

L3 Managed Switch

Web-based Configuration Guide

About This Document

This product includes three documents as the table below.

Documents	Description	How to get it
Quick Guide	Including product introductions and installation steps.	In the packing box or contact your dealer.
Web-based Configuration Guide	Including Web network management system configuration instructions.	Please contact your dealer.
CLI-based Configuration Guide	Including CLI-based configuration instructions	Please contact your dealer.

This document is [Web-based Configuration Guide](#), including Web network management system (short for Web system) configuration instructions. It is intended for engineers or anyone who needs to configure the device by Web system.

The configuration instructions here take industrial 8-Port Gigabit PoE + 4-Port 10G SFP+ L3 Managed Ethernet Switch as example. If there is inconsistency between the instruction (eg. port number, PoE function, etc.) and the actual product, please refer to the actual product.

Announcement




The information in this document is subject to change without notice.

The document is only used as operation guide, except for other promises. No warranties of any kind, either express or implied are made in relation to the description, information or suggestion or any other contents of the manual.

The images shown here are indicative only. If there is inconsistency between the image and the actual product, the actual product shall govern.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 DANGER	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazard with a medium or low level of risk, which if not avoided, could result in minor or moderate injury.
 CAUTION	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
NOTE	Provides additional information to emphasize or supplement important points in the main text.

Change History

Updates between document issues are cumulative. Therefore, the latest document issue contains all updates made in previous issues.

Version	State	Release Date	Descriptions
V1.0	Released	2018-12-04	Initial commercial release.
V2.0	Released	2020-04-27	Make the section of “3 Function Configuration Guide” a document to introduce the Web system configuration steps completely.
V3.0	Released	2020-08-05	Add new chapters of “12.4 ERPS Ring”, “12.5 ERPS Instance” and “13 Alarm Management” to introduce the new features of Web System.
V3.1	Released	2020-12-07	Correct the version of browser in “2.2 Software Requirements”.

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1 Configuration Instruction

To facilitate configuration and the maintenance of the device, the Web system is provided to users. You can log in to the Web system to configure and maintain devices through the graphic user interface (GUI).

The Web-based configuration guide describes the configuration and maintenance of the device through the Web system. It is intended for engineers or anyone who needs to configure the device through the Web system.

[Web System Overview](#)

The Web system provides the functions as below.

- System State
- Port Configuration
- Ethernet Switch
- IP Service
- IP Routing
- IP Multicast
- Security Configuration
- Reliability
- Alarm Management
- System Management

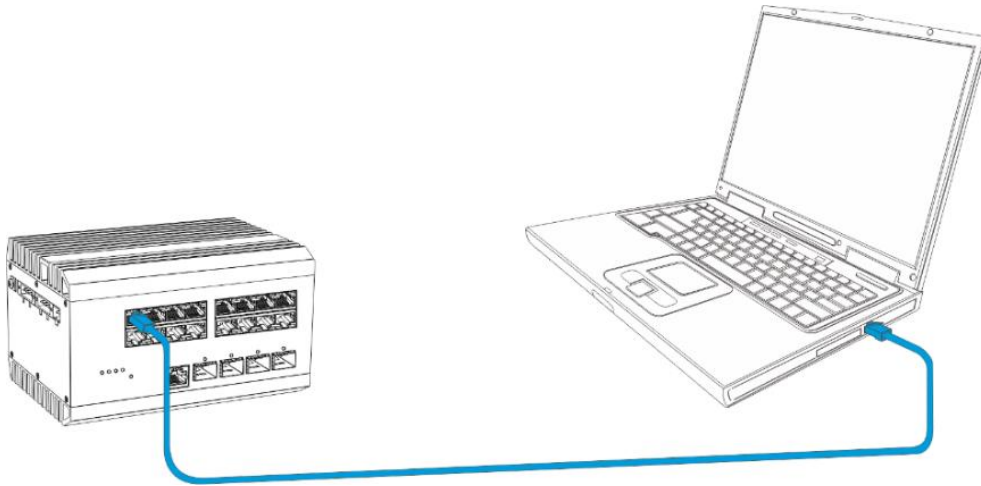
Please follow the instructions below to configure the Web system.

2 Environments Requirements

2.1 Hardware Requirements

The management PC recommended as below.

- Make sure the management PC has already been with Ethernet port.
- Use a network cable to connect the Ethernet port of PC and the Ethernet port of the switch.



2.2 Software Requirements

The browser version recommend as below.

- IE10 or higher
- Firefox browser
- Chrome

3 Set Up Network Connection

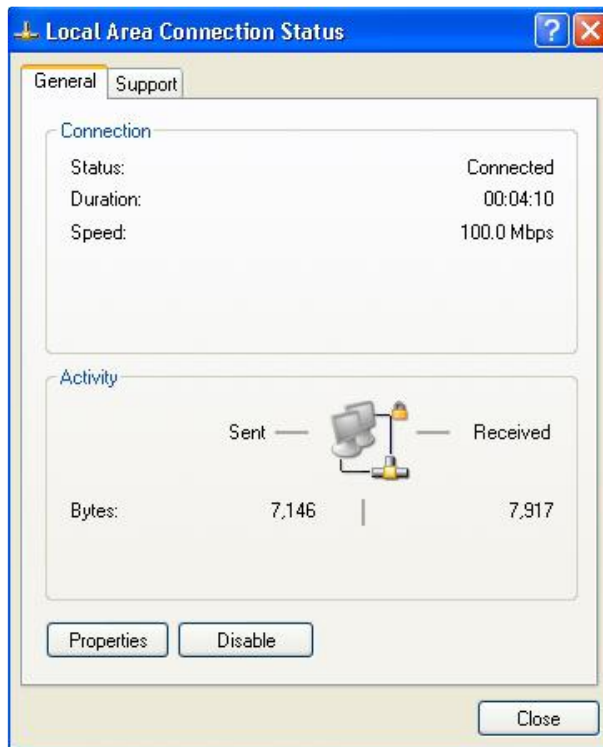
Before login the Web system to start configuration, users need to set up the network connection as follow steps.

- Set the IP of the PC and the switch in the same network segment. The default IP address of the switch is 192.168.1.200, network gate is 255.255.255.0.
- The port to connect management PC for Web setting must be management VLAN. By default, management VLAN is VLAN 1, and each port of the switch is VLAN1.
- If you need to connect the remote network, please make sure the management PC and the router can do the jobs above.
- This product can't assign the IP address for the management PC, please configure the management static IP manually before web configuration.

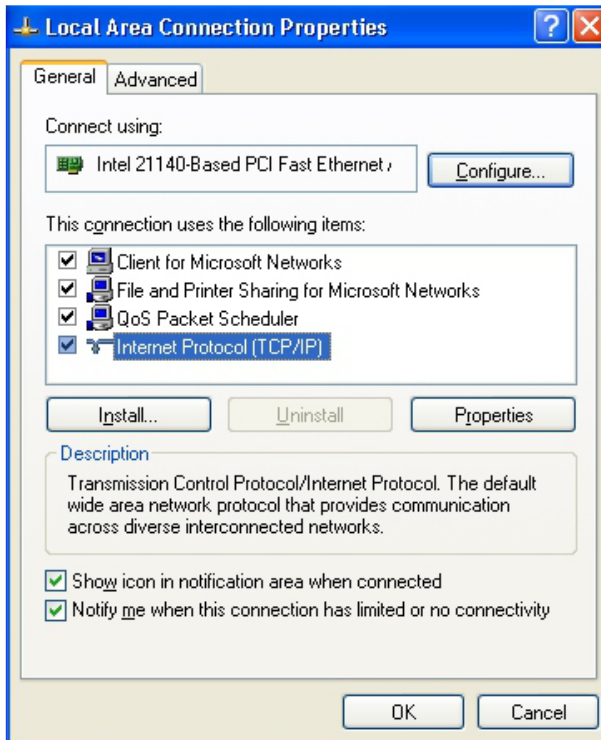
3.1 Set Static IP for the Management Computer

Operation steps (take Windows 7 as sample):

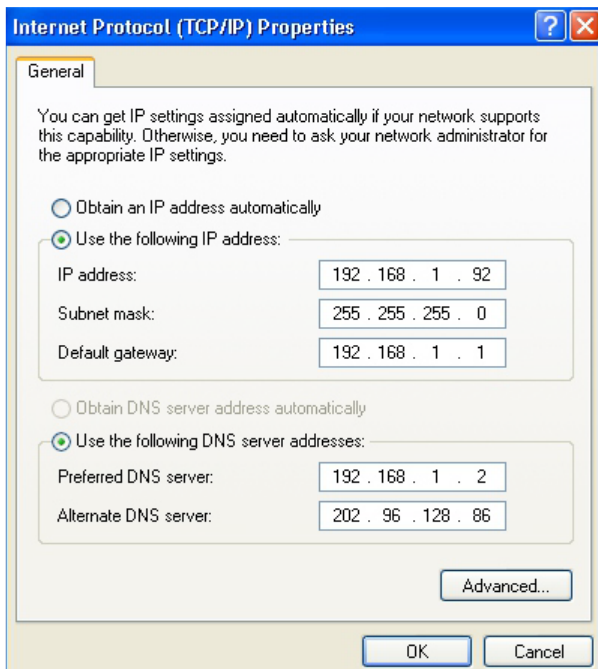
- Click <start> to enter the <start> menu, select “control panel”. Double click “network connection” icon, then double click the “local connection” icon, “local Area Connection Status” window pops out.



- Click <property> button, enter "Local Area Connection Properties" window.



- Select "Internet protocol (TCP/IP), click <property> button, enter "Internet Protocol (TCP/IP) Properties" window. Select the option "Use the following IP address", input IP address (use arbitrary value between 192.168.1.1~ 192.168.1.254, besides 192.168.1.200) and the subnet mask(255.255.255.0).
- Click "OK" to finish the configuration.



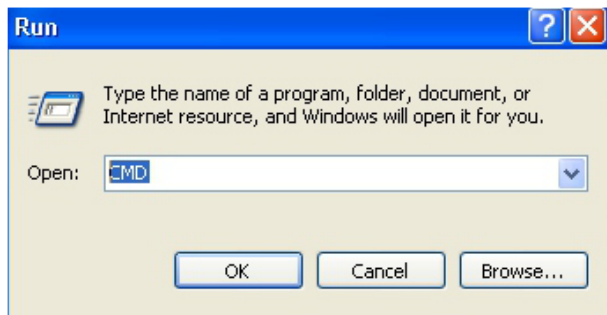
Note:

- DNS server address can be empty or be filled in with the real server address.

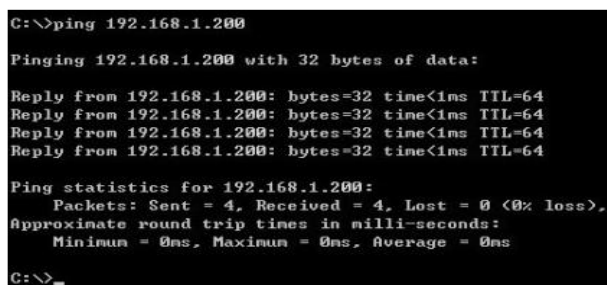
3.2 Confirm the Network Connection by Ping Command

Operation Steps as below:

- Click <Start> button to enter <Start> menu, select <Run>, popping out the dialog.



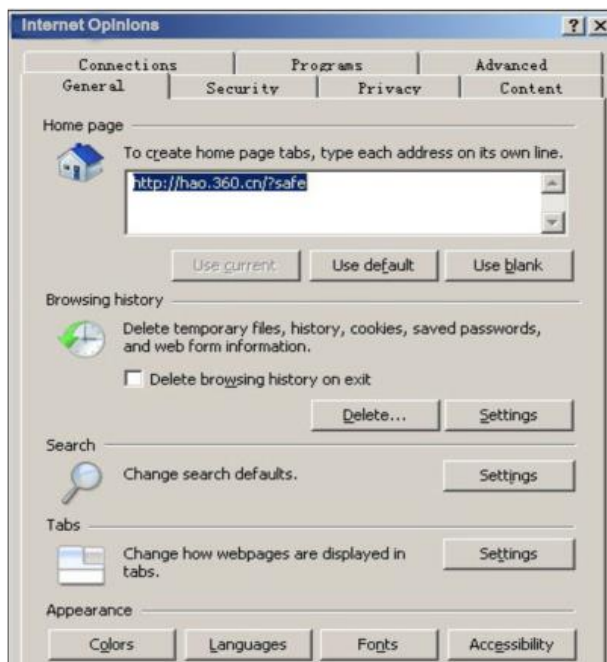
- Input "ping 192.168.1.200", and press enter. If there is equipment response displaying in the pop out dialog, that means network connection succeed, otherwise please check if the network connection is correct.



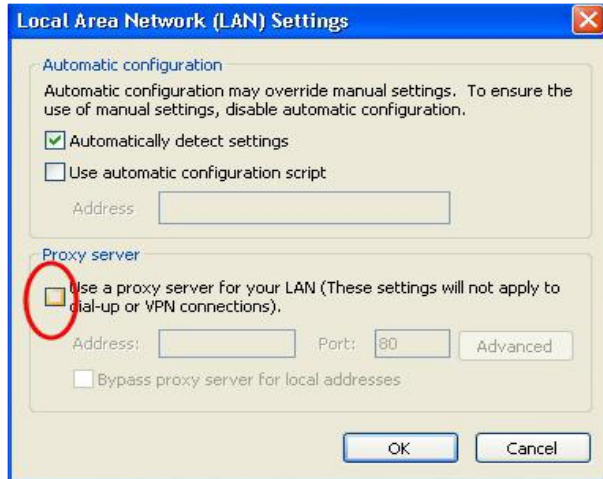
3.3 Cancel the Proxy Server

If this management PC uses proxy server to visit the internet, then the proxy service must be prohibited as follows:

- In browser, select <Tool/Internet Option> to enter <Internet Options> window.



- Select “Connections” tab in <Internet Options> window, and click <LAN Setting> button.



- Check if the “Use a proxy server for your LAN” option is selected. If selected, please deselect the option. Then click <OK> button.

Note:

- Please follow the steps to check if the switch is installed correctly:
- Whether the physical connection of the equipment is correct?
- Use network cable to connect the product’s Ethernet port (except the console port) with managed computer network card, and ensure the link LED of the port is on.
- Whether the computer TCP/IP agreement setting is correct?
- Management PC's IP address must be 192.168.1.x (x range is 1~254 and x can't be 200, otherwise it will conflict with the product IP address 192.168.1.200), subnet mask: 255.255.255.0.
- Whether the computer's port VLAN ID is 1?
- By default, the management VLAN is VLAN 1, same as each port of switch.

Now the setting up tasks are finished.

Users can login the Web system and start configuration as following.

4 Login the Web system

4.1 Login and Start

Open the browser, input the switch default address.

Press Enter, the user login page will show in front of you as follows.

Items	Default value
Switch default address	192.168.1.200
Subnet mask	255.255.255.0
Administrator's account	admin
Administrator's password	admin

Input Administrator's account and password, press Enter, and click <Login in>, the Web system page will be shown as below:

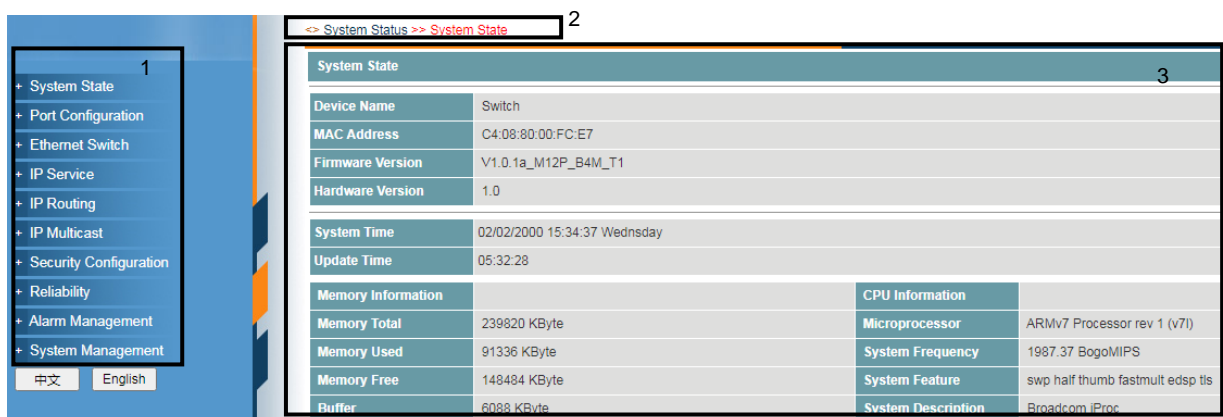
The screenshot displays the Web system interface. On the left is a navigation menu with options: System State, Port Configuration, Ethernet Switch, IP Service, IP Routing, IP Multicast, Security Configuration, Reliability, Alarm Management, and System Management. At the bottom of the menu are buttons for '中文' and 'English'. The main content area shows the 'System Status' page, with a breadcrumb trail '<- System Status >> System State'. The 'System State' section contains the following information:

System State	
Device Name	Switch
MAC Address	C4:08:80:00:FC:E7
Firmware Version	V1.0.1a_M12P_B4M_T1
Hardware Version	1.0
System Time: 02/02/2000 15:34:37 Wednesday	
Update Time: 05:32:28	
Memory Information	
Memory Total	239820 KByte
Memory Used	91336 KByte
Memory Free	148484 KByte
Buffer	6088 KByte
CPU Information	
Microprocessor	ARMv7 Processor rev 1 (v7I)
System Frequency	1987.37 BogoMIPS
System Feature	swp half thumb fastmult edsp tls
System Description	Broadcom IProc

4.2 Web System User Interface

Interface Layout

The layout and style of the Web system client GUI are described as follows.



Items	Descriptions
1	Navigation tree
2	Your Position
3	Configuration area

Operation Field and Buttons

The elements that users usually use on the Web system GUI are described as follows.

Items	Descriptions
<input type="text"/>	Input box. Please input the value as required.
<input type="text" value="Automatical"/>	Drop down list box. Please choose the value as required.
<input checked="" type="radio"/> Enable <input type="radio"/> Disable	Enable/ disable option. Please choose as required.
<input type="button" value="Modify"/>	Modify button. Click to change the configured parameter.
<input type="button" value="Add"/>	Add button. Click to add the parameter into the system.
<input type="button" value="Delete"/>	Delete button. Click to delete the parameter from the system.
<input type="button" value="Edit"/>	Edit button. The same as <Modify>, click to change the configured parameter.
<input type="button" value="Save"/>	Save button. Click to the save the configurations.
<input type="button" value="Refresh"/>	Refresh button. Click to reload the page.

4.3 Saving Configuration

After performing configuration, users need to save the configuration data. If you do not save the configuration data, the configuration that you made will be lost after reboot.

To save configurations, please click the <Save> button at the bottom of the page to save the configuration data to memory.

4.4 Viewing Configuration

Finished configuration, click <Refresh> button on the page, users can view the saved configuration.

4.5 User Timeout

If users do not perform any operations on the Web system GUI for a long time, your account will be logged out and the login page is displayed.


The auto-log out interval time is 5 minutes by default.

If you need to continue operations, please log in again.

4.6 Logging-out Web System

To protect security of user accounts and switches, please log out of the Web system immediately after finishing the configurations.

Users can log out of the Web system in either of the following ways:

- Click  on the top right corner of the page to close the browser.
- Click **Exit** on the top right corner of the page of Web system.

5 System State

5.1 System Status

Users can query the main information of the device, including device name, MAC address, firmware version, hardware version, system time, update time, memory information and CPU information.

System State			
Device Name	switch		
MAC Address	C4:08:80:01:5C:23		
Firmware Version	V1.1.3d_M28P_B4M_T12		
Hardware Version	1.0		
System Time	04/15/2020 17:55:00 Wednesday		
Update Time	07:54:23		
Memory Information		CPU Information	
Memory Total	239820 KByte	Microprocessor	ARMv7 Processor rev 1 (v7I)
Memory Used	95404 KByte	System Frequency	1987.37 BogoMIPS
Memory Free	144416 KByte	System Feature	swp half thumb fastmult edsp tls
Buffer	5572 KByte	System Description	Broadcom iProc

5.2 Traffic Statistics

Users can view traffic statistics on interfaces and update the statistics.

Port No	Sent Frame Statistics				Received Frame Statistics			
	Unicast	Multicast	Broadcast	Error	Unicast	Multicast	Broadcast	Error
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0

Procedure

Click <Refresh> button to reload the page.

5.3 MAC Address Table

Users can view the MAC table of the interfaces.

MAC Address Table					
Sort Type	Automatic	Refresh			
No	MAC Address	VLAN ID	Port	Address Type	
1	00:08:82:C4:C3:22	1	11	dynamic	
2	50:46:5D:A9:2D:29	1	11	dynamic	
3	18:31:BF:0B:C4:12	1	11	dynamic	
4	98:45:62:1A:F7:11	1	11	dynamic	
5	50:46:5D:A9:2D:32	1	11	dynamic	
6	00:22:A2:00:03:01	1	11	dynamic	
7	54:AB:3A:2F:09:6E	1	11	dynamic	
8	98:45:62:1A:F7:1F	1	11	dynamic	
9	88:D7:F6:E0:A2:DB	1	11	dynamic	
10	40:8D:5C:3F:4D:BA	1	11	dynamic	
11	8C:89:A5:FD:DF:30	1	11	dynamic	
12	FC:AA:14:8C:F9:BA	1	11	dynamic	
13	00:00:00:00:04:29	1	11	dynamic	
14	00:22:A2:00:0E:01	1	11	dynamic	
15	00:ED:66:70:67:0B	1	11	dynamic	
16	00:08:82:C0:07:A7	1	11	dynamic	

Procedure

- 1) Click the drop down list to select the sort type, including
 - Automatic
 - By MAC Address
 - By VLAN
 - By port
- 2) Click <Refresh> button to reload the page.

6 Port Configuration

6.1 Port Setting

Users can view the basic attributes of Ethernet interfaces, and configure the Ethernet interfaces as required.

Port Setting							
Port State		Enable ▼					
Port Speed		Auto Negotiation ▼		Duplex Mode		Auto ▼	
Traffic Control		Disable ▼					
Port Range		<input type="text"/> <input type="button" value="Modify"/>					
<input type="checkbox"/>	Port	Port Mark	Current Status(speed/duplex)	Port Enable			
				Port Rate(speed/duplex)	Traffic Control	Port State	
<input type="checkbox"/>	1	port1	disconnected	Auto/Auto	Disable	Enable	
<input type="checkbox"/>	2	port2	disconnected	Auto/Auto	Disable	Enable	
<input type="checkbox"/>	3	port3	disconnected	Auto/Auto	Disable	Enable	
<input type="checkbox"/>	4	port4	disconnected	Auto/Auto	Disable	Enable	
<input type="checkbox"/>	5	port5	disconnected	Auto/Auto	Disable	Enable	
<input type="checkbox"/>	6	port6	disconnected	Auto/Auto	Disable	Enable	

Procedure

Choose <Port Configuration> <Port Setting> in the navigation tree to open the page.

1) Configure the interfaces.

Port Setting	
Port State	Enable ▼
Port Speed	Auto Negotiation ▼ Duplex Mode Auto ▼
Traffic Control	Disable ▼
Port Range	<input type="text"/> <input type="button" value="Modify"/>

- Set the parameters as required.

Items	Descriptions	Default value
Port State	Choose <Enable> to enable the function.	Enable
Port Speed	Indicates the interface speed, including <ul style="list-style-type: none"> Auto Negotiation 10 Mbits/s 100 Mbits/s 1000 Mbits/s. By default the SFP port is 10Gbits/s, it supports to be set to 1000Mbits/s.	Auto Negotiation
Duplex Mode	Indicates the duplex mode of the interface, including <ul style="list-style-type: none"> Auto Full duplex Half duplex To enable an interface to send and receive packets at the same time, enable the full duplex mode on the interface. To disable an interface from sending and receiving packets at the same time, enable the half duplex mode on	Auto

	the interface.	
Traffic Control	Enable or disable the traffic control function.	Disable
Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as "2" or "1-5" or "3, 1-5".	Null

- Click <Modify> to change the configuration.
 - Click <Save>.
- 2) View the basic attributes.
- Click the <Refresh> button to reload the page.
 - View the information.

6.2 Rate Limit

This function is used to limit the rate of outgoing traffic or incoming traffic on a physical interface.

Users can view detailed information about interface-based rate limiting. Before sending traffic from an interface, users can configure rate limit on the interface in the outbound direction to control all outgoing packets, and configure rate limit on the interface inbound direction to control all incoming packets.

Speed Limit		<input checked="" type="radio"/> Enable <input type="radio"/> Disable			
Port Range	<input type="text"/>				
Input Speed	<input type="text"/>				Kbps
Output Speed	<input type="text"/>				Kbps <input type="button" value="Modify"/>
<input type="checkbox"/>	Port	Port Mark	Input Speed	Output Speed	
<input type="checkbox"/>	1	port1	nolimit	nolimit	
<input type="checkbox"/>	2	port2	nolimit	nolimit	
<input type="checkbox"/>	3	port3	nolimit	nolimit	
<input type="checkbox"/>	4	port4	nolimit	nolimit	
<input type="checkbox"/>	5	port5	nolimit	nolimit	
<input type="checkbox"/>	6	port6	nolimit	nolimit	

Procedure

Choose <Port Configuration> <Rate Limit> in the navigation tree to open the page.

- 1) Configure the interfaces.

Speed Limit	<input type="radio"/> Enable <input type="radio"/> Disable	
Port Range	<input type="text"/>	
Input Speed	<input type="text"/>	Kbps
Output Speed	<input type="text"/>	Kbps <input type="button" value="Modify"/>

- Set the parameters as required.

Items	Descriptions	Default value
Speed Limit	Choose <Enable> to enable the function.	Disable
Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as "2" or "1-5" or "3, 1-5".	Null
Input Speed	Input the speed limit in the inbound direction. The value ranges 64 Kbps ~1000000 Kbps.	Null
Output Speed	Input the speed limit in the outbound direction. The value ranges 64 Kbps ~1000000 Kbps.	Null

- Click <Modify> to change the configuration.
 - Click <Save>.
- 2) View the input and output speed.
- Click the <Refresh> button to reload the page.
 - View the information.

6.3 Storm Control

Storm control prevents broadcast storms and ensures device forwarding performance.

To limit the rate of incoming broadcast packets, multicast packets, and unknown unicast packets and prevent heavy traffic on a device, users can configure storm control on an interface.

Storm Control				
Port Range	<input type="text"/>			
Broadcast Storm	<input type="text"/> <0-1000>*64 Kbps			
Multicast Storm	<input type="text"/> <0-1000>*64 Kbps			
Unknown Unicast Storm	<input type="text"/> <0-1000>*64 Kbps <input type="button" value="Modify"/>			
<input type="checkbox"/>	port	Broadcast Storm	Multicast Storm	Unknown Unicast Storm
<input type="checkbox"/>	1	No Limited	No Limited	No Limited
<input type="checkbox"/>	2	No Limited	No Limited	No Limited
<input type="checkbox"/>	3	No Limited	No Limited	No Limited
<input type="checkbox"/>	4	No Limited	No Limited	No Limited
<input type="checkbox"/>	5	No Limited	No Limited	No Limited
<input type="checkbox"/>	6	No Limited	No Limited	No Limited

Procedure

Choose <Port Configuration> <Storm Control> in the navigation tree to open the page.

- 1) Configure the interfaces.

Storm Control	
Port Range	<input type="text"/>
Broadcast Storm	<input type="text"/> <0-1000>*64 Kbps
Multicast Storm	<input type="text"/> <0-1000>*64 Kbps
Unknown Unicast Storm	<input type="text"/> <0-1000>*64 Kbps <input type="button" value="Modify"/>

- Set the parameters as required.

Items	Descriptions	Default value
Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as "2" or "1-5" or "3, 1-5".	Null
Broadcast Storm	Configure the broadcast storm control. The value ranges from 1~1000.	Null
Multicast Storm	Configure the multicast storm control. The value ranges from 1~1000.	Null
Unicast Storm	Configure the unicast storm control. The value ranges from 1~1000.	Null

- Click <Modify> to change the configuration.
 - Click <Save>.
- 2) View the storm control state of the interfaces.

- Click the <Refresh> button to reload the page.
- View the information.

6.4 Port Isolation

Interfaces in a port isolation group are isolated from each other, but interfaces in different port isolation groups can communicate.

The switch supports one isolation group. Users can add or delete the ports from the group as required, and view the isolation mode of the ports.

Port Isolation							
Port Isolation		Normal					
Port Range		<input type="text"/> <input type="button" value="Modify"/>					
	Port	Name	Type		Port	Name	Type
<input type="checkbox"/>	1	port1	Normal	<input type="checkbox"/>	2	port2	Normal
<input type="checkbox"/>	3	port3	Normal	<input type="checkbox"/>	4	port4	Normal
<input type="checkbox"/>	5	port5	Normal	<input type="checkbox"/>	6	port6	Normal
<input type="checkbox"/>	7	port7	Normal	<input type="checkbox"/>	8	port8	Normal
<input type="checkbox"/>	9	port9	Normal	<input type="checkbox"/>	10	port10	Normal
<input type="checkbox"/>	11	port11	Normal	<input type="checkbox"/>	12	port12	Normal

Procedure

Choose <Port Configuration> <Port Isolation> in the navigation tree to open the page.

- 1) Configure the isolation modes of the ports.

Port Isolation	
Port Isolation	Isolation ▼
Port Range	<input type="text"/> <input type="button" value="Modify"/>

- Select the ports that need to be set in <Port Range>.

Items	Descriptions	Default value
Port isolation	Choose <Isolation> to enable the function. Choose <Normal> to disable the function.	Isolation
Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as "2" or "1-5" or "3, 1-5".	Null

The ports can communicate at both Layer 2 and Layer 3 by default, after the isolation mode is selected, all is the isolation at both Layer 2 and Layer 3.

- Click <Modify> to change the configuration.
 - Click <Save>.
- 2) View the isolation modes of the ports.
 - Click the <Refresh> button to reload the page.
 - View the information.

6.5 PoE Setting

Currently, the network devices are deployed flexibly; therefore, the cabling of power supply is complicated. To simplify cabling, users can configure the PoE function on the switch.

Users can set global PoE parameters and the PoE parameters on an interface, and view the PoE status of the device and ports.

PoE

Power setting (Be careful for modification)

Power provided 390 W Overload limit 5 % Reserved rate 0 %

Power status

Consumed 0 W Remaining 390 W Reserved 0 W Provided 390 W

Port status and control

Port range Priority Low Power limit W (0-30W)

Port	Port mark	Consumed (W)	Setting		
			Power limit (W)	Priority	Port status
<input type="checkbox"/>	1	0	30	Low	open
<input type="checkbox"/>	2	0	30	Low	open
<input type="checkbox"/>	3	0	30	Low	open
<input type="checkbox"/>	4	0	30	Low	open
<input type="checkbox"/>	5	0	30	Low	open
<input type="checkbox"/>	6	0	30	Low	open

Procedure

Choose <Port Configuration> <PoE Setting> in the navigation tree to open the page.

1) Set global PoE parameters.

Power setting (Be careful for modification)

Power provided 390 W Overload limit 5 % Reserved rate 0 %

- Set the parameters as required.

Items	Descriptions	Default value
Power Provided	Input the maximum provided power of the device. The value is less than 400W.	390W
Overload Limit	The limit percentage that allows over the preset <Power Provided> value. The value is less than 10%. This parameter is optional.	5%
Reserved Rate	Input the reserved rate from the preset <Power Provided> value. The value ranges from 0 to 100%. The device supports reserved power function for reliability. The actual value of input power the device divides to the interfaces (named as V) is equal to the value of <Power Provided> minus the value of <Power Provided> multiplies <Reserved Rate>. If the required input power of the devices over the value of real input power, the reserved power will be divided to each port as further demand. This parameter is optional.	0%

- Click <Edit> to change the configuration.
- Click <Save>.

2) Set the PoE parameters on an interface

Power status

Consumed 0 W Remaining 390 W Reserved 0 W Provided 390 W

Port status and control

Port range Priority Low Power limit W (0-30W)

- The current power status will be displayed in the items of <Power status> as below.

Items	Descriptions
Power Status	

Consumed	The total actual output power of all the interfaces.
Remaining	The actual remained input power of the device, not including the reserved power.
Reserved	The actual reserved power of the device. The value is equal to the value of <Power Provided> minus <Remaining>.
Provided	The preset input power. The value is equal to <Power Provided>.

- Set the parameters as required.

Items	Descriptions	Default value
Port Status and Control		
Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as "2" or "1-5" or "3, 1-5".	Null
Priority	Indicates the power priority of an interface, including <ul style="list-style-type: none"> · Low · Middle · High In the same priority, the interfaces with larger port number will be shut off first when the power is not enough.	Low
Power Limit	Input the maximum output power of the interfaces. The value ranges from 0 to 30W.	Null
<input type="button" value="ON"/>	Click to enable the PoE function of the interfaces.	Enable
<input type="button" value="OFF"/>	Click to disable the PoE function of the interfaces.	

- Click <Edit> to change the configuration.
- Click <Save>.

7 Ethernet Switch

7.1 Link Aggregation

Link aggregation is a technology that bundles multiple Ethernet links into a logical link to increase bandwidth, improve reliability, and load balance traffic.

The Switch supports the manual load balancing mode and Link Aggregation Control Protocol (LACP) mode. The Switch also supports inter-device link aggregation.

Users can create link aggregation group, configure load pattern mode, working mode and members of link aggregation group, and delete the group.

Link Aggregation LLDP Setting					
Aggregated Load Pattern	Source MAC and Dst MAC ▼				
Trunk Name	Trunk- <input type="text"/>				
Aggregation Pattern	Manual Aggregation ▼				
Port Range	<input type="text"/>	<input type="button" value="Add"/>	<input type="button" value="Delete"/>		
<input type="checkbox"/>	No	Trunk Name	Aggregation Pattern	Port Range	Aggregation Group State
<input type="button" value="Save"/> <input type="button" value="Refresh"/>					

Procedure

Choose <Ethernet Switch> <Link Aggregation> in the navigation tree to open the page.

Link Aggregation LLDP Setting	
Aggregated Load Pattern	Source MAC and Dst MAC ▼
Trunk Name	Trunk- <input type="text"/>
Aggregation Pattern	Manual Aggregation ▼
Port Range	<input type="text"/> <input type="button" value="Add"/> <input type="button" value="Delete"/>

1) Create link aggregation group and configuration.

- Set the parameters as required.

Items	Descriptions	Default value
Aggregated Load Pattern	Choose the aggregation load pattern, including <ul style="list-style-type: none"> · Source MAC · Destination MAC · Source MAC and Dst MAC · Destination IP Address · Source IP and Dst IP Address 	Source MAC and Dst MAC
Trunk Name	Indicates the trunk number. The value ranges from 1 to 8.	Null
Aggregation Pattern	Choose the aggregation pattern, including <ul style="list-style-type: none"> · Manual Aggregation: not under LACP protocol, by setting register to make aggregation. · Static LACP Aggregation: under LACP protocol, manually configured by the user, and the system is not allowed to automatically add or delete ports in the aggregation group. 	Manual Aggregation

Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as “2” or “1-5” or “3, 1-5”.	Null
------------	---	------

- Click <Add>.
- Click <Save>.

2) Delete trunk.

		<input type="text"/>	<input type="button" value="Add"/>	<input type="button" value="Delete"/>
<input type="checkbox"/>	No	Trunk Name	Aggregation Pattern	
<input checked="" type="checkbox"/>	1	Trunk-8	Manual Aggregation	

- Choose the trunk that need to be deleted.
- Click <Delete>.
- Click <Save>.

7.2 802.1Q VLAN

User can configure the link-type of the interfaces and view the configuration.

802.1Q VLAN Setting						
Port Range	<input type="text"/>					
Link Type	Trunk					
PVID	9999					
vlan-allowed	<input type="text"/>					
vlan-untagged	<input type="text"/>	<input type="button" value="Add"/>	(Warning :VLAN property of all ports aggregated are same!)			
<input type="checkbox"/>	Port	Port Mark	Link Type	PVID	vlan-allowed	vlan-untagged
<input type="checkbox"/>	1	port1	Access	1		
<input type="checkbox"/>	2	port2	Access	1		
<input type="checkbox"/>	3	port3	Access	1		
<input type="checkbox"/>	4	port4	Access	1		
<input type="checkbox"/>	5	port5	Access	1		
<input type="checkbox"/>	6	port6	Access	1		

Procedure

Choose <Ethernet Switch> <802.1Q VLAN> in the navigation tree to open the page.

802.1Q VLAN Setting	
Port Range	<input type="text"/>
Link Type	Trunk
PVID	9999
vlan-allowed	<input type="text"/>
vlan-untagged	<input type="text"/> <input type="button" value="Add"/>

1) Configure the link-type of interfaces.

- Set the parameters as required.

Items	Descriptions	Default value
Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28.	Null

	Format as "2" or "1-5" or "3, 1-5".	
Link Type	Link type of the interfaces, including <ul style="list-style-type: none"> · Access · Trunk 	Access
PVID	Input the VLAN ID of the interface. The value ranges from 1 to 4094.	Null
VLAN-allowed	Input ID of VLAN that allowed to access in Trunk. The value ranges from 1 to 4094.	Null
VLAN-untagged	Input ID of untagged VLAN in Trunk. The value ranges from 1 to 4094.	Null

- Click <Add>.
 - Click <Save>.
- 2) View the link-type of the interfaces.
- Click the <Refresh> button to reload the page.
 - View the information.

7.3 802.1P QoS

Users can configure the QoS of the device and view the configuration.

The screenshot shows the configuration page for QoS. It includes sections for 'QoS Setting' (with 'Enable' selected), 'QoS Priority' (with 'Absolute Priority' selected), '802.1p QoS Setting' (with 'Enable' selected), and a table for '802.1p Mark Range'. The table lists 802.1p Mark values from 0 to 7, each with a 'Priority' of 'first queue'. There are 'Save' and 'Refresh' buttons at the bottom.

802.1pMark	Priority	802.1pMark	Priority	802.1pMark	Priority	802.1pMark	Priority
0	first queue	1	first queue	2	first queue	3	first queue
4	first queue	5	first queue	6	first queue	7	first queue

Procedure

Choose <Ethernet Switch> <802.1P QoS> in the navigation tree to open the page.

This is a zoomed-in view of the configuration interface. It shows the 'QoS Setting' section with 'Disable' selected, 'QoS Priority' with 'Absolute Priority' selected, '802.1p QoS Setting' with 'Disable' selected, and the '802.1p Mark Range' section with an empty input field and a dropdown menu set to 'first queue'.

- 1) Configure the QoS of the device.
- Set the parameters as required.

Items	Descriptions	Default value
QoS Setting	Choose <Enable> to enable the QoS function.	Disable
QoS Priority	Choose the mode of QoS priority, including	Relative Priority

	<ul style="list-style-type: none"> · Absolute Priority · Relative Priority 	
802.1p QoS Setting	Choose <Enable> to enable the 802.1p QoS function.	Disable
802.1p Mark Range	Input the priority of CoS for VLAN. The value ranges from 0~7. Format as "2" or "1-5" or "3, 1-5".	Null
Priority	Configuring mapping of 802.1p COS priority. The device supports setting 8 priorities, and the option is from <first queue> to <Fastest queue>	First queue

- Click <Add>.
 - Click <Save>.
- 2) View the configuration.
- Click <Refresh> to reload the page.
 - View the information.

8 IP Service

8.1 Interface IP

Users can add, modify delete the IP address of the VLANs, including IPv4 and IPv6, and view the IP address of VLAN for the device.

The screenshot shows the 'Network Interface IP Address Setting' page. At the top, there are fields for 'Network Interface(VID)' set to 'vlan1', 'Access' set to 'Static IP', 'IPv4 Address' (empty), and 'IPv6 Address' (empty). Below these are 'Add', 'Modify', and 'Delete' buttons. A table below shows the configuration for 'vlan1' with 'Static IP' type and '192.168.1.25/24' address. At the bottom are 'Save' and 'Refresh' buttons.

	Index	Interface Name	IP Type	IPv4 Address/Mark	IPv6 Address/Prefix
<input type="checkbox"/>	1	vlan1	Static IP	192.168.1.25/24	

Procedure

Choose <IP Service> <Interface IP> in the navigation tree to open the page.

1) Add the IP address

This screenshot is similar to the previous one but highlights the 'IPv4 Address' field, which is currently empty. The 'Access' mode is 'Static IP'.

- Set the parameters as required.

Items	Descriptions	Default value
Network Interface (VID)	VLAN ID of the interface. This parameter is not able to be set.	VLAN 1
Access	The access mode of the IP. This parameter is not able to be set.	Static IP
IPv4 Address	The IPv4 Address of the IP address of the Ethernet interface and the subnet mask of the IP address.	Null
IPv6 Address	The IPv6 Address of the IP address of the Ethernet interface and the subnet mask of the IP address.	Null

- Click <Add> to add the IP address.
- Click <Save>.

2) Modify the IP address

- Select the IP Address that need to be modified.

	Index	Interface Name	IP Type	IPv4 Address/Mark
<input checked="" type="checkbox"/>	1	vlan1	Static IP	192.168.1.25/24

- Set the parameters as required.
- Click <Modify>.
- Click <Save>.

3) Delete the IP address

- Select the IP Address that need to be deleted.

<input type="checkbox"/>	Index	Interface Name	IP Type	IPv4 Address/Mark
<input checked="" type="checkbox"/>	1	vlan1	Static IP	192.168.1.25/24

- Click <Delete>.
- Click <Save>.

8.2 DHCP Server

DHCP is a technology used to dynamically manage and configure clients in a concentrated manner. The client applies to the server for configurations such as the IP address, subnet mask, and default gateway, and the server replies with corresponding configurations according to policies.

Users need to configure a DHCP server based on the global address pool to enable computers to obtain IP addresses from the global address pool dynamically.

Users can configure an address pool on a VLAN when a device supports switched Ethernet interfaces. IP addresses cannot be configured on switched Ethernet interfaces directly; therefore, you need to create a VLAN and configure a DHCP address pool on the VLAN.

DHCP Server Global Setting						
Client Lease Time	<input type="text" value="86400"/>	s (Range : 3600-86400)				
Preferred DNS Address	<input type="text" value="192.168.1.1"/>					
Backup DNS Address	<input type="text" value="3.3.3.3"/>					
WINS Server	<input type="text" value="2.2.2.2"/>					
Network Interface(VID)	<input type="text" value="1"/>					
Default Gateway	<input type="text"/>					
Start IP Address	<input type="text"/>					
Max Client Number	<input type="text"/>	<input type="button" value="Modify"/>	<input type="button" value="Clear"/>			
<input type="checkbox"/>	Interface Name	gateway	Address Range	Lease Time	DNS	WINS
<input type="checkbox"/>	1	192.168.1.25/24				
<input type="button" value="Save"/> <input type="button" value="Refresh"/>						

Procedure

Choose <IP Service> <DHCP Server> in the navigation tree to open the page.

DHCP Server Global Setting	
Client Lease Time	<input type="text" value="86400"/> s (Range : 3600-86400)
Preferred DNS Address	<input type="text" value="192.168.1.1"/>
Backup DNS Address	<input type="text" value="3.3.3.3"/>
WINS Server	<input type="text" value="2.2.2.2"/>
Network Interface(VID)	<input type="text" value="1"/>
Default Gateway	<input type="text"/>
Start IP Address	<input type="text"/>
Max Client Number	<input type="text"/> <input type="button" value="Modify"/> <input type="button" value="Clear"/>

1) Set the global the DHCP server parameter.

- Set the parameters as required.

Items	Descriptions	Default value
Client Lease Time	Indicates the lease of dynamic IP addresses. The default lease is one day (86400s). The value ranges from 3600 to 86400 s.	86400
Preferred	Indicates the main IP address of a DNS server.	192.168.1.1

DNS Address		
Backup DNS Address	Indicates the backup IP address of a DNS server.	Null
WINS Server	Indicates the IP address of a WINS server.	Null

- Click <Modify>.
- Click <Save>.

2) Set an address pool on a VLAN.

Network Interface(VID)	1		
Default Gateway	192.168.1.25/24		
Start IP Address			
Max Client Number		Modify	Clear

<input type="checkbox"/>	Interface Name	gateway	Address Range
<input checked="" type="checkbox"/>	1	192.168.1.25/24	
<input type="checkbox"/>	1000	192.168.10.5/24	

Save Refresh

- Set the parameters as required.

Items	Descriptions	Default value
Network Interface (VID)	Select a record in the table to indicate the name of a VLNAIF interface. The VLANs in the table are created in the <Ethernet Switch> <802.1Q VLAN> and <IP Service> <Interface IP> modules.	1
Default Gateway	Indicates the default IP address and subnet mask of the selected VLAN. The value is displayed automatically after you select the <Network Interface (VID)>.	Null
Start IP Address	Indicate the start IP address of the interface.	Null
Max Client Number	Input the max client number. The value ranges from 2 to 255.	50

- Click <Modify>.
- Click <Save>.

3) Clear the record

User can clear the DHCP configuration of the selected VLAN.

Max Client Number	3	Modify	Clear
-------------------	---	--------	-------

<input type="checkbox"/>	Interface Name	gateway	Address Range
<input checked="" type="checkbox"/>	1	192.168.1.25/24	192.168.1.50-192.168.1.52
<input type="checkbox"/>	1000	192.168.10.5/24	192.168.2.2-192.168.2.3

Save Refresh

- Choose the record that need to be cleared, multiple records can be selected.
- Click <Clear>.
- Click <Save>.

9 IP Routing

9.1 RIP

RIP is a simple Interior Gateway Protocol (IGP) used in small-scale networks, such as campus networks and regional networks with simple structure.

Users can configure RIP, delete the network segment as required and view the configuration.

RIP Configuration				
RIP Setting		<input checked="" type="radio"/> Enable <input type="radio"/> Disable		
Protocol Type		<input type="text" value="RIP-V2"/>		
Network Interface		<input type="text" value="vlan1:192.168.1.25/24"/> <input type="button" value="ADD"/> <input type="button" value="DEL"/>		
<input type="checkbox"/>	Index	Protocol Type	Network Interface	
<input type="checkbox"/>	1	RIP-V2	192.168.3.4/24	
<input type="checkbox"/>	2	RIP-V2	1.1.1.1/24	
<input type="checkbox"/>	3	RIP-V2	2.2.2.2/24	
<input type="button" value="Save"/> <input type="button" value="Refresh"/>				

Procedure

Choose <IP Routing> <RIP> in the navigation tree to open the page.

RIP Configuration				
RIP Setting		<input checked="" type="radio"/> Enable <input type="radio"/> Disable		
Protocol Type		<input type="text" value="RIP-V2"/>		
Network Interface		<input type="text" value="vlan1:192.168.1.25/24"/> <input type="button" value="ADD"/> <input type="button" value="DEL"/>		

1) Create the RIP routing

- Set the parameters as required.

Items	Descriptions	Default value
RIP Setting	Choose <Enable> to enable the function.	Disable
Protocol Type	Choose the protocol type of RIP routing, including <ul style="list-style-type: none"> RIP-V2 RIP-V1 	RIP-V2
Network Interface	Choose the network segment in the drop down list box. The value is created in the <Ethernet Switch> <802.1Q VLAN> and <IP Service> <Interface IP> modules.	VLAN1:192.16 8.1.200/8

- Click <Add>.
- Click <Save>.

2) Delete the network segment

Network Interface		<input type="text"/> <input type="button" value="ADD"/> <input type="button" value="DEL"/>	
<input type="checkbox"/>	Index	Protocol Type	
<input checked="" type="checkbox"/>	1	RIP-V2	
<input type="checkbox"/>	2	RIP-V2	

- Choose the record that need to be cleared.
- Click .

- Click <Save>.
 - Click <Refresh>.
- 3) View the RIP configuration.
- Click <Refresh>.
 - View the configuration.

9.2 OSPF

By building OSPF networks, users can enable OSPF to discover and calculate routes in Autonomous Systems. OSPF is applicable to a large-scale network that consists of hundreds of devices.

Users can configure the OSPF network, delete the network segment as required and view the configuration.

OSPF Configuration			
OSPF Setting	<input checked="" type="radio"/> Enable <input type="radio"/> Disable		
OSPF Host ID	<input type="text"/>	(Pattern 172.16.100.1)	
Region ID	<input type="text"/>	(0 - 65535)	
Region Type	Normal		
Network Interface	<input type="text" value="vlan1:192.168.1.25/24"/>	<input type="button" value="Add"/>	<input type="button" value="Delete"/>
	Index	Region ID	Region Type

Procedure

Choose <IP Routing> <OSPF> in the navigation tree to open the page.

- 1) Configure OSPF network.

OSPF Configuration			
OSPF Setting	<input checked="" type="radio"/> Enable <input type="radio"/> Disable		
OSPF Host ID	<input type="text"/>	(Pattern 172.16.100.1)	
Region ID	<input type="text"/>	(0 - 65535)	
Region Type	Normal		
Network Interface	<input type="text" value="vlan1:192.168.1.25/24"/>	<input type="button" value="Add"/>	<input type="button" value="Delete"/>

- Set the parameters as required.

Items	Descriptions	Default value
OSPF Setting	Choose <Enable> to enable the function.	Disable
OSPF Host ID	Input IP address of OSPF host.	Null
Region ID	Input the range of OSPF network. The value ranges from 0 to 65535.	Null
Region Type	Choose the region type, including <ul style="list-style-type: none"> · Normal · Stub · NSSA 	Normal
Network Interface	Choose the network segment in the drop down list box. The value is created in the <Ethernet Switch> <802.1Q VLAN> and <IP Service> <Interface IP> modules.	VLAN1:192.168.1.200/8

- Click <Add>.
 - Click <Save>.
- 2) Delete the network segment.

Network Interface		vlan1:192.168.1.25/24	Add	Delete
<input type="checkbox"/>	Index	Region ID		
<input checked="" type="checkbox"/>	1	area 6000		

- Choose the record that need to be deleted.
- Click <Delete>.
- Click <Save>.
- Click <Refresh>.

9.3 Routing Table

A router forwards packets by using a routing table. Each router saves a routing table. Each entry in the routing table contains a physical interface of the router, and the router sends packets to the physical interfaces.

Users can configure the static routing tables and view the information of the routing table.

Routing Table Setting						
Target Network	<input type="text"/>	(Default IP: 0.0.0.0/0)				
Next Hop Address	<input type="text"/>					
Path Consumption	<input type="text"/>	Add Delete				
<input type="checkbox"/>	Index	Target Network	Next Hop Address	Path Consumption	Network Interface	Type
<input type="checkbox"/>	1	192.168.1.0/24	0.0.0.0	0	vlan1	interface
Save Refresh						

Procedure

Choose <IP Routing> <Routing Table> in the navigation tree to open the page.

- 1) Create an IPv4 routing table.

Routing Table Setting			
Target Network	<input type="text"/>	(Default IP: 0.0.0.0/0)	
Next Hop Address	<input type="text"/>		
Path Consumption	<input type="text"/>	Add	Delete

- Set the parameters as required.

Items	Descriptions	Default value
Target Network	Indicates the destination IP address and subnet mask of an IP packet.	Null
Next Hop Address	Indicates the next-hop router address that IP packets pass through.	Null
Path Consumption	Indicate the length of static route path. The value ranges from 1 to 255.	Null

- Click <Add>.
- Click <Save>.

2) Delete an IPv4 routing table.

Path Consumption		0	Add	Delete
<input type="checkbox"/>	Index	Target Network		
<input checked="" type="checkbox"/>	1	192.168.1.0/24		

- Choose the record that need to be deleted.
- Click <Delete>.
- Click <Save>.

3) View the routing table.

- Click <Refresh>.
- View the configuration.

10 IP Multicast

10.1 IGMP Snooping

Internet Group Management Protocol Snooping (IGMP-Snooping) is a Layer 2 IPv4 multicast protocol. The IGMP-Snooping protocol maintains information about the outgoing interfaces of multicast packets by snooping multicast protocol packets exchanged between the Layer 3 multicast device and user hosts. The IGMP-Snooping protocol manages and controls the forwarding of multicast packets at the data link layer.

Users could turn on/off the IGMP-Snooping function and configure the IGMP-Snooping Timer.

IGMP Configuration			
IGMP Interception Setting	<input checked="" type="radio"/> Enable <input type="radio"/> Disable		
IGMP Query	<input type="radio"/> Enable <input checked="" type="radio"/> Disable		
IGMP Query Interval	60 s (Effective time 60-1000)		
Group Member Alive Time	120 s (Effective value 120-5000)		
Index	Network Interface	MAC Address	Port Range
1	vlan1	01:00:5e:00:01:3c	11
2	vlan1	01:00:5e:7f:ff:fa	11
3	vlan1	01:00:5e:7f:ff:fd	11
<input type="button" value="Save"/> <input type="button" value="Refresh"/>			

Procedure

Choose <IP Multicast> <IGMP Snooping> in the navigation tree to open the page.

IGMP Configuration	
IGMP Interception Setting	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IGMP Query	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IGMP Query Interval	60 s (Effective time 60-1000)
Group Member Alive Time	120 s (Effective value 120-5000)

1) Configure the IGMP-Snooping function.

- Set the parameters as required.

Items	Descriptions	Default value
IGMP Interception Setting	Choose <Enable> to enable the IGMP-Snooping function.	Disable
IGMP Query	Choose <Enable> to enable the IGMP-Snooping query function.	Disable
IGMP Query Interval	Indicate the query interval time. The value ranges from 60~1000 s.	60s
Group Member Alive Time	Indicate the group members survival time. The value ranges from 120~5000 s.	150s

- Click <Save>.

2) View the IGMP Snooping configuration.

- Click <Refresh> to reload the page.
- View the information.

11 Security Configuration

11.1 Static Address Lock

User can create, delete the static MAC table and view the configuration information.

Procedure

Choose <Security Configuration> <Static Address Lock> in the navigation tree to open the page.

- 1) Configure the static MAC table.
 - Set the parameters as required.

Items	Descriptions	Default value
Static Address Lock	Choose <Enable> to enable the function.	Disable
MAC Address	Input the 48 bit mac address.	Null
VLAN ID	Input the VLAN ID. The value ranges from 1~4094.	Null
Port	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as "2" or "1-5" or "3, 1-5".	Null

- Click <Add>.
 - Click <Save>.
- 2) Delete the static MAC table.
 - Choose the record that need to be deleted.
 - Click <Delete>.
 - Click <Save>.
 - 3) View the static MAC table.
 - Click <Refresh> to reload the page.
 - View the information.

12 Reliability

12.1 Rapid Spanning Tree

RSTP is the abbreviation of Rapid Spanning Tree Protocol.

This protocol provides the same function as STP, and is completely backward compatible with 802.1D STP. Relative to the STP, the most important feature is "fast", if a LAN within the bridge are supported RSTP protocol, and the administrator configured properly, once the network topology changes, and to regenerate the topology tree only need not more than 1 second time (traditional STP takes about 50 seconds).

Users can configure global parameter and ports parameters of Rapid Spanning Tree.

Spanning Tree Setting		<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
Device Priority	32768		
Message Sending Period	2 s (Range 1-10)		
Message Maximum Lifetime	20 s (Range 6-40)		
Port State Transition Delay	15 s (Range 4-30)		
This Bridge Update Message		RSTP Info (Warning: Be careful of using spanning tree in link aggregation port , suggest close STP state)	
Modify Configuration		Path Cost	Port Priority
		0	128
Port Range		Point-to-point Port	Edge Port
		No	No
	Port No	Port Mark	Path Cost
<input type="checkbox"/>	1	port1	Autodetect
<input type="checkbox"/>	2	port2	Autodetect
<input type="checkbox"/>	3	port3	Autodetect
<input type="checkbox"/>	4	port4	Autodetect
<input type="checkbox"/>	5	port5	Autodetect
<input type="checkbox"/>	6	port6	Autodetect

Procedure

Choose <Reliability> <Rapid Spanning Tree> in the navigation tree to open the page.

Spanning Tree Setting		<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
Device Priority	32768		
Message Sending Period	2 s (Range 1-10)		
Message Maximum Lifetime	20 s (Range 6-40)		
Port State Transition Delay	15 s (Range 4-30)		
This Bridge Update Message		RSTP Info (Warning: Be careful of using spanning tree in link aggregation port , suggest close STP state)	

- 1) Configure global parameters.
 - Set the parameters as required.

Items	Descriptions	Default value
Spanning Tree Setting	Choose <Enable> to enable the function.	Disable
Device Priority	Choose the priority of the device. The lager number takes lower priority. Step length: 4096.	32768
Message Sending Period	Input the interval time to send message. The value ranges from 1 to 10.	2s
Message Maximum Lifetime	Input the maximum lifetime of the message. The value ranges from 6 to 40.	20s
Port State Transition Delay	Input the interval time of state transition delay for the ports. The value ranges from 4 to 30.	15s

- Click <RSTP Info>, view the current RSTP information for the bridge. Click <Close> to exit.

Spanning Tree>>RSTP Information

RSTP Information		Root Bridge Information					
Device ID							
Root Bridge ID							
Root Port No							
Root Port Path Cost							

Port Information							
Port No	Priority	Path Cost	P2P	Edge	Neighbor Bridge	Port Role	Port State
<input type="button" value="Close"/>							

- Click <Modify>.
- Click <Save>.

2) Configure ports parameters.

Modify Configuration	Path Cost	Port Priority	Point-to-point Port	Edge Port
	<input type="text" value="0"/>	<input type="text" value="128"/>	<input type="text" value="No"/>	<input type="text" value="No"/>
Port Range	<input type="text"/>		<input type="button" value="Modify"/>	

- Set the parameters as required.

Items	Descriptions	Default value
Path Cost	Indicates the path cost of local port and target port. The value ranges from 0 to 200,000,000. 0 means auto detect. On an STP/RSTP network, the accumulated cost of path from a port to the root bridge consists of all path costs of ports on the passed bridges. This cost is called root path cost, which determines root port selection.	0
Port Priority	Choose the priority of the port. The larger number takes lower priority. Step length: 16.	128
Point-to-point Port	Choose the state of point-to-point, including <ul style="list-style-type: none"> · No. · Yes. · Auto Detect 	No
Edge Port	Choose <Yes> to enable the edge port. Choose <No> to disable the edge port.	No
Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as "2" or "1-5" or "3, 1-5".	Null

- Click <Modify>.
- Click <Save>.

- 3) View the configuration.
 - Click <Refresh> to reload the page.
 - View the information.

12.2 Fast-Ring Protect

Users can configure the Fast-Ring protect function of the device. Fast Ring is a private protocol applied on Ethernet loop protection to provide fast recovery switching for Ethernet traffic in ring topology.

Fast Ring provides a faster redundant recovery than spanning tree topology. The action is similar to STP or RSTP, but the algorithms between them are not the same. In the ring topology, every switch should support fast ring and be enabled with Fast Ring and two ports should be assigned as the member ports in the fast ring group. When the failure of network connection occurs, the traffic will go through via the backup link.

Fast Ring Network	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
Fast Ring Network Group 1	Ring Network No: <input type="text" value="0"/>	Current State: <input type="text" value="Not Enabled"/>
	Ring Port 1: <input type="text" value="26"/>	Ring Port 1: <input type="text" value="Unknown"/>
	Ring Port 2: <input type="text" value="28"/>	Ring Port 2: <input type="text" value="Unknown"/>
Fast Ring Network Group 2	Network Type: <input type="text" value="Disable"/> Ring No: <input type="text" value="0"/>	Current State: <input type="text" value="Not Enabled"/>
	Ring Port 1: <input type="text" value="25"/>	Ring Port 1: <input type="text" value="Unknown"/>
	Ring Port 2: <input type="text" value="27"/>	Ring Port 2: <input type="text" value="Unknown"/>

Procedure

Choose <Reliability> <Fast-Ring Protect> in the navigation tree to open the page.

Fast Ring Network	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	
Fast Ring Network Group 1	Ring Network No: <input type="text" value="0"/>	Current State: <input type="text" value="Not Enabled"/>
	Ring Port 1: <input type="text" value="26"/>	Ring Port 1: <input type="text" value="Unknown"/>
	Ring Port 2: <input type="text" value="28"/>	Ring Port 2: <input type="text" value="Unknown"/>
Fast Ring Network Group 2	Network Type: <input type="text" value="Double"/> Ring No: <input type="text" value="0"/>	Current State: <input type="text" value="Unknown State"/>
	Ring Port 1: <input type="text" value="25"/>	Ring Port 1: <input type="text" value="Unknown"/>
	Ring Port 2: <input type="text" value="27"/>	Ring Port 2: <input type="text" value="Unknown"/>

- 1) Configure the Fast-Ring protect.
 - Set the parameters as required.

Items	Descriptions	Default value
Fast-Ring Network	Choose <Enable> to enable the function.	Disable
Fast-Ring Network Group 1		
Ring Network No:	Indicates the number of main ring network the device accesses. The value ranges from 0 to 255.	0
Ring Port 1:	Indicates the port number that access the ring network. The value ranges from 1 to 28.	26
Ring Port 2:	Indicates the port number that access the ring network. The port number can't be the same if it is used in other ring network. The value ranges from 1 to 28.	28
Current State:	Actual status of the ring network group 1.	Not Enabled

	This parameter is not able to be set.	
Ring Port 1:	Actual port number that being accessing the network. This parameter is not able to be set.	Unknown
Ring Port 2:	Actual port number that being accessing the network. This parameter is not able to be set.	Unknown
Fast-Ring Network Group 2		
Network Type:	Choose the network type of the sub ring network, including <ul style="list-style-type: none"> · Double · Coupling Click <Disable>, the function of sub ring network is disabled.	Disable
Ring No:	Indicates the number of sub ring network the device accesses. The value ranges from 0 to 255.	0
Ring Port 1:	Indicates the port number that access the ring network. The value ranges from 1 to 28.	25
Ring Port 2:	Indicates the port number that access the ring network. The port number can't be the same if it is used in other ring network. The value ranges from 1 to 28.	27
Current State:	Actual status of the ring network group 2. This parameter is not able to be set.	Not Enabled
Ring Port 1:	Actual port number that being accessing the network. This parameter is not able to be set.	Unknown
Ring Port 2:	Actual port number that being accessing the network. This parameter is not able to be set.	Unknown

- Click <Save>.
- 2) View the current status of Fast-Ring protection.
 - Click <Refresh> to reload the page.
 - View the current state information.

12.3 Loopback Protect

The device supports loopback protection function.

While the function is turned on, users can check if there is a Loopback for the device under this port. If there is Loopback, the port will be shutdown.

Loop Detection		<input checked="" type="radio"/> Enable <input type="radio"/> Disable		
Protect Automatic Recovery		Disable		
Disable Loop Port Time		300 s (Effective value : 20-300)		
Port Range		<input type="text"/> Port Loop Detection <input type="text"/> Enable <input type="text"/> Modify (Warning: Be careful of port in link aggregation)		
<input type="checkbox"/>	Port No	Port Mark	Loop Detection	Loop Detection State
<input type="checkbox"/>	1	port1	Disable	Forward
<input type="checkbox"/>	2	port2	Disable	Forward
<input type="checkbox"/>	3	port3	Disable	Forward
<input type="checkbox"/>	4	port4	Disable	Forward
<input type="checkbox"/>	5	port5	Disable	Forward
<input type="checkbox"/>	6	port6	Disable	Forward

Procedure

Choose <Reliability> <Loopback Protect> in the navigation tree to open the page.

Loop Detection	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Protect Automatic Recovery	Disable ▾
Disable Loop Port Time	300 s (Effective value : 20-300)
Port Range	<input type="text"/> Port Loop Detection Enable ▾ <input type="button" value="Modify"/>

1) Configure the loopback function.

- Set the parameters as required.

Items	Descriptions	Default value
Loop Direction	Choose <Enable> to enable the loopback detection function for the device.	Enable
Protect Automatic Recovery	Choose <Enable> to enable the protection automatic recovery function. The ports will be recovered automatically.	Disable
Disable Loop Port Time	Indicate the disable loop protect time. The port will be recovered automatically, if the port detection no loopback packet after the time range, when <Protect Automatic Recovery> is enable. The port will keep shutdown, if the port detection no loopback packet after the time range, when <Protect Automatic Recovery> is disable. The value ranges from 20 to 300s.	20s
Port Range	Input the ports numbers that need to be set. Multiple interfaces can be selected. The value ranges from 1~28. Format as "2" or "1-5" or "3, 1-5".	Null
Port Loop Detection	The device supports to enable or disable the loopback function of each port. Choose <Enable> to enable the function of the ports needed to be set.	Enable

- Click <Modify>.
- Click <Save>.

2) View the loopback protect information.

- Click <Refresh> to reload the page.
- View the information.

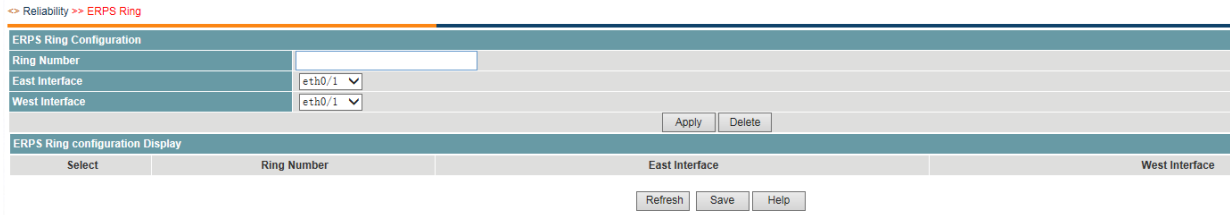
12.4 ERPS Ring

Ethernet Ring Protection Switching (ERPS) is defined in ITU-T G.8032 Recommendation. It prevents logical loops on a ring network by blocking redundant links.

ERPSv1 supports only the single-ring topology. When there is no faulty link on a ring network, ERPS can eliminate loops on the network. When a link fails on the ring network, ERPS can immediately restore the communication between the nodes on the network. Compared with other ring network protocols, ERPS has the following advantages:

- The network converges fast.
- ERPS is a standard protocol published by the ITU-T; therefore devices from different vendors can communicate with each other when they run ERPS.

ERPS works for ERPS rings. An ERPS ring consists of interconnected Layer 2 switching devices configured with the same control VLAN and data VLAN. Logically, an ERPS ring is a necessity before you configure other related functions.



Procedure

Choose <Reliability> <ERPS Ring> in the navigation tree to open the page.

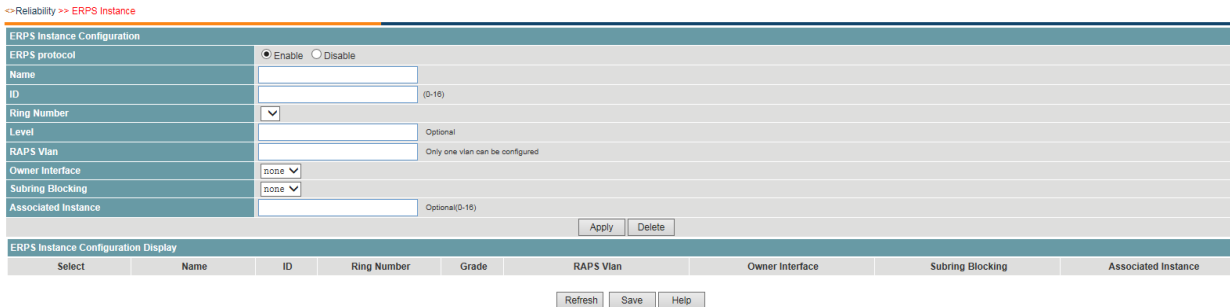
- 1) Create an ERPS Ring.

Items	Descriptions	Default value
Ring Number	Input the number of ERPS Ring. The value ranges from 1 to 16.	Null
East Interface	Select the interface that in the ERPS Ring.	Null
West Interface	Select the interface that in the ERPS Ring.	Null

- 2) Click <Save>.

12.5 ERPS Instance

The VLAN in which ERPS PDUs and data packets are transmitted must be mapped to a protected instance so that ERPS forwards or blocks the packets based on rules. If the mapping is not performed, the preceding packets may cause broadcast storms on the ring network, leading to the network failure.



Procedure

Choose <Reliability> <ERPS Instance> in the navigation tree to open the page.

- 1) Configure the ERPS instance as required.

Items	Descriptions	Default value
ERPS Protocol	Choose <Enable> to enable the loopback detection function for the device.	Null
Name	Name the ERPS instance.	Null
ID	Input the ID of the ERPS instance.	Null
Ring Number	Choose the number of the ERPS Ring that the instance linking with.	Null

Level	Define the ERPS Ring level. This parameter is optional.	Null
RAPS VLAN	Configure the control VLAN of the ERPS Ring. The RAPS VLAN specified here must be a VLAN that has not been created or used.	Null
Owner Interface	Choose the owner interface of the ERPS Ring. The link where the RPL Owner port resides is a ring protection link. An ERPS ring has only one RPL Owner interface. Blocking the RPL Owner interface prevents loops in the ERPS ring.	None
Subring Blocking	Select the subring of the ERPS Ring. The protecting instance of the subring is 0 in default.	None
Associating Instance	Define the associating ERPS interface of subring. This parameter is optional.	Null

2) Click <Save>.

12.6 VRRP Setting

The Virtual Router Redundancy Protocol (VRRP) groups multiple routing devices into a virtual router. One device functions as the master, and the others as the backup devices. When the next hop device of the master device fails, VRRP switches services to a backup device. This implementation ensures nonstop service transmission and reliability.

Procedure

Choose <Reliability> <VRRP Setting> in the navigation tree to open the page.

1) Configure VRRP

- Set the parameters as required.

Items	Descriptions	Default value
VRID	Input the virtual router ID. The value ranges from 1 to 255.	Null
VLAN	Choose the primary IP address.	VLAN1

Interface	It is selected from one of actual IP addresses of interfaces. Usually, it is the first configured IP address. The primary IP address is often used as the source IP address for VRRP broadcast packets.	
Priority	Input the priority of a VRRP router. The virtual router selects the master and backup devices based on the priority. The value ranges from 1 to 254.	100
Preemption Mode	Choose the preemption mode, including <ul style="list-style-type: none"> · Election · No Election 	Election
Preemption Delay	Input the time of preemption delay.	0
Authentication Method	Choose the type of authentication method, including <ul style="list-style-type: none"> · Plaintext Key · MD5 Key Choose <No Auth> to disable the authentication function.	No Auth
Authentication Word	Input the authentication key.	Null
Virtual IP	Input the IP address of virtual router. A virtual router can be assigned one or more virtual IP addresses. Virtual IP addresses are configurable.	Null

- Click <Save>.
- 2) View the VRRP configuration.
- Click <Refresh> to reload the page.
 - View the information.

13 Alarm Management

13.1 Alarm Host

The switch supports relay alarm function. After setting, the Web system will alarm in the following three cases:

- Power supply off
- Port network disconnected
- Port PoE off

[<> Alarm Management >> Alarm Host](#)

Alarm Host	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Alarm Type	<input type="radio"/> Normal Open <input checked="" type="radio"/> Normal Close
<input checked="" type="checkbox"/> Power Supply Triggering Condition: Either power supply is powered down	
<input checked="" type="checkbox"/> Port Network Triggering Condition: Network of ports get from ON to OFF	All <input checked="" type="checkbox"/> T1 <input checked="" type="checkbox"/> T2 <input checked="" type="checkbox"/> T3 <input checked="" type="checkbox"/> T4 <input checked="" type="checkbox"/> T5 <input checked="" type="checkbox"/> T6 <input checked="" type="checkbox"/> T7 <input checked="" type="checkbox"/> T8 <input checked="" type="checkbox"/> X1 <input checked="" type="checkbox"/> X2 <input checked="" type="checkbox"/> X3 <input checked="" type="checkbox"/> X4 <input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Port PoE Triggering Condition: PoE power supply of ports get from ON to OFF	All <input checked="" type="checkbox"/> T1 <input checked="" type="checkbox"/> T2 <input checked="" type="checkbox"/> T3 <input checked="" type="checkbox"/> T4 <input checked="" type="checkbox"/> T5 <input checked="" type="checkbox"/> T6 <input checked="" type="checkbox"/> T7 <input checked="" type="checkbox"/> T8 <input checked="" type="checkbox"/>

Procedure

Choose <Alarm Management > <Alarm Host> in the navigation tree to open the page.

- 1) Enable the Alarm host function.
- 2) Configure the function as required.

Items	Descriptions	Default value
Alarm Type	Select "Normal Open".	Normal Close
Power Supply	Select to enable the power supply alarm function. When the main power supply or backup power supply is off, the "Power Supply" area will turn red, please check the power supply.	
Port Network	Select to enable the port network alarm function. Select the ports as required. When the linking port is disconnected, "Port Network" area and the link down ports will turn red, and the please check the network cable.	All
Port PoE	Select to enable the Port PoE alarm function. Select the ports as required. When the port stops supplying PoE power, the "Port PoE" area and the PoE off ports will turn red, please check the PoE function.	All

14 System Management

14.1 Port mirroring

Packet mirroring copies the packets on a mirrored port (source port) to an observing port (destination port).

During network maintenance, maintenance personnel need to capture and analyze packets (for example, when there are suspicious attack packets). However, these operations always affect packet forwarding.

Packet mirroring copies packets on a mirrored port to an observing port so that users can analyze packets copied to the destination port by a monitoring device to monitor the network and rectify faults.

Users can configure the source interface and target interface of mirror. The function supports 1 to 1 and many to 1 modes.

Procedure

Choose <System Management> <Port mirroring> in the navigation tree to open the page.

1) Configure the port mirroring function.

- Set the parameters as required.

Items	Descriptions	Default value
Port mirror	Choose <Enable> to enable the function.	Disable
Monitor Port	Indicate the monitor port number. The value ranges from 1 to 28.	Null
Mirror Port Range	The port number range of mirror ports, Multiple ports can be selected. The value ranges from 1~28. Format as “2” or “1-5” or “3, 1-5”.	Null
Collect Data	The packets that the need to be copied and monitored on the mirrored ports, including <ul style="list-style-type: none"> • All data • Input data • Output data 	All data

- Click <Modify>.
- Click <Save>.

2) View the port mirroring configuration.

- Click <Refresh> to reload the page.
- View the information.

14.2 SNMP

As a network management standard protocol used on TCP/IP networks, SNMP uses a central computer (NMS) that runs network management software to manage network elements.

In a large network, it is very difficult for network administrator to detect, locate and rectify the fault as the devices does not report the fault. This affects maintenance efficiency and increases maintenance workload. To solve this problem, equipment vendors have provided network management functions in some products. The NMS then can query the status of remote devices, and devices can send traps to the NMS in the case of particular events.

Users can configure the function of the SNMP community permission and SNMP V3.

Procedure

Choose <System Management> <SNMP> in the navigation tree to open the page.

1) Configure SNMP community permission.

- Set the parameters as required.

Items	Descriptions	Default value
SNMP Configuration	Choose <Enable> to enable the function.	Disable
SNMP Gateway	Input the IP address of the server.	Null
SNMP Version	Choose the SNMP version, including <ul style="list-style-type: none"> · SNMP V1 · SNMP V2 	SNMP V2
Read-only	Indicate the name of SNMP community for read-only	public

Group Name	permission. The value supports strings.	
Read and Write Group Name	Indicate the name of SNMP community for read and write permission. The value supports strings.	private

- Click <Save>.

2) Configure SNMP V3

- Set the parameters as required.

Items	Descriptions	Default value
User name	Indicates the user name. The value supports 31 stings	Null
Read and Write Mode	Choose the read and write mode, including <ul style="list-style-type: none"> · Read-only · Read and Write 	Read-only
Identity Authentication	Choose the identity authentication, including <ul style="list-style-type: none"> · MD5 · SHA 	MD5
Verify Password	Indicates the Authentication password, supporting 8-32 digits strings.	Null
Encryption Protocol	Choose the Encryption Protocol, including <ul style="list-style-type: none"> · DES · AES · 3DES 	DES
Encryption Password	Indicates the Encryption password, supporting 8-32 digits strings.	Null

- Click <Save>.

3) View SNMP configuration.

- Click <Refresh> to reload the page.
- View the information.

14.3 Time

Users can set time of the device by choosing local time or NTP server.


By default the device supports local time setting.

Procedure

Choose <System Management> <Time> in the navigation tree to open the page.

1) Local time.

- Set the parameters as required.

Items	Descriptions	Default value
World Time Zone	Choose time zone in drop down list.	
System Time	Display the current time of the system.	-
PC Time	Display the current time of management PC.	-
	Click to update the <System Time> to synchronize with the <PC Time>.	-

- Click <Save>.

2) Using NTP.

Time Setting

Local Time
 Using NTP

World Time Zone (GMT+08:00) China, Hong Kong, Australia Western ▼

Automatically adjust daylight saving time

NTP Sever (Optional)

- Choose <Using NTP>.
- Set the parameters as required.

Items	Descriptions	Default value
NTP Server	Input the IP address of NTP server.	Null

- Click <Save>.

14.4 Syslog

Users can view, download and clear the system log, including

- Operation information
- Network link
- Warning information

Log Information

Log Enable Disable

Show Type Network Link ▼

Information Processing

Index	Type	Time	Event
-------	------	------	-------

Procedure

Choose <System Management> <Syslog> in the navigation tree to open the page.

Log Information

Log Enable Disable

Show Type Network Link ▼

Information Processing

- 1) Configure system log function.
- Set the parameters as required.

Items	Descriptions	Default value
Log	Choose <Enable> to enable the function.	Disable
Show type	Choose the contents of the system log, including <ul style="list-style-type: none"> · All Information · Operation information · Network link 	All Information

	· Warning information	
--	-----------------------	--

- Click <Refresh>.
- 2) Clear the system log records.
 - Click <Clear All> to delete the displayed log.
 - Click <Refresh>.
- 3) Download the system log records.
 - Click <Download All> to download the displayed log.

Note:

- The system log can't be recovered after clear operation.

14.5 Management

Users can restore the factory value, reboot the system, download the actual configuration file, upload configuration file, and upgrade the software version.

Restore Factory Value

Restore Factory Value:

System Reboot

System Reboot:

Configuration File

Download Configuration File:

Upload Configuration File: No file chosen

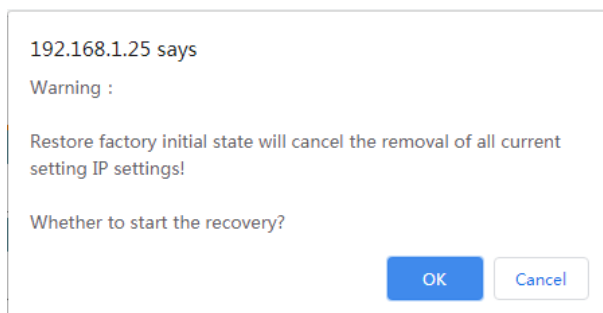
System Upgrade (Recommend using uplink to upgrade)

Choose upgrade file: No file chosen

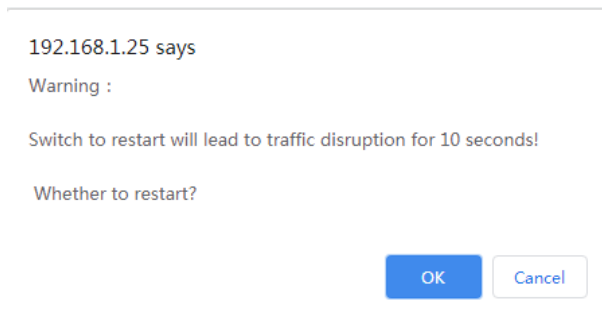
Procedure

Choose <System Management> <Management> in the navigation tree to open the page.

- 1) Restore factory value.
 - Click <Start> under <Restore Factory Value>.



- Click <OK>.
- 2) Reboot the system.
- Click <Start> under <System Reboot>.



- Click <OK>.
- 3) Manage the configuration file.
- Click <Download> under <Configuration File>.
 - The configuration file will be downloaded.
- 4) Upload configuration file.
- Click <Choose File> under <Configuration File>.
 - Click <Upload>.

Note:

- The actual configuration will be covered after uploading configuration file operation. Please download your configuration file before uploading, or the latest configuration can't be recovered.

- 5) Upgrade the software version.
- Click <Choose File> under <System Upgrade>.
 - Click <Start>.

Note:

- To upgrade the software version, please contact the seller for the software package.
- After software upgrade, please press the <Init> key on the front panel for 5s, to make sure the new version software will work normally.

14.6 User Setting

The Web system manages users at levels.

User levels are marked by numbers from 1 to 15, in ascending order.

The access privilege of user is determined by the level of this user.

User Setting			
Access Privilege	15		
Username	<input type="text"/>		
Input password	<input type="password"/>		
Confirm password	<input type="password"/>		
<input type="button" value="Add"/> <input type="button" value="Edit"/> <input type="button" value="Del"/>			
Index	Access Privilege	Username	
1	15	admin	
<input type="button" value="Refresh"/> <input type="button" value="Save"/>			

Procedure

Choose <System Management> <User Setting> in the navigation tree to open the page.

1) Create username.

User Setting	
Access Privilege	15 ▼
Username	<input type="text"/>
Input password	<input type="password"/>
Confirm password	<input type="password"/>

· Set the parameters as required.

Items	Descriptions	Default value
Access Privilege	Choose the user level, from 1 ~ 15. · With lower than 3 level, the users are only allowed the read permission. · With 3 and higher than 3 lever, the users are allowed the read, create and delete permission.	15
User name	Input the username, supporting 32 digits of letters or numbers.	Null
Input password	Input the password, support 16 digits of letters or numbers.	Null
Confirm password	Confirm the password. The value must be the same as <Input password>.	Null

· Click <Add>.

· Click <Save>.

2) Delete username.

· Choose the username that need to be deleted.

· Click .

· Click <Save>.

3) View the usernames.

· Click <Refresh>.

· View the information.

14.7 Manage IP Address

Users can configure the outband IP address of loopback interfaces.

The device supports 4 IP addresses.

Manage IP Address	
Master IP Addr.	<input type="text" value="192.168.2.200/24"/> (Such as: 1.1.1.1/24)
2nd IP Addr.	<input type="text"/>
3rd IP Addr.	<input type="text"/>
4th IP Addr.	<input type="text"/>
Manage type	Outband ▾ Inband IP setting please refer >> Interface IP

Procedure

Choose <System Management> <User Setting> in the navigation tree to open the page.

Manage IP Address	
Master IP Addr.	<input type="text" value="192.168.2.200/24"/> (Such as : 1.1.1.1/24)
2nd IP Addr.	<input type="text"/>
3rd IP Addr.	<input type="text"/>
4th IP Addr.	<input type="text"/>
Manage type	Outband ▾ Inband IP setting please refer >> Interface IP

1) Configure the IP addresses of loopback interfaces.

- Set the parameters as required.

Items	Descriptions	Default value
Master IP Addr.	Input the master IP address and subnet mask.	192.168.2.200/8
2nd IP Addr.	Input the 2nd IP address and subnet mask.	Null
3rd IP Addr.	Input the 3rd IP address and subnet mask.	Null
4th IP Addr.	Input the 4th IP address and subnet mask.	Null

- Click <Add>.
- Click <Save>.