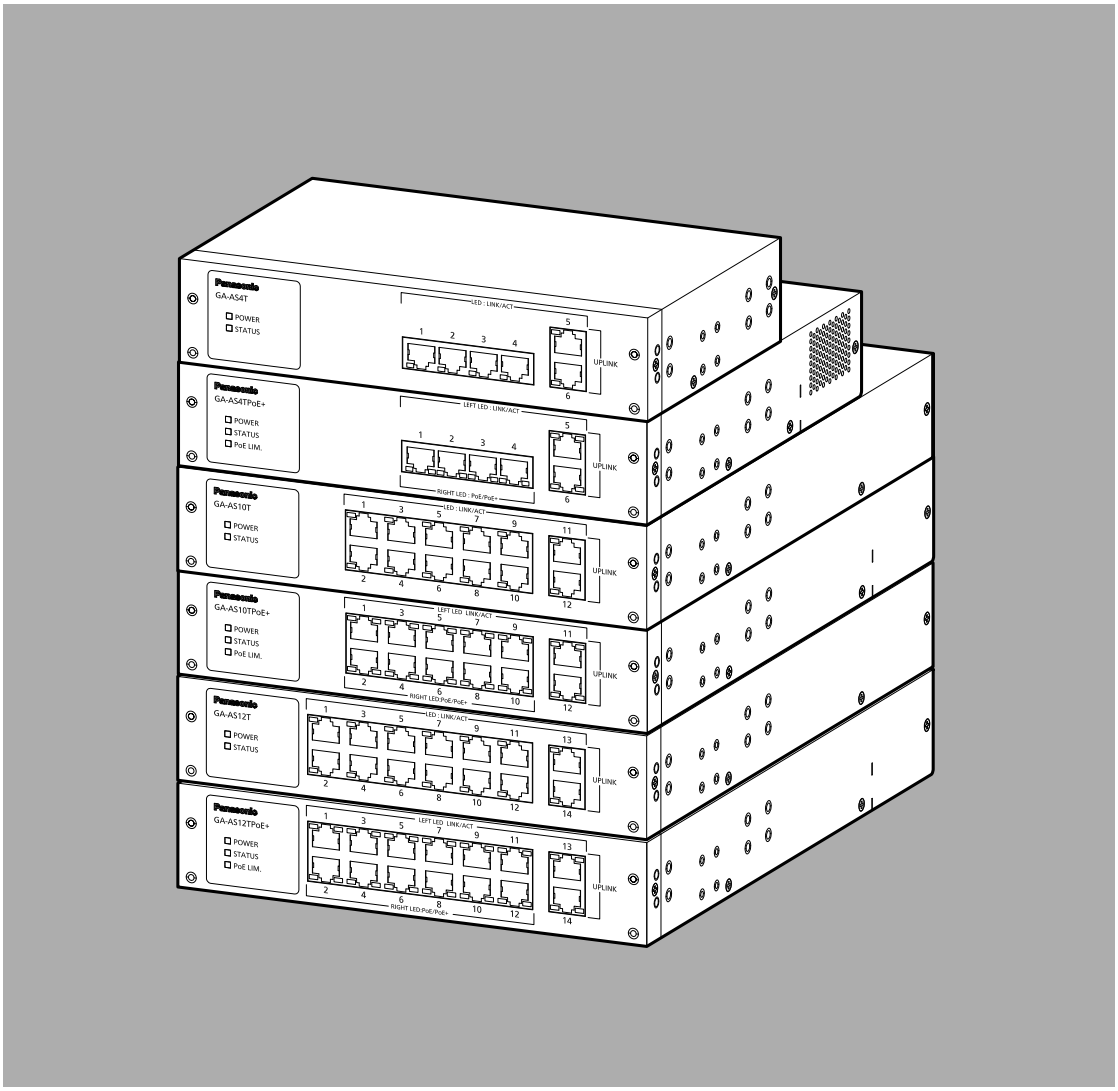
Panasonic

Layer 2 Switching Hub

WEB Reference

Model No. PN25041/PN25048
PN25101/PN25108
PN25121/PN25128



The target model for this document is as follows.

Model name	Model number	Firmware version
GA-AS4TPoE+	PN25048-ID PN25048-TH PN25048-MY PN25048-SG	2.0.0.00 and above
GA-AS10TPoE+	PN25108-ID PN25108-TH PN25108-MY PN25108-SG PN25108-NZ	2.0.0.00 and above
GA-AS12TPoE+	PN25128-ID PN25128-TH PN25128-MY PN25128-SG	2.0.0.00 and above
GA-AS4T	PN25041-ID PN25041-TH PN25041-MY PN25041-SG	2.0.0.00 and above
GA-AS10T	PN25101-ID PN25101-TH PN25101-MY PN25101-SG	2.0.0.00 and above
GA-AS12T	PN25121-ID PN25121-TH PN25121-MY PN25121-SG	2.0.0.00 and above

Table of Contents

1. Product Outline

GA-AS series are Ethernet Switching Hubs that feature the Web control function and 10/100/1000BASE-T ports.
The downlink ports support the PoE power supply function for IEEE802.3at/af compatible devices.

1.1. Features

- All ports (twisted pair ports) are 10/100/1000BASE-T ports that support auto-negotiation.
  Speed and communication mode can be switched by configuring the settings.
- The downlink ports of PoE supported models can provide PoE power supply to IEEE802.3at and IEEE802.3af compatible devices.
  A single port can supply power by PoE up to 30 W.
  The total number of ports, number of downlink ports, and amount of power supply by the whole unit are shown below for each model.

Model name	Total number of ports	Number of downlink ports (PoE power supply supported)	Power supply by the whole unit
GA-AS4TPoE+	6 (port 1 to 6)	4 (port 1 to 4)	62 W
GA-AS10TPoE+	12 (port 1 to 12)	10 (port 1 to 10)	70 W
GA-AS12TPoE+	14 (port 1 to 14)	12 (port 1 to 12)	84 W

- All twisted pair ports support the straight/cross cable auto sensing function. You can simply connect devices with a straight cable, whether the target is a terminal or a network device.
  (By factory default, downlink ports are fixed to MDI-X.)
- The IEEE802.3az (LPI) compatible Energy Efficient Ethernet (EEE) function is supported, allowing reduction of power consumption of each port by automatically switching to a power saving state when there is no data communication at link up.
- The power saving mode detects the connection status automatically, and reduces power consumption to a minimum.
- The IEEE802.1Q compatible tag VLAN is supported, allowing registration of up to 256 VLANs.
- The Internet Mansion function is supported, allowing to ensure security of each room in a building.
- The IEEE802.1p compatible QoS function is supported.
- The IEEE802.3ad compatible link aggregation function is supported, allowing aggregation up to 8 ports.
- (For GA-AS4TPoE+ and GA-AS4T, up to 6 ports.)6. u002d (hyphen-minus)

1.2. LED Behavior

1.2.1. LED Behavior during Start-up

When you turn on this switch, all LEDs are lit momentarily.
Then, self-diagnosis of the hardware is conducted. When the self-diagnosis is completed, the STATUS LED is lit in green, and the hardware starts operation as a switching hub.

1.2.2. LED Behavior while Operating

Each switch has system LEDs and a set of LEDs for each port. These LEDs indicate the operation status of the switch and each port.

- System LEDs

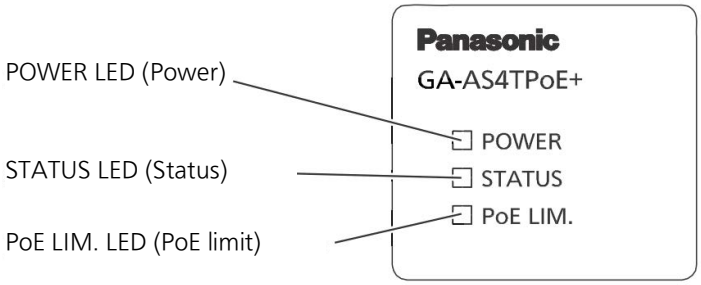


Figure 1-1 System LEDs (Example: GA-AS4TPoE+)

LED	Behavior	Description
POWER LED	Green light	Power On.
	Off	Power Off.
STATUS LED	Green light	System operating normally.
	Orange light	System starting-up.
	Orange blink	System failure.
PoE LIM. LED (PoE supported models only)	Off	Supplies power 0 to 55 W. [GA-AS4TPoE+] Supplies power 0 to 63 W. [GA-AS10TPoE+] Supplies power 0 to 77 W. [GA-AS12TPoE+]
	Green light	Supplies power 55 to 62 W. [GA-AS4TPoE+] Supplies power 63 to 70 W. [GA-AS10TPoE+] Supplies power 77 to 84 W. [GA-AS12TPoE+]
	Green blink	When power supply by the whole unit exceeds 62 W. [GA-AS4TPoE+] When power supply by the whole unit exceeds 70 W. [GA-AS10TPoE+] When power supply by the whole unit exceeds 84 W. [GA-AS12TPoE+]

- Port LEDs

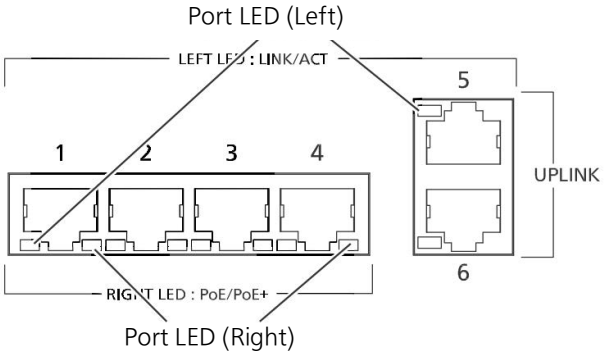


Figure 1-2 Port LEDs (Example: GA-AS10TPoE+)

Port LEDs		Behavior	Description
Left	LINK/ACT	Green light	Link established.
		Green blink	Transmitting data.
		Off	No device connected.
Right	PoE (PoE support device only)	Green light	Supplying power normally.
		Green blink	The whole unit or the single port is overloaded.
		Off	Not supplying power, or no PoE power receiving device connected.

1.2.3. Operation Overview of PoE Power Supply Function on PoE Supported Models

The downlink ports of GA-AS4TPoE+/AS10TPoE+/AS12TPoE+ can provide PoE power supply for IEEE802.3at/af compatible devices. A single port can supply power up to 30 W.
The number of downlink ports and amount of power supply by the whole unit are shown below for each model.

Model name	Number of downlink ports (PoE power supply supported)	Power supply by the whole unit
GA-AS4TPoE+	4 (port 1 to 4)	62 W
GA-AS10TPoE+	10 (port 1 to 10)	70 W
GA-AS12TPoE+	12 (port 1 to 12)	84 W

- Power supply operation when the PoE LIM. LED is green blink (the whole unit is overloaded)
  When the whole unit is overloaded due to a power request exceeding the limit, you can check which port has stopped supplying power, by checking whether the port LED (right) is green blink. To keep power request less than maximum power supply on the whole unit, unplug the cable connected to the port green blink.
  Priority control of the power supply can be set and changed from the web control screen. (By factory default, the priority of all downlink ports is set as the same.)

- Power supply operation when a single port is overloaded
  When power request exceeds the maximum on a single port, the port is overloaded and stops supplying power. You can check which port has stopped supplying power, by checking whether the port LED (right) is green blink. Unplug the cable on the port green blink.

Note: Power consumption may be greatly different between during normal operation and during maximum power consumption depending on the PoE power receiving device. Configure the switch not to exceed the limit.

Note: When priority control is not set or the priority is set as the same for all ports, the port with the smallest port number will be given priority for power supply. (If power request exceeds the limit of the whole unit, a port with a larger port number is blocked to stop supplying power.)

2. Installation

For the installation methods for each model, refer to the operating instructions.

3. Connection

3.1. Connecting a Twisted Pair Port

- Connection Cable
  Use a CAT5E or higher straight cable (twisted pair cable) with 8P8C RJ45 modular plugs.

- Network Configuration

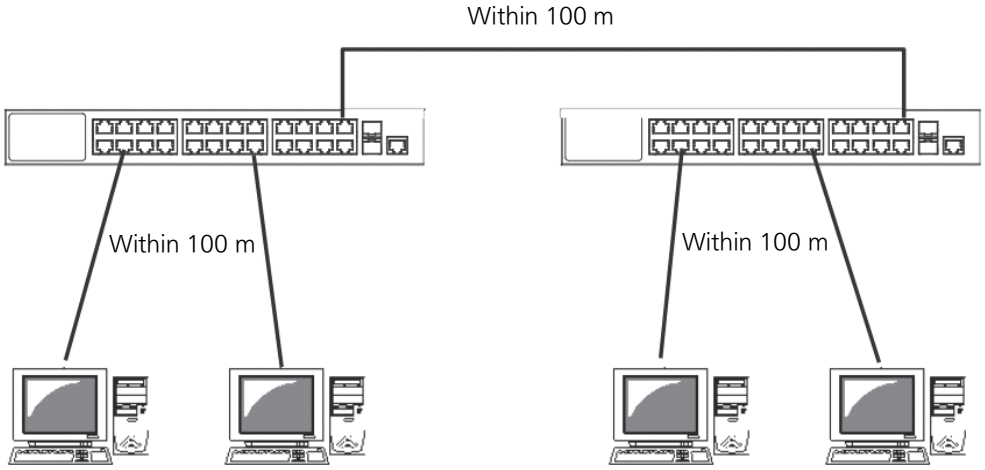


Figure 3-1 Connection configuration example

The length of the cable connecting this switch and a device must be 100 m or shorter. When a terminal or a LAN device with auto-negotiation function is connected to a port, the port is automatically configured to the most appropriate performance mode. When a terminal or a device without auto-negotiation function is connected to a port, this switch automatically determines and sets the communication speed; however, the full-duplex/half-duplex configuration is set at half-duplex because the full-duplex/half-duplex capability cannot be determined. When connecting a terminal or a device without auto-negotiation function, set the connection mode of the port to Fixed. For detailed configuration procedure, refer to Section 5.1.3.

Note: If connection mode is set to a fixed value, Auto-MDI/MDI-X function does not work. Therefore, you need to use a cross cable for connections between switches.

3.2. Connecting to Power

Connect the supplied power cord to the power port of this switch, and connect the power plug into an electric outlet.
The switch operates at AC 100-240 V (50/60 Hz).
It does not have a power switch. When you connect the power plug, the switch turns on and starts operating.
To power off, unplug the power plug from the electric outlet.

4. Web Browser-based Control

With the web browser-based control function (hereinafter referred to as the "Web control function"), you can configure the settings for this switch from a web browser's user interface via the network.

The letters, numbers, and symbols that can be used for setting are as follows.
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
-._

The example setting screen used in this document may differ from the actual screen.

4.1. Operating Environment

The recommended web browser is Microsoft Edge(Internet Explorer mode).

Note: When you use a proxy, the active window may not be displayed properly; direct access without using a proxy is recommended.

4.2. IP Address Configuration

The IP address of this switch is not set as factory default. To access the Web control function screen for this switch, you need to use the ZEQUO assist Plus application that can be downloaded from HP with the switch to set the IP address.
For details, refer to the operation instructions for ZEQUO assist Plus.

4.3. Access to Web Control Function

To use the Web control function, enter the IP address for this switch in the web browser's URL field ("location:", "address:", etc.) and press "Enter." Then, a login screen for this switch shown in **Figure 4-1** is displayed. Enter the user name and password.
The factory default user name is "manager" and password is "manager."

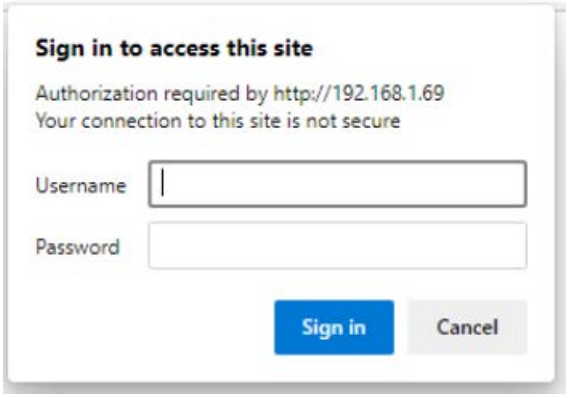


Figure 4-1 Login Screen

Note: If the login screen is not displayed, check the following:
(1) Are the IP address, subnet mask, and default gateway of this switch properly configured?
(2) Is the IP address entered on the web browser the same as the IP address of this switch?

When the above information has been authenticated properly, the screen shown in Figure 4-2 will appear for selecting a display language.
Select the type of the language in which you want to show menus, and press "OK."

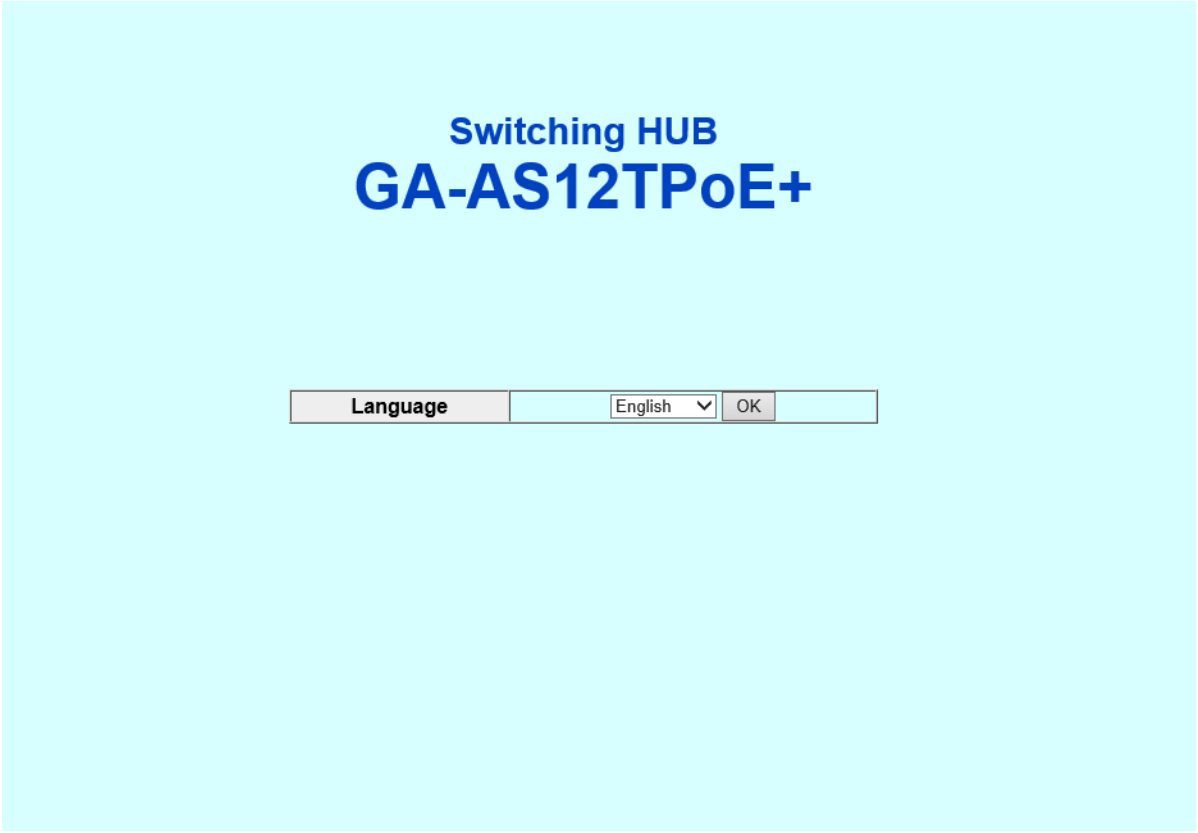


Figure 4-2 Select Display Language

The left side of the screen shows a list of actions that you can perform on this screen.

(1) General Info
Displays a list of basic information of this switch.

(2) Basic Config
Configure the basic settings such as IP address and port settings.

(3) Advanced Config
Configure the advanced function settings such as VLAN, QoS, and port monitoring.

(4) System Tools
Management tools to update the firmware and browse system logs.

To conduct operation management, it is recommended that you first configure settings for the "Basic Config" and then configure other advanced settings.

4.4. Displaying Basic Information

Select "General Info" to open the screen shown in Figure 4-3. This screen displays a list of this switch's basic information.

Figure 4-3 General Info

Screen Description

System Information	Displays the operating time and firmware version of this switch.	
	Operating Time	Displays the cumulative time since the power on of this switch.
	Boot Code Version	Displays the firmware version of this switch. * The firmware update described in Section 5.3.1 is available only for runtime codes.
	Runtime Code Version	
	Serial Number	Displays the serial number of this switch.
Hardware	Displays the hardware information.	
	Hardware Version	Displays the hardware version.
	DRAM Size	Displays the size of the installed DRAM.
	Flash Size	Displays the size of the installed Flash memory.
Management	Configure the items shown here in accordance with Section 5.1.1 "Administration Configuration."	
	Host Name	Displays the switch name. The factory default setting is blank. For configuration details, refer to Section 5.1.1.
System Address	Configure the items shown here in accordance with Section 5.1.2 "IP Config."	
	MAC Address	Displays the MAC address of the switch. This value is uniquely assigned to each device and cannot be changed.
	IP Address	Displays the switch's current IP address. "0.0.0.0" is the factory default setting. For configuration details, refer to Section 5.1.2.
	Subnet Mask	Displays the switch's current subnet mask. "0.0.0.0" is the factory default setting. For configuration details, refer to Section 5.1.2.
	Default Gateway	Displays the IP address of the router for the default gateway. "0.0.0.0" is the factory default setting. For configuration details, refer to Section 5.1.2.

5. Switch Configuration

After completing configuration, you must save the configuration information in accordance with Section 5.3.3. Unless you save the configuration information, the settings configured so far will not be reflected upon restart.

5.1. Basic Config

5.1.1. Administration Config

Select "Basic Config" and then "Administration Config" to open the screen shown in Figure 5-1. Select this screen to display this switch's information. On this screen, you can set administrative information, such as device name.

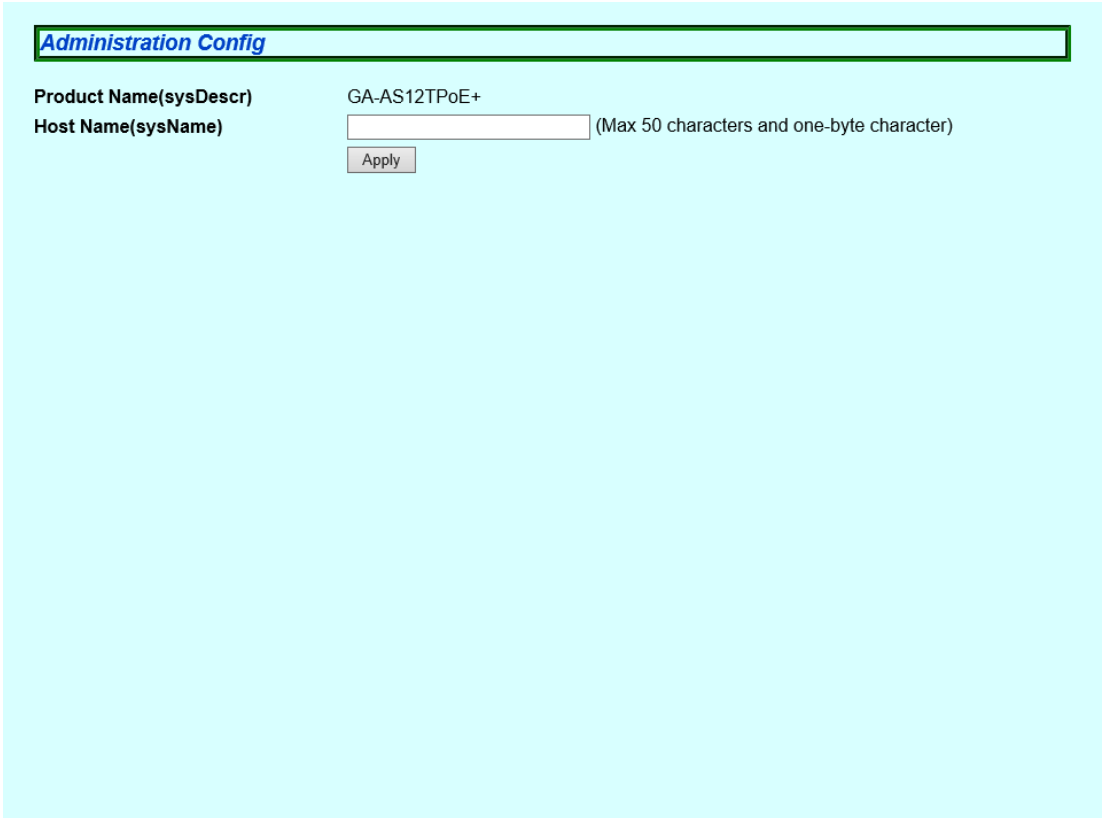


Figure 5-1 Administration Configuration

Screen Description

Products Name	Displays the system information. This item is not editable.
Host Name	Displays the system name. The factory default setting is blank.

5.1.2. IP Config

Select "Basic Config" and then "IP Config" to open the screen shown in Figure 5-2. On this screen, you can configure the IP address of this switch.

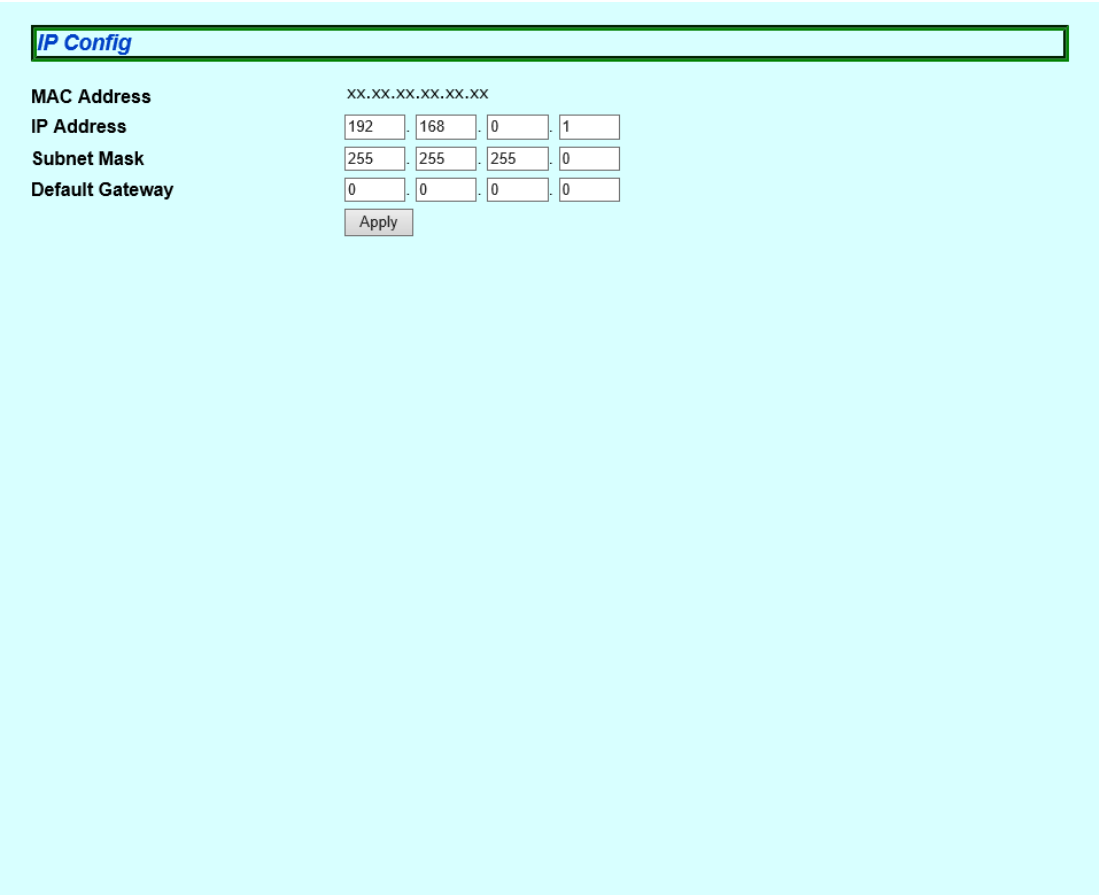


Figure 5-2 IP Config

Screen Description

MAC Address	Displays the MAC address of this switch. This value is uniquely assigned to each device and cannot be changed.
IP Address	Displays the current IP address. "0.0.0.0" is the factory default setting.
Subnet Mask	Displays the current subnet mask. "0.0.0.0" is the factory default setting.
Default Gateway	Displays the IP address of the router, set as the current default gateway. "0.0.0.0" is the factory default setting.

Note: All IP addresses on the local network must be unique, and no duplications are allowed. In addition, you need to set the subnet mask and the default gateway, which are the same for other devices on the same subnet using this switch. If you are unsure, consult the network administrator.

5.1.3. Basic Port Config

Select "Basic Config" and "Port Config" and then "Basic Port Config" to open the screen shown in Figure 5-3. On this screen, you can display status and configure mode and other settings for each port.

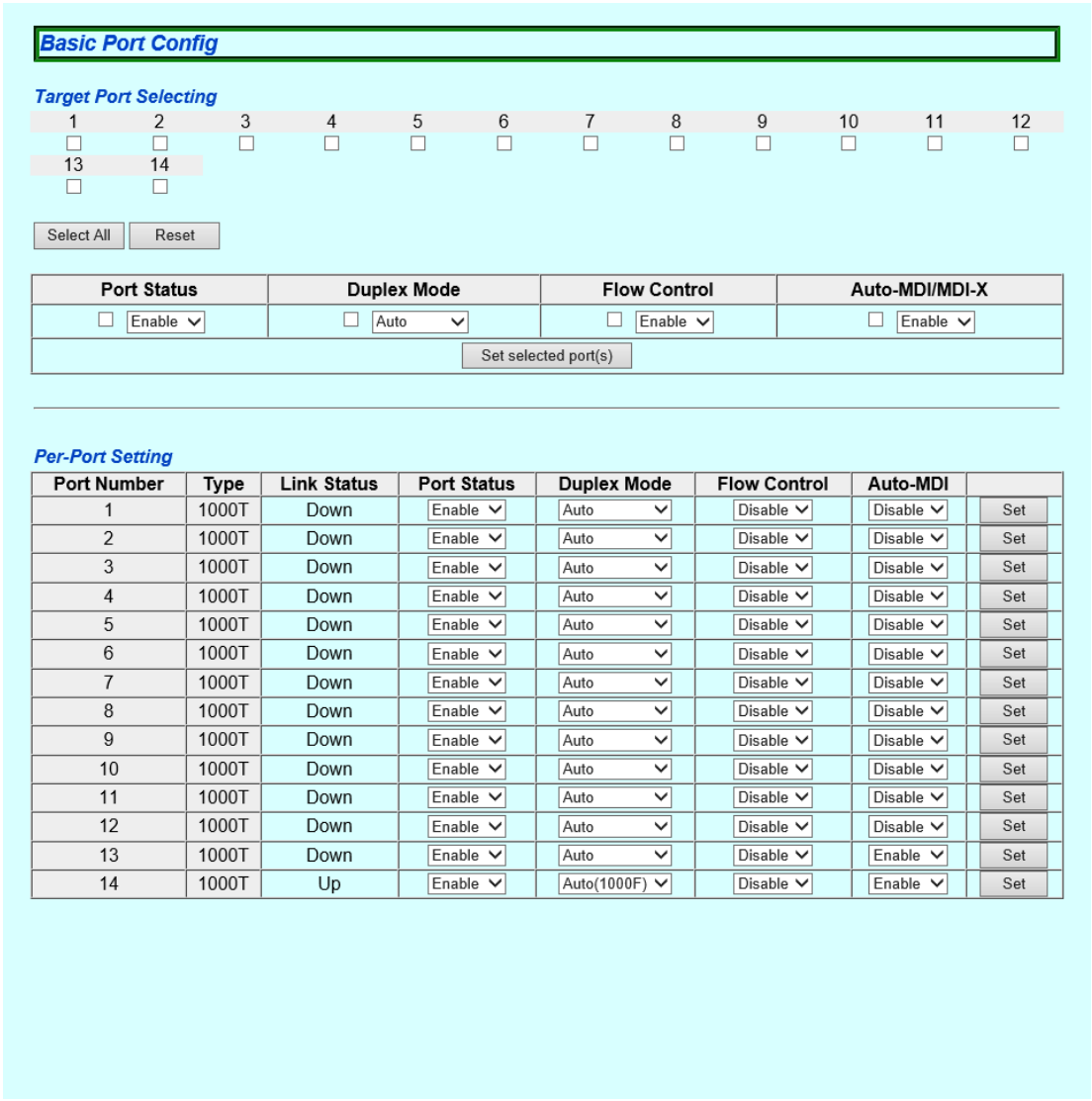


Figure 5-3 Basic Port Configuration

Screen Description

Port Number	Displays the port number.	
Type	Displays the port type.	
	1000T	The port type is 1000BASE-T.
Link Status	Displays the current link status.	
	Up	A link has been established successfully.
	Down	A link has not been established.
Port Status	Displays the current port status. For all ports, "Enable" is the factory default setting.	
	Enable	The port is available.
	Disable	The port is not available.
Duplex Mode	Displays the communication speed and full-duplex/half-duplex settings. For all ports, "Auto" is the factory default setting.	
	Auto	Auto-negotiation mode
	10M Half	10 Mbps half-duplex
	10M Full	10 Mbps full-duplex
	100M Half	100 Mbps half-duplex
	100M Full	100 Mbps full-duplex
Flow Control	Indicates the flow control configuration status. For all ports, "Disable" is the factory default setting.	
	Enable	The flow control is enabled.
	Disable	The flow control is disabled.
Auto-MDI	Indicates the Auto MDI/MDI-X function configuration status. The factory default setting is "Enable" for uplink ports and "Disable" for other ports.	
	Enable	The Auto-MDI/MDI-X function is enabled.
	Disable	The Auto-MDI/MDI-X function is disabled.

5.1.4. Extend Port Config

Select "Basic Config" and "Port Config" and then "Extend Port Config" to open the screen shown in Figure 5-4. On this screen, you can display status and configure mode and other settings for each port.

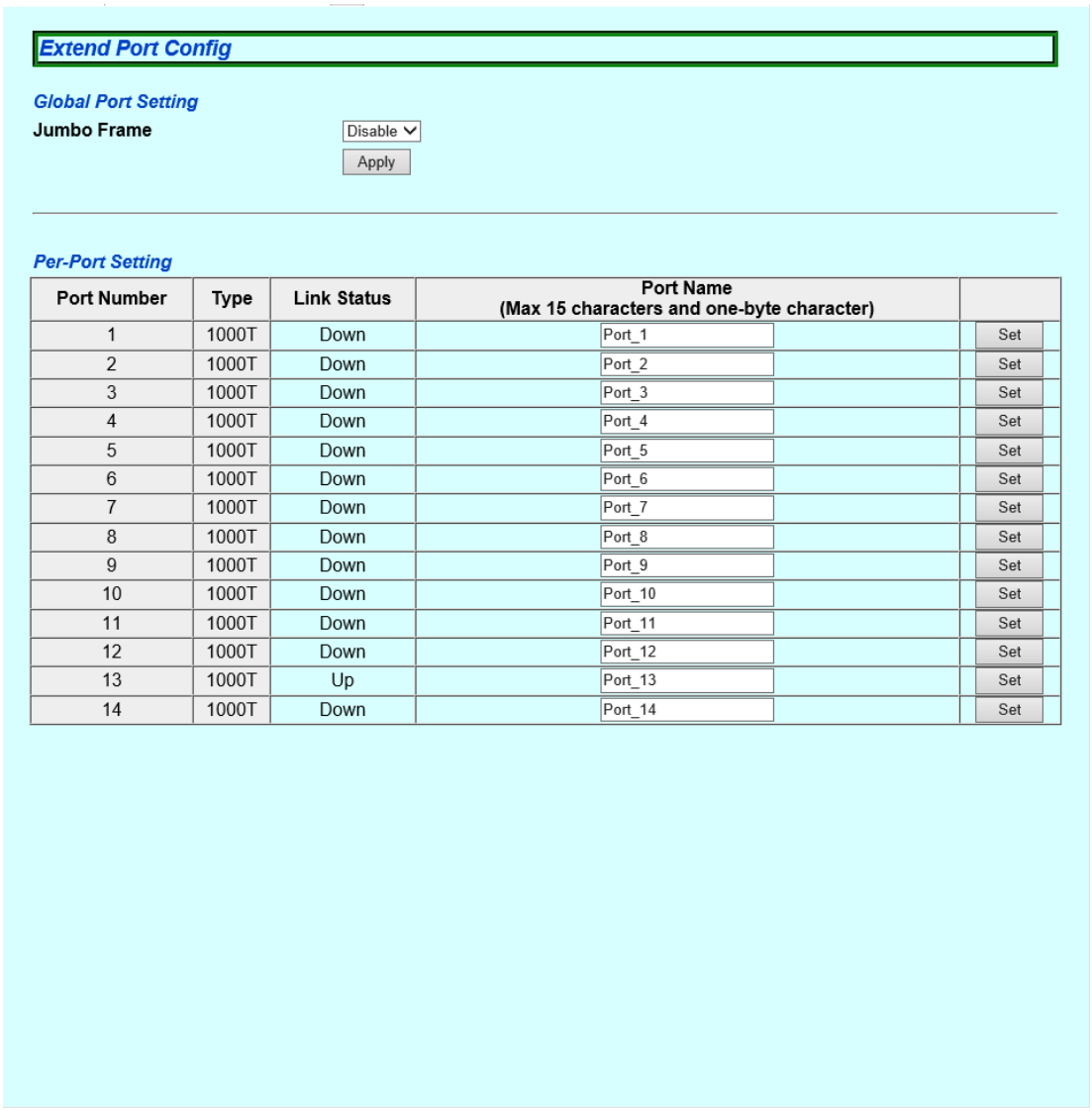


Figure 5-4 Extend Port Config

Screen Description

Global Jumbo Status	Displays the jumbo frame settings. For all ports, "Disable" is the factory default setting.	
	Enable	The jumbo frame is enabled.
	Disable	The jumbo frame is disabled.
Port Number	Displays the port number.	
Type	Displays the port type.	
	1000T	The port type is 1000BASE-T.
Link Status	Displays the current link status.	
	Up	A link has been established successfully.
	Down	A link has not been established.
Port Name	Displays the port name.	

5.1.5. Power Saving Config

Select "Basic Config" and "Port Config" and then "Power Saving Config" to open the screen shown in **Figure 5-5**. On this screen, you can configure the power saving settings of each port.

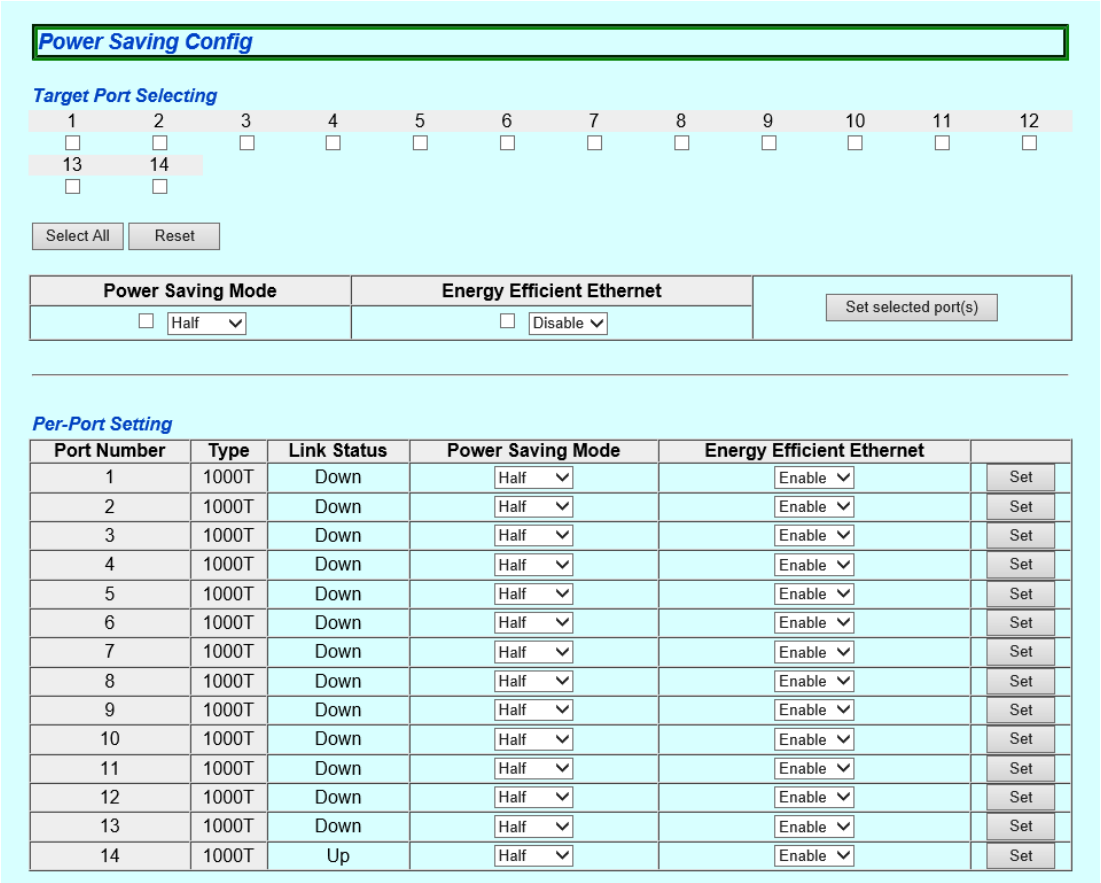


Figure 5-5 Power Saving Port Config

Screen Description

Port Number	Displays the port number.	
Type	Displays the port type.	
	1000T	The port type is 1000BASE-T.
Link Status	Displays the current link status.	
	Up	A link has been established successfully.
	Down	A link has not been established.
Power Saving Mode	Indicates the power saving mode configuration status. For all ports, "Half" is the factory default setting.	
	Full	The power saving mode status is enabled (Full).
	Half	The power saving mode status is enabled (Half).
	Disable	The power saving mode status is disabled.
Energy Efficient Ethernet (EEE)	Displays the EEE (Energy Efficient Ethernet) status. For all ports, "Disable" is the factory default setting.	
	Enable	The EEE is enabled.
	Disable	The EEE is disabled.

5.1.6. System Security

Select "Basic Config" and "System Security" and then "System Security" to open the screen shown in Figure 5-6. On this screen, you can configure the various settings for accessing this switch for configuration and management.

Figure 5-6 System Security

Screen Description

Web Server Status	Displays the Web access settings. "Enable" is always set for this switch. This item is not editable.	
IP Setup Interface Status	Displays the access settings for the IP address configuration software. * For instructions, refer to "6.2.Easy IP Address Setup Function".	
	Enable	Access is enabled.
	Disable	Access is disabled.

5.1.7. Syslog Transmission Config

Select "Basic Config" and "System Security" and then "Syslog Transmission Config" to open the screen shown in Figure 5-7. On this screen, you can configure the settings of the Syslog server information to which a system log is sent.

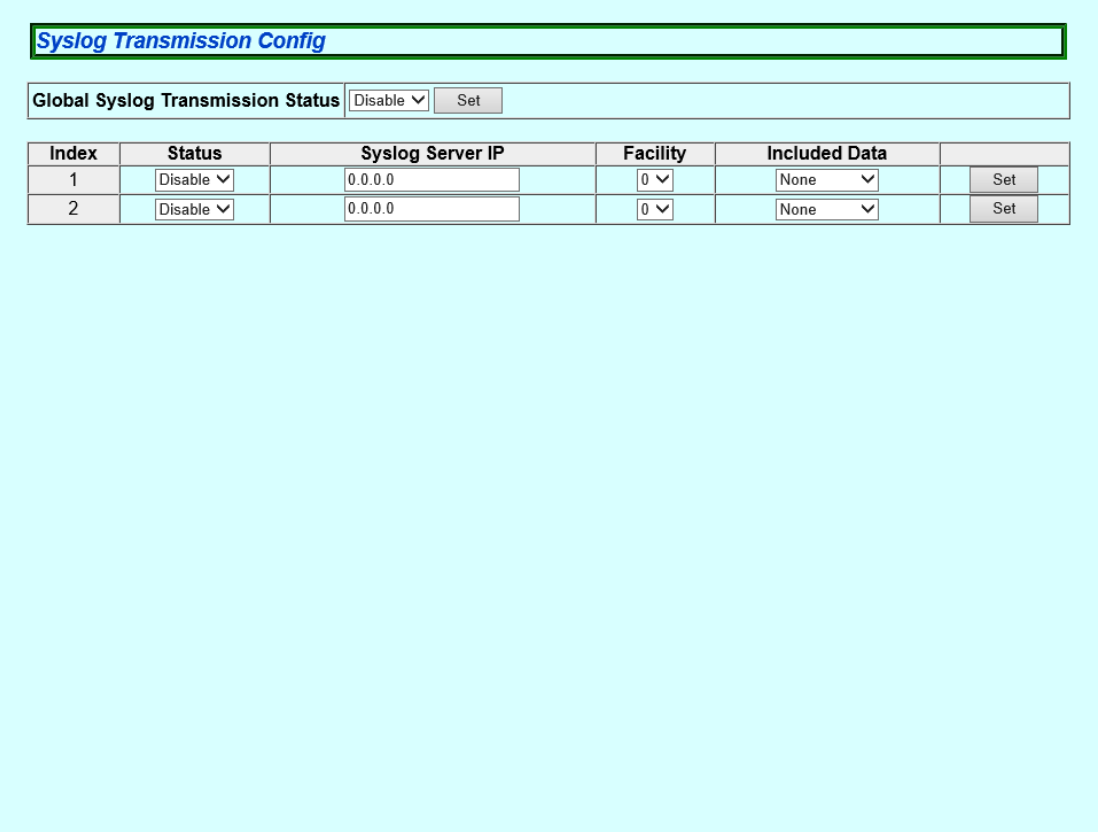


Figure 5-7 Syslog Transmission Configuration

Screen Description

Global Syslog Transmission Status	Displays the settings for sending system logs to the Syslog server. "Disable" is the factory default setting.	
	Enable	Sends system logs to the Syslog server.
	Disable	Does not send system logs to the Syslog server.
Index	Displays the entry number for the Syslog transfer.	
Status	Displays the status of Syslog Transmission. "Disable" is the factory default setting.	
	Enable	Transfers to the Syslog server.
	Disable	Does not transfer to the Syslog server.
Syslog Server IP	Displays the IPv4 address of the Syslog server.	
Facility	Displays the Facility value.	
Included data	Displays the information to be added.	
	None	Does not include the additional information.
	SysName	Adds the SysName of this switch to the system log to be transmitted.
	IP Address	Adds the IP address of this switch to the system log to be transmitted.

5.1.8. ID/Password Change

Select "Basic Config" and "System Security" and then "ID/Password Change" to open the screen shown in Figure 5-8. On this screen, you can configure the user name/password.

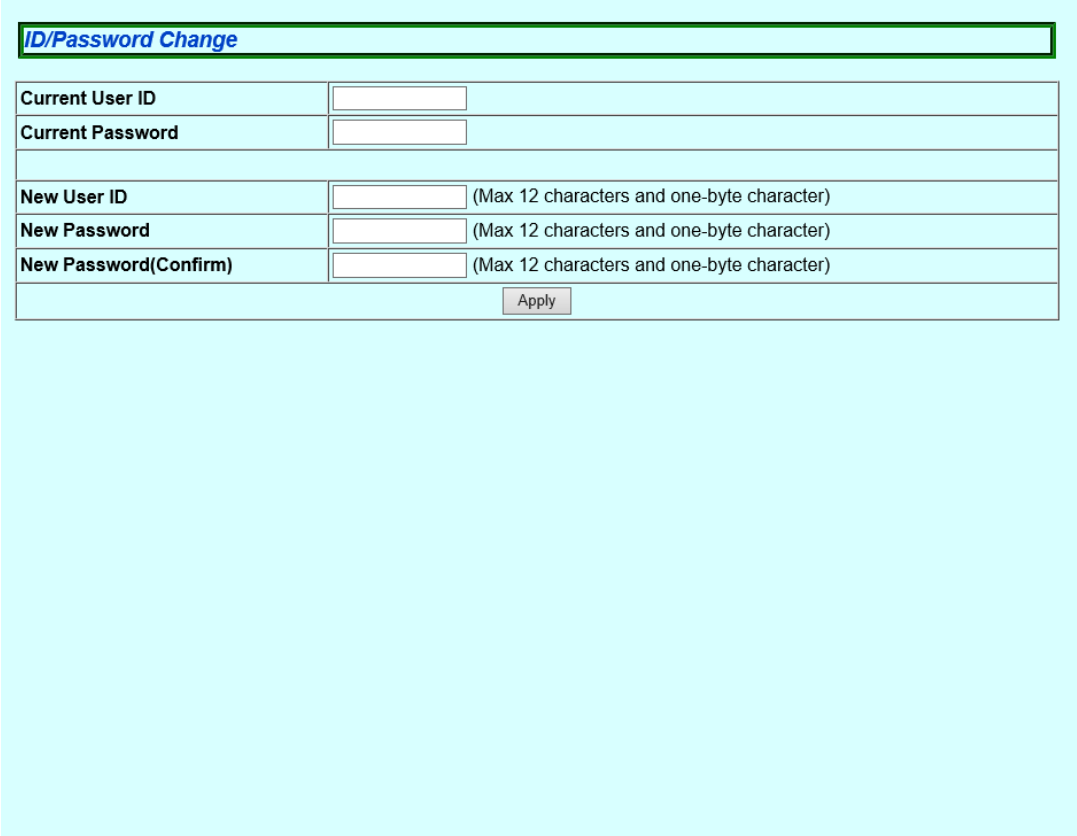


Figure 5-8 ID/Password Change

Screen Description

Current User ID	Enter the current user name. This is used to login to this switch. "manager" is the factory default setting.
Current Password	Enter the current password. This is used to login to this switch. "manager" is the factory default setting.
New User ID	Enter the new user name.
New Password	Enter the new password.
New Password (Confirm)	Enter the password again to make sure the correct password is entered.

Note: Do not forget your user name and password.
These will be required to login to this switch.

5.1.9. FDB Table

Select "Basic Config" and "FDB" and then "FDB Table" to open the screen shown in Figure 5-9. This screen shows the MAC addresses learned in the FDB table for each port.

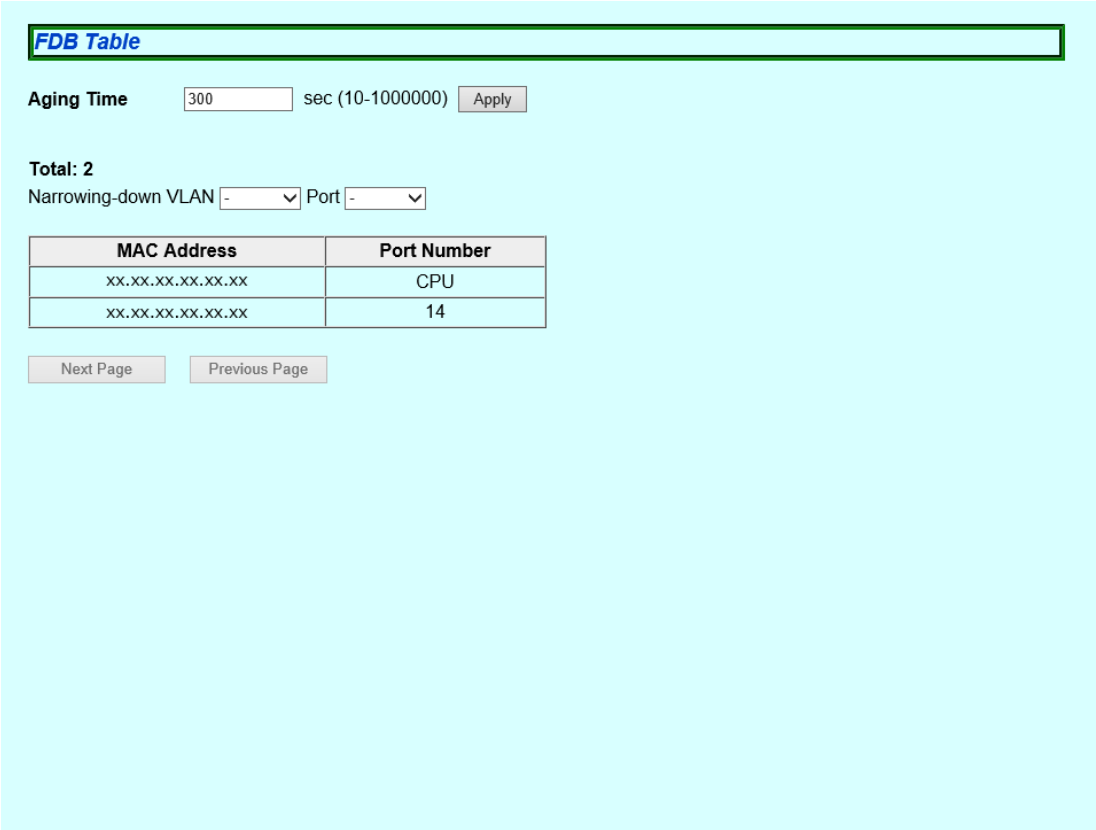


Figure 5-9 FDB Table

Screen Description

Aging Time	Displays the time for which an automatically learned FDB entry is retained. It is equal to the time after receiving the last packet. The factory default setting is 300 seconds (5 minutes).
Narrowing-down VLAN	Narrows down records by the specified VLAN ID.
Narrowing-down Port	Narrows down records by the specified port number.
MAC Address	Displays the MAC address in the FDB table.
Port Number	Displays the port to which the MAC address has been assigned.

5.1.10. Time Config

Select "Basic Config" and then "Time Config" to open the screen shown in **Figure 5-10**. On this screen, you can configure the SNTP synchronization settings.

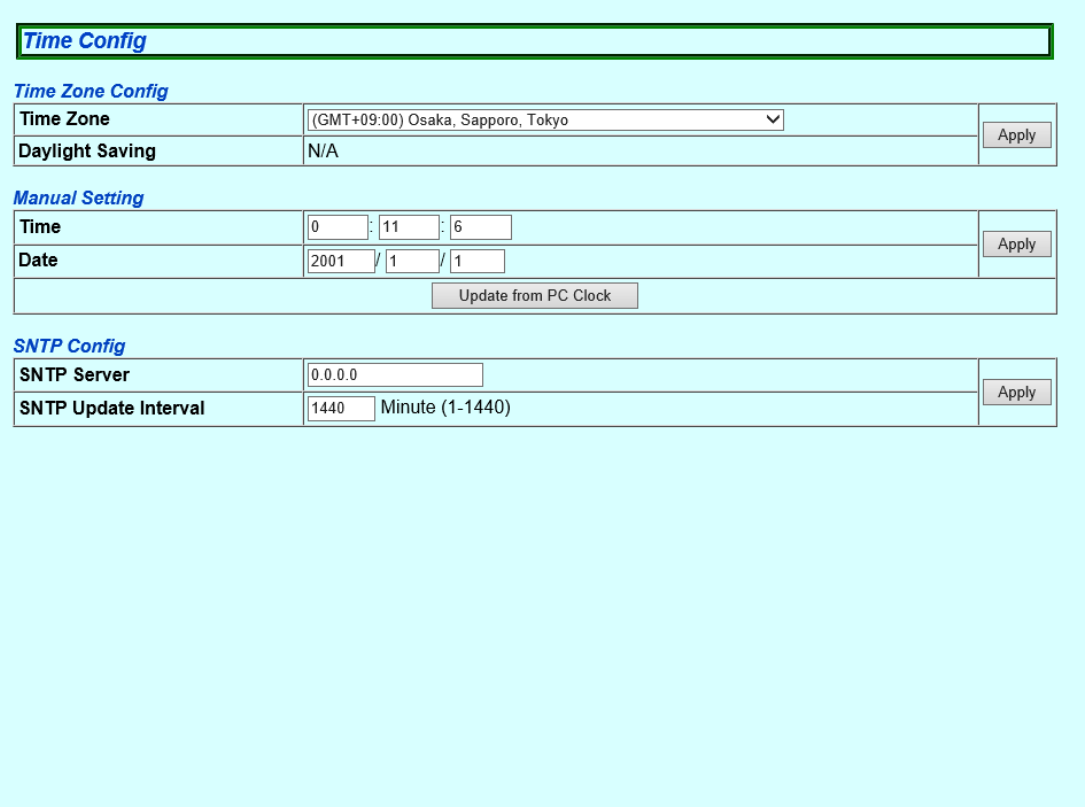


Figure 5-10 Time Configuration of This Switch

Screen Description

Time Zone	Displays the time zone.
Daylight Saving	Displays the application status of Daylight Saving (Summer time). In case the set time zone is a zone where Daylight Saving is not applied, "N/A" is displayed, and this configuration is not available. When this switch is used domestically, this configuration is not required.
Time	Displays the time configured manually.
Date	Displays the date configured manually.
Update from PC Clock	Obtains the date and time from the PC's clock.
SNTP Server	Displays the IPv4 address of the SNTP server that executes time synchroniza-tion.
SNTP Update	Displays the interval time for SNTP synchronization.

Note: In case the SNTP server is located outside of the firewall, connection with the SNTP server may not be possible depending on settings by the network administrator. For details, ask your network administrator.
If you wish to disable the time synchronization function, set the SNTP server to "0.0.0.0."

5.1.11. Static ARP Table

Select "Basic Config" and "ARP Table" and then "Static ARP Table" to open the screen shown in Figure 5-11. On this screen, you can statically associate the IP address and MAC address and register that relationship to the ARP table.

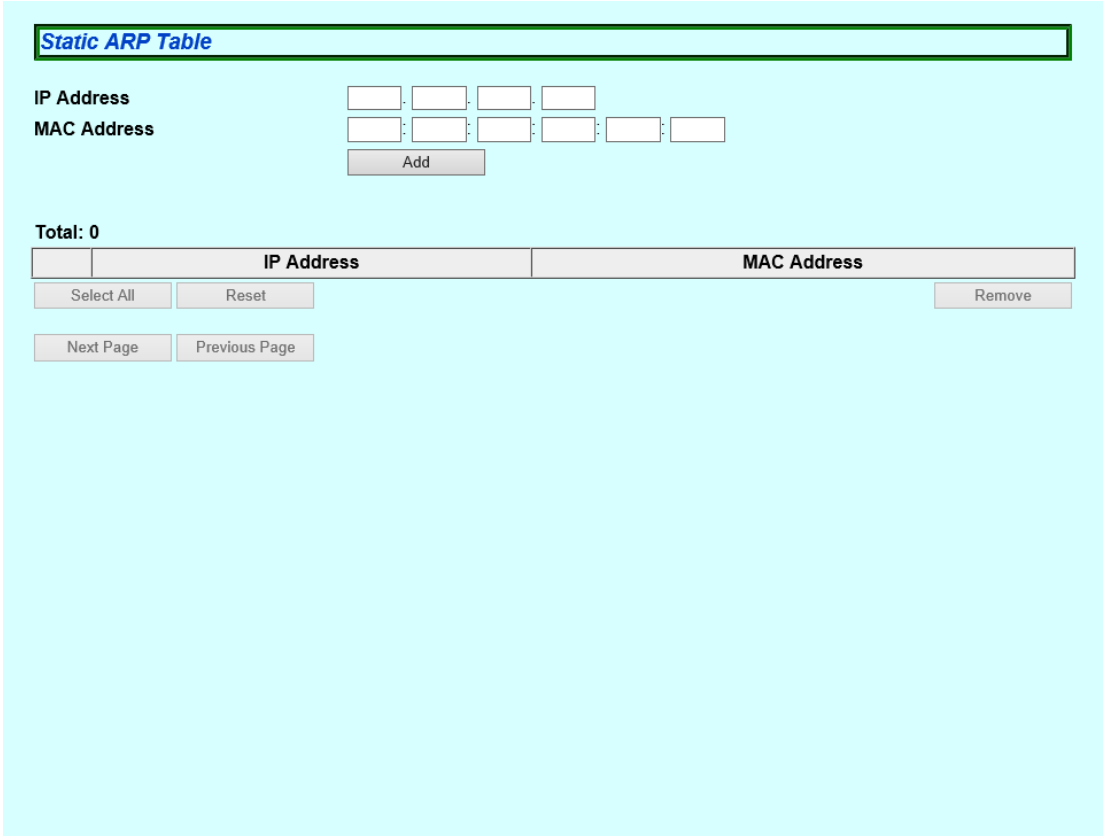


Figure 5-11 Static ARP Table

Screen Description

IP Address	Enter the IP address of the ARP table to be added.
MAC Address	Enter the MAC address of the ARP table to be added.
Remove	Put a checkmark on an ARP table to be removed. Press the "Remove" button to remove the item.

5.1.12. ARP Table

Select "Basic Config" and "ARP Table" and then "ARP Table" to open the screen shown in Figure 5-12. This screen shows the ARP table.

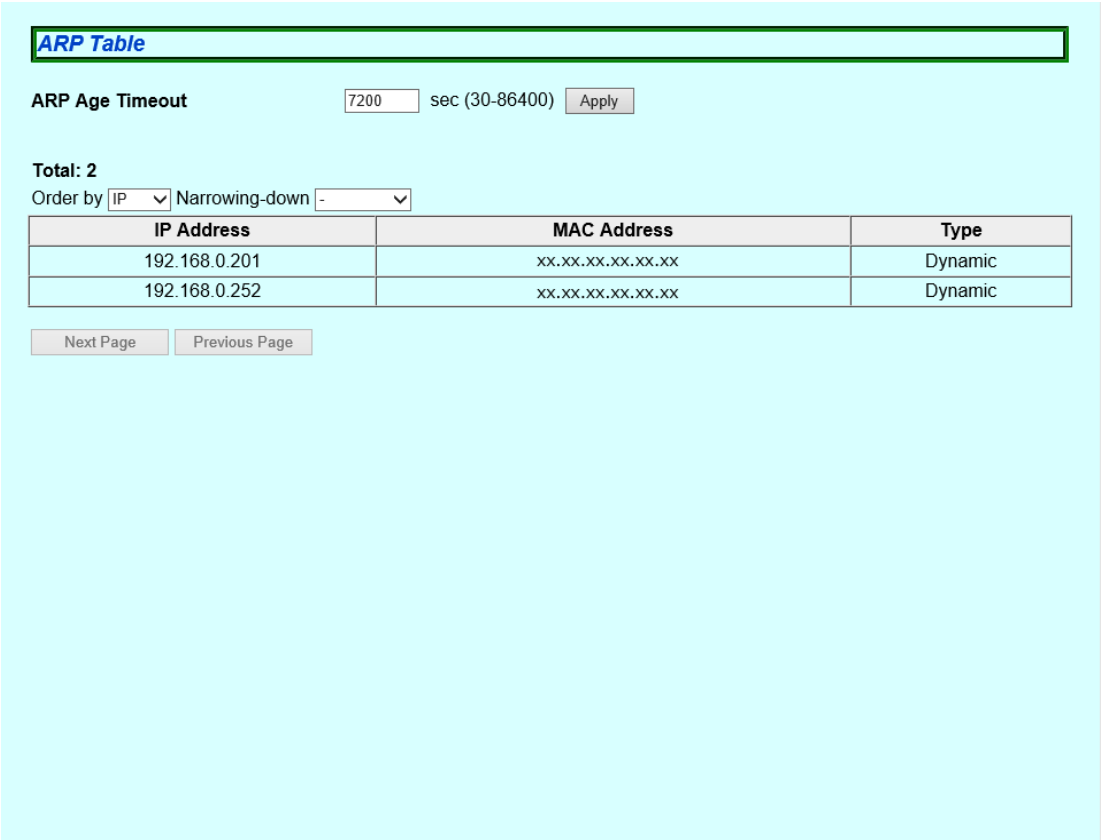


Figure 5-12 ARP Table

Screen Description

ARP Age Timeout	Displays the time for which an automatically learned ARP table is retained. It is equal to the time after receiving the last packet. The factory default setting is 7200 seconds (2 hours).	
Order by	Sorts the list in a specified order.	
	IP	Sorts the list by IP address.
	MAC	Sorts the list by MAC address.
Narrowing-down	Narrows down and displays the ARP entries.	
	Static	Displays the ARP entries manually registered.
	Dynamic	Displays the ARP entries learned automatically.
IP Address	Displays the IP address entries on the ARP table.	
MAC Address	Displays the MAC address entries on the ARP table.	
Type	Displays the type of the registered ARP entry.	
	Static	Indicates that the ARP entry has been registered manually.
	Dynamic	Indicates that the ARP entry has been learned automatically.

5.2. Advanced Switch Configuration

5.2.1. VLAN Management

Select "Advanced Config" and "VLAN" and then "VLAN Management" to open the screen shown in Figure 5-13. On this screen, you can configure the VLAN-related settings.

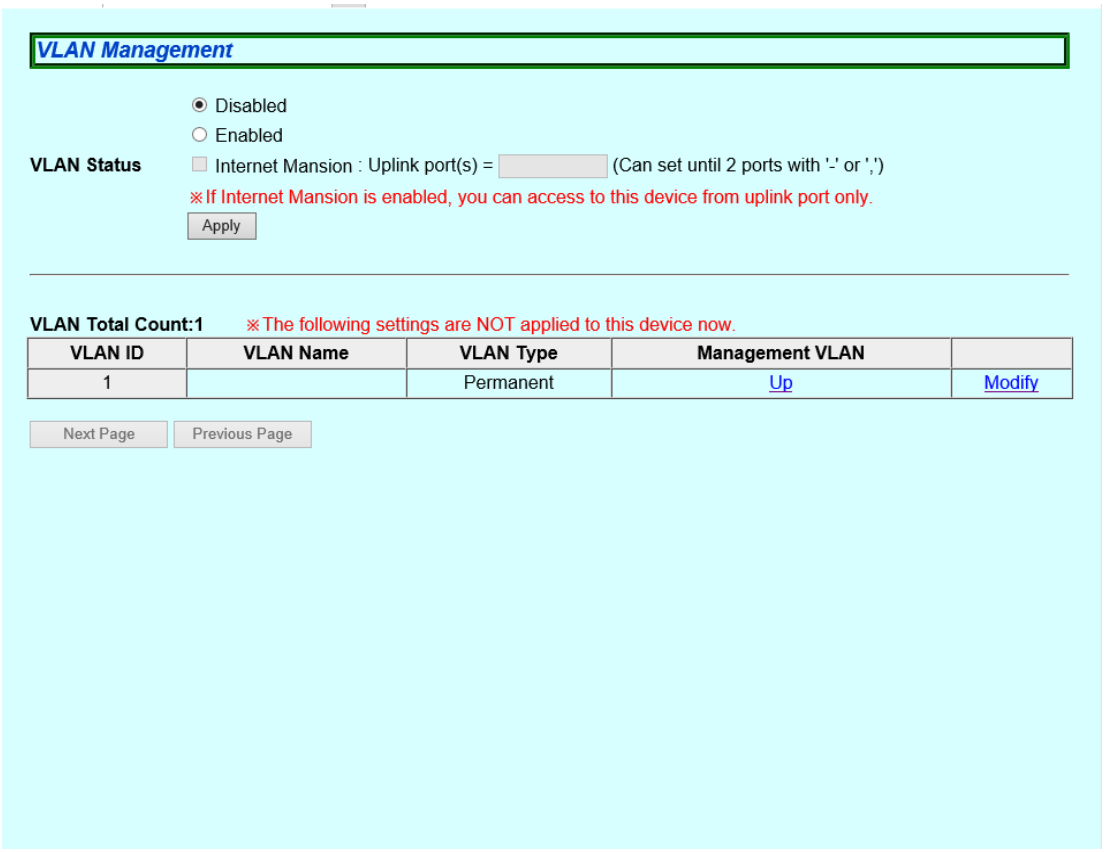


Figure 5-13 VLAN Management

Screen Description

VLAN Status	Displays the VLAN status.	
	Enabled	VLAN is enabled.
	Disabled	VLAN is disabled. (Factory default setting)
	Internet Mansion	When enabled, communication to any port except uplink ports will be limited. You can specify up to two uplink ports.
VLAN Total Count	Displays the number of VLANs configured for this switch.	
VLAN ID	Displays the VLAN ID of the VLAN.	
VLAN Name	Displays the name of the VLAN that has been configured.	
VLAN Type	Displays the type of the VLAN.	
	Permanent	Indicates that the VLAN is the one of the initial settings. This VLAN cannot be removed.
	Static	Indicates that the VLAN is the newly configured one.

Management VLAN	Indicates whether the VLAN is a management VLAN or not.	
	Up	Indicates that the VLAN is a management VLAN (VLAN that can communicate with the CPU).
	Down	Indicates that the VLAN is not a management VLAN.

5.2.1.a. VLAN Modification

On the "VLAN Management" screen, select "Modify" to open the screen shown in **Figure 5-14**. On this screen, you can modify the VLAN configuration information.

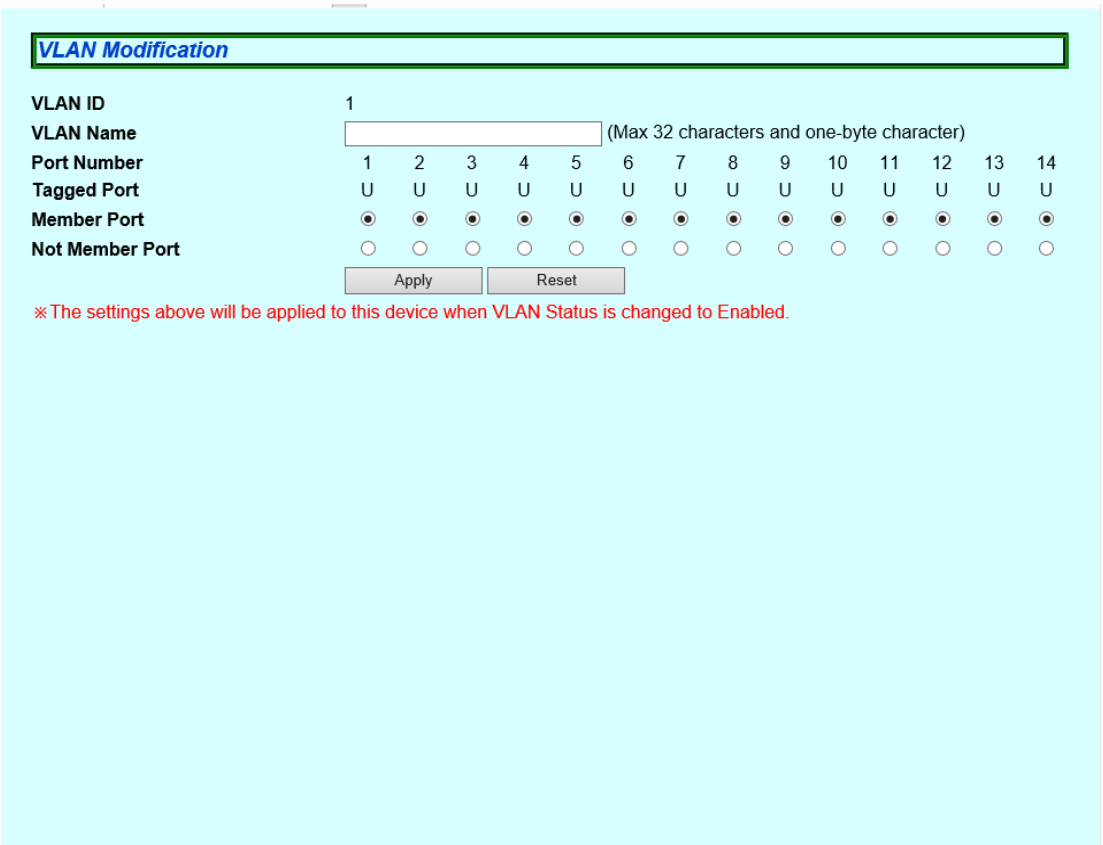


Figure 5-14 "VLAN Modification" Screen

Screen Description

VLAN ID	Displays the VLAN ID.
VLAN Name	Displays the VLAN name.
Untagged Port	Indicates ports that do not use tags.
Member Port	Indicates ports that belong to the VLAN.
Not Member Port	Indicates ports that do not belong to the VLAN.

5.2.2. VLAN Creation

Select "Advanced Config" and "VLAN" and then "VLAN Creation" to open the screen shown in Figure 5-15. On this screen, you can create a new VLAN.

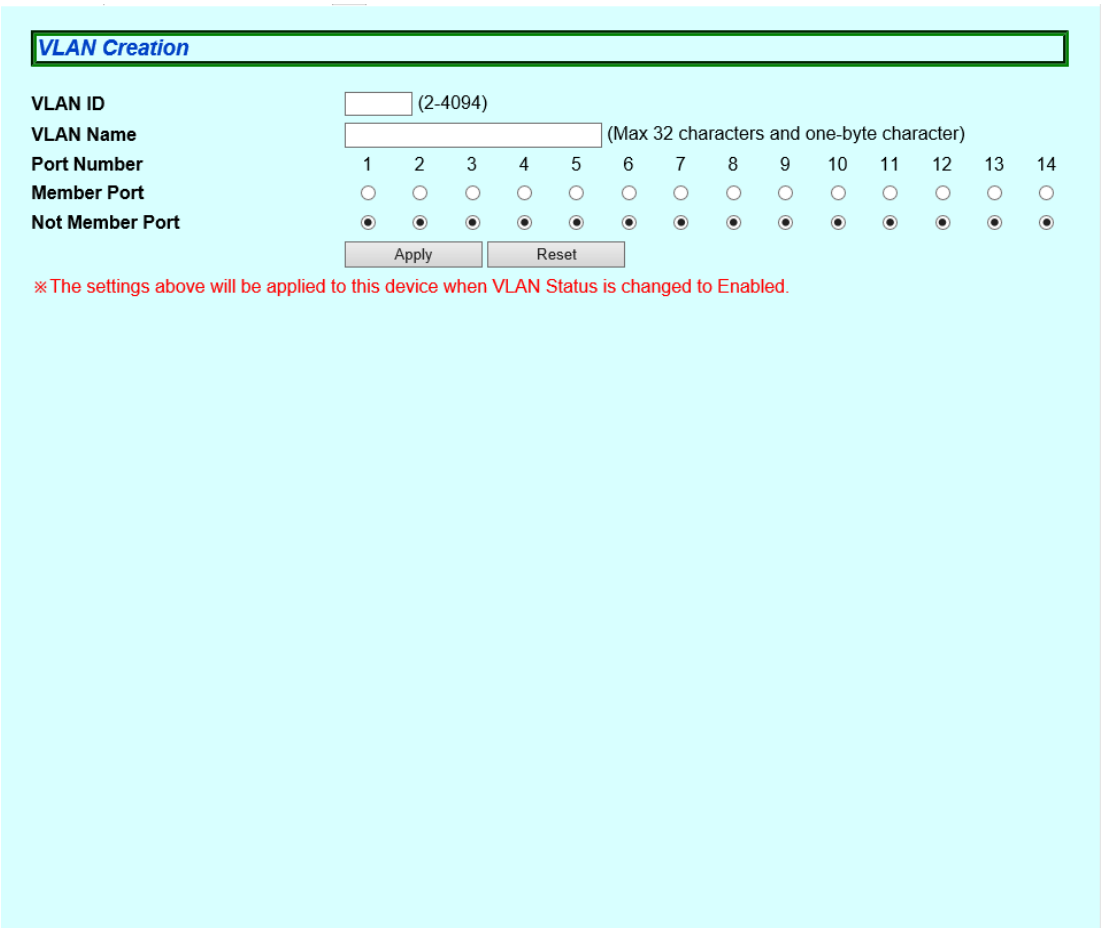


Figure 5-15 "VLAN Creation" Screen

Screen Description

VLAN ID	Set the VLAN ID.
VLAN Name	Set the VLAN name.
Member Port	Select ports that you want to assign to the VLAN.
Not Member Port	Select ports that you do not want to assign to the VLAN.

5.2.3. VLAN Port Config

Select "Advanced Config" and "VLAN" and then "VLAN Port Config" to open the screen shown in **Figure 5-16**. On this screen, you can configure the VLAN port settings.

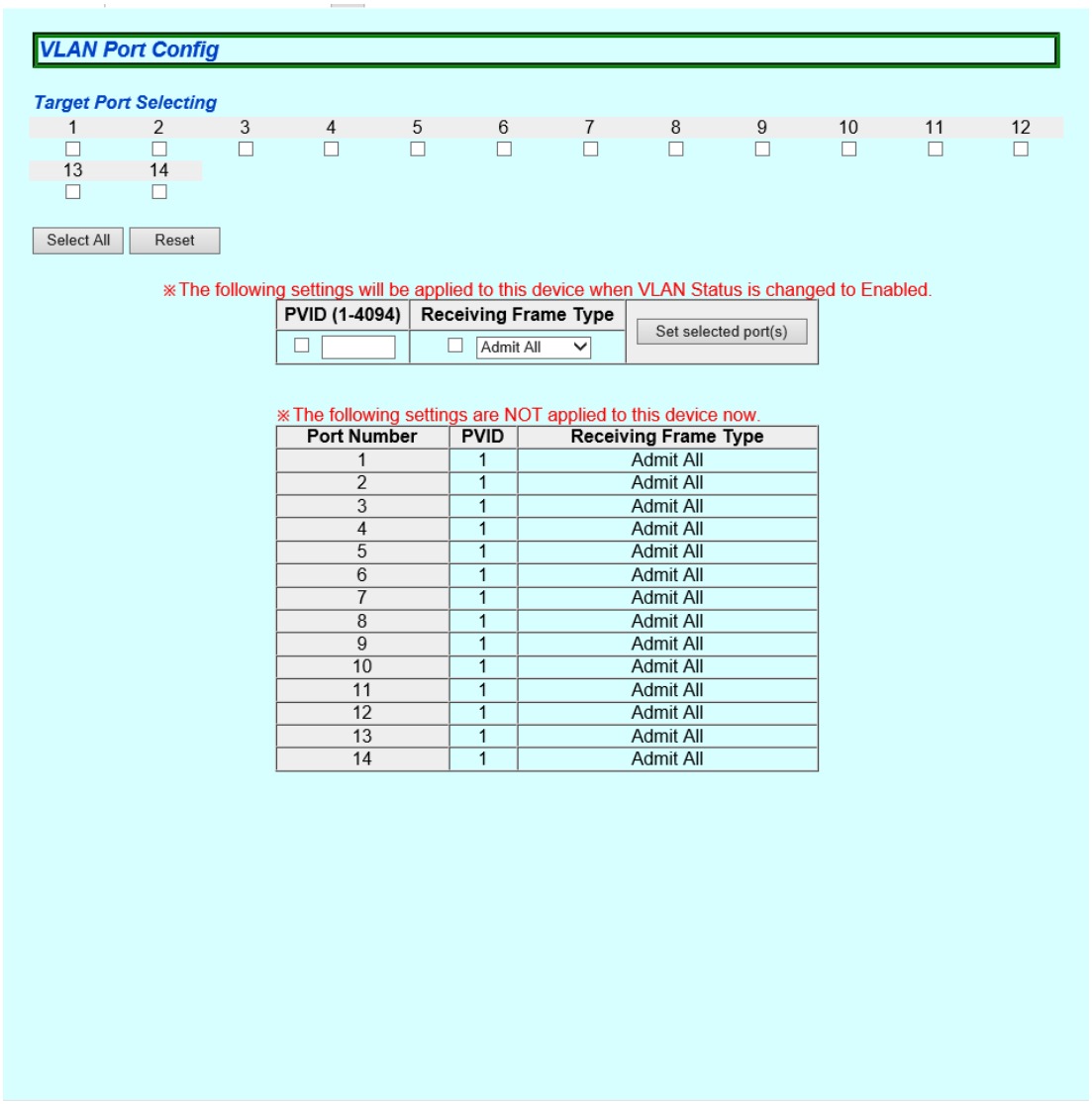


Figure 5-16 VLAN Port Config

Screen Description

Port Number	Displays the port number.	
PVID	Displays the PVID (Port VLAN ID) that has been set to the port. PVID represents a VLAN ID to which an untagged packet should be sent when it is received. The factory default setting is 1. If a tagged packet is received, the tag is referenced regardless of this value to determine the destination port.	
Receiving Frame Type	Indicates the type of frames to be received. For all ports, "Admit All" is the factory default setting.	
	Admit All	Receives all frames.
	Tagged Only	Receives only tagged frames.

5.2.4. Traffic Class Config

Select "Advanced Config" and "QoS Config" and then "Traffic Class Config" to open the screen shown in Figure 5-17. On this screen, you can configure the QoS and Traffic Class settings.

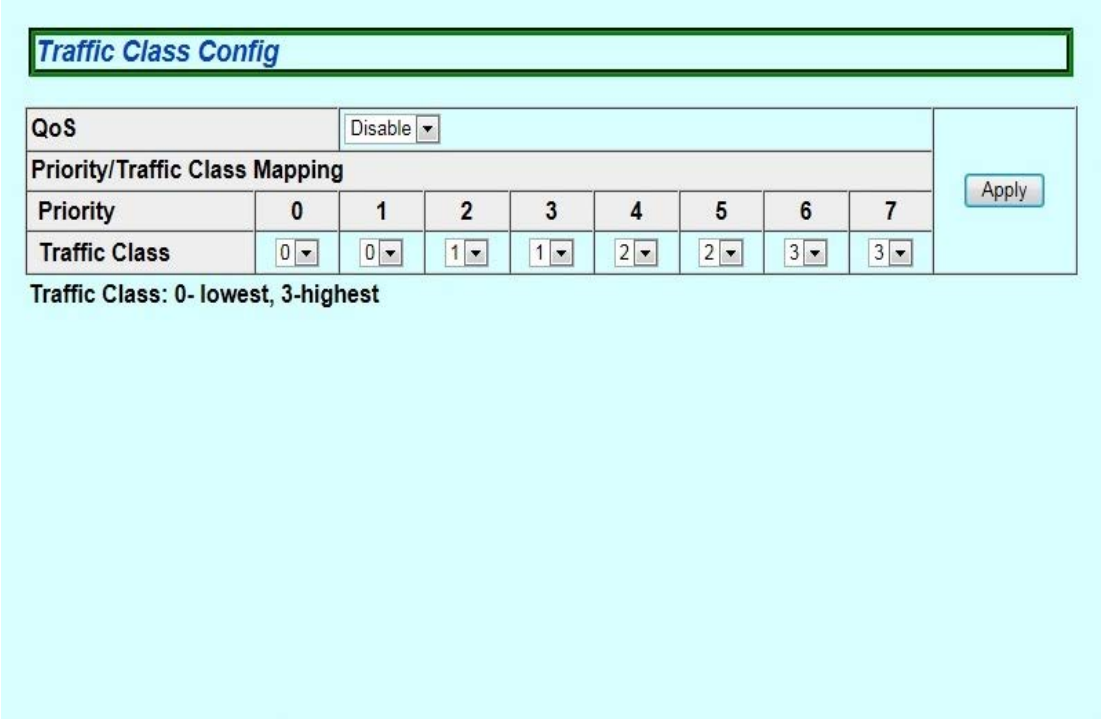


Figure 5-17 QoS Config

Screen Description

QoS	Displays "Enable"/"Disable" of the QoS function using IEEE802.1p. "Disable" is the factory default setting.	
	Enable	QoS is enabled.
	Disable	QoS is disabled.
Priority	Displays the packet priority value.	
Traffic Class	Displays the priority to transfer the packet.	

5.2.5. Diffserv Config

Select "Advanced Config" and "QoS Config" and then "Diffserv Config" to open the screen shown in **Figure 5-18**. On this screen, you can configure the Diffserv settings.

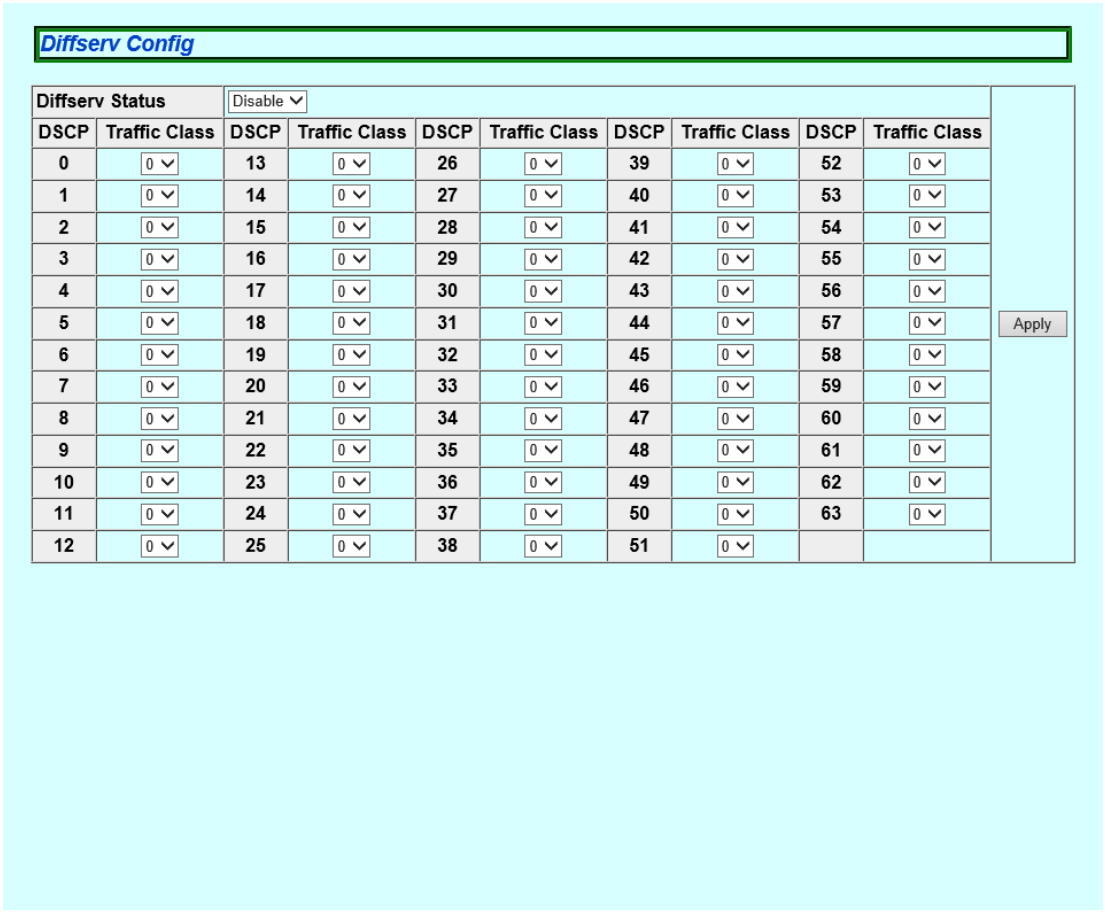


Figure 5-18 Diffserv Settings

Screen Description

Diffserv Status	Displays "Enable"/"Disable" of the Diffserv function. "Disable" is the factory default setting.	
	Enable	Diffserv is enabled.
	Disable	Diffserv is disabled.
DSCP	Displays the DSCP value.	
Traffic Class	Displays the priority to transfer the packet.	

5.2.6. Link Aggregation Config

Select "Advanced Config" and then "Link Aggregation Config" to open the screen shown in Figure 5-19. On this screen, you can configure the group settings of link aggregation.

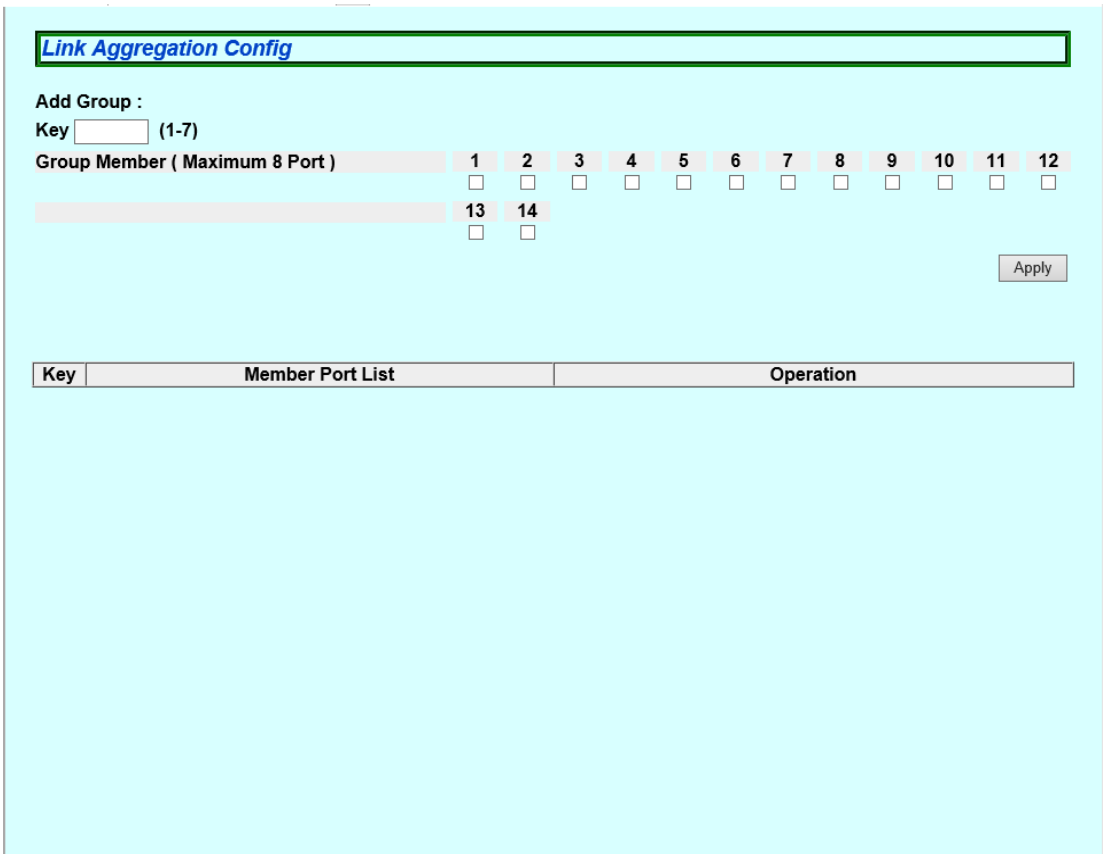


Figure 5-19 Link Aggregation Config

Screen Description

Key	Displays the group number of the link aggregation.
Member Port List	Displays the ports that belong to the group of link aggregation.

Note: Disable loop detection in advance on ports that have link aggregation configured.

5.2.6.a. Link Aggregation Modification

Select "Advanced Config" and "Link Aggregation Config" and then click the "Modify" button of each group to open the screen shown in **Figure 5-20**. On this screen, you can modify the link aggregation.

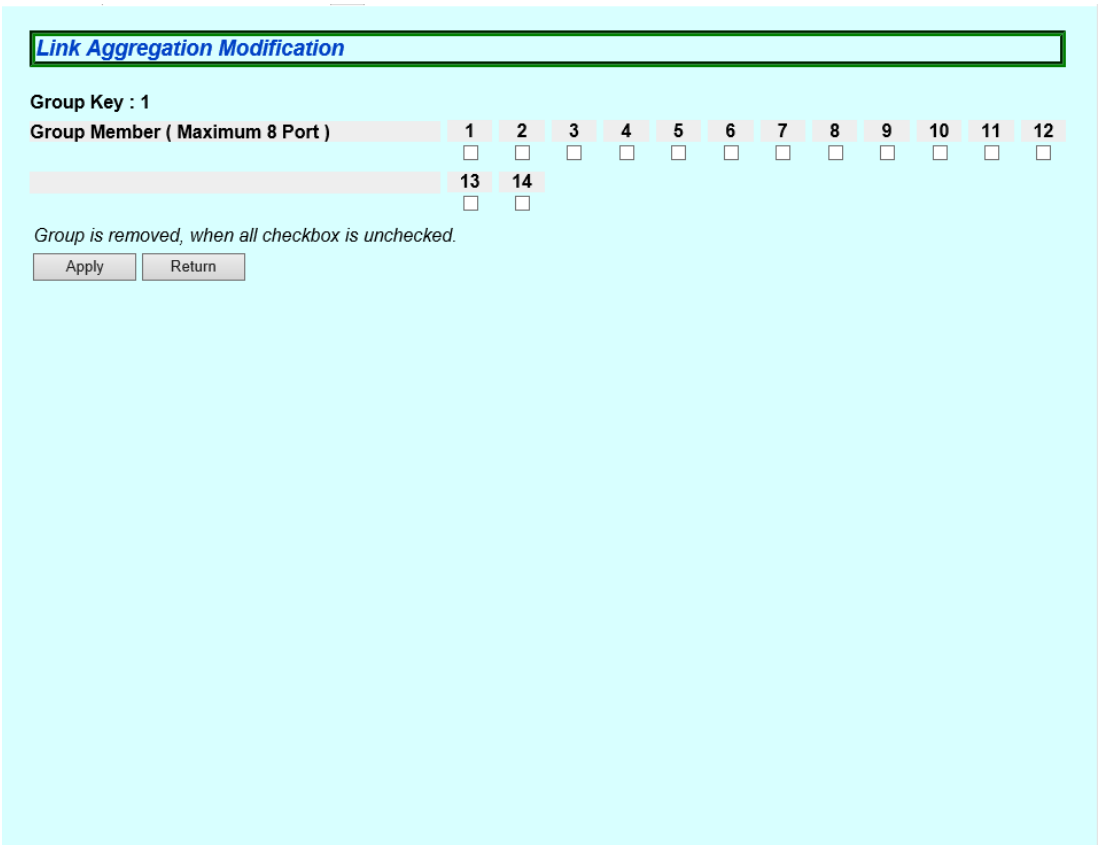


Figure 5-20 Link Aggregation Modification

Screen Description

Key	Displays the group number of the link aggregation.
Group Member	Displays the ports that belong to the group of link aggregation.

5.2.7. Storm Control Config

Select "Advanced Config" and then "Storm Control Config" to open the screen shown in Figure 5-21. On this screen, you can configure the storm control settings.

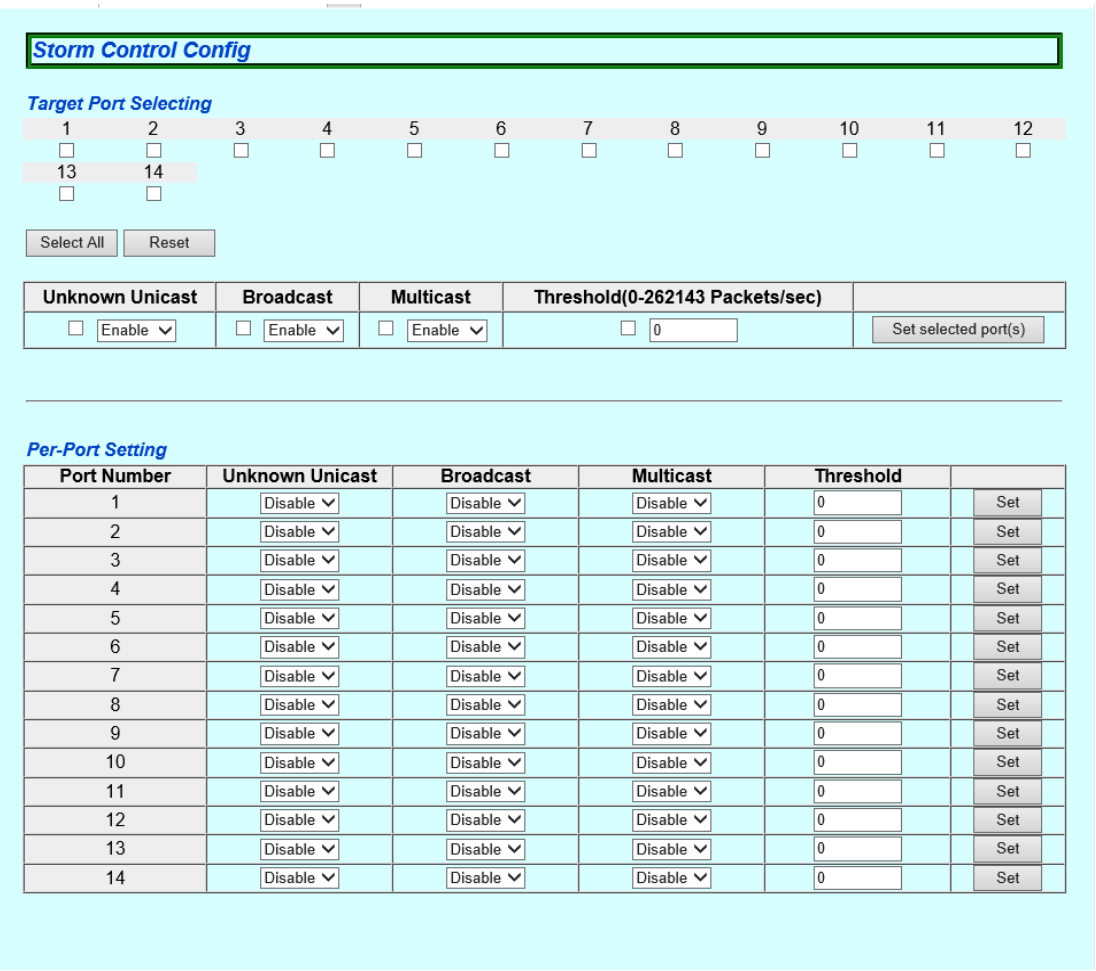


Figure 5-21 Storm Control Configuration

Screen Description

Port Number	Displays the port number.	
Unknown Unicast	Enables or disables the Unknown unicast storm control.	
	Enable	The Unknown unicast storm control is enabled.
	Disable	The Unknown unicast storm control is disabled. (Factory default setting)
Broadcast	Enables or disables the broadcast storm control.	
	Enable	The broadcast storm control is enabled.
	Disable	The broadcast storm control is disabled. (Factory default setting)
Multicast	Enables or disables the multicast storm control.	
	Enable	The multicast storm control is enabled.
	Disable	The multicast storm control is disabled. (Factory default setting)
Threshold	Displays the threshold value for the number of packets.	

5.2.8. Port Monitoring Config

Select "Advanced Config" and then "Port Monitoring Config" to open the screen shown in Figure 5-22. On this screen, you can configure the port monitoring settings.

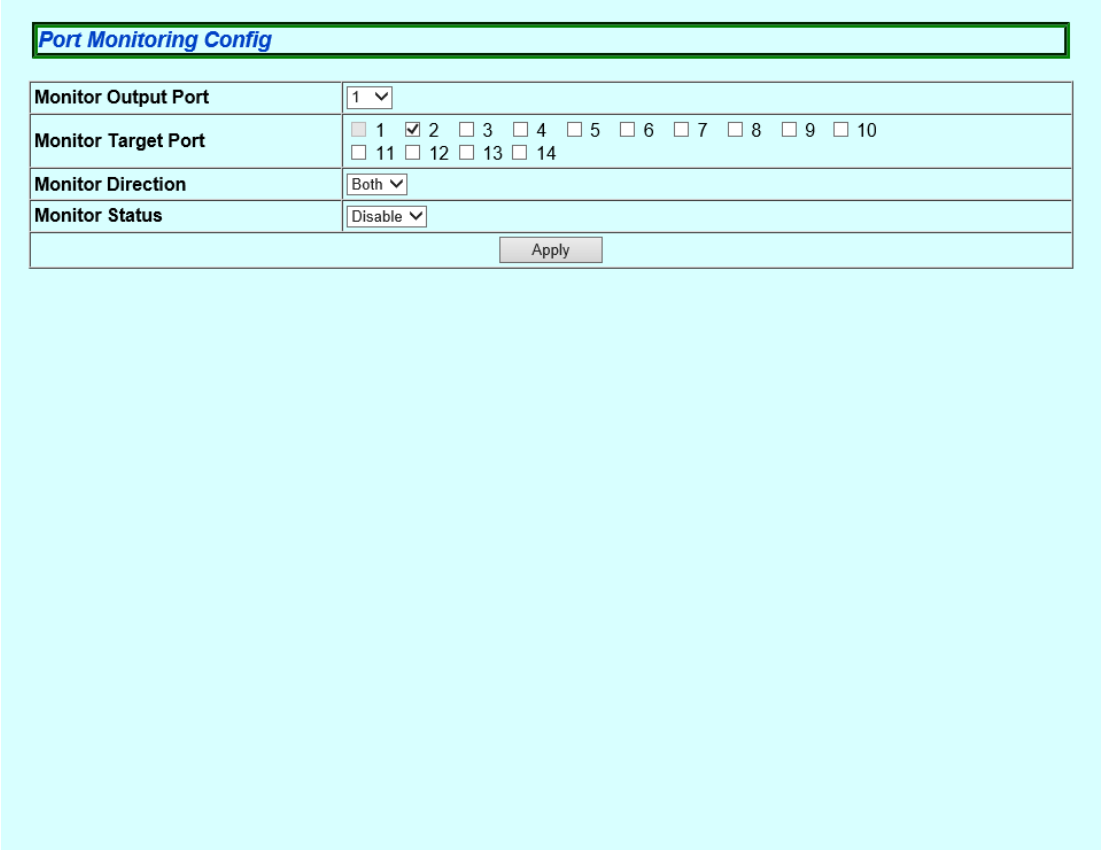


Figure 5-22 Port Monitoring Configuration

Screen Description

Monitor Output Port	Indicates a port number of a port used to monitor packets for another port.	
Monitor Target Port	Indicates a port number of a port being monitored. The factory default setting is 2.	
Monitor Direction	Displays which of transmit packets or receive packets are monitored at the port to be monitored. "Send/Recv" is the factory default setting.	
	Recv	Monitors receive packets.
	Send	Monitors transmit packets.
	Send/Recv	Monitors both transmit and receive packets.
Monitor Status	Indicates whether monitoring is enabled. "Disable" is the factory default setting.	
	Enable	Monitors packets.
	Disable	Does not monitor packets.

Note: Mirror packets in transmission direction will include the VLAN tag of the received VLAN ID.

Note: Administrative packets such as Ping and ARP transmitted by this switch cannot be captured.

5.2.9. Static Multicast Address Config

Select "Advanced Config" and then "Static Multicast Address Config" to open the screen shown in Figure 5-23. On this screen, you can manually register multicast addresses.

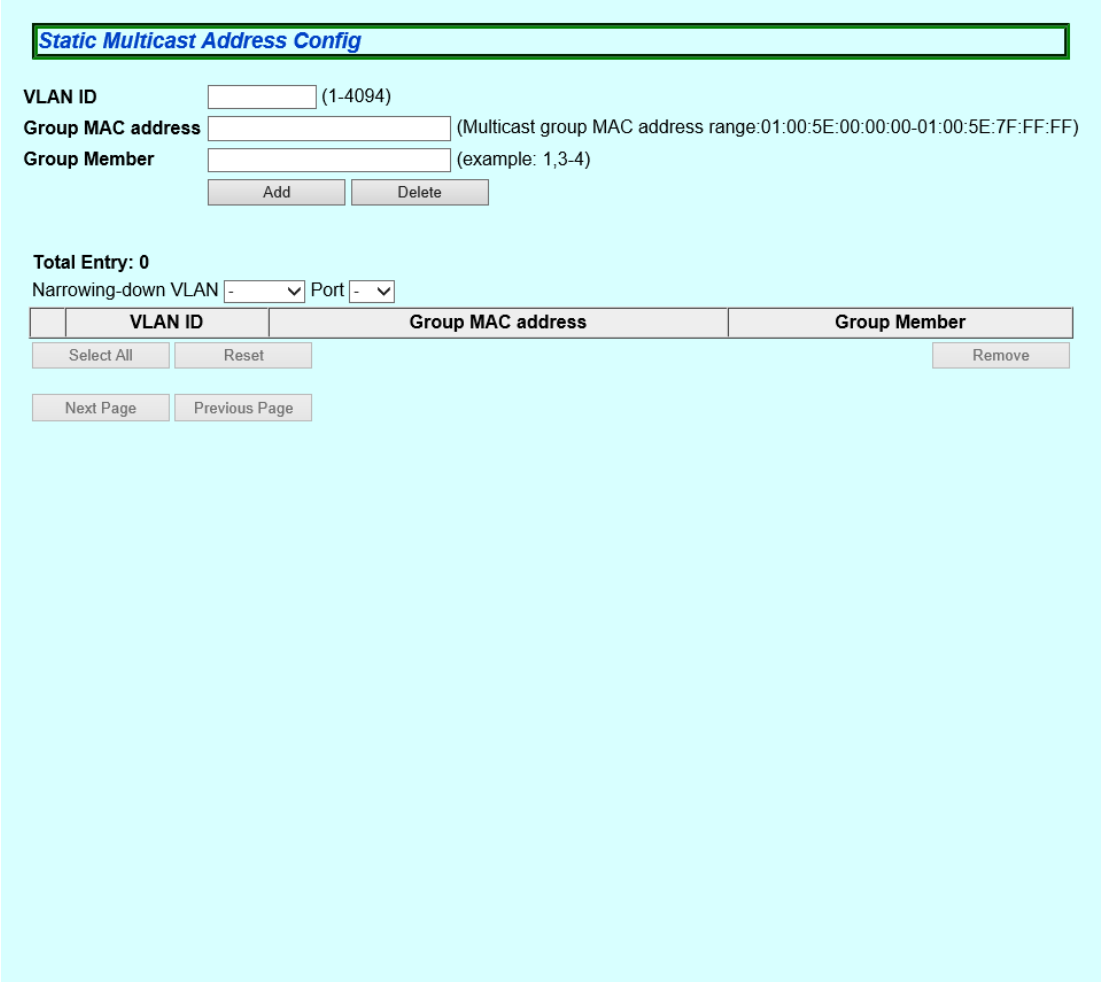


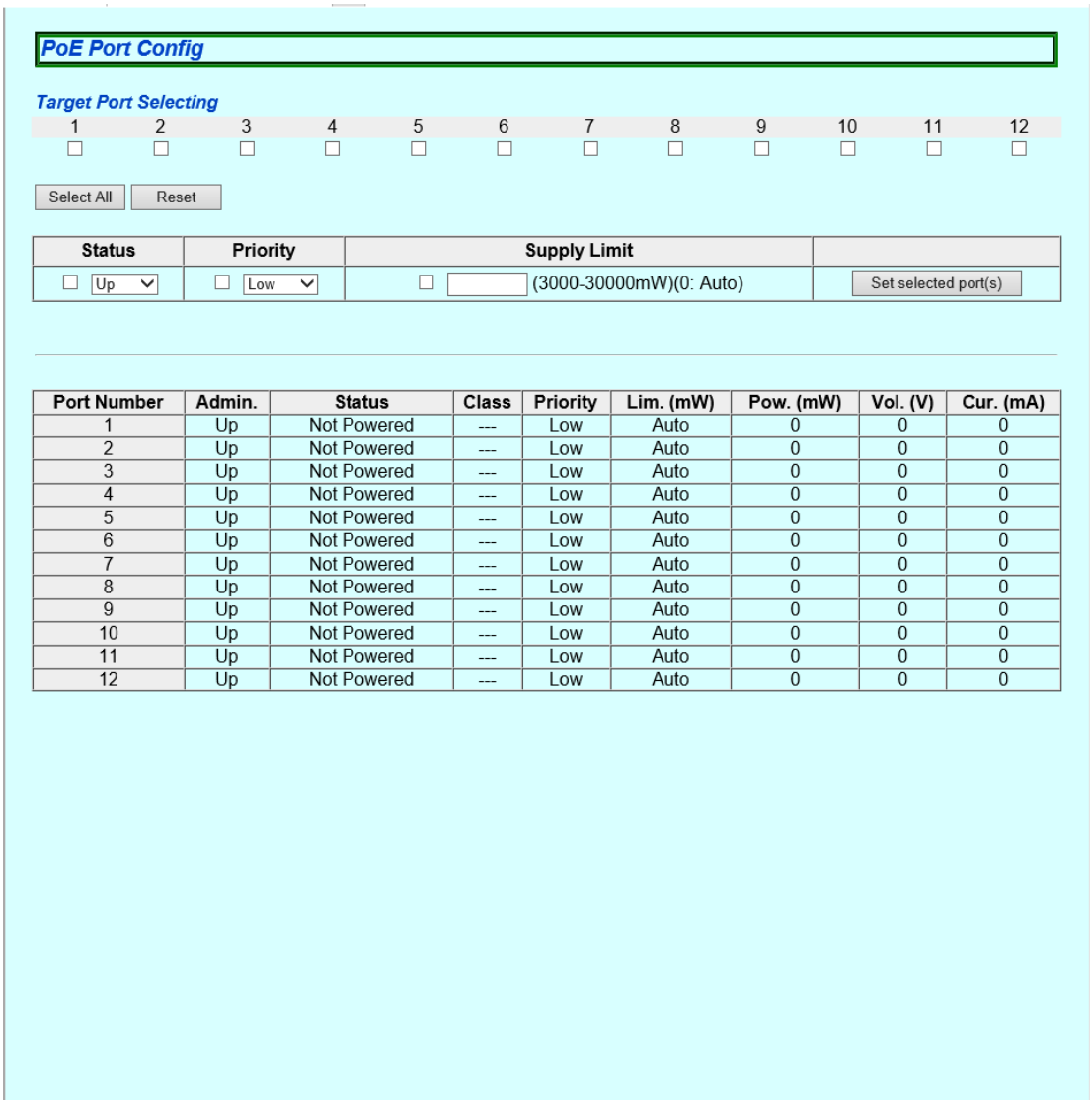
Figure 5-23 Multicast Address Manual Register

Screen Description

VLAN ID	Displays the VLAN ID of the multicast group.
Group Multicast MAC Address	Specifies the MAC address of the multicast group.
Group Member	Specifies the ports included in the multicast group.
Narrowing-down VLAN	Specifies the VLAN ID of the multicast group to be displayed.
Narrowing-down Port	Specifies the port of the multicast group to be displayed.
VLAN ID	Displays the VLAN ID of the multicast group.
Group Multicast MAC Address	Displays the MAC address of the multicast group.
Group Member	Displays the ports included in the multicast group.

5.2.10. PoE Port Config (for PoE Supported Models)

Select "Advanced Config" and "PoE Config" and then "PoE Port Config" to open the screen shown in **Figure 5-24**. On this screen, you can configure the power supply settings by port.



Port Number	Admin.	Status	Class	Priority	Lim. (mW)	Pow. (mW)	Vol. (V)	Cur. (mA)
1	Up	Not Powered	---	Low	Auto	0	0	0
2	Up	Not Powered	---	Low	Auto	0	0	0
3	Up	Not Powered	---	Low	Auto	0	0	0
4	Up	Not Powered	---	Low	Auto	0	0	0
5	Up	Not Powered	---	Low	Auto	0	0	0
6	Up	Not Powered	---	Low	Auto	0	0	0
7	Up	Not Powered	---	Low	Auto	0	0	0
8	Up	Not Powered	---	Low	Auto	0	0	0
9	Up	Not Powered	---	Low	Auto	0	0	0
10	Up	Not Powered	---	Low	Auto	0	0	0
11	Up	Not Powered	---	Low	Auto	0	0	0
12	Up	Not Powered	---	Low	Auto	0	0	0

Figure 5-24 PoE Port Config

Screen Description

Port Number	Displays the port number.	
Admin.	Displays whether or not the power can be supplied.	
	Up	Power supply is possible.
	Down	Power supply is not possible.
Status	Displays the power supply status.	
	Powered	Indicates that power is supplied by PoE.
	Not Powered	Indicates that power is not supplied by PoE.
	Overload	Indicates that an amount of power exceeding the limit is supplied by PoE.
Class	Displays the Class value detected by the classification function.	
Priority	Displays the priority for supplying power.	
	Critical	Represents the highest priority.
	High	Represents the next priority to Critical.
	Low	Represents no priority.
Lim. (mW)	Displays the upper limit of supplied power. (in units of 200 mW) "Auto" means that the value is calculated according to the Class.	
Pow. (mW)	Displays the supplied power. (in units of 100 mW)	
Vol. (V)	Displays the voltage. (in units of 1 V)	
Cur. (mA)	Displays the current. (in units of 1 mA)	

5.2.11. PoE Global Config (for PoE Supported Models)

Select "Advanced Config" and "PoE Config" and then "PoE Global Config" to open the screen shown in **Figure 5-25**. On this screen, you can configure the general PoE settings.

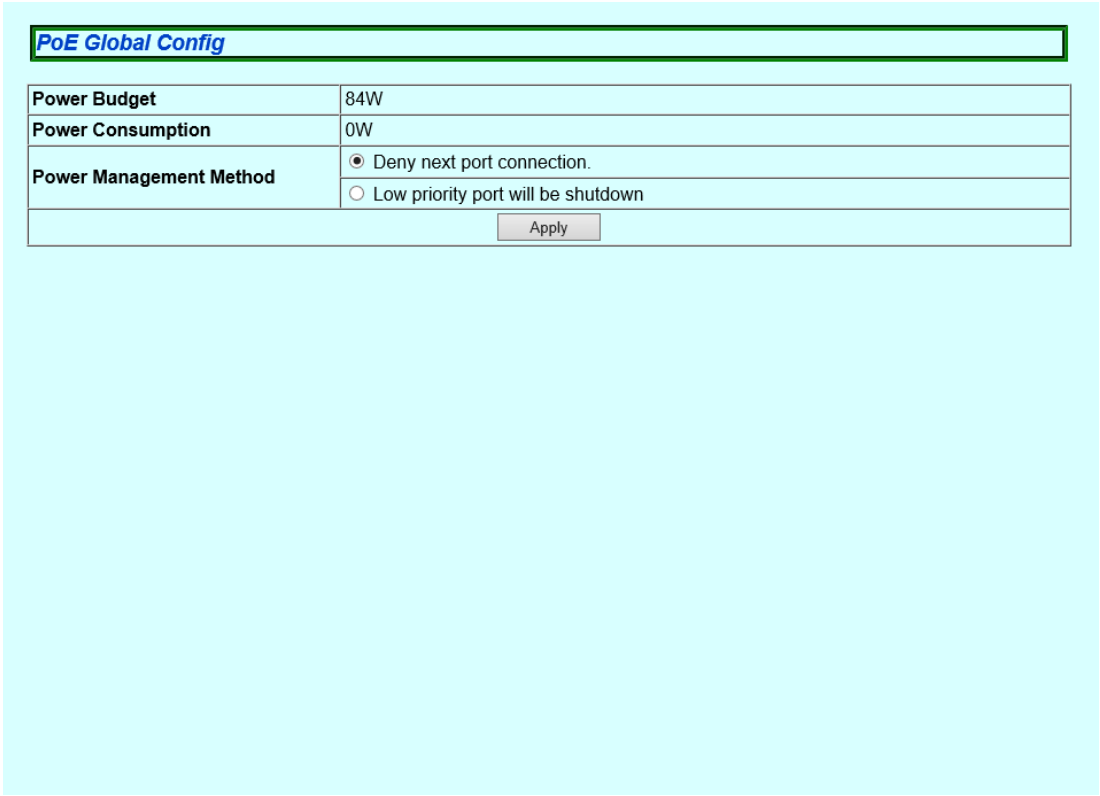


Figure 5-25 PoE Global Configuration

Screen Description

Power Budget	Displays the maximum amount of power this switch can supply.
Power	Displays the amount of power currently supplied by this switch.
Power Management Method	Displays the power supply method used when the amount of supplied power exceeds the "Power Budget." The factory default setting is "Deny next port connection."

5.2.12. Loop Detection Config

Select "Advanced Config" and "Loop Detection" and then "Loop Detection Config" to open the screen shown in **Figure 5-26**. On this screen, you can configure additional settings.

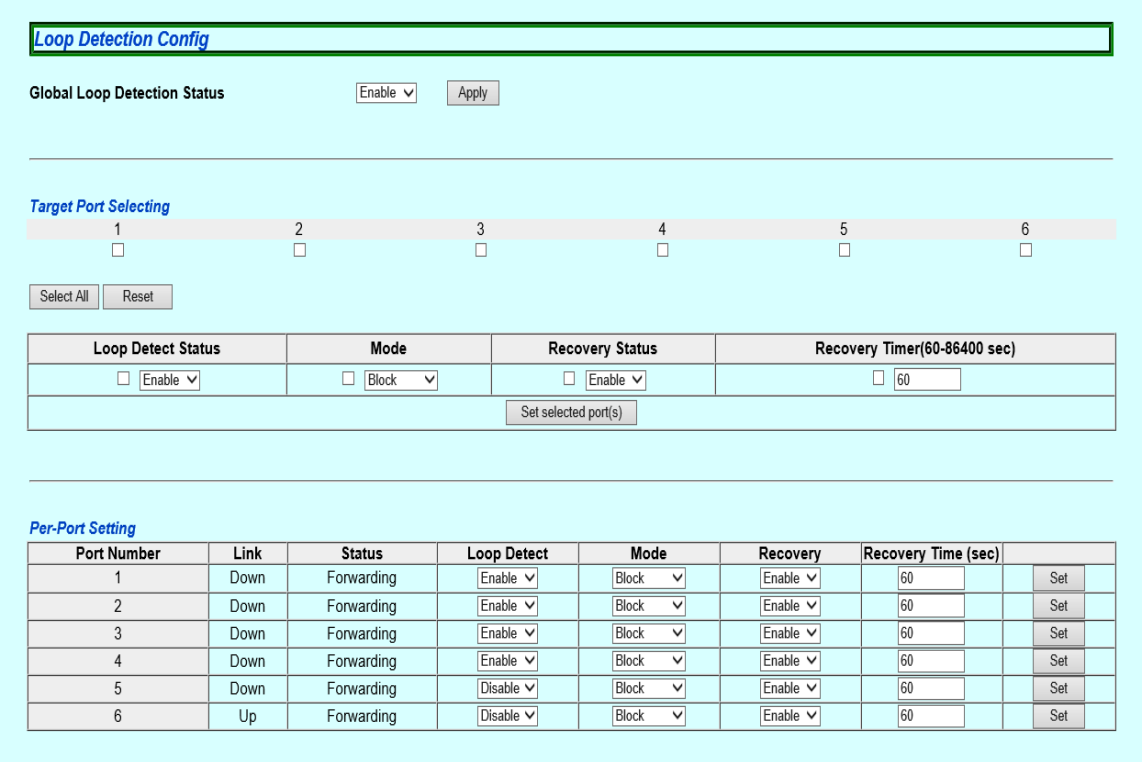


Figure 5-26 Loop Detection Config

Screen Description

Global Loop Detection Status	Displays the status of the Global Loop Detection function.	
	Enable	Enables Global Loop Detection.
	Disable	Disables Global Loop Detection.
Target Port Selecting	Select multiple target ports for configuring settings at a time. Click the "Select All" button, and all ports will be selected. Click the "Reset" button, and all ports will be deselected. Click the "Set selected port (s) " button after selecting and changing the items for configuring settings at a time, and the same settings will apply to the selected ports.	
Port Number	Displays the port number.	
Loop Detect Status	Enables/disables the loop detection function for ports.	
Link	Displays the link status.	
	Up	The link has been established successfully.
	Down	The link has not been established.
Status	Displays the status of the Loop detection and blocking function for that port.	
	Forwarding	Sending packets normally.
	Loop Detect	Detecting a loop and shutdown or block a port.

Loop Detect	Displays the setting status of the Loop detection and blocking function for that port.	
	Enable	The Loop detection and blocking function is enabled. (the factory default setting for a down-link port)
	Disable	The Loop detection and blocking function is disabled. (the factory default setting for an up-link port)
Mode	Displays the setting status of the Loop detection mode for that port.	
	Block	When the Switching Hub detects loop, the ports are blocked. (Factory default setting) Switching Hub transmits and receives specific packets include Loop Detection Packet in blocking status. When Recovery Status is enabled, the port will recover if Switching Hub does not receive Loop Detection Packet from own for Recover Timer (Default: 60 seconds)
	Shutdown	When the Switching Hub detects loop, the ports becomes link-down. It uses to take event of Link-up and Link-down. When Recovery Status is enabled, after [Recover Timer (Default: 60 seconds) - 30 seconds], the port will change to blocking status from link-down status. Switching Hub does not receive Loop Detection Packet from own for 30 seconds in blocking status, the port will recover. If Switching Hub receives Loop Detection Packet, the port will becomes link-down. Switching Hub transmits and receives specific packets include Loop Detection Packet in blocking status.
Recovery Status	Enables/disables recovery when a port is blocked.	
	Enable	Automatically recovers a blocked port after the time specified in "Recovery Time" passed. (Factory default setting)
	Disable	Does not recover a blocked port until manually configured.
Recovery Time	Enters the time until recovery when a loop is detected in a port. The factory default setting is 60 seconds.(range: 60 - 86400 seconds)	

Note: Disable loop detection in advance on ports that have link aggregation configured.

5.2.13. Loop History Info

Select "Advanced Config" and "Loop Detection" and then "Loop History Info" to open the screen shown in **Figure 5-27**. On this screen, you can configure additional settings.

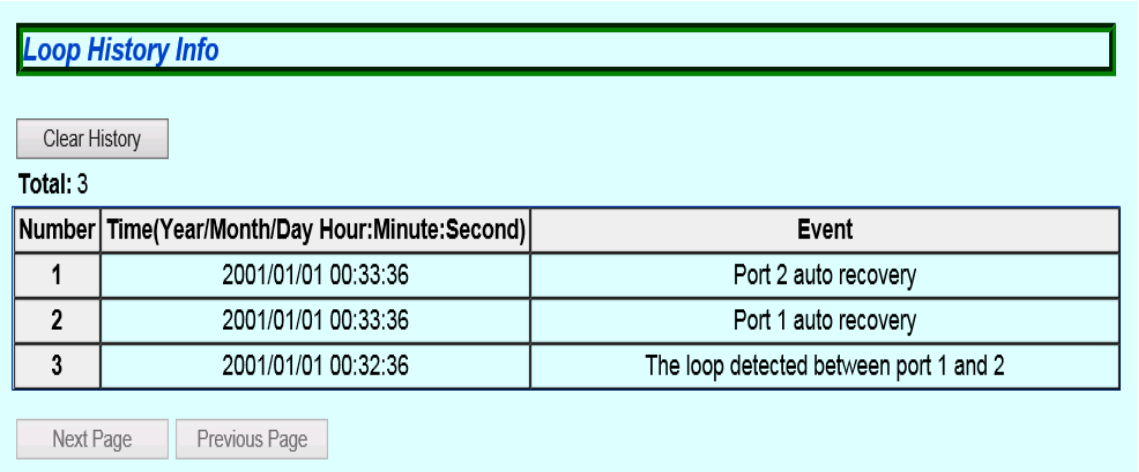


Figure 5-27 Loop History Info

Screen Description

Number	Displays the loop detection event number.	
Time	Displays the time when the loop detection event occurred.	
Event	Displays the description of the loop detection event that occurred on this switch.	
	The loop detected on port X	Indicates that a loop was detected in Port X.
	The loop detected between port A and port B	Indicates that a loop was detected between Port A and Port B.
	Port X auto recovery	Indicates that Port X automatically recovered from being blocked after loop detection.
Next Page	Switches the display range of a list.	
Previous		

5.2.14. Port Group Config

Select "Advanced Config" and then "Port Group Config" to open the screen shown in Figure 5-28. On this screen, you can configure the port grouping settings. With port grouping, ports specified as members of the port group can communicate only with the member ports in the same group. Each port can be assigned to multiple port groups.

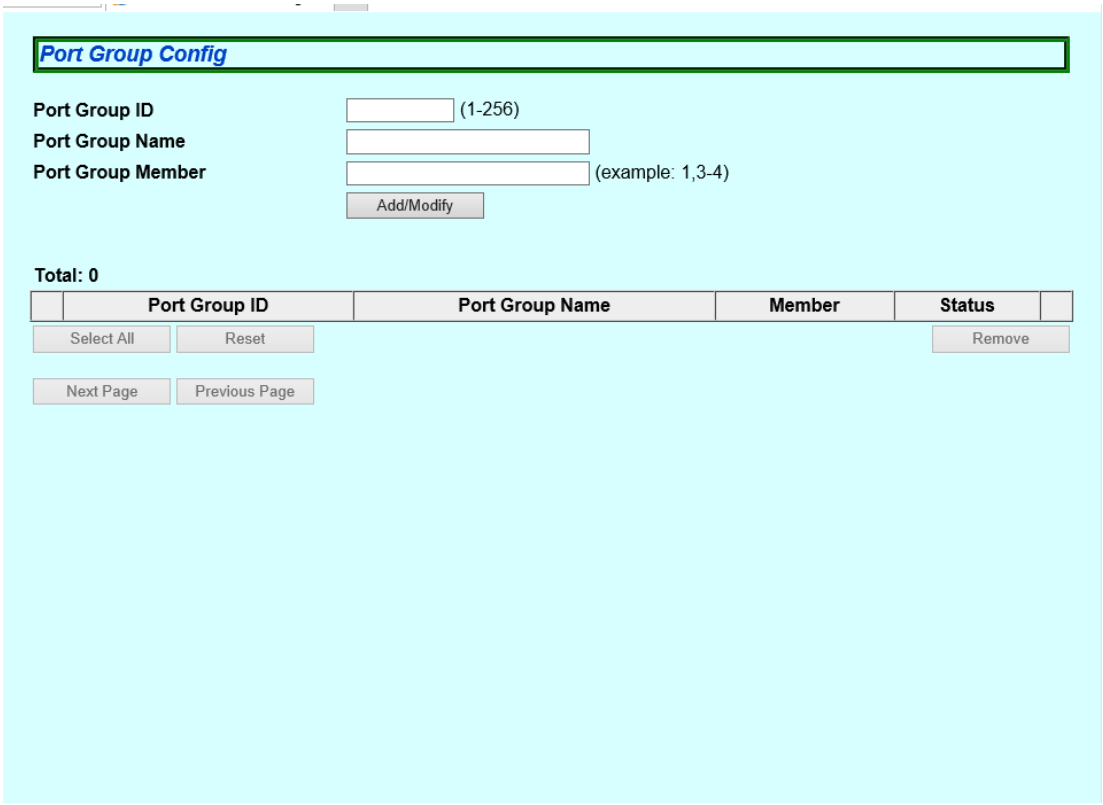


Figure 5-28 Port Group Settings

Screen Description

Port Group ID	Displays a port group ID.	
Port Group Name	Displays the name of the port group configured. (The name is indispensable.)	
Port Group Member	Displays the member ports that belong to the port group.	
Status	Displays the status of the port group.	
	Enabled	The corresponding port group is enabled.
	Disabled	The corresponding port group is disabled.
Modify	Modifies the corresponding port group settings.	

5.3. System Tools

5.3.1. Software Update

Select "System Tools" and then "Software Update" to open the screen shown in Figure 5-29. On this screen, you can update the firmware.

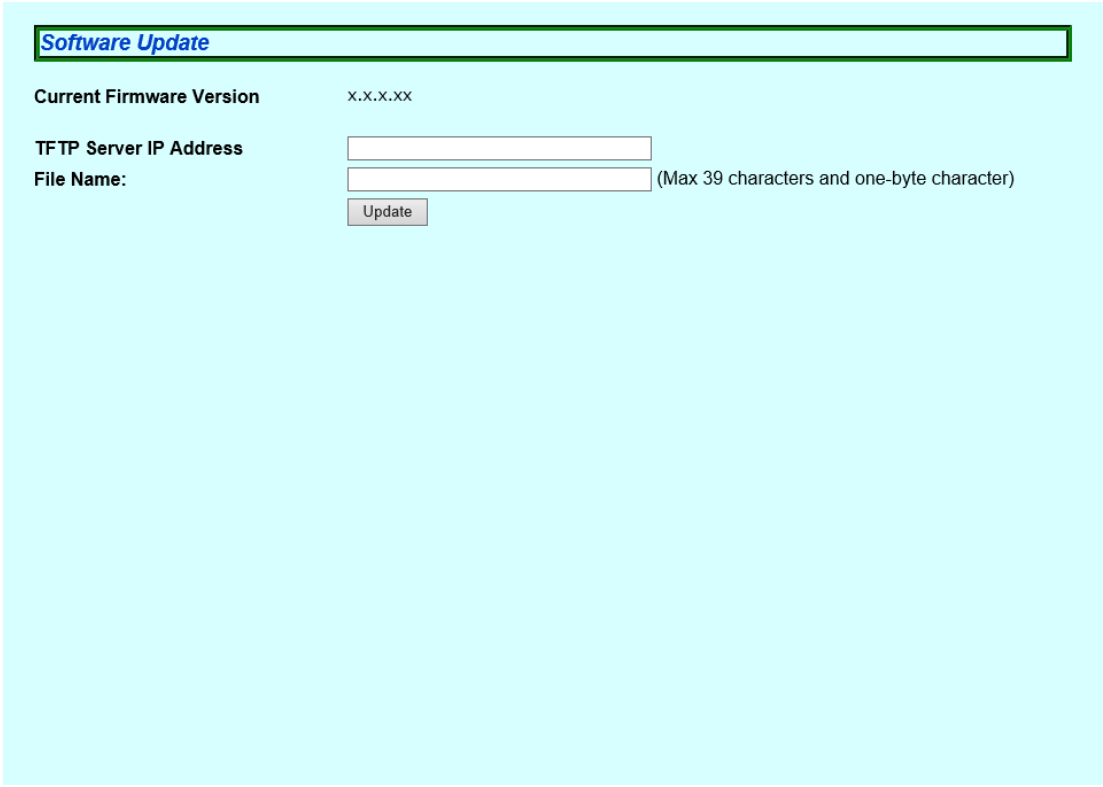


Figure 5-29 Software Update

Screen Description

Current Firmware Version	Displays the current firmware version.
TFTP Server IP Address	Displays the IPv4 address of the TFTP server on which the firmware for update has been saved.
File Name	Displays the file name of the firmware for update.

Note: Before you update the firmware, you must save the configuration information in accordance with Section 5.3.3. Unless you save the configuration information, the settings configured so far will be deleted upon restart.

5.3.2. Reboot

Select "System Tools" and then "Reboot" to open the screen shown in Figure 5-30. On this screen, you can reboot this switch.

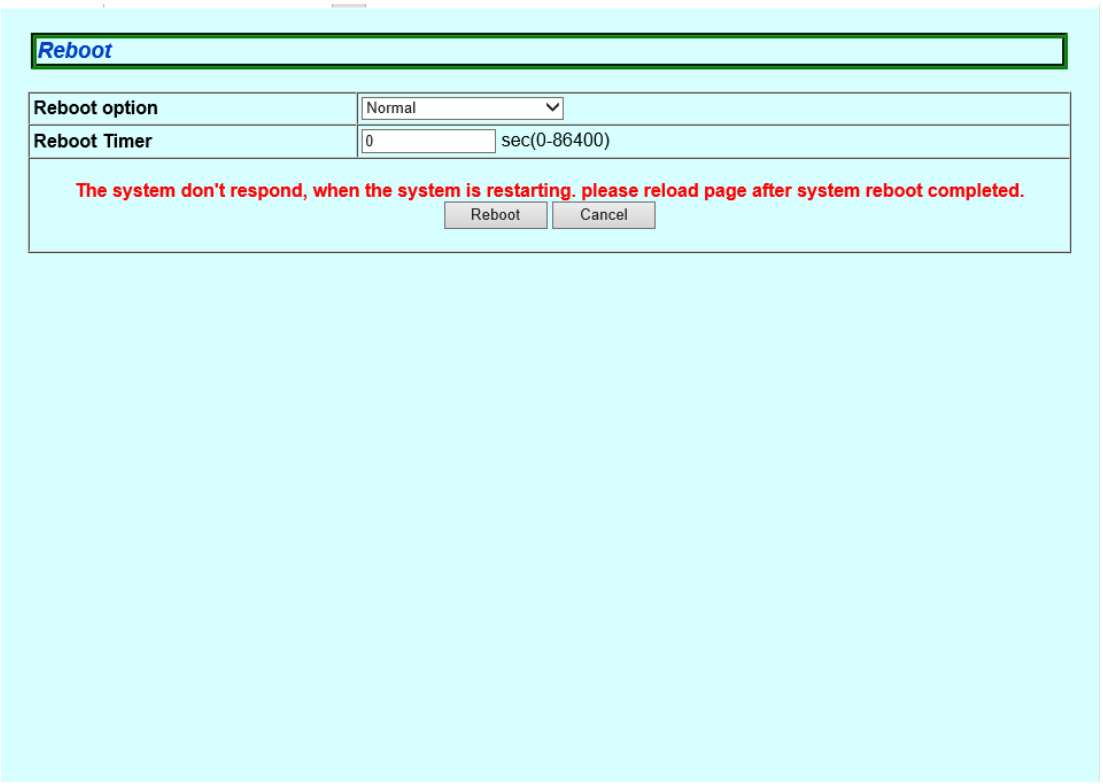


Figure 5-30 Reboot

Screen Description

Reboot Option	Displays the reboot method. "Normal" is the factory default setting.	
	Normal	Normal reboot is executed.
	Factory Default	All settings are reset to factory default.
	Factory Default Except IP	All settings except the IP address are reset to factory default.
Reboot Timer	Displays the time between execution of the reboot command and actual reboot. The factory default setting is 0 seconds.	

Note: There is no response while reboot is in progress. Reload the settings after reboot is completed.

5.3.3. Save Current Config

Select "System Tools" and then "Save Current Config" to open the screen shown in **Figure 5-31**. On this screen, you can save configuration information.

Figure 5-31 Save Current Config

Click "Save" to save this switch's settings to its internal RAM. Unless you save the configuration information, the settings configured so far will not be reflected upon restart.

After saving is completed, the message **"Save Completed"** is displayed.

5.3.4. Statistics

Select "System Tools" and then "Statistics" to open the screen shown in Figure 5-32. On this screen, you can check the statistics.

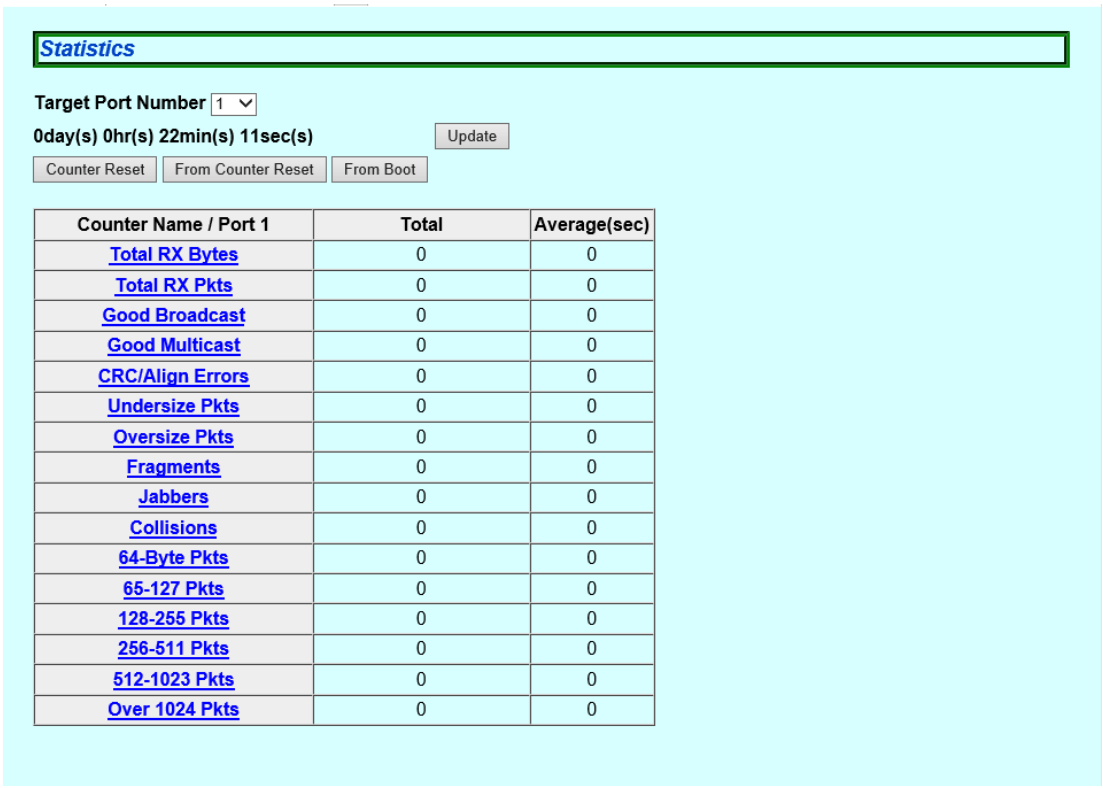


Figure 5-32 Statistics

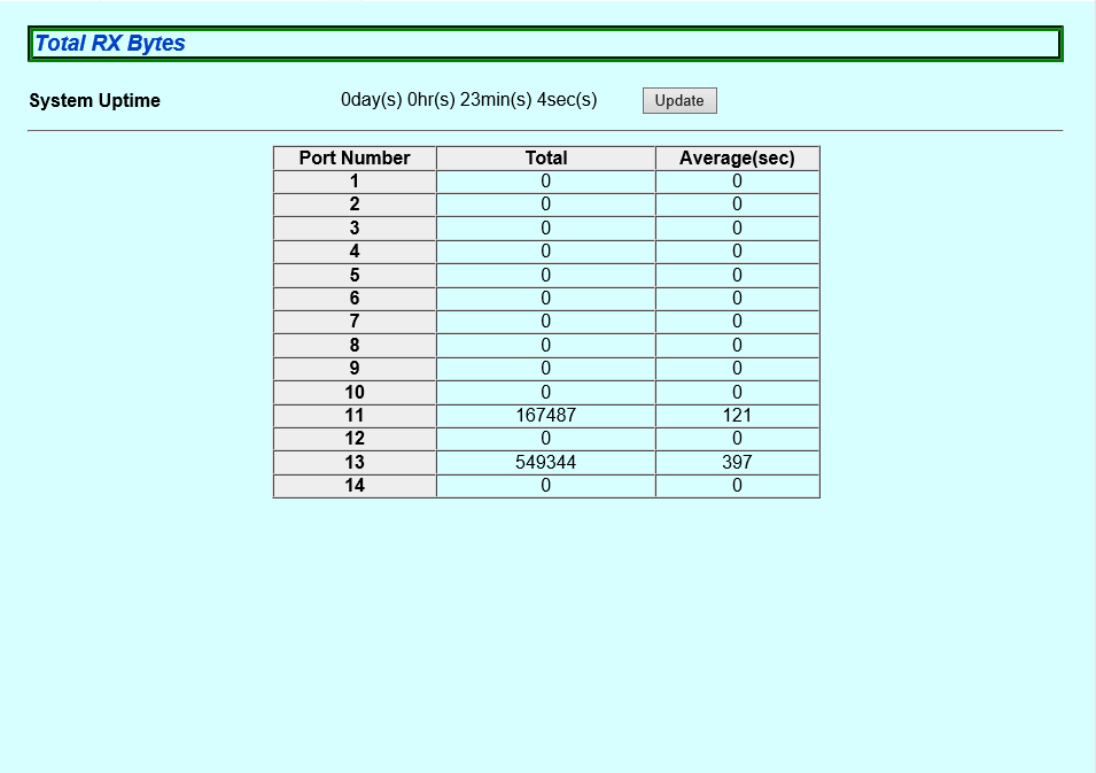
Screen Description

Target Port Number	Displays the port number.
Time	Displays the time elapsed since power on or counter reset.
Counter Name	Displays the counter name.
Total	Displays the counter value.
Average(sec)	Displays the average counter value per second.

The counters are described below.

Total RX Bytes	Displays the number of bytes of all packets received.
Total RX Pkts	Displays the number of all packets received.
Good Broadcast	Displays the number of broadcast packets received.
Good Multicast	Displays the number of multicast packets received.
CRC/Align Errors	Displays the number of error packets that have a normal packet length (64 to 1518 bytes), but have an error found by an error detection code (FCS). If the packet length is an integral multiple of one byte, the error is a CRC (FCS) error. If not, it is an alignment error.
Undersize Pkts	Displays the number of error packets that have a packet length less than 64 bytes, but have no other errors.
Oversize Pkts	<When Jumbo status is Disabled> Displays the number of packets having a packet length greater than 1518 bytes. <When Jumbo status is Enabled> Displays the number of packets having a packet length greater than 9216 bytes.
Fragments	Displays the number of error packets that have a packet length less than 64 bytes and have a CRC or alignment error.
Jabbers	Displays the number of error packets that have a packet length greater than 1518 bytes and have a CRC or alignment error.
Collisions	Displays the number of packet collisions.
64-Byte Pkts	Displays the total number of packets having a packet length of 64 bytes.
65-127 Pkts	Displays the total number of packets having a packet length of 65 to 127 bytes.
128-255 Pkts	Displays the total number of packets having a packet length of 128 to 255 bytes.
256-511 Pkts	Displays the total number of packets having a packet length of 256 to 511 bytes.
512-1023 Pkts	Displays the total number of packets having a packet length of 512 to 1023 bytes.
Over 1024 Pkts	Displays the total number of packets having a packet length 1024 bytes or greater. * This item is displayed when the Jumbo Status is Disabled.
1024-1518 Pkts	Displays the total number of packets having a packet length of 1024 to 1518 bytes. * This item is displayed when the Jumbo Status is Enabled.

Click each counter name to open the screen shown in Figure 5-33. The total and per-second average of the counter for each port is displayed on the screen.



Port Number	Total	Average(sec)
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	167487	121
12	0	0
13	549344	397
14	0	0

Figure 5-33 Statistic Information of each Counter by Port

Screen Description

Port Number	Displays the port number.
Total	Displays the counter value.
Average(sec)	Displays the average counter value per second.

5.3.5. System Log

Select "System Tools" and then "System Log" to open the screen shown in Figure 5-34. This screen displays the logs of events that occurred on this switch. By viewing events, you can keep track of activities that occurred on this switch, which are useful for network management.

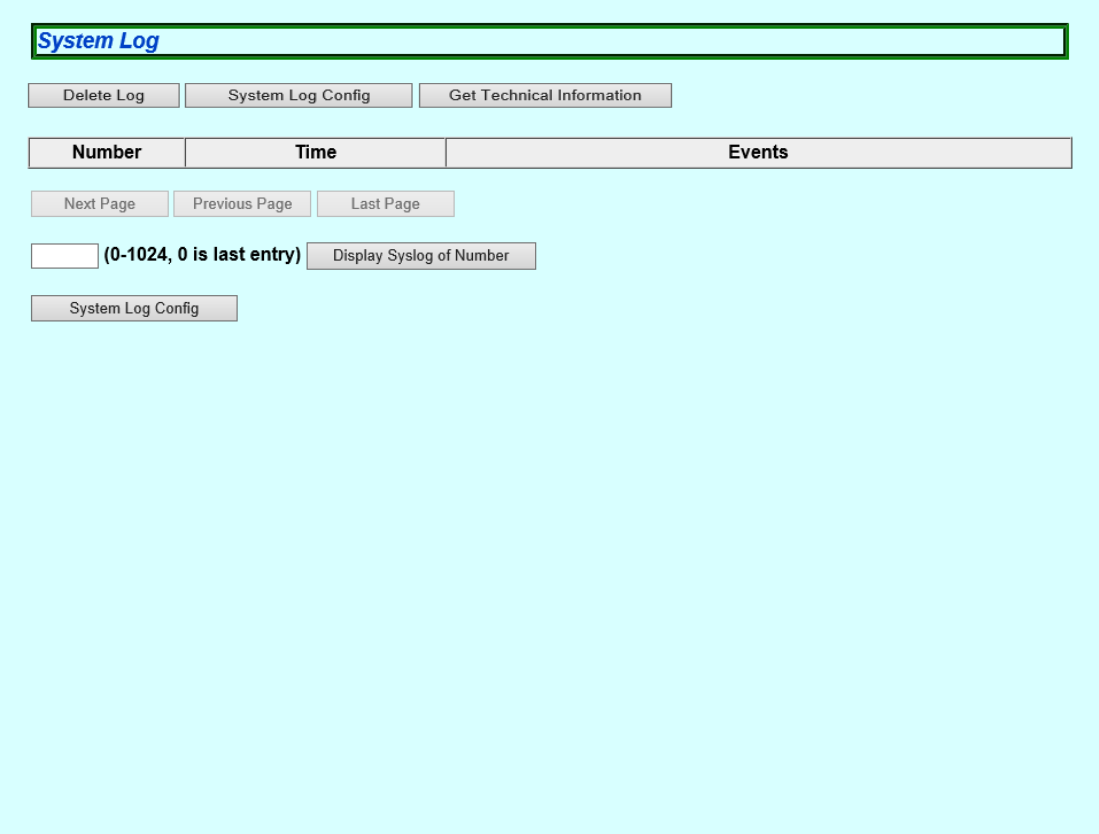


Figure 5-34 System Log

Screen Description

Delete Log	Deletes all system logs.	
Number	Indicates the event number.	
Time	Displays the time when the event occurred. The cumulative time since power on is displayed if "Time Config" is not configured.	
Event	Displays the description of the event that occurred on this switch.	
	Configuration changed	Indicates that the configuration was changed.
	Runtime code changes	Indicates that the firmware was changed.
	Configuration file upload	Indicates that the configuration file was transferred from the TFTP server.
	Configuration file download	Indicates that the configuration file was transferred to the TFTP server.
	Reboot: Normal	Indicates that this switch was rebooted.
	Reboot: Factory Default	Indicates that this switch was rebooted to return settings to factory default.
	Reboot: Factory Default Except IP	Indicates that this switch was rebooted to return settings except the IP address to factory default.
	SNTP first update to yyyy/mm/dd hh:mm:ss	Indicates that this switch accessed the SNTP server to retrieve time information.
	Port-*xx* Link-up	Indicates that port link is up. This event occurs when Individual Trap is enabled and a target port is set.
	Port-*xx* Link-down	Indicates that port link is down. This event occurs when Individual Trap is enabled and a target port is set.
	The loop detected on portX.	Indicates that a loop was detected in Port X.
	The loop detected between portA and portB.	Indicates that a loop was detected between Port A and Port B.
	PortX auto recovery.	Indicates that Port X automatically recovered from being blocked after loop detection.
	Port-*xx* Power ON notification	Indicates that the power supply to the target port is turned on.
	Port-*xx* Power OFF notification	Indicates that the power supply to the target port is turned off.
	(TRAP)Usage power is above the threshold	Indicates that the PoE power supply exceeded the threshold value.
	(TRAP)Usage power is below the threshold	Indicates that the PoE power supply exceeded the threshold value and then decreased below the threshold value.
	System Cold Start	Indicates that this switch powered on.
Display Syslog of Number	Displays the system log for the specified number.	
System Log Config	Sets enable/disable of the system log for each operation. For configuration details, refer to Section 5.3.5.a.	

Note: Up to 1024 system logs are saved. If 1025 or more system logs are created, the oldest system log will be deleted and overwritten with a new log.

5.3.5.a. System Log Config

Select "System Tools" and "System Log" and then "System Log Config" in the "System Log" screen to open the screen shown in Figure 5-35. On this screen, you can configure enable/disable of the system log for each event.

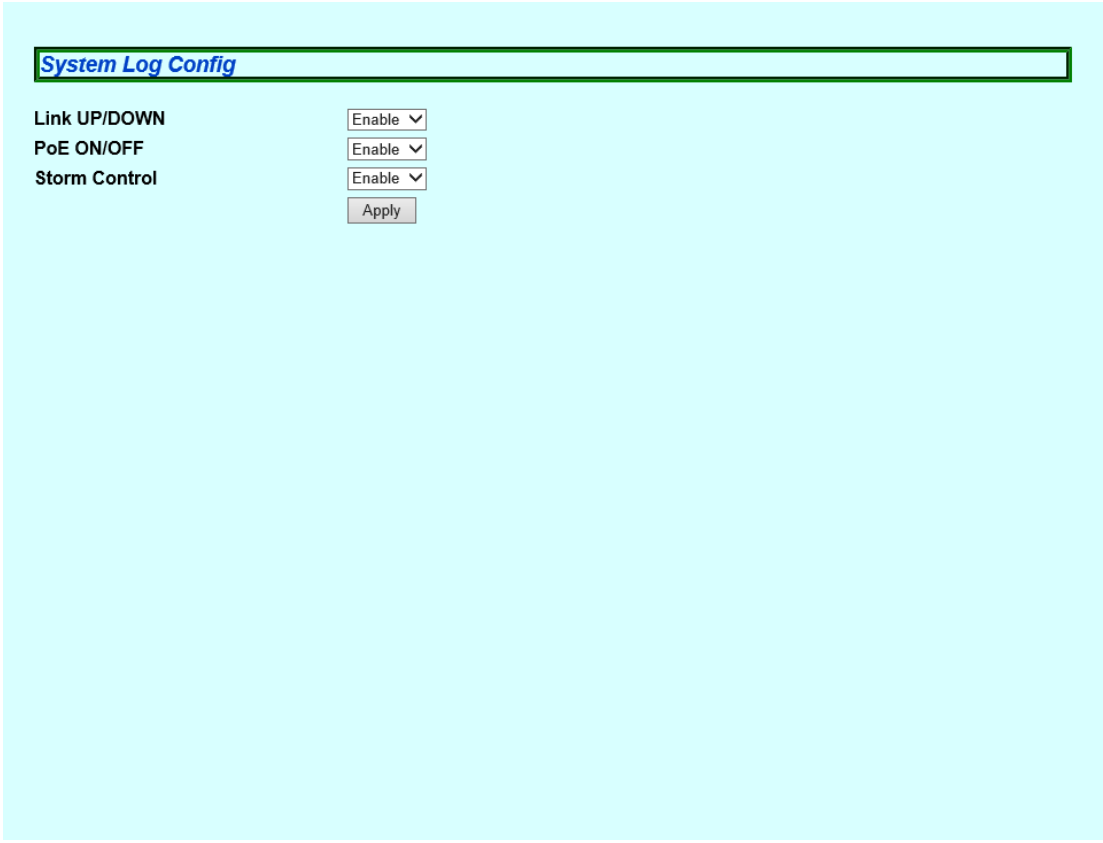


Figure 5-35 System Log Settings

Screen Description

Link UP/DOWN	Displays "Enable"/"Disable" of saving the system log when the link status changes.	
	Enable	Saves the system log when link goes up/down.
	Disable	Does not save the system log when link goes up/down.
PoE ON/OFF	Displays "Enable"/"Disable" of saving the system log when the PoE power supply status changes.	
	Enable	Saves the system log when PoE power supply turns ON/OFF.
	Disable	Does not save the system log when PoE power supply turns ON/OFF.
Storm Control	Displays "Enable"/"Disable" of saving the system log when storm control turns on.	
	Enable	Saves the system log when storm control turns on.
	Disable	Does not save the system log when storm control turns on.
Configuration	Save the changes to the settings.	

5.3.6. Config File Transfer

Select "System Tools" and then "Config File Transfer" to open the screen shown in Figure 5-36. On this screen, you can upload and download configuration files.

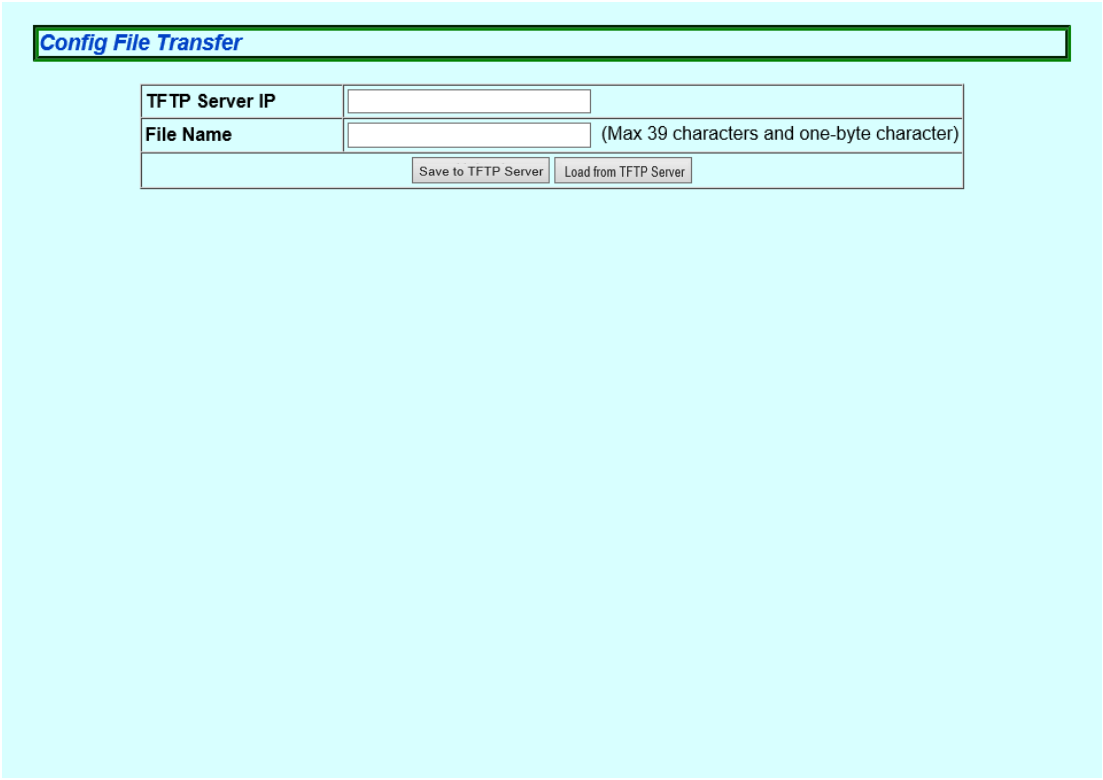


Figure 5-36 Config File Transfer

Screen Description

TFTP Server IP	Displays the IPv4 address of the TFTP server that saves and reads the configuration file.
File Name	Displays the file name of the configuration information.

To save the configuration information to the TFTP server, select "Download." To read the configuration information into this switch, select "Upload."

5.3.7. Ping Execution

Select "System Tools" and then "Ping Execution" to open the screen shown in **Figure 5-37**. On this screen, you can send a ping.

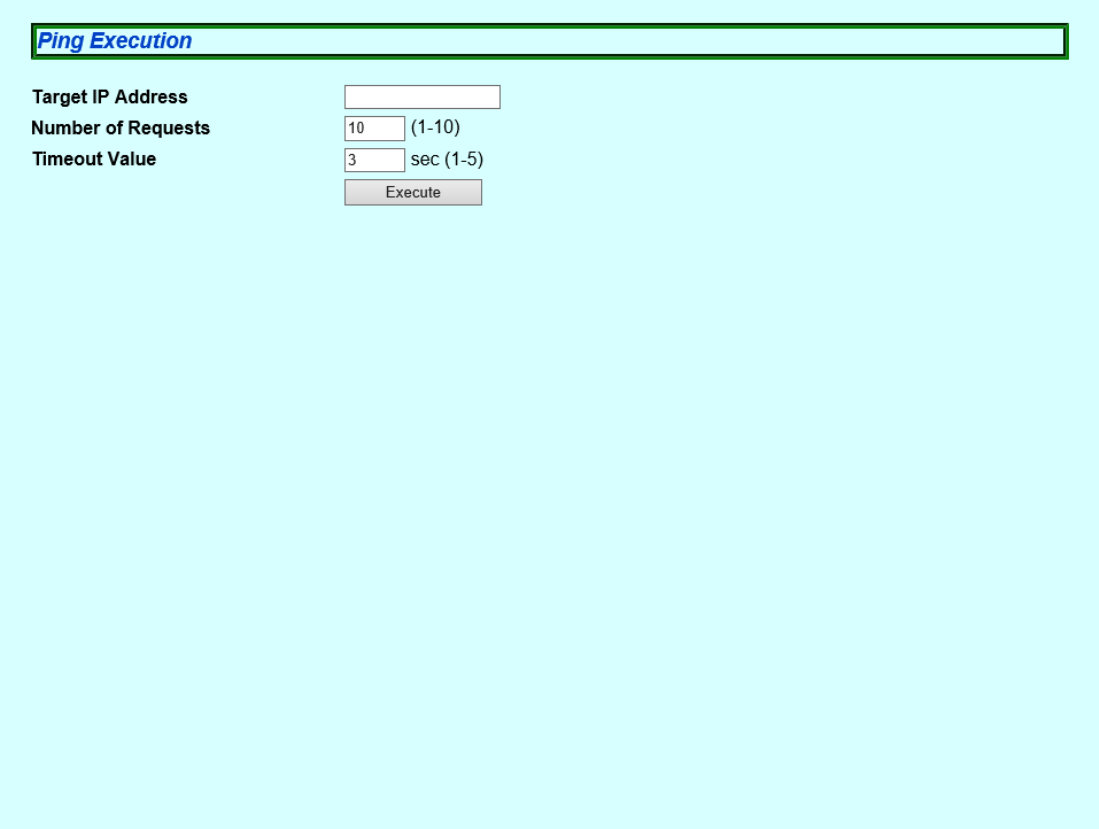


Figure 5-37 Ping Execution

Screen Description

Target IP Address	Displays the IPv4 address of the target of the ping. The factory default setting is blank.
Number of Request	Displays the number of times a ping is being sent. The factory default setting is 10 times.
Timeout Value	Displays the timeout time. The factory default setting is 3 seconds.
Result	Displays the ping execution result.

5.3.8. Exception Handler

Select "System Tools" and then "Exception Handler" to open the screen shown in Figure 5-38. On this screen, you can configure the exception handler.

Figure 5-38 Exception Handler

Screen Description

Exception Handler	Displays the exception handling function status.	
	Enable	Enables the exception handling function.
	Disable	Disables the exception handling function.

5.3.9. Watchdog Timer

Select "System Tools" and then "Watchdog Timer" to open the screen shown in **Figure 5-39**. On this screen, you can configure the Watchdog Timer settings.

Figure 5-39 Watchdog Timer

Screen Description

Watchdog Timer Configuration	Displays the status of the Watchdog Timer function.	
	Enable	Enables the Watchdog Timer.
	Disable	Disables the Watchdog Timer.

6. Appendix

6.1. Specifications

○ Interface
- Twisted pair ports: (RJ45 connector) * Refer to the "Specifications for each model" on page 75.
  - ✧ Transmission system

IEEE802.3	10BASE-T
IEEE802.3u	100BASE-TX
IEEE802.3ab	1000BASE-T

○ Switching system
- Store-and-forward system

- Forwarding rate	10BASE-T	14,880 pps
	100BASE-TX	148,800 pps
	1000BASE-T/X	1,488,000 pps
- MAC address table	8K entries/unit	
- Buffered memory	512 KB	
- Flow control	IEEE802.3x (full-duplex) Back pressure (half-duplex)	

○ Major functions

- IEEE802.1Q	Tag VLAN (256 VLANs max.)
- IEEE802.3ad	Link aggregation * Refer to the "Specifications for each model" on page 75.
- IEEE802.1p	QoS function (Four levels of Priority Queue supported)
- IEEE802.3x	Flow control
- IEEE802.3az	Energy Efficient Ethernet (Supports LPI except 10BASE-Te)
- IEEE802.3at/af	PoE+/PoE power supply function * Refer to the "Specifications for each model" on page 75.
- Port monitoring function	Capable of monitoring multiple ports

○ Management methods
- WEB, ZEQUO assist Plus

○ Agent specifications
- TFTP (RFC783, RFC1350)
- BOOTP (RFC951)
- SNTP (RFC1769)

○ Power supply specifications

- Power supply (rated) AC 100-240 V, 50/60 Hz, 1.7 A
- Power consumption * Refer to the following "Specifications for each model".

○ Environment specifications

- Operating temperature * Refer to the following "Specifications for each model".
- Operating humidity 20 to 80 % RH (no condensation)
- Storage temperature -20 to 70 ℃
- Storage humidity 10 to 90 % RH (no condensation)

○ External specifications

- Dimensions (not including protruding section) * Refer to the following "Specifications for each model".
- Weight * Refer to the following "Specifications for each model".

○ Specifications for each model

Target model	Number of ports	Link aggregation	PoE+/ PoE power supply function	maximum power consumption (when not supplying power)	minimum power consumption	Operating temperature	Dimensions WxDxH (mm)	Weight
GA-AS4TPoE+	6	Up to 6 ports, 3 groups	○	75.0W (5.8W)	3.7W	0 to 50 ℃	210x210x44	1,700g
GA-AS10TPoE+	12	Up to 8 ports, 6 groups	○	89.2W (11.0W)	6.4W	0 to 50 ℃	210x280x44	2,200g
GA-AS12TPoE+	14	Up to 8 ports, 7 groups	○	109.0W (14.1W)	9.0W	0 to 50 ℃	210x280x44	2,200g
GA-AS4T	6	Up to 6 ports, 3 groups	-	(4.3W)	3.2W	0 to 50 ℃	210x130x44	1,100g
GA-AS10T	12	Up to 8 ports, 6 groups	-	(7.6W)	3.3W	0 to 50 ℃	210x280x44	1,800g
GA-AS12T	14	Up to 8 ports, 7 groups	-	(8.5W)	3.3W	0 to 50 ℃	210x280x44	1,800g

6.2. Easy IP Address Setup Function

The following are points to note when using the easy IP address setup function.

[Known compatible software]
"ZEQUO assist Plus" Ver.1.1.1.0

[User-settable items]
- IP address, subnet mask, and default gateway

[Restrictions]
- The time for accepting setting changes is limited to 20 minutes after power-on to ensure security.
  However, you can change settings regardless of the time limit if the IP address, subnet mask, default gateway, user name, and password values are set to factory defaults.
  * Even after the time limit is reached, you can check the current settings displayed in a list.

6.3. Network Configuration Example and Notes Using Loop Detection and Blocking Function

Configuration example using the Loop detection and blocking function

Using the Loop detection and blocking function allows to prevent a loop failure possibly occurring on a downstream Switching Hub that the user directly uses. If you connect a hub that does not support the Loop detection and blocking function to a downstream Switching Hub, and a loop failure occurs in the Switching Hub, the downstream Switching Hub port that caused a loop is blocked to prevent a loop failure from affecting the entire network.

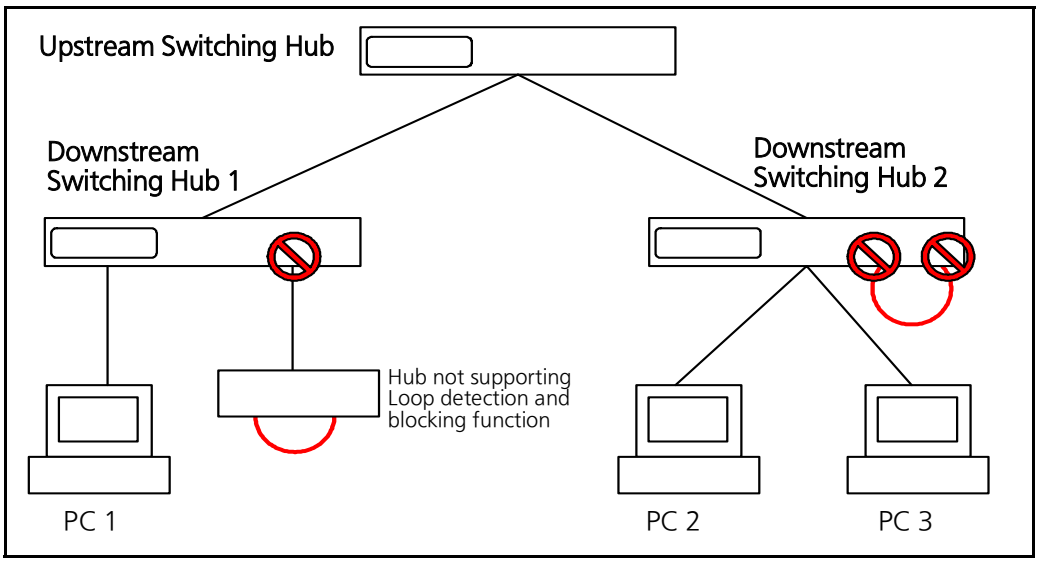
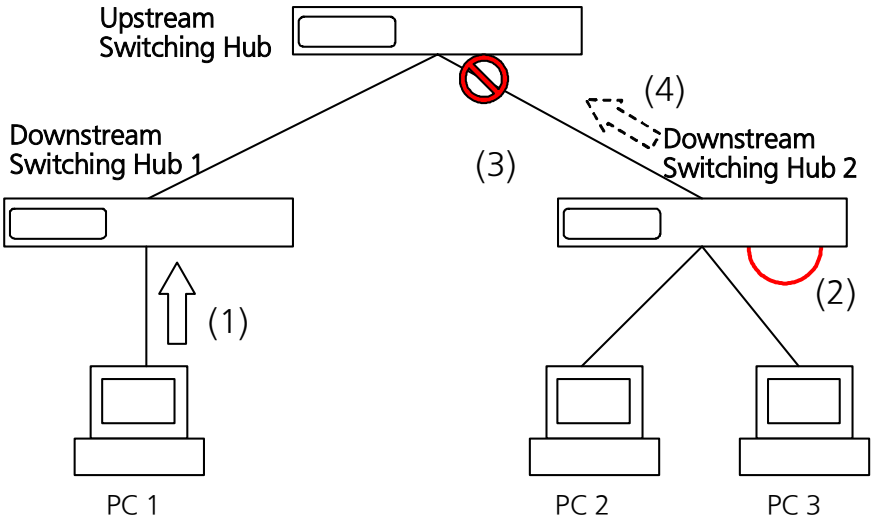


Figure 6-1 Configuration example using the Loop detection and blocking function

Notes when using the Loop detection and blocking function - Disable the function on the upstream Switching Hub

If you configure a network only with switches having the Loop detection and blocking function, the upstream Switching Hub may detect a loop occurring on the downstream Switching Hub first depending on the condition. Then, all communications to the downstream Switching Hub may be blocked.
To minimize the impact of communication blocks caused by loop detection, the Loop detection and blocking function needs to be disabled on the upstream Switching Hub. Then, network configuration and Switching Hub settings need to be changed to block only the port having a loop on the Switching Hub.



[Occurrence conditions]
(1) Communication is taking place between PC 1 and PC 2, and between PC 1 and PC 3.
(2) A loop occurs on downstream Switching Hub 2.
(3) The upstream Switching Hub detects the loop first and blocks the uplink port on downstream Switching Hub 2. (Normally, only the loop-connected port is blocked.)
(4) The uplink port on downstream Switching Hub 2 is linked down, and all communication to other switches is blocked.

Figure 6-2 Notes when using the Loop detection and blocking function

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