Trademarks

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If you find information in this manual that is incorrect, misleading, or incomplete, we would appreciate your comments and suggestions.

FCC Warning

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 generates, uses, and can radiate radio frequency energy and, 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 be required to correct the interference at his own expense.

CE Mark Warning

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.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

PLANET 24-Port 10/100Mbps + 1-Slot Web Smart Fast Ethernet Switch User's Manual

FOR MODEL: FNSW-2401CS

REVISION: 2.0(JUNE.2006)

Part No: EM_FNSW2401CSv2 (2010-A81110-001)

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1. INTRODUCTION

1.1 Checklist

Check the contents of your package for following parts:

- FNSW-2401CS x1
- User's manual x1
- Quick installation guide x1
- Power cord x 1
- Rubber feet x 4
- Two rack-mounting brackets with attachment screws x1

If any of these pieces are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

1.2 About the Switch

The PLANET FNSW-2401CS is a 24-Port 10/100Mbps Fast Ethernet Switch with 1-Port open slot for 100Mbps fiber interface which boasts high performance switch architecture that is capable of providing non-blocking switch fabric and wire-speed throughput as high as 5Gbps. The FNSW-2401CS supports MDI/MDI-X convertible on 24-10/100Mbps ports, the dual speed ports use standard twisted-pair cabling and are ideal for SOHO or segmenting networks into small. Its optional 100Base-FX fiber module slot also offers incredible extensibility, flexibility and connectivity to the Core Switch or servers.

The front panel of FNSW-2401CS provides LEDs for easy recognition of the switch operation status and troubleshooting. These LED indicators display the power status for the system, LNK/ACT and speed for each10/100M port.

The FNSW-2401CS IEEE 802 standard-based firmware provides a rich set of features and ensue interoperability with equipment from other vendor. Additionally, the FNSW-2401CS firmware includes advanced features such as port-based VLAN, trunk, port mirroring, QoS, bandwidth control on each port, broadcast storm control.

With its built-in web-based management, the PLANET FNSW-2401CS offer an easy-to-use, platform-independent management and configuration facility.

1.3 Features

- Complies with IEEE 802.3 and IEEE 802.3u standards for 100Base-TX/FX
- 24-Port 10/100 Mbps Fast Ethernet Switch
- Each Switching ports support auto-negotiation-10/20, 100/200Mbps supported
- One open slot for 100Base-FX fiber-optic interface with various connection media
- Auto-MDI/MDI-X detection on each RJ-45 port
- Prevents packet loss with back pressure (half-duplex) and 802.3x PAUSE frame flow control (full-duplex)
- High performance Store and Forward architecture, broadcast storm control, runt/CRC filtering eliminates erroneous packets to optimize network bandwidth
- 4K MAC address table, automatic source address learning and ageing
- Embeds 1.5MB packet buffer
- Web interface for Switch basic management and setup
- Support 24 Port-based VLAN function
- Supports up to 2 Trunk groups, each trunk with up to 4 ports with 800Mbps bandwidth
- Supports rate control and IEEE 802.1p QoS on each port
- Port Mirroring support for dedicated port monitoring
- Broadcast storm control and aging time setting
- Firmware upgrade through web interface
- EMI standards comply with FCC, CE class A

1.4 Specification

Product	**FNSW-2401CS** 24-Port 10/100Mbps + 1-Slot Web Smart Fast Ethernet Switch
Hardware Specification	
Ports	24 10/ 100Base-TX RJ-45 Auto-MDI/MDI-X ports
Module Slot	1 for 100Base-FX module
Switch Processing Scheme	Store-and-forward
Throughput (packet per second)	3.72Mpps
Switch fabric	5Gbps
Address Table	4K entries
Share data Buffer	1.5MB
Flow Control	Back pressure for half duplex, IEEE 802.3x Pause Frame for full duplex
Dimensions	440 x 120 x 44 mm, 1U height
Weight	1.6 kg
Power Requirement	100~240 VAC, 50-60 Hz
Power Consumption / Dissipation	13.2 Watts maximum / 45 BTU/hr maximum
Temperature	Operating: 0~50 degree C, Storage -40~70 degree C
Humidity Operating:	10% to 90%, Storage: 5% to 95% (Non-condensing)
Smart function	

System Configuration	Web interface
Port configuration	Port operation mode control; Auto, fixed 10/100 half/full-duplex mode, disable Port flow control / backpressure enable, disable Qos on each port Port Rate control; TX/RX rate 0-99 percentage, 0: no limit
Port Status	Display each port's link status, speed duplex mode. Flow control status
Aging Control	Disable/Enable and available range is 30-600 seconds.
Broadcast storm control	Disable, 20%, 50%, 80%
VLAN	24 port-based VLAN groups
Port trunking	Support 2 groups of 4-Port trunk support
Port Mirroring	Disable, one monitoring / monitored port assign, monitoring mode: TX.RX. Both
Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 (Ethernet) IEEE 802.3u (Fast Ethernet), IEEE 802.3x (full-duplex flow control) IEEE 802.1p QoS

2. HARDWARE DESCRIPTION

This product provides two different running speeds – 10Mbps, 100Mbps in the same switch and automatically distinguishes the speed of incoming connection.

This section describes the hardware features of FNSW-2401CS. For easier management and control of the Switch, familiarize yourself with its display indicators, and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the FNSW-2401CS, read this chapter carefully.

2.1 Front Panel

The Front Panel of the FNSW-2401CS Web Smart Fast Ethernet Switch consists of 24x Auto-Sensing 10/100Mbps Ethernet RJ-45 Ports and one 100Base-FX fiber module slot; the LED Indicators are also located on the front panel of the FNSW-2401CS.

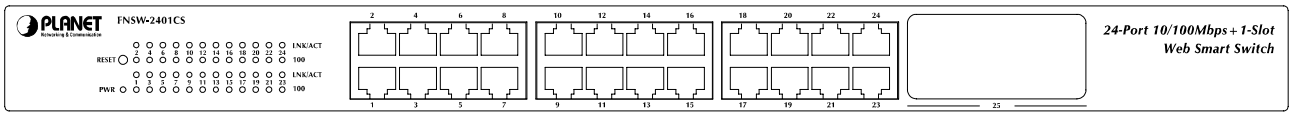


Figure 2-1: FNSW-2401CS Switch front panel

2.1.1 LED indicators

System

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.

Per 10/100Mbps port

LED	Color	Function
LNK/ACT	Green	Lights to indicate the link through that port is successfully established.
100	Orange	Lights to indicate the port is running in 100Mbps speed.

Notice:

Press the RESET button for 5 seconds. The FNSW-2401CS will back to the factory default mode; the entire configuration will be erased.

2.2 Rear Panel

The rear panel of the FNSW-2401CS indicates an AC inlet power socket, which accepts input power from 100 to 240V AC, 50-60Hz.

Figure 2-2: FNSW-2401CS Switch rear panel

Power Notice:

1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime.
2. In some area, installing a surge suppression device may also help to protect your FNSW-2401CS from being damaged by unregulated surge or current to the FNSW-2401CS.

2.3 Hardware Installation

This part describes how to install your Web Smart Ethernet Switch and make connections to the Switch. Please read the following topics and perform the procedures in the order being presented. To install your Switch on a desktop or shelf, simply completed the following steps.

2.3.1 Desktop Installation

To install a Switch on a desktop or shelf, simply completed the following steps:

Step 1: Attached the rubber feet to the recessed areas on the bottom of the Switch.

Step 2: Place the Switch on a desktop or shelf near an AC power source.

Step 3: Keep enough ventilation space between the Switch and the surrounding objects.

Notice:

When choosing a location, please keep in mind the environmental restrictions discussed in Chapter 1, Section 4, Specification.

Step 4: Connect your Switch to network devices.

A. Connect one end of a standard network cable to the 10/100 RJ-45 ports on the front of the FNSW-2401CS Switch.

B. Connect the other end of the cable to the network devices such as printer servers, workstations or routers…etc.

Notice:

Connection to the Switch requires UTP Category 5 network cabling with RJ-45 tips. For more information, please see the Cabling Specification in **Appendix A**.

Step 5: Supply power to the Switch.

A. Connect one end of the power cable to the Switch.

B. Connect the power plug of the power cable to a standard wall outlet then power on the Switch.

When the Switch receives power, the Power LED should remain solid Green.

2.3.2 Rack Mounting

To install the Switch in a **19-inch** standard rack, follow the instructions described below.

Step 1: Place your Switch on a hard flat surface, with the front panel positioned towards your front side.

Step 2: Attach a rack-mount bracket to each side of the Switch with supplied screws attached to the package. Figure 2-3 shows how to attach brackets to one side of the Switch.

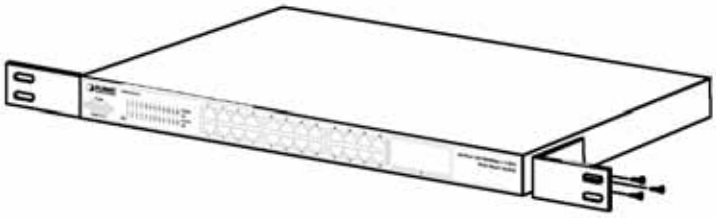


Figure 2-3 Attaching the brackets to the Switch

Caution:

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate your warranty.

Step 3: Secure the brackets tightly.

Step 4: Follow the same steps to attach the second bracket to the opposite side.

Step 5: After the brackets are attached to the Switch, use suitable screws to securely attach the brackets to the rack, as shown in Figure 2-4.

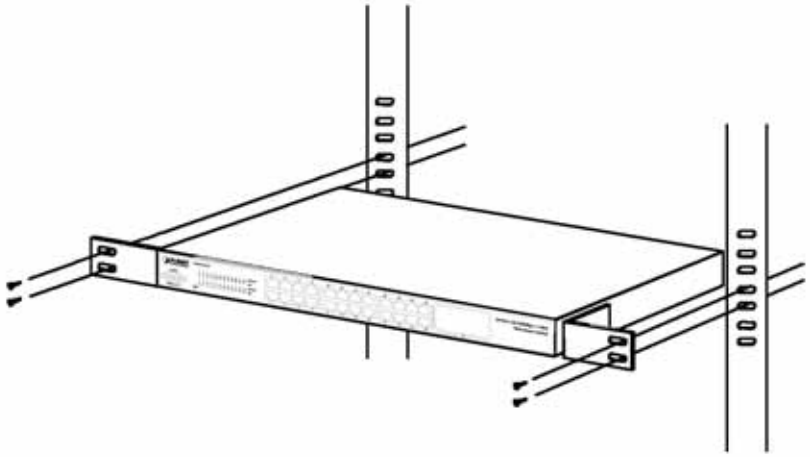


Figure 2-4 Mounting the Switch in a Rack

Step 6: Proceed with the steps 4 and steps 5 of section **2.3.1 Desktop Installation** to connect the network cabling and supply power to your Switch.

3. SWITCH MANAGEMENT

This chapter describes how to manage the FNSW-2401CS. Topics include:

- Overview

- Management method

- Logging on to the FNSW-2401CS

3.1 Overview

The FNSW-2401CS provides a user-friendly, web interface. Using this interface, you can perform various switch configuration and management activities, including:

Please refer to the following Chapter 4 for the details.

3.2 Management Method

User can manage the FNSW-2401CS by Web Management via a network or dial-up connection.

3.2.1 Web Management

You can manage the FNSW-2401CS remotely by having a remote host with web browser, such as Microsoft Internet Explorer or Netscape Navigator.

Using this management method:

The FNSW-2401CS must have an Internet Protocol (IP) address accessible for the remote host.

3.3 Logging on to the FNSW-2401CS

When you log on to the FNSW-2401CS Web interface for the first time, a sign-on string appears and you are prompted for a Web login username and password.

The factory default login username is **admin** without password.

Notice:

1. For security reason, please change and memorize the new password after this first setup.
2. Only accept command in lowercase letter under Web interface.

4. WEB MANAGEMENT

To modify your PC's IP domain to the same with FNSW-2401CS then use the default IP address (***192.168.0.100***) to remote configure FNSW-2401CS through the **Web** interface.

4.1 Login in to the Switch

To access the Web-browser interface you must first enter the user name, the default user name is **"admin"** without password**.** You will see the following screen comes out on the Web browser program:

Figure 4-1 The FNSW-2401CS login Web Page screen

After the User name and Password is entered, you will see the web main menu screen.

Figure 4-2 The web main menu screen of FNSW-2401CS

4-2 Port Config

This section provides each port configuration of FNSW-2401CS, the screen in Figure 4-3 appears and Table 4-1 describes the port configuration object of switch.

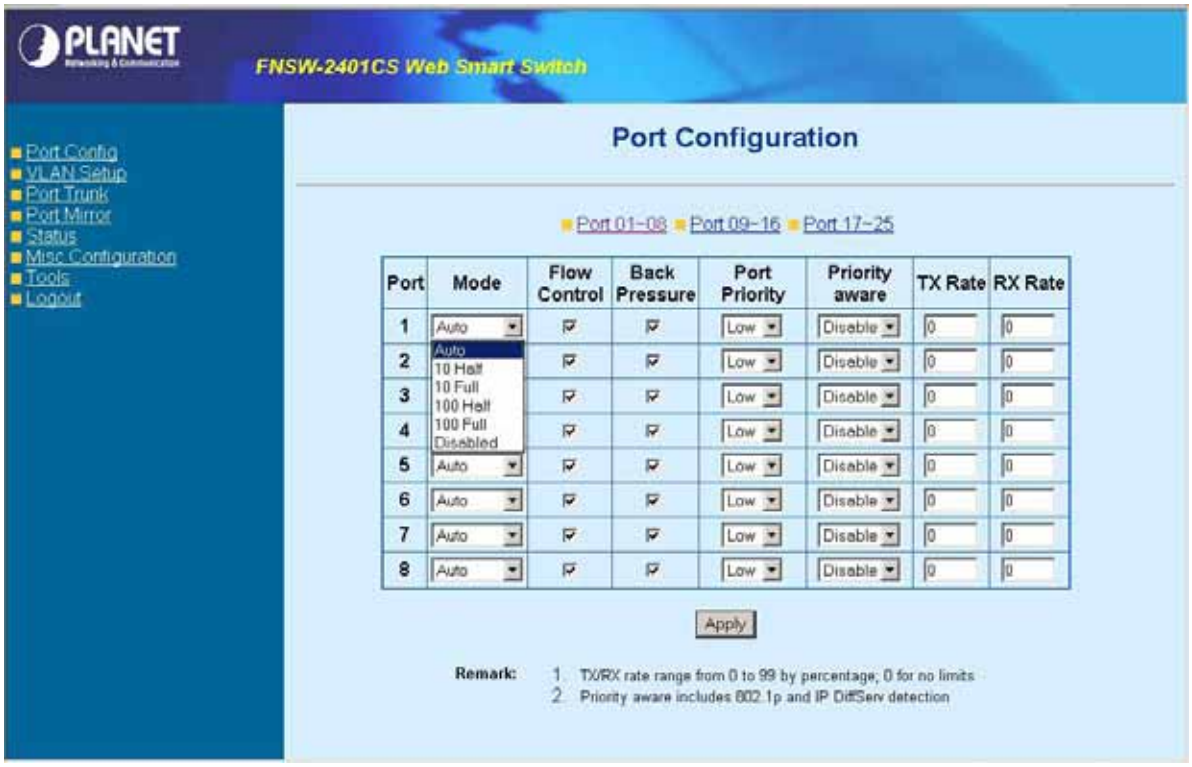


Figure 4-3 FNSW-2401CS Port configuration Web Page screen

Object	Description
Port	Indicate port 1 to port 25.
Mode	Allow set each port run at Auto-negotiation mode or force 10/100Mbps half / full duplex mode, also disable each port of FNSW-2401CS.
Flow control	Allow to disable or enable Full-duplex flow control on each port.
Back pressure	Allow to disable or enable Half-duplex back pressure on each port.
Port priority	Allow assign low queue or high queue on each port.
Priority aware	Allow to disable or enable priority aware function on each port.
TX Rate	Allow assign per port transmit bandwidth, the available range is 0-99 by percentage; 0 for no limits.
RX Rate	Allow assign per port transmit bandwidth, the available range is 0-99 by percentage; 0 for no limits.

Table 4-1 Descriptions of the Port Configuration screen Objects

4-3 VLAN Setup

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain. It allows you to isolate network traffic so only members of the VLAN receive traffic from the same VLAN members. The FNSW-2401CS supports 24 port-based VLAN function. In the default configuration with VLAN disable, the screen in Figure 4-4 appears.

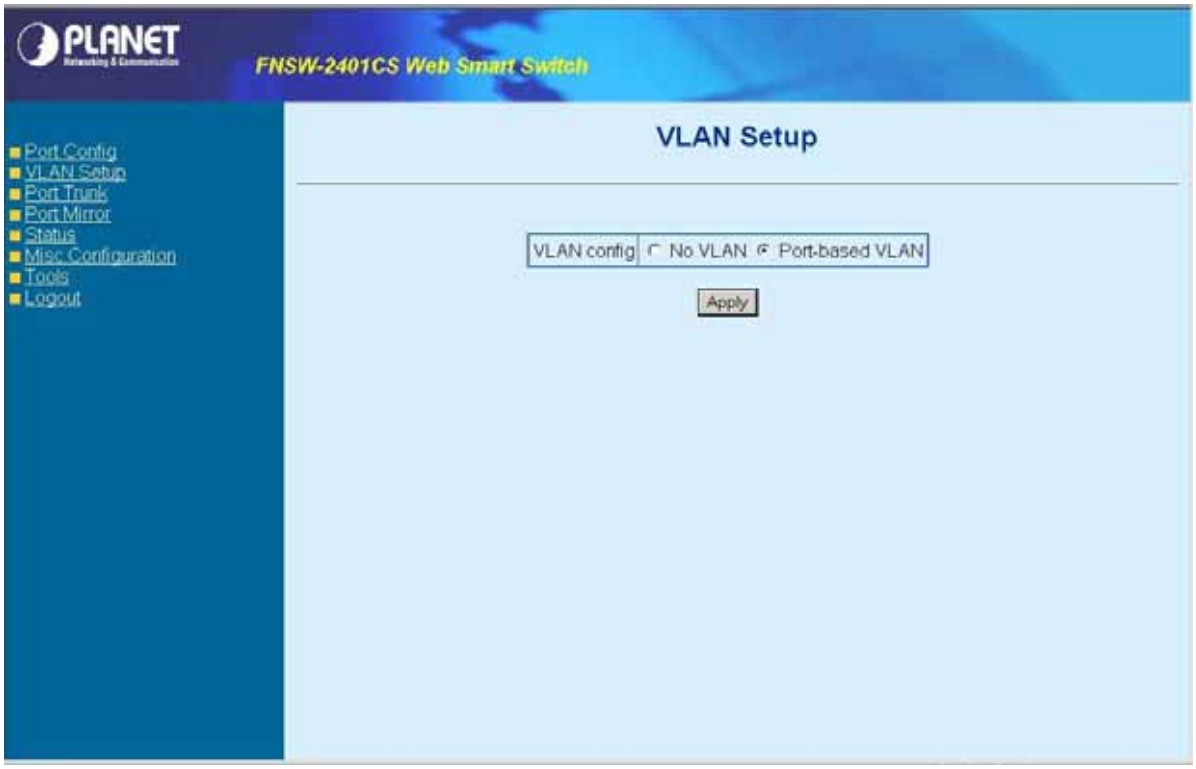


Figure 4-4 FNSW-2401CS VLAN Setup Web Page screen

Select **"Port-based VLAN"** and press **"Apply"** button, to enable the port-based VLAN function then continue configure twenty-four port-based VLAN groups as your request. After setup completed, please press **"Apply"** to take affect and press **"Group 09~16" or "Group 17-24"** hyperlink for other port-based VLAN groups. The screen in Figure 4-5 appears.

Figure 4-5 FNSW-2401CS port-based VLAN Setting Web Page screen

4.3.1 VLAN setting example:

VLAN scenario

1. Port 24 is the file server port for all the workstations

2. Port 1 to port 23 is different devices that do need to see each other

Setup steps

1. Port Setting

    1.1 Assign VLAN 1 for the second VLAN group with port 1 and port 24

    1.2 Assign VLAN 2 for the second VLAN group with port 2 and port 24

    1.3 Repeat the same steps for port 3 to port 23. i.e. 3 & 24, 4 & 24, ….., 23 & 24

After the above steps port 1 to port 23 is being separated physically due to it belongs to different VLAN groups (different VLAN). However, they all can access port 24 due to port 24 is overlapping port to communicate with port 1 to port 23.

4-4 Port Trunk Setup

This section allows you to disable or enable trunk function of two ports or four ports together to speed up data transmission. The screen in Figure 4-6 appears.

Figure 4-6 FNSW-2401CS Port Trunk Setup Web Page screen

Notice:

After turn on the port trunk feature, port 1 and port 2, port 1,2,3,4 or port 5,6,7,8 should connect to another switch, such as another FNSW-2401CS, that also supports port trunk feature to double the bandwidth in between. Otherwise, if the connected switch do not support port trunk, it will cause network loop and hangs the whole network.

4-5 Port Mirror Setup

This section allow to configure port mirror function of FNSW-2401CS, the screen in Figure 4-7 appears and table 4-2 descriptions the port mirror objects of FNSW-2401CS.

Figure 4-7 FNSW-2401CS Port Mirror Configuration Web Page screen

Object	Description
Port Mirroring	Allow disable or enable port mirroring function.
Monitoring port	Allow assign one port as Monitoring port.
Monitored port	Allow assign one port as Monitored port.
Monitoring mode	Allow choosing Monitoring mode and the available options are TX, RX, Both TX RX.

Table 4-2 Descriptions of the port mirror configuration screen Objects

4-6 Status

This section allows viewing System information and port status of FNSW-2401CS, the screen in Figure 4-8 appears and please refer to **“chapter 4.6.1 System Info”** and **“chapter 4.6.2 Port Status”** for detail information.

Figure 4-8 FNSW-2401CS Status Web Page screen

4.6.1 System Information

This section provides System information of FNSW-2401CS, the screen in Figure 4-9 appears and table 4-3 descriptions the System information objects of FNSW-2401CS.

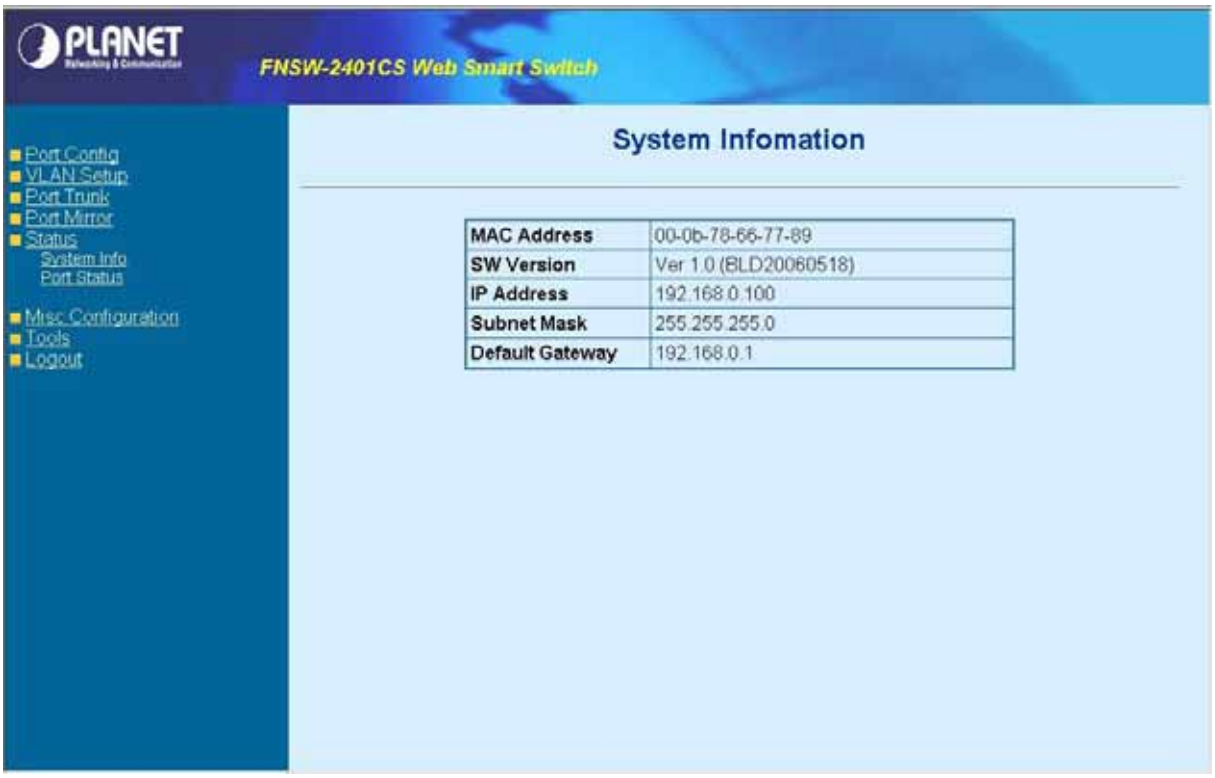


Figure 4-9 FNSW-2401CS System Information Web Page screen

Object	Description
Mac address	Display MAC address of FNSW-2401CS.
SW Version	Display firmware version of FNSW-2401CS.
IP Address	Display IP address of FNSW-2401CS.
Subnet Mask	Display subnet Mask of FNSW-2401CS.
Default Gateway	Display Gateway of FNSW-2401CS.

Table 4-3 Descriptions of System information screen Objects

4.6.2 Port Status

This section provides to view per port status of FNSW-2401CS, the screen in Figure 4-10 appears and table 4-4 descriptions the port status objects of FNSW-2401CS.

Figure 4-10 FNSW-2401CS Port Status Web Page screen

Object	Description
Port No.	Indicate port 1 to port 25.
Flow control	Display the flow control **On** or **Off** state on each port of FNSW-2401CS.
Duplex	Display half or full duplex mode on each port of FNSW-2401CS.
Speed	Display the **10Mbps or 100Mbps** speed state of each port on FNSW-2401CS.
Link	The state of the link, indicating a valid link partner device. **"Up"** means a device is successful connected to the port. **"Down"** means no device is connected.

Table 4-4 Descriptions of Port Status screen Objects

4-7 Misc Configuration

This section provides Misc Configuration of FNSW-2401CS, the screen in Figure 4-11 appears and table 4-5 descriptions the Misc Configuration objects of FNSW-2401CS.

Figure 4-11 FNSW-2401CS Misc Configuration Web Page screen

Object	Description
IP Address	Allow user to assign IP address, Subnet Mask, Gateway of FNSW-2401CS, please refer to chapter 4.7.1
Password	Allow user to change the password and maximum up to 8 characters, please refer to chapter 4.7.2
Switch Control	Allow user to configuring Broadcast Storm Control, Address Table Aging, Aging Time, Class of Service Mode function of FNSW-2401CS refer to chapter 4.7.3

Table 4-5 Descriptions of Misc Configuration screen Objects

4.7.1 IP Address

This section allow user to assign IP subnet address of FNSW-2401CS, the screen in Figure 4-12 appears and table 4-6 descriptions the IP Address objects of FNSW-2401CS.

Figure 4-12 FNSW-2401CS IP Address Web Page screen

Object	Description
IP address	Assign IP address of FNSW-2401CS.
Subnet Mask	Assign subnet Mask of FNSW-2401CS.
Default Gateway	Assign Gateway of FNSW-2401CS.

Table 4-6 Descriptions of IP Address screen Objects

4.7.2 Password

This section allow user to modify password of FNSW-2401CS, the screen in Figure 4-13 appears and table 4-7 descriptions the password setting objects of FNSW-2401CS.

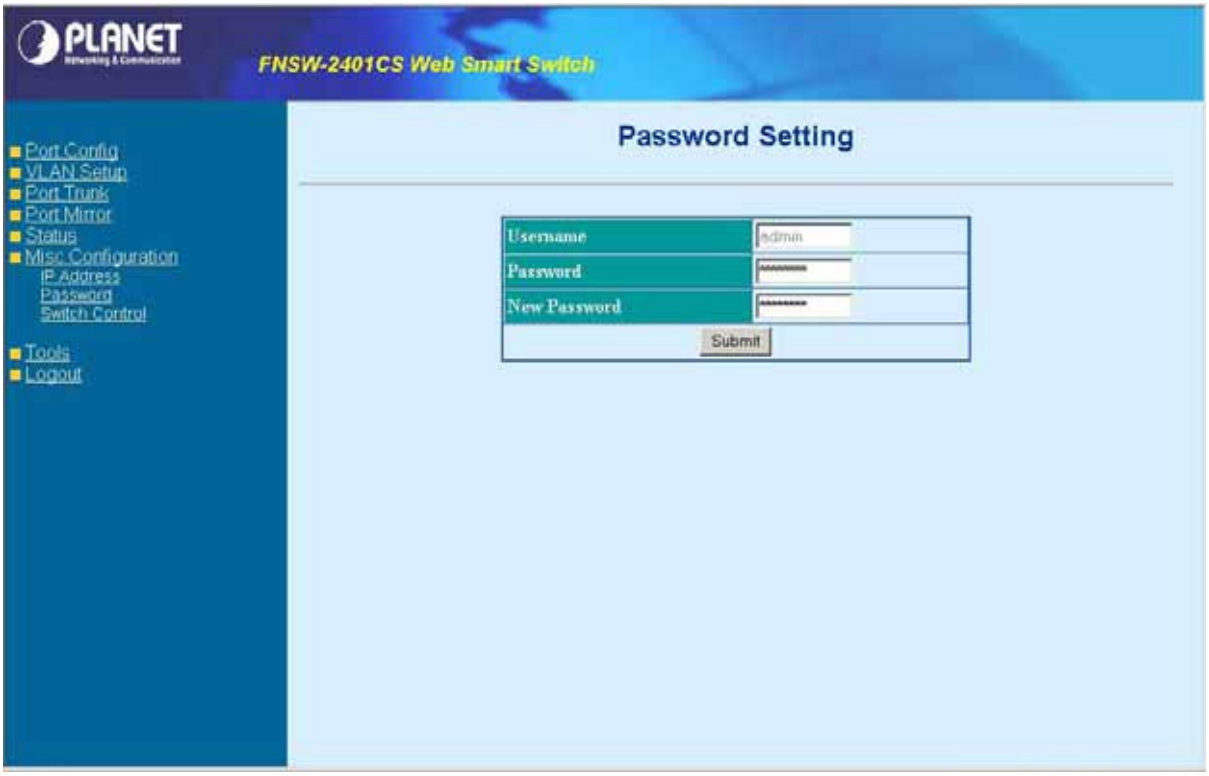


Figure 4-13 FNSW-2401CS Password Setting Web Page screen

Object	Description
Username	Indicate the username of FNSW-2401CS and its read only.
Password	Input previous password of FNSW-2401CS.
New password	Input new password of FNSW-2401CS.

Table 4-7 Descriptions of Password setting screen Objects

Notice:

1. For security reason, please change and memorize the new password after this setup.
2. The maximum length is 8 characters.

4.7.3 Switch Control

This section allow user to setup Broadcast Storm Control, Address Table Aging, Aging Time, Class of Services function of FNSW-2401CS. The screen in Figure 4-14 appears and tables 4-8 descriptions the Switch Control setting objects of FNSW-2401CS.

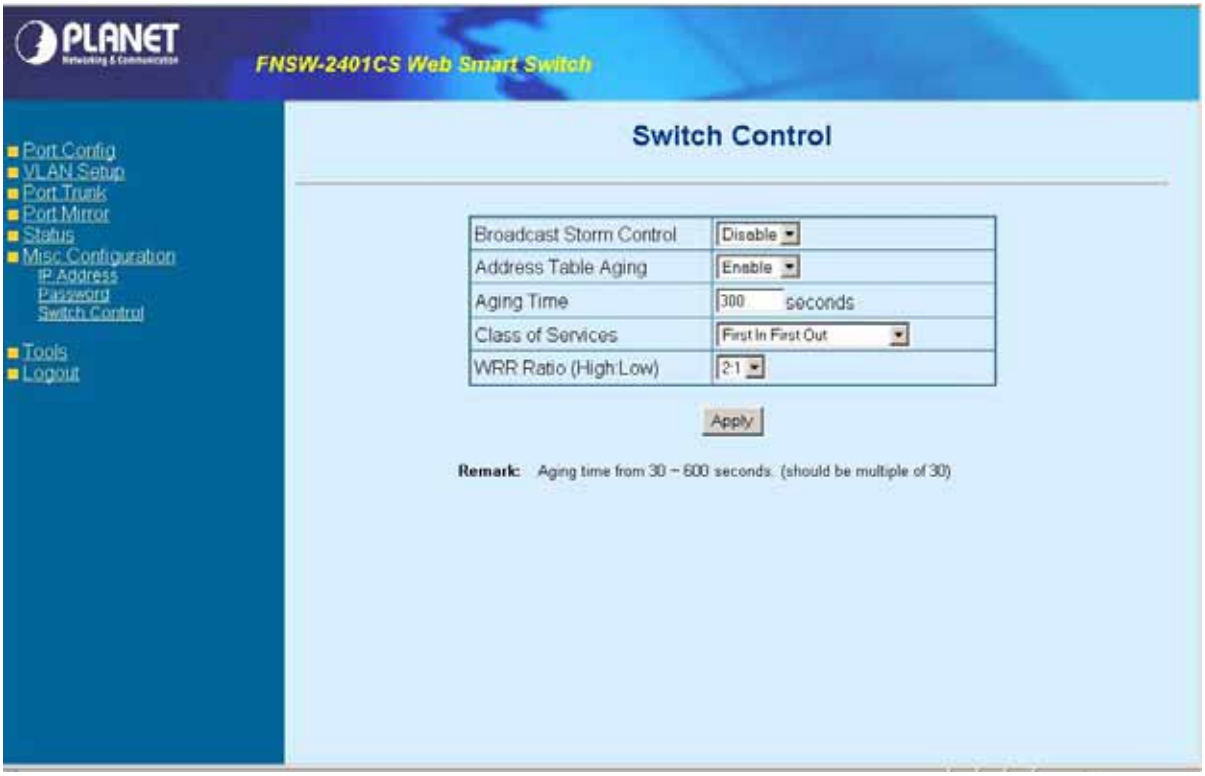


Figure 4-14 FNSW-2401CS Switch Control Web Page screen

Object	Description
Broadcast Control	Allow disable or enable broadcast storm control with 20%, 50%, and 80% for pass.
Address Table Aging	Allow disable or enable Mac address table aging.
Aging time	Allow to input the aging time and available range is 30 to 600 seconds (must be multiple of 30).
Class of Services	Allow to choose different policy for Class of Service.
WRR Ratio (High : Low)	Available when choose Weighted Round Robin as Class of Service schedule.

Table 4-8 Descriptions of the Switch Control Configuration screen Objects

4-8 Tools

This section provides tools of FNSW-2401CS; the screen in Figure 4-15 appears and table 4-9 descriptions the tools Configuration objects of FNSW-2401CS.

Figure 4-15 FNSW-2401CS Tools Configuration Web Page screen

Object	Description
Reboot	Allow user to reboot the FNSW-2401CS, please refer to chapter 4.8.1.
Factory Reset	Allow user to reset FNSW-2401CS to factory default mode, please refer to chapter 4.8.2.
Firmware upgrade	Allow user proceed firmware update procedure of FNSW-2401CS, please refer to chapter 4.8.3.

Table 4-9 Descriptions of Tools Configuration screen Objects

4.8.1 Reboot

This section allow user to reboot the FNSW-2401CS, the screen in Figure 4-16 & 4-17 & 4-18 appears.

Figure 4-16 FNSW-2401CS Reboot Web Page screen

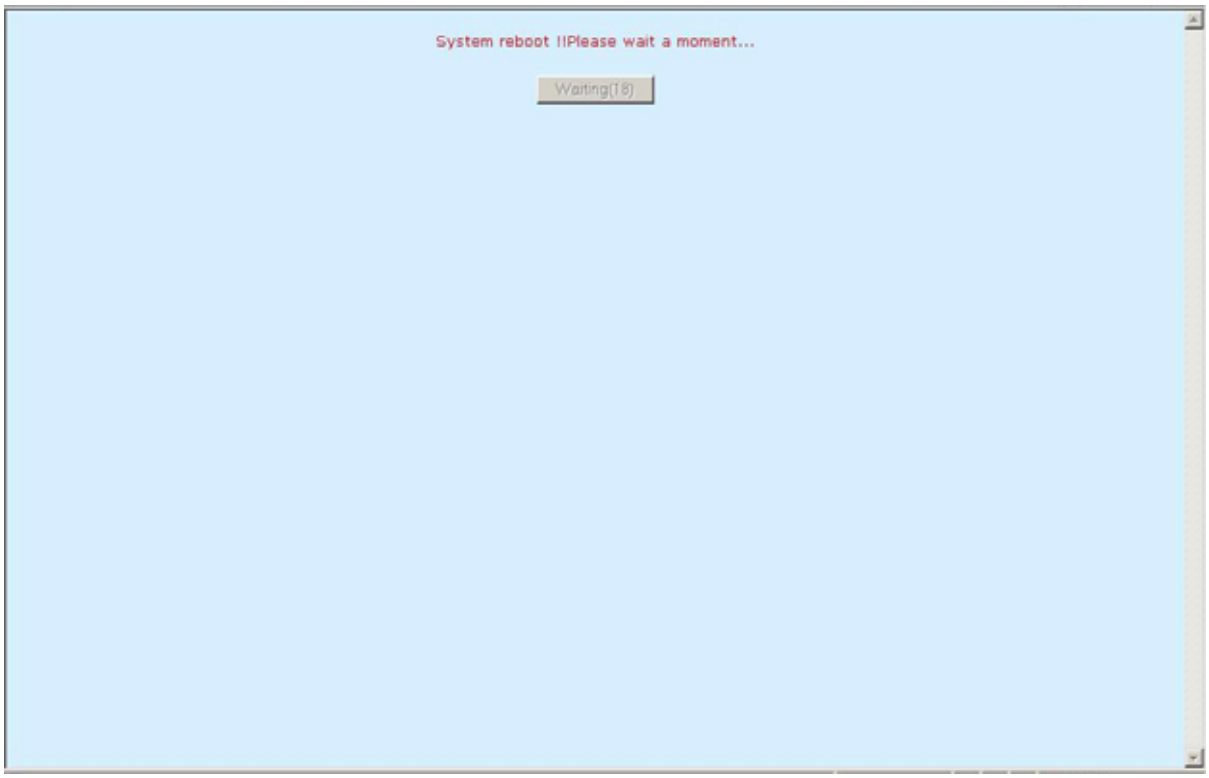


Figure 4-17 FNSW-2401CS Reboot Web Page screen

Figure 4-18 FNSW-2401CS Reboot Web Page screen

4.8.2 Factory Reset

This section allow user to reset the FNSW-2401CS to factory default mode, the screen in Figure 4-19 & 4-20 & 4-21 appears.

Figure 4-19 FNSW-2401CS Factory Reset Web Page screen

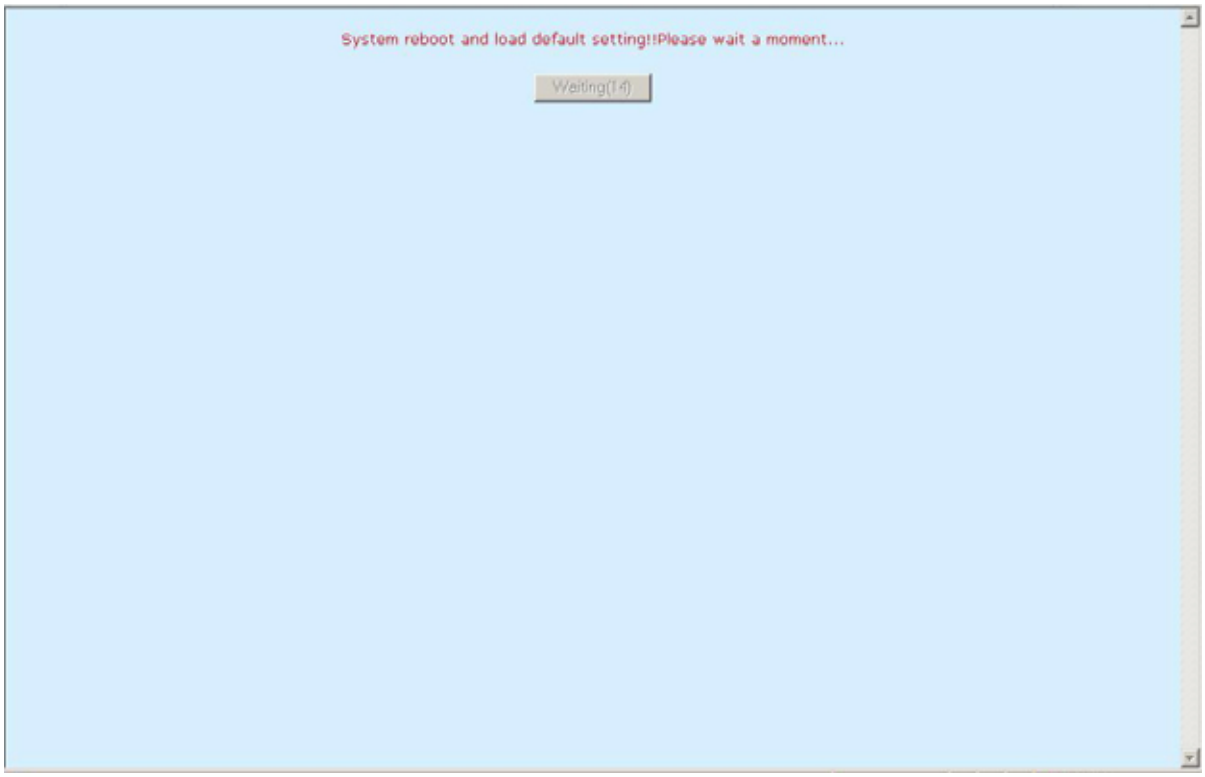


Figure 4-20 FNSW-2401CS Factory Reset Web Page screen

Figure 4-21 The FNSW-2401CS login Web Page screen

4.8.3 Firmware Upgrade

This section provides firmware upgrade of FNSW-2401CS, after choose this function and the following screen appears in Figure 4-22. Please press **"Update"** button to continue following firmware upgrade process.

Figure 4-22 The FNSW-2401CS firmware upgrade Web Page screen

Please wait for two seconds and press **"Continue"** to next firmware upgrade web page, the screen in Figure 4-23 & Figure 4-24 appears.

Figure 4-23 The FNSW-2401CS firmware upgrade Web Page screen

Figure 4-24 The FNSW-2401CS firmware upgrade Web Page screen

Please press **"Browser"** to locate the latest firmware of FNSW-2401CS that deposit in your PC and press **"Upgrade"** to start the firmware upgrade process. The screen in Figure 4-25 appears.

Figure 4-25 The FNSW-2401CS firmware upgrade Web Page screen

Please wait for seventeen seconds and go to next firmware upgrade web page, the screen in Figure 4-26 appears.

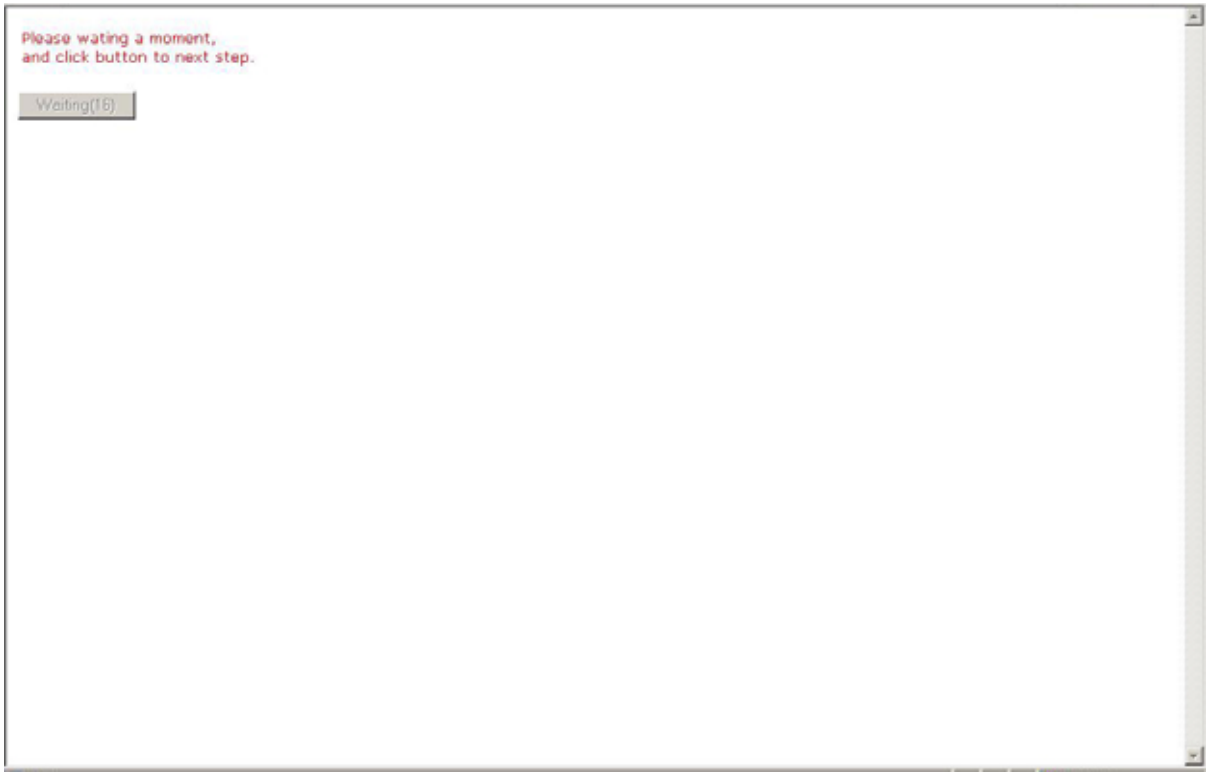


Figure 4-26 The FNSW-2401CS firmware upgrade Web Page screen

Then the re-login screen appears in Figure 4-27, please press **"Re Login"** button to re-login web interface of FNSW-2401CS with latest firmware version, the screen in Figure 4-28 appears.

Figure 4-27 The FNSW-2401CS firmware upgrade Web Page screen

Figure 4-28 The FNSW-2401CS login Web Page screen

Notice: Please does not power off the FNSW-2401CS during firmware upgrade process.

4-9 Logout

This section allows to logout the FNSW-2401CS, the screen in Figure 4-29 & 4-30 & 4-31 appears.

Figure 4-29 FNSW-2401CS Logout Web Page screen

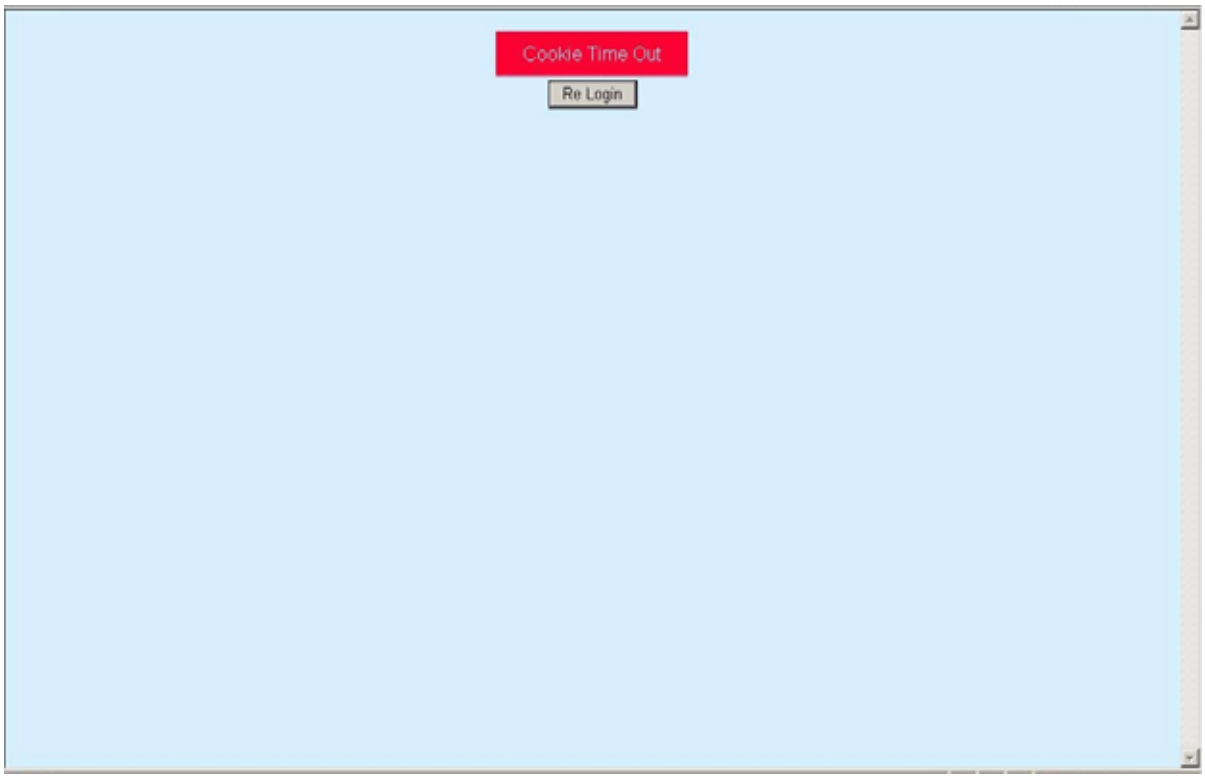


Figure 4-30 The FNSW-2401CS Logout Web Page screen

Figure 4-31 The FNSW-2401CS login Web Page screen

5. SWITCH OPERATION

5.1 Address Table

The Switch is implemented with an address table. This address table composed of many entries. Each entry is used to store the address information of some node in network, including MAC address, port no, etc. This information comes from the learning process of Ethernet Switch.

5.2 Learning

When one packet comes in from any port. The Switch will record the source address, port no. And the other related information in address table. This information will be used to decide either forwarding or filtering for future packets.

5.3 Forwarding & Filtering

When one packet comes from some port of the Ethernet Switching, it will also check the destination address besides the source address learning. The Ethernet Switching will lookup the address-table for the destination address. If not found, this packet will be forwarded to all the other ports except the port which this packet comes in. And these ports will transmit this packet to the network it connected. If found, and the destination address is located at different port from this packet comes in, the Ethernet Switching will forward this packet to the port where this destination address is located according to the information from address table. But, if the destination address is located at the same port with this packet comes in, then this packet will be filtered. Thereby increasing the network throughput and availability.

5.4 Store-and-Forward

Store-and-Forward is one type of packet-forwarding techniques. A Store-and Forward Ethernet Switching stores the incoming frame in an internal buffer, do the complete error checking before transmission. Therefore, no error packets occurrence, it is the best choice when a network needs efficiency and stability.

The Ethernet Switch scans the destination address from the packet-header, searches the routing table provided for the incoming port and forwards the packet, only if required. The fast forwarding makes the switch attractive for connecting servers directly to the network, thereby increasing throughput and availability. However, the switch is most commonly used to segment existing hubs, which nearly always improves overall performance. An Ethernet Switching can be easily configured in any Ethernet network environment to significantly boost bandwidth using conventional cabling and adapters.

Due to the learning function of the Ethernet switching, the source address and corresponding port number of each incoming and outgoing packet are stored in a routing table. This information is subsequently used to filter packets whose destination address is on the same segment as the source address. This confines network traffic to its respective domain, reducing the overall load on the network.

The Switch performs "Store and forward" therefore, no error packets occur. More reliably, it reduces the re-transmission rate. No packet loss will occur.

5.5 Auto-Negotiation

The STP ports on the FNSW-2401CS switch have built-in "Auto-negotiation". This technology automatically sets the best possible bandwidth when a connection is established with another network device (usually at Power On or Reset). Detecting the modes does this and speeds at the second of both devices are connected and capable of, both 10Base-T and 100Base-TX devices can connect with the port in either Half- or Full-duplex mode.

6.TROUBLESHOOTING

This chapter contains information to help you solve problems. If the Switch is not functioning properly, make sure the Ethernet Switch was set up according to instructions in this manual.

The Link LED is not lit

Solution:

Check the cable connection and remove duplex mode of the Switch.

Some stations cannot talk to other stations located on the other port

Solution:

Please check the VLAN, port trunking function that may introduce this kind of problem.

Performance is bad

Solution:

Check the full duplex status of the Ethernet Switch. If the Ethernet Switch is set to full duplex and the partner is set to half duplex, then the performance will be poor.

100Base-TX port link LED is lit, but the traffic is irregular

Solution:

Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.

Why the Switch doesn't connect to the network

Solution:

Check the LNK/ACT LED on the switch Try another port on the Switch Make sure the cable is installed properly Make sure the cable is the right type Turn off the power. After a while, turn on power again.

How to deal forgotten password situation of FNSW-2401CS?

Solution:

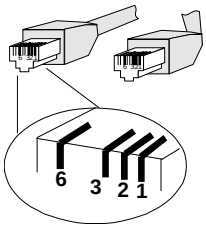
Please press **"RESET"** button from front panel of FNSW-2401CS for 5 seconds then the FNSW-2401CS will reset to factory default mode(username: admin without password.)

APPENDIX A NETWORKING CONNECTION

A.1 Switch‘s RJ-45 Pin Assignments

Contact	MDI	MDI-X
1	1 (TX +)	3
2	2 (TX -)	6
3	3 (RX +)	1
6	6 (RX -)	2
4, 5, 7, 8	Not used	Not used

A.2 RJ-45 cable pin assignment



There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight cable and crossover cable connection:

Figure A-1: Straight-Through and Crossover Cable

Please make sure your connected cables are with same pin assignment and color as above picture before deploying the cables into your network.

2010-A81110-001