

C51-082-30-120
C51-164-30-250
C51-244-30-370
PoE Managed Switches

User Manual

About This Manual

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Purpose

This GUI user guide gives specific information on how to operate and use the management functions of the C51 Series via HTTP web browser

Audience

The Manual is intended for use by network administrators who are responsible for operating and maintaining network equipment; consequently, it assumes a basic working knowledge of general switch functions, the Internet Protocol (IP), and Hypertext Transfer Protocol (HTTP).

CONVENTIONS

The following conventions are used throughout this manual to show information.

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Overview

In this User Guide, it will not only tell you how to install and connect your network system but configure and monitor the C51 Series through the web by (RJ-45) serial interface and Ethernet ports step-by-step. Many explanations in detail of hardware and software functions are shown as well as the examples of the operation for web-based interface.

The C51 Series are web smart managed PoE switch from AETEK INC., is a portfolio of affordable managed switches that provides a reliable infrastructure for your business network. These switches deliver more intelligent features you need to improve the availability of your critical business applications, protect your sensitive information, and optimize your network bandwidth to deliver information and applications more effectively. It provides the ideal combination of affordability and capabilities for entry level networking includes small business or enterprise application and helps you create a more efficient, better-connected workforce.

C51 Series is Web Smart Managed Switch; the specification is highlighted as follows.

Features

- **Layer 2 Switch**
 - 802.1d (STP), 802.1w (RSTP), 802.1s (MSTP)
 - Loop protection
 - SNMP
 - QoS
 - VLAN
 - LACP
 - DHCP Server
- **PoE Management**
 - PoE Per Port On/OFF Control
 - PoE Status
 - PoE Power Delay
 - PoE Auto Checking
 - PoE Scheduling Profile

Initial Configuration

This chapter instructs you how to configure and manage the C51 Series through the web user interface. With this facility, you can easily access and monitor through any one port of the switch all the status of the switch, including, each port activity, Spanning tree status, port aggregation status, VLAN and priority status, and so on.

The default values of the C51 Series are listed in the table below:

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.254

After the C51 Series have been finished configuring the interface, you can browse it. For instance, type <http://192.168.1.1> in the address bar of a browser, it will show the following screen and ask you to input username and password in order to login and access authentication.

The first time login you need to create a new account. After the account has been created, please enter the new username and password and then click the <LOGIN> button. The login process is now completed.

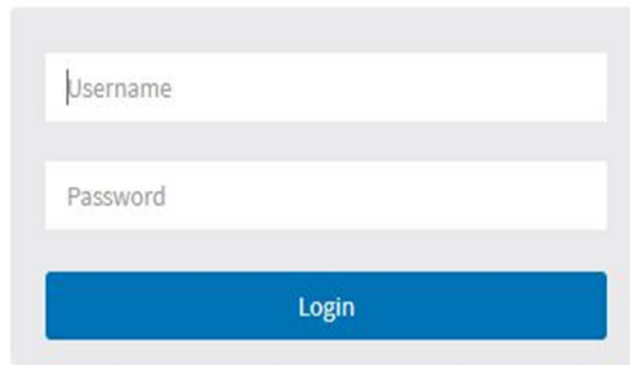
In this login menu, you have to input the complete username and password respectively, the C51 Series will not give you a shortcut to username automatically. This looks inconvenient, but safer.

In the C51 Series, allowed two or more users using administrator's identity to manage this switch, which administrator to do the last setting, it will be an available configuration to effect the system.



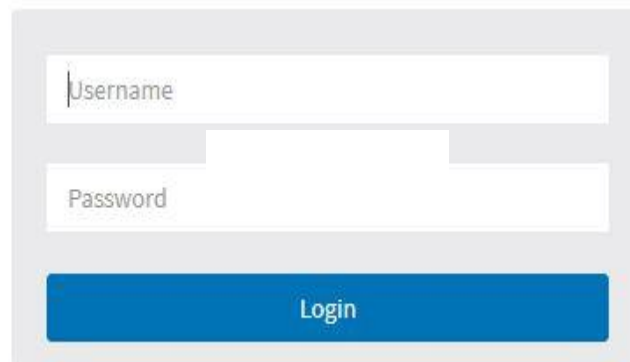
NOTE:

To optimize the display effect, we recommend you to use Microsoft IE 6.0 above, Netscape V7.1 above or Firefox V1.00 above and have the resolution 1024x768. The switch supported neutral web browser interface



A login form with a light gray border. It contains two white input fields: the top one is labeled "Username" and the bottom one is labeled "Password". Below the input fields is a solid blue button with the word "Login" in white text.

Figure 1-1: The first time login page



A login form similar to Figure 1-1, but with a different layout. The "Username" input field is at the top. Below it, there is a horizontal gray bar. Underneath the bar is the "Password" input field. At the bottom is a solid blue button with the word "Login" in white text.

Figure 1-2: The login page

AETEK PoE Managed switch software provides rich functionality for switches in your networks. This guide describes how to use Web-based management interface (Web UI) to configure AETEK managed switch software features.

The Web UI supports all frequently used web browsers listed below:

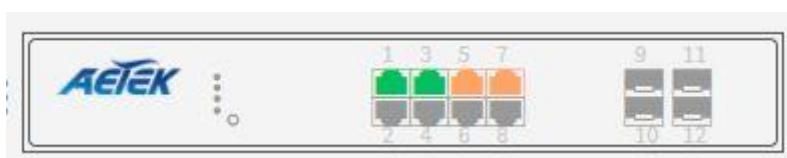


Figure 2-0: Port Information

In the Web UI, the left column shows the configuration menu. The top row shows the switch's current linking status described below.

- Yellow color: The LAN port is powered on and is connected with 10/100M linking speed powered device.
- Green circles: The LAN port is powered on and is connected with 1000M linking speed powered device
- White circles: The LAN port is NOT connected with any device.

On the top-right part, it shows useful functions for users to save the system configuration, log out the system. The rest of the screen area displays the configuration settings.

2-1 System Information

You can identify the system by configuring system name, location and the contact of the switch. The switch system's contact information is provided here.

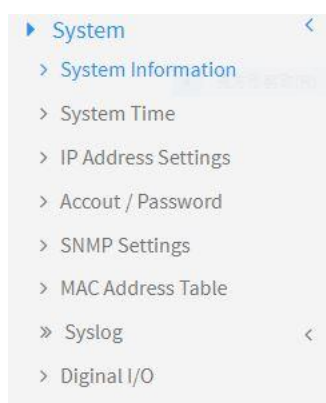


Figure 2-1: System

Web interface

To configure System Information in the web interface:

1. Click System -> System Information.
2. Input System Name, Location and Contact information in this page.
3. Click Apply.

The screenshot shows a web interface titled "System Information" with a breadcrumb trail "Home > System > System Information". It contains a table of system parameters and several input fields for configuration.

Model Name	D60-084-30
System Description	D60-084-30: 8xGbE PoE + 4xGbE SFP Managed Switch
Firmware Version	2.0.0.15_10050c
MAC Address	68:8D:B6:00:CF:00
Serial Number	
System Name	<input type="text" value="D60-084-30"/>
Location	<input type="text"/>
Contact	<input type="text"/>
System Date	2021-01-05 12:42:42
System Uptime	4 days, 4:43:42

Figure 2-2: System Information

Parameter Description:

■ **Description**

Displays the system description.

■ **Model Name**

Displays the factory defined model name for identification purpose.

■ **MAC Address**

Base MAC address of the switch.

■ **IP Address**

The IP Address of this switch.

■ **Subnet Mask**

The Subnet Mask IP Address of this switch.

■ **Default Gateway**

The Gateway IP Address of this switch.

■ **Firmware Version**

The software version of this switch.

■ **System Time**

The current (GMT) system time and date. The system time is obtained through the Timing server running on the switch, if any.

■ **Uptime**

The period of time the device has been operated.

■ **System name**

An administratively assigned name for this managed node. By convention, this is the node's

fully-qualified domain name. A domain name is a text string drawn from the alphabet (A-Z, a-z), digits (0-9), minus sign (-). No space characters are permitted as part of a name. The first character must be an alpha character. And the first or last character must not be a minus sign. The allowed string length is 0 to 128.

■ Location

The physical location of this node(e.g., telephone closet, 3rd floor). The allowed string length is 0 to 128, and the allowed content is the ASCII characters from 1 to 32.

■ Contact

The textual identification of the contact person for this managed node, together with information on how to contact this person. The allowed string length is 0 to 128, and the allowed content is the ASCII characters from 32 to 126.

2-2 System Time

The switch provides manual and automatic ways to set the system time via NTP. Manual setting is simple and you just input "Year", "Month", "Day", "Hour", "Minute" and "Second" within the valid value range indicated in each item.

Web interface

To configure System Time in the web interface:

1. Click System -> System Time.
2. Specify the Time parameter.
3. Click Apply.

System Time

Home > System > System Time

Time Configuration

Clock Source: Local Settings

System Date: 2021-01-05 12:46:43 (yyyy-mm-dd hh:mm:ss)

NTP Server:

Time Zone Configuration

Time Zone: (UTC+08:00)Beijing, Chongqing, Hong Kong, Urumqi

Acronym: (0 - 16 characters)

Daylight Saving Time Configuration

Daylight Saving Time: Off

Figure 2-3: System Time

Parameter Description:

■ Time Configuration

You can input Year, Month, Day, Hour, Minute and Second manually, or by clicking "Copy

Computer Time" button to get time through PC, and to enable/disable obtaining system time through the time server.

- **Time Zone**

Lists various Time Zones worldwide. Select appropriate Time Zone from the drop down and click Apply to set.

- **Daylight Saving Time**

To enable/disable daylight saving time function.

- **Start Time Settings**

Month - Select the starting month.

Day - Select the starting day.

Hours - Select the starting hour.

- **End Time Settings**

Month - Select the ending month.

Day - Select the ending day.

Hours - Select the ending hour.

- **Offset**

The number of minutes to be added by Daylight Saving Time. (Range: 1 to 720 minutes)

2-3 IP Address Settings

The IPv4 address for the switch could be obtained via DHCP Server for VLAN 1. To manually configure an address, you need to change the switch's default settings to values that are compatible with your network. You may also need to establish a default gateway between the switch and management stations that exist on another network segment.

Web Interface

To configure an IP Settings in the web interface:

1. Click System -> IP Address Settings.
2. Enable or Disable the IPv4 DHCP Client.
3. Specify the IPv4 Address, Subnet Mask and Gateway.
4. Input IPv4 DNS Server if desired.
5. Click Apply.

IP Address Settings	
IPv4 DHCP Client Enable	<input type="checkbox"/>
IPv4 Address	192.168.1.16
Subnet Mask	255.255.255.0
Gateway	192.168.1.1
DNS Server	8.8.8.8
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

Figure 2-4: IP Address Setting

Parameter Description:

■ DHCP Client Enable

Enable the DHCP client by clicking this checkbox. If this option is enabled, the system will configure the IPv4 address and mask of the interface using the DHCP protocol. The DHCP client will announce the configured System Name as hostname to provide DNS lookup.

■ IPv4 Address

The IPv4 address of the interface in dotted decimal notation.

If DHCP is enabled, this field is not used. The field may also be left blank if IPv4 operation on the interface is not desired.

■ Subnet Mask

User IP subnet mask of the entry.

■ Default Gateway

The IP address of the IP gateway. Valid format is dotted decimal notation, or a valid IPv6 notation. Gateway and Network must be in the same type.

■ DNS Server

This setting controls the DNS name resolution done by the switch.

2-4 Account / Password

This page provides an overview of the current users. Use this page to modify the user name and password.

Web Interface

To configure User Account in the web interface:

1. Click System -> Account/Password.
2. Specify the User Name.
3. Specify new password and confirm new password.
4. Click Apply.

Account / Password	
Username	admin16
New Password	
Confirm Password	
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

Figure 2-5: Account / Password

Parameter Description:

■ **Username**

The name identifying the user. The field can be input 32 characters.

■ **New Password**

To type the new password. The field can be input 32 characters.

■ **Confirm Password**

To type the new password again. You must type the same password again in the field.

2-5 SNMP Settings

The page is used to configure SNMPv1/v2 Communities and Trap Host.

Web Interface

To configure the SNMP Communities in the web interface:

1. Click System -> SNMP Settings.
2. Specify Community parameters.
3. Specify Trap Host parameters.
4. Click Apply.

SNMP Settings					
State	<input type="checkbox"/>				
Community					
Name 1	<input type="text"/>	Access Mode	Read-Only ▼		
Name 2	<input type="text"/>	Access Mode	Read-Only ▼		
Trap Host					
IP Address 1	<input type="text"/>	Name	SNMPv1 ▼	Community	<input type="text"/>
IP Address 2	<input type="text"/>	Name	SNMPv1 ▼	Community	<input type="text"/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>					

Figure 2-6: SNMP Settings

Parameter Description:

■ **State**

To enable/disable SNMP function.

■ Community Name

The SNMP community name. Its maximum length is 20 characters. There are two communities by default: "public" and "private".

■ Trap

The SNMP Trap parameters. (IP Address, Version and Community)

2-6 MAC Address Table

The MAC address table page displays all MAC address entries on the switch including static MAC address created by administrator or auto learned from hardware.

Web Interface

To display MAC Address Table page, click System -> MAC Address Table

Type	VLAN	MAC Address	Port Members												
			CPU	1	2	3	4	5	6	7	8	9	10	11	12
Dynamic	1	00:02:D1:0E:D3:6D						✓							
Dynamic	1	54:A0:50:8A:B1:73		✓											
Dynamic	1	54:AB:3A:59:F1:43								✓					
Management	1	68:8D:B6:00:CF:00	✓												
Dynamic	1	68:8D:B6:01:BF:96				✓									
Dynamic	1	68:8D:B6:01:C0:7E				✓									
Dynamic	1	68:8D:B6:01:C0:9B				✓									
Dvnamic	1	68:8D:B6:01:E1:75				✓									

Figure 2-7: MAC Address Table

Parameter Description:

■ VLAN

VLAN ID of the MAC address

■ MAC Address

MAC address

■ Type

Type of MAC address

- Management: DUT's base MAC address for management purpose
- SecureStatic: Manually configured by administrator for port security function.
- SecureDynamic: Dynamically learned by hardware associated with port security. It will be aged out.
- Dynamic: Dynamically learned by hardware, and it will be aged out.

■ Port

Type of Port

- CPU: DUT's CPU port for management purpose

- Other: Normal switch port

■ **Clear Dynamic[Button]**

To clear all dynamic entries.

■ **Refresh[Button]**

To retrieve latest MAC address entries shown on this page.

2-7 SysLog

2-7.1 Syslog Configuration

The Syslog Configuration is a standard for logging program messages. It allows separation of the software that generates messages from the system that stores them and the software that reports and analyzes them. It can be used as well a generalized informational, analysis and debugging messages. It is supported by a wide variety of devices and receivers across multiple platforms.

Web Interface

To configure the SysLog Settings in the web interface:

1. Click System -> Syslog Configuration.
2. Specify Mode and Server1(or Server2) parameters.
3. Click Apply.

Syslog Configuration	
Mode	<input checked="" type="checkbox"/>
Server 1	<input type="text"/>
Server 2	<input type="text"/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

Figure 2-8: Syslog Configuration

Parameter Description:

■ **Mode**

To enable/disable Syslog function

■ **Server1(or Server2)**

SysLog Server. (IPv4 format)

2-7.2 View Log

To display Log, click System -> SysLog -> View Log

View Log			
<div> Home > System > Syslog > View Log </div> <div> <div>Refresh</div> <div>Clear</div> </div>			
ID	Level	Time	Message
0	notice	Jan 05 2021 14:02:40	New http connection for user admin16, source 192.168.1.111 ACCEPTED
1	notice	Jan 05 2021 13:57:17	http connection for user admin16, source 192.168.1.111 TERMINATED
2	notice	Jan 05 2021 13:33:54	New http connection for user admin16, source 192.168.1.111 ACCEPTED
3	notice	Jan 05 2021 13:14:06	http connection for user admin16, source 192.168.1.111 TERMINATED
4	notice	Jan 05 2021 12:42:39	New http connection for user admin16, source 192.168.1.111 ACCEPTED
5	notice	Jan 05 2021 12:41:56	http connection for user admin16, source 192.168.1.111 TERMINATED
6	notice	Jan 05 2021 12:31:46	New http connection for user admin16, source 192.168.1.111 ACCEPTED
7	notice	Jan 05 2021 12:19:36	http connection for user (null), source 192.168.1.111 TERMINATED
8	notice	Jan 05 2021 12:18:54	New http connection for user admin16, source 192.168.1.111 ACCEPTED

Figure 2-9: View log

Parameter Description:

- **Level**
The log event category
- **Time**
The log event occurs time
- **Message**
The log event content
- **Refresh[Button]**
To reload log events
- **Clear[Button]**
To clear log events

The section describes to configure the Port detail parameters of the switch. Others you could use the Port configure to enable or disable the Port of the switch. Monitor the ports content or status in the function

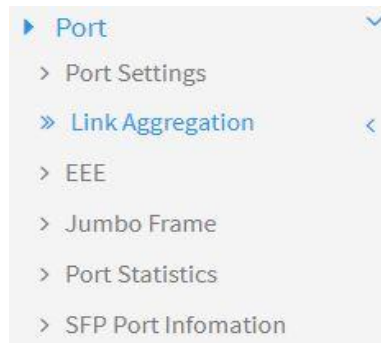


Figure 3-0: Port Setting

3-1 Port Setting

This page displays current port configuration. Ports can also be configured here.

Web Interface

To configure a Current Port Configuration in the web interface:

1. Click Port -> Port Setting.
2. Click the port number which you want to configure. (For example: Port 9)
3. Click Edit.
4. Specify the parameters you want to configure.
5. Click Apply.

Port Settings Home > Port > Port Settings

[Refresh](#)

Port	Link	Speed		Flow Control		Description
		Status	Mode	Status	Mode	
1	●	1G FDX	Auto	Off	<input type="checkbox"/>	
2	●	Down	Auto	Off	<input type="checkbox"/>	
3	●	1G FDX	Auto	Off	<input type="checkbox"/>	
4	●	Down	Auto	Off	<input type="checkbox"/>	
5	●	100M FDX	Auto	Off	<input type="checkbox"/>	

Figure 3-1.1: Port Setting

3-2 Link Aggregation

This page is used to configure port's LACP.

Web Interface

To configure a Current Port's LACP in the web interface:

1. Click Port -> Link Aggregation.
2. Specify Link Aggregation Group and the port's LACP method you want to configure. (For example: Port 9)
3. Click Apply.

Port	Method	Group	LACP Role	LACP Timeout	LACP Priority
1	None	1	Active	Fast	1
2	None	1	Active	Fast	1
3	None	1	Active	Fast	1
4	None	1	Active	Fast	1
5	None	1	Active	Fast	1
6	None	1	Active	Fast	1
7	None	1	Active	Fast	1
8	None	1	Active	Fast	1

Figure 3-2: Link Aggregation

Parameter Description:

■ Method

Current port's LACP method.(None/LACP/Static)

3-3 Energy Efficient Ethernet

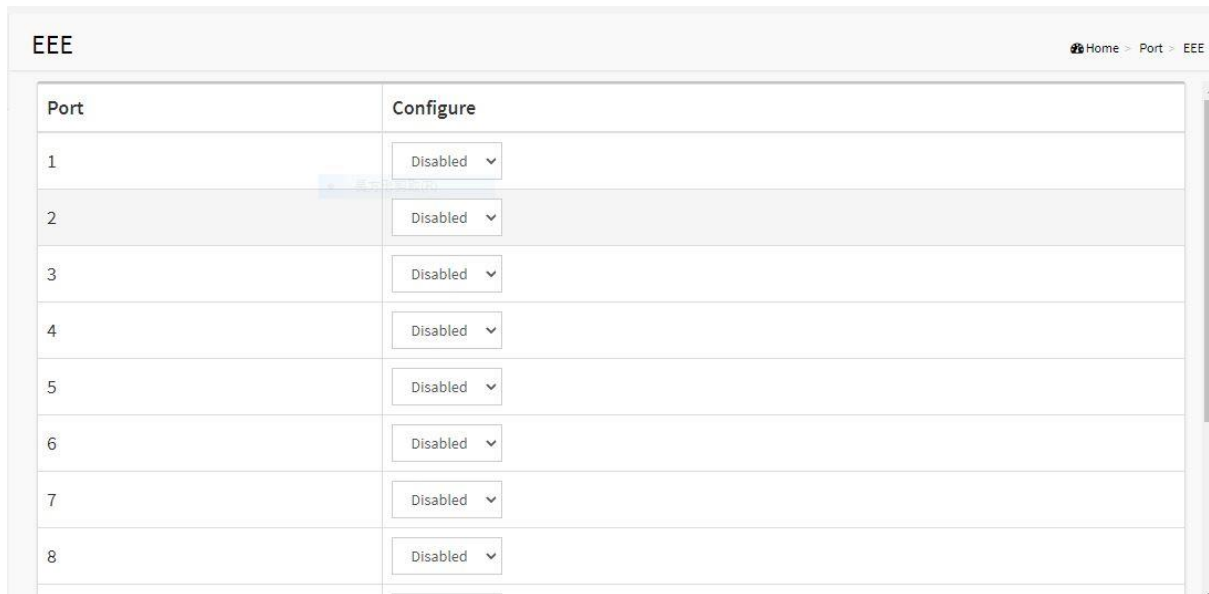
This page is used to set current ports' energy configuration.

Web Interface

To configure a Current Port EEE Configuration in the web interface:

1. Click Port -> EEE.

2. Specify the parameters you want to configure.
3. Click Apply.



The screenshot shows a web interface titled 'EEE' with a breadcrumb 'Home > Port > EEE'. It contains a table with two columns: 'Port' and 'Configure'. The 'Port' column lists ports 1 through 8. The 'Configure' column contains a dropdown menu for each port, all of which are currently set to 'Disabled'.

Port	Configure
1	Disabled ▼
2	Disabled ▼
3	Disabled ▼
4	Disabled ▼
5	Disabled ▼
6	Disabled ▼
7	Disabled ▼
8	Disabled ▼

Figure 3-3: Link Aggregation

Parameter Description:

■ Configure

To enable/disable EEE function

3-4 Jumbo Frame

This page is used to set jumbo frame function.

Web Interface

To configure jumbo frame function in the web interface:

1. Click Port -> Jumbo Frame.
2. Specify the parameters you want to configure.
3. Click Apply.



The screenshot shows a web interface titled 'Jumbo Frame'. It contains a form with a label 'Jumbo Frame' and a checkbox. Below the checkbox are two buttons: 'Apply' and 'Reset'. There is also a faint watermark text '長方形要致(再)' in the background.

Figure 3-4: Jumbo Frame

Parameter Description:

- To enable/disable jumbo frame function.

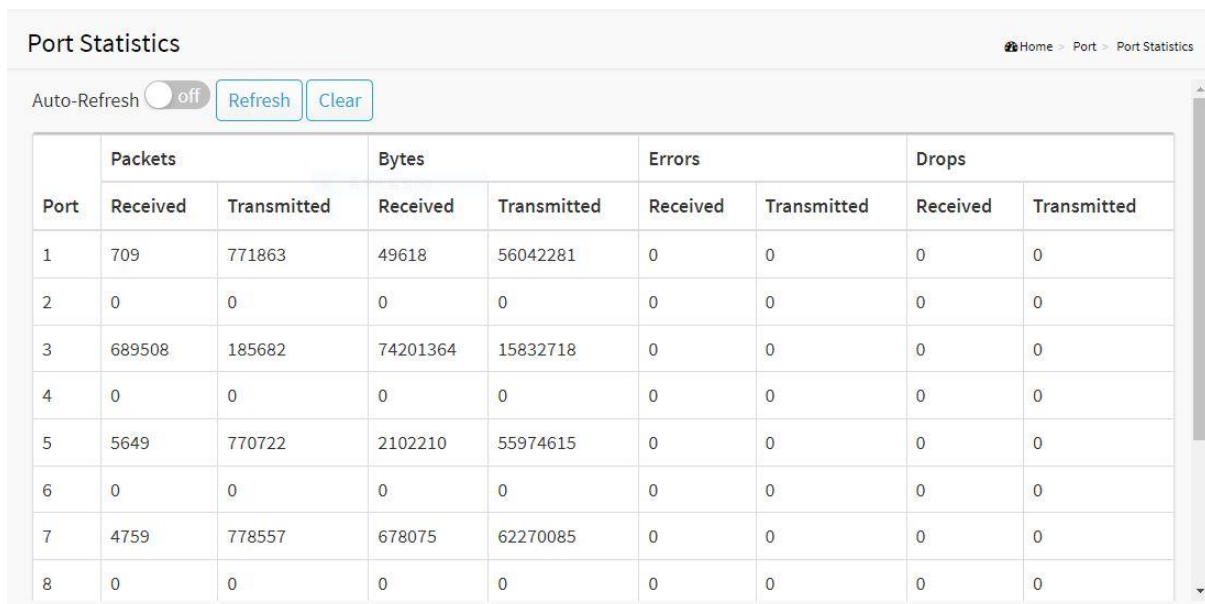
3-5 Port Statistics

The Port Statistics page displays port summary and status information. This page displays standard counters on network traffic from the Interfaces. The port counters would be display in four groups individually.

Web Interface

To display Port Statistics in the web interface:

1. Click Port -> Port Statistics.
2. Check Packets, Bytes , Error and Drops individually to view each port's statistics information.
3. Click "Clear" button will clear counter of current selected port.



The screenshot shows the 'Port Statistics' web interface. At the top, there is a breadcrumb trail: Home > Port > Port Statistics. Below the title, there is an 'Auto-Refresh' toggle set to 'off', and two buttons: 'Refresh' and 'Clear'. The main content is a table with 8 rows representing ports 1 through 8. The table has 9 columns: 'Port', 'Packets' (Received, Transmitted), 'Bytes' (Received, Transmitted), 'Errors' (Received, Transmitted), and 'Drops' (Received, Transmitted). The data for each port is as follows:

Port	Packets		Bytes		Errors		Drops	
	Received	Transmitted	Received	Transmitted	Received	Transmitted	Received	Transmitted
1	709	771863	49618	56042281	0	0	0	0
2	0	0	0	0	0	0	0	0
3	689508	185682	74201364	15832718	0	0	0	0
4	0	0	0	0	0	0	0	0
5	5649	770722	2102210	55974615	0	0	0	0
6	0	0	0	0	0	0	0	0
7	4759	778557	678075	62270085	0	0	0	0
8	0	0	0	0	0	0	0	0

Figure 3-5: Port Statistics

Parameter Description:

- **Refresh[Button]**
To refresh selected port information.
- **Clear[Button]**
To clear counter of current selected port.

This chapter describes the PoE management including PoE Configuration, PoE Status, PoE Power Delay, PoE Auto Check and PoE Scheduling Profile.

4-1 PoE Configuration

This page displays current PoE ports' power ON/OFF status and schedule profile. It can also be configured here.

Web Interface

To configure a PoE port's power in the web interface:

1. Click PoE Management -> PoE Configuration.
2. Specify the parameters which you want to configure.
3. Click Apply.

PoE Configuration Home > PoE Management > PoE Configuration

Reserved Power determined by ☐ Class ☒ Allocation

Port	PoE Mode	PoE Schedule	Priority	Maximum Power [W]
1	Enabled ▾	Disabled ▾	Low ▾	30
2	Enabled ▾	Disabled ▾	Low ▾	30
3	Enabled ▾	Disabled ▾	Low ▾	30
4	Enabled ▾	Disabled ▾	Low ▾	30
5	Enabled ▾	Disabled ▾	Low ▾	30
6	Enabled ▾	Disabled ▾	Low ▾	30
7	Enabled ▾	Disabled ▾	Low ▾	30

Figure 4-1: PoE Configuration

Parameter Description:

■ PoE Mode

To enable/disable port's power.

■ PoE Schedule

To set port's schedule profile. (profile 1 to 10, disabled means no schedule profile)

■ Priority

To set port's priority.

■ Maximum Power(W)

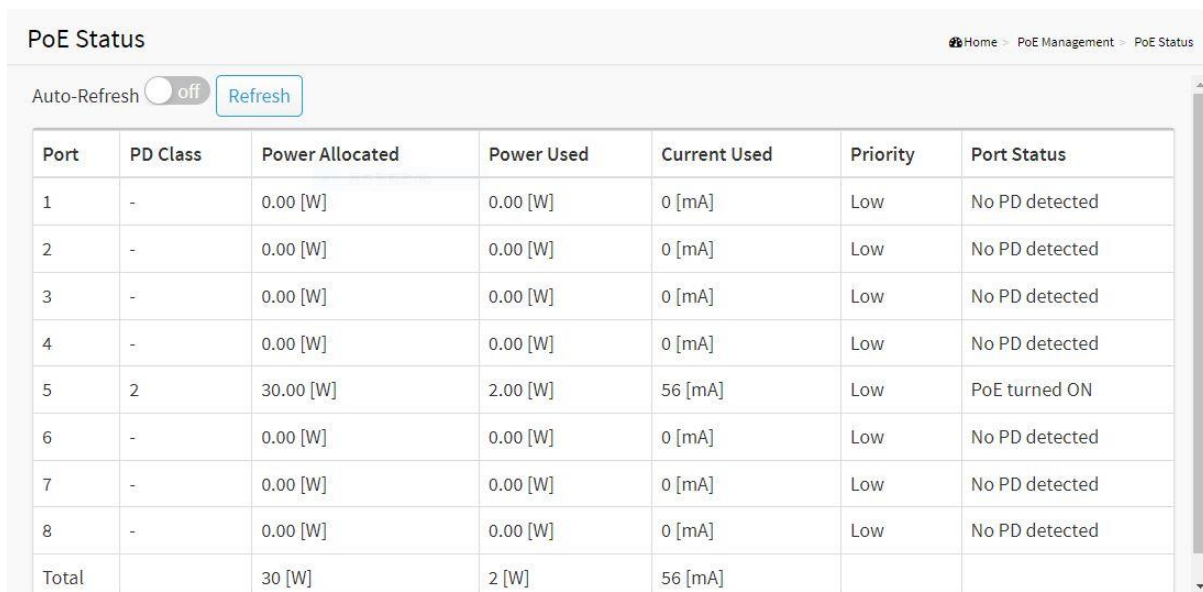
To set port's power.

4-2 PoE Status

This page displays current ports' power status.

Web Interface

To display PoE port's power information in the web interface, click PoE Management -> PoE Status.



The screenshot shows the 'PoE Status' page in a web interface. At the top right, there is a breadcrumb trail: 'Home > PoE Management > PoE Status'. Below the title, there is an 'Auto-Refresh' toggle set to 'off' and a 'Refresh' button. The main content is a table with 7 columns: Port, PD Class, Power Allocated, Power Used, Current Used, Priority, and Port Status. The table lists 8 ports and a total row. Port 5 is the only one with power allocated and used.

Port	PD Class	Power Allocated	Power Used	Current Used	Priority	Port Status
1	-	0.00 [W]	0.00 [W]	0 [mA]	Low	No PD detected
2	-	0.00 [W]	0.00 [W]	0 [mA]	Low	No PD detected
3	-	0.00 [W]	0.00 [W]	0 [mA]	Low	No PD detected
4	-	0.00 [W]	0.00 [W]	0 [mA]	Low	No PD detected
5	2	30.00 [W]	2.00 [W]	56 [mA]	Low	PoE turned ON
6	-	0.00 [W]	0.00 [W]	0 [mA]	Low	No PD detected
7	-	0.00 [W]	0.00 [W]	0 [mA]	Low	No PD detected
8	-	0.00 [W]	0.00 [W]	0 [mA]	Low	No PD detected
Total		30 [W]	2 [W]	56 [mA]		

Figure 4-2: PoE Status

Parameter Description:

■ Auto Refresh

To refresh web page automatically every 10 seconds.

■ Port

The port number.

■ PD Class

The IEEE802.3af/at defined power classification.

Class0: 0.44~12.95 W

Class1: 0.44~3.84 W

Class2: 3.84W~6.49 W

Class3: 6.49~12.95 W

Class4: 12.95~25.5 W

■ Power Allocated

The port's PoE can used maximum

- **Power Used**

The port's PoE used power.

- **Current Used**

The port's PoE used current.

- **Priority**

The port's PoE priority.

- **Port Status**

The port's PoE Status.

4-3 PoE Power Delay

This page displays current PoE ports' power delay function. It can also be configured here.

Web Interface

To configure a port power delay function in the web interface:

1. Click PoE Management -> PoE Power Delay.
2. Specify the parameters which you want to configure.
3. Click Apply.

Port	Delay Mode	Delay Time (0~300 sec)
1	Disabled	0
2	Disabled	0
3	Disabled	0
4	Disabled	0
5	Disabled	0
6	Disabled	0
7	Disabled	0
8	Disabled	0

Figure 4-3: PoE Power Delay

Parameter Description:

- **Delay Mode**

To enable/disable power delay function

- **Delay Time**

To set port's power delay time. (0 ~ 300 seconds)

4-4 PoE Auto Checking

This page displays current PoE ports' power auto checking function. It can also be configured here.

Web Interface

To configure a port power auto checking function in the web interface:

1. Click PoE Management -> PoE Auto Checking.
2. Specify the parameters which you want to configure.
3. Click Apply.

Port	Ping IP Address	Start Time	Interval Time(sec)	Retry Time	Failure Log	Failure Action	Reboot Time(sec)	Max. Reboot Times
1	0.0.0.0	30	30	3	error:0, total:0	Nothi	15	0
2	0.0.0.0	30	30	3	error:0, total:0	Nothi	15	0
3	0.0.0.0	30	30	3	error:0, total:0	Nothi	15	0
4	0.0.0.0	30	30	3	error:0, total:0	Nothi	15	0
5	0.0.0.0	30	30	3	error:0, total:0	Nothi	15	0

Figure 4-4: Power Auto Check

Parameter Description:

■ Ping IP Address

The PD's IP Address used to test its connectivity.

■ Start Time

After Startup Time, PoE auto checking function will be started. Default: 30, range: 30-60 seconds.

■ Interval Time

Device will send checking message to PD each interval time. Default: 30, range: 10-120 seconds.

■ Retry Time

When PoE port can't ping the PD, it will retry to send detection again. When reaching the retry time, it will trigger failure action. Default: 3, range: 1-5.

■ Failure Log

Failure loggings counter.

■ Failure Action

The action when reaching the retry time fail detection.

Nothing: Keep Ping the remote PD but does nothing further.

Reboot: Cut off the power of the PoE port, make PD rebooted.

■ Reboot Time

When PD has been rebooted, the PoE port restored power after the Reboot Time. Default: 15, range: 3-120 sec.

4-5 PoE Scheduling Profile

This page displays current PoE ports' power schedule profile function. It can also be configured here.

Web Interface

To configure power scheduling profile in the web interface:

1. Click PoE Management -> PoE Scheduling Profile.
2. Specify the parameters which you want to configure.
3. Click Apply.

Week Day	Start Time		End Time	
	HH	MM	HH	MM
*	<>	<>	<>	<>
Monday	0	0	0	0
Tuesday	0	0	0	0
Wednesday	0	0	0	0
Thursday	0	0	0	0

Figure 4-5: PoE Scheduling Profile

Parameter Description:

■ Profile

The profile number. (1-10)

■ Name

The profile name.

■ Start Time <HH>

The starting hour time.

■ Start Time <MM>

The starting minute time.

■ End Time <HH>

The ending hour time.

■ **End Time <MM>**

The ending minute time.

A virtual local area network, virtual LAN or VLAN, is a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location. A VLAN has the same attributes as a physical local area network (LAN), but it allows for end stations to be grouped together even if they are not located on the same network switch. VLAN membership can be configured through software instead of physically relocating devices or connections.

5-1 VLAN Configuration

To create new VLANs for management purpose. The management VLAN is used to establish an IP connection to the switch from a workstation connected to a port in the VLAN. By default, the active management VLAN is VLAN 1, but you can designate any VLAN as the management VLAN and only one management VLAN can be active at a time.

When you specify a new management VLAN, your HTTP connection to the old management VLAN is lost. For this reason, you should have a connection between your management station and a port in the new management VLAN or connect to the new management VLAN through a multi-VLAN route

Web Interface

To create new VLANs the web interface:

1. Click VLAN -> VLAN configuration
2. Input new VLANs.
3. Click Apply.

Port	Mode	Port VLAN	Ingress Filtering	Ingress Acceptance	Allowed VLANs
1	Access	1	<input checked="" type="checkbox"/>	Tagged and Untagged	1
2	Access	1	<input checked="" type="checkbox"/>	Tagged and Untagged	1
3	Access	1	<input checked="" type="checkbox"/>	Tagged and Untagged	1
4	Access	1	<input checked="" type="checkbox"/>	Tagged and Untagged	1
5	Access	1	<input checked="" type="checkbox"/>	Tagged and Untagged	1

Figure 5-1: VLAN Configuration

Parameter Description:

■ Allow Access VLANs

The VLANs list you want to create. Enter the final VLAN list you want.

e.g. 1 or 1,4,9,11 which means your system has VLAN 1,4,9,11.

5-2 VLAN Membership

This page provides an overview of membership status of VLANs. Users can set ports as untagged or tagged member of VLAN.

Web Interface

To configure VLAN membership configuration in the web interface:

1. Click VLAN -> VLAN Membership.
2. To see the VLAN member for the port(s).
3. Click Apply.

VLAN Membership																				
Home > VLAN > VLAN Membership																				
Auto-Refresh <input type="radio"/> off <input type="button" value="Refresh"/> <input type="button" value="Clear"/>																				
VLAN ID	Port Members																			
1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U

Figure 5-2: VLAN Member

Parameter Description:

- **VLAN ID**
The VLAN ID list(s).
- **Port Members**
The port status with VLAN setting.

The function is used to establish the multicast groups to forward the multicast packet to the member ports, and, in nature, avoids wasting the bandwidth while IP multicast packets are running over the network. This is because a switch that does not support IGMP or IGMP Snooping cannot tell the multicast packet from the broadcast packet, so it can only treat them all as the broadcast packet. Without IGMP Snooping, the multicast packet forwarding function is plain and nothing is different from broadcast packet.

A switch supported IGMP Snooping with the functions of query, report and leave, a type of packet exchanged between IP Multicast Router/Switch and IP Multicast Host, can update the information of the Multicast table when a member (port) joins or leaves an IP Multicast Destination Address. With this function, once a switch receives an IP multicast packet, it will forward the packet to the members who joined in a specified IP multicast group before.

The packets will be discarded by the IGMP Snooping if the user transmits multicast packets to the multicast group that had not been built up in advance. IGMP mode enables the switch to issue IGMP function that you enable IGMP proxy or snooping on the switch, which connects to a router closer to the root of the tree. This interface is the upstream interface. The router on the upstream interface should be running IGMP.

6-1 Property

This page sets the property of IGMP Snooping, including State, Immediate Leave and Unknown Multicast.

Web Interface

To configure the property of IGMP Snooping in the web interface:

1. Click IGMP Snooping -> Property.
2. Specify the parameters which you want to configure.
3. Click Apply.

Property	
State	<input type="checkbox"/> Enable
Immediate Leave	<input type="checkbox"/> Enable
Unknown Multicast	<input type="checkbox"/> Block

Figure 6-1: Property

Parameter Description:

■ State

To enable/disable IGMP Snooping function.

- **Immediate Leave**

If set enabled, the multicast traffic would be stopped as soon as an IGMP leave message received on a port

- **Unknown Multicast**

If set blocked, the unknown multicast received would be dropped; Otherwise, the packets would be flooded

6-2 Group Address

This page displays the group address for all port members.

Web Interface

To view the group address in the web interface:

1. Click IGMP Snooping -> Group Address.
2. Click "Clear" to delete the entries.
3. Click "Refresh" to reload the entries.

Figure 6-2: Group Address

Parameter Description:

- **VLAN**

VLAN.

- **Group Address**

Group Address of IGMP Snooping.

- **Member**

IGMP Snooping Members.

- **Clear[Button]**

To delete the entries.

- **Refresh[Button]**

To reload the entries.

The switch supports the LLDP. For current information on your switch model, The Link Layer Discovery Protocol (LLDP) provides a standards-based method for enabling switches to advertise themselves to adjacent devices and to learn about adjacent LLDP devices. The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 local area network, principally wired Ethernet. The protocol is formally referred to by the IEEE as Station and Media Access Control Connectivity Discovery specified in standards document IEEE 802.1AB.

7-1 LLDP Configuration

This page is used to configure LLDP settings. You can per port to do the LLDP configuration and the detail parameters, the settings will take effect immediately. This page allows the user to inspect and configure the current LLDP port settings.

Web Interface

To configure the LLDP settings in the web interface:

1. Click LLDP -> LLDP Configuration.
2. Specify LLDP parameters you want to configure.
3. Click Apply.

LLDP Configuration

Home > LLDP > LLDP Configuration

LLDP Parameters	
State	<input checked="" type="checkbox"/> Enable
Tx Interval	30 seconds
Tx Hold	4 times
Tx Delay	2 seconds
Tx Reinit	2 seconds

LLDP System Information	
Chasis ID Subtype	macAddress
Chasis ID	68:8D:B6:51:16:3F

LLDP Configuration
Home > LLDP > LLDP Configuration

LLDP System Information

Chassis ID Subtype	macAddress
Chassis ID	68:8D:B6:51:16:3F
System Name	C60-164-30-250
System Description	C60-164-30: 16xGbE PoE + 2xGbE RJ45 + 2xGbE SFP Managed Switch

LLDP Port Configuration

Port	Mode
1	Enabled
2	Enabled

Figure 7-1: LLDP Configuration

Parameter Description:

■ State

To enable/disable LLDP function.

■ TX Hold

Specify the LLDP packet hold time interval as a multiple of the LLDP timer value. The range is 2 to 10, and the default value is 4.

■ TX Interval

Specify how often the software sends LLDP updates in seconds. The range is 5 to 32768 seconds. The default value is 30 seconds.

■ TX Reinit

Specify the minimum time in seconds an LLDP port waits before reinitializing LLDP transmission. The range is from 1 to 10 and the default value is 2 seconds.

■ TX Delay

Specify the delay in seconds between successive LLDP frame transmissions initiated by value or status changes in the LLDP local systems MIB. The range is from 1 up to 8192 seconds and the default transmission delay is 2 seconds.

■ Chassis ID Subtype

Type of chassis ID (for example, MAC address).

■ Chassis ID

Identifier of the chassis. Where the chassis ID subtype is a MAC address, the MAC address of the device is displayed.

■ System Name

The Name of the device.

■ System Description

The Description of the device.

■ LLDP Port Configuration:

Enable/Disable LLDP State for the ports.

7-2 LLDP Neighbor

This page is to display LLDP neighborhood status.

Web Interface

To display the LLDP neighborhood status in the web interface, click LLDP -> LLDP Neighbor.

LLDP Information

Show 10 entries

Port

Chassis ID Subtype

Chassis ID

Port ID Subtype

Port ID

Port Description

System Name

System Capabilities

System Description

Management Address

10

macAddress

D0:67:E5:B7:0C:FA

interfaceName

10

Port#10

Showing 1 to 1 of 1 entries

Previous1Next

LLDP Neighbor

Home > LLDP > LLDP Neighbor

Auto-Refresh

off

Refresh

Local Port	Chasis ID	Port ID	Chasis ID	System Name	System Capabilities	System Description
gi2	54:AB:3A:59:F1:43	54:AB:3A:59:F1:43				
gi18	68:8D:B6:01:BF:96	gi25		C60-244-30-370	Bridge	C60-244-30: 24xGbE PoE + 2xGbE RJ45 + 2xGbE SFP M

Figure 7-2: LLDP Information

Parameter Description:

Local Port

The normal port of the device.

Chassis ID

Identifier of the chassis. Where the chassis ID subtype is a MAC address, the MAC address of the device is displayed.

Port ID

Port identifier.

System Name

The Name of the device.

System Capabilities

Identifies the switch's primary capabilities (bridge, router).

System Description

The Description of the device.

Management Address

Specify the management address to be used in LLDP Management Address type, length, and value (TLV) messages. The Management Address TLV typically contains the IPv4 or IPv6 management addresses of the local system. Only out-of-band management addresses must be used for the management-address. Other remote managers can use this address to obtain information related to the local device.

The chapter describes how to prevent loop situation.

8-1 Property

This page is used to configure the loop prevention.

Web Interface

To configure the loop prevention in the web interface:

1. Click Loop Prevention -> Property.
2. Specify the parameter you want to configure.
3. Click Apply.

Figure 8-1: Property

Parameter description:

■ State

To enable/disable loop prevention function.

8-2 Status

This page is used to display the loop status of ports.

Web Interface

To view the loop status in the web interface, click Loop Prevention -> Status.

Status

[Home](#) > [Loop Prevention](#) > [Status](#)

Auto-Refresh
 ☐ off
 Refresh

Port	Status
1	Normal
2	Normal
3	Normal
4	Normal
5	Normal
6	Normal
7	Normal
8	Normal
9	Normal

Figure 8-2: Status

This section shows you to configure the Port Security settings of the Switch. You can use the Port Security feature to restrict input to an interface by limiting and identifying MAC addresses.

9-1 Management

This page is used to configure the connect function.

Web Interface

To configure the IP filter function the web interface:

1. Click Security -> Management.
2. Specify the connection parameter you want to configure.
3. Click Apply.

Client	State	Service Port
HTTP	<input checked="" type="checkbox"/>	80
HTTPS	<input checked="" type="checkbox"/>	443
Telnet	<input type="checkbox"/>	23
SSH	<input type="checkbox"/>	22

Apply Reset

Figure 9-1.0: Management

9-2 Port Isolation

This page is used to configure the Port Isolation function.

Web Interface

To configure the port isolation in the web interface:

1. Click Security -> Port Isolation.
2. Specify the parameter you want to configure.
3. Click Apply.

Port Isolation Home > Security > Port Isolation

Port Number																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 9-2: Port Isolation

Parameter Description:

■ Port Number

Select the port of the device to isolate.

9-3 Port Security

This page is used to configure the Port Security function.

Web Interface

To configure the port security in the web interface:

1. Click Security -> Port Security.
2. Specify the parameter you want to configure.
3. Click Apply.

Configuration Home > Security > Port Security > Configuration

System Configuration

Mode ☐ off

Port Configuration

Port	Mode	MAC Limit	Action	State	Re-open
1	Disabled	1	None	Disabled	<input type="button" value="Re-open"/>
2	Disabled	1	None	Disabled	<input type="button" value="Re-open"/>
3	Disabled	1	None	Disabled	<input type="button" value="Re-open"/>
4	Disabled	1	None	Disabled	<input type="button" value="Re-open"/>

Figure 9-3.1: Port Security

Parameter Description:

- **Port**
The normal port of the device.
- **Mode**
The state of the function.
- **MAC Limit**
The limit number of MAC address.
- **Action**
The state of the port

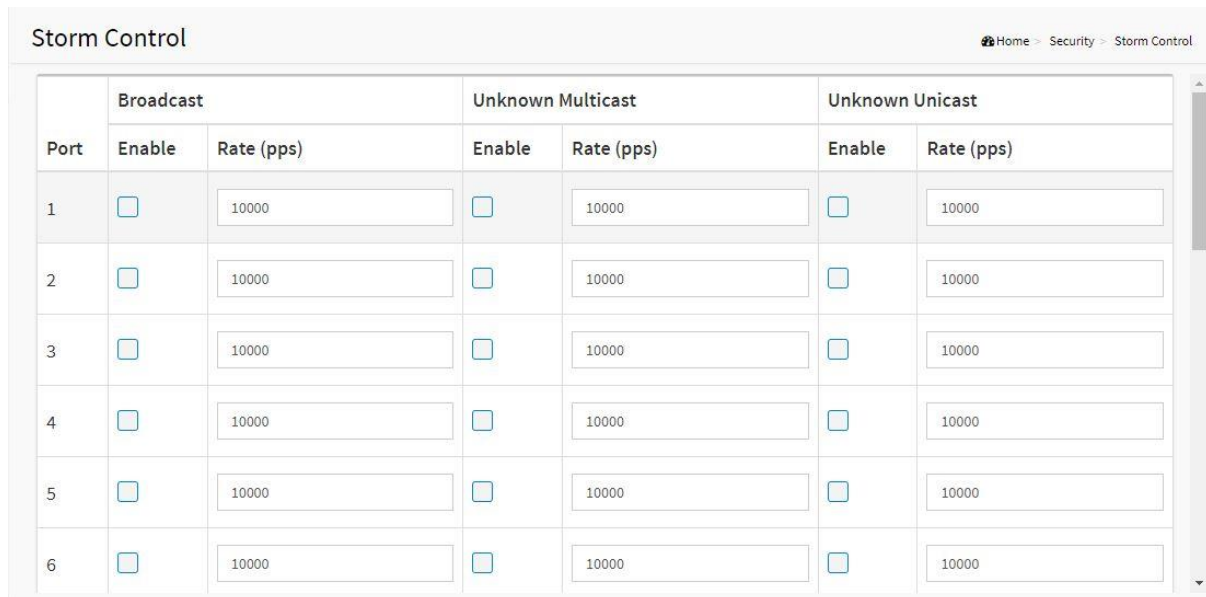
9-4 Storm Control

This page is used to configure the storm control function. A traffic storm occurs when packets flood the LAN, creating excessive traffic and degrading network performance. The traffic broadcast and multicast suppression (or storm control) feature prevents LAN ports from being disrupted by a broadcast, multicast and unicast traffic storm on physical interfaces.

Web Interface

To configure the storm control function in the web interface:

1. Click Security -> Storm Control.
2. Specify the parameter you want to configure.
3. Click Apply.



The screenshot shows the 'Storm Control' configuration page in a web interface. The page has a breadcrumb trail: Home > Security > Storm Control. Below the header is a table with 7 columns: Port, Broadcast, Unknown Multicast, and Unknown Unicast. Each of the last three columns is subdivided into 'Enable' and 'Rate (pps)'. There are 6 rows of ports, numbered 1 to 6. Each row contains a checkbox for 'Enable' and a text input field for 'Rate (pps)', all with a default value of 10000.

Port	Broadcast		Unknown Multicast		Unknown Unicast	
	Enable	Rate (pps)	Enable	Rate (pps)	Enable	Rate (pps)
1	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000
2	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000
3	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000
4	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000
5	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000
6	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000	<input type="checkbox"/>	10000

Figure 9-4: Storm Control

Parameter description:

- **Rate**
The rate for controlling broadcast, multicast and unicast traffic storm on physical interfaces.
- **Enable**
To enable/disable the function.

9-5 DoS Attack Prevention

This page is used to configure the DoS Attack Prevention function.

Web Interface

To configure the DoS Attack Prevention function in the web interface:

1. Click Security -> DoS Attack Prevention.
2. Specify the parameter you want to configure.
3. Click Apply.

DoS Attack Prevention		Home > Security > DoS Attack Prevention	
POD	<input checked="" type="checkbox"/> Enable	Land	<input checked="" type="checkbox"/> Enable
UDP Blat	<input checked="" type="checkbox"/> Enable	TCP Blat	<input checked="" type="checkbox"/> Enable
DMAC = SMAC	<input checked="" type="checkbox"/> Enable	Null Scan Attack	<input checked="" type="checkbox"/> Enable
X-Mas Scan Attack	<input checked="" type="checkbox"/> Enable	TCP SYN-FIN Attack	<input checked="" type="checkbox"/> Enable
TCP SYN-RST Attack	<input checked="" type="checkbox"/> Enable	ICMP Fragment	<input checked="" type="checkbox"/> Enable
TCP-SYN	<input checked="" type="checkbox"/> Enable	TCP Fragment	<input checked="" type="checkbox"/> Enable
Ping Max Size	<input checked="" type="checkbox"/> Enable IPv4 <input checked="" type="checkbox"/> Enable IPv6	512	Byte (0 - 65535)
TCP Min Hdr Size	<input checked="" type="checkbox"/> Enable	20	Byte (0 - 31)
IPv6 Min Fragment	<input checked="" type="checkbox"/> Enable	1240	Byte (0 - 65535)
Smurf Attack	<input checked="" type="checkbox"/> Enable	0	

Figure 9-5.1: DoS Attack Prevention

DoS Attack Prevention		Home > Security > DoS Attack Prevention	
Port	State		
1	Disabled		
2	Disabled		
3	Disabled		
4	Disabled		
5	Disabled		
6	Disabled		
7	Disabled		
8	Disabled		

Figure 9-5.2: DoS Attack Prevention(Detail)

Parameter description:

- **Port**
The normal port of the device.
- **State**
To enable/disable the function.

Quality of Service refers to traffic prioritization and resource reservation control mechanisms rather than the achieved service quality. Quality of Service is the ability to provide different priority to different applications, users, or data flows, or to guarantee a certain level of performance to a data flow.

Quality of Service is particularly important for the transport of traffic with special requirements. In particular, developers have introduced Voice over IP technology to allow computer networks to become as useful as telephone networks for audio conversations, as well as supporting new applications with even stricter network performance requirements.

10-1 Global Settings

This page is used to configure the QoS mode, including CoS/802.1p, DSCP, IP Precedence and 802.1p /DSCP.

Web Interface

To configure the QoS mode in the web interface:

1. Click Quality of Service -> Global Setting
2. Specify the parameter you want to configure.
3. Click Apply.

Parameter Description:

■ CoS/802

Traffic is mapped to queues based on the VPT field in the VLAN tag, or based on the per-port default CoS/802.1p value (if there is no VLAN tag on the incoming packet), the actual mapping of the VPT to queue can be configured on the CoS/802.1p to Queue page.

■ DSCP

All IP traffic is mapped to queues based on the DSCP field in the IP header. The actual mapping of the DSCP to queue can be configured on the DSCP to Queue page. If traffic is not IP traffic, it is mapped to the best effort queue.

■ IP Precedence

Traffic is mapped to queues based on the IP precedence. The actual mapping of the IP precedence to queue can be configured on the IP Precedence to Queue page.

■ 802.1p /DSCP

Differentiated Services Code Point (DSCP) is a priority level that prioritizes the network traffic based on the DSCP queue mapping on the DSCP Settings page.

The screenshot shows the 'Global Settings' page in a web interface. At the top, there is a breadcrumb trail: 'Home > Quality of Service > Global Settings'. The main section is titled 'Trust Mode' and contains four radio button options: 'CoS/802.1p' (which is selected), 'DSCP', 'IP Precedence', and 'CoS/802.1p-DSCP'. Below these options are two buttons: 'Apply' and 'Reset'.

Figure 10-1.1: Global Setting

10-2 Port Settings

Web Interface

To configure the logical port for the setting in the web interface:

1. Click Quality of Service -> Port Setting.
2. Specify the parameter you want to configure.
3. Click Apply.

The screenshot shows the 'Port Settings' page in a web interface. At the top, there is a breadcrumb trail: 'Home > Quality of Service > Port Settings'. Below this is a table with the following columns: 'Port', 'Mode', 'Default CoS', 'Remark CoS', 'Remark DSCP', and 'Remark IP Precedence'. The table contains 7 rows, each representing a port. In all rows, the 'Mode' is set to 'Untrust' (shown in a dropdown menu), 'Default CoS' is set to '0' (shown in a dropdown menu), and the 'Remark' columns have checkboxes that are currently unchecked.

Port	Mode	Default CoS	Remark CoS	Remark DSCP	Remark IP Precedence
1	Untrust	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Untrust	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Untrust	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Untrust	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Untrust	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Untrust	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Untrust	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 10-2: Port Setting

Parameter Description:

■ Mode

Untrust

All ingress traffic on the port is mapped to the best effort queue and no classification/prioritization takes place.

Trust

Port prioritize ingress traffic is based on the system wide configured trusted mode, which is either CoS/802.1p trusted mode, IP Precedence trusted mode or DSCP trusted mode.

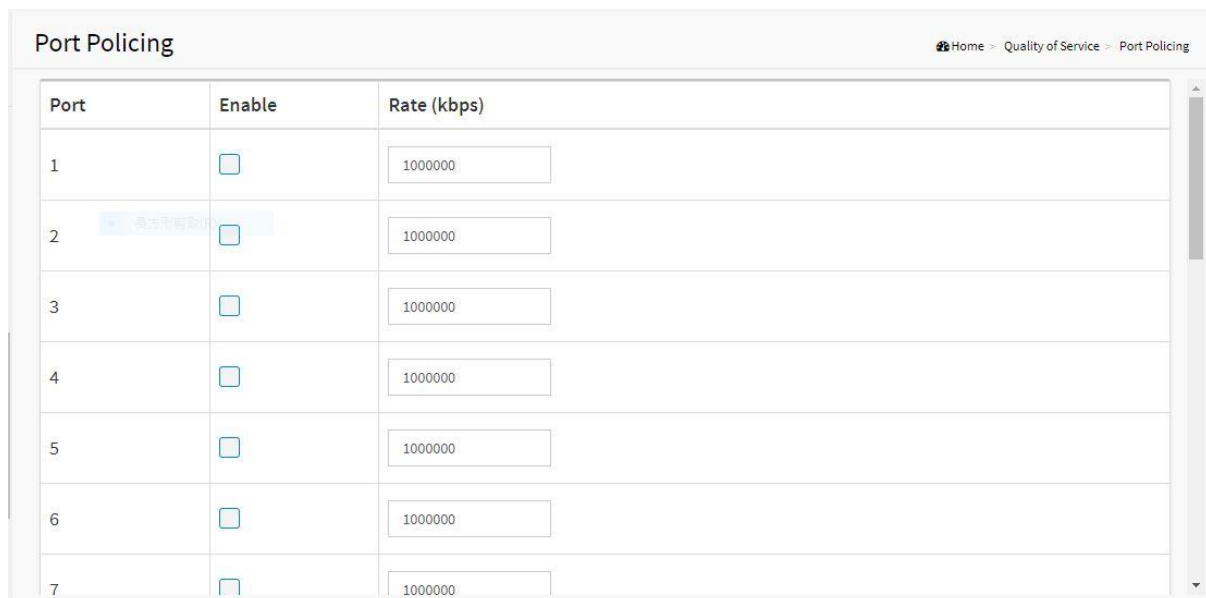
- **Default CoS**
FIFO, Low, Normal, Medium and High. Select the default CoS value to be assigned for incoming untagged packets. The range is 0 to 7.
- **Source CoS**
The CoS value is determined based on C-Tag or S-Tag for incoming tagged packets.
- **Remark CoS**
Click the checkbox to remark the CoS/802.1p priority for egress traffic on this port.
- **Remark DSCP**
Click the checkbox to remark the DSCP value for egress traffic on this port.
- **Remark IP Precedence**
Click the checkbox to remark the IP precedence for egress traffic on this port.

10-3 Port Policing

Web Interface

To configure the logical port for the setting in the web interface:

4. Click Quality of Service -> Port Policing.
5. Specify the parameter you want to configure.
6. Click Apply.



The screenshot shows the 'Port Policing' configuration page in a web interface. The page has a breadcrumb trail: Home > Quality of Service > Port Policing. Below the header is a table with 3 columns: 'Port', 'Enable', and 'Rate (kbps)'. There are 7 rows, numbered 1 to 7. Each row has an 'Enable' checkbox (all are unchecked) and a 'Rate (kbps)' input field (all contain '1000000'). A blue tooltip is visible over the 'Enable' checkbox for port 2.

Port	Enable	Rate (kbps)
1	<input type="checkbox"/>	1000000
2	<input type="checkbox"/>	1000000
3	<input type="checkbox"/>	1000000
4	<input type="checkbox"/>	1000000
5	<input type="checkbox"/>	1000000
6	<input type="checkbox"/>	1000000
7	<input type="checkbox"/>	1000000

Figure 10-2: Port Policing

Parameter Description:

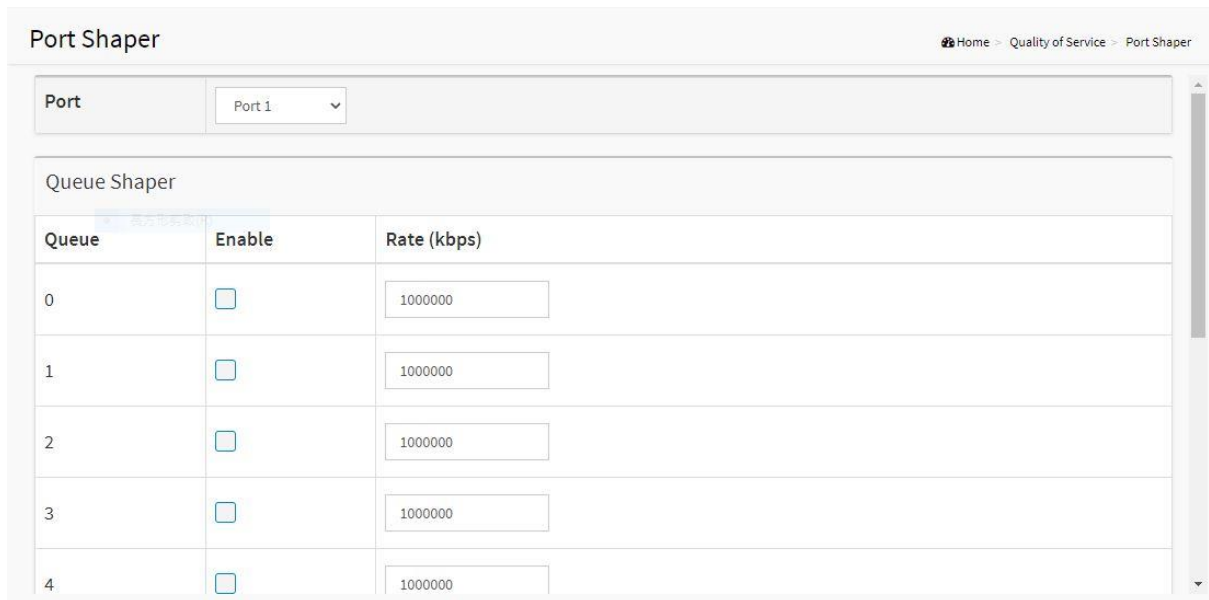
- **Enable**
To evoke which Port you need to enable the QoS Ingress Port Policers function.
- **Rate(kbps)**
To set the Rate limit value for this port, the default is 1000000.

10-4 Port Shaper

Web Interface

To configure the logical port for the setting in the web interface:

7. Click Quality of Service -> Port Shaper.
8. Specify the parameter you want to configure.
9. Click Apply.



The screenshot shows the 'Port Shaper' configuration page. At the top, there is a breadcrumb trail: 'Home > Quality of Service > Port Shaper'. Below this, a 'Port' dropdown menu is set to 'Port 1'. The main section is titled 'Queue Shaper' and contains a table with 5 rows representing queues 0 through 4. Each row has three columns: 'Queue', 'Enable', and 'Rate (kbps)'. The 'Enable' column contains checkboxes, all of which are currently unchecked. The 'Rate (kbps)' column contains input fields, all of which are set to the value '1000000'.

Queue	Enable	Rate (kbps)
0	<input type="checkbox"/>	1000000
1	<input type="checkbox"/>	1000000
2	<input type="checkbox"/>	1000000
3	<input type="checkbox"/>	1000000
4	<input type="checkbox"/>	1000000

Figure 10-2: Port Shaper

Parameter Description:

■ Enable

Controls whether the queue shaper is enabled for this queue on this switch port.

■ Rate(kbps)

Controls the rate for the queue shaper. The default value is 1000000.

10-5 Port Scheduler

Web Interface

To configure the logical port for the setting in the web interface:

10. Click Quality of Service -> Port Scheduler.
11. Specify the parameter you want to configure.
12. Click Apply.

Port Scheduler									
Home > Quality of Service > Port Scheduler									
Port	Scheduler Mode	Weight							
		Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7
1	Strict Priority	0	0	0	0	0	0	0	0
2	Strict Priority	0	0	0	0	0	0	0	0
3	Strict Priority	0	0	0	0	0	0	0	0
4	Strict Priority	0	0	0	0	0	0	0	0
5	Strict Priority	0	0	0	0	0	0	0	0
6	Strict Priority	0	0	0	0	0	0	0	0
7	Strict Priority	0	0	0	0	0	0	0	0
8	Strict Priority	0	0	0	0	0	0	0	0

Figure 10-2: Port Scheduler

Parameter Description:

■ Scheduler Mode

Controls whether the queue shaper is enabled for this queue on this switch port. Controls whether the scheduler mode is "Strict Priority", "WRR" or "WFQ" on this switch port.

■ Weight

Controls the rate for the queue shaper. The default value is 1000000. Controls the weight for this queue. The default value is "0". This value is restricted to 0-127. This parameter is only shown if "Scheduler Mode" is set to "Weighted".

10-6 CoS/802.1p Mapping

This page is used to configure the Class of Service (CoS) which prioritizes the network traffic based on the CoS queue mapping on the CoS Settings.

Web Interface

To configure the CoS in the web interface:

13. Click Quality of Service -> CoS/802.1p Mapping.
14. Specify the parameter you want to configure.
15. Click Apply.

CoS/802.1p Mapping Home > Quality of Service > CoS/802.1p Mapping

CoS/802.1p	Queue ID
0	1
1	0
2	2
3	3
4	4
5	5
6	6
7	7

Figure 10-2: CoS/802.1p Mapping

Parameter Description:

■ Queue ID

Select the egress queue to which the 802.1p priority is mapped. Eight egress queues are supported, where Queue 7 is the highest priority egress queue and Queue 0 is the lowest priority egress queue.

10-7 CoS/802.1p Remarking

This page is use the Queues to CoS/802.1p page to remark the CoS/802.1p priority for egress traffic from each queue.

Web Interface

To configure the rate limit function in the web interface:

1. Click Quality of Service -> CoS/802.1p remarking
2. Specify the parameter you want to configure.
3. Click Apply.

CoS/802.1p Remarking Home > Quality of Service > CoS/802.1p Remarking

Queue ID	CoS/802.1p
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7

Figure 10-3 :CoS/802.1p Remarking

Parameter Description:

■ **Queue ID**

Displays the Queue ID, where Queue 7 is the highest priority egress queue and Queue 0 is the lowest priority egress queue.

■ **CoS/802.1p**

For each output queue, select the CoS/802.1p priority to which egress traffic from the queue is remarked.

The Spanning Tree Protocol (STP) can be used to detect and disable network loops, and to provide backup links between switches, bridges or routers. This allows the switch to interact with other bridging devices (that is, an STP-compliant switch, bridge or router) in your network to ensure that only one route exists between any two stations on the network, and provide backup links which automatically take over when a primary link goes down.

STP - STP uses a distributed algorithm to select a bridging device (STP-compliant switch, bridge or router) that serves as the root of the spanning tree network. It selects a root port on each bridging device (except for the root device) which incurs the lowest path cost when forwarding a packet from that device to the root device. Then it selects a designated bridging device from each LAN which incurs the lowest path cost when forwarding a packet from that LAN to the root device. All ports connected to designated bridging devices are assigned as designated ports. After determining the lowest cost spanning tree, it enables all root ports and designated ports, and disables all other ports. Network packets are therefore only forwarded between root ports and designated ports, eliminating any possible network loops.

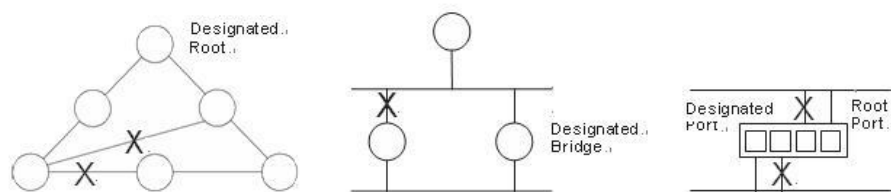


Figure 11-0: The Spanning Tree Protocol

Once a stable network topology has been established, all bridges listen for Hello BPDUs (Bridge Protocol Data Units) transmitted from the Root Bridge. If a bridge does not get a Hello BPDU after a predefined interval (Maximum Age), the bridge assumes that the link to the Root Bridge is down. This bridge will then initiate negotiations with other bridges to reconfigure the network to reestablish a valid network topology.

11-1 State

The section describes that you can select enable spanning tree protocol or not, and you can select what protocol version you want.

Web Interface

To configure the Spanning Tree Protocol version in the web interface:

1. Click Spanning Tree -> State.
2. To enable/disable the Spanning Tree Protocol.
3. Select the Spanning Tree Protocol version.
4. Click Apply.

State

Home > Spanning Tree > State

Multiple Spanning Tree Protocol	<input checked="" type="checkbox"/> on
Force Version	MSTP ▼

Apply Reset

Figure 11-1: State

Parameter Description:

■ Multiple Spanning Tree Protocol

To enable/disable spanning tree protocol.

■ Force Version

The Spanning Tree protocol version, including STP, RSTP and MSTP.

11-2 Region Config

The section describes how to configure the basic identification of a MSTP bridge. Bridges participating in a common MST region must have the same Region Name and Revision Level.

Web Interface

To configure the Region Config in the web interface:

1. Click Spanning Tree -> Region Configuration
2. Specify the Region Name and Revision Level.
3. Click Apply.

Region Configuration

Home > Spanning Tree > Region Configuration

Region Name (0~32 characters)	68:8D:B6:51:16:3F
Revision Level (0-65535)	0

Apply Reset

Figure 11-2: Region Config

Parameter Description:

■ Region Name

The name identifying the VLAN to MSTI mapping. Bridges must share the name and revision (see below), as well as the VLAN-to-MSTI mapping configuration in order to share spanning trees for MSTI's (Intra-region). The name is at most 32 characters.

■ Revision Level

The revision of the MSTI configuration named above. This must be an integer between 0 and 65535.

11-3 Instance View

The section describes how to configure the basic identification of a MSTP bridge. Bridges participating in a common MST region must have the same Region Name and Revision Level.

The section providing an MST instance table which include information(vlan membership of a MSTI) of all spanning instances provisioned in the particular MST region which the bridge belongs to. Through this table, additional MSTP configuration data can be applied and MSTP status can be retrieved.

Web Interface

To configure the MSTP Instance in the web interface:

1. Click Spanning Tree -> Instance View.
2. Click Add VLAN.
3. Specify the Instance ID and Vlan Mapping.
4. Click Instance Config, Port Config, Instance Status and Port Status to see the detail.
5. If you want to cancel the setting, click Delete.

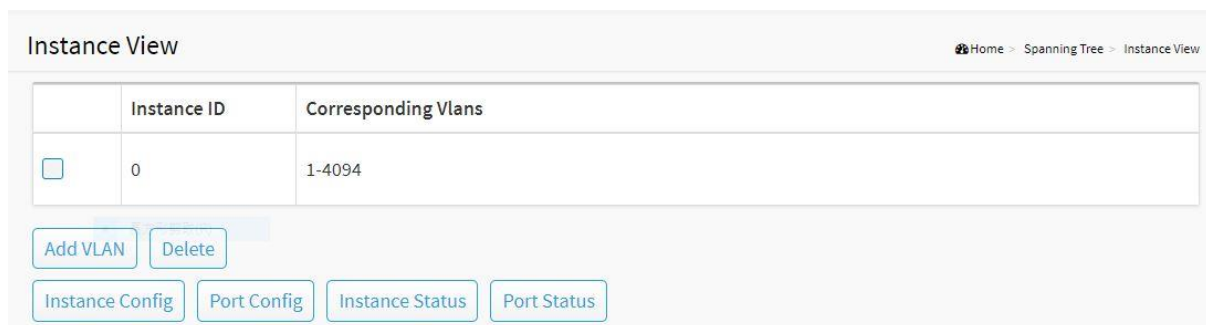


Figure 11-3.0: MSTP Instance Config

Parameter Description:

■ Instance ID

Every spanning tree instance need to have a unique instance ID within 1~15. Instance 0 (CIST) always exists and cannot be deleted. Additional spanning instances (MSTIs) can be added or deleted. At least one vlan must be provisioned for an MSTI to declare the need for the MSTI to be existent.

■ Corresponding VLANs

1-4094.

Multiple vlans can belong to an MSTI. All vlans that are not provisioned through this will be automatically assigned to Instance 0(CIST).

■ Add VLAN[Button]

To add an MSTI and provide its vlan members for a specific MSTI, you can add up to 15.

■ Delete[Button]

To delete an MSTI.

■ Instance Config[Button]

To provision spanning tree performance parameters per instance.

■ Port Config[Button]

To provision spanning tree performance parameters per instance per port.

- **Instance Status[Button]**

To show the status report of a particular spanning tree instance.

- **Port Status[Button]**

To show the status report of all ports regarding a specific spanning tree instance.

Add VLAN

Figure 11-3.1: Add VLAN

Parameter Description:

- **Instance ID**

The Range is 1-15

- **Vlan Mapping**

The list of VLANs mapped to the MSTI. The VLANs can be given as a single (xx, xx must be between 1 and 4094) VLAN, or a range (xx-yy), each of which must be separated with comma and/or space. A VLAN can only be mapped to one MSTI. An unused MSTI should just be left empty. (I.e. not having any VLANs mapped to it.) Example: 2,5,20-40.

Instance Config (ID=0)

Figure 11-3.2: Instance Config (ID 0)

Parameter Description:

- **Priority**

The priority parameter used in the CIST(Common and Internal Spanning Tree) connection.

0 / 4096 / 8192 / 12288 / 16384 / 20480 / 24576 / 28672 / 32768 / 36864 / 40960 / 45056 / 49152 / 53248 / 57344 / 61440

- **MAX. Age**

Range: 6-40 sec

The max age timer controls the maximum length of time that passes before a bridge port saves its configuration BPDU information. This time is 20 sec by default, but you can tune the time to be

between 6 and 40 sec.

■ Forward Delay

Range: 4-30 sec

It is the same definition as in the RSTP protocol. The forward delay is the time that is spent in the listening and learning state. This time is equal to 15 sec by default, but you can tune the time to be between 4 and 30 sec.

■ MAX. Hops

Range: 1-40 sec

It's a new parameter for the multiple spanning tree protocol. It is used in the internal spanning tree instances. "CIST Remaining Hops" or "MSTI Remaining Hops" in the Spanning tree protocol message would decreased by one when the message is propagated to the neighboring bridge. If the Remaining Hops in a message is zero, the message (BPDU) would be regarded as invalid. Max Hops is used to specify the initial value of the Remaining Hops for Regional Root Bridge (Either CIST Regional Root or MSTI Regional Root)

Port Config (ID=0)

Port Config of Instance 0 Home > Spanning Tree > Instance View

Port Config							Migration Check
Port	STP Enable	Path Cost	Priority	Admin Edge	Admin P2P	Mcheck	
1	<input checked="" type="checkbox"/>	Auto	128	No	Auto	---	
2	<input checked="" type="checkbox"/>	Auto	128	No	Auto	---	
3	<input checked="" type="checkbox"/>	Auto	128	No	Auto	---	
4	<input checked="" type="checkbox"/>	Auto	128	No	Auto	---	
5	<input checked="" type="checkbox"/>	Auto	128	No	Auto	---	
6	<input checked="" type="checkbox"/>	Auto	128	No	Auto	---	

Figure 11-3.3: Port Config (ID 0)

Parameter Description:

■ Port

The logical port for the settings contained in the same row.

■ Path Cost

Range: 0-200000000

It is the same definition as in the RSTP specification. But in MSTP, this parameter can be respectively applied to ports of CIST and ports of any MSTI.

■ Priority

0 / 16 / 32 / 48 / 64 / 80 / 96 / 112 / 128 / 144 / 160 / 176 / 192 / 208 / 224 / 240

It is the same definition as in the RSTP specification. But in MSTP, this parameter can be respectively applied to ports of CIST and ports of any MSTI.

■ Admin Edge

Yes / No

It is the same definition as in the RSTP specification for the CIST ports.

- **Admin P2P**

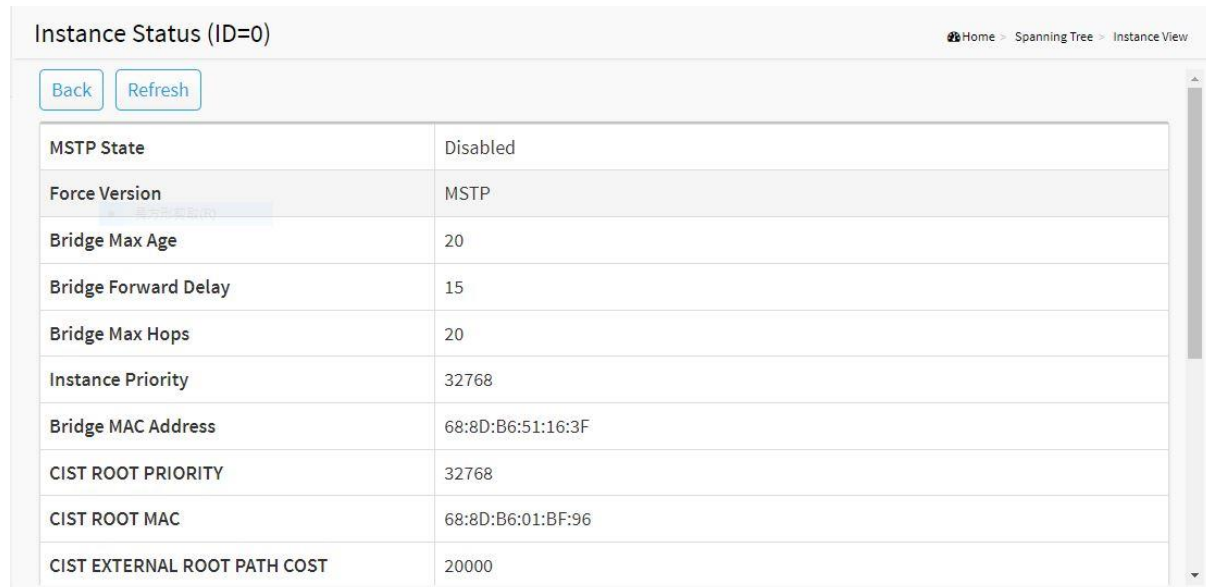
Auto / True / False

It is the same definition as in the RSTP specification for the CIST ports.

- **MCheck**

It is the same definition as in the RSTP specification for the CIST ports.

Instance Status (ID=0)



MSTP State	Disabled
Force Version	MSTP
Bridge Max Age	20
Bridge Forward Delay	15
Bridge Max Hops	20
Instance Priority	32768
Bridge MAC Address	68:8D:B6:51:16:3F
CIST ROOT PRIORITY	32768
CIST ROOT MAC	68:8D:B6:01:BF:96
CIST EXTERNAL ROOT PATH COST	20000

Figure 11-3.4: Instance Status (ID 0)

Parameter Description:

- **MSTP State**

MSTP protocol is Enable or Disable.

- **Force Version**

It shows the current spanning tree protocol version configured.

- **Bridge Max Age**

It shows the Max Age setting of the bridge itself.

- **Bridge Forward Delay**

It shows the Forward Delay setting of the bridge itself.

- **Bridge Max Hops**

It shows the Max Hops setting of the bridge itself.

- **Instance Priority**

Spanning tree priority value for a specific tree instance(CIST or MSTI)

- **Bridge Mac Address**

The Mac Address of the bridge itself.

- **CIST ROOT PRIORITY**

Spanning tree priority value of the CIST root bridge

■ **CIST ROOT MAC**

Mac Address of the CIST root bridge

■ **CIST EXTERNAL ROOT PATH COST**

Root path cost value from the point of view of the bridge's MST region.

■ **CIST ROOT PORT ID**

The port ID of the bridge's root port. In MSTP, peer port of a root port may reside in different MST region or in the same MST region. The first case indicates that the root port's owner is the CIST regional root bridge.

■ **CIST REGIONAL ROOT PRIORITY**

Spanning tree priority value of the CIST regional root bridge. Note that CIST Regional Root bridge is different from CIST Root bridge. One exception is that when a bridge belonging to an MST region happens to be the root bridge of the CST(Common Spanning Tree). An MST Region in the CST can be regarded as a common RSTP bridge. The IST(Internal Spanning Tree) and MSTIs are transparent to bridges outside this region.

■ **CIST REGIONAL ROOT MAC**

Mac Address of the CIST regional root bridge.

■ **CIST INTERNAL ROOT PATH COST**

Root path cost value from the point of view of the bridges inside the IST.

■ **CIST CURRENT MAX AGE**

Max Age of the CIST Root bridge.

■ **CIST CURRENT FORWARD DELAY**

Forward Delay of the CIST Root bridge.

Port Status (ID=0)

Port Status of Instance 0							
Back Refresh							
Port	Status	Role	Path Cost	Priority	Hello	Oper. Edge	Oper. P2P
1	disable	disable	20000	128	0		
2	FORWARDING	DSGN	200000	128	1		V
3	disable	disable	20000	128	0		
4	disable	disable	20000	128	0		
5	disable	disable	20000	128	0		
6	disable	disable	20000	128	0		
7	disable	disable	20000	128	0		
8	disable	disable	20000	128	0		
9	disable	disable	20000	128	0		

Figure 11-3.5: Port Status (ID 0)

Parameter Description:

■ Port No

The port number to which the configuration applies.

■ Status

The forwarding status. Same definition as of the RSTP specification.

Possible values are "FORWARDING" , "LEARNING" , "DISCARDING"

■ Role

The role that a port plays in the spanning tree topology.

Possible values are "disable"(disable port) , "alternate"(alternate port) , "backup"(backup port) , "ROOT"(root port) , "DSGN"(designated port) , "MSTR"(master port). The last 3 are possible port roles for a port to transit to FORWARDING state

■ Path Cost

Display currently resolved port path cost value for each port in a particular spanning tree instance.

■ Priority

Display port priority value for each port in a particular spanning tree instance.

■ Hello

Per port Hello Time display. It takes the following form:

Current Hello Time/Hello Time Setting

■ Oper. Edge

Whether or not a port is an Edge Port in reality.

■ Oper. P2P

Whether or not a port is a Point-to-Point Port in reality.

The section describes how to configure and display the DHCP Snooping parameters of the switch. The DHCP Snooping can prevent attackers from adding their own DHCP servers to the network.

12-1 DHCP Server

This page is used to configure the DHCP Server, including State, Start IP/End IP addresses and Client Lease Time. DHCP Server will allocate these IP addresses to DHCP clients. And deliver configuration parameters to DHCP clients.

Web Interface

To configure the DHCP Server in the web interface:

1. Click DHCP -> DHCP Server.
2. Specify the parameter you want to configure.
3. Click Apply.

DHCP Server	
State	Disabled
Start IP Address	0.0.0.0
End IP Address	0.0.0.0
Client Lease Time	86400 minutes

Apply Reset

Figure 12-1: DHCP Server

Parameter description:

■ State

To enable/disable DHCP Server function.

■ Start IP Address and End IP Address

Define the IP range. The Start IP Address must be smaller than or equal to the End IP Address.

■ Client Lease Time

Range: 1 - 14400000, 0: infinite

Display the lease time of the pool.

This chapter provides a set of basic system diagnosis, including Mirroring, Ping and LAN Cable Diagnostics.

13-1 Mirroring

This page is used to configure the ports' mirror function. You can mirror traffic from any source port to a target port for real-time analysis. You can then attach a logic analyzer or RMON probe to the target port and study the traffic crossing the source port in a completely unobtrusive manner.

Mirror Configuration is to monitor the traffic of the network. For example, we assume that Port A and Port B are Monitoring Port and Monitored Port respectively, thus, the traffic received by Port B will be copied to Port A for monitoring.

Web Interface

To configure port mirroring in the web interface:

1. Click Diagnostics -> Mirroring.
2. Click the Enable checkbox.
3. Select Monitor Destination Port. (Mirror Port)
4. Specify the state of Monitor Source Port.
5. Click Apply.

The screenshot displays the 'Mirroring' configuration page. At the top right, there is a breadcrumb trail: Home > Diagnostics > Mirroring. The main configuration area includes a 'Mode' section with a toggle switch currently set to 'off'. Below this is a 'Monitor Destination Port' dropdown menu, which is currently set to 'Port 1'. The bottom section of the interface is a table with two columns: 'Port' and 'Mode'. The 'Port' column lists ports 1 through 6. The 'Mode' column contains dropdown menus for each port, all of which are currently set to 'Disabled'.

Port	Mode
1	Disabled
2	Disabled
3	Disabled
4	Disabled
5	Disabled
6	Disabled

Figure 13-1: Mirroring

Parameter Description:

■ Mode

To enable/disable port mirroring function.

■ Monitor Destination Port

Port to output the mirrored traffic. Also known as the mirror port. Frames from ports that have either source (rx) or destination (tx) mirroring enabled are mirrored on this port.

■ Monitor Source Port State

To enable/disable source port mirroring function:

- Disabled: neither frames transmitted nor frames received are mirrored.
- Enabled: Frames received and frames transmitted are mirrored on the mirror port.

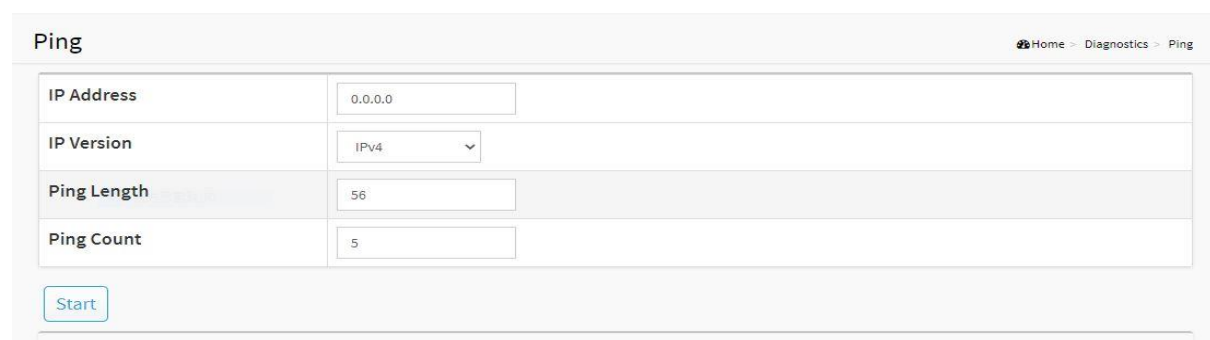
13-2 Ping

This section allows you to issue ICMP Echo packets to troubleshoot Ipv4 connectivity issues.

Web Interface

To configure a PING in the web interface:

1. Click Diagnostics -> Ping.
2. Specify IP Address and Ping Count..
3. Click Ping to start.
4. Click Stop to stop.



The screenshot shows a web interface titled "Ping" with a breadcrumb trail "Home > Diagnostics > Ping". It contains four input fields: "IP Address" with the value "0.0.0.0", "IP Version" with a dropdown menu set to "IPv4", "Ping Length" with the value "56", and "Ping Count" with the value "5". Below these fields is a "Start" button.

Figure 13-2: Ping

Parameter Description:

■ IP Address

To specify the target IP Address of the Ping.

■ IP Version

To select the IP Version.

■ Ping Length

The payload size of the ICMP packet. Values range from 1 bytes to 1452 bytes.

■ Ping Count

The count of the ICMP packet. Values range from 1 time to 60 times.

13-3 LAN Cable Diagnostics

This section shows how to run LAN Cable Diagnostics for copper ports.

Web Interface

To configure a LAN Cable Diagnostics Configuration in the web interface:

1. Click Diagnostics -> Cable Diagnostics.
2. Specify Port which you want to check.
3. Click Cable Test.

Cable Diagnostics			
Home > Diagnostics > Cable Diagnostics			
Port 1 Start			
Cable Diagnostics Status			
Port	Link Status	Test Result	Length
1	--	--	--
2	--	--	--
3	--	--	--
4	--	--	--
5	--	--	--
6	--	--	--
7	--	--	--
8			

Figure 13-3: LAN Cable Diagnostics

Parameter Description:

- **Port**
The port where you are requesting Cable Diagnostics.
- **Result**
The status of copper test. It include:
 - OK: Correctly terminated pair
 - Short Cable: A short circuit was detected on the twisted pair.
 - Open Cable: Opening pair. One scenario is the cable doesn't plug to the link partner.
 - Imedance Mismatch : The normal impedance should be 100Ω, impedance mismatch is detected if the impedance measured is not in the range 70Ω~130Ω.
 - Line Drive: The high impedance is detected. One scenario is the cable plug to a power down link partner.
- **Length**
Distance in meter from the port to the location on the cable where the fault was discovered.

This chapter provides the maintenance of the system. These includes Configuration Import/Export, Restart Device, Reset to default and Firmware Upgrade.

14-1 Configuration

14-1.1 Backup / Restore

This section describes how to import or export the Switch Configuration for maintenance needs. Any current configuration files will be exported as text format, and the configuration files on the switch can be backed up and saved on the station running the web browser.

It is possible to transfer any of the files on the switch to the web browser. Select the configuration file for uploading, as the file must be backup before uploading.

Web Interface

To import or export the current device's configuration in the web interface:

1. Click Maintenance -> Configuration -> Backup / Restore
2. For upload configuration, select the file you want to backup and restore.
3. For backup, click Backup to save the configuration file.

BackupHome > Maintenance > Configuration > Backup

Select configuration file for backup.
Please note: running-config may take a while to prepare for download.

File Name

☐ running-config

☐ startup-config

Backup

Restore

Home > Maintenance > Configuration > Restore

Source File

選擇檔案 未選擇任何檔案

Destination File

File Name

☐ running-config

☐ startup-config

Restore

Figure 14-1.1: Backup / Restore

Parameter Description:

- **Backup[Button]**
Set port enable/disable.
- **Restore[Button]**
Set port enable/disable.

14-2 Restart Device

This section describes how to restart the device for any maintenance needs. Any configuration files or scripts that you saved in the switch should still be available afterwards.

Web Interface

To Restart Device in the web interface:

1. Click Maintenance -> Restart Device.
2. Click Yes.

Restart Device

Home > Maintenance > Restart Device

Are you sure you want to perform a Restart?

Yes No

Figure 14-2: Restart Device

Parameter Description:

- **Yes[Button]**
To restart device

14-3 Reset Default

This section describes how to restore the Switch configuration to factory default value.

Web Interface

To restore to factory default value in the web interface:

1. Click Maintenance -> Reset Default.
2. Click Yes.

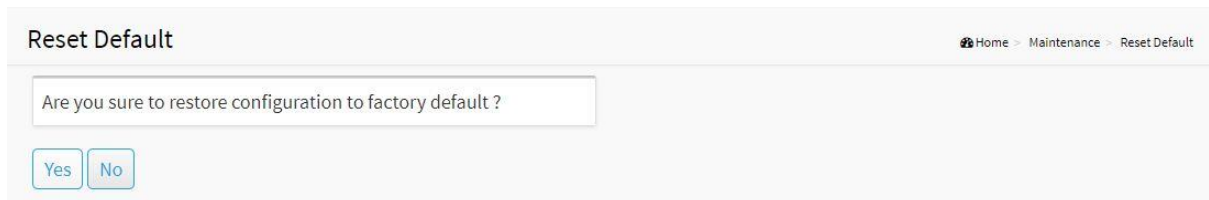


Figure 14-3: Reset Default

Parameter Description:

■ Yes[Button]

To reset the device to factory default value.

14-4 Firmware Upgrade

To display firmware upgrade page, you can click 'Maintenance -> Firmware Upgrade'. This page allows user to upgrade firmware image through HTTP.

Web Interface

To update firmware of the device in the web interface:

1. Click Maintenance -> Firmware -> Firmware Upgrade.
2. Choose the firmware you want to upgrade.
3. Click Upload.



Figure 14-4: Firmware Upgrade

Parameter Description:

- **Firmware File**
The firmware version which currently runs on this device
- **Upload[Button]**
Click to perform firmware upgrading.
Don't turn off the device during the firmware upgrading.

14-5 Firmware Selection

To display firmware upgrade page, you can click 'Maintenance -> Firmware -> Firmware Selection'. This page allows user to select firmware image through UI.

Web Interface

To update firmware of the device in the web interface:

4. Click Maintenance -> Firmware -> Firmware Selection.
5. Choose the firmware version you want to use.
6. Click Activate.

Firmware Selection

Home > Maintenance > Firmware > Firmware Selection

Active Image

Partition	primary
Version	C60-164-30-250_v2.0.0.15_10120f
Date	2021-10-12 12:13:21

Alternate Image

Partition	secondary
Version	C60-164-30-250_v2.0.0.15_10120f
Date	2021-10-12 12:13:21

Activate Alternate Image

Reset

Figure 14-4: Firmware Upgrade

Parameter Description:

- **Activate Alternate Image[Button]**
The firmware version which would like to activate on this device.
- **Reset[Button]**
Reset the setting.