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NX-5610-48G
Core Aggregation Switch
Product Guide

Obtaining Technical Assistance

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Preface

Thank you for using our products. This manual will guide you through the installation of the device.
This manual describes the functional and physical features and provides the device installation

steps, hardware troubleshooting, module technical specifications, and specifications and usage

guidelines for cables and connectors.

Audience

It is intended for the users who have some experience in installing and maintaining network

hardware. At the same time, it is assumed that the users are already familiar with the related

terms and concepts.

Introduction To The Installation Manual

The Product User's Manual mainly introduces the software and hardware parameters, installation methods, and precautions during the installation process of the NX-5610-48G switch.
This manual includes the following sections:

Chapter 1: Product introduction. Briefly describe the basic functions and features of the switch, detailed hardware and software specifications, and appearance information.

Chapter 2: Hardware Connections. Guide the connection and precautions between the switch and other devices.

Chapter 3: Product Installation. Guide the hardware installation method and precautions of the switch.

Chapter 4: Product Packaging and Use Recommendations

Chapter 1 Product Introduction

1.1 Product Introduction

The NX-5610-48G adopts a new generation of high-performance hardware and software platform to provide flexible and cost-effective full Gigabit access and uplink ports. It supports Layer 3 routing protocols, complete security protection mechanisms, and complete ACL/QoS policies and enrichment. The VLAN function is easy to manage and maintain. It meets the user's easy-to-manage, high-security, and low-cost networking requirements for network devices. It is suitable for network access, aggregation, and core application scenarios in campus, hotel, and enterprise campus.

1. 2 Product Features
- Full Gigabit Ethernet port: 48 full Gigabit RJ45 network ports, and 4 10 Gigabit SFP fiber ports, breaking the traditional 100 megabit limit, data transmission is not stuck
- Broadcom high-end chip, performance is more stable and powerful: Broadcom high-end chip can greatly improve network data processing rate
- Support DHCP: Support DHCP server, DHCP relay, DHCP Snooping
- Support Apollo cloud platform one-stop management: Support cloud platform to visualize management of switches and PDs connected to the PD, making operation and maintenance management easier

1.3 Product Software and Hardware Specifications

Sensor	Broadcom high performance sensor
Flash	16MB
Memory	256MB DDR
Ports	48 x 10/100/1000Mbps RJ45 ports
	4x 10GSFP+ Fiber ports
	1 Console ports, 1 Mini USB console port
Performance	Mode：Storage/ forwarding
	Total Bandwidth：176Gbps
	Transmission Rate：131Mpps

	Mac address: 16K
Surge proof	±6KV
ESD	Contact：±6KV Non-contact：±8KV
Power in	100-240V/50-60Hz
Dimen sion （L×W ×H）	440mm×365mm×44mm

Software Features

Basic AI Functions	Support hardware watchdog, restore factory Settings, system and port LED
	Support global information, statistics, log information
	Support user management, alarm management, configuration management
	Support port rate, duplex, flow control, maximum frame length configuration
	Support port mirroring, port speed limit, port energy saving
Apollo Cloud one stop management	Support three management methods: local management, cloud management, mobile management
	prevention in advance; Real-time map, fast fault location; Cloud operation, maintenance, configuration, upgrade batch processing; Multi-user, multi-dimensional authority, hierarchical control; AI blessing, intelligent scheduling; Business analysis and decision making; Open interface, customer business import; Support for automatic identification, management and acquisition of information about the downlink device
Protocol standard	IEEE 802.3: Ethernet media access control (MAC) protocol
	IEEE 802.3i:10BASE-T Ethernet
	IEEE 802.3u:100BASE-TX Fast Ethernet
	IEEE 802.3ab:1000BASE-T Gigabit Ethernet
	IEEE 802.3z:1000BASE-X Gigabit Ethernet （Fiber）
	IEEE 802.3ad: Standard method for performing link aggregation
	IEEE 802.3x: traffic control
	IEEE 802.1p: LAN layer 2 Qos/Cos protocol on traffic priority (multicast filtering function)
	IEEE 802.1q:VLAN Bridge operation
	IEEE 802.1d:STP spanning tree
	IEEE 802.1s:MSTP Multiple spanning tree
	IEEE 802.1w:RSTP Fast spanning tree

	IEEE 802.1x: Access control and authentication	
	G.8032: ERPS Ethernet loop protection switch	
Layer 3 interface	Support Layer 3 interface	
	Support IPv4、IPv6 Address configuration	
	Support ARP configuration	
	Support ND configuration	
Router	Supports RIP V1/V2, OSPFv1\OSPFv2 dynamic routing	
	Support static routing	
DHCP	Support DHCP server	
	Support DHCP relay	
	Support DHCP Snooping	
VLAN	Support 4K numbers of VLAN	
	Support 802.1Q VLAN、MAC VLAN, IP VLAN	
	Voice VLAN	
MAC address list	According IEEE 802.1dstandard	
	Support MAC address automatic learning and aging	
	Support static, dynamic, filtering address table	
Security	Password protection	
	Support user access based on port number, IP address, and MAC address	
	Support HTTPS、SSL V3、TLS V1、SSH V1/V2	
	Support IP-MAC-PORT ternary binding	
	Support ARP protection, IP source protection, DoS protection	
	Support DHCP Snooping and DHCP attack protection	
	Support 802.1X authentication, AAA	
	Support port security, port isolation	
	Support CPU protection	
(ACL)	Support L2(Layer 2) ~ L4(Layer 4) Packet filtering	
	Support port mirroring, port redirection, flow rate limiting, QoS re-marking	
(QoS)	Support 8 ports queues	
	Support port priority, 802.1P priority, DSCP priority	
	Support SP, WRR, WFQ priority scheduling algorithm	
	Supports automatic identification, management, and retrieval of information about attached devices	

Spanning tree	Support STP(IEEE 802.1d)，RSTP(IEEE 802.1w)and MSTP(IEEE 802.1s) protocol
	Support loop protection, root bridge protection, TC protection, BPDU protection, BPDU filtering
Multicast	Support IGMP v1/v2 Snooping
	Support fast leave
	Support multicast VLAN
	Supports multicast filtering, packet statistics, and unknown multicast discards.
Storm resist	Support multicast resist
	Support broadcast resist
	Support for unknown unicast resist
Link aggregation	Support static link aggregation
	Support dynamic link aggregation
	Support IP, MAC, hybrid load balancing mode
	Max support 32 link aggregation groups
IPv6	Support IPv6 Ping、IPv6 Tracert、IPv6 Telnet
	Support IPv6 SSH 、IPv6 SSL
Management and maintenance	Support web management (HTTP, HTTPS、SSL V3)
	Support CLI （Telnet、SSH V1/V2、local ports）
	Support SNMP V1/V2/V3
	Support LLDP, RMON
	Support ARP protection、IP source protection 、DoS protection
	Support CPU monitor、Memory monitor
	Support Apollo one stop management
	Support system log, grading warning
	Support Ping, Tracert detection, cable detection

1.4 Product appearance
Front panel
Contains indicator light, RJ45 port as shown below

Indicator light

The working information of the NX-5610-48GPindicator is as shown in the following table.

Indicator light	Indicator light instruction	normal status	Abnormal and trouble shooting
PWR Indicator light	Power Indicator light	Yellow light lighting	If the light does not illuminate, check if the power supply of the external power outlet is normal, and the power adapter is connected correctly.
Link Indicator light	Connection Indicator light	Yellow light lighting	If the indicator is not light, check whether the corresponding network port is connected to the network device, the network cable is connected correctly, the network cable meets the standard (the maximum transmission distance of Category 5 is 100 meters), whether the network cable is damaged, and whether the network device is damaged.
SYS Indicator light	System Indicator light	Green light flashing	If the light is off, the device does not start normally, please restart after power off.
10GIndicator light (XG1-XG4)	Connection indication	Green light lighting	If the indicator is not light, check whether the corresponding interface is connected to the network device, the optical module is damaged, and the network device is damaged.

RJ45ports

The NX-5610-48GPsupports 48 10/100/1000Mbps adaptive RJ45 ports. Rear panel

1. Power socket
2. Ground terminal

Includes: power outlet, power switch, ground terminal

SFP port

The NX5610-48GP provides four 10 Gigabit SFP optical module expansion slots for plugging into Gigabit SFP modules.

Console port

The Console port is used to connect to the serial port of a computer or other terminal to manage or configure the switch.

Power socket

The power supply to the switch NX-5610-48G must be 100-240V~ 50/60Hz AC power.

Chapter 2 Hardware Connection

2.1 Connecting RJ45 port
Connect the switch and the RJ45 port of the peer network device with a network cable.

2.2 Connecting SFP Ports
The SFP port of the NX-5610-48G supports only 10 Gigabit fiber modules. It is recommended to use standard SFP module products.

The process of installing a fiber module on a switch is as follows:

1、 Grasp the fiber module from the side and insert it smoothly along the SFP port slot of the switch until the fiber module is in close contact with the switch;

2、 Confirm the Rx and Tx ports of the fiber module when connecting. Insert one end of the fiber into the Rx and Tx ports to ensure that the Tx and Rx ends of the interface are correctly connected, and the other end of the fiber is connected to another device.

3、 After power-on, check the status of the corresponding indicator. If the indicator is on, the link is up. If the indicator is off, the link is down. Check the line and confirm that the peer device is enabled.

⚠ Note:

- It is not allowed to excessively bend the fiber, and its radius of curvature should be no less than 10cm ;

- Ensure the cleanliness of the fiber end face;

- Please do not look directly into the fiber optic connector with your eyes, as this may cause eye damage.

2.3 Check before power-on

Check that the power supply of the power outlet meets the switch specifications.

Check that the power supply, switch, and rack are properly grounded.

Check whether the switch is connected to other network devices.

2.4 device initialization

The switch will automatically initialize after the power is turned on and the power switch is turned on.

The indicator light will appear as follows:

1、After the power is turned on, the power indicator remains steady. When SYS enters the flashing state, the system runs normally.

2、The indicator of each port indicates the connection status of each port, indicating that the switch has started to work normally.

Chapter 3 Product Installation

3.1 Installation Precautions

⚠ Note: To avoid damage to the equipment and personal injury caused by improper use, please observe the following precautions.

Safety Precautions

- Power supply remains off during the installation process. Wear an ESD-preventive wrist strap and ensure that the ESD-preventive wrist strap is in good contact with the skin to avoid potential safety hazards.

- Switch only can work normally under the correct power supply. Please confirm that the power supply voltage matches the voltage indicated by the switch.

- Before powering on the switch, please make sure that the power circuit is not overloaded, so as not to affect the normal operation of the switch and cause unnecessary damage.

- To avoid the risk of electric shock, do not open the case while the switch is working, even if it is not charged, do not open it yourself

- Before cleaning the switch, first pull out the power plug of the switch. Do not wipe with a moist fabric. Do not use liquid to clean.

Humidity

In order to ensure long-term stable operation of the switch and prolong its service life, please maintain a certain temperature and humidity in the environment. Too high or too low ambient humidity is likely to cause leakage, deformation and even corrosion of metal parts. If the temperature is too high, the aging process of the insulation material will be accelerated, which will seriously affect the service life of the equipment. The normal operation and storage temperature / humidity of this series of switches are as follows

Environmental description	temperature	Relative humidity
Working Temperature	0℃~40℃	10% ~ 90% RH Non-condensing
Storage Temperature	-40℃ ~ 70℃	5% ~ 90% RH Non-condensing

Elevation

Products with this mark are only suitable for safe use in areas below 2000m above sea level .

Dustproof

Dust falling on the surface of the switch can cause electrostatic adsorption and poor contact of the metal contacts. Although the device itself has made certain measures in anti-static, when the static electricity exceeds a certain intensity, it will still cause fatal damage to the electronic components on the internal circuit board. To avoid the static electricity affecting the normal operation of the device, please pay attention to the following:

    1、Regular dust removal to keep indoor air clean;

    2、Make sure that the equipment is well grounded to ensure the smooth transfer of static electricity.

Interference

Electromagnetic interference will affect the electronic components such as capacitors and inductors inside the device by means of capacitive coupling, inductive coupling, impedance coupling, etc. To reduce the adverse effects caused by electromagnetic interference, please pay attention to the following:

1、 The power supply system takes necessary measures against grid interference;

2、 The switch should be away from high-frequency, high-power, high-current equipment, such as wireless transmitters;

3、 Take electromagnetic shielding measures when necessary.

Lightning Protection Needs

When a lightning strike occurs, a strong current is generated in an instant, and the air in the discharge path is instantaneously heated to 20,000 degrees Celsius, and an instantaneous large current is enough to cause fatal damage to the electronic device. For better lightning protection, please note the following:

1. Confirm that the rack is in good contact with the ground;
2. Make sure the power outlet is in good contact with the ground;
3. Reasonable wiring to avoid internal induction lightning;
4. When using outdoor wiring, it is recommended to use a signal lightning arrester.

Installation rack requirements

Regardless of whether the switch is installed in a rack or other horizontal workbench, please note the following:

1. Verify that the rack or table is stable, strong, and capable of withstanding a weight of at least 5.5 kg;
2. Confirm that the rack itself has a good cooling system, or keep the room well ventilated;
3. Make sure the rack is well grounded, and the distance between the power socket and the switch is less than 1.5 meters.

Tool Preparation

The Phillips screwdriver, electrostatic wrist strap, and cable fiber may be used during installation.

3.2 Product Installation

19 inch standard rack mount

The NX-5610-48GP is designed to fit the standard 19-inch rack and can be easily mounted to the rack. The specific installation steps are as follows：：

1. Check the grounding and stability of the rack;

2. Install the two L-shaped brackets in the accessories on both sides of the switch panel and fix them with the screws provided in the accessories.
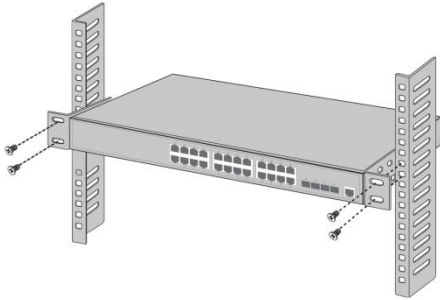
3. Place the switch in the proper position in the rack and support it by the bracket. Fix the L-bracket to the guide groove fixed at both ends of the rack with screws to ensure that the switch is installed on the rack stably and horizontally.

⚠️ Note:

Good grounding of the rack is an important guarantee for anti-static, anti-leakage, lightning protection and anti-interference of the equipment. Therefore, ensure that the grounding wire of the rack is properly installed.

The equipment installed in the rack is generally from bottom to top to avoid overload installation;

Avoid placing other heavy objects on the surface of the switch to avoid accidents;

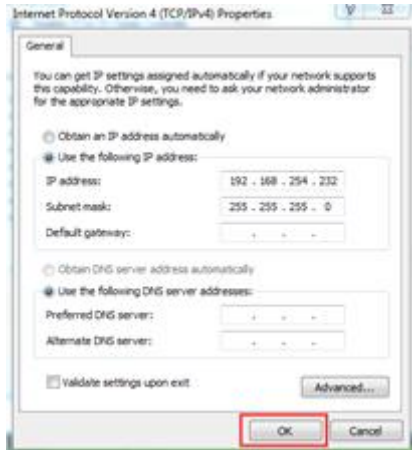Ensure heat dissipation and air circulation.

3.3 login management interface
Step1
Connect the network cable to the computer

Step 2
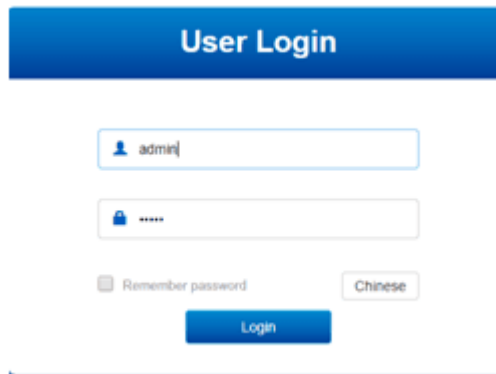Change the computer IP to 192.168.254.X (2~254), and the Subnet mask is 255.255.255.0

Step3

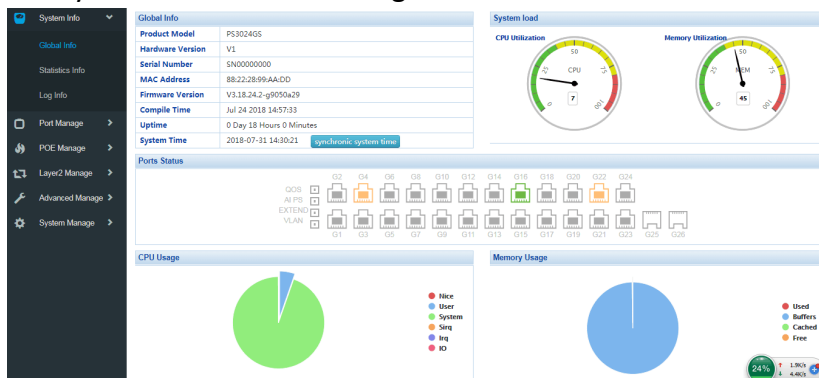Turn on the browser, input 192.168.254.1, and click Enter

Step4

Enter the web manage UI, Input the Username and PW, both are admin and log in

Step5

You already entered the web management UI of the switch and can start to configure the switch

Chapter 4, packing list and recommendations for use

4.1 Open the package and check the list below.

Objects	Quantity	Remark
Switch	1 pc	\
Power cable	1 pc	Support power to SW

Hook	2 pcs	To installation
Warranty Card	1 pc	To After sale service
Manual	1 pc	To guide the user

4.2 Suggestions

1. For safety reasons, non-professionals should not open the product case；

2. Pay attention to the danger of strong electricity and safe protection when the product is powered on；

3. Please select the correct power adapter to supply power to the switch. Confirm whether it meets the switch requirements before use；

4. Do not use the switch in a humid environment to prevent water from entering the fuselage through the casing, resulting in damage to the machine.；

5. Please turn on the power after the line connection is completed；

6. When the product is powered on, please do not plug and unplug the cable if it is not special.

7. Do not use the switch in places with excessive dust and electromagnetic radiation. Do not use the switch in a place that is hot and not ventilated.；

8. Please do not place heavy objects on the switch to avoid accidents.；

9. It is recommended to use the switch indoors. It is recommended to add a waterproof box when using it outdoors.

Note: The pictures in the manual are for reference only, whichever is subject to the actual products.