NADDOD S3600 Series Ethernet Switches Installation Guide

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Website of the Company: http://www.naddod.com/

Technical support hotline: 400-0698-860

Technical support e-mail: tech@naddod.com

Technical file e-mail: tech@naddod.com

Customer complaint hotline: 400-0698-860

Address of headquarters of the Company: 302, Building F1, Optics Valley Software Park, Guanshan 1st Road East Lake High-tech Zone, Wuhan ,P.R.China

Postcode: 430000

Declaration

Due to the version upgrade of products or other reasons, the content of this manual will be updated irregularly. Unless otherwise agreed, this manual is only used as usage instruction, and all statements, information and suggestions herein don't constitute any expressed or implied guarantee

Foreword

Overview

This document presents product introduction, installation guide, startup after power on, maintenance and troubleshooting of NADDOD S3600 Series Layer 3 Ethernet Switches (hereinafter referred to as S3600 Series).

Product Version

The product versions corresponding to this document are as follows.

Product name	Hardware version
S3600-24T24S4X	
S3600-48S4X	

Stipulations

Symbol Stipulations

The following symbols may appear in the document, of which the meanings are as below.

Symbol	Description
 WARNING	Text marked with this symbol means potential risk that may cause personal injury if it cannot be avoided.
 CAUTION	Text marked with this symbol means potential risk that may cause equipment trouble, data loss, device performance degradation or unpredictable results if it is ignored.
 NOTE	Text marked with this symbol delivers additional information to the body for emphasizing and complementing.
 TIP	Text marked with this symbol may help you address certain issues or save your time.

General Format Stipulations

Format	Description
Song	The main body is in Song.
Gothic	Level 1 title, Level 2 title, Level 3 title and Block are in Gothic.
Regular	Warnings and hints are in Regular.
Lucida Console	Lucida Console format indicates screen output. Additionally, the data input by users from terminal among the screen output is displayed in bold font.

Contents

1 Product Introduction

NADDOD S3600 Series Switches are enhanced Gigabyte Ethernet switches of high performance, high port density and high safety level launched by NADDOD , which provide flexible full Gigabyte access and cost-effective 10G uplink ports, as well as 10G SFP+ optical interface and 40G QSFP+ optical interface with the aid of daughter card.

NADDOD S3600 Series Switches have enhanced Layer 3 functions, large tablebody, and VXLAN, support IPV4 and IPV6 management and forwarding, and are of rich security features. NADDOD S3600 Series Switches are flexible for networking and easy to maintain, and are widely applied for aggregation or access of large and medium-scaled campus network or data center, and core of small campus network. NADDOD S3600 Series Switches can be used to construct high performance end-to-end network solutions together with other NADDOD products.

1.1 Product Model Description

Table 1-1 S3600 Series Switches

Product model	Description
S3600-24T24S4X	• Standard 1RU 19-inch chassis • 24 10/100/1000 Base-T ports, including 24 1GE SFP ports • 4 10GE SFP+ ports • 2 expansion slots • Pluggable dual power supply
S3600-48S4X	• Standard 1RU 19-inch chassis • 48 1G SFP ports, 4 10G SFP+ ports • 1 expansion slot • Pluggable dual power supply

1.2 S3600 Series Front Panel Description

1.2.1 S3600-24T24S4X

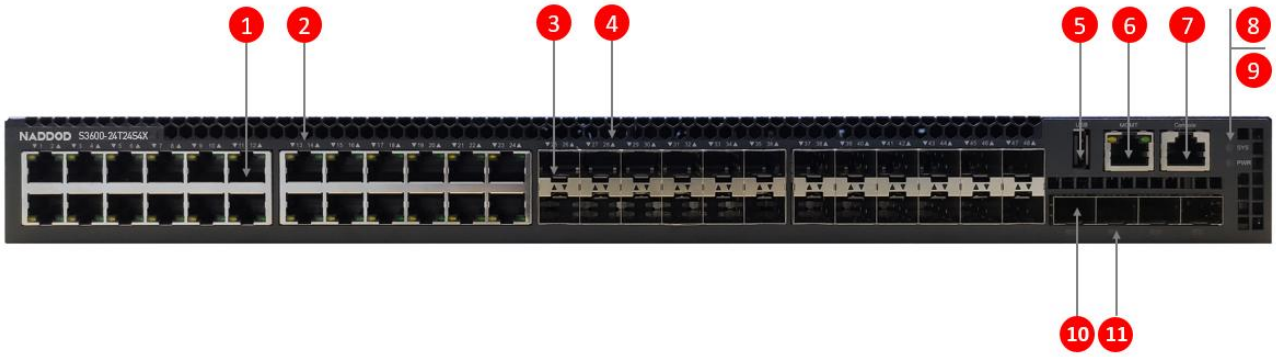

Figure 1-1 Schematic Diagram of S3600-24T24S4X Front Panel

(1): 10/100/1000BASE-T self-adapting Ethernet port

(2): 10/100/1000BASE-T self-adapting Ethernet port status indicator

(3): 1G SFP+ optical interface

(4): SFP port status indicator

(5): USB port

(6): Ethernet management port

(7): CONSOLE port

(8): System status indicator (SYS)

(9): System power status indicator (PWR)

(10): 10G SFP+ port

(11): 10G SFP+ port status indicator

1.2.2 S3600-48S4X

Figure 1-2 Schematic Diagram of S3600-48S4X Front Panel

(1): 1G SFP+ optical interface

(2): 1G SFP optical interface status indicator

(3): Ethernet management port

(4): CONSOLE port

(5): USB port

(6): System power status indicator (PWR)

(7): System status indicator (SYS)

(8): 10G SFP+ port

(9): 10G SFP+ port status indicator

1.3 S3600 Series Back Panel Description

1.3.1 S3600-24T24S4X

Figure 1-3 Schematic Diagram of S3600-24T24S4X Back Panel

(1): Grounding screw
(2): Expansion slot 1
(3): Expansion slot 2
(4): Pluggable fan 1
(5): Pluggable fan 2
(6): Pluggable power supply 1
(7): Pluggable power supply 2

1.3.2 S3600-48S4X

Figure 1-4 Schematic Diagram of S3600-48S4X Back Panel

(1): Grounding screw
(2): Expansion slot
(3): Pluggable fan
(4): Pluggable power module 1
(5): Pluggable power module 2

1.4 S3600 Series Port Description

1.4.1 Service Port

Table 1-2 shows service ports of S3600 Series.

Table 1-2 Service Ports of S3600 Series

Port type		Count	Description
Uplink port	S3600-24T24S4X	4	The supported optical module types include: • 10G SFP+ optical interface; the supported SFP+ optical module type: 10GBASE-X • 1G SFP+ optical interface; the supported SFP+ optical module type: 1000BASE-X
	S3600-48S4X	4	The supported optical module types include: • 10G SFP+ optical interface; the supported SFP+ optical module type: 10GBASE-X • 1G SFP+ optical interface; the supported SFP+ optical module type: 1000BASE-X
Downlink port	S3600-24T24S4X	48	24 10/100/1000BASE-T self-adapting electrical interfaces 24 1G SFP optical interfaces
	S3600-48S4X	48	48 1G SFP optical interfaces

10G SFP+ Optical Interface

Table 1-3 shows properties of the 10G SFP+ optical interface.

Table 1-3 Properties of 10G SFP+ Optical Interface

Property	Description
Connector type	LC
Optical interface properties	Depend on the selected SFP+ optical module
Transmission rate	10Gbit/s
Operating mode	Full duplex

1G SFP Optical Interface

Table 1-4 shows properties of the 1G SFP interface.

Table 1-4 Properties of 1G SFP Interface

Property	Description
Connector type	LC
Optical interface properties	Depend on the selected SFP module
Operating mode	Full duplex
Standard	IEEE 802.3

1G Ethernet Electrical Interface

Table 1-5 shows properties of the 10/100/1000M Ethernet electrical interface.

Table 1-5 Properties of 10/100/1000M Ethernet Electrical Interface

Property	Description
Connector type	RJ45
Operating mode	• Support 10/100/1000M rate adaption • Support full duplex/half-duplex auto-negotiation • MDI/MDI-X self-adaption
Cable specifications	Twisted pair of Class 5 and above
Standard	IEEE 802.3

1.4.2 Management Port

Console Port

Console port adopts one 8-pin RJ-45 connector. An RJ-45-to-DB-9 adapter cable is needed to connect the console port of switch to a computer. It is encouraged to employ the attached network cable.

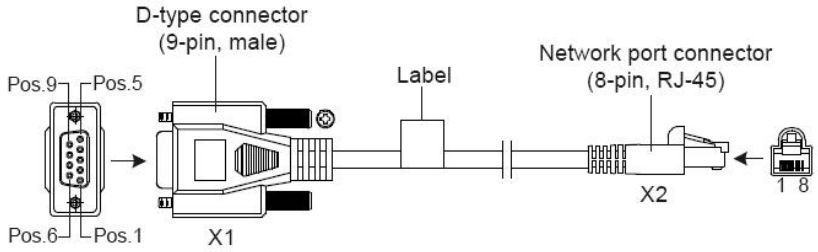

Figure 3-1 Connection Cable of DB9 to RJ45 Console Port

Pin parameters are as shown in the table below:

Table 3-1 RJ-45-to-DB-9 Cable Order

RJ45	Signal	Direction	DB-9
1	CTS (Clear To Send)	→	8
2	DSR (Data Set Ready)	→	6
3	RXD (Receive Data)	→	2
4	GND	---	5
5	GND	---	5
6	TXD (Transmit Data)	←	3
7	DTR (Data Terminal Ready)	←	4
8	RTS (Request To Send)	←	7

properties of CONSOLE Port:

Property	Description
Connector type	RJ45
Standard	EIA/TIA-232
Rate	115200bit/s
Supported services	• Connect to character terminal • Connect to serial port of local terminal (could be PC), and run terminal emulator on terminal

Ethernet Management Port

S3600 series switches integrate out-of-band management Ethernet interface, and the interface is 1000Base-TX or 100Base-T. It is recommended to use the attached cables, which are generally used to connect computer for program loading and debugging of system or connect remote network management station for remote management of system.

Table 1-7 Properties of Ethernet Management Port

Property	Description
Connector type	RJ45

Property	Description
Port transmission rate	• Support 10/100M rate adaption • Support full duplex/half-duplex auto-negotiation • MDI/MDI-X self-adaption
Applicable cable specifications	Twisted pair of Class 5 and above
Maximum transmission distance	100m
Standard	IEEE 802.3
Function and service	Be used for application program and BootRom upgrade and network management

USB Port

The front panel of S3600 series switches provides a USB2.0 port complying with OHC standards, which supports 480Mbps upload and download rate. The port allows users to realize file interaction with the Flash file system of switches, such as uploading or downloading application files, etc.

NOTE

Considering the discrepancies in the compatibility and driving of USB devices from different manufacturers, NADDOD doesn't promise that all USB devices from various manufacturers can work normally on S3600 Series Switches. Malfunction of any USB device should not be attributed to switch fault. In such case, please try USB devices from different manufacturers.

1.5 S3600 Series Indicator Description

1.5.1 System Indicator

The operating state can be preliminarily judged via the system status indicator, as shown in Table 1-8.

Table 1-8 System Status Indicator Description

Indicator name	**Status**		**Description**
SYS	Green	Always on	The system is operating properly.
	Red	Always on	The system is in an abnormal state.
	-	Off	The system is not powered on or is in an abnormal state.

1.5.2 Power Indicator

The running state of S3600 power modules can be judged via the pluggable power module status indicator on the front panel, as show in Table 1-9.

Table 1-9 Pluggable Power Module Status Indicator Description

Indicator name	Status		Description
PWR	Green	Always on	The power is operating properly.
	Red	Always on	The power is not in position or single power supply failure alarm.
	-	Off	The power supply is not on.

1.5.3 Ethernet Management Port Indicator

Table 1-10 Ethernet Management Port Indicator Status Description

Indicator name	Status		Description
MGMT	Green	Always on	1000M port link up
		Flash	The port is sending or receiving data packets
	Yellow	Always on	10/100M port link up
		Flash	The port is sending or receiving data packets
	-	Off	The port is not linked up

1.5.4 10/100/1000BASE-T Self-adapting Ethernet Port Status Indicator

Combining port mode indicator with 10/100/1000BASE-T self-adapting Ethernet port allows to indicate detailed operating state of port from different aspects, as shown in Table 1-11.

Table 1-11 Description of 10/100/1000BASE-T Self-adapting Ethernet Port Status Indicator

Indicator name	Status		Description
1-48	Green	Always on	1000M port link up
		Flash	The port is sending or receiving data packets
	Yellow	Always on	10/100M port link up
		Flash	The port is sending or receiving data packets

Indicator name	Status		Description
	-	Off	The port is not linked up

1.5.5 SFP Port Status Indicator

Table 1-12 SFP Port Status Indicator Description

Indicator name	Status		Description
1-48 (S3600-48S4X) 25-48 (S3600-24T24S4X)	Yellow	Flash	The 1G port is sending or receiving data packets
	Yellow	Always on	1G port link up
	-	Off	The port is not linked up

1.5.6 SFP Port/ SFP+ Port Status Indicator

Table 1-13 SFP Port/ SFP+ Port Status Indicator Description

Indicator name	Status		Description
49-52	Green	Always on	10G port link up.
		Flash	The 10G port is sending or receiving data packets
	Yellow	Always on	GE port link up
		Flash	The GE port is sending or receiving data packets
	-	Off	The port is not linked up.

2 Installation Guide

2.1 Preparation before Installation

2.1.1 Safety Warning

To prevent personal injury caused by equipment trouble due to improper use, please keep in mind the following:

- The power cable must be unplugged before cleaning the switches. Don’t wipe the switches with wet cloth, nor clean the switches with liquid.
- Don’t put the switches beside the water or in wet place, and dampproof measures must be taken for the chassis of switches.
- Don't put the switches on an unstable box or table, which may cause serious damage to the switches in the case of drop.
- Good room ventilation must be ensured and the air holes of the switches must be kept unblocked.
- The switches can works normally with correct voltage only. Please confirm that the operating voltage is consistent with the voltage marked on the switches.
- To lower the risk of electric shock, please don’t open the chassis during the operation of the switches. Don’t open the chassis at will even in the case of power off.
- Be sure to use antistatic gloves when making replacement of interface conversion board to prevent electrostatic damage.

2.1.2 Pre-installation Check

To ensure a normal work environment of switches, S3600 Series Switches have the following requirements for the operational site:

- Be sure to leave space at the air intake vent and ventilation opening of switches to facilitate switches chassis cooling.
- Make sure that the chassis and workbench are provided with a good ventilation and cooling system.
- Make sure that the chassis and workbench are sufficiently secure to support the weight of switches plus the installation accessories.

- Be sure to ground the chassis and workbench properly.

To guarantee long-term steady operation of the switches, the installation site also must meet the following requirements:

Temperature and humidity

To guarantee normal operation and the service life of switches, the machine room must maintain a certain temperature and humidity. Long-term high humidity in machine room is liable to cause defective insulation and even electric leakage of insulating materials, and changes in mechanical performance of materials and corrosion of metal parts at some time; in the case of excessively low relative humidity, the fastening screws might become loose due to air shrinkage of the insulating spacer, and static electricity is likely to be generated in dry environment to harm the electric circuits of switches; excessively high temperature is more harmful because long-term high temperature will accelerate the ageing of insulating materials to lower the reliability of switches and largely reduce the service life.

Table 2-1 Temperature and humidity

Item	S3600-24T24S4X	S3600-48S4X
Working condition temperature	0℃～45℃	0℃～45℃
Working condition relative humidity (non-condensation)	10%～95%	10%～95%

Cleanliness

Dust is one of the threats to safe operation of switches. Dust falling onto the machine body might cause electrostatic adhesion, to result in bad contact of metal connectors or metal contacts. Particularly, low room relative humidity is more liable to cause electrostatic adhesion, which will not only reduce the life of equipment, but also cause communication failure.

Table 2-2 Dust Content Requirement of Machine Room

Mechanically active material	Unit	Content
Dust particles	Particle/m3	≤3×104 (no visible dust on table top within 3 days)
Note: Dust particle diameter ≥5um		

Besides dust, switches room is also subject to strict requirements for the content of salt, acid and sulfide in the air. These harmful gases will accelerate corrosion of metals and the ageing of some parts. Measures must be taken to prevent harmful gases such as SO2, H2S, NH3 and Cl2 from intruding into the machine room.

Table 2-3 Harmful Gas Limit of Machine Room

Gas	Max (mg/m3)
SO_2	0.2
H_2S	0.006
NH_3	0.05
Cl_2	0.01

Anti-interference

Switches in operation might be subject to interference outside the system, which affects the equipment via capacitive coupling, inductive coupling, electromagnetic radiation, common impedance (including grounding system) coupling and transmission mode of wires (power line, signal line and output line, etc.).

For this reason, please keep in mind:

- AC power supply system is a TN system, a one-phase three-line electric outlet with protective ground wire (PE) must be provided as AC socket to enable the filter circuit of equipment to effectively filter out grid interference.
- The work site of switches must keep far away from high power radio transmitting station, radar transmitting station or high frequency strong current equipment.
- Measures for electromagnetic shielding must be taken as necessary, such as adopting shield cable for interface cable.
- Interface cable must be arranged indoor, and outdoor arrangement is prohibited, to prevent overvoltage or overcurrent damage to equipment signal port due to thunder and lightning.

Laser Use Safety

- The Switches of this series are Class 1 laser equipment.

NOTE

Don’t look straight at the optical interfaces of switches of this series if the optional optical interface panel is in working condition, because the beam of light emitted by optical fiber is of extremely high energy that might harm the retina.

2.1.3 Installation Tools

Please prepare the following tools before installation:

- Straight screwdriver
- Cross screwdriver
- Anti-electrostatic wrist

NOTE

The switches of this series come without installation tools, which must be prepared by users.

2.2 Installation

S3600 series switches can be installed in two ways:

- Installing by fixing the front suspension loop and chassis tray.
- Installing on the table.

2.2.1 Suspension Loop Description

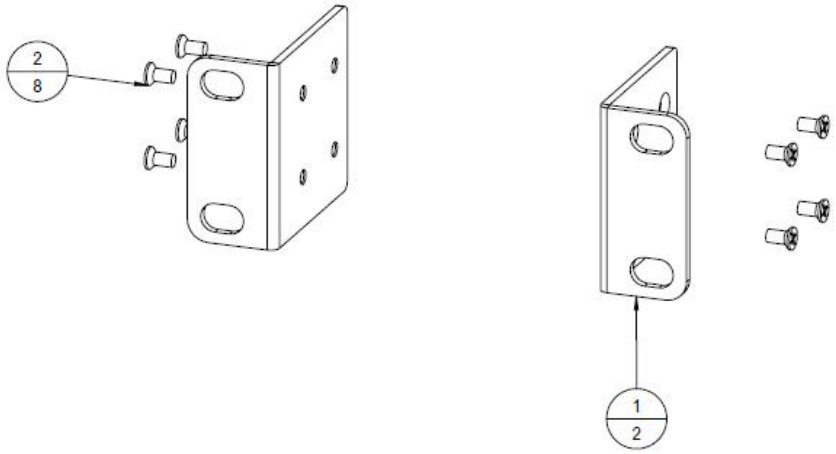

Figure 2-1 Schematic Diagram of Front Suspension Loop

Description:

(1): Screw hole for fixing the front suspension hoop and chassis

(2): Screw hole for fixing the front suspension hoop and switch

CAUTION

The front suspension loop is for fixing switches only, and cannot be used for load-bearing.

2.2.2 Installing by Fixing the Front Suspension Loop onto the Chassis via Chassis Tray

Installation Steps

Step 1: Take on anti-electrostatic wrist, and check the grounding and stability of chassis.

Step 2: Horizontally fix the tray of the chassis in a proper position of the chassis.

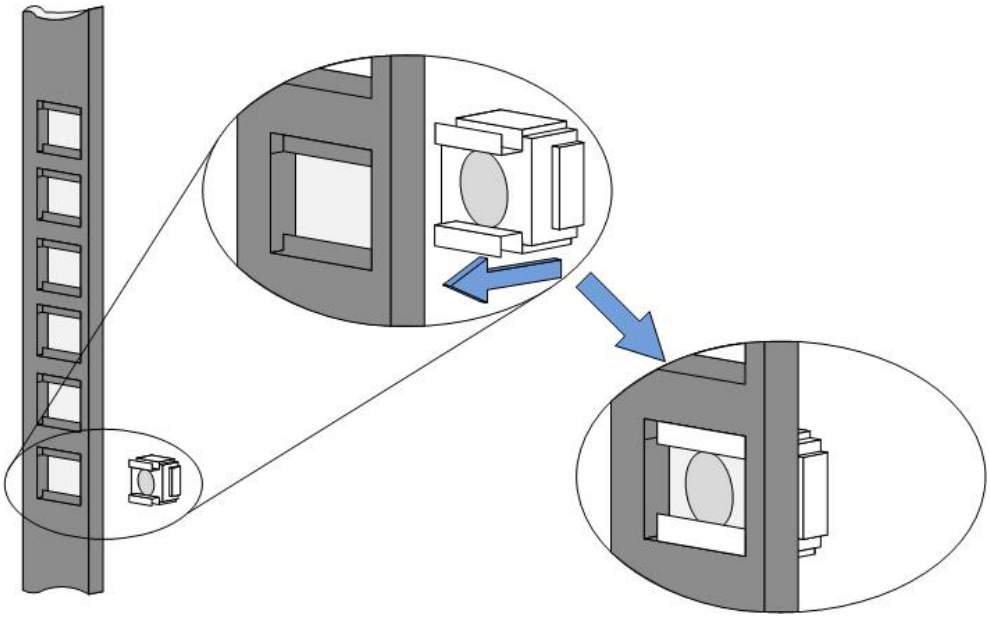

Figure 2-2

Step 3: Take out screws (packaged along with the front suspension loop), and install one end of the front suspension loop onto switch, as shown in Figure 2-3

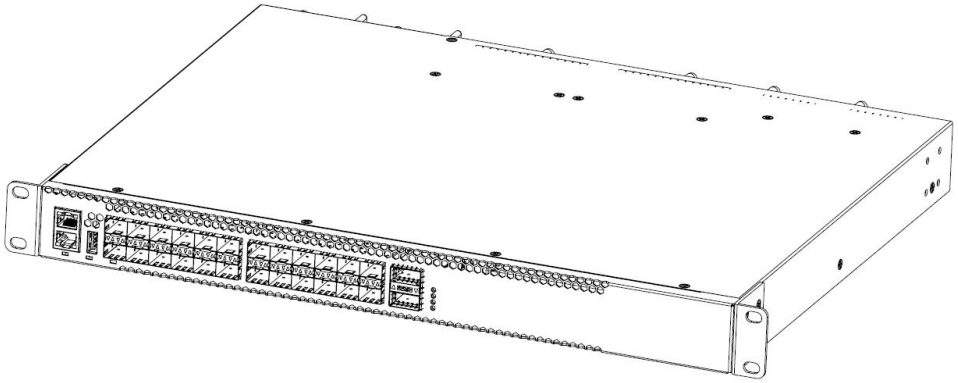

Figure 2-3 Schematic Diagram of Front Suspension Loop Installation

Step 4: Horizontally place switch on the tray, gently push it into the chassis, and fix the other end of the front suspension loop onto the front slot of the chassis with the screws and matched floating nuts.

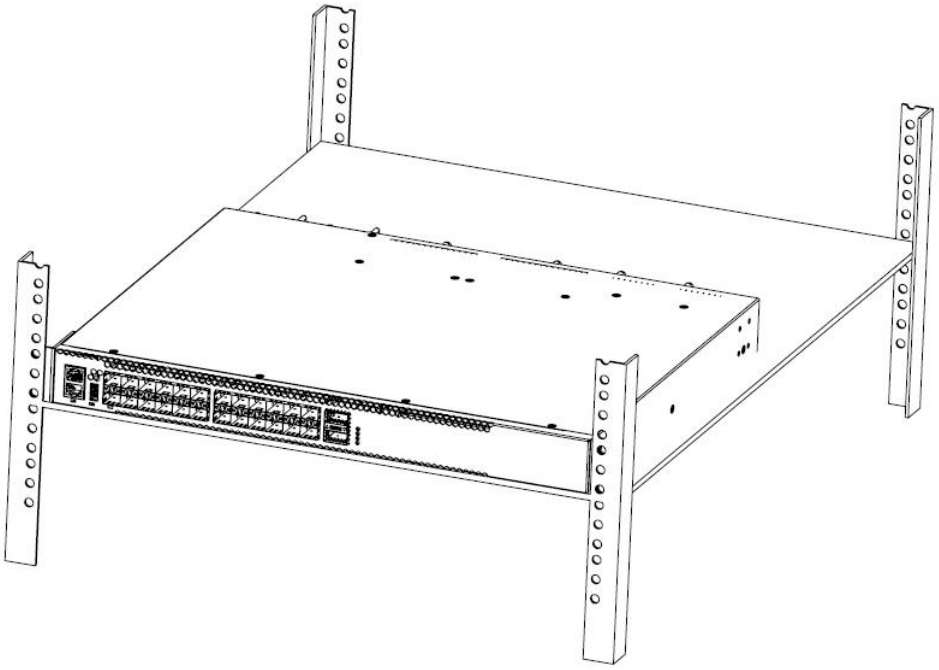

Figure 2-4 Schematic Diagram after Installing Switch onto Chassis (with Tray)

2.2.3 Installing Switch on the Table

Most users have no 19-inch standard chassis. The common practice in such case is to place switch on a clean workbench. This is simple, and only the following matters must be kept in mind:

- The workbench must be stable and grounded properly.
- A space of 10cm must be left around the switch for cooling.
- Don’t place heavy objects on the switch.
- The equipment comes with four foot pads. Please paste the pads on the bottom corners of the switch, as shown in the figure below:

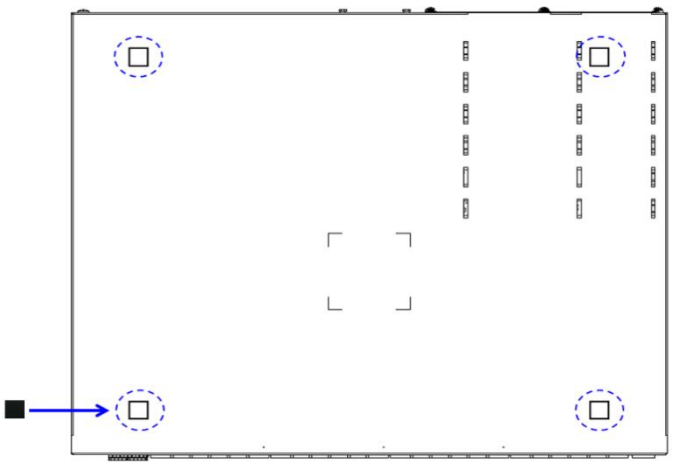

Figure 2-5 Schematic Diagram of Foot Pad Installation

2.2.4 Installation and Disassembling of Power Module

Installation Procedure

The power module of S3600 series switches support hot plug, and the installation procedure is as below:

Step 1: Wear anti-electrostatic wrist, and confirm the anti-electrostatic wrist is grounded properly.

Step 2: Figure out the correct directions of power supply (otherwise it is unable to install the power supply onto the base in a safe way).

Step 3: Hold the handle of power module with one hand, hold the bottom of power module with another hand, and push in the power module smoothly along the power supply socket until the power module completely connects with the underpan.

Step 4: Fix the power supply onto the switch via the power fixing device.

Figure 2-6 Schematic Diagram of Power Module Installation

Description:

(1): power module handle

(2): power module fixing device

Disassembling Procedure

The power module of S3600 series switches support hot plug, and the disassembling procedure is as below:

Step 1: Wear anti-electrostatic wrist, and confirm the anti-electrostatic wrist is grounded properly.

Step 2: Disconnect the power supply of switch.

Step 3: Hold power module handle and press the fixing device with one hand, and press the switch with another hand.

Step 4: Pull out the power module smoothly along the power supply socket.

Figure 2-7 Schematic Diagram of Power Module Disassembling

CAUTION

S3600 series switches can be installed with two power modules for hot spare, so that switching to another power supply (without power interruption) can be realized in the case of one power supply failure.

2.2.5 Ground Connection

The power input terminal of switch is connected with noise filter of which the central place is directly connected with the chassis, which is called chassis grounding wire (namely protective grounding wire). The chassis grounding wire must be connected properly, so that induced current and leakage current can flow into the ground safely and the ability of anti-electromagnetic interference of the complete machine can be enhanced.

Correct grounding mode:

Connect one end of the green-yellow protective grounding cable of switch to the grounding terminal of switch, and the other end to the wiring terminal on the grounding bar of machine room.

NOTE

The grounding wire of Ethernet switches must be connected and grounded with switch room. Grounding connection with fire mains and lightning rod is not correct.

Figure 2-8 Schematic Diagram of Switch Grounding Wire Installation

Description:

(1): Switch grounding terminal

(2): Protective grounding cable

(3): Grounding terminal of machine room

CAUTION

Correct connection of switch grounding terminal is an important guarantee for lightning protection and anti-interference of switches, so users must connect grounding wire correctly. The position of grounding wire connection and machine room grounding in the figure are for reference only. Please take consideration of the actual conditions of equipment.

3 Initial Startup after Power on of Switches

3.1 Building Configuration Environment and Connecting Cables

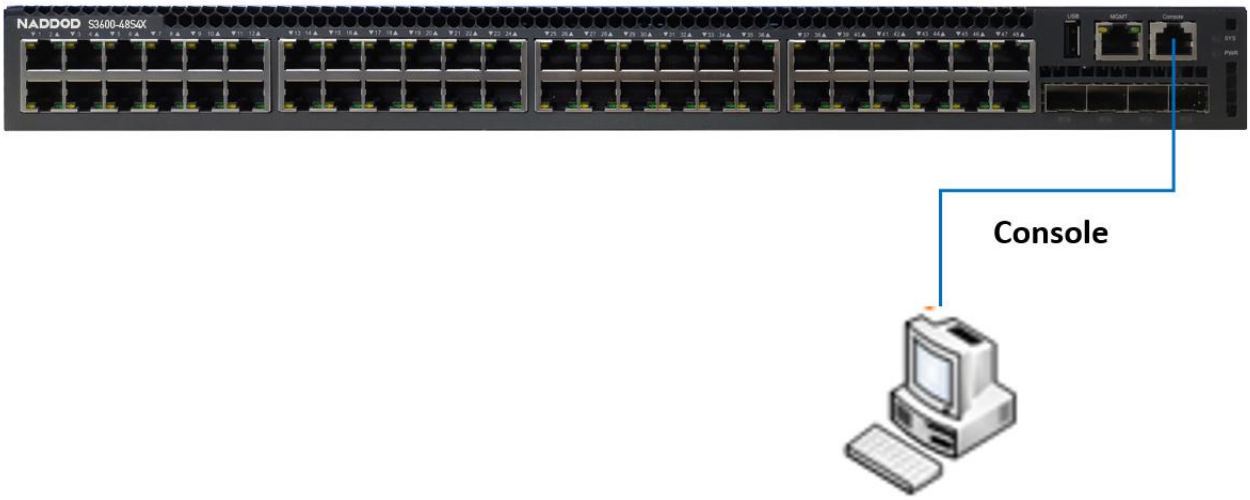

Figure 3-1 Building Local Configuration Environment via Console Port

Step 1 Connect the DB-9 hole plug of the provided cable to the serial port of a PC via which switch configuration will be made.

Step 2 Connect the RJ-45 end of the provided cable to the console port of the switch.

CAUTION

Please use the attached DB-9 to RJ-45 cable to avoid incompatibility.

3.2 Setting up Terminal Parameters (Windows Hyperterminal)

Step 1 Boot PC, and run a terminal emulator on the PC (Windows system is provided with a hyperterminal);

Step 2 Setting up terminal parameters (example of Windows XP Hyperterminal) The method is as follows:

1. Go to the hyperterminal window by tapping "start → program- → attached → communication → hyperterminal" to create a new connection, and the "Connection Description" interface will pop up as shown in the figure.

Figure 3-2 Create A New Connection

2. Type in the **name** of new connection (such as Network) in the pop-up window, click <**OK**> button, and the "Connect To" interface will pop up as shown in the figure below. Select a serial port in [**Connect using**] field.

Figure 3-3 Setting Port Connection

3. After selecting serial port, click <OK> button, the parameter setting interface for serial connection will pop up, and set the parameters as follows: bps **115200**, data bits **8**, parity **null**, stop bits **1** and data flow control null. (In other Windows operating systems, "bps" may be expressed as "Baud rate"; "data flow control" may be expressed as "flow control".)
4. After parameter setting is completed, click <OK> button, and the "Network - Hyper Terminal" interface appears as shown in the figure.

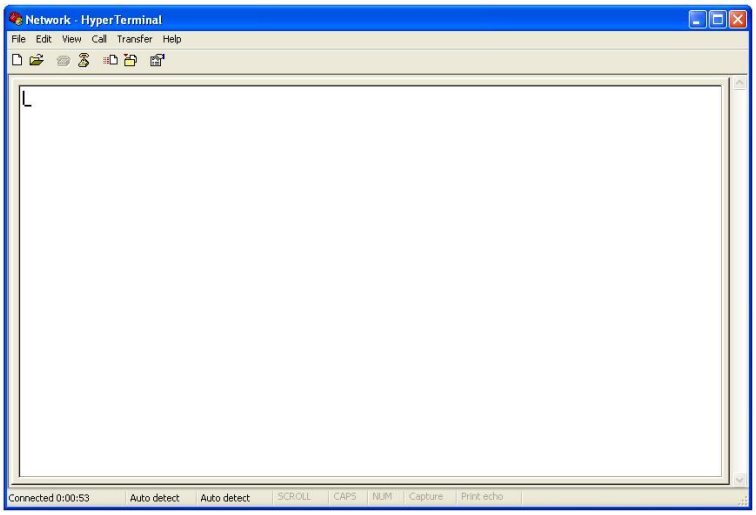

Figure 3-4 Hyper Terminal Interface

5. Choose [**File/Properties**] menu item in the hyper terminal attributes dialog box to enter Properties Window. Click "**Settings**" tab in the **Properties Window** to enter the Settings window (as shown in the figure below), choose VT100 under "Emulation:", and click <**OK**>.

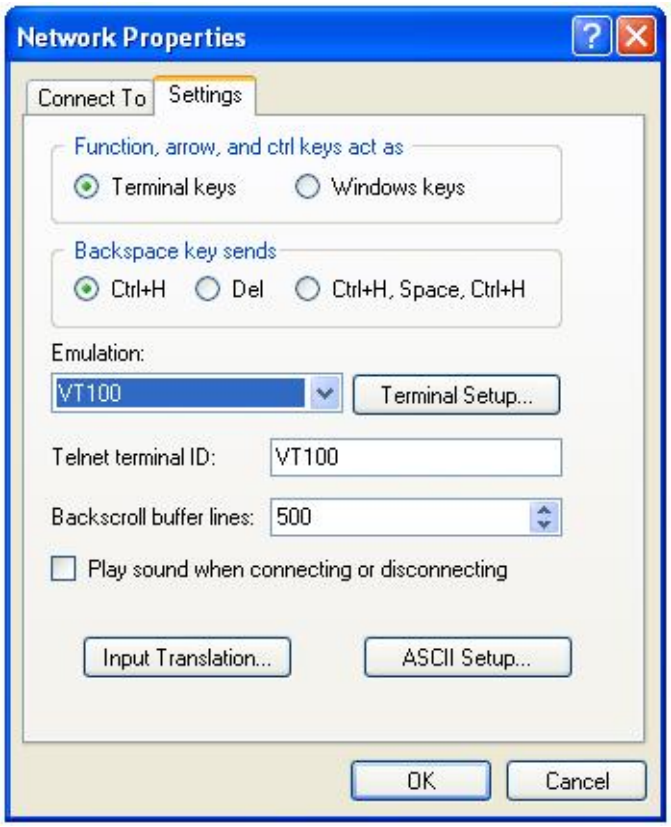

Figure 3-5 Setting of Terminal Emulation from the "Network Properties" Interface

CAUTION

Please use the attached DB-9 to RJ-45 cable to avoid incompatibility.

3.3 Setting up Port Parameters (SecureCRT)

Step 1 Install SecureCRT software on PC;

Step 2 Setting up SecureCRT terminal parameters:

1. Click "**Quick Connect**" button to enter the "quick connect" window.

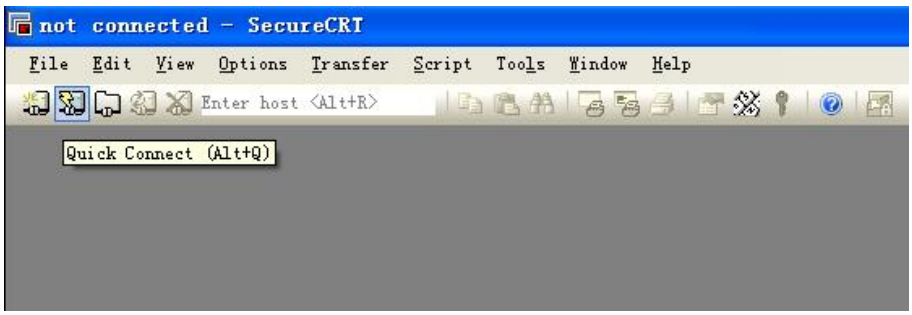

Figure 3-6 Create A Quick Connect

2. Choose "**Serial**" protocol.

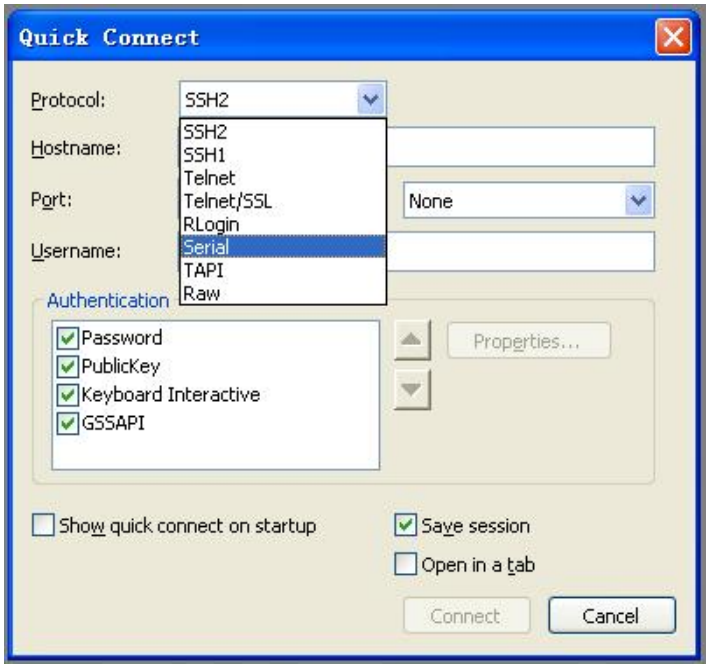

Figure 3-7 Serial Protocol Settings

3. Choose a serial number for PC (an example of COM4).

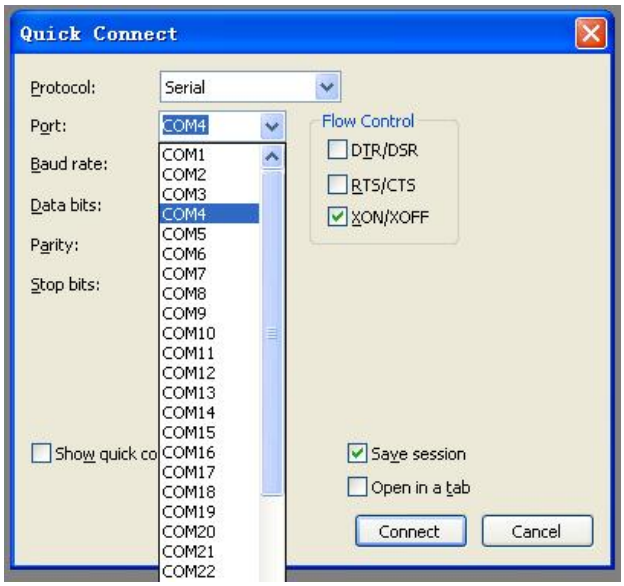

Figure 3-8 Serial Parameter Settings (Serial Number Selection)

4. Set Baud rate as **115200**, data bits as **8**, parity as **null**, stop bits as **1**, and flow control as **XON/XOFF**, and click **Connect** button.
5. Connect PC via the serial port, and you will see CL1 by pressing Enter button of the PC, as shown below.

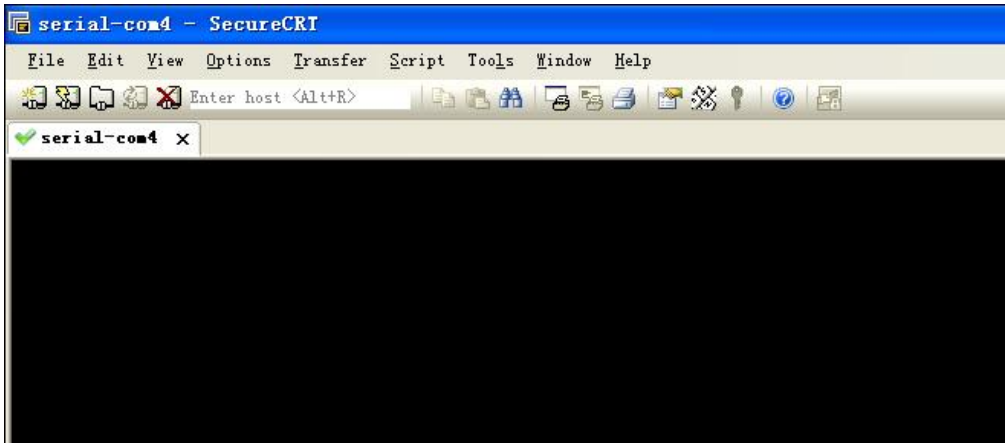

Figure 3-9 Serial Port Display Window

CAUTION

Please use the attached DB-9 to RJ-45 cable to avoid incompatibility.

3.4 Power on of Switch

After power on of switch, the terminal shows device self-checking information, and the system turns to cmd (such as

switch#) after self-checking is completed.

Type in commands to configure Ethernet switch or view running status of Ethernet switch. You can type in "?" at any time if you need help.

Please consult the command line reference or configuration guides for detailed configuration commands.

4 Technical Data

This chapter presents overall indicators, system indicators, single-board indicators and performance indicators of S3600 series products, as follows:

- Overall Parameters

4.1 Overall Parameters

Table 4-1 shows overall parameters of S3600 products.

Table 4-1 Overall Parameters of S3600 Series

Item		Parameters
Outline dimension (mm)		• S3600-24T24S4X: 440 (W) × 460 (D) × 4.4 (H) • S3600-48S4X: 440 (W) × 360 (D) × 4.4 (H)
Maximum overall power consumption (W)		• S3600-24T24S4X: 80W/100W • S3600-48S4X: 75W/100W
Weight (kg)		• S3600-24T24S4X: 6.0 • S3600-48S4X: 6.2
Operating temperature (℃)		0～45
Operating humidity		10%～95% RH, no condensation
AC input voltage	Rated voltage (V)	220
	Voltage range (V)	100～240（50Hz/60Hz）

5 Switches System Software Loading

The conventional switches software loading mode is serial port loading, which is slow, time-consuming, incapable of remote loading, and inconvenient to operation. To solve these problems, a TFTP module is introduced for switches, which enables software loading and file downloading via Ethernet port.

Step 1: Enter uBoot operation mode.

Please press Ctrl + b when Press ctrl+b to stop autoboot: appears in the start-up procedure to enter uBoot operation mode. The startup information is as follows:

```
Restarting system.
U-Boot 3.0.2 (Development build) (Build time: May 10 2011 - 17:14:19)
P1010 board revision major:1, minor:0, serial #:
P1010 pass 1.1, Core clock: 533 MHz, DDR clock: 265 MHz (530 Mhz data rate)
Board descriptor tuple not found in eeprom, using defaults
DRAM:  1 GB
Clearing DRAM..... done
Flash: 2 GB
BIST check passed.
Net:    octeth0, octeth1
Press ctrl+b to stop autoboot:  3   – Press Ctrl + b to enter uBoot operation mode
```

Step 2: Determine one PC as loading server, and connect the management port of switch to this PC with network cable; set the IP address of this PC and the management IP address of switch to be in the same network segment. The method is as follows:

1) Use the command help open_all to open all commands.
2) Use the command setenv ipaddr address to set up the management IP address of switch. Switches can copy system Image from TFTP server via this address.
3) Use the command setenv serverip address to set up the IP address of server.
4) Use the command ping to check connectivity of switch with the loading server.
5) Use the command printenv to view current environment variables of switch.
6) Use the command saveenv to save current environment variables of switch to EPROM.

7) Use the command reenv to restore environment variables of switch to default.

Step 3: Run TFTP Server program on the PC serving as server, and set the catalogue for files to be loaded, assuming the uBoot file to upgraded as u_boot_v1.0.bin.

Run the command upgrade_uboot u_boot_v1.0.bin to upgrade uBoot; here the filename is u_boot_v1.0.bin.

Step 4: Run the command upgrade_uboot filename spiflash to upgrade uBoot. Here the filename is u_boot_v1.0.bin.

Step 5: Run the command reset to complete uBoot upgrade.

6 Switches Operating System Upgrade

S3600 series switches can be upgraded via operating system software rather than replacing hardware to add new features and enhance system performance.

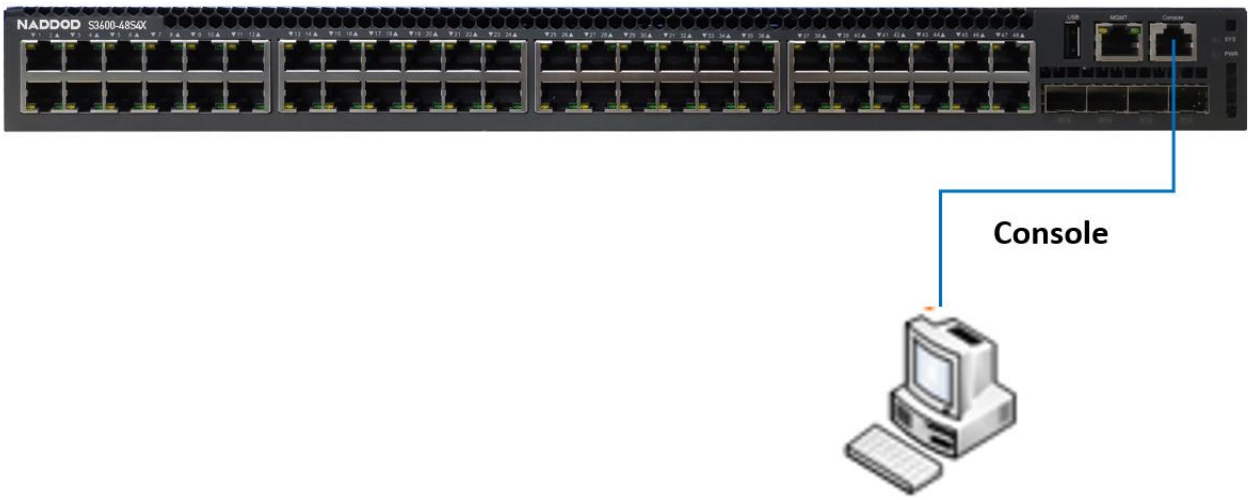

Figure 6-1 Upgrading Operating System

Step 1: Copy system software to be upgraded to switch

In privilege mode of switch, use the command copy to copy the software image on TFTP server to the folder boot of switch Flash.

```
Switch# copy mgmt-if tftp://10.10.29.160/SwitchOS-ma-v3.1.12.it.r.bin flash:/boot/ SwitchOS-ma-v3.1.12.it.r.bin
```

Please check whether the Flash space of switch is enough. If the space is insufficient, please remove unnecessary files.

Step 2: Assign software image file for next loading of the system.

After copying the new software Image file to the designated folder of switch, you can use the command boot to set the image as the software Image for use by the switch after reboot next time.

```
Switch(config)# boot system flash:/boot/SwitchOS-ma-v3.1.12.it.r.bin
```

Step 3: View the software Image loaded after reboot of the switch next time

After setting the Image for use by the switch after reboot next time, you can use the command show to view whether the setting is correct.

```
Switch# show boot images
System image files list:
Current boot image version: 3.1.12
   Create Time               Version                  File name
=====================================================================
2011-01-01 15:03:30          3.1.11                   SwitchOS-ma-v3.1.11.it.r.bin
* 2011-05-28 10:08:38          3.1.12                   SwitchOS-ma-v3.1.12.it.r.bin
```

As shown above, the asterisked file is the system image of operating system software to be loaded after reboot of the switch next time.

7 Maintenance and Troubleshooting

7.1 Troubleshooting of Load Failure

In the case of load failure, the system will run the original version. In this case, users ought to check connection of physical ports first. If port connection is not made properly, reconnect the ports correctly, and conduct reloading. If physical connection has no problem, check the loading process information displayed on the hyper terminal for input error. If input error exists, correct the input error, and conduct reloading. For example, inputting wrong IP addresses of Server or Switch or wrong loader software name, or failure to designate correct operating path of correct TFTP server when using TFTP protocol. If you fail to load without physical connection error and input error, please contact your technical support/salesperson/agent for help.

7.2 User Password Loss

If the system password is lost or forgotten, you can reset password as below:

- Enter uBoot operation mode;
- Type in the following commands in uBoot mode to boot the system

  Bootrom> setenv bootargs 'console=ttyAMA0,115200n8 bootimage=uImage nopass1 quiet earlycon=pl011,0x33000000'

  Bootrom> run bootcmd

CAUTION

By using the above commands, the system will clear the file startup-config; the startup-config file before this action will be saved to flash:/startup-config.conf.old file.

7.3 Troubleshooting of Power-supply System Failure

You can judge whether the power-supply system of switch goes wrong via the PWR indicator on the front panel: PWR indicator being always on means normal operation; please run checks if the PWR indicator is off:

- Whether the power cord of switch is connected correctly.
- Whether the power supply matches the required power supply (AC or DC).

7.4 Troubleshooting of Configuration System Failure

After the switch is powered on, startup information will be shown on the configuration terminal if the system is normal; the configuration terminal may show no information or random codes if the configuration system goes wrong.

7.5 Troubleshooting of Terminal No-show Fault

If the configuration terminal shows no information after power on, run checks as follows:

Step 1: Whether the power is normal.

Step 2: Whether the Console port cable is connected correctly.

Step 3: If the problem persists after the checks above, it is probably because the provided cable cannot work or terminal (such as hyper terminal) parameters are set incorrectly. Please run checks as necessary.

Step 4: Troubleshooting of terminal showing random codes

If the configuration terminal shows random codes, it is probably because terminal (such as hyper terminal) parameters are set incorrectly. Please confirm the parameter settings of terminals (such as hyper terminal): Baud rate 115200, data bits 8, parity null, stop bits 1, and flow control null, and terminal emulation VT100.