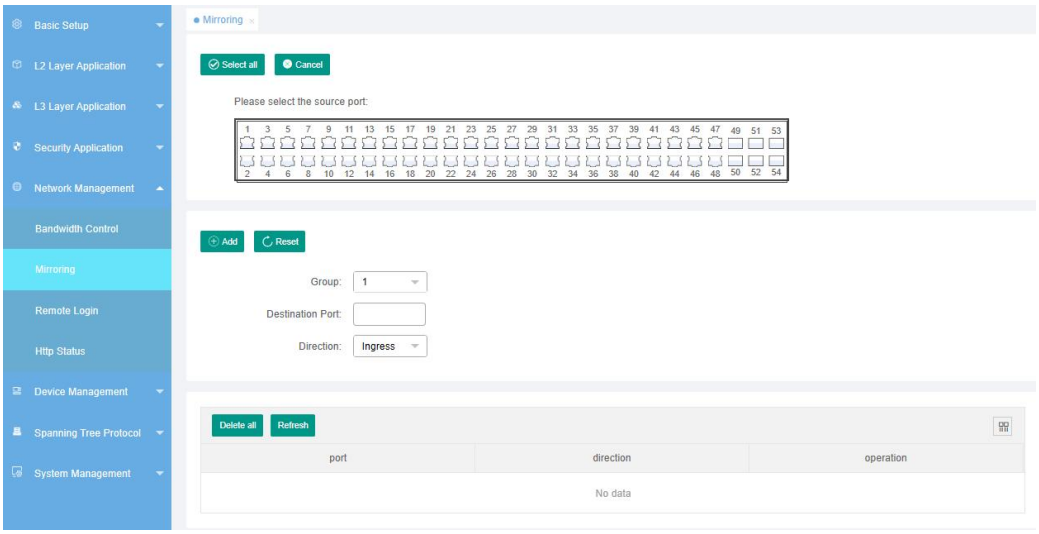


【Parameter Description】

Parameter	Description
Ingress Rate	Set the Ingress Rate. If the value is 0, set it to disable.
Egress Rate	Set the Egress Rate. If the value is 0, set it to disable.

2.6.2 Mirroring

Selecting “**Network Management>Mirroring**", in the navigation bar, you can set the mirror group, destination port, and direction.

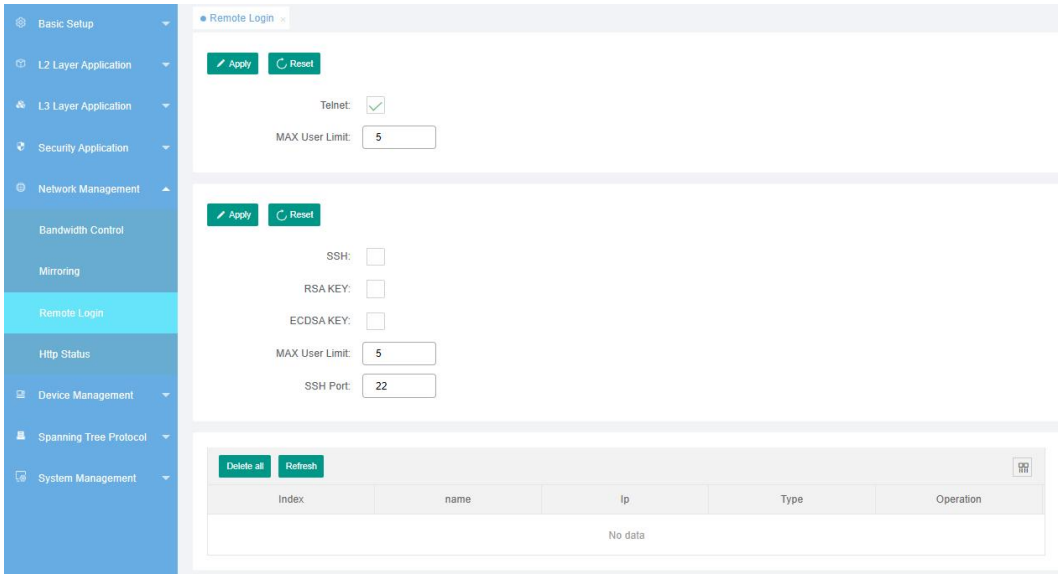


【Parameter Description】

Parameter	Description
Group	Select mirror group
Destination Port	Select any port other than the source port
Direction	Configure the direction of the mirrored packet. The direction can be inbound, outbound, and bidirectional.

2.6.3 Remote Login

Selecting “**Network Management>Remote Login**", in the navigation bar, you can set the remote Settings and the maximum number of users.

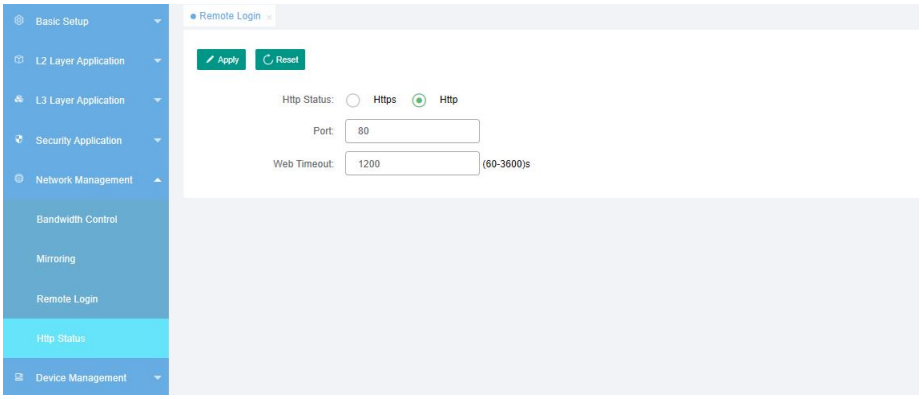


【Parameter Description】

Parameter	Description
Telnet	Select whether to enable remote Settings(After Telnet is enabled remotely, it is automatically disabled 24 hours later)
MAX User Limit	Setting Remote as maximum user (0~5)
SSH	Select whether to enable SSH Settings(After ssh is enabled , it is automatically disabled 24 hours later)

2.6.4 Http Status

Selecting “**Network Management>Http Status**", in the navigation bar, you can set the Http Status ,Port and Web Timeout.



【Parameter Description】

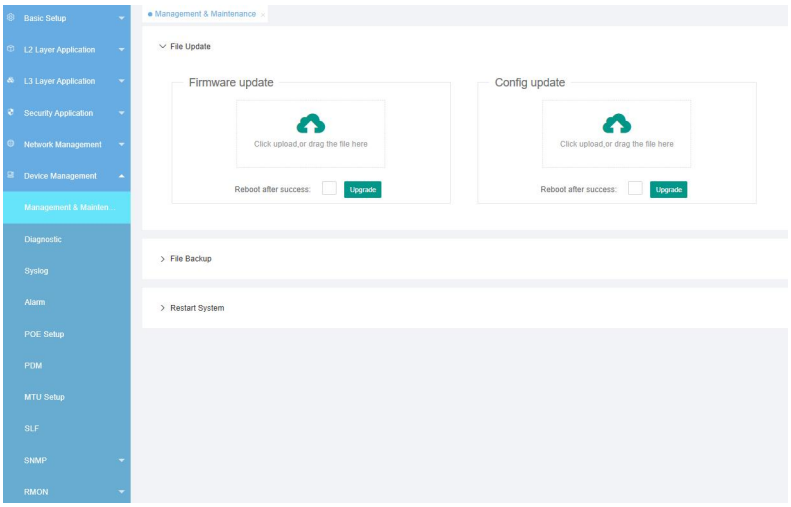
Parameter	Description
Http Status	Select Http or Https
Port	Setting port
Web Timeout	Web Timeout ranges from 60 to 3600 seconds.

2.7 Device Management

Choose Device Management, and the following page appears. There are "Management & Maintenance", "Diagnostic", “Syslog", "Alarm", “POE Setup", “PDM”, “MTU Setup", "SLF",“SNMP"and “RMON" configuration web pages.

2.7.1 Management & Maintenance

Selecting “**Device Management>Management & Maintenance**", in the navigation bar, you can set file update, file backup, and system restart.

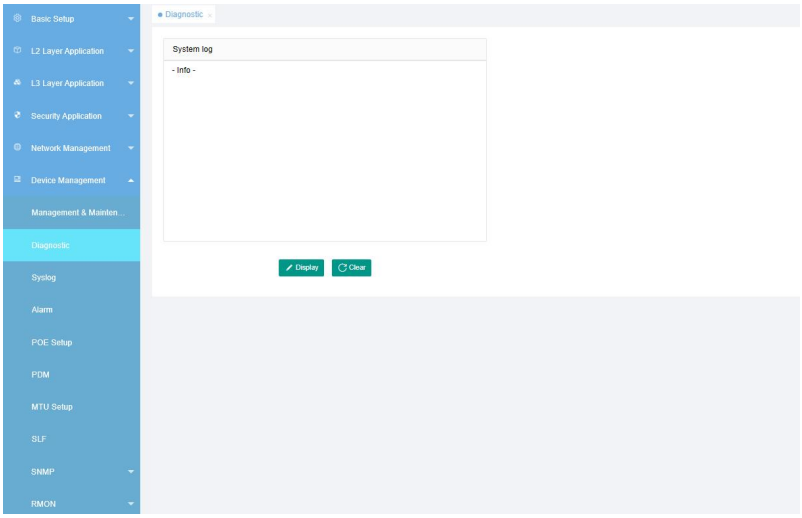


【Parameter Description】

Parameter	Description
File Update	Update firmware and configuration files (optionally restart after successful update)
File Backup	Back up configuration files and log files.
Restart System	There are two restart types: restart and factory Settings reset.

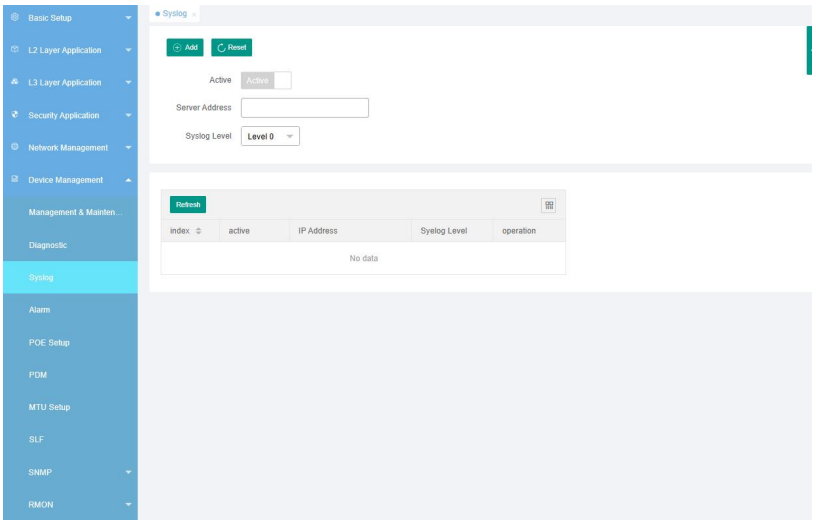
2.7.2 Diagnostic

Selecting “**Device Management>Diagnostic**", in the navigation bar, click the display button to display the system log; Click the Clear button to clear system logs.



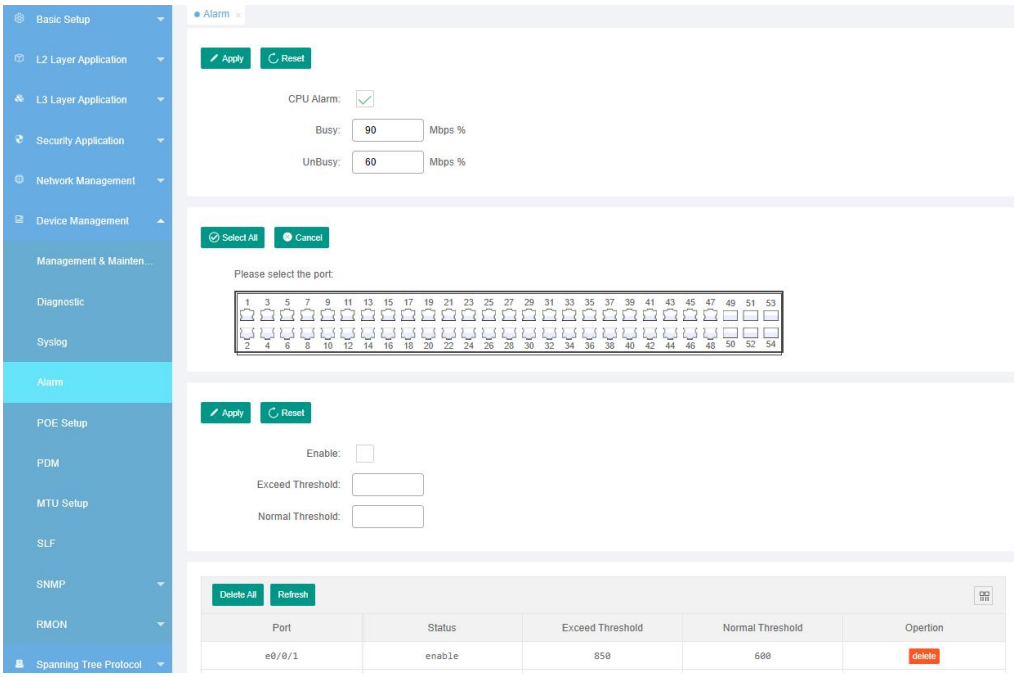
2.7.3 Syslog

Selecting “**Device Management**>**Syslog**", in the navigation bar, you can enable the log function and the log function of the corresponding module globally, and set the log server address and log level .



2.7.4 Alarm

Selecting “**Device Management**>**Alarm**", in the navigation bar, you can set CPU alarm, busy threshold, busy threshold, activation, traffic overload threshold, and normal traffic threshold.

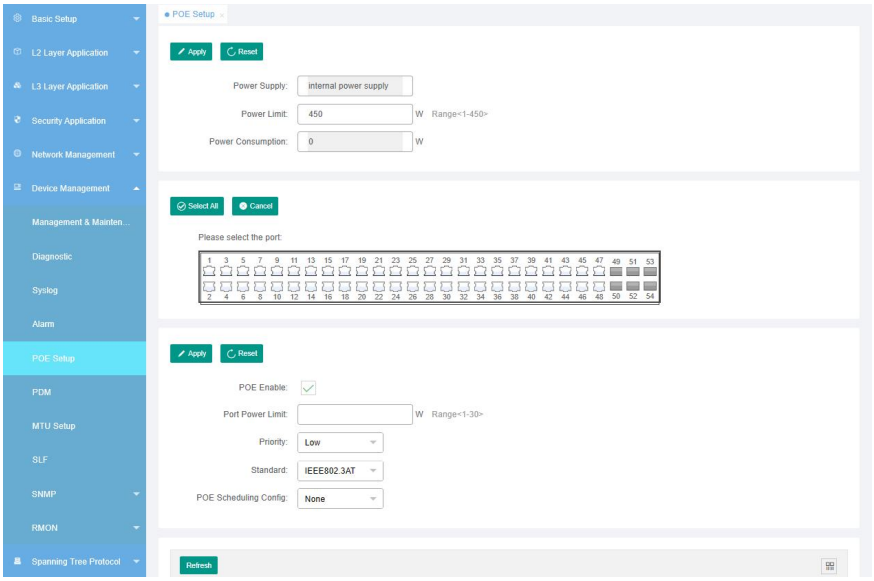


【Parameter Description】

Parameter	Description
CPU Alarm	Whether to enable the CPU alarm function
Busy	Set the busy hour threshold
UnBusy	Set the unbusy hour threshold
Enable	Status On or off
Exceed Threshold	The threshold of a GE port ranges from 1 to 1000.
Normal Threshold	The normal traffic threshold should be smaller than the excessive traffic threshold

2.7.5 POE Setup

Selecting “**Device Management>POE Setup**", in the navigation bar, you can set POE relative parameters.

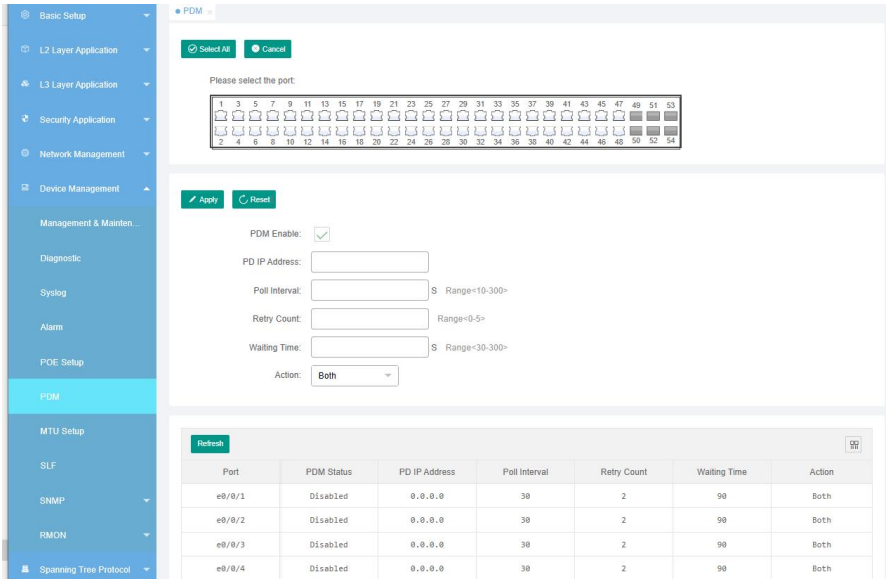


【Parameter Description】

Parameter	Description
Power Limit	The POE power supply of a switch can be limited
POE Enable	Enable or disable the POE power supply for a port. The default value is enable
Port Power Limit	Limit the port power
Priority	The priority can be low, critical, or high. The default priority is low
Standard	The IEEE802.3AF and IEEE802.3AT modes can be configured. The default mode is IEEE802.3AT

2.7.6 PDM

Selecting “**Device Management**>**PDM**", in the navigation bar, you can set PDM relative parameters.

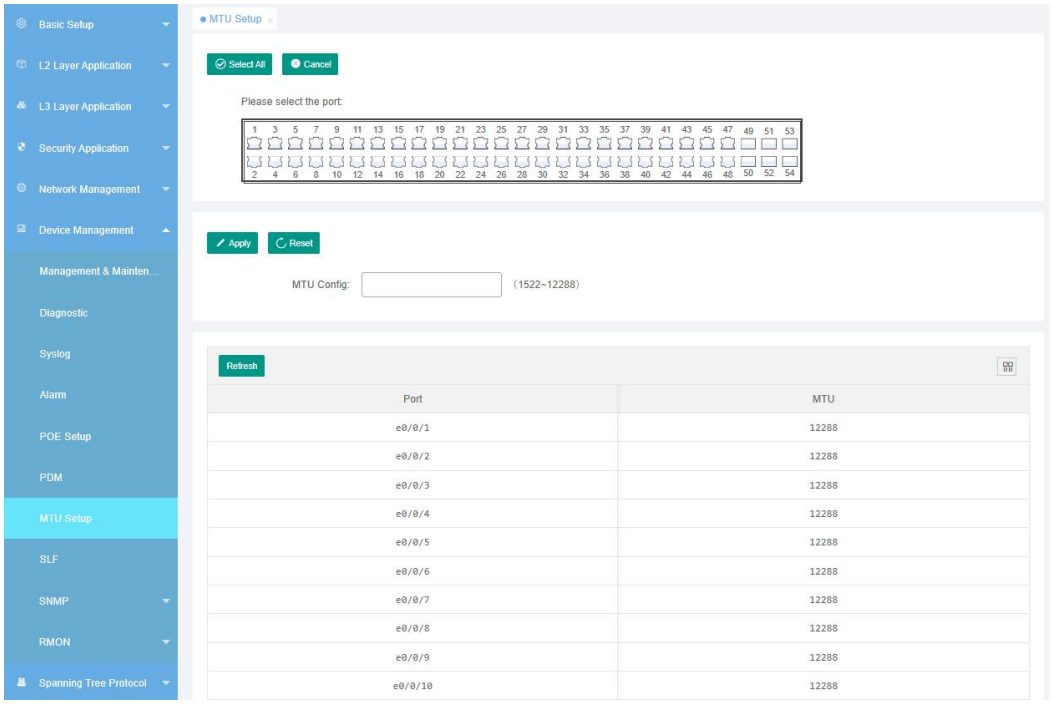


【Parameter Description】

Parameter	Description
PDM Enable	Enable or disable the PDM for a port. The default value is enable
Poll Interval	Set Poll Interval ,range from 10 to 300
Retry Count	Set Retry Count ,range from 0 to 5
Waiting Time	Set Waiting Time ,range from 30 to 300
Action	Available Both,Notify,Reboot-PD and Nothing.The default value is Both

2.7.7 MTU Setup

Selecting “**Device Management>MTU Setup**", in the navigation bar, you can set MTU relative parameters.

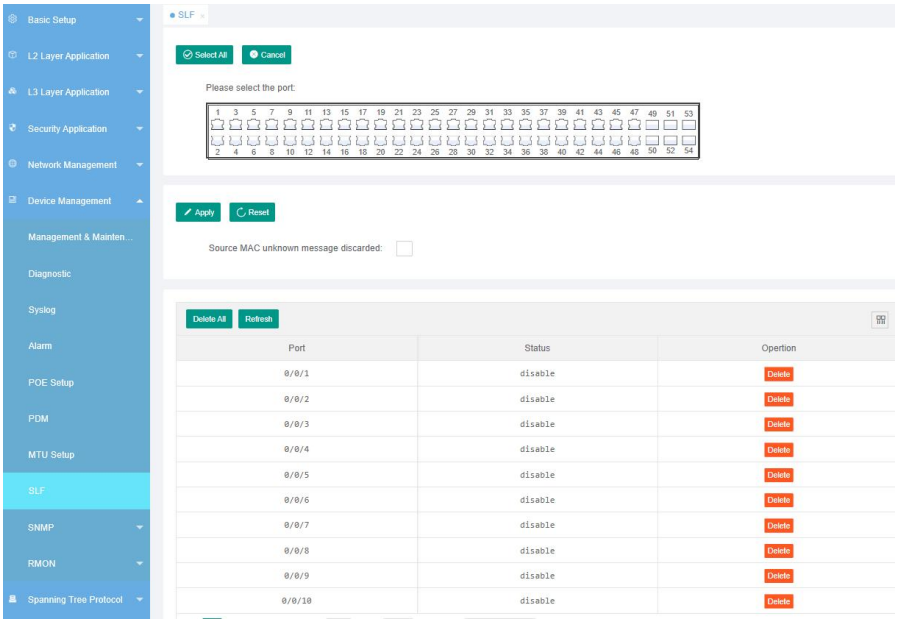


【Parameter Description】

Parameter	Description
MTU Config	Set MTU value,range from 1522 to12288

2.7.8 SLF

Selecting“ **Device Management**>**SLF**", in the navigation bar, you can set Enable or disable packet discarding with unknown source mac addresses.

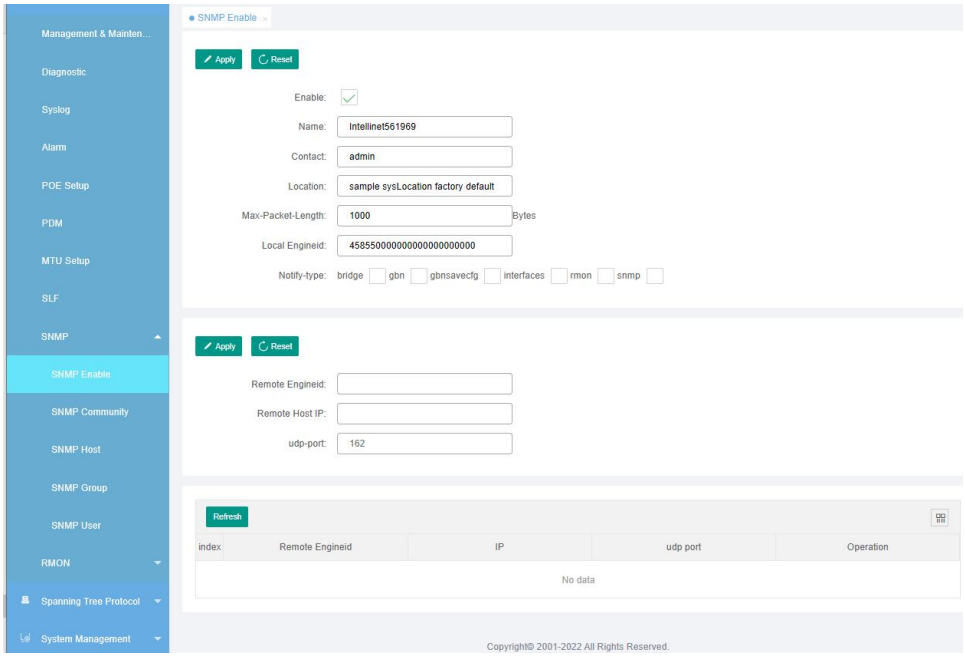


【Parameter Description】

Parameter	Description
Source MAC unknown message discarded	Enable or disable this function
Delete	Restore the default port Settings and disable the function of discarding packets with unknown source mac addresses

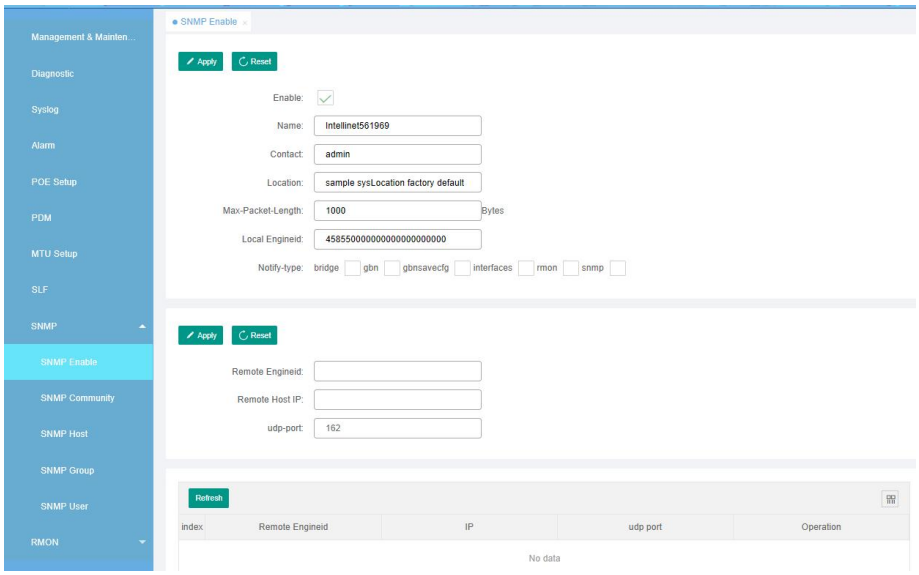
2.7.9 SNMP

Selecting “**Device Management>SNMP**", in the navigation bar, you can set global SNMP, SNMP community, SNMP host, SNMP group, and SNMP user.



2.7.9.1 SNMP Enable

Selecting "**Device Management>SNMP>SNMP Enable**", in the navigation bar, you can set whether to enable, switch system name, administrator information, switch location, maximum packet length, local engine ID, remote engine ID, remote host IP address, and remote udp port.

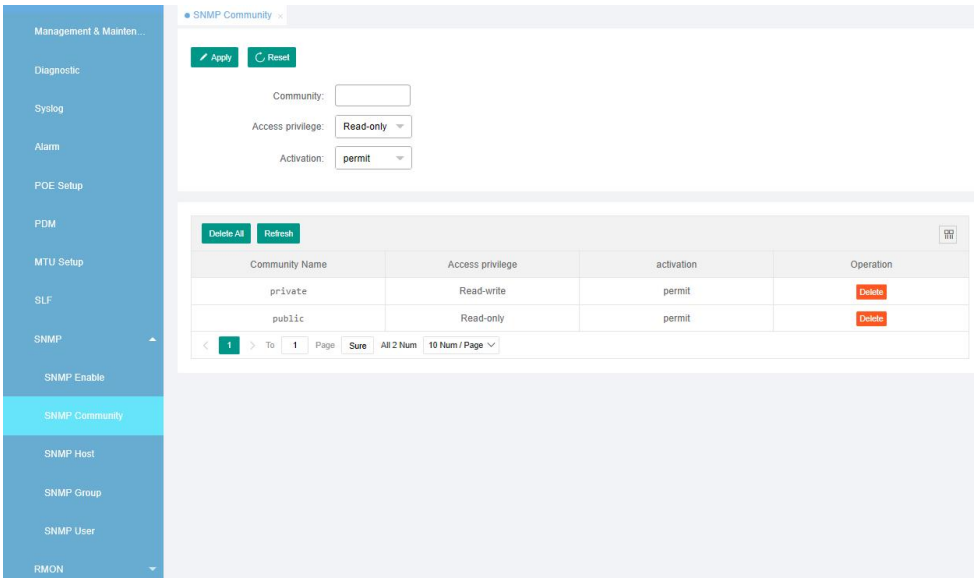


【Parameter Description】

Parameter	Description
Enable	Whether to enable the function.The default value is enable

2.7.9.2 SNMP Community

Selecting “**Device Management>SNMP>SNMP Community**", in the navigation bar, you can set the community name, read/write permission, and activation.

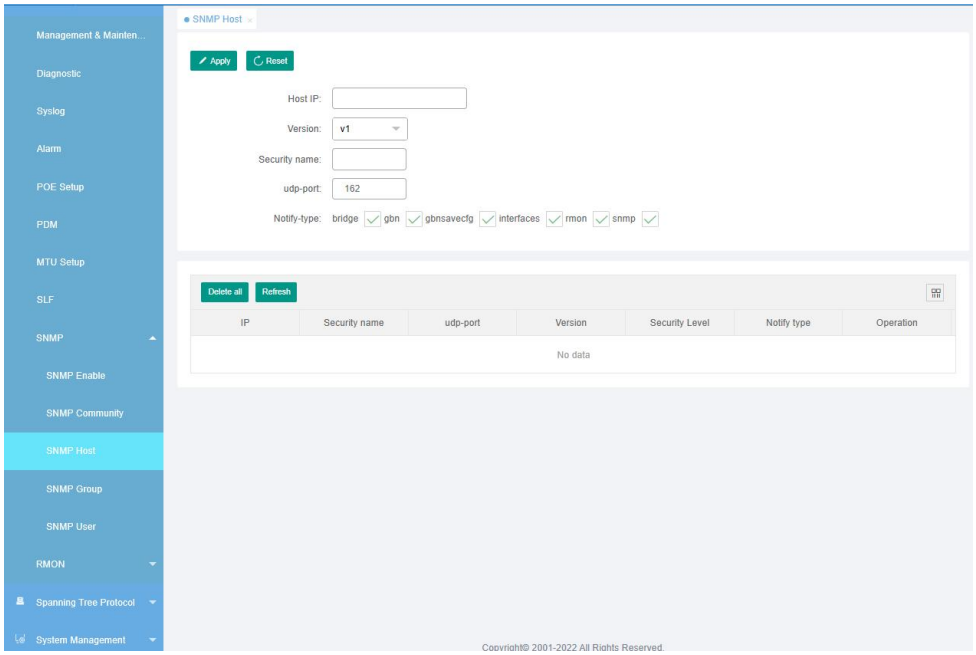


【Parameter Description】

Parameter	Description
Community	Community character string, equivalent to the communication password between the NMS and Snmp agent
Access privilege	The value can be Read-only or Read-write
Activation	The value can be Permit or deny

2.7.9.3 SNMP Host

Selecting “**Device Management>SNMP>SNMP Host**", in the navigation bar, you can set the host IP address, version information, SNMP security name, udp port, and notification type.

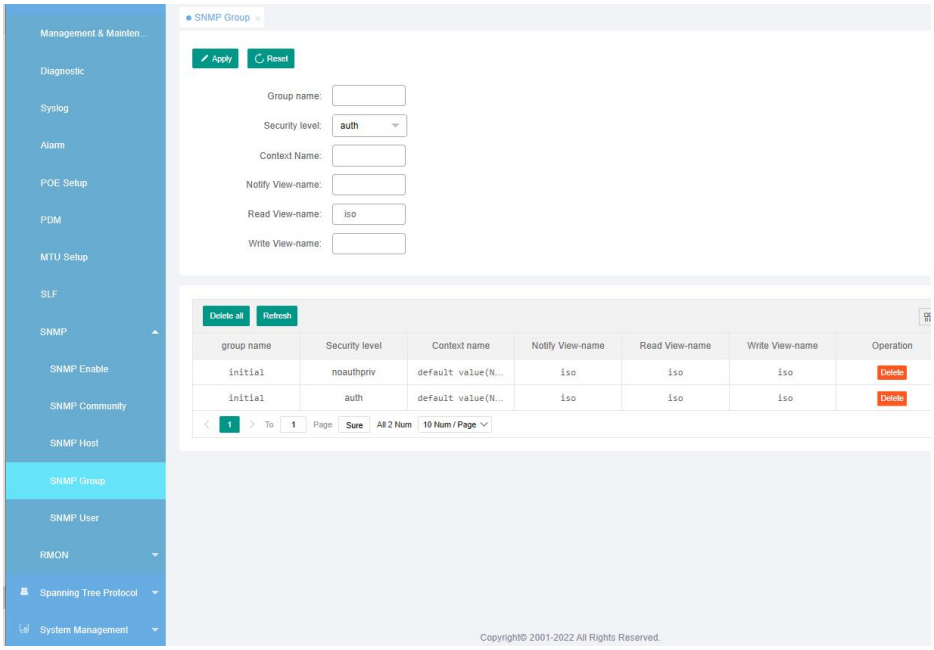


【Parameter Description】

Parameter	Description
Host IP	Set the ip address of the trap host
Version	he version can be v1, v2c, or v3

2.7.9.4 SNMP Group

Selecting “**Device Management**>**SNMP**>**SNMP Group**", in the navigation bar, you can set the group name, security level, device context, notification view name, read access view name, and write access view name .

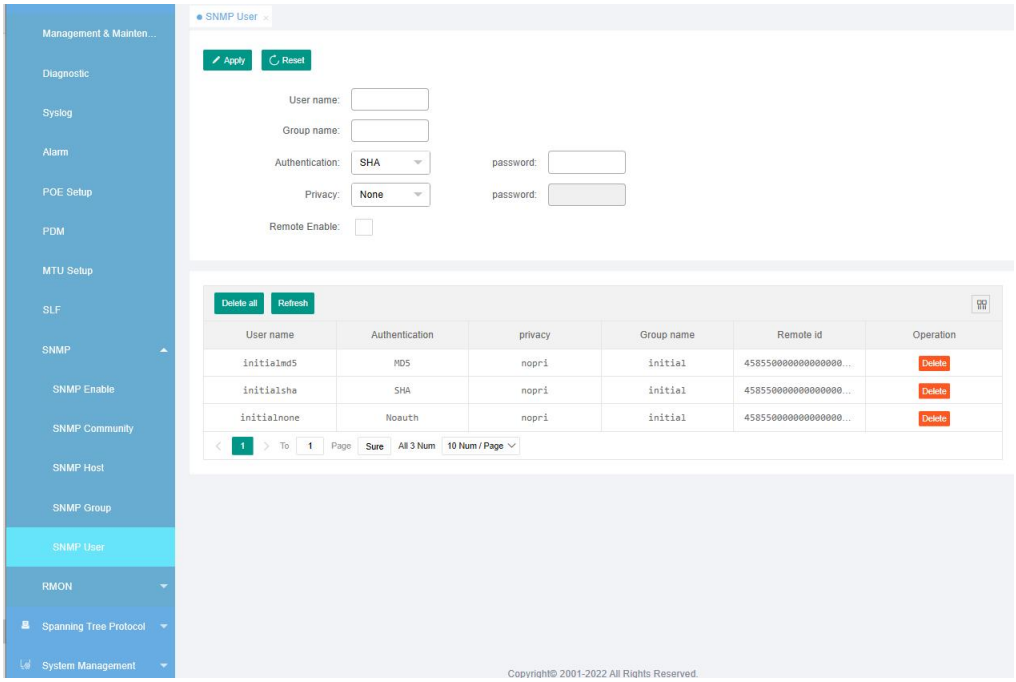


【Parameter Description】

Parameter	Description
Group name	SNMP group name
Security level	The security levels are noauthpriv, auth, and priv

2.7.9.5 SNMP User

Selecting “**Device Management>SNMP>SNMP User**", in the navigation bar, you can set the user name, group name, authentication mode, encryption mode, password, and remote function.

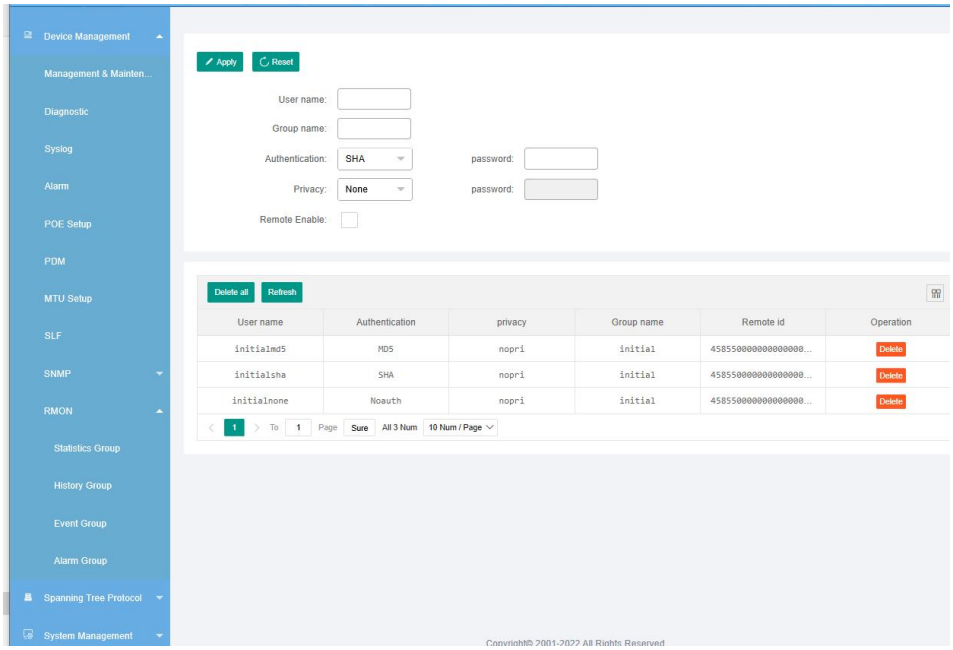


【Parameter Description】

Parameter	Description
User name	SNMP name
Authentication	MD5 and SHA Specify the security level
Privacy	DES encryption protocol
password	Authentication password and Privacy password

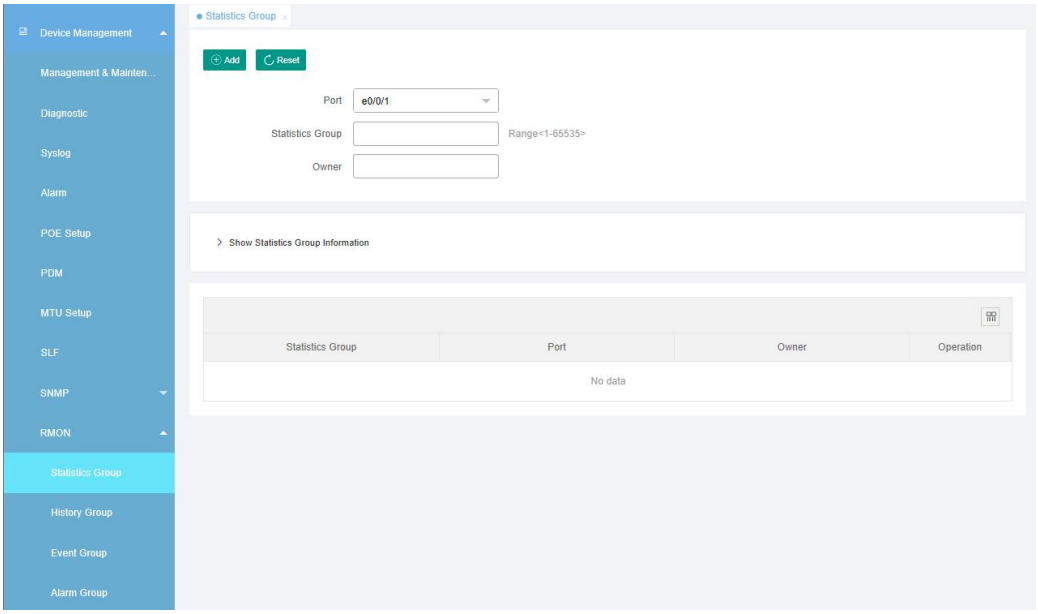
2.7.10 RMON

Selecting “**Device Management>RMON**", in the navigation bar, you can set statistics group, history group, event group, and alarm group.



2.7.10.1 Statistics Group

Selecting "**Device Management>RMON>Statistics Group**", in the navigation bar, you can set ports, statistics groups, owners, and so on.



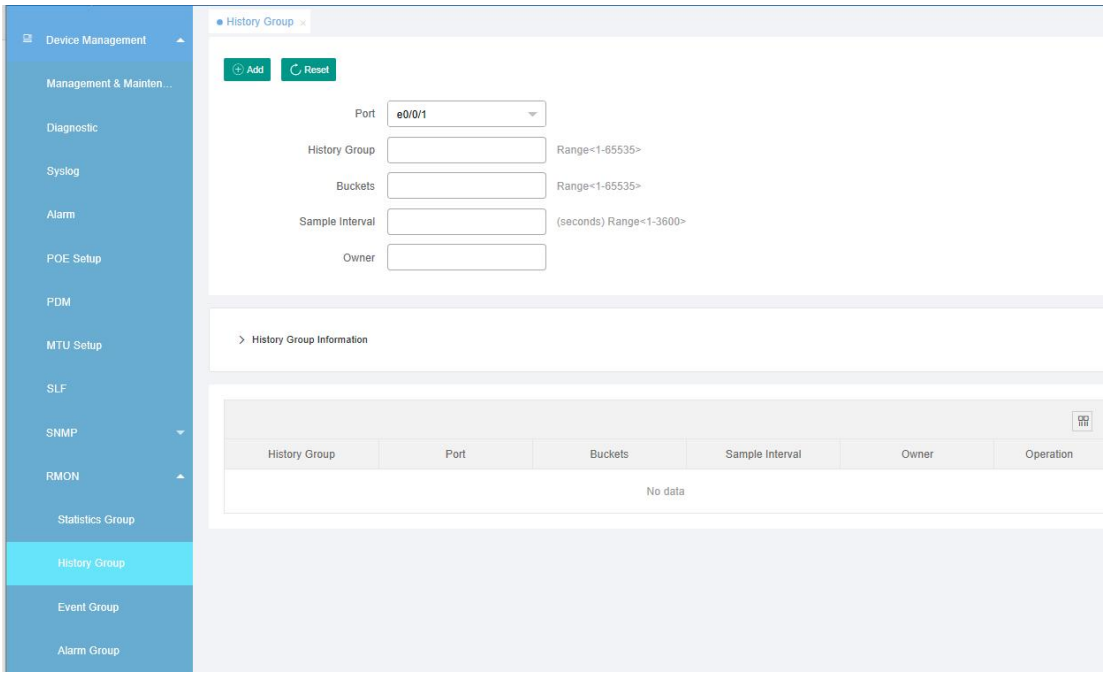
【Parameter Description】

Parameter	Description

Port	Select any port on the switch.
Statistics Group	The value ranges from 1 to 65535.
Owner	The user sets the owner name.

2.7.10.2 History Group

Selecting "**Device Management**>**RMON**>**History Group**", in the navigation bar, you can set ports, history groups, number of records, sampling intervals, owners, and so on.



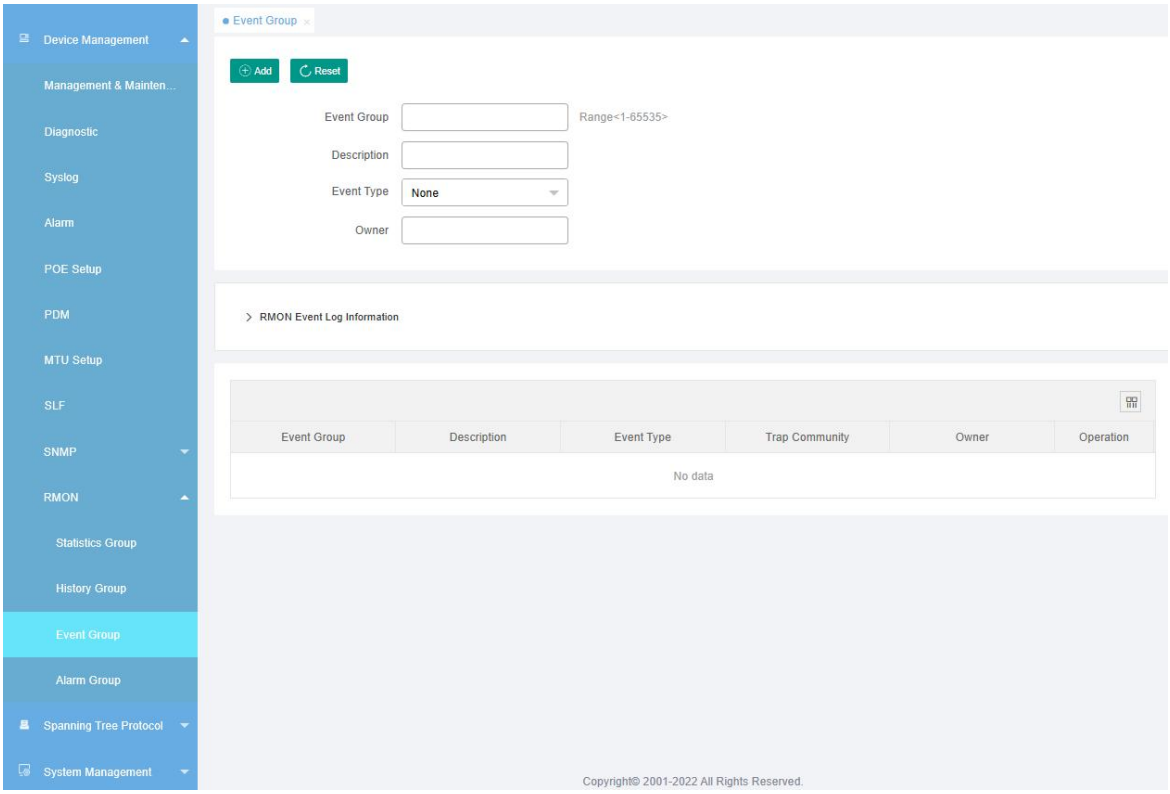
【Parameter Description】

Parameter	Description
Port	Select any port on the switch.
History Group	Set the History Group.The value ranges from 1 to 65535.
Buckets	Set the Buckets.The value ranges from 1 to 65535.

Sample Interval	Set the sampling interval. The value ranges from 1 to 3600 seconds.
Owner	The user sets the owner name.

2.7.10.3 Event Group

Selecting “**Device Management**>**RMON**>**Event Group**", in the navigation bar, you can set event groups, descriptions, event types, owners, and so on.

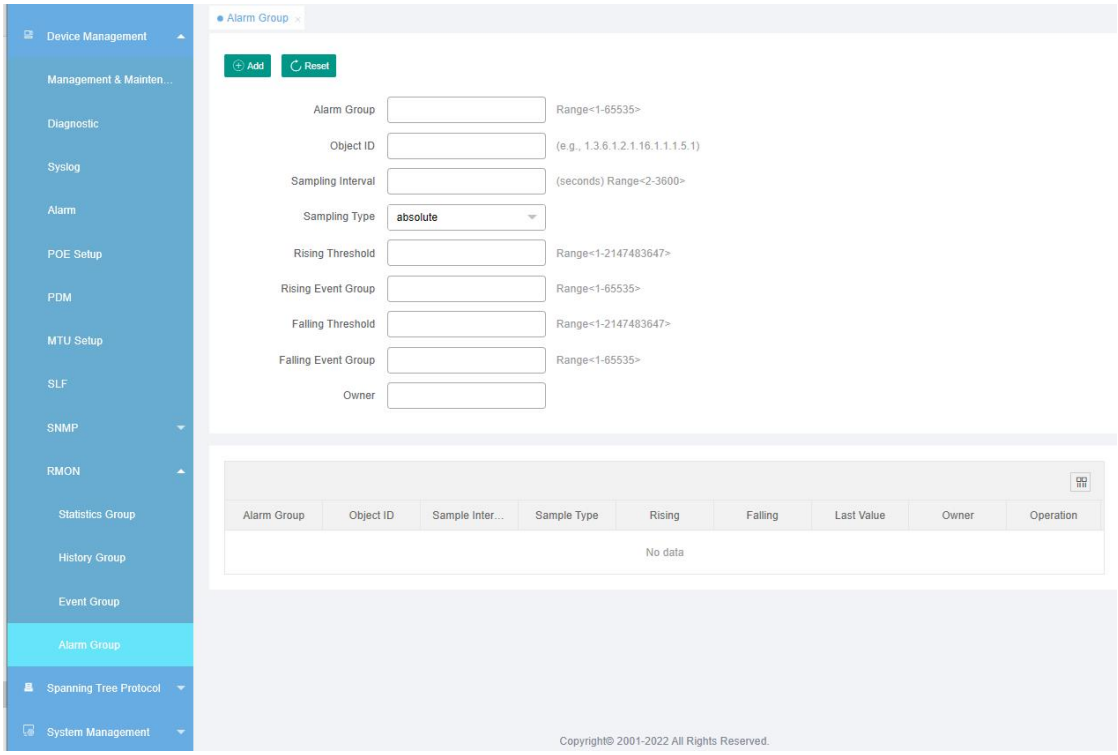


【Parameter Description】

Parameter	Description
Event Group	Set the Event Group.The value ranges from 1 to 65535.
Event Type	The Log, Trap, and log-trap events are available.

2.7.10.4 Alarm Group

Selecting “**Device Management**>**RMON**>**Alarm Group**", in the navigation bar, you can set alarm group, object ID, sampling interval, sampling type, rise threshold, rise event group, fall threshold, fall event group, and owner.



【Parameter Description】

Parameter	Description
Alarm Group	Set the Alarm Group.The value ranges from 1 to 65535
Object ID	The value ranges from 2 to 3600 seconds
Sampling Type	There are two types: absolute and delta
Rising Threshold	The value ranges from 1 to 2147483647
Rising Event Group	The value ranges from 1 to 65535

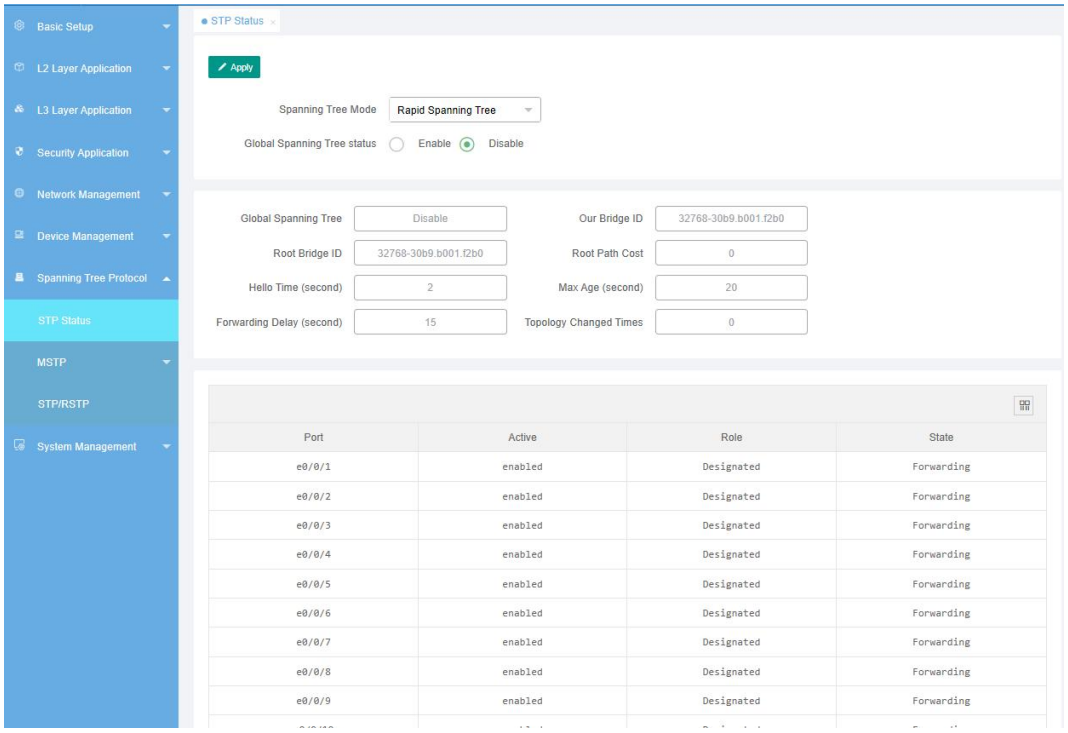
Falling Threshold	The value ranges from 1 to 2147483647
Falling Event Group	The value ranges from 1 to 65535

2.8 Spanning Tree Protocol

Choose Spanning Tree Protocol, and the following page appears. There are "STP Status", "MSTP" and “STP Status" configuration web pages.

2.8.1 STP Status

Selecting “**Spanning Tree Protocol>STP Status**", in the navigation bar, you can set the generated tree mode and global spanning tree state.

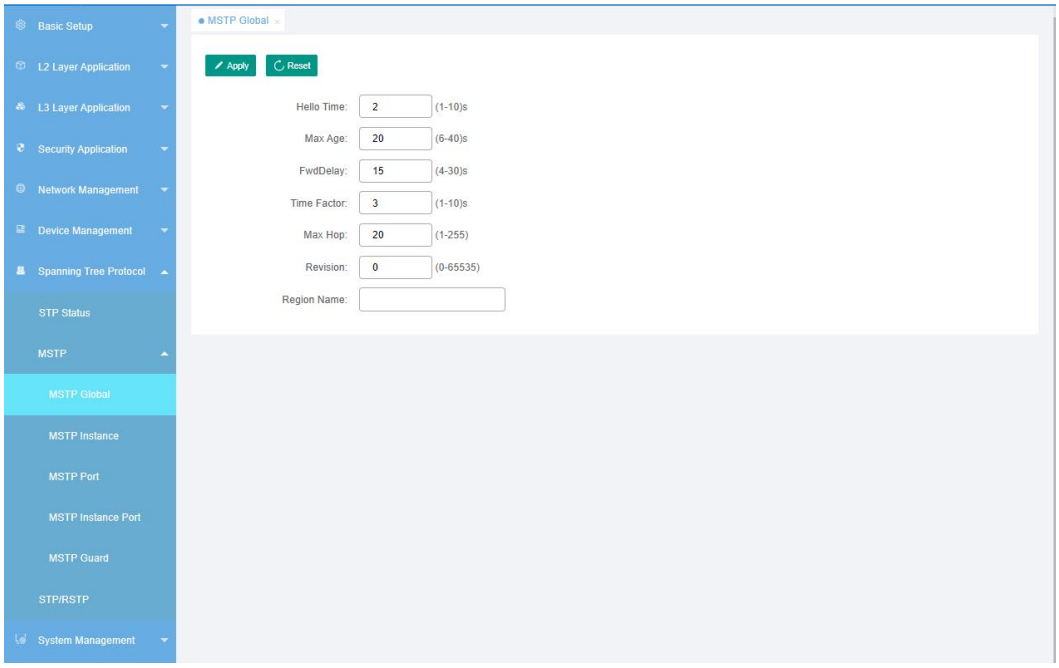


【Parameter Description】

Parameter	Description
Spanning Tree Mode	IEEE compatible spanning tree, rapid spanning tree, multiple spanning tree three modes.
Global Spanning Tree status	Enable or disable the global spanning tree.

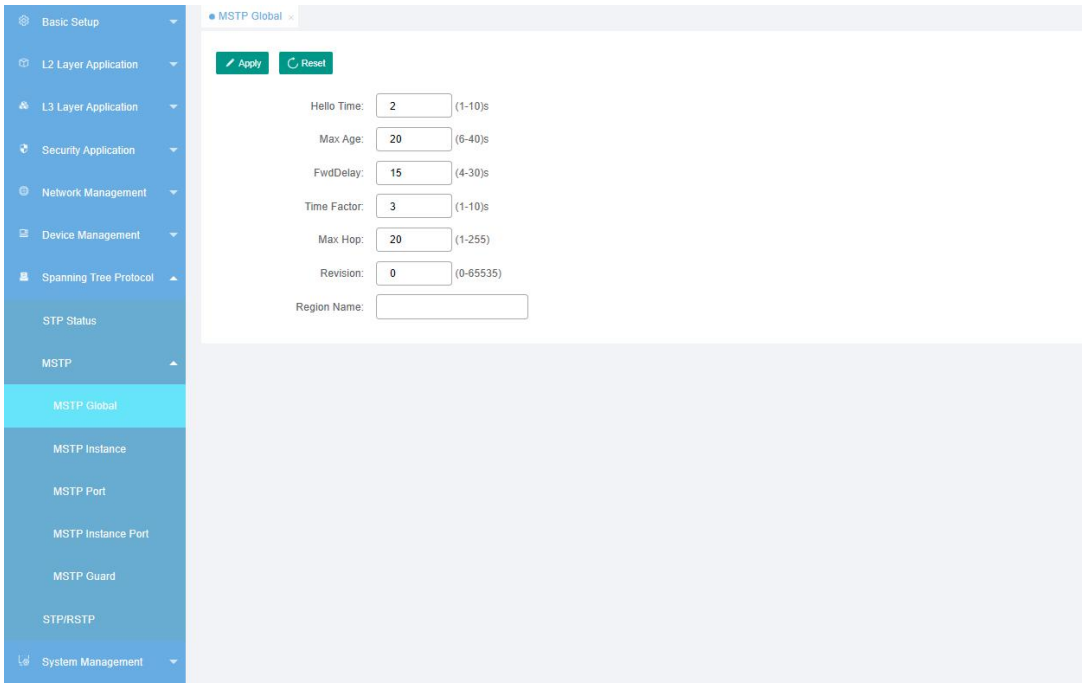
2.8.2 MSTP

Selecting "**Spanning Tree Protocol>MSTP**", in the navigation bar, you can set MSTP global, MSTP instance, MSTP port, MSTP instance port and MSTP guard.



2.8.2.1 MSTP Global

Selecting "**Spanning Tree Protocol>MSTP>MSTP Global**", in the navigation bar, you can set the sending period, maximum aging time, forwarding delay, timeout factor, maximum hop count, area modification level, and area name.

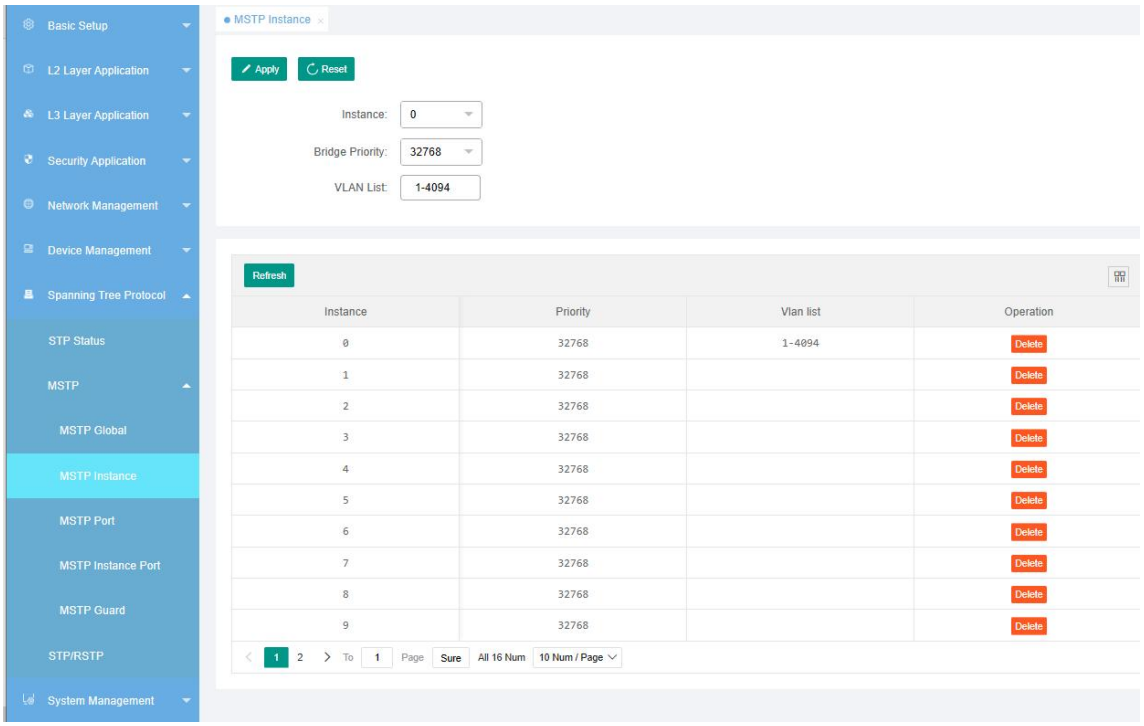


【Parameter Description】

Parameter	Description
Hello Time	The value ranges from 1 to 10 seconds.
Max Age	If the port does not receive any packet within this period (6-40 seconds), the port initiates a topology change.
FwdDelay	Port status switching time (4 to 30 seconds)
Time Factor	The value ranges from 1 to 10 seconds.
Max Hop	This parameter specifies the maximum number of hops supported by BPDUs in the spanning tree. The value ranges from 1 to 255.
Revision	The range correction level ranges from 0 to 65535

2.8.2.2 MSTP Instance

Selecting “**Spanning Tree Protocol>MSTP>MSTP Instancel**", in the navigation bar, you can set the instance ID, bridge priority, and VLAN list.

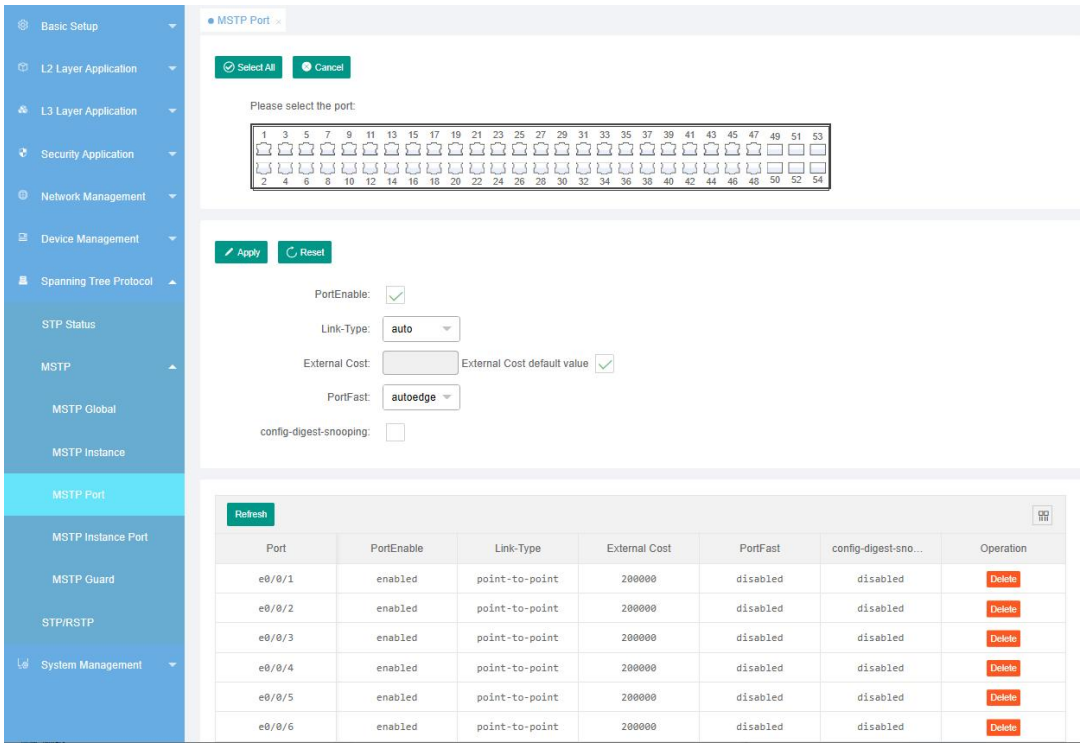


【Parameter Description】

Parameter	Description
Instance	The value ranges from 0 to 15
Bridge Priority	Set the bridge priority. The default bridge instance priority is 32768
VLAN List	The VLAN list ranges from 1 to 4094

2.8.2.3 MSTP Port

Selecting “ **Spanning Tree Protocol>MSTP>MSTP Port**", in the navigation bar, you can set Enable, connection type, external path cost, port boundary mode, digest listening feature compatible with Cisco and so on.

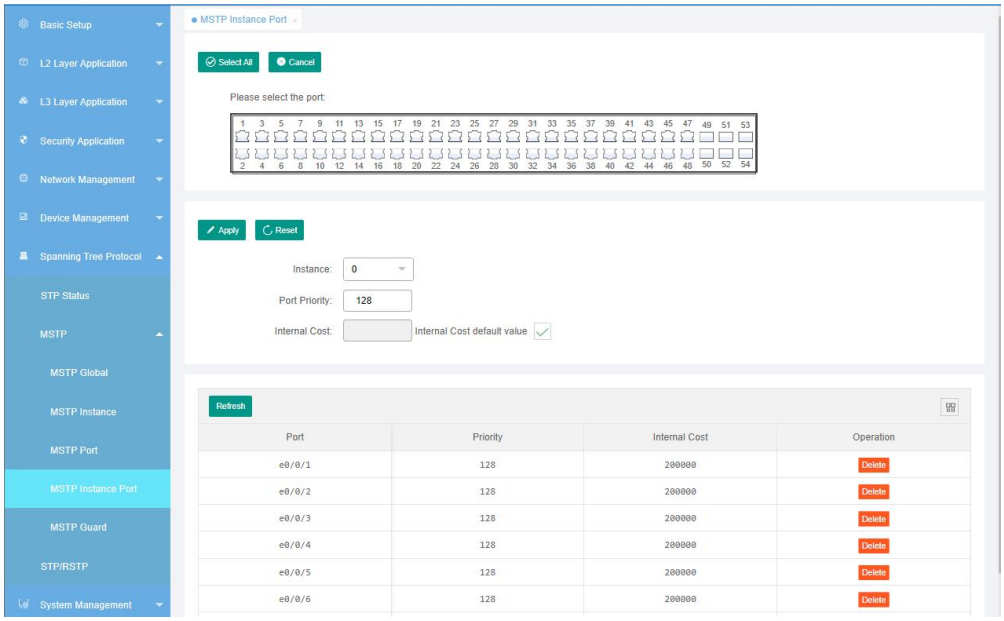


【Parameter Description】

Parameter	Description
PortEnable	Whether to enable the MSTP function
Link-Type	There are three link types: auto, point-to-point, and shared
External Cost	Configure port external path cost (default: 200000)
PortFast	There are three modes: autoedge, disable, and edqeport
config-digest-snooping	Specifies whether the status is enabled

2.8.2.4 MSTP Instance Port

Selecting "**Spanning Tree Protocol**>**MSTP**>**MSTP Instance Port**", in the navigation bar, you can set the instance number, port priority, internal path cost, etc.

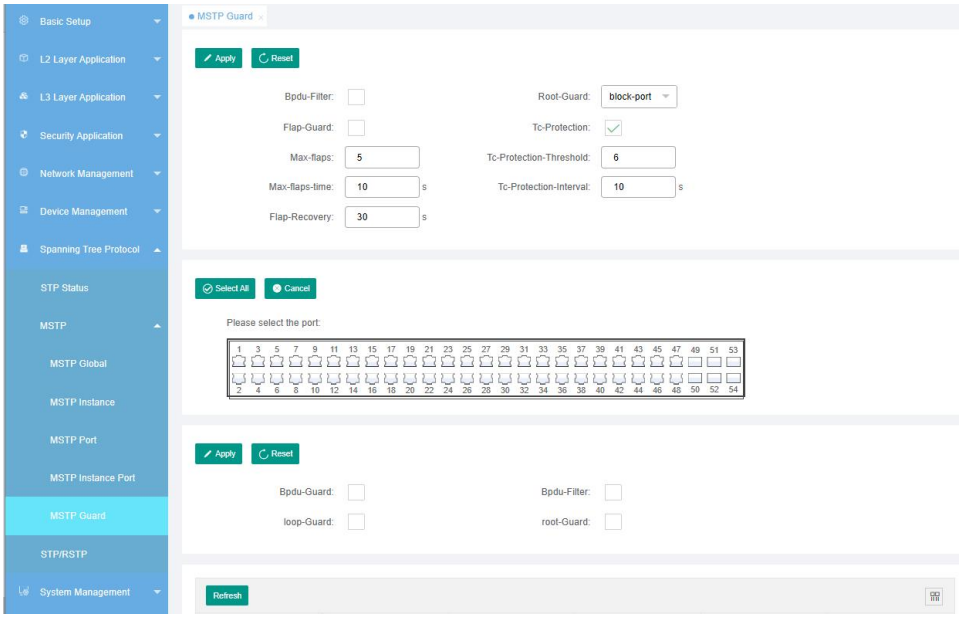


【Parameter Description】

Parameter	Description
Instance	The value ranges from 0 to 15
Port Priority	Set the port instance priority. The default value is 128
Internal Cost	Configure the port internal path cost (default: 200000)

2.8.2.5 MSTP Guard

Selecting “**Spanning Tree Protocol**>**MSTP**>**MSTP Guard**", in the navigation bar, you can set Bpdu filtering, Bpdu protection, loop protection, and root protection for a port .

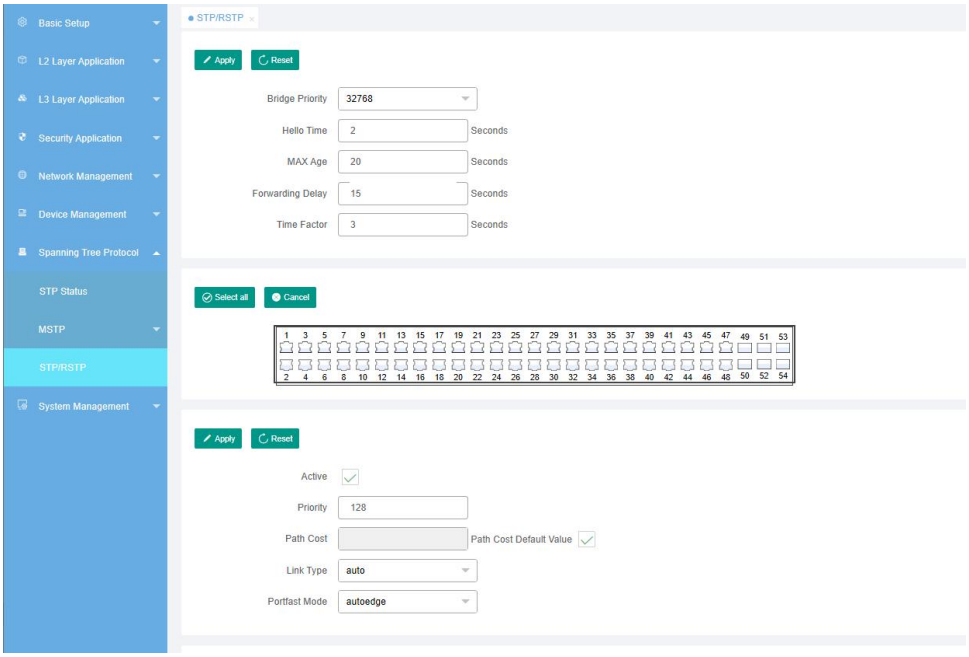


【Parameter Description】

Parameter	Description
Bpdu-Filter	Select whether to enable
Bpdu-Guard	Select whether to enable
root-Guard	Select whether to enable
loop-Guard	Select whether to enable

2.8.3 STP/RSTP

Selecting “**Spanning Tree Protocol>STP/RSTP**", in the navigation bar, you can set the bridging priority, sending period, maximum aging time, forwarding delay, timeout factor, enable, priority, path cost, link type, and boundary status.

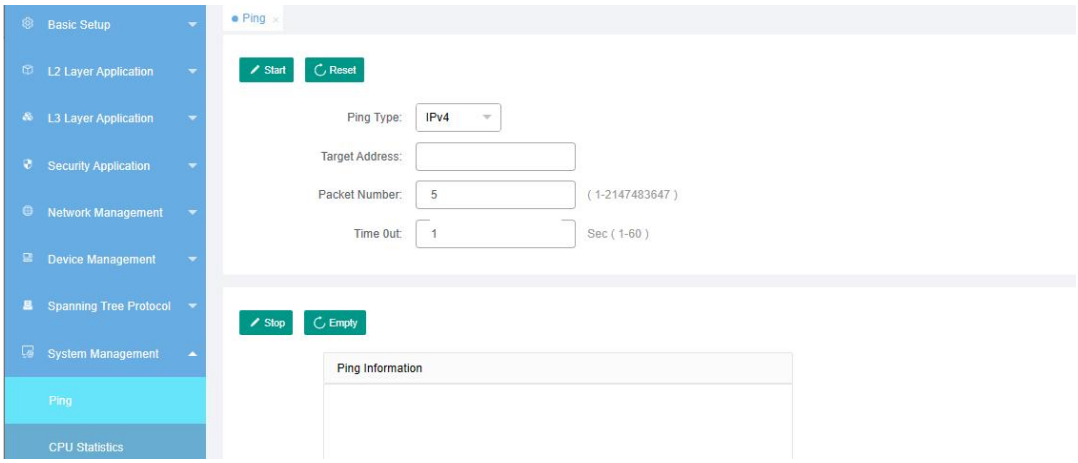


【Parameter Description】

Parameter	Description
Bridge Priority	Set the bridge priority. The default bridge instance priority is 32768
Hello Time	The value ranges from 1 to 10 seconds
MAX Age	If the port does not receive any packet within this period (6-40 seconds), the port initiates a topology change
Forwarding Delay	Port status switching time (4 to 30 seconds)
Time Factor	The value ranges from 1 to 10 seconds
Active	Whether the port function is enabled
Priority	Set the port instance priority. The default value is 128.
Path Cost	Configure port path cost (default: 200000)
Link Type	The port link type can be auto, point-to-point, or shared
Portfast Mode	The port status can be autoedge, disable, or edqeport

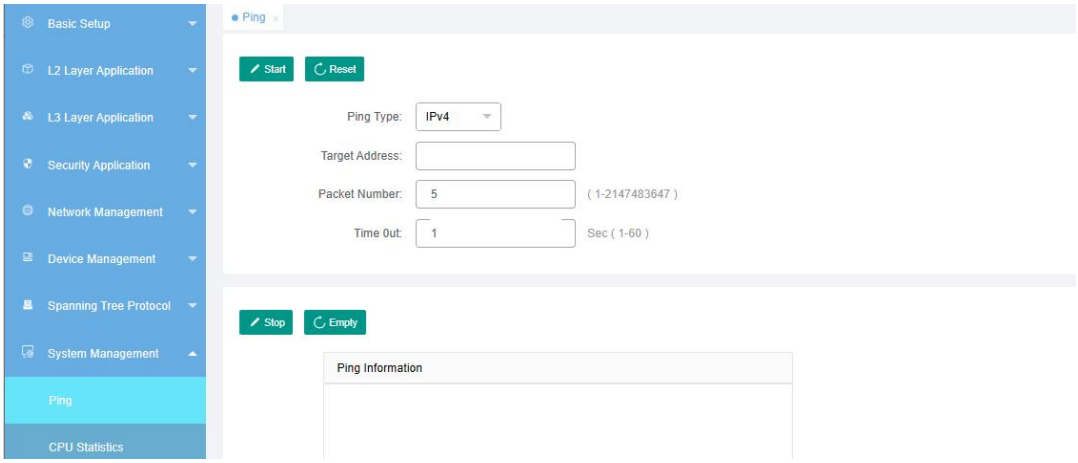
2.9 System Management

Choose System Management, and the following page appears. There are "Ping" and “CPU Statistics" configuration web pages.



2.9.1 Ping

Selecting “**System Management>Ping**", in the navigation bar, you can set the Ping type, destination address, number of packets, and timeout period.



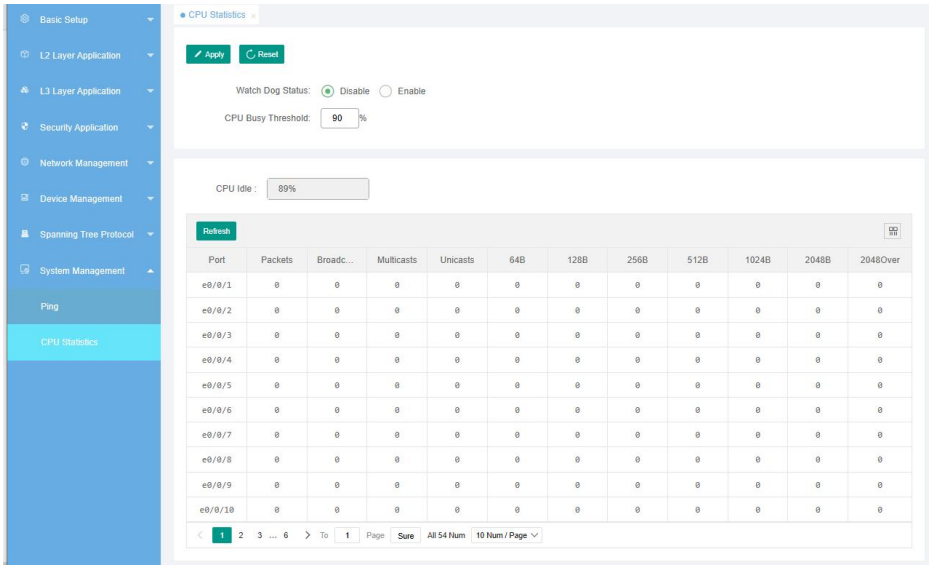
【Parameter Description】

Parameter	Description
Ping Type	The value is IPv4 or IPv6.
Target Address	The Ping destination address is specified

Packet Number	The value ranges from 1 to 2147483647.
Time 0ut	The value ranges from 1 to 60 seconds.

2.9.2 CPU Statistics

Selecting “**System Management**>**CPU Statistics**", in the navigation bar, you can check the CPU idle rate to learn the data packets, broadcast, multicast, unicast, and byte information of each port.



【Parameter Description】

Parameter	Description
Watch Dog Status	Select Enable or disable
CPU Busy Threshold	Set CPU Busy Threshold

Step 7. End