NADDOD S3200P/S2200 Series Ethernet Switches Installation Instruction Manual

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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

Foreword

Overview

This document presents product introduction, installation guide, startup after power on, maintenance and troubleshooting of S3200P & S2200 Series full Gigabyte Ethernet Switches (hereinafter referred to as S3200P & S2200 Series).

Product Version

The product versions corresponding to this document are as follows.

Product name	Hardware version
S3200P-24T4X	
S3200P-48T4X	
S2200-24T4X	
S2200-48T4X	

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.

Symbol	Description
 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

S2200 & S3200P Series Ethernet Switches are new generation high-performance Gigabyte Ethernet Switches launched by Naddod Networking, which provide rich port forms such as 10/100/1000Base-T self-adapting Ethernet port and 10G SFP+ optical interface, support pluggable dual power supply, and are widely applied in network environment of high-performance, high reliability, high port density and convenience in installation to address users' needs of enterprise-class access or tandem low-end switches.

1.1 Product Model Description

Table 1-1 S3200P&S2200 Switches

Product model	Description
S3200P-24T4X	• Standard 1RU 19-inch chassis • 24 10/100/1000 Base-T ports, including 4 Combo ports and 4 10G SFP+ ports • POE+ • Pluggable dual power supply
S3200P-48T4X	• Standard 1RU 19-inch chassis • 48 10/100/1000 Base-T ports, including 4 10G SFP+ ports • POE+ • Pluggable dual power supply
S2200-24T4X	• Standard 1RU 19-inch chassis • 24 10/100/1000 Base-T ports, including 4 10G SFP+ ports • Built-in fixed single power supply

Product model	Description
S2200-48T4X	• Standard 1RU 19-inch chassis • 48 10/100/1000 Base-T ports, including 4 10G SFP+ ports • Built-in fixed single power supply

1.2 S3200P&S2200 Series Front Panel Description

1.2.1 S3200P-24T4X

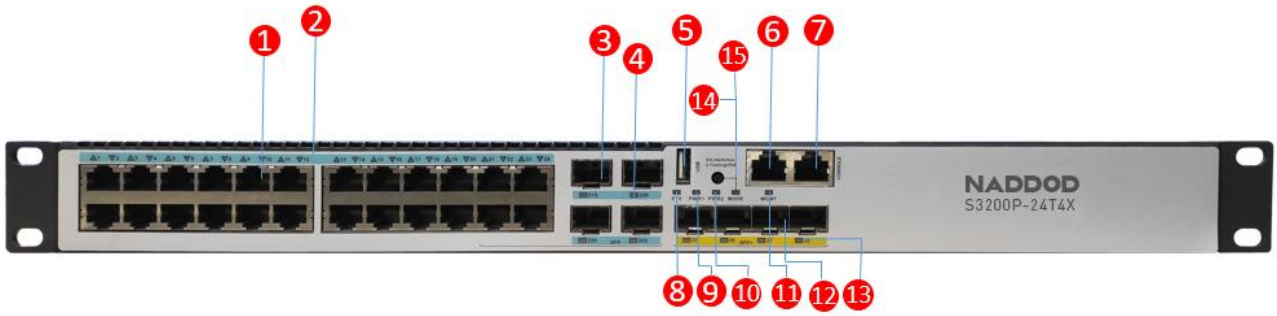


Figure 1-1 Schematic Diagram of S3200P-24T4X Front Panel

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

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

(3): SFP Combo port

(4): SFP port status indicator

(5): USB port

(6): Ethernet management port

(7): CONSOLE port

(8): System status indicator (SYS)

(9): Pluggable power module 1 status indicator (PWR1)

(10): Pluggable power module 2 status indicator (PWR2)

(11): Ethernet management port status indicator (ACT/LINK)

(12): 10G SFP+ port

(13): 10G SFP+ port status indicator

(14): Mode switch (POE lamp/link&ACT lamp)

(15): Mode switch lamp (POE lamp/link&ACT lamp)

1.2.2 S3200P-48T4X

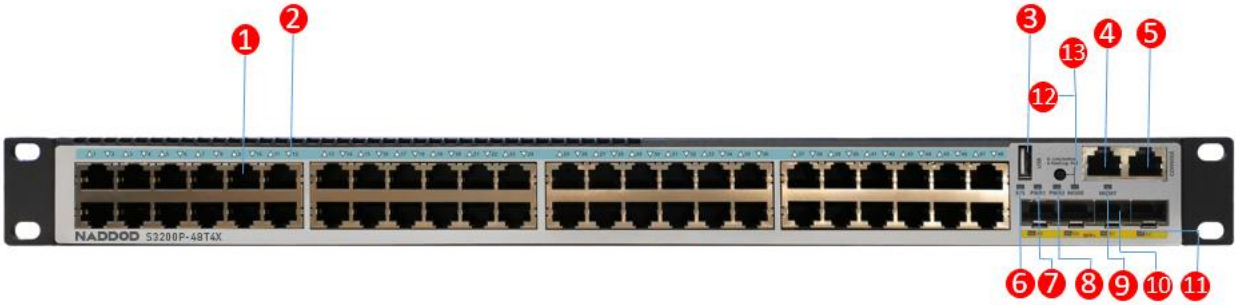


Figure 1-2 Schematic Diagram of S3200P-48T4X Front Panel

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

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

(3): USB port

(4): Ethernet management port

(5): CONSOLE port

(6): System status indicator (SYS)

(7): Pluggable power module 1 status indicator (PWR1)

(8): Pluggable power module 2 status indicator (PWR2)

(9): Ethernet management port status indicator (ACT/LINK)

(10): 10G SFP+ port

(11): 10G SFP+ port status indicator

(12): Mode switch (POE lamp/link&ACT lamp)

(13): Mode switch lamp (POE lamp/link&ACT lamp)

1.2.3 S2200-24T4X

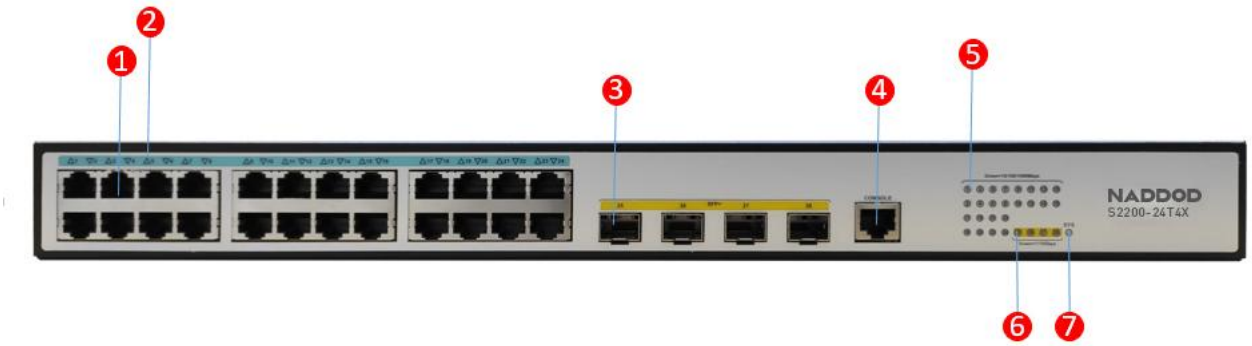


Figure 1-3 Schematic Diagram of S2200-24T4X Front Panel

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

(2): Port number direction indicator

(3): 10G SFP+ port

(4): CONSOLE port

(5): 10/100/1000BASE-T Ethernet port status indicator

(6): 10G SFP+ port status indicator

(7): System status indicator (SYS)

1.2.4 S2200-48T4X

Figure 1-4 Schematic Diagram of S2200-48T4X Front Panel

(1): 10/100/1000BASE-T self-adapting Ethernet port
(2): 10/100/1000BASE-T Ethernet port status indicator
(3): Reset button
(4): System status indicator (SYS)
(5): Power indicator (PWR)
(6): 10G SFP+ port
(7): 10G SFP+ port status indicator
(8): CONSOLE port

1.3 S3200P Series Back Panel Description

1.3.1 S3200P-24T4X

Figure 1-5 Schematic Diagram of S3200P-24T4X Back Panel

(1): Grounding screw
(2): Cooling fan
(3): Pluggable power module 1 (PSU1)
(4): Pluggable power module 2 (PSU2)

1.3.2 S3200P-48T4X

Figure 1-6 Schematic Diagram of S3200P-48T4X Back Panel

(1): Grounding screw

(2): Cooling fan 1

(3): Cooling fan 2

(4): Pluggable power module 1 (PSU1)

(4): Pluggable power module 2 (PSU2)

1.3.3 S2200-24T4X

Figure 1-7 Schematic Diagram of S2200-24T4X Back Panel

(1): Grounding screw (2): AC power port

1.3.4 S2200-48T4X

Figure 1-8 Schematic Diagram of S2200-48T4X Back Panel

(1): Grounding screw (2): AC power port

1.4 S3200P&S2200 Series Port Description

1.4.1 Service Port

Table 1-2 shows service ports of S3200P&S2200 Series.

Table 1-2 Service Ports of S3200P Series

Port type		Count	Description
Uplink port	S3200P-24T4X	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

Port type		Count	Description
	S3200P-48T4X	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
	S2200-24T4X	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
	S2200-48T4X	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	S3200P-24T4X	24+4Combo	24 10/100/1000BASE-T self-adapting electrical interfaces (4 Combo SFPs); All the electrical interfaces can provide POE/PoE+ power supply for remote PD devices, and the maximum output power of each interface is 30W; Be capable of supporting 24 ports 30W power supply to the maximum; Equip power supply depending on the actual power demand
	S3200P-48T4X	48	48 10/100/1000BASE-T self-adapting electrical interfaces; All the electrical interfaces can provide POE/PoE+ power supply for remote PD devices, and the maximum output power of each interface is 30W; Be capable of supporting 48 ports 30W power supply to the maximum; Equip power supply depending on the actual power demand
	S2200-24T4X	24	24 10/100/1000BASE-T self-adapting electrical interfaces;
	S2200-48T4X	48	48 10/100/1000BASE-T self-adapting electrical 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

Combo Port

The front panel of S3200P-24T4X switches provides four fixed Combo ports. A Combo port consists of one SFP port and one corresponding 10/100/1000BASE-T self-adapting Ethernet port, only one of which can be active at one time.

1.4.2 Management Port

Console Port

The front panel of S3200P&S2200 Series Switches provides a serial CONSOLE port, of which the properties are shown in Table 1-6.

Table 1-6 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

The front panel of S3200P Series Switches provides an Ethernet management port. This port is independent from the operation condition of switching chip, and is 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
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

Property	Description
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 S3200P 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 S3200P 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 S3200P&S2200 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	Initialization phase of Linux core, or the switch has been successfully booted
	Green, flash (S3200P-24T4X)	System fails in power on self-test or equipment failure
	Red, always on	System fails in power on self-test or equipment failure
	Off	Switch is power off or system booting fails

1.5.2 Power Indicator

The back panel of S3200P Series Switches provides two pluggable power module sockets. S2200 Series Switches support one power supply. The running state of 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	Normal output of power module
	Off	Fault or failure to power on of power module

1.5.3 Port Mode Indicator

To allow users to grasp more device information via the “port status indicator” of various ports of switches, the “port status indicator” of 10/100/1000BASE-T self-adapting Ethernet port of S2200 and S3200P Series Switches shows detailed operating state of the port from different aspects.

- The “port mode indicator” is designed to help users understand the current conditions of “port status indicator”.
- The display status of the “port mode indicator” can be adjusted via the “port status indicator mode switch” to realize final control over the display information of the “port status indicator”.

Table 1-10 Port Mode Indicator Description

Indicator name	Status	Description
MODE	Green, always on	The port status indicator indicates port Link/Active status
	Green, flash	The port status indicator indicates port PoE power supply situation

1.5.4 Ethernet Management Port Indicator

Table 1-11 Ethernet Management Port Indicator Status Description

Indicator name	Status	Description
ACT/Link	Green, always on	The port is linked up
	Green, flash	The port is receiving or sending data
	Off	The port is not linked up

1.5.5 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 1-12.

Table 1-12 Description of 10/100/1000BASE-T Self-adapting Ethernet Port Status Indicator

Indicator status		Indicator meaning
Port mode indicator (MODE)	**Ethernet port status indicator**	
Green, always on (Link/Active mode)	Green, always on	The port is linked up
	Green, flash	The port is receiving or sending data
	Off	The port is not linked up
Green, flash (PoE mode, only supported by S3200P-24T4X, S3200P-48T4X	Green, always on	Normal PoE power supply
	Green, flash (1Hz)	The power consumption required by the device connected to the port is beyond the port power supply limit; PoE is in failure state (such as overcurrent, overvoltage, short circuit, etc.) or the surplus power supply of switches is insufficient to meet the power requirement of the port
	Off	The port is not connected or PoE feature is not enabled on the port

1.5.6 SFP Port/ SFP+ Port Status Indicator

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

SFP Port/ SFP+ Port Status Indicator	Description
Green, always on	The port is linked up
Green, flash	The port is receiving or sending data
Off	• The port is not linked up • The port mode indicator works in PoE mode (applicable for PoE machines only)

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, S3200P 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 Requirements of POE Machines

Item	S3200P-24T4X	S3200P-48T4X
Working condition temperature	0℃～50℃	0℃～50℃
Working condition relative humidity (non-condensation)	10%～90%	10%～90%

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
- Nipper pliers
- Diagonal pliers
- Crimping pliers
- Marking pen

NOTE

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

2.2 Installation

S3200P&S2200 series switches can be installed in two ways:

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

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

Suspension Loop

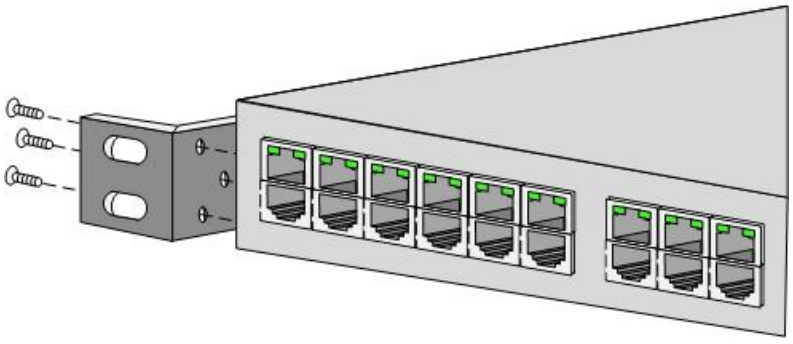


Figure 2-1

CAUTION

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

Installation Steps

Step 1 Inspect the stability of chassis.

Step 2 Install suspension loops and fix with screws. Figure 2-1 **.** shows how to install suspension loops on one side. The installation of the other suspension loops is same.

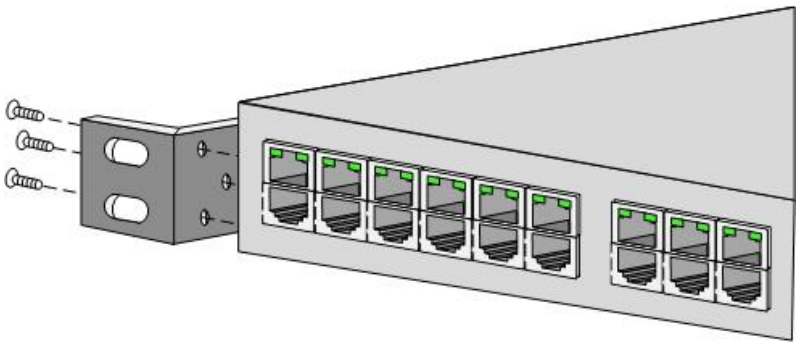


Figure 2-1

Step 3 Install floating nuts onto the chassis, as shown in Figure 2-2;

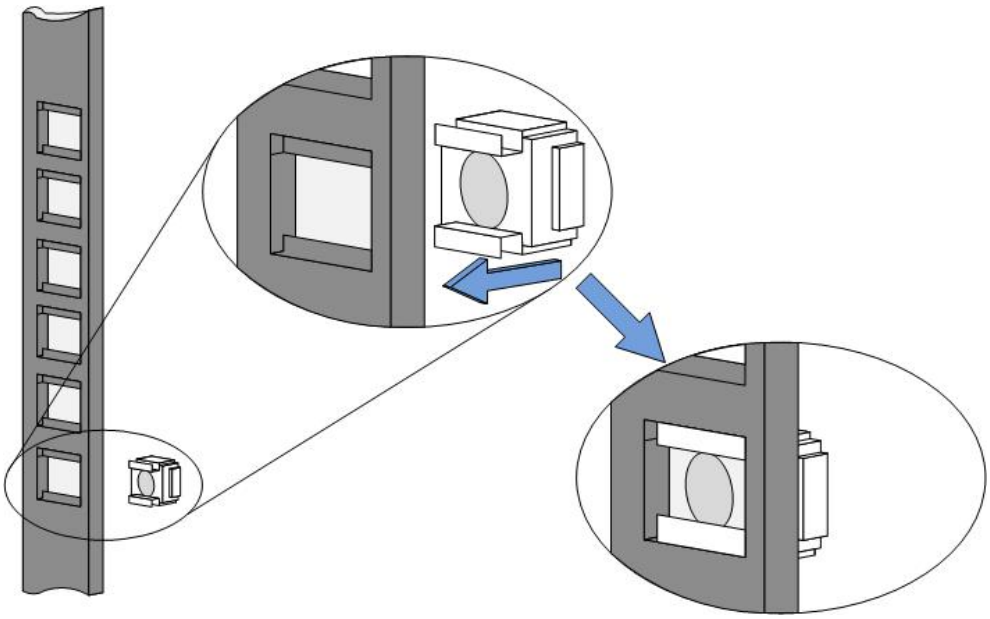


Figure 2-2

Step 4 Install slide path onto the chassis, as shown in Figure 2-3

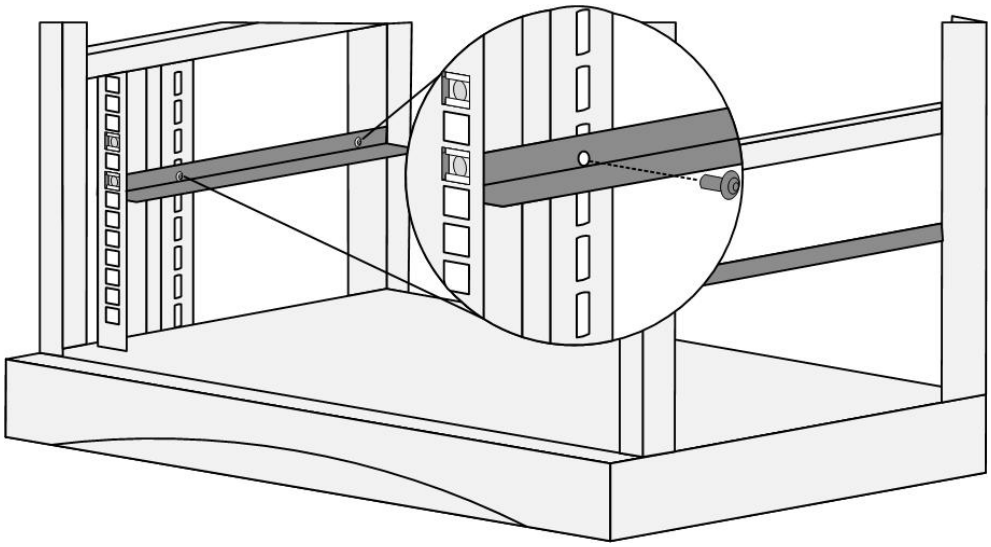


Figure 2-3

Step 5 Horizontally fix suspension loops onto the guide slots of the chassis to complete the installation, as shown in Figure 2-4.

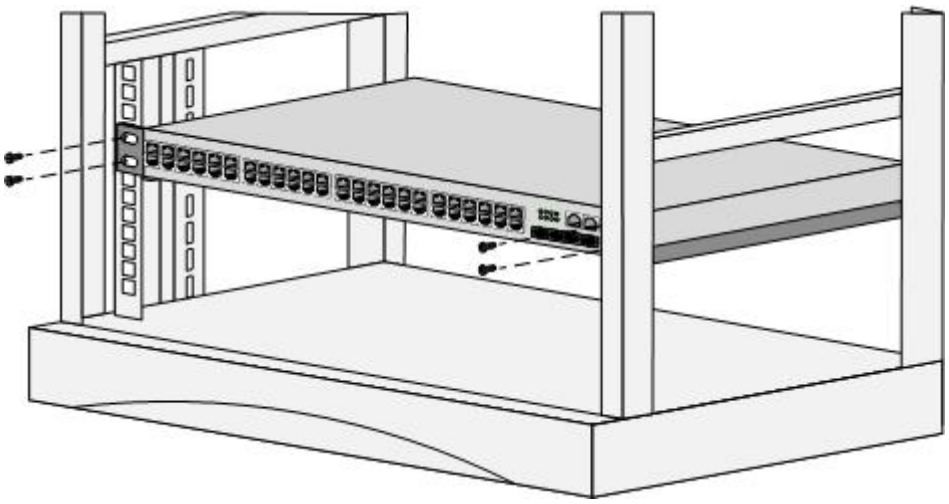


Figure 2-4

2.2.2 Installation and Disassembling of Power Module

Installation Procedure

The power module of S3200P series switches support hot plug, and the installation procedure is as below:

Step 1 Operators must wear anti-electrostatic wrist strap. Make sure that the anti-electrostatic wrist strap contacts the skin properly and 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 Select a power supply socket to install power module. Operators must face the power supply socket of switch squarely.

Step 4 Figure out the correct directions of power supply (for inserting power module, the side with text of power module is forward direction). Hold the handle of power module with one hand,

hold the bottom of power module with another hand, and horizontally insert the power module along the power supply socket slide path until the power module is in place.

Figure 2-5 Schematic Diagram of Power Module Installation

(1): Power installation screw (2): Power handle

Disassembling Procedure

The power module of S3200P series switches support hot plug, and the disassembling procedure is as below:

Step 1 Operators must wear anti-electrostatic wrist strap. Make sure that the anti-electrostatic wrist strap contacts the skin properly and 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, press the switch with another hand, and gently pull out the power module along the slide path horizontally.
Step 4 Gently pull out the power module along the slide path horizontally.

Figure 2-6 Schematic Diagram of Power Module Disassembling

(1): Power handle

2.3 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 2-7 Schematic Diagram of Switch Grounding Wire Installation

Description:

(1): Switch grounding terminal

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

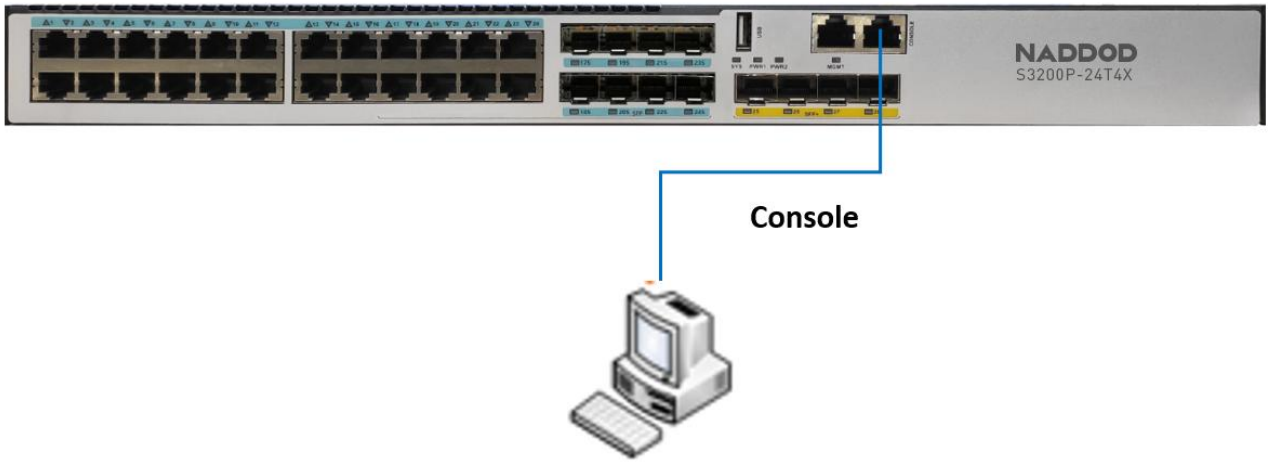


Figure 3-1 Building Local Configuration Environment via Console Port

Step 1 Connect the USB 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 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.

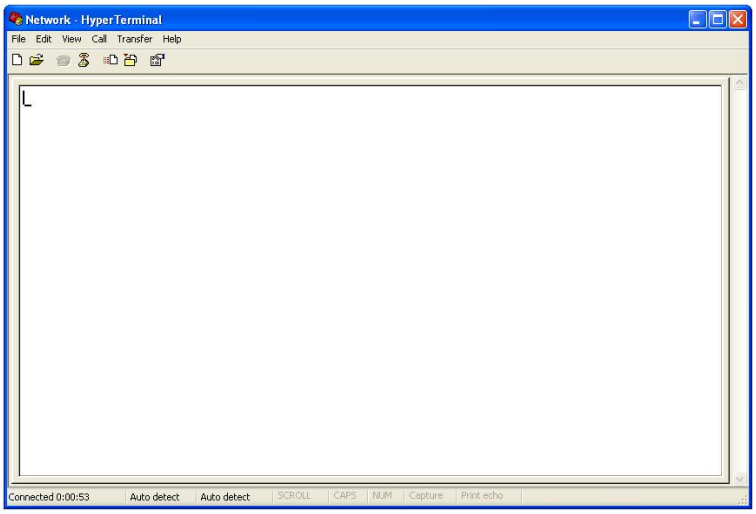


Figure 3-4 Hyper Terminal Interface

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**>.

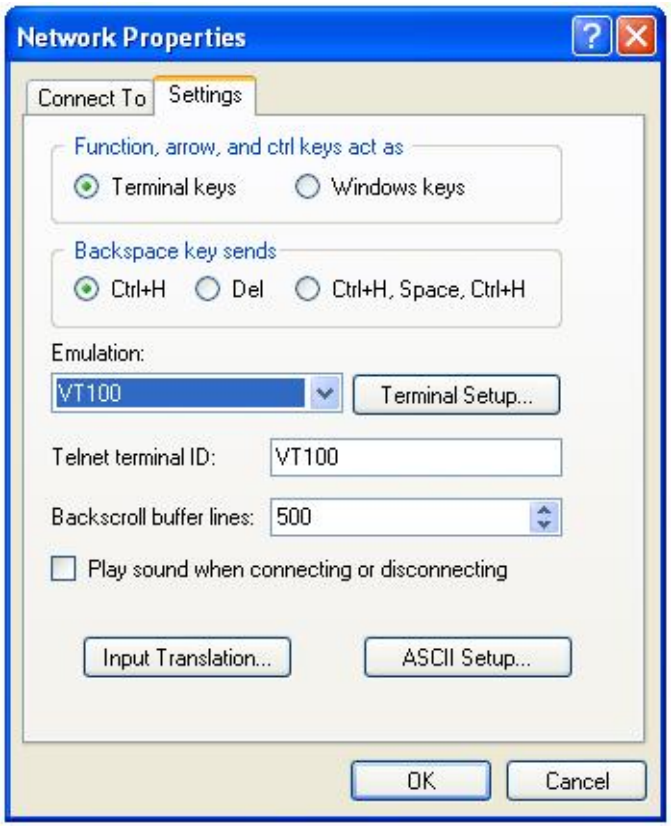


Figure 3-5 Setting of Terminal Emulation from the "Network Properties" Interface

CAUTION

Please use the attached 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.

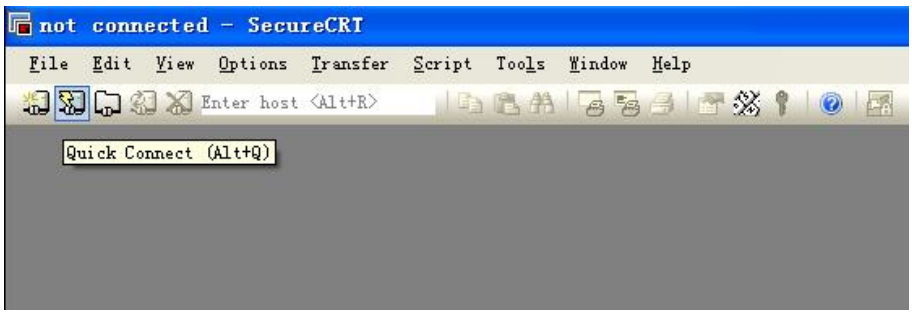


Figure 3-6 Create A Quick Connect

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

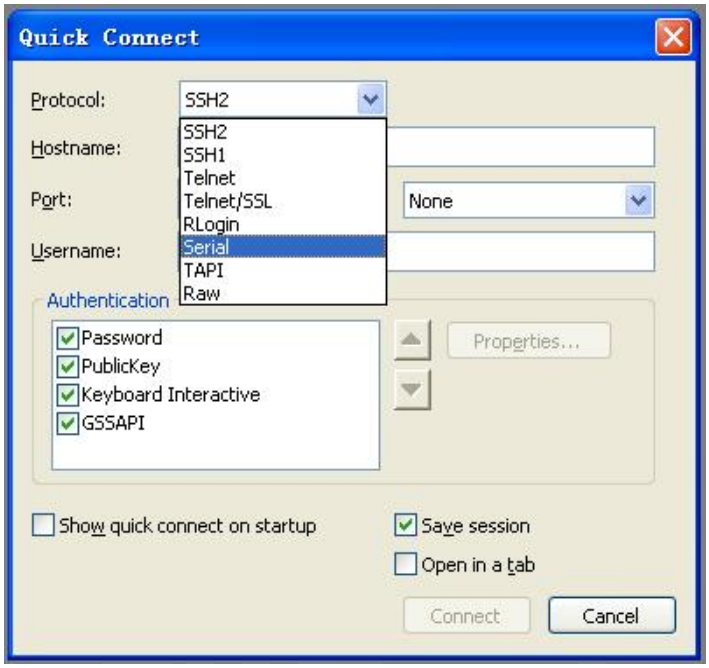


Figure 3-7 Serial Protocol Settings

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

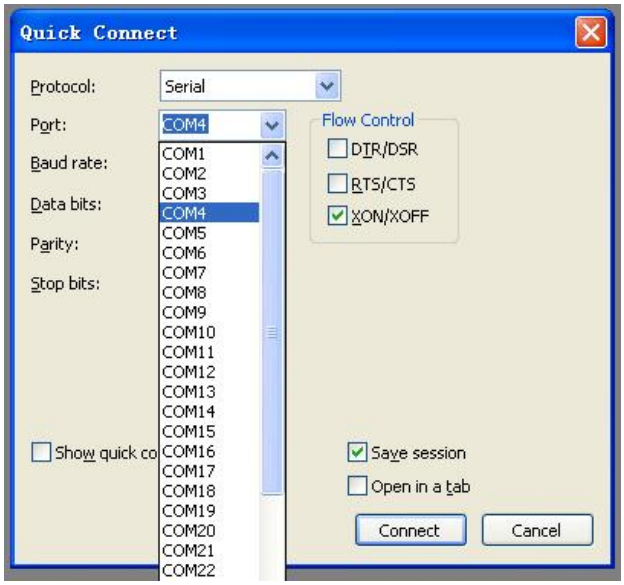


Figure 3-8 Serial Parameter Settings (Serial Number Selection)

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.

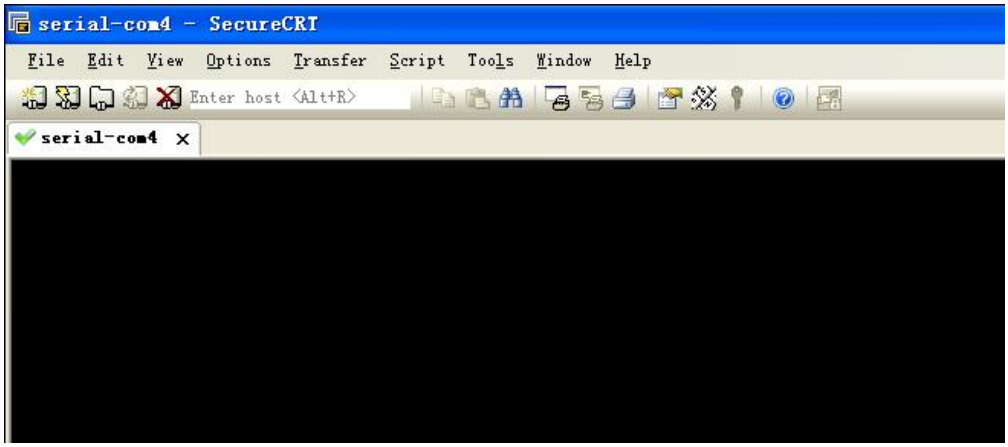


Figure 3-9 Serial Port Display Window

CAUTION

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

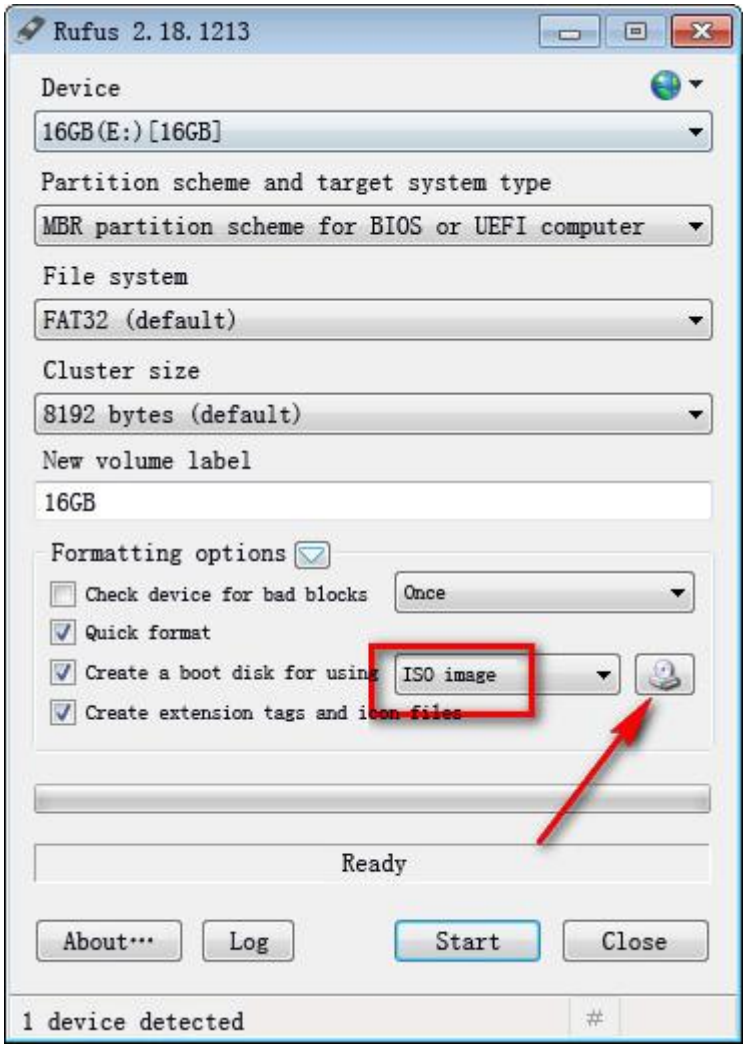
3.4 Power on of Switch

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

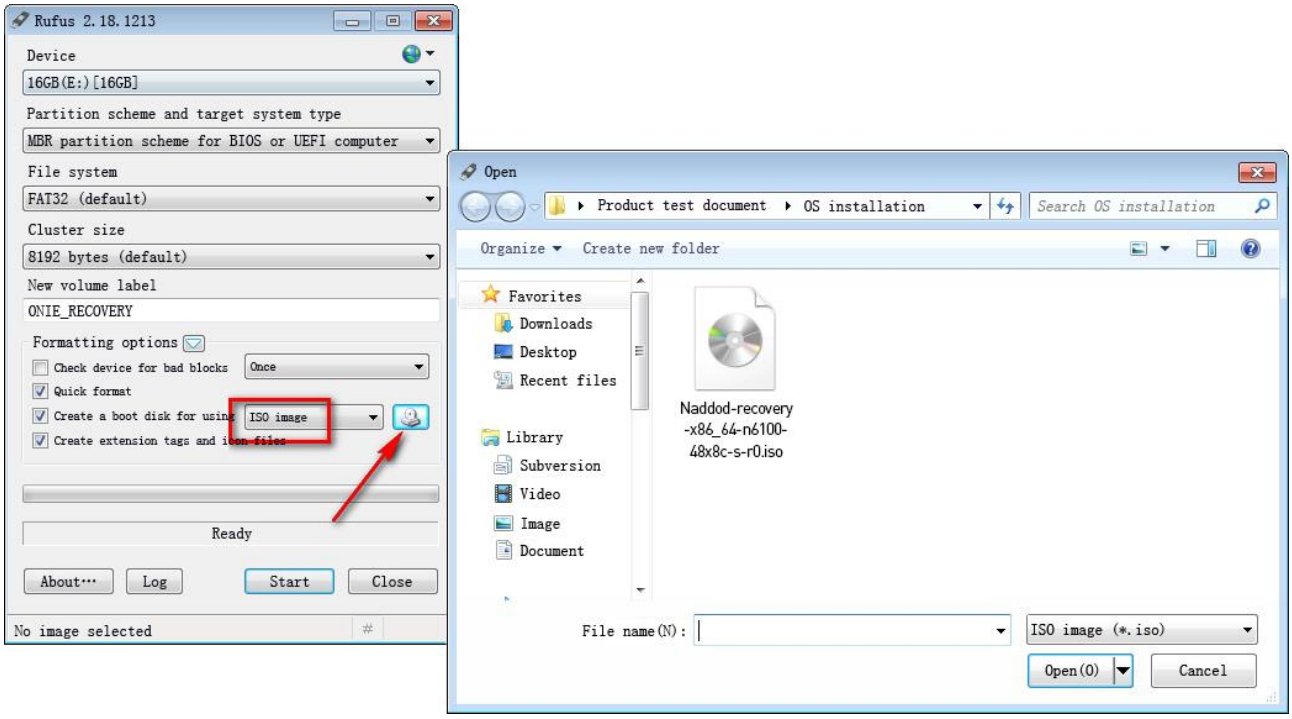
switch#) after self-checking is completed.

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.



A. Click the arrow-pointed icon, enter the path where the file naddod-recovery-x86_64-n6100-48x8c-s-r0.iso is saved in the pop-up window, and select it to open.



A. Click Start button, choose DD Image Mode to write in in the pop-up dialog box, and click OK, until the startup disk making is completed.

4 Technical Data

This chapter presents overall indicators, system indicators, single-board indicators and performance indicators of S3200P&S2200 series products, as follows:

- Overall Parameters
- Laser Safety Class
- Reliability Indicators
- EMC Indicators
- Safety Standards
- Environment Requirements
- Standards and Protocols

4.1 Overall Parameters

Tables 4-1 and 4-2 show overall parameters of S3200P&S2200 products.

Table 4-1 Overall Parameters of S3200P Series

Item		Parameters
Outline dimension (mm)		• S3200P-24T4X：440 (W) × 460 (D) × 43.6 (H) • S3200P-48T4X：440 (W) × 460 (D) × 43.6 (H)
Maximum overall power consumption (W)		• S3200P-24T4X: 45/720W • S3200p-48T4X: 60/1440W
Weight (kg)		• S3200P-24T4X: 5 • S3200P-48T4X: 5.5
Operating temperature (℃)		0～50
Operating humidity		10%～90% RH, no condensation
AC input voltage	Rated voltage (V)	220
	Voltage range (V)	100～240（50Hz/60Hz）
Lightning	AC power supply	• Difference mode: 6, common mode: 6

Item		Parameters
Outline dimension (mm)		• S3200P-24T4X：440 (W) × 460 (D) × 43.6 (H) • S3200P-48T4X：440 (W) × 460 (D) × 43.6 (H)
Maximum overall power consumption (W)		• S3200P-24T4X: 45/720W • S3200p-48T4X: 60/1440W
Weight (kg)		• S3200P-24T4X: 5 • S3200P-48T4X: 5.5
Operating temperature (℃)		0～50
Operating humidity		10%～90% RH, no condensation
protection grade	(kV)	
	Ethernet electrical interface (kV)	Indoor common mode 6

Table 4-2 Overall Parameters of S2200 Series

Item		Parameters
Outline dimension (mm)		• S2200-24T4X: 440 (W) ×160 (D) ×43.6 (H) • S2200-48T4X: 440 (W) ×240 (D) ×43.6 (H)
Maximum overall power consumption (W)		• S2200-24T4X: 27/60 • S2200-48T4X: 37/60
Weight (kg)		• S2200-24T4X: 3.2 • S2200-48T4X: 3.5
Operating temperature (℃)		0～50
Operating humidity		10%～90% RH, no condensation
AC input voltage	Rated voltage (V)	220
	Voltage range (V)	100～240（50Hz/60Hz）
Lightning protection grade	AC power supply (kV)	• Difference mode: 6, common mode: 6
	Ethernet electrical interface (kV)	Indoor common mode 6

4.2 Laser Safety Class

The optical output power of the laser device of S3200P&S2200 series products shows the products are of laser safety class 1.

The maximum optical output power of Class 1 laser devices is lower than 10dBm (10mW).

The laser beam in the optical fiber is likely to burn human eyes. Please don't look straight at the optical port during installation and maintenance.

4.3 Reliability Indicators

The reliability indicators of S3200P&S2200 series products mainly include system availability, average annual return rate, MTTR, MTBF, and so much more, as shown in Table 4-3.

Table 4-3 Reliability Indicators of S3200P&S2200

Item	Indicator requirement
System availability	99.999%, annual downtime not longer than 5 min
Average annual return rate	Lower than 1.5%
MTTR	Less than 2h
MTBF	100000 hours

4.4 EMC Indicators

S3200P&S2200 Series devices are designed in accordance with ETS300 386 series and ETS 300127 suggestions formulated by ETSI, and have passed EMC-related tests (Electromagnetic Compatibility).

4.5 Safety Standards

S3200P&S2200 series comply with the following safety standards:

- EN 60950
- UL 60950
- CSA C22.2 No. 60950-1-03
- CSA C22.2 No. 60950-1-07
- 47 CFR FCC Part 15 Subpart B (Class A),ANSI C63.4

4.6 Environment Requirements

For environment requirements, the following standards are complied with:

- GF 014-1995 Environment conditions of equipment room for communications

- YDT 1821-2008 The requirements of environment conditions of Central Equipment room for Communications
- NEBS GR-63-CORE: Network Equipment-Building System (NEBS) Requirements: Physical Protection
- ETSI (European Telecommunication Standards Institute) EN 300 019

4.6.1 Storage Conditions

Climatic Circumstance

The requirements for climatic circumstance for the storage of S3200P&S2200 series are as shown in Table 4-4.

Table 4-4 Climatic Circumstance Requirements for Storage

Item	Range
Atmospheric pressure (kPa)	86～106
Temperature (℃)	-25～+60
Relative humidity	10%～90% RH
Solar radiation (W/s²)	≤1120
Thermal radiation (W/s²)	≤600
Wind speed (m/s)	≤20

Waterproof Requirements

Onsite equipment storage requirement: generally, indoor storage must be guaranteed.

For indoor storage, the storage place must be free of standing water, and water seepage into packaging box is not allowed. Equipment storage place must keep far away from areas where water leakage is likely to occur, such as fire-fighting equipment, heater, etc.

If outdoor storage is unavoidable, all the following conditions must be met as below:

- The packaging box is intact;
- Necessary rain shade is provided to shelter the packaging box from rainwater;
- The packaging box storage place is free of standing water, and water seepage into the packaging box is not allowed.
- The packaging box must be out of direct sunlight.

Biotic Environment

- Measures must be taken to stop reproduction of microorganism such as fungus and mould;
- Measures must be taken to eliminate rodents (such as rat).

4.6.2 Transport Environment

Climatic Circumstance

The requirements for climatic circumstance for equipment transport are as shown in Table 4-5.

Table 4-5 Climatic Circumstance Requirements for Transport

Item	Range
Atmospheric pressure (kPa)	86～106
Temperature (℃)	-25～+60
Temperature alteration ratio (℃/min)	≤1
Relative humidity	10%～90% RH
Solar radiation (W/s²)	≤1120
Thermal radiation (W/s²)	≤600
Wind speed (m/s)	≤20

Waterproof Requirements

All the following conditions must be met during transport:

- The packaging box is intact;
- Necessary rain shade is provided for the transport machine to shelter the packaging box from rainwater;
- The transport machine is free of standing water.

4.6.3 Operating Environment

Climatic Circumstance

The requirements for climatic circumstance for the operation of S3200P&S2200 series are as shown in Table 4-6.

NOTE

Product temperature and humidity refer to numerical values measured 1.5m above the ground and 0.4m before the product.

Table 4-6 Other Climatic Circumstance Requirements

Item	Range
Atmospheric pressure (kPa)	86～106
Temperature (℃)	0～50
Relative humidity	10%～90% RH, no condensation
Temperature alteration ratio (℃/min)	≤0.5
Solar radiation (W/s²)	≤700
Thermal radiation (W/s²)	≤600
Wind speed (m/s)	≤5

Biotic Environment

- Measures must be taken to stop reproduction of microorganism such as fungus and mould;
- Measures must be taken to eliminate rodents (such as rat).

4.7 Standards and Protocols

- MEF Technical Specification MEF 6.1 Ethernet Services Definitions - Phase 2
- MEF Implementation Agreement, MEF 8 Implementation Agreement for the Emulation of PDH Circuits over Metro Ethernet networks
- MEF Technical Specification, MEF 10.1 Ethernet Services Attributes - Phase 2
- MEF Technical Specification, MEF 11 User Network Interface (UNI) Requirements and Framework
- MEF Technical Specification, MEF 13 User Network Interface (UNI) Type 1 Implementation Agreement
- MEF Technical Specification, MEF 17 Service OAM Requirements & Framework
- MEF Technical Specification, MEF 20 User Network Interface (UNI) Type 2 Implementation Agreement
- IEEE 802.1D-2004 Part 3: Media Access Control (MAC) Bridges
- IEEE 802.1Q-2005 - Standard for Local and Metropolitan Area Networks - Virtual Bridged Local Area Networks
- IEEE 802.1s-2002 - Amendment to 802.1Q Virtual Bridged Local Area Networks: Multiple Spanning Trees
- IEEE 802.3-2005 Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications
- IEEE 802.1ag: Virtual Bridged Local Area Networks Amendment 5: Connectivity Fault Management
- IEEE 1588-2008 Standard for a Precision Clock Synchronization Protocol for Network Measurement and Control Systems
- ITU-T Y.1541 Network Performance Objectives For IP-Based Services

- ITU-T Y.1731 OAM Functions and Mechanisms for Ethernet based networks
- ITU-T G.8031 Ethernet linear protection switching
- ITU-T G.8032 Ethernet ring protection switching
- ITU-T G.8261 Timing and Synchronization Aspects in Packet Networks
- ITU-T G.8262 Timing Characteristics of Synchronous Ethernet Equipment Slave Clock (EEC)
- ITU-T G.823 The control of jitter and wander within digital networks which are based on the 2048 kbit/s hierarchy
- ITU-T G.824 The control of jitter and wander within digital networks which are based on the 1544 kbit/s hierarchy
- ITU-T G.825 The control of jitter and wander within digital networks which are based on synchronous digital hierarchy (SDH)
- RFC1349 Type of Service in the Internet Protocol Suite
- RFC2474 Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers
- RFC2475 An Architecture for Differentiated Services
- RFC2597 Assured Forwarding PHB Group
- RFC2598 An Expedited Forwarding PHB
- RFC2698 A Two Rate Three Color Marker
- RFC3086 Definition of Differentiated Services Per Domain Behaviors and Rules for their Specification
- RFC3140 Per Hop Behavior Identification Codes
- RFC3246 An Expedited Forwarding PHB (Per-Hop Behavior)
- RFC3247 Supplemental Information for the New Definition of the EF PHB (Expedited Forwarding Per-Hop Behavior)
- RFC3248 A Delay Bound alternative revision of RFC 2598
- RFC3260 New Terminology and Clarifications for DiffServ
- RFC3289 Management Information Base for the Differentiated Services Architecture
- RFC3290 An Informal Management Model for DiffServ Routers
- RFC3317 Differentiated Services Quality of Service Policy Information Base

5 Install License

B. Place license under ftp server catalogue (similar to installing system software)

C. Type in the following commands via the serial port: copy mgmt-if ftp://192.168.1.11/d8860b0009d5.lic flash:/d8860b0009d5.lic

D. Type in the command reload after the execution of the command Copy is completed

6 Maintenance and Troubleshooting

6.1 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.

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.

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 3 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.**