Intelligent 6 Port
Lite-Managed Ethernet Switches

iES6-SFP User Manual

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SERVICES • SUPPORT • SECURITY • SOLUTIONS • SYSTEMS

Website: www.iS5Com.com E-mail: sales@iS5Com.com

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Federal Communications Commission Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment cangenerate, use, and radiate radio frequency energy. If not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will at his/her own expense, be required to correct the interference.

This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Caution: LASER

This product contains a laser system and is classified as a CLASS 1 LASER PRODUCT. Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Caution: Service

This product contains no user-serviceable parts. Attempted service by unauthorized personnel shall render all warranties null and void.

Changes or modifications not expressly approved by iS5 Communications Inc. could invalidate specifications, test results, and agency approvals, and void the user's authority to operate the equipment.

Should this device require service, please contact support@iS5Com.com.

Caution: Physical Access

This product should be installed in a restricted access location. Access should only be gained by qualified service personnel or users who have been instructed on the reasons for the restrictions applied at the location, and any precautions that have been taken. Access must only be via the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.

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1. GETTING TO KNOW YOUR SWITCH

1.1 ABOUT IES6-SFP LITE-MANAGED INDUSTRIAL SWITCH

The IES6-SFP switch is cost-effect and powerful industrial switch with many features. The switch can work under wide temperature and dusty environment and humid condition. The IES6-SFP switch can be managed by WEB and a useful Windows Utility we called "iManage". "iManage".is powerful network management software. With its friendly and powerful interface, you can easily configure multiple switches at the same time, and monitor switches' status

1.2 SOFTWARE FEATURES

- World's fastest Redundant Ethernet Ring (Recovery time < 10ms over 250 units connection)
- Supports Ring Coupling, Dual Homing over iRing and standard STP/RSTP
- Supports SNMPv1/v2c/v3 & Port base VLAN Network Management
- Web-based ,Telnet, Console, CLI configuration
- Port Based VLAN to segregate and secure network traffic
- SNMPv3 encrypted authentication and access security
- RSTP (802.1w)
- Port configuration, status presentation
- Windows utility (iManage) for network management
- MRP Implementation

1.3 HARDWARE FEATURES

- 4 x 10/100Base-T(X) Ethernet ports
- 2x 100Base-FX SFP Fiber port
- Console Port (DB9)
- Dual Input low-voltage (LV) DC (10-48VDC)
- Dual Input medium-voltage (MV) DC (36-75VDC)
- Single Input Hi-voltage (HV) AC/DC input (85-264VAC, 88-300VDC) with Single (10-48VDC) backup
- Wide Operating Temperature: -40 to 85oC
- Storage Temperature: -40 to 85oC
- Operating Humidity: 5% to 95%, non-condensing
- Chassis: IP-40 Galvanized Steel
- Dimensions – iES6-SFP (W x D x H) : 65(W) x 164(D) x 191(H) mm (2.56x6.47x7.53 inches)

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2. HARDWARE INSTALLATION

2.1 DIN RAIL MOUNTING

Each switch has a DIN-Rail bracket on the rear panel that allows the switch to be mounted on a DIN Rail. To mount the switch on a DIN Rail follow the steps below.

1. Slant the top of the switch back and hook the top of the DIN bracket onto the top of the DIN rail.

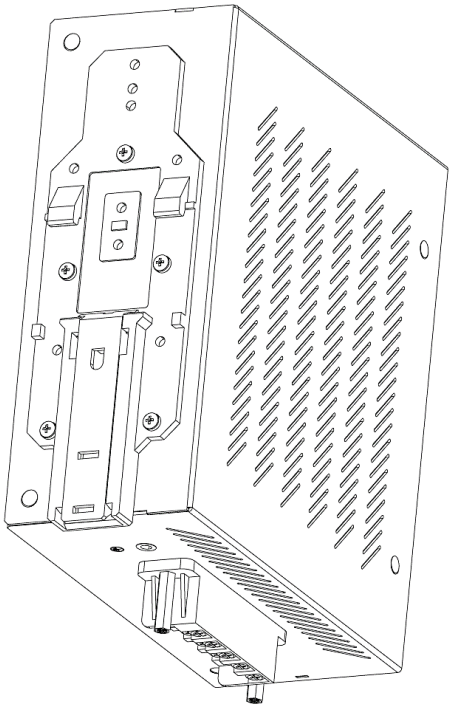

Figure 1 - DIN Rail Mounting

2. Push the bottom of the switch towards the DIN Rail until in clicks into place.

Note: To release the switch from the DIN Rail, pull the latch at the bottom of the switch down to release the DIN bracket from the DIN Rail. While pulling the latch down, pull the bottom of the switch away from the DIN Rail. The switch will now lift off of the DIN rail.

2.2 PANEL MOUNTING OPTION

The switch can also has an option to be panel or wall mounted. The following steps show how to mount the switch on a panel or wall.

1. Install the Panel mounting hardware onto the switch. To avoid damage to the unit please use the screws provided to install the panel mount brackets onto the switch.

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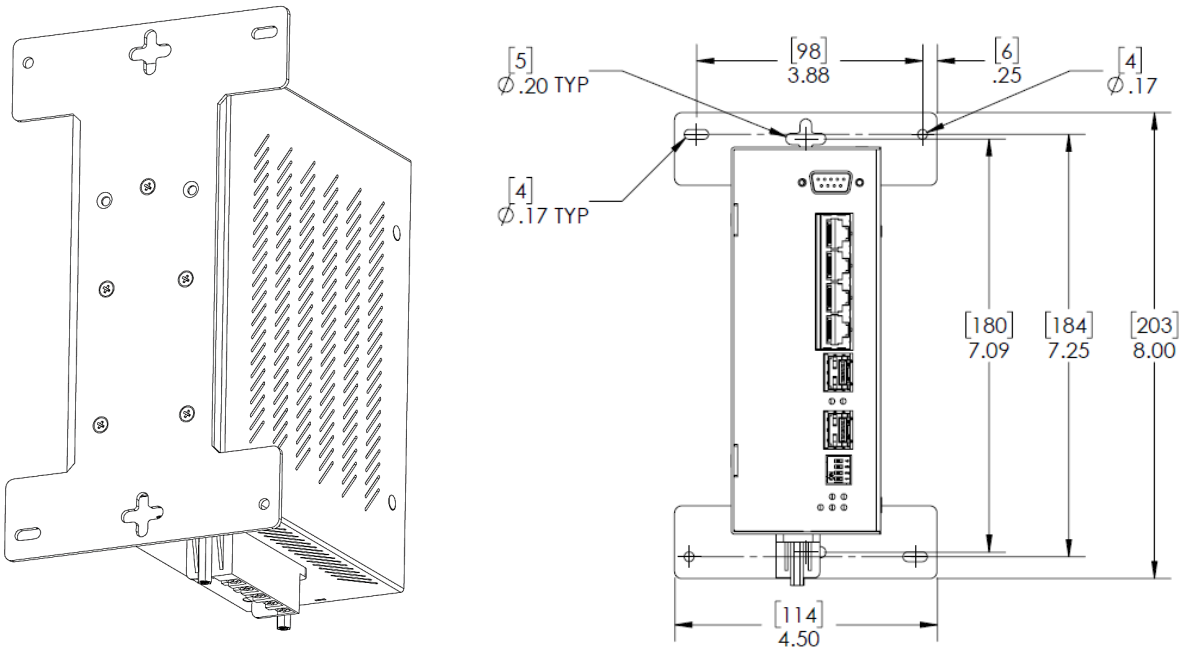

Figure 2 - iES6-S Panel Mounting Option

2. Use the holes in the brackets to secure the switch to a wall or panel.

2.3 CHASSIS GROUND CONNECTION

The iES6 SFP chassis ground connection uses a #6-32 Screw. We recommend terminating the ground connection using a #6 ring lug, and a torque setting of 15 in.lbs (1.7Nm). The red outline indicates the location of the chassis ground.

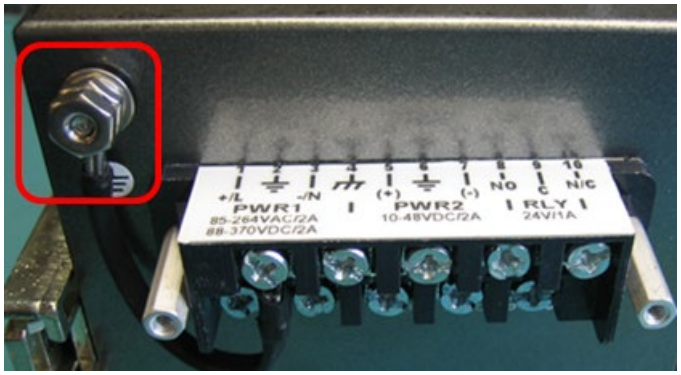

Figure 3 - Chassis Ground Connection

2.4 POWER CONNECTIONS

The iES6-SFP and iES6-M Series Industrial switch supports 3 different dual redundant power supplies (PWR1 and PWR2):

1. LV: Dual Input 10-48VDC
2. MV: Dual Input 36-75VDC
3. HV: Single Input 85-264VAC or 88-370VDC with a Single 10-48VDC Backup

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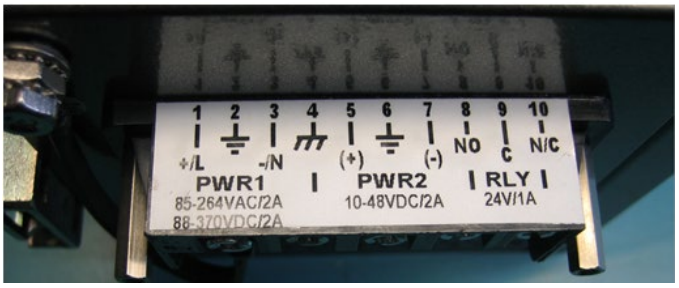

Figure 4 - Power Connections

The label on the terminal block will indicate the accepted voltage range for PWR1 and PWR2. Positions 2, 4 and 6 are all for ground connections (connected via a removable jumper) and can be used for any ground connection. The 3 tables below list the power connections for each type of input power.

The Phillips Screw Terminal Block has Phillips screws with compression plates, allowing either bare wire connections or crimped terminal lugs. The use of #6 size ring lugs is recommended to ensure secure and reliable connections under severe shock or vibration. The terminal block comes with a safety cover which must be removed before connecting any wires. This cover must be re-attached after wiring to ensure personnel safety.

1. LV: Dual Input 10-48VDC

Terminal Number	Description	Connection
1	PWR1 (+) : Positive	Connected to the positive of the 1st 10-48VDC power source.
2	PWR1 : Ground	Power supply 1 ground connection.
3	PWR1 (-) : Negative	Connected to the negative of the 1st 10-48VDC power source.
4	: Chassis Ground	Connected to the safety ground terminal for AC Units or the ground bus for DC inputs. Chassis Ground connects to both power supply surge grounds via a removable jumper.
5	PWR2 (+) : Positive	Connected to the positive terminal of the 2nd 10-48VDC power source.
6	PWR2 : Ground	Power supply 2 ground connection.
7	PWR2 (-) : Negative	Connected to the negative terminal of the 2nd 10-48VDC power source.
8	RLY NO	Failsafe relay, normally open contact.
9	RLY CM	Failsafe relay, common contact.
10	N/C	No connection

2. MV: Dual Input 36-75VDC

Terminal Number	Description	Connection
1	PWR1 (+): Positive	Connected to the positive of the 1st 36-75VDC power source.
2	PWR1 : Ground	Power supply 1 ground connection.
3	PWR1 (-) : Negative	Connected to the negative of the 1st 36-75VDC power source.
4	: Chassis Ground	Connected to the safety ground terminal for AC Units or the ground bus for DC inputs. Chassis ground connects to

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Terminal Number	Description	Connection
		both power supply surge grounds via a removable jumper.
5	PWR2 (+) : Positive	Connected to the positive terminal of the 2nd 36-75VDC power source.
6	PWR2 : Ground	Power supply 2 ground connection.
7	PWR2 (-) : Negative	Connected to the negative terminal of the 2nd 36-75VDC power source.
8	RLY NO	Failsafe relay, normally open contact.
9	RLY CM	Failsafe relay, common contact.
10	N/C	No connection

3. HV: Single Input 85-264VAC or 88-370VDC with a Single 10-48VDC Backup

Terminal Number	Description	Connection
1	PWR1 (+/L) – Line or Positive	Connected to the line terminal of the 85-264VAC power source or the positive terminal of the 88-370VDC power source.
2	PWR1 – Ground	Power supply 1 ground connection.
3	PWR1 (-/N) – Neutral or Negative	Connected to the neutral terminal of the 85-264VAC power source or the negative terminal of the 88-370VDC power source.
4	– Chassis Ground	Connected to the safety ground terminal for AC units or the ground bus for DC inputs. Chassis ground connects to both power supply surge grounds via a removable jumper.
5	PWR2 (+) - Positive	Connected to the positive terminal of the 10-48VDC backup power source.
6	PWR2 – Ground	Power supply 2 ground connection.
7	PWR2 (-) – Negative	Connected to the negative terminal of the 10-48VDC backup power source.
8	RLY NO	Failsafe relay, normally open contact.
9	RLY CM	Failsafe relay, common contact.
10	N/C	No connection

- *100-240VAC rated equipment: A 250VAC appropriately rated circuit breaker must be installed.*
- *Equipment must be installed according to the applicable country wiring codes.*
- *When equipped with a HI voltage power supply and DC backup,*

- *88-300VDC rated equipment: A 300VDC appropriately rated circuit breaker must be installed.*
- *A circuit breaker is not required for DC power supply voltages of 10-48VDC.*
- *For Dual DC power supplies, separate circuit breakers must be installed and separately identified.*
- *Equipment must be installed according to the applicable country wiring*

2.5 CONSOLE CONNECTION

To manage the switch via console port, connect the console cable (provided with the switch) from a PC serial port (DB9) to the Console port on the front of the switch.

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3. HARDWARE OVERVIEW

3.1 FRONT PANEL

The following table describes the labels that adhere to the IES6-SFP.

Port	Description
10/100 RJ-45 fast Ethernet ports	10/100Base-T(X) RJ-45 fast Ethernet ports support auto negotiation. Default Setting : Speed: auto Duplex: auto Flow control : disable
Reset	Push reset button 2 to 3 seconds to reset the switch. Push reset button 5 second to reset the switch into **Factory Default.**

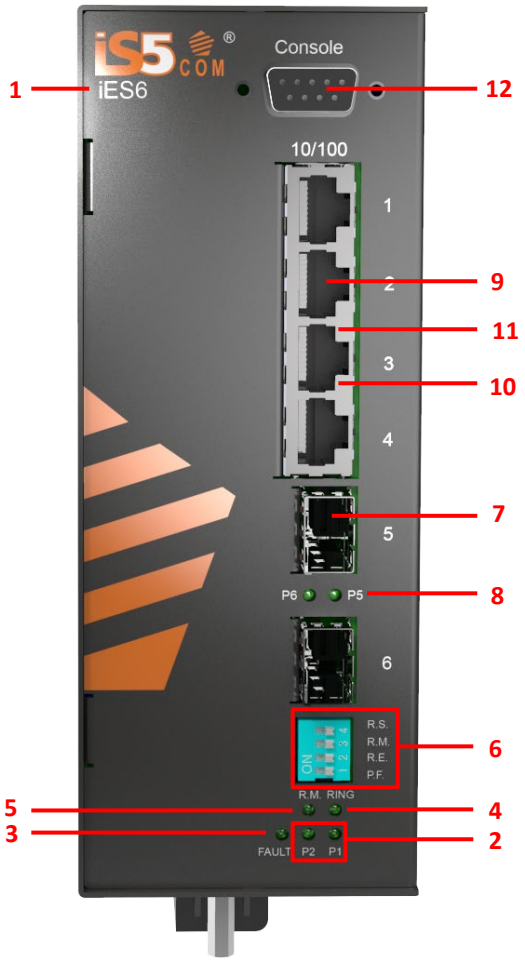

Figure 5 - iES6-SFP Product Description

1. Model name
2. LED for PWR1&PWR2 When the PWR links, the green led will be light on

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3. LED for Fault Relay. When the fault occurs, the amber LED will be light on.
4. LED for Ring. When the led light on, it means the iRing is activated.
5. LED for R.M (Ring master). When the LED light on, it means that the switch is the ring master of iRing.
6. Dip Switch setting when the Dip sett

   P.F：Power fault warning (On is enable, Off is disable) R.E ：iRing technology (On is enable, Off is disable) R.M：Ring Master (On is enable, Off is disable)
   R.S：Ring Select (P1/P2:Port1 and Port2 , P5/P6:Port5 and Port6)
7. 100 Base Fiber port on SFP
8. LED for SFP LINK/ACT
9. 10/100Base-T(X) Ethernet ports..
10. LED for Ethernet ports ACT status.
11. LED for Ethernet ports LINK status.

3.2 FRONT PANEL LEDS

LED	Color	Status	Description
PWR1	Green	On	DC power module 1 activated.
PWR2	Green	On	DC power module 2 activated.
R.M	Green	On	iRing Master.
Ring	Green	Slowly blinking	iRing enabled.
			iRing topology has problem
		On	iRing work normally.
Fault	Amber	On	Fault relay. Power failure or Port down/fail.
10/100Base-T(X) Fast Ethernet ports			
LNK / ACT	Green	On	Port link up.
		Blinking	Data transmitted.
LINK	Amber	On	LINK LED
100Base Fiber port on SFP			
LINK / ACT	Green	On	Port link up
		Blinking	Data transmitted

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4. CABLES

4.1 ETHERNET CABLES

The IES6-SFP switch has standard Ethernet ports. According to the link type, the switches use CAT 3, 4, 5,5e UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

The cable types and specifications are as shown below:

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45

4.1.1 100BASE-TX/10BASE-T Pin Assignments

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 are used for receiving data.

RJ-45 Pin Assignments are as show below.

Pin Number	Assignment
1	TD+
2	TD-
3	RD+
4	Not used
5	Not used
6	RD-
7	Not used
8	Not used

The IES6-SFP switch support auto MDI/MDI-X operation. You can use a straight-through cable to connect PC and switch. The following table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

MDI/MDI-X pins assignment are as show below.

Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	Not used
5	Not used	Not used
6	RD-(receive)	TD-(transmit)

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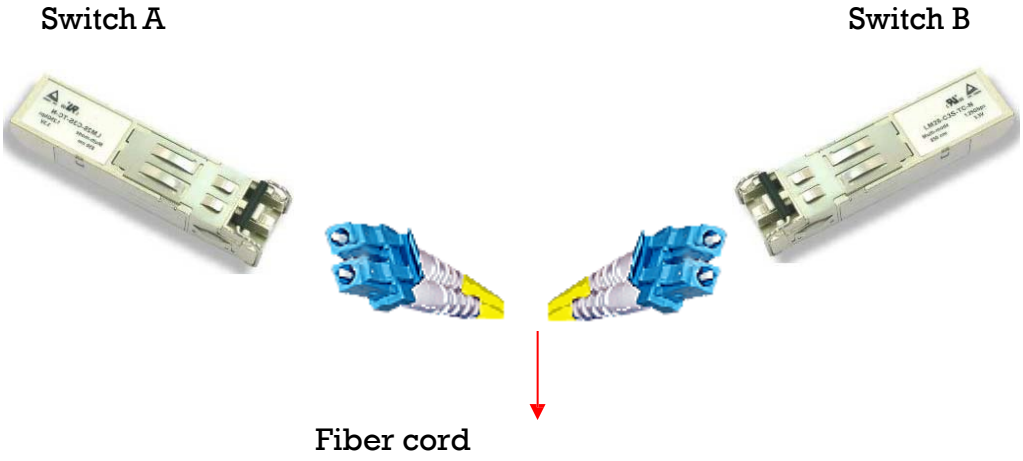
Pin Number	MDI port	MDI-X port
7	Not used	Not used
8	Not used	Not used

Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.

4.2 SFP

The Switch has fiber optical ports with SFP connectors. The fiber optical ports are in multi-mode and single-mode with LC connector. Please remember that the TX port of Switch A should be connected to the RX port of Switch B.



4.3 CONSOLE

Each iES6-SFP Series switch can be managed through its console port. You can connect your PC via an RS-232 cable with DB-9 female connector to the console port.

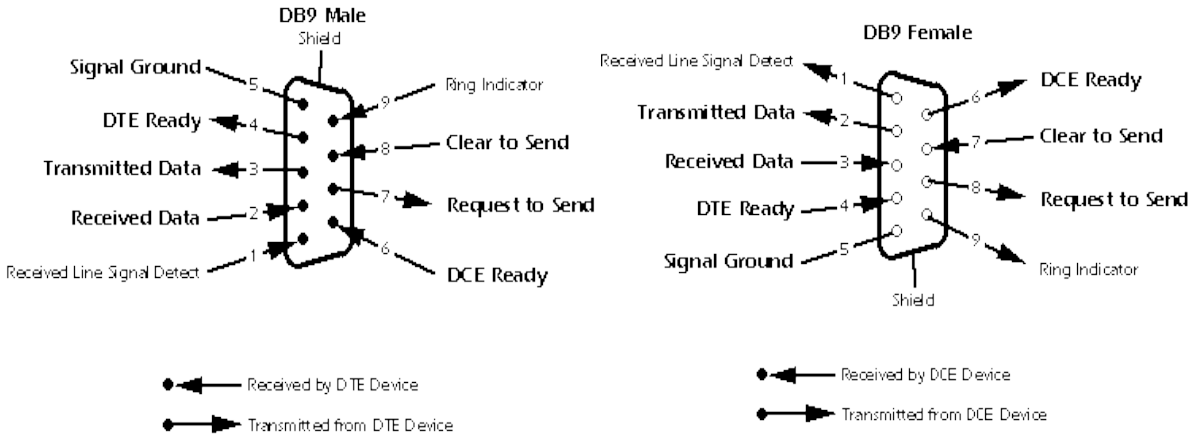


Figure 6 - Connections with DB-9 female and male connectors

PC pin-out (male) assignment	RS-232 with DB9 female connector
Pin #2 RD	Pin #2 TD
Pin #3 TD	Pin #3 RD
Pin #5 GD	Pin #5 GD

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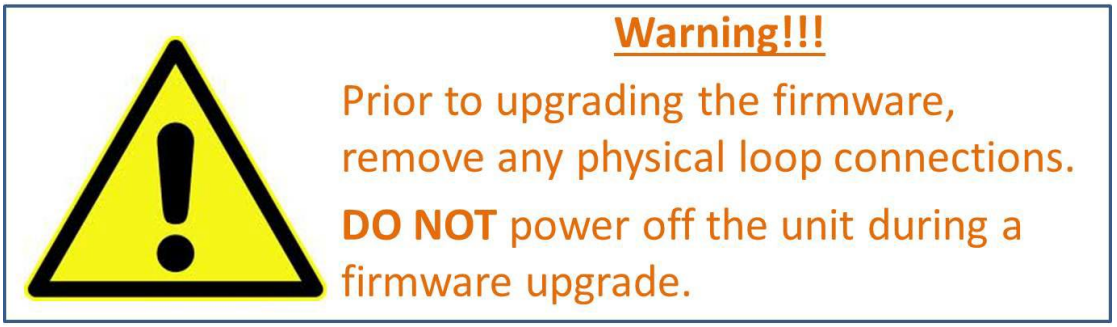
5. WEB MANAGEMENT



5.1 CONFIGURATION BY WEB BROWSER

This section introduces the configuration by Web browser.

5.1.1 About Web-based Management

An embedded HTML web site resides in flash memory on the CPU board. It contains advanced management features and allows you to manage the switch from anywhere on the network through a standard web browser such as Microsoft Internet Explorer.

The Web-Based Management function supports Internet Explorer 5.0 or later. It is based on Java Applets with an aim to reduce network bandwidth consumption, enhance access speed and present an easy viewing screen.

Note: By default, IE5.0 or later version does not allow Java Applets to open sockets. To enable Java Applets to use network ports, You need to explicitly modify the browser setting in order. to enable Java Applets to use network ports

5.1.1.1 Preparing for Web Management

The default value is as below: IP Address: **192.168.10.1**

Subnet Mask: **255.255.255.0**

Default Gateway: **192.168.10.254**

User Name: **admin**

Password: **admin**

Note: admin password is the default password for the first login or after factory reset.

5.1.1.2 System Login

1. Launch the Internet Explorer.
2. Type http:// and the IP address of the switch. Press **Enter**.

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Figure 7 - System Login

3. The login screen appears.
4. Key in the username and password The default username and password is **admin**
5. Click **Enter** or **OK** button, then the main interface of the Web-based management appears.

Figure 8 - Login Screen

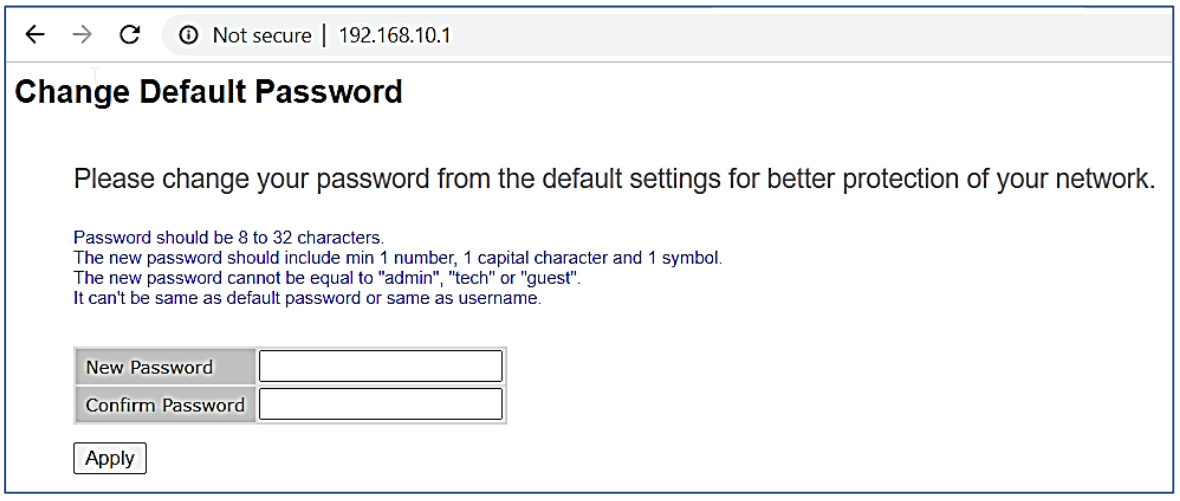

Figure 9 - Change Default Password Screen

6. Key in the new password as per password complexity rules in the picture.

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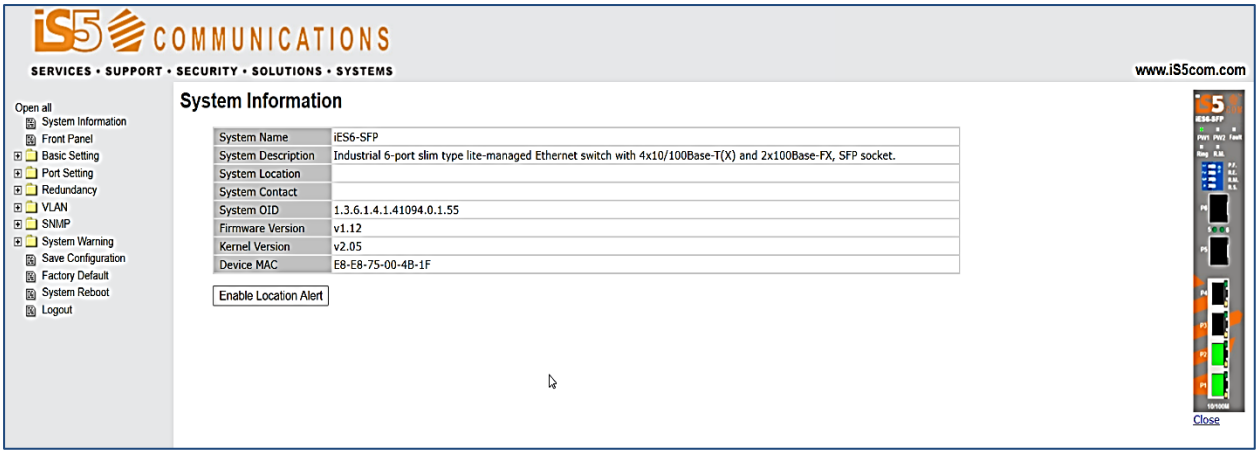

Figure 10 - Main Interface

5.1.2 Basic Setting

5.1.2.1 Switch setting

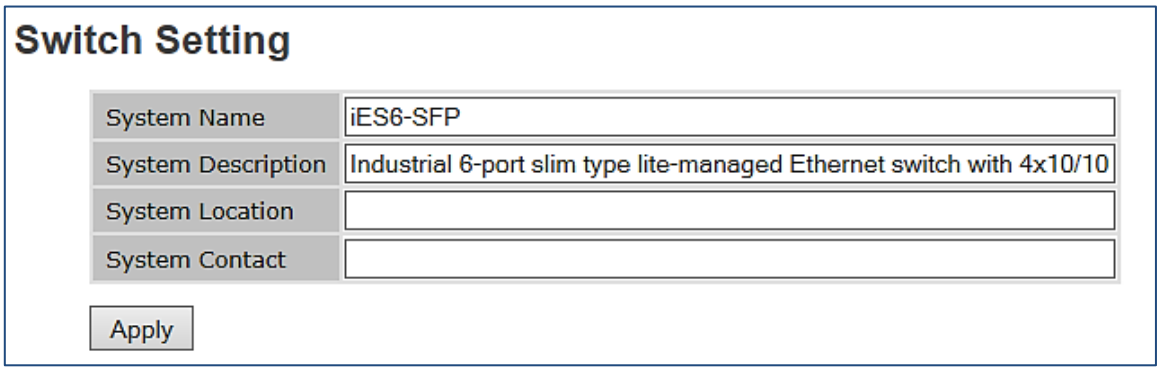

Figure 11 - Switch Setting Interface

The following table describes the labels in this screen.

Label	Description
System Name	Assign the name of switch. The maximum length is 64 bytes
System Description	Display the description of switch.
System Location	Assign the switch physical location. The maximum length is 64 bytes
System Contact	Enter the name of contact person or organization
Firmware Version	Display the switch's firmware version
Kernel Version	Display the kernel software version
MAC Address	Display the unique hardware address assigned by manufacturer (default)

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5.1.2.2 Admin Password

Change web management login username and password for the management security issues.

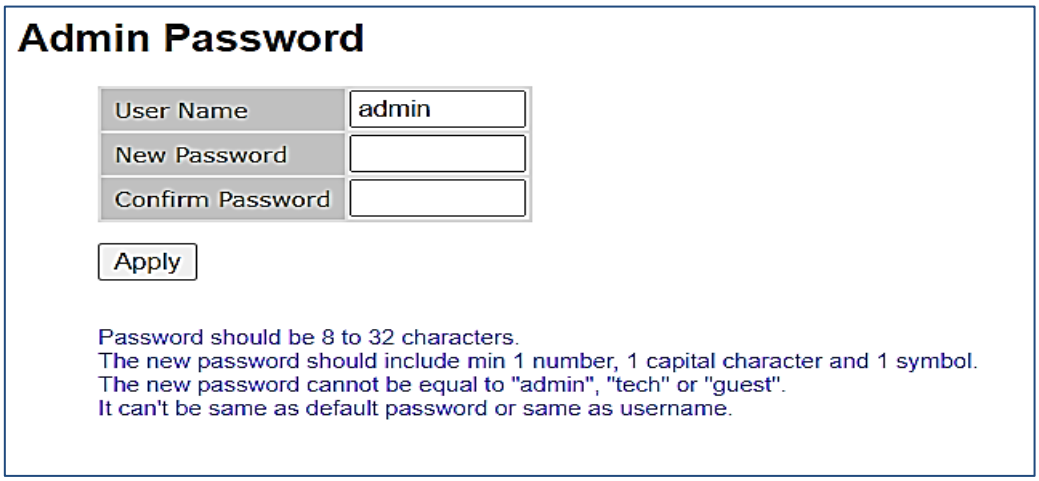

Figure 12 - Admin Password

The following table describes the labels for the Admin Password screen.

Label	Description
User name	Key in the new username (The default is "**admin**").
New Password	Key in the new password as per the password complexity rules in the picture.
Confirm password	Re-type the new password.
Apply	Click **Apply** to activate the configurations.

5.1.2.3 IP configuration

You can configure the IP Settings and DHCP client function through IP configuration.

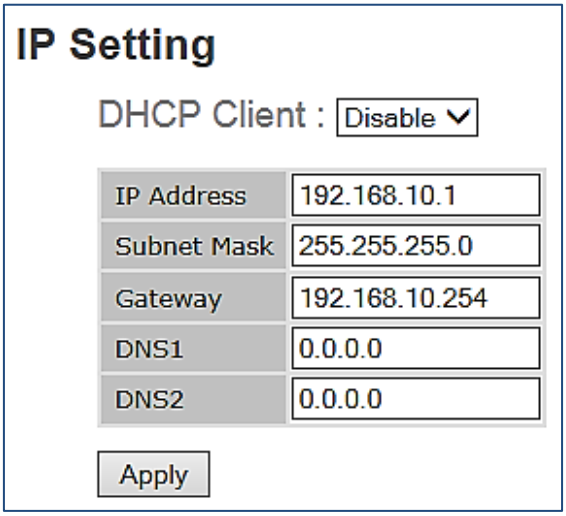

Figure 13 - IP Configuration Interface

The following table describes the labels in this screen.

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Label	Description
DHCP Client	To enable or disable the DHCP client function. When DHCP client function is enabling, the switch will assign the IP address from the network DHCP server. The default IP address will be replaced by the IP address which the DHCP server has assigned. After clicking **Apply** button, a popup dialog will show up to inform you when the DHCP client is enabling. The current IP will be lost, and the new IP should be found on the DHCP server.
IP Address	Assign the IP address that the network is using. If DHCP client function is enabling, you do not need to assign the IP address. The network DHCP server will assign the IP address for the switch and it will be displayed in this column. The default IP is 192.168.10.1
Subnet Mask	Assign the subnet mask for the IP address. If DHCP client function is enabled, you do not need to assign the subnet mask.
Gateway	Assign the network gateway for the switch. The default gateway is 192.168.10.254
DNS1	Assign the primary DNS IP address
DNS2	Assign the secondary DNS IP address
Apply	Click **Apply** to activate the configurations.

5.1.2.4 SNTP Configuration

The SNTP (Simple Network Time Protocol) settings allow you to synchronize switch clocks in Internet.

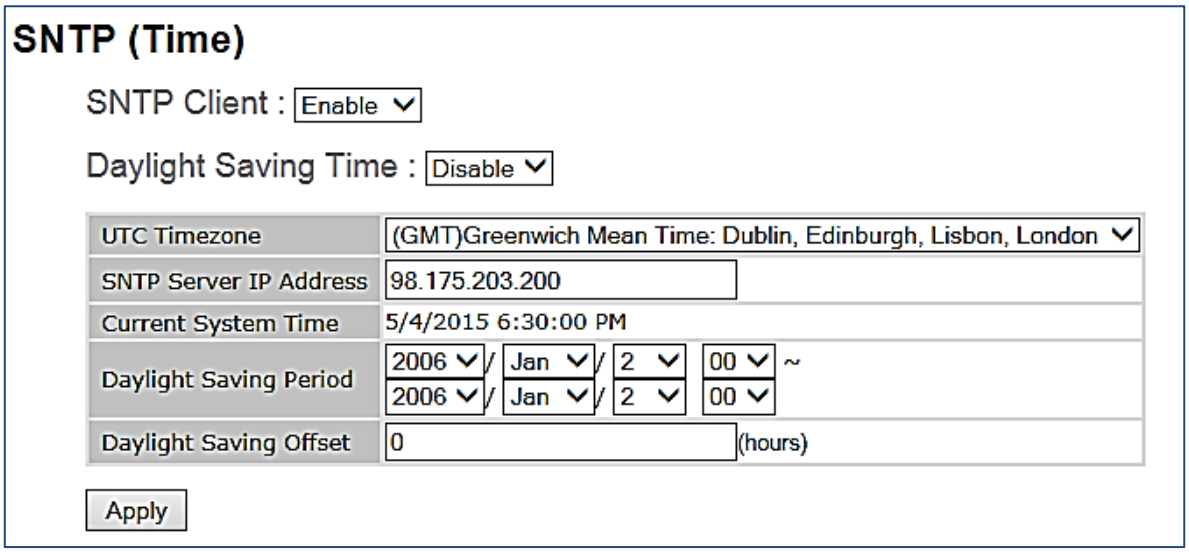

Figure 14 - SNTP Configuration interface

The following table describes the labels in this screen.

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Label	Description
SNTP Client	Enable or disable SNTP function to get the time from the SNTP server.
Daylight Saving Time	Enable or disable daylight saving time function. When daylight saving time is enabling, you need to configure the daylight saving time period.
UTC Time zone	Set the switch location time zone. The following table lists the different location time zone for your reference.

Local Time Zone	Conversion from UTC	Time at 12:00 UTC
November Time Zone	- 1 hour	11 am
Oscar Time Zone	-2 hours	10 am
ADT - Atlantic Daylight	-3 hours	9 am
AST - Atlantic Standard EDT - Eastern Daylight	-4 hours	8 am
EST - Eastern Standard CDT - Central Daylight	-5 hours	7 am
CST - Central Standard MDT - Mountain Daylight	-6 hours	6 am
MST - Mountain Standard PDT - Pacific Daylight	-7 hours	5 am
PST - Pacific Standard ADT - Alaskan Daylight	-8 hours	4 am
ALA - Alaskan Standard	-9 hours	3 am
HAW - Hawaiian Standard	-10 hours	2 am
Nome, Alaska	-11 hours	1 am
CET - Central European FWT - French Winter MET - Middle European MEWT - Middle European Winter SWT - Swedish Winter	+1 hour	1 pm
EET - Eastern European, USSR Zone 1	+2 hours	2 pm

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Local Time Zone	Conversion from UTC	Time at 12:00 UTC
BT - Baghdad, USSR Zone 2	+3 hours	3 pm
ZP4 - USSR Zone 3	+4 hours	4 pm
ZP5 - USSR Zone 4	+5 hours	5 pm
ZP6 - USSR Zone 5	+6 hours	6 pm
WAST - West Australian Standard	+7 hours	7 pm
CCT - China Coast, USSR Zone 7	+8 hours	8 pm
JST - Japan Standard, USSR Zone 8	+9 hours	9 pm
EAST - East Australian Standard GST Guam Standard, USSR Zone 9	+10 hours	10 pm
IDLE - International Date Line NZST - New Zealand Standard NZT - New Zealand	+12 hours	Midnight

The following table describes the labels in this screen.

Label	Description
SNTP Sever IP Address	Set the SNTP server IP address.
Daylight Saving Period	Set up the Daylight Saving beginning time and Daylight Saving ending time. Both will be different each year.
Daylight Saving Offset	Set up the offset time.
Switch Timer	Display the switch current time.
Apply	Click **Apply** to activate the configurations.

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5.1.2.5 LLDP

LLDP (Link Layer Discovery Protocol) function allows the switch to advertise its information to other nodes on the network and store the information it discovers.

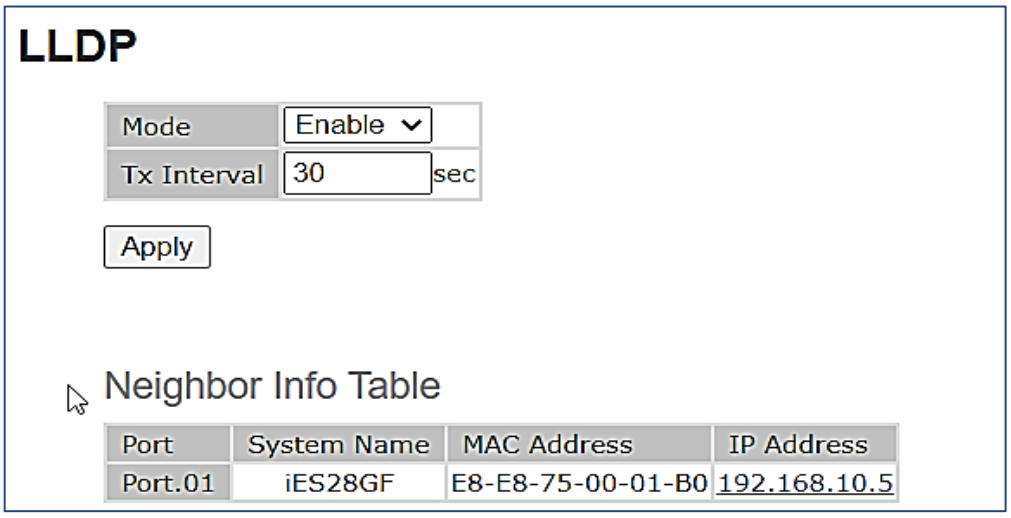

Figure 15 - LLDP interface

The following table describes the labels in this screen.

Label	Description
LLDP Protocol	Enable or disable LLDP function.
LLDP Interval	The interval of resend LLDP (by default at 30 seconds)
Apply	Click **Apply** to activate the configurations.
Neighbor Info Table	Show LLDP Neighbors information.

5.1.2.6 Dip Setting

The Dip switch mode can be enabled or disabled

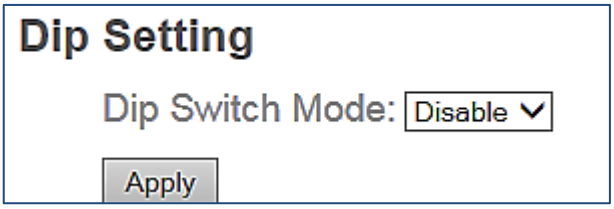

Figure 16 - Dip setting interface

The following table describes the labels in this screen

Label	Description
Dip Switch Mode	Enable or disable Dip Switch control
Apply	Apply setting

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5.1.2.7 Backup & Restore

You can save current EEPROM value of the switch to TFTP server, then go to the TFTP restore configuration page to restore the EEPROM value.

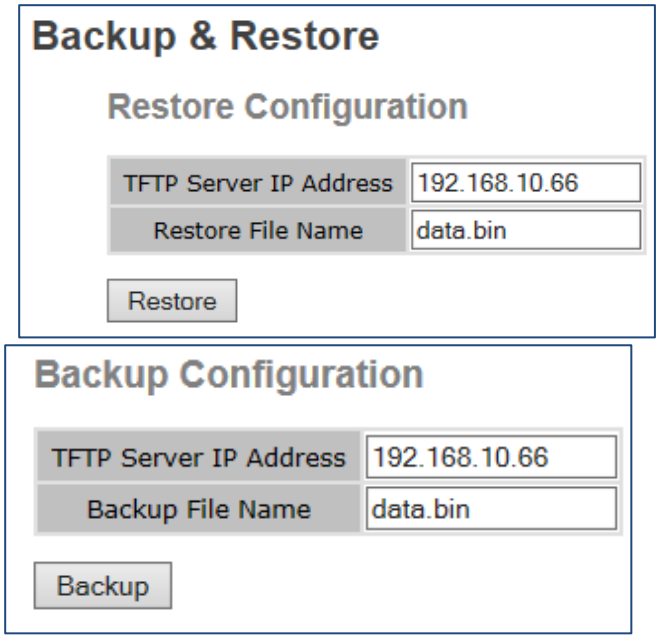

Figure 17 - Backup and Restore Interface

The following table describes the labels in this screen.

Label	Description
TFTP Server IP Address	Fill in the TFTP server IP
Restore File Name	Fill the file name.
Restore	Click **Restore** to restore the configurations.
Restore File Name	Fill the file name.
Restore	Click **Restore** to restore the configurations.
Backup	Click **Backup** to back up the configurations.

5.1.2.8 Upgrade Firmware

Upgrade Firmware allows you to update the switch firmware. Before updating, make sure you have your TFTP server ready and the firmware image is on the TFTP server.

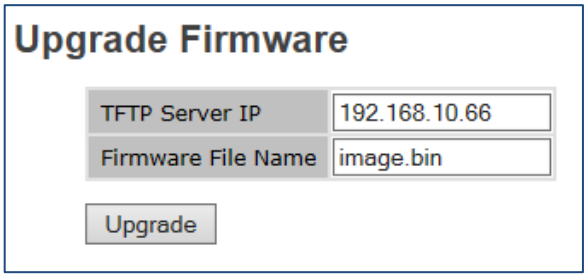

Figure 18 - Update Firmware Interface

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5.1.3 Redundancy

5.1.3.1 Fast Recovery Mode

The Fast Recovery Mode can be set to connect multiple ports to one or more switches. The IES6-SFP with its Fast Recovery Mode will provide redundant links. Fast Recovery mode supports 6 priorities, only the first priority will be the act port, the other ports configured with other priority will be the backup ports.

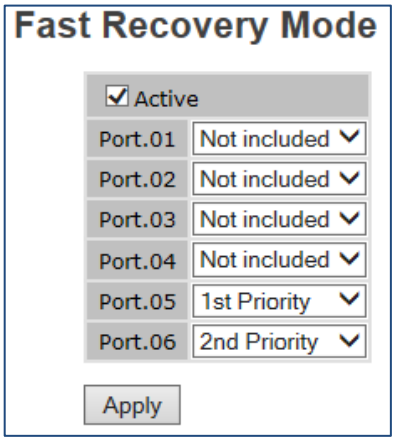

Figure 19 - Fast Recovery Mode Interface

The following table describes the labels in this screen.

Label	Description
Active	Activate the fast recovery mode.
Port	Port can be configured as 6 priorities. Only the port with highest priority will be the active port. 1st Priority is the highest.
Apply	Click **Apply** to activate the configurations.

5.1.3.2 iRing

iRing is a powerful Redundant Ring technology. The recovery time of iRing is less than 30ms with over 250 units connected. It can reduce unexpected malfunctions caused by network topology changes. iRing technology supports three Ring topologies for network redundancy: iRing, Coupling Ring and Dual Homing.

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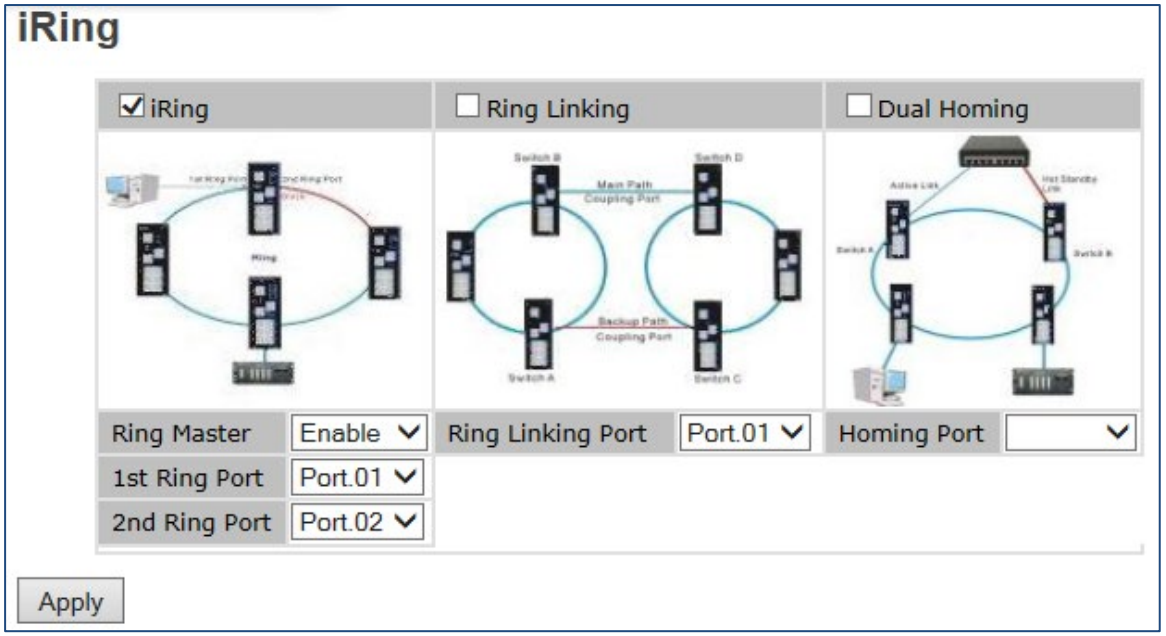

Figure 20 - iRing Interface

The following table describes the labels in this screen.

Label	Description
iRing	Enables iRing.
Ring Master	There should be only one Ring Master in a ring. However, if two or more switches have Ring Master enabled, the switch with the lowest MAC address will become the Ring Master and the others will become the Backup Masters.
1st Ring Port	The primary port when configured in iRing.
2nd Ring	The backup port when configured in iRing.
Ring Linking	Enables Ring Linking. Ring Linking can be used to divide a big ring into two smaller rings avoiding any change to the other switches if there is network topology change. It is a good application for connecting two rings.
Ring Linking Port	Set a port as the Ring Linking port to link to the Ring Linking port of the switch in the other ring. Ring Linking requires four switches to construct an active and a backup link. The linked four ports of the four switches will be operated in active/backup mode.
Dual Homing	Link to Control Port of the switch of the same ring. Control Port used to transmit control signals.
Homing Port	Enables Dual Homing. By selecting Dual Homing mode, the ring will be connected to switches through two RSTP links (i.e., backbone Switch). The two links will act in active/backup mode, and connect each ring to the switches in RSTP mode
Apply	Click **Apply** to activate the configurations.

Note: It is not recommended to set one switch as a Ring Master and a Coupling Ring at the same time due as this will over load the system.

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5.1.3.3 iChain

iChain can be enabled to provide network redundancy and maximize fault recovery speed by creating multiple redundant networks. iChain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology, i.e. the creation of multiple redundant networks beyond the limitations of current redundant ring technology.

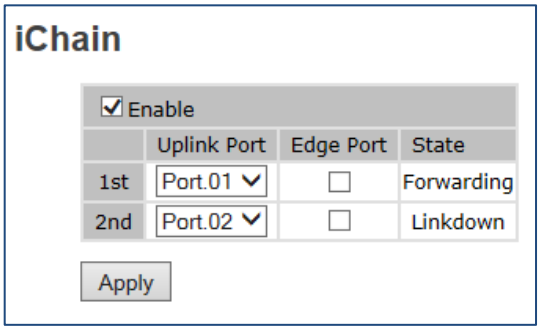

Figure 21 - iChain Interface

Label	Description
Enable	Enables the iChain function
Uplink Port	Select the port (1 - 8) to be the Uplink Port.
1st Ring Port	Choosing the port which connect to the ring
2nd Ring Port	Choosing the port which connect to the ring
Edge Port	Defines the port as an Edge Port. Only one Edge Port of the Edge Switch needs to be defined. Other switches beside them just need to have iChain enabled.
State	Status is Forwarding or Linkdown.

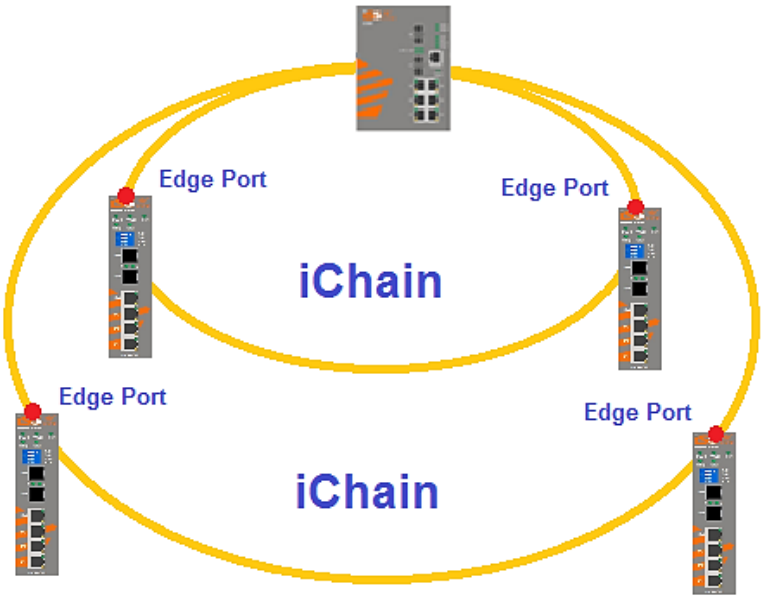

Figure 22 - iChain Network Diagram

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5.1.3.4 iBridge

iBridge technology can be enabled allowing the addition of iS5Com switches into a network constructed by another vendor's proprietary ring technology. This allows the interoperability between managed switches.

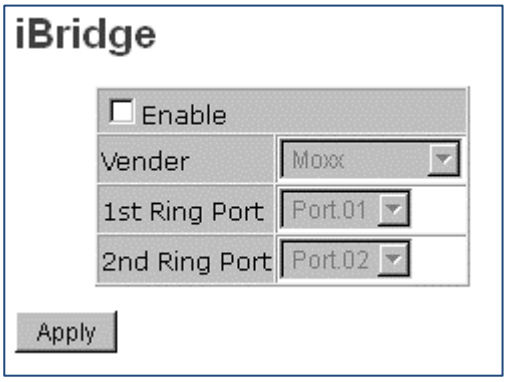

Figure 23 - iBridge Interface

Label	Description
Enable	Enables the iBridge function
Vendor	Choose the vendors that you want to interoperate with.
1st Ring Port	Choose the port that will connect to the ring.
2nd Ring Port	Choose the port that will connect to the ring.

The application of iBridge is shown as below.

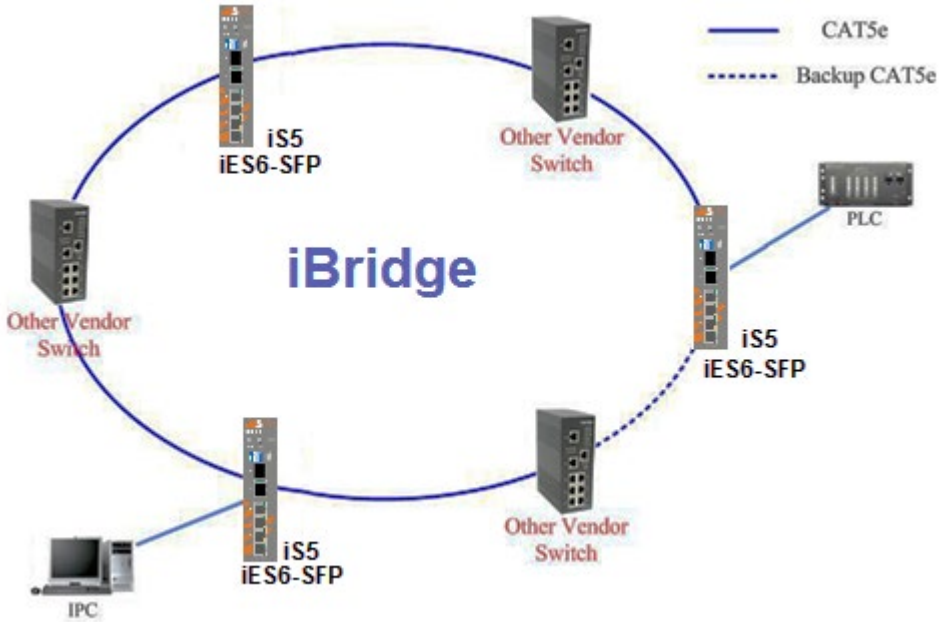

Figure 24 - iBridge Network Diagram

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5.1.3.5 RSTP

The Rapid Spanning Tree Protocol (RSTP) is an evolution of the Spanning Tree Protocol. It provides faster spanning tree convergence after a topology change. The system also supports STP and the system will auto detect the connected device that is running STP or RSTP protocol.

RSTP would be enabled after disabling Dip Switch.

5.1.3.5.1 RSTP setting

You can enable/disable the RSTP function, and set the parameters for each port.

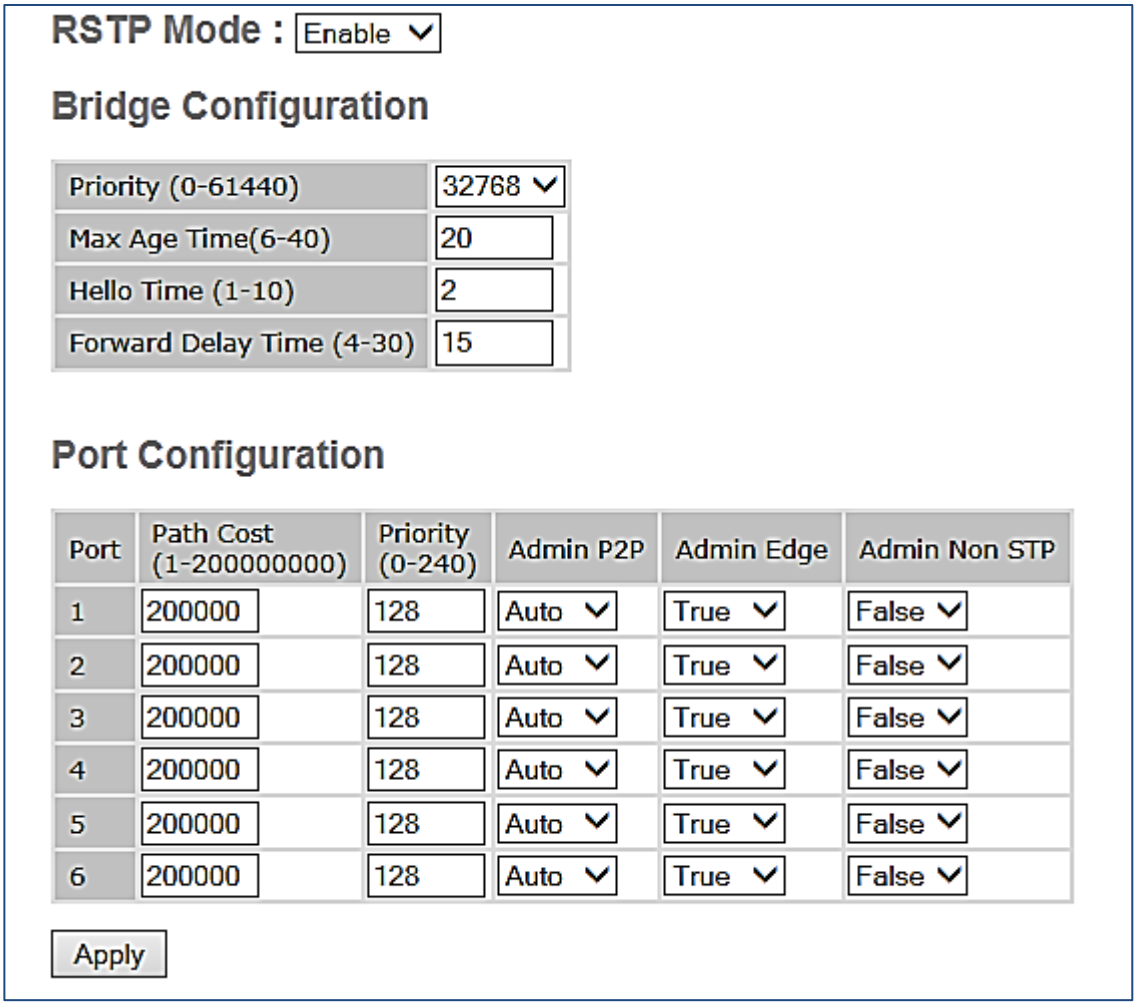

Figure 25 - RSTP Setting Interface

The following table describes the labels in this screen.

Label	Description
RSTP mode	You must enable or disable RSTP function before configuring the related parameters.
Priority (0-61440)	A value used to identify the root bridge. The bridge with the lowest value has the highest priority and is selected as the root. If the value changes, you must reboot the switch. The value must be multiple of 4096 according to the protocol standard rule.
Max Age (6-40)	The number of seconds a bridge waits without receiving Spanning-tree Protocol configuration messages before attempting a reconfiguration. Enter a value between 6 through 40.

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Label	Description
Hello Time (1-10)	The time that controls switch sends out the BPDU packet to check RSTP current status. Enter a value between 1 through 10.
Forwarding Delay Time (4-30)	The number of seconds a port waits before changing from its Rapid Spanning-Tree Protocol learning and listening states to the forwarding state. Enter a value between 4 through 30.
Path Cost (1-200000000)	The cost of the path to the other bridge from this transmitting bridge at the specified port. Enter a number from 1 to 200000000.
Priority (0-240)	Decide which port should be blocked by priority in LAN. Enter a number 0 through 240. The value of priority must be the multiple of 16
Admin P2P	Some of the rapid state transactions that are possible within RSTP are dependent upon whether the port concerned can only be connected to exactly one other bridge (i.e. It is served by a point-to-point LAN segment), or it can be connected to two or more bridges (i.e. It is served by a shared medium LAN segment). This function allows the P2P status of the link to be manipulated administratively. **True** means P2P enabling. **False** means P2P disabling.
Admin Edge	The port is directly connected to end stations, and it cannot create bridging loop in the network. To configure the port as an edge port, set the port to **True**.
Admin Non STP	The port includes the STP mathematic calculation. **True** is not including STP mathematic calculation. **False** is including the STP mathematic calculation.
Apply	Click **Apply** to activate the configurations.

NOTE: Follow the rule to configure the MAX Age, Hello Time, and Forward Delay Time:
2 x (Forward Delay Time value –1) ≥ Max Age value ≥ 2 x (Hello Time value +1)

5.1.3.5.2 RSTP Information

Show RSTP algorithm result at this table.

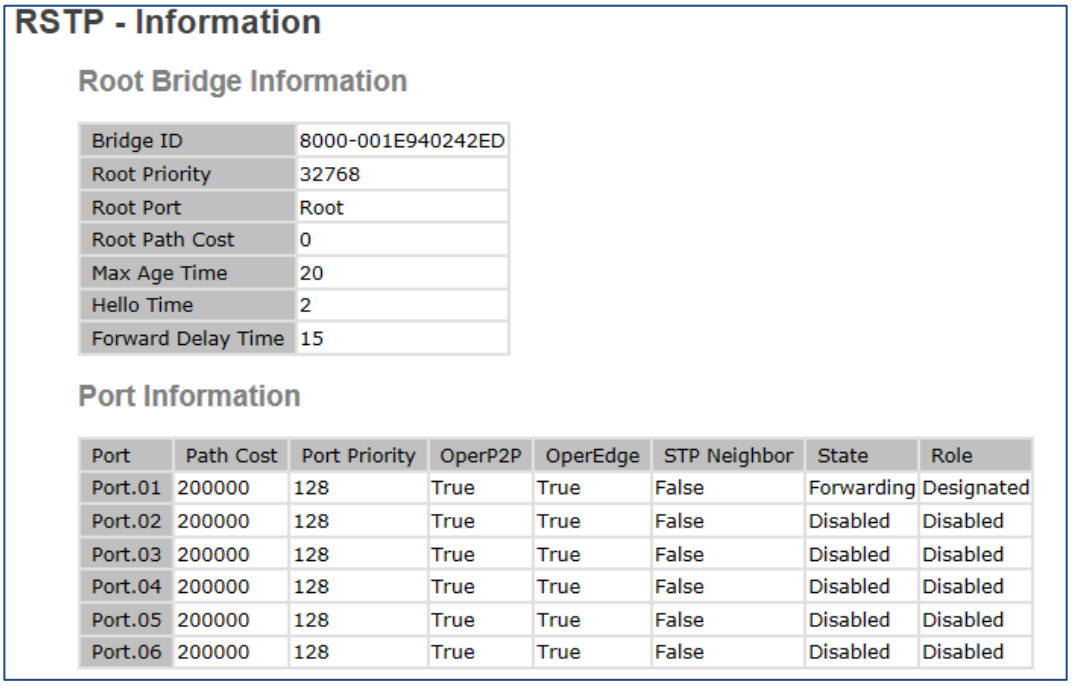

Figure 26 - RSTP Information Interface

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5.1.3.6 MRP

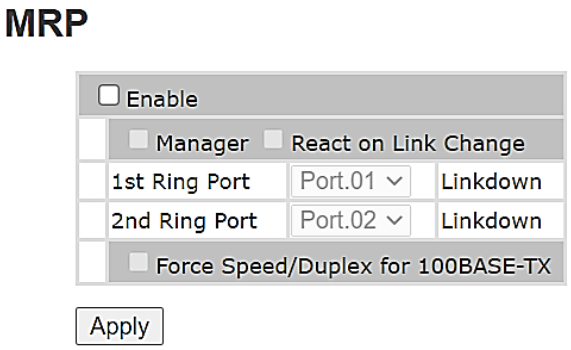

Figure 27 – MRP

The following table describes the labels in this screen.

Label	Description
Enable	Enables the MRP function.
Manager	Every MRP topology needs a MRP manager, and can only have one manager. If two or more switches are set to be Managers at the same time, the MRP topology will fail.
React on Link Change (Advanced mode)	Faster mode. Enabling this function will ensure MRP topology a more rapid converge. This function only can be set by the MRP manager switch.
1st Ring Port	Chooses the port that connects to the MRP ring.
2nd Ring Port	Chooses the port that connects to the MRP ring.
Force Speed / Duplex for 100 Base-TX	Add a checkmark to activate Force Speed/Duplex for 100 Base-TX.

5.1.4 Port Configuration

5.1.4.1 Port Control

By this function, you can set the state, speed/duplex, flow control, and security of the port.

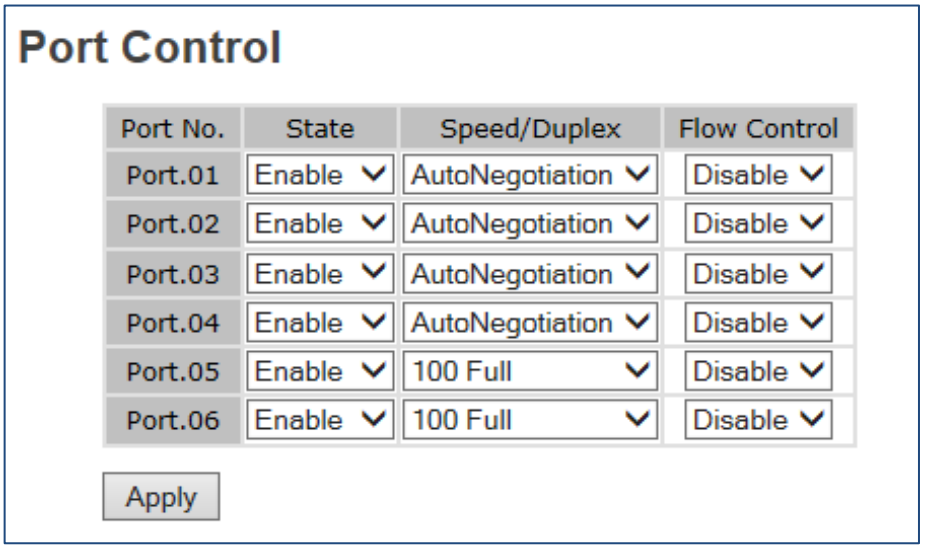

Figure 28 - Port Control Interface

The following table describes the labels in this screen.

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Label	Description
Port NO.	Port number for setting.
State	Enable/Disable the port.
Speed/Duplex	You can set Auto-negotiation, 100 full,100 half,10 full,10 half mode.
Flow Control	Support symmetric and asymmetric mode to avoid packet loss when congestion occurred.
Apply	Click **Apply** to activate the configurations.

5.1.4.2 Port Status

The following information provides the current port status.

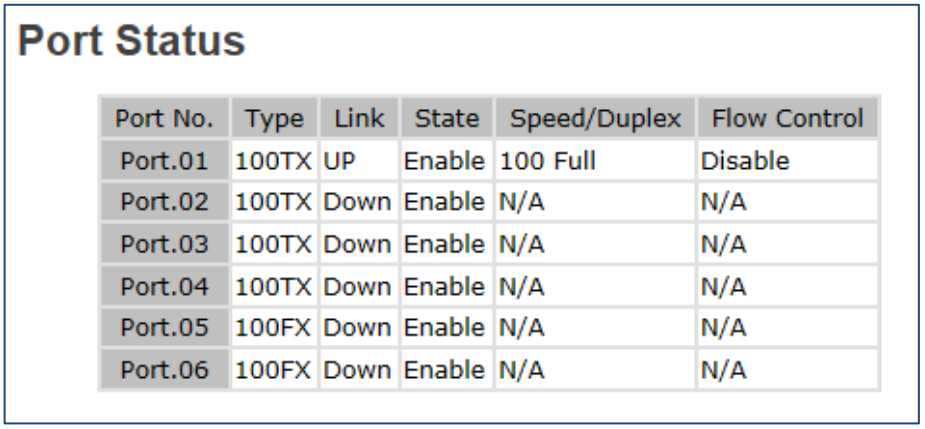

Figure 29 - Port Status Interface

5.1.4.3 Port Alias

The user can define the name of every Port. User can be convenient management every Port.

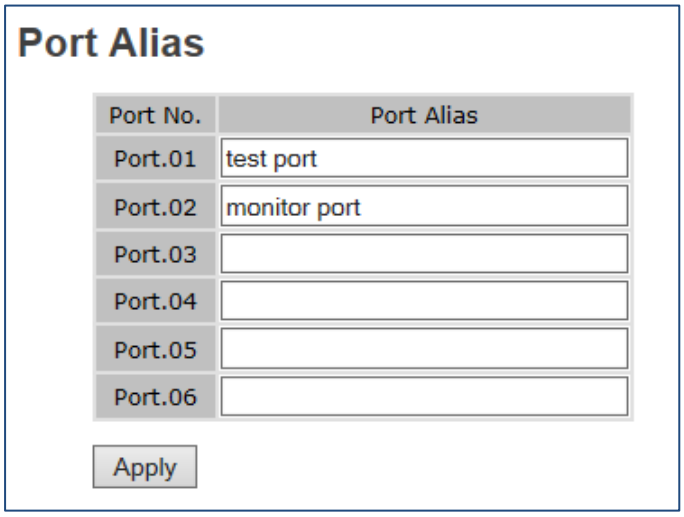

Figure 30 - Port Alias Interface

5.1.5 VLAN

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain, which allows you to

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isolate network traffic. Only the members of the VLAN will receive traffic from the same members of VLAN. Basically, creating a VLAN from a switch is logically equivalent of reconnecting a group of network devices to another Layer 2 switch. However, all the network devices are still plugged into the same switch physically.

The switch supports port-based VLAN only.

5.1.5.1 VLAN Configuration – Port Based

Traffic is forwarded to the member ports of the same vlan group. vlan port based startup, set in the same group of the port, can be a normal transmission packet, without restricting the types of packets.

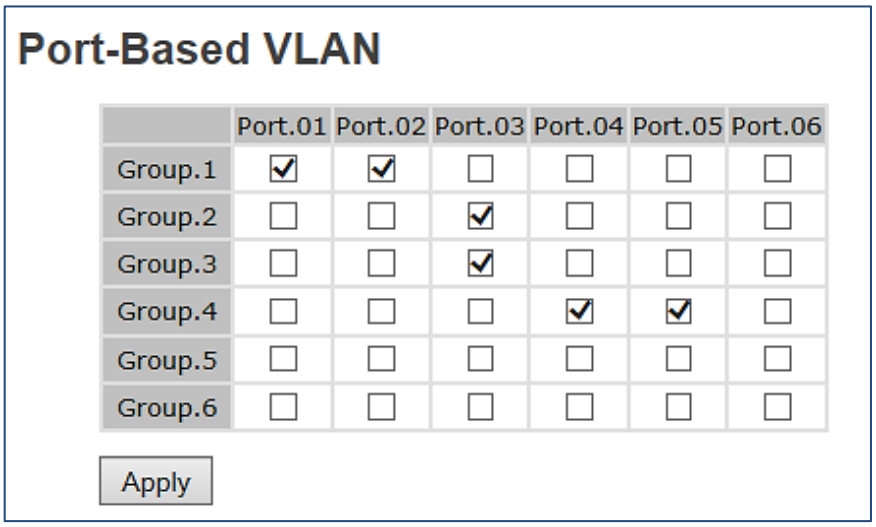

Figure 31 - VLAN Configuration – Port Based VLAN interface

The following table describes the labels in this screen.

Label	Description
Group	Mark the blank to assign the port into VLAN group.
Apply	Click **Apply** to activate the configurations.

5.1.6 SNMP Configuration

Simple Network Management Protocol (SNMP) is the protocol developed to manage nodes (servers, workstations, routers, switches, and hubs etc.) on an IP network. SNMP enables network administrators to manage network performance, find and solve network problems, and plan for network growth. Network management systems learn of problems by receiving traps or change notices from network devices implementing SNMP.

5.1.6.1 SNMP – Agent Setting

The SNMP agent related information can set by Agent Setting Function.

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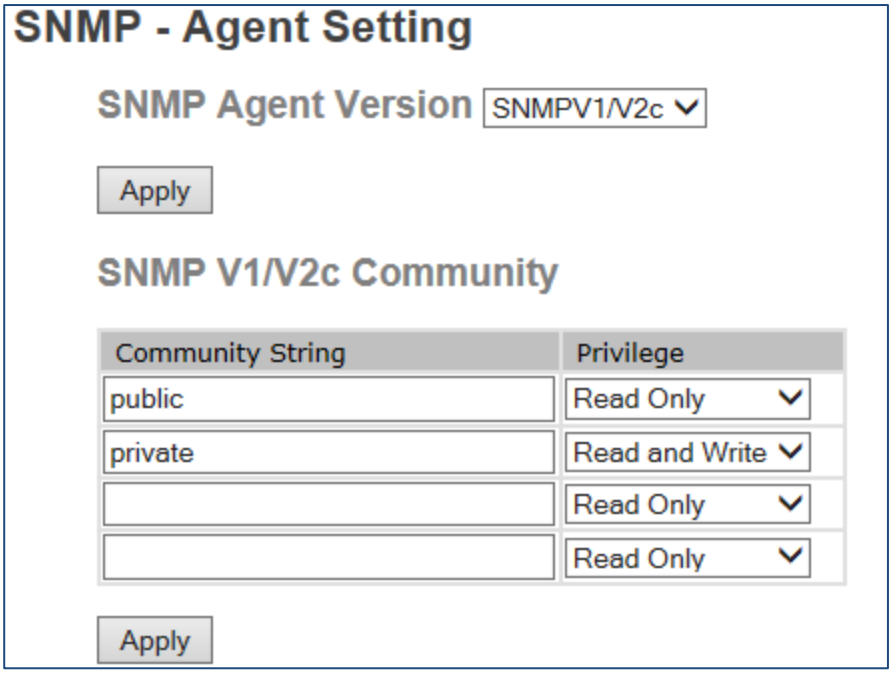

Figure 32 - SNMP – Agent Setting interface

The following table describes the labels in this screen.

Label	Description
SNMP – Agent Setting	SNMP Community should be set for SNMP. Four sets of **Community String / Privilege** are supported. Each Community String is maximum 32 characters. Keep empty to remove this Community string.

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5.1.6.2 SNMP –Trap Setting

A trap manager is a management station that receives traps, the system alerts generated by the switch. If no trap manager is defined, no traps will issue. Create a trap manager by entering the IP address of the station and a community string. To define management stations as trap manager, enter SNMP community strings and selects the SNMP version.

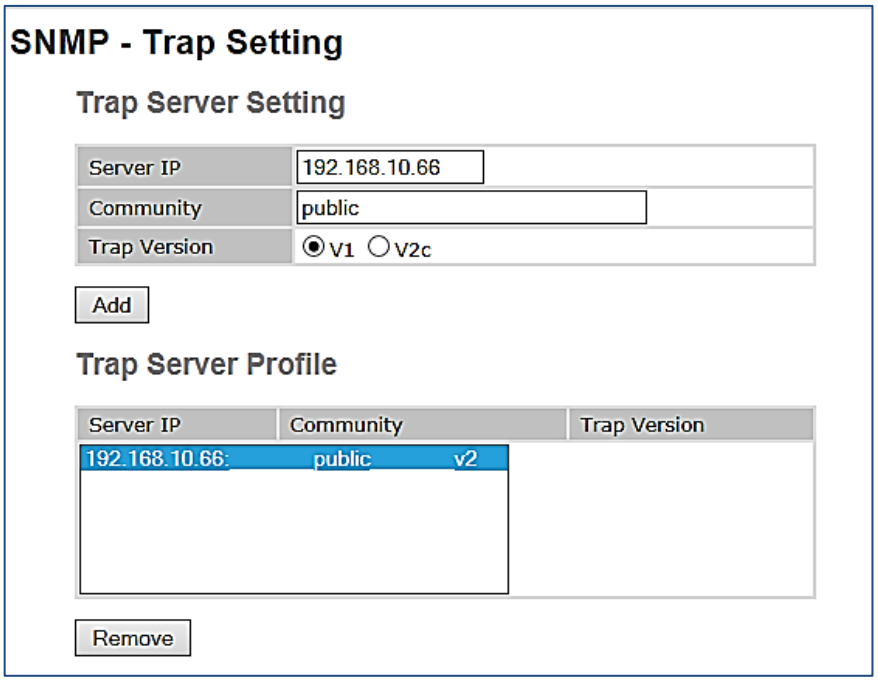

Figure 33 - SNMP –Trap Setting interface

The following table describes the labels in this screen.

Label	Description
Server IP	The server IP address to receive Trap
Community	Community for authentication
Trap Version	Trap Version supports V1 and V2c.
Add	Add trap server profile.
Remove	Remove trap server profile.

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5.1.6.3 SNMP – SNMP-V3 Setting

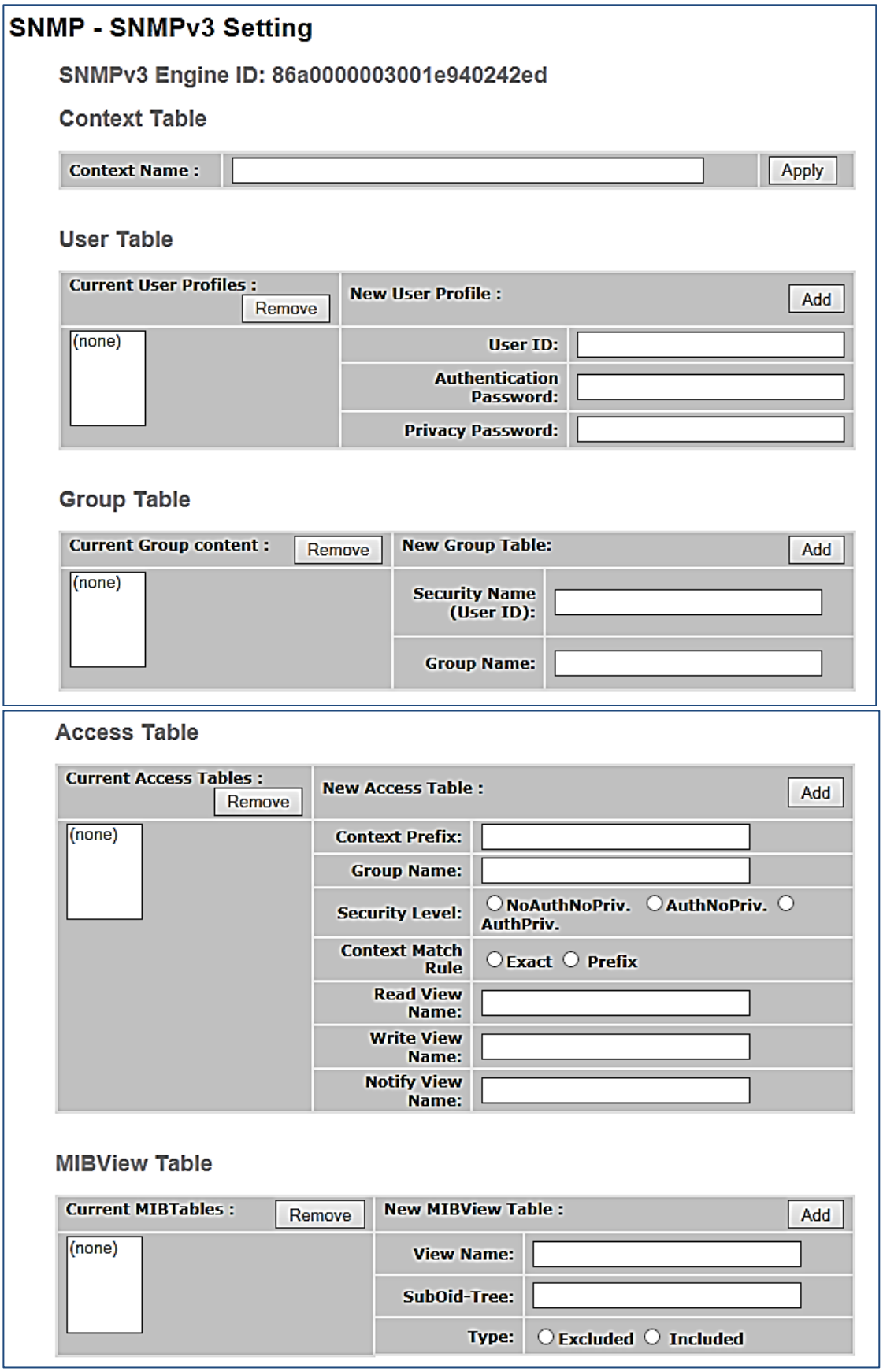

Figure 34 - SNMP – SNMP-V3 Setting

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The following table describes the labels in this screen.

Label	Description
Context Table	Configure SNMP v3 context table. Assign the context name of context table. Click **Apply** to change context name
User Table	1. Configure SNMP v3 user table. 2. **User ID:** set up the user name. 3. **Authentication Password:** set up the authentication password. 4. **Privacy Password:** set up the private password. 5. Click **Add** to add context name. 6. Click **Remove** to remove unwanted context name.
Group Table	1. Configure SNMP v3 group table. 2. **Security Name (User ID):** assign the user name that you have set up in user table. 3. **Group Name:** set up the group name. 4. Click **Add** to add context name. 5. Click **Remove** to remove unwanted context name.
Access Table	1. Configure SNMP v3 access table. 2. **Context Prefix:** set up the context name. 3. **Group Name:** set up the group. 4. **Security Level:** select the access level. 5. **Context Match Rule:** select the context match rule. 6. **Read View Name:** set up the Read view. 7. **Write View Name:** set up the Write view. 8. **Notify View Name:** set up the notify view. 9. Click **Add** to add context name. 10. Click **Remove** to remove unwanted context name.
MIBview Table	1. Configure MIB view table. 2. **ViewName:** set up the name. 3. **Sub-Oid Tree:** fill the Sub OID. 4. **Type:** select the type – exclude or included. 5. Click **Add** to add context name. 6. Click **Remove** to remove unwanted context name.

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5.1.7 System Warning

Warning function is very important for managing switch. The switch can be managed by SYSLOG, E-MAIL, and Fault Relay. These features help to monitor the switch status on remote site. When events occurr, the warning message will be send to an appointed server, E-MAIL, or relay fault to switch panel.

5.1.7.1 Syslog Setting

The SYSLOG is a protocol to transmit event notification messages across networks. Please refer to RFC 3164 - The BSD SYSLOG Protocol

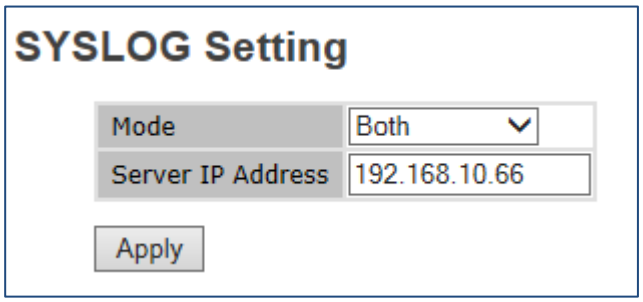

Figure 35 - System Warning – SYSLOG Setting interface

The following table describes the labels in this screen.

Label	Description
SYSLOG Mode	■ **Disable:** disable SYSLOG. ■ **Client Only:** log to local system. ■ **Server Only:** log to a remote SYSLOG server. ■ **Both:** log to both of local and remote server.
SYSLOG Server IP Address	The remote SYSLOG Server IP address.
Apply	Click **Apply** to activate the configurations.

5.1.7.2 System Event Log

If system log client is enabled, the system event logs will show in this table.

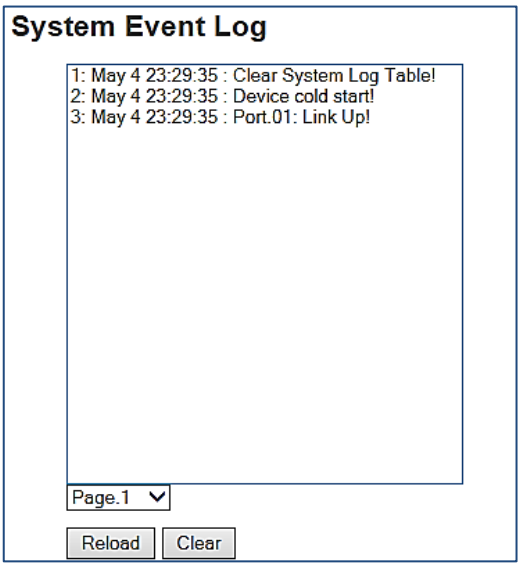

Figure 36 - System Event Log Interface

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The following table describes the labels in this screen.

Label	Description
Page	Select LOG page.
Reload	To get the newest event logs and refresh this page.
Clear	Clear log.

5.1.7.3 SMTP Setting

The SMTP is Short for Simple Mail Transfer Protocol. It is a protocol for e-mail transmission across the Internet. For details, refer to RFC 821 - Simple Mail Transfer Protocol.

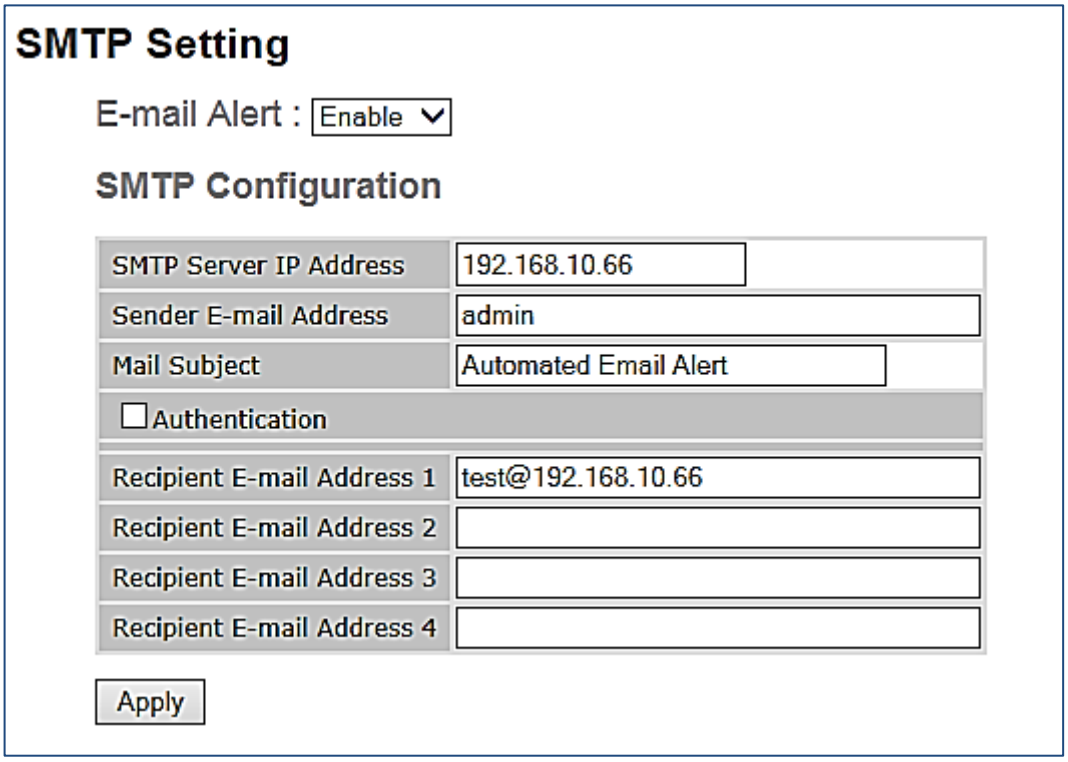

Figure 37 - System Warning – SMTP Setting Interface

The following table describes the labels in this screen.

Label	Description
E-mail Alarm	Enable/Disable transmission system warning events by e-mail.
Sender E-mail Address	The SMTP server IP address
Mail Subject	The Subject of the mail
Authentication	■ **Username:** the authentication username. ■ **Password:** the authentication password. ■ **Confirm Password:** re-enter password.
Recipient E-mail Address	The recipient's E-mail address. It supports up to 6 recipients per mail.
Apply	Click **Apply** to activate the configurations.

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5.1.7.4 Event Selection

SYSLOG and SMTP are the two warning methods that supported by the system. Check the corresponding box to enable the selected warning method.

Note that the checkbox cannot be checked when SYSLOG or SMTP is disabled.

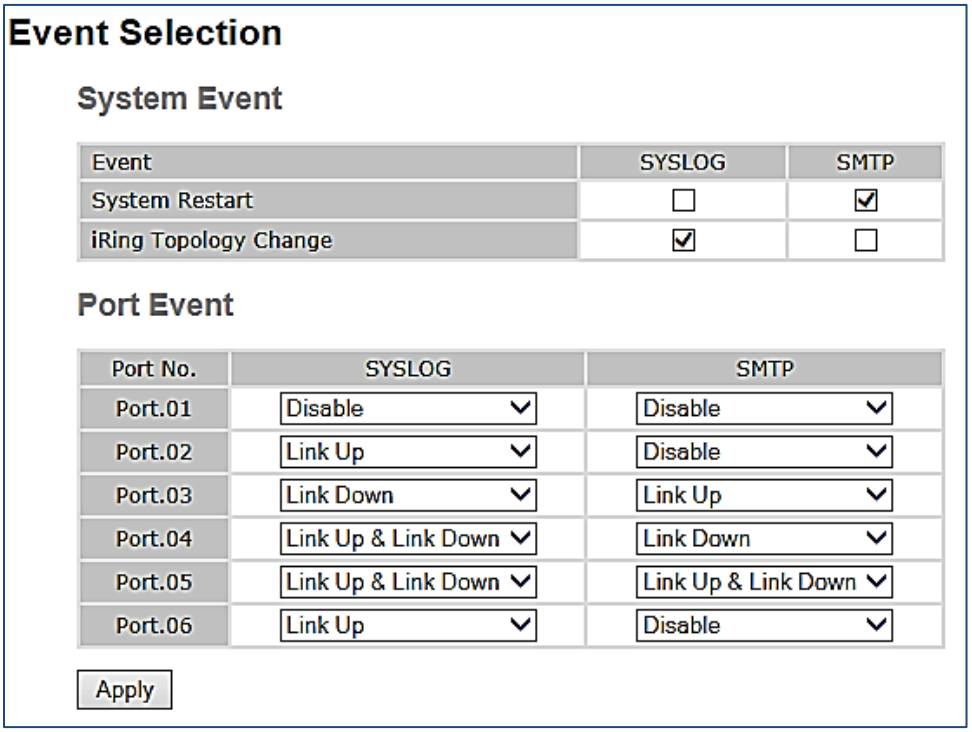

Figure 38 - System Warning – Event Selection Interface

The following table describes the labels in this screen.

Label	Description
Event	There are 2 options: SYSLOG and SMTP.
System Cold Start	Alert when system restart
iRing Topology Change	Alert when iRing topology change
Port Event	■ **Disable** ■ **Link Up** ■ **Link Down** ■ **Link Up & Link Down**
Apply	Click **Apply** to activate the configurations.

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5.1.7.5 Fault Relay Alarm

When any selected fault event is happened, the Fault LED in switch panel will light up and the electric relay will signal at the same time.

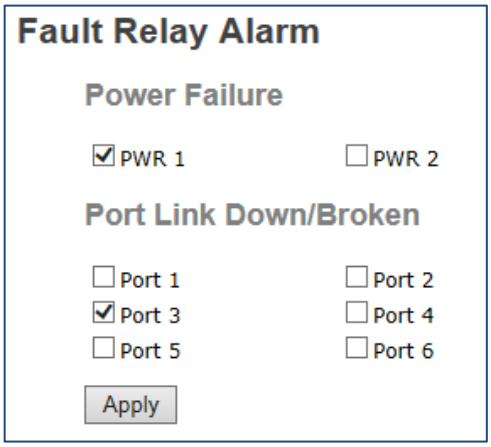

Figure 39 - Fault Alarm Interface

5.1.8 Save Configuration

If any configuration changed, click **Save Configuration** to save current configuration data into the permanent flash memory. Otherwise, the current configuration will be lost when power off or system reset.

Figure 40 - System Configuration Interface

The following table describes the labels in this screen.

Label	Description
Save	Save all configurations.

5.1.9 Factory Default

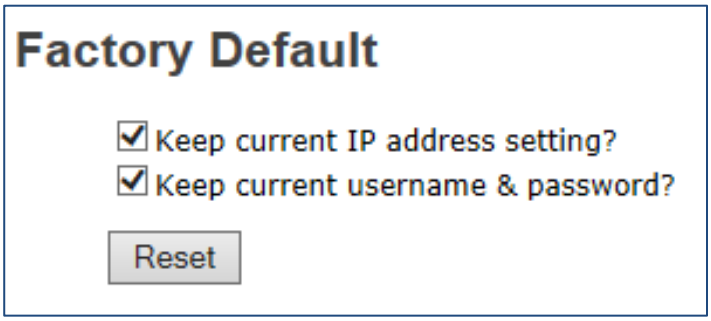

Figure 41 - Factory Default interface

Reset switch to default configuration. Click **Reset** to reset all configurations to their default values.

Select **Keep current IP address setting** and **Keep current username & password** to prevent IP and username & password from going back to default.

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5.1.10 System Reboot

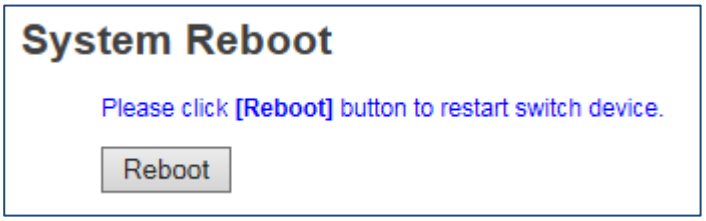

Figure 42 - System Reboot

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6. CLI MANAGEMENT

6.1 ABOUT CLI MANAGEMENT

Besides WEB-based management, iES6/iES6-S Series also supports CLI (Command Line Interface) management. The switch console port or Telnet can be used to configure the switch via the CLI.

6.1.1 CLI Management by RS-232 Serial Console (9600, 8, none, 1, none)

Use an RJ45 to DB9-F cable to connect to the switch's console and to a local PC's COM port.

Follow the steps below to access the console via the RS-232 serial cable.

1. Start **Tara Term** application.

Figure 43 - Tera Term

2. Under **Setup** select **Serial Port**.

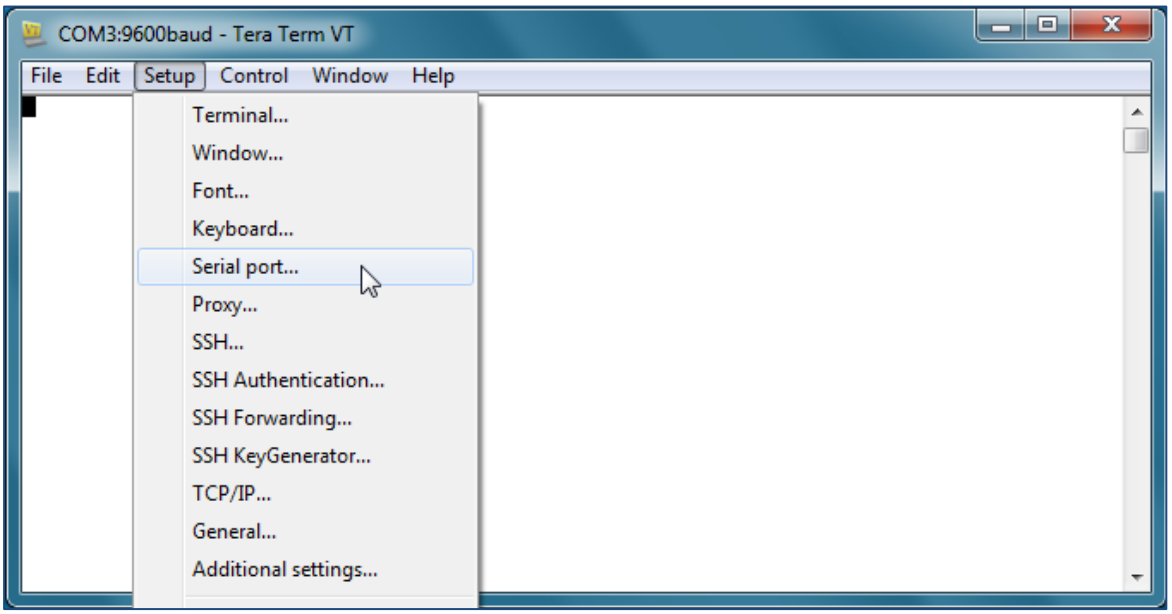

Figure 44 - Setup Drop-down Menu

3. Select the COM Port on your PC used to connect to the Console Port. Set the rest of the properties to: **9600** for Baud rate, **8** for Data bits, **None** for Parity, **1** bit for Stop and **none** for Flow control, then click **OK**.

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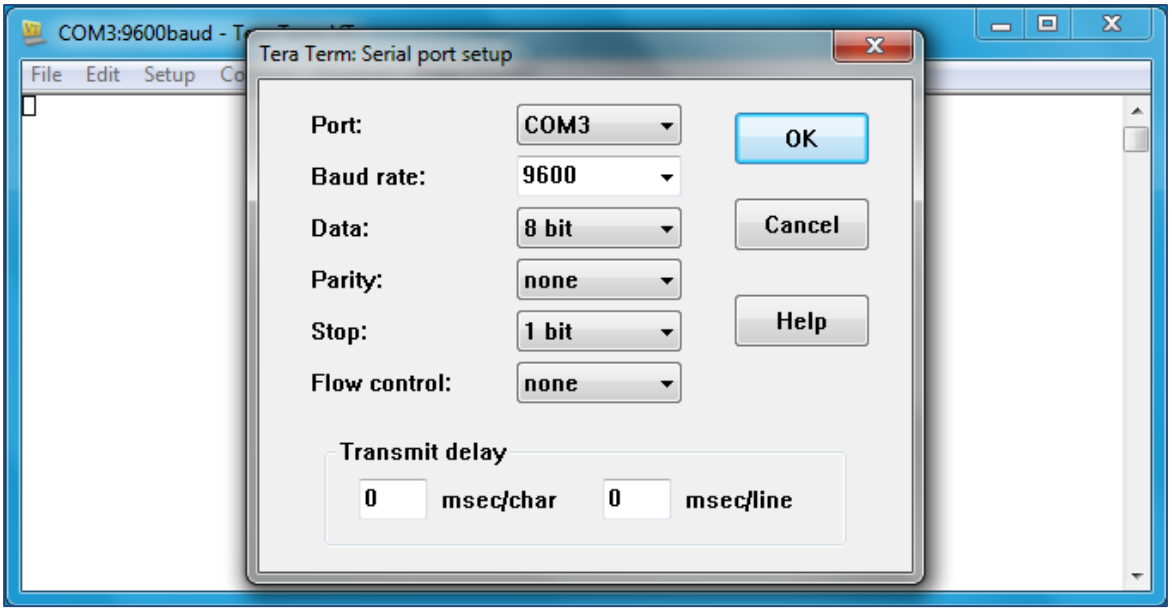

Figure 45 - Serial Port Setup

4. Press **Enter** on the keyboard for the Console login screen to appear. Use the keyboard to enter the Console Username and Password which is same as the Web Browser password, then press **Enter**.

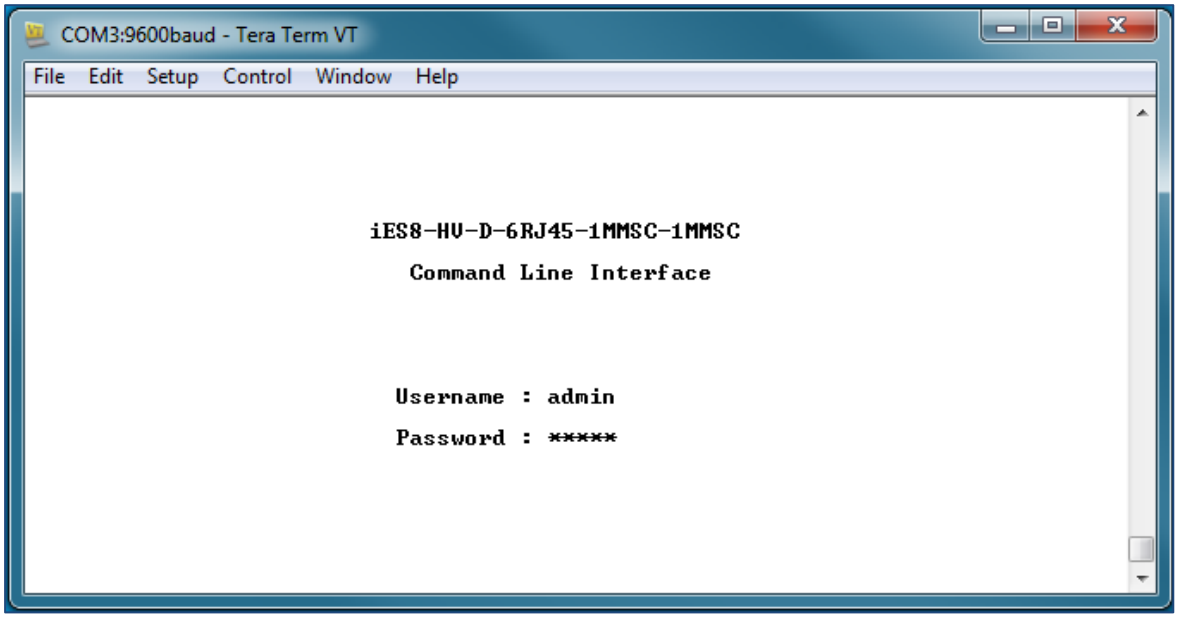

Figure 46 - Command Line Interface

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6.1.2 CLI Management by Telnet

Users can use "**TELNET**" to configure the switches. The default values are as shown below:

IP Address: **192.168.10.1**

Subnet Mask: **255.255.255.0**

Default Gateway: **192.168.10.254**

User Name: **admin**

Password: **same as the Web Browser password**

Note: First login into device requires changes of the default password.

Follow the steps below to access the console via Telnet.

1. Telnet to the IP address of the switch from the Windows **Run** command (or from the MS-DOS prompt).

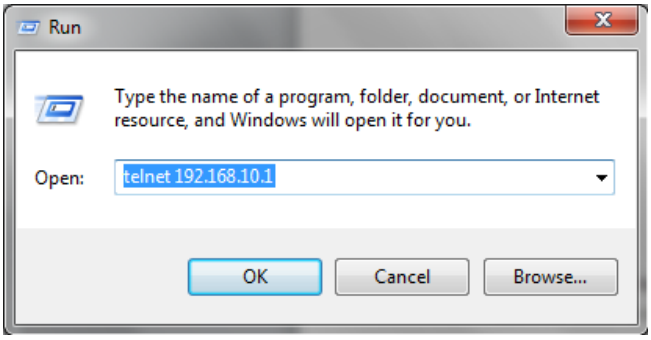

Figure 47 – Run Command Prompt

2. The Console login screen appears. Use the keyboard to enter the Console Username and Password which is same as the Web Browser password , then press **Enter**.

Figure 48 - Command Line Interface

6.1.3 CLI Commands Modes (Levels)

Modes	Access Method	Prompt	Exit Method	About This Model
User EXEC	Begin a session with your switch.	switch>	Enter **logout** or **quit**.	The user command available at the level of user is the subset of those available at the

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Modes	Access Method	Prompt	Exit Method	About This Model
				privileged level. Use this mode to: • Enter menu mode. • Display system information.
Privileged EXEC	Enter the **enable** command while in user EXEC mode.	switch#	Enter **disable** to exit.	The privileged command is advance mode Privileged this mode to: • Display advance function status • save configures
Global configuration	Enter the **configure** command while in privileged EXEC mode.	switch(config)#	To exit to privileged EXEC mode, enter **exit** or **end**	Use this mode to configure parameters that apply to your Switch as a whole.
Interface configuration	Enter the **interface** command (with a specific interface)while in global configuration mode	switch(config-if)#	To exit to global configuration mode, Enter **exit**. To exit privileged EXEC mode or **end.**	Use this mode to configure parameters for the switch and Ethernet ports.

6.1.3.1 Symbol of Command Level

Mode	Symbol of Command Level
User EXEC	E
Privileged EXEC	P
Global configuration	G
VLAN database	V
Interface configuration	I

6.1.3.2 Commands Set List — System Commands set

iES6-SFP Series Commands	Level	Description	Example
show config	**E**	Show switch configuration	switch>show config
show terminal	**P**	Show console information	switch#show terminal
write memory	**P**	Save your configuration into permanent memory (flash rom)	switch#write memory
system name [System Name]	**G**	Configure system name	switch(config)#system name xxx
system location [System Location]	**G**	Set switch system location string	switch(config)#system location xxx
system description [System Description]	**G**	Set switch system description string	switch(config)#system description xxx
system contact [System Contact]	**G**	Set switch system contact window string	switch(config)#system contact xxx
show system-info	**E**	Show system information	switch>show system-info

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iES6-SFP Series Commands	Level	Description	Example
ip address [Ip-address] [Subnet-mask] [Gateway]	G	Configure the IP address of switch	switch(config)#ip address 192.168.1.1 255.255.255.0 192.168.1.254
ip dhcp	G	Enable DHCP client function of switch	switch(config)#ip dhcp
show ip	P	Show IP information of switch	switch#show ip
no ip dhcp	G	Disable DHCP client function of switch	switch(config)#no ip dhcp
reload	G	Halt and perform a cold restart	switch(config)#reload
default	G	Restore to default	Switch(config)#default
admin username [Username]	G	Changes a login username. (maximum 10 words)	switch(config)#admin username xxxxxx
admin password [Password]	G	Specifies a password (maximum 10 words)	switch(config)#admin password xxxxxx
show admin	P	Show administrator information	switch#show admin

6.1.3.3 Commands Set List — Port Commands set

iES6-SFP Series Commands	Level	Description	Example
interface fastEthernet [Portid]	G	Choose the port for modification.	switch(config)#interface fastEthernet 2
duplex [full | half]	I	Use the duplex configuration command to specify the duplex mode of operation for Fast Ethernet.	switch(config)#interface fastEthernet 2 switch(config-if)#duplex full
speed [10|100|1000|auto]	I	Use the speed configuration command to specify the speed mode of operation for Fast Ethernet., the speed can't be set to 1000 if the port isn't a Gigabit port.	switch(config)#interface fastEthernet 2 switch(config-if)#speed 100
flowcontrol mode [Symmetric|Asymmetric]	I	Use the flowcontrol configuration command on Ethernet ports to control traffic rates during congestion.	switch(config)#interface fastEthernet 2 switch(config-if)#flowcontrol mode Asymmetric
no flowcontrol	I	Disable flow control of interface	switch(config-if)#no flowcontrol
security enable	I	Enable security of interface	switch(config)#interface fastEthernet 2 switch(config-if)#security enable
no security	I	Disable security of interface	switch(config)#interface fastEthernet 2 switch(config-if)#no security
state [Enable | Disable]	I	Use the state interface configuration command to specify the state mode of operation for Ethernet ports. Use the disable form of this command to disable the port.	switch(config)#interface fastEthernet 2 switch(config-if)#state Disable

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iES6-SFP Series Commands	Level	Description	Example
show interface configuration	I	show interface configuration status	switch(config)#interface fastEthernet 2 switch(config-if)#show interface configuration
show interface status	I	show interface actual status	switch(config)#interface fastEthernet 2 switch(config-if)#show interface status
show interface accounting	I	show interface statistic counter	switch(config)#interface fastEthernet 2 switch(config-if)#show interface accounting
no accounting	I	Clear interface accounting information	switch(config)#interface fastEthernet 2 switch(config-if)#no accounting

6.1.3.4 Commands Set List — RSTP command set

iES6-SFP series Commands	Level	Description	Example
RSTP enable	G	Enable RSTP	switch(config)#RSTP enable
RSTP priority [0to61440]	G	Configure RSTP priority parameter	switch(config)# RSTP priority 32768
RSTP max-age [seconds]	G	Use the RSTP max-age global configuration command to change the interval between messages the RSTP receives from the root switch. If a switch does not receive a bridge protocol data unit (BPDU) message from the root switch within this interval, the RSTP topology is recomputed.	switch(config)# RSTP max-age 15
RSTP hello-time [seconds]	G	Use the RSTP hello-time global configuration command to specify the interval (1-10) between hello bridge protocol data units (BPDUs).	switch(config)# RSTP hello-time 3
RSTP forward-time [seconds]	G	Use the RSTP forward-time global configuration command to set the forwarding-time for the specified RSTP instances. The forwarding time (4-30) determines how long each of the listening and learning states last before the port begins forwarding.	switch(config)# RSTP forward-time 20
RSTP max-age [seconds]	G	Configure RSTP max age parameter	switch(config)# RSTP max-age 25
RSTP path-cost [1to200000000]	I	Use the RSTP cost interface configuration command to set the path cost for RSTP calculations. In the event of a loop, RSTP considers the path cost when selecting	switch(config)#interface fastEthernet 2 switch(config-if)# rstp path-cost 2

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iES6-SFP series Commands	Level	Description	Example
		an interface to place into the forwarding state.	
RSTP port-priority [Port Priority]	I	Use the RSTP port-priority interface configuration command to configure a port priority that is used when two switches tie for position as the root switch.	switch(config)#interface fastEthernet 2 switch(config-if)# rstp port-priority 128
RSTP admin-p2p [Auto | True | False]	I	Admin P2P of STP priority on this interface.	switch(config)#interface fastEthernet 2 switch(config-if)# rstp admin-p2p Auto
RSTP admin-edge [True | False]	I	Admin Edge of RSTP priority on this interface.	switch(config)#interface fastEthernet 2 switch(config-if)# rstp admin-edge False
RSTP admin-non-stp [True | False]	I	Admin Non STP of RSTP priority on this interface.	switch(config)#interface fastEthernet 2 switch(config-if)# rstp admin-non-stp True
Show RSTP	E	Display a summary of the RSTP states.	switch>show rstp
no RSTP	G	Disable RSTP.	switch(config)#no rstp

6.1.3.5 Commands Set List — SNMP command set

iES6-SFP Series Commands	Level	Description	Example
snmp agent-mode [v1v2c | v3]	G	Select the agent mode of SNMP	switch(config)#snmp agent-mode v1v2c
Snmp trap server [IP address] **community** [Community-string] **trap-version** [v1 | v2c]	G	Configure SNMP trap server host information and community string	switch(config)# snmp trap server 192.168.10.50 community public trap-version v1
snmp community-strings [Community-string] **right** [RO | RW]	G	Configure the community string right	switch(config)#snmp community-strings public right RO or switch(config)#snmp community-strings public right RW
snmp snmpv3-user [User Name] **password** [Authentication Password] [Privacy Password]	G	Configure the userprofile for SNMPV3 agent. Privacy password could be empty.	switch(config)#snmp snmpv3-user test01 password AuthPW PrivPW
show snmp	P	Show SNMP configuration	switch#show snmp
show snmp trap	P	Show specified trap server information	switch#show snmp trap
no snmp community-strings [Community]	G	Remove the specified community.	switch(config)#no snmp community-strings public
no snmp snmpv3-user [User Name] **password** [Authentication Password] [Privacy Password]	G	Remove specified user of SNMPv3 agent. Privacy password could be empty.	switch(config)# no snmp snmpv3-user test01 password AuthPW PrivPW
no snmp trap server [Host-address]	G	Remove the SNMP server host.	switch(config)#no snmp trap server 192.168.10.50

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6.1.3.6 Commands Set List — TFTP command set

iES6-SFP Series Commands	Level	Description	Defaults Example
TFTP [IP address] **backup** [File name]	G	Save configuration to TFTP and need to specify the IP of TFTP server and the file name of image.	switch(config)# tftp 192.168.10.66 backup file.cfg
TFTP [IP address] **restore** [File name]	G	Get configuration from TFTP server and need to specify the IP of TFTP server and the file name of image.	switch(config)# tftp 192.168.10.66 restore file.cfg
TFTP [IP address] **upgrade** [File name]	G	Upgrade firmware by TFTP and need to specify the IP of TFTP server and the file name of image.	switch(config)# tftp 192.168.10.66 upgrade firmware.bin

6.1.3.7 Commands Set List — SYSLOG, SMTP, EVENT command set

iES6-SFP Series Commands	Level	Description	Example
syslog ip [IP address]	G	Set System log server IP address.	switch(config)# syslog ip 192.168.1.100
syslog mode [client|server|both]	G	Specified the log mode	switch(config)# syslog mode both
show syslog	P	Show system log client & server information	switch#show syslog
no syslog	G	Disable systemlog function	switch(config)#no syslog
smtp enable	G	Enable SMTP function	switch(config)#smtp enable
smtp serverip [IP address]	G	Configure SMTP server IP	switch(config)#smtp serverip 192.168.1.5
smtp authentication	G	Enable SMTP auth.	switch(config)#smtp authentication
smtp account [account]	G	Configure authentication account	switch(config)#smtp account User
smtp password [password]	G	Configure authentication password	switch(config)#smtp password
smtp rcptemail [Index] [Email address]	G	Configure Rcpt e-mail Address	switch(config)#smtp rcptemail 1 Alert@test.com
show smtp	P	Show the information of SMTP	switch#show smtp
no smtp	G	Disable SMTP function	switch(config)#no smtp
event device-restart [Systemlog|SMTP|Both]	G	Set restart event type	switch(config)#event device-restart both
event authentication-failure [Systemlog|SMTP|Both]	G	Set Authentication failure event type	switch(config)#event authentication-failure both
event iRing-topology-change [Systemlog|SMTP|Both]	G	Set ring topology changed event type	switch(config)#event ring-topology-change both
event syslog [Link-UP|Link-Down|Both]	I	Set port event for system log	switch(config)#interface fastethernet 3 switch(config-if)#event syslog both
event smtp [Link-UP|Link-Down|Both]	I	Set port event for SMTP	switch(config)#interface fastethernet 3 switch(config-if)#event smtp both
show event	P	Show event selection	switch#show event
no event device-restart [Systemlog|SMTP|Both]	G	Disable cold start event type	switch(config)#no event device-restart
no event authentication-failure	G	Disable Authentication failure event typ	switch(config)#no event authentication-failure

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iES6-SFP Series Commands	Level	Description	Example
[Systemlog | SMTP | Both]			
no event iRing-topology-change [Systemlog | SMTP | Both]	G	Disable iRing topology changed event type	switch(config)#no event ring-topology-change
no event syslog	I	Disable port event for system log	switch(config)#interface fastethernet 3 switch(config-if)#no event syslog
no event smtp	I	Disable port event for SMTP	switch(config)#interface fastethernet 3 switch(config-if)#no event smtp
show syslog	P	Show system log client & server information	switch#show syslog

6.1.3.8 Commands Set List — SNTP command set

iES6-SFP Series Commands	Level	Description	Example
sntp enable	G	Enable SNTP function	switch(config)#sntp enable
sntp daylight	G	Enable daylight saving time, if SNTP function is inactive, this command can't be applied.	switch(config)#sntp daylight
sntp daylight-period [Start time] [End time]	G	Set period of daylight saving time, if SNTP function is inactive, this command can't be applied. Parameter format: [yyyymmdd-hh:mm]	switch(config)# sntp daylight-period 20060101-01:01 20060202-01-01
sntp daylight-offset [Minute]	G	Set offset of daylight saving time, if SNTP function is inactive, this command can't be applied.	switch(config)#sntp daylight-offset 3
sntp ip [IP]	G	Set SNTP server IP, if SNTP function is inactive, this command can't be applied.	switch(config)#sntp ip 192.169.1.1
sntp timezone [Timezone]	G	Set timezone index, use "show sntp timzezone" command to get more information of index number	switch(config)#sntp timezone 22
show sntp	P	Show SNTP information	switch#show sntp
show sntp timezone	P	Show index number of time zone list	switch#show sntp timezone
no sntp	G	Disable SNTP function	switch(config)#no sntp
no sntp daylight	G	Disable daylight saving time	switch(config)#no sntp daylight

6.1.3.9 Commands Set List — iRing command set

iES6-SFP Series Commands	Level	Description	Example
iRing enable	G	Enable iRing	switch(config)# iring enable
iRing master	G	Enable iRing master	switch(config)# iring master
iRing ring-linking	G	Enable iRing linking	switch(config)# iring ring-linking
iRing dual-homing	G	Enable dual homing	switch(config)# iring dual-homing
iRing port	G	Configure 1st/2nd Ring Port	switch(config)# iring port 7 8

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iES6-SFP Series Commands	Level	Description	Example
[1st Ring Port] [2nd Ring Port]			
iRing ring-linking-port [Coupling Port]	**G**	Configure iRing linking Port	switch(config)#iring ring-linking-port 1
iRing homing-port [Dual Homing Port]	**G**	Configure Dual Homing Port	switch(config)# iring homing-port 3
show iRing	**P**	Show the information of iRing	switch#show iring
no iRing	**G**	Disable iRing	switch(config)#no iring
no iRing master	**G**	Disable iRing master	switch(config)# no iring master
no iRing ring-linking	**G**	Disable iRing linking	switch(config)# no iring ring-linking
no iRing dual-homing	**G**	Disable dual homing	switch(config)# no iring dual-homing

6.1.3.10 Commands Set List—MRP command set

MRP	Status
	MRP Mode [enable|disable]
	MRP Manager [enable|disable] MRP React [enable|disable] MRP 1stRingPort [<mrp_port>] MRP 2ndRingPort [<mrp_port>] MRP Parameter MRP_TOPchgT [<value>] MRP Parameter MRP_TOPNRmax [<value>] MRP Parameter MRP_TSTshortT [<value>] MRP Parameter MRP_TSTdefaultT [<value>] MRP Parameter MRP_TSTNRmax [<value>] MRP Parameter MRP_LNKdownT [<value>] MRP Parameter MRP_LNKupT [<value>] MRP Parameter MRP_LNKNRmax [<value>]

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