24 Port Gigabit Layer 2 Managed PoE Switch

IP24GESP2

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User Manual

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IP24GESP2 is a managed PoE switch designed for security transmission and Wi-Fi coverage. It can meet the PoE power supply requirements of Wi-Fi AP, IP camera, Wi-Fi bridge, IP phone and other types of equipment. The product adopts a new generation of high-performance hardware and software platforms to provide flexible, cost-effective access and Gigabit uplink ports for complete security protection. It's easy to manage and maintain, and meet user requirements for network equipment for high security but at a low-cost. The IP24GESP2 is applicable to network access, aggregation, and core application scenarios of many applications.

Main Features

- 6KV lightning protection
- Short cut functions: AI VLAN, AI Extend 1~8 port 250m PoE distance, AI PoE, AI Q0S (video priority)
- Support based on the port number, IP address, MAC address and user access restrictions
- Supports PoE and settings for PoE port priority
- Supports L2 (Layer 2) ~ L4 (Layer 4) packet filtering
- Supports multi-cast suppression
- Supports loop protection, root bridge protection, TC protection, BPDU protection and BPDU filtering
- Supports broadcast suppression
- Supports unknown unicast suppression
- Supports static aggregation
- Supports dynamic aggregation
- Supports IP, MAC and hybrid load balancing modes
- Supports up to 32 aggregation groups
- Supports Web network management (HTTP, HTTPS, SSL, V3)
- Supports SNMP V1/V2/V3
- Supports LLDP, RMON
- Supports ARP protection, IP source protection, DoS protection
- Supports Ping, Tracert detection and cable detection

Packing List

- PoE Switch
- Power Cord
- Bracket
- User Manual

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Front Panel Switch Appearance

Including indicators, RJ45 port, shortcut buttons, RST button, SFP port, CONSOLE port, as shown below.

1、 Working mode key
2、 CONSOLE
3、 Port LEDs
4、 RST
5、 24 10/100/1000Mbps RJ45 Ports
6、 2 SFP Ports
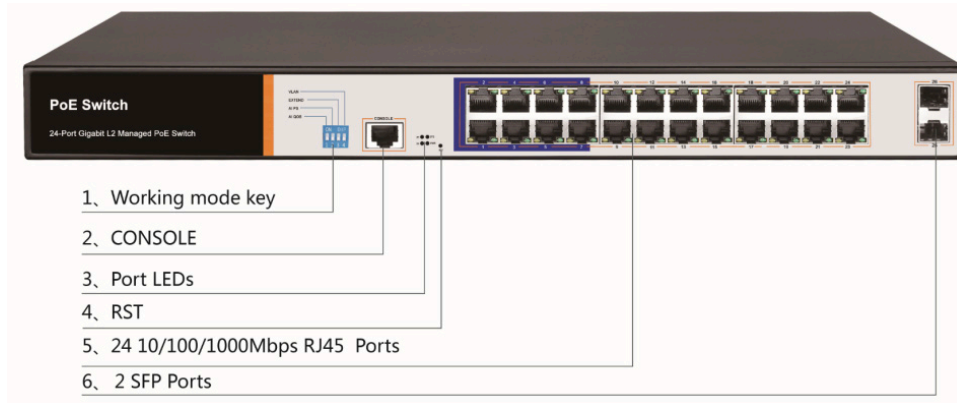
Indicator Table

Indicator	Title	Colour	Work State	Description
PWR	Power indicator	Red	Solid	Power is normal
			Off	No power, the power switch is not turned on, power supply is abnormal.
PoE	PoE power indicator	Yellow	Solid	The corresponding RJ45 port is connected to the powered device and the power supply is normal.
			Off	The corresponding RJ45 port is not connected to the powered device or the power supply is abnormal.
LINK / ACT	Connection indicator	Green	Blinking	A valid link is established.
			Off	An invalid link is established.
SYS	System	Green	Blinking	System is functioning properly.
			Off	System is functioning improperly, Software is damaged.

DIP Switch Function

AI QoS:
Improve video data processing capabilities and improve the monitoring of Caton and Mosaic phenomena in the network.

AI Extend:
1–8 port rate down to 10Mbps, but the transmission distance up to 250m.

AI VLAN:
Isolating ports 1–24 from each other, suppress network storms effectively and improve network performance.

AI Power Supply:
Detect PD, power failure and restart dead equipment.

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RJ45 Port
Supports 24 10/100/1000 Mbps ports, both supporting IEEE802.3af and
IEEE802.3at standard PoE power supply.

SFP Port
Provides 2 Gigabit SFP optical module expansion slots (17, 18) for plugging Gigabit
SFP modules

RST Button
When the switch is powered on, press the button with needle and release the
device to enter the restart state. When the SYS light is turned on again, the device
restarts. When the switch is powered on, press the button for 5 seconds or more
to release the button device to enter the reset status, when SYS lights up again,
the device resets successfully.

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

Back Panel Switch Appearance

Includes power socket and ground terminal as shown below.

1、 Power socket

2、 Ground terminal

Power Socket
The power supply to the switch should be 100–240V~50/60Hz AC power.

Ground Terminal
Please use a wire to ground so that preventing lightning strikes. To avoid product
lightning strikes and extend the life of the product

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Installation Safety Precautions

To avoid damage to the equipment or personal injury caused by improper use, please observe the following precautions:

- The power is kept off during the installation process. Wear an ESD-preventive wrist strap and ensure that the wrist strap is in close contact with the skin.

- The switch 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 as this can affect the normal operation of the switch and can cause unnecessary damage.

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

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

Temperature and Humidity

In order to ensure long-term stable operation of the switch and prolong its working life, please maintain a certain temperature and humidity in the environment it's placed in. Excessively high or too low ambient humidity may cause leakage, deformation or 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 working life of the equipment. Normal operation and storage temperature / humidity of this series of switches are shown below:

Environment	Temperature	Relative Humidity
Working Environment	0°C~40°C	10%~90% RH Non-condensing
Storage environment	-40°C~70°C	5%~90% RH Non-condensing

Altitude

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

Dust Proof
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 strength, 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:

• Regular dust removal to keep indoor air clean.
• Confirm that the equipment is well grounded to ensure the smooth transfer of static electricity.

Electromagnetic Interference
• Electromagnetic interference will affect the internal components such as capacitance, inductance and other electronic components by capacitive coupling, inductive coupling, impedance coupling, etc. To reduce the adverse effects caused by electromagnetic interference, please pay attention to the following:
• The power supply system takes necessary measures against grid interference.
• The switch should be away from high-frequency, high-power, high-current equipment, such as wireless transmitters.
• Take electromagnetic shielding measures when necessary.

Lightning Protection
• 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, which can instantaneous cause a large current that is enough to cause fatal damage to the electronic device. For better lightning protection, please note the following:
• Confirm that the rack is in good contact with the ground.
• Make sure the power outlet is in good contact with the ground.
• Reasonable wiring to avoid internal induction lightning.
• Signal lightning protector is recommended for outdoor wiring.

Installation Station Requirements
Regardless of whether the switch is installed in a rack or on another horizontal workbench, be aware of the following:
• Make sure the rack or workbench is stable, strong, and can withstand at least 5.5 Kg weight.
• Make sure the rack has a good cooling system, or maintain good indoor ventilation.
• Make sure the rack is well grounded, the power outlet and switch are within 1.5 meters.

Prepare Tools for Installation
You may need to use a screwdriver during installation, electrostatic wrist strap, fiber optic cable and other tools to prepare yourself.

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Product Installation

IP24GESP2 is designed according to the standard 19-inch rack size. The specific installation steps are as follows:

1. Check rack grounding and stability
2. Install the two L-brackets in the accessory on each side of the switch panel and secure with the screws provided in the accessory.
3. Place the switch in an appropriate place in the rack and be supported by the bracket. Screw the L-shaped bracket to the guide groove fixed on both ends of the rack to ensure that the switch is stable and horizontally installed on the rack.
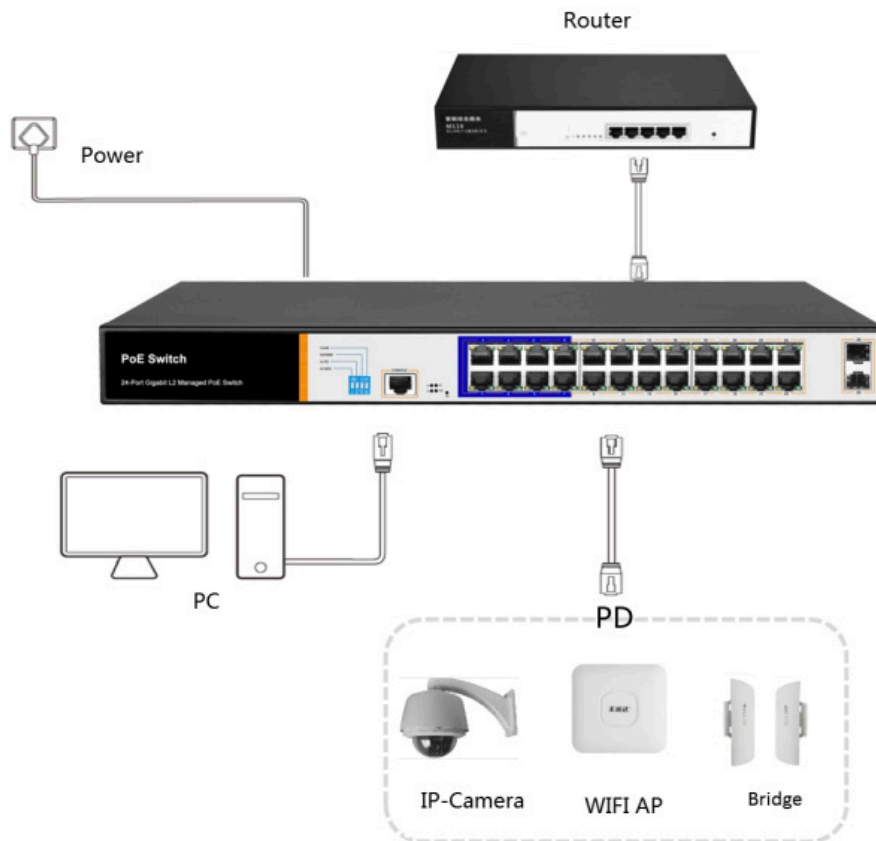
Note:
- *A good grounding rack is a piece of anti-static, anti-leakage, anti-jamming and lightning protection equipment that is an important guarantee to ensure that the rack ground wire is properly installed.*
- *Make sure equipment is installed within the rack from the bottom up, to avoid overload.*
- *Avoid placing other heavy objects on top of the switch to avoid accidents and ensure that there is heat dissipation and air circulation.*

RJ45 Port Connection

Connect the RJ45 port of the switch and the corresponding network device via cables, the PoE power supply function of the switch is default enabled on the downlink port of the switch, which can be used for IEEE802.3af or IEEE802.3at standards powered devices such as APs, bridges, and network cameras.

Note:
- *When the switch is connected to workstations, servers, routers or other Ethernet devices, the cable length should be within 100 meters.*
- *The Auto-MDI / MDIX Ethernet interface is enabled by default. Category 5,the standard network cable or crossover cable can be used for Ethernet connection.*
- *Do not connect the RJ45 port to the phone line.*

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SFP Port Connection

The IP16GESP2 only supports Gigabit fiber module. The process of installing a fiber module on a switch is as follows:

- Firstly, grasp the optic fiber module from the side, insert it smoothly along the SFP port slot until the optic fiber module and switch are in close contact.

- Secondly, confirm the Rx and Tx ports of the fiber module when connecting. Insert one end of the fiber into the Rx and Tx ports, ensuring that the Tx and Rx ends of the interface are connected correctly and the other end of the fiber is connected to another device.

- Thirdly, please check the corresponding indicator light status after power on. If the light is blinking that means the link is properly connected, if the light is off , the link has failed to connect. Please check the line to confirm that the corresponding equipment is enabled.

Note:
- *Do not allow excessive bending of the fiber, the radius of curvature should not be less than 10cm.*
- *Ensure the cleanliness of the fiber surface.*
- *Please do not look directly into the optical fiber connector with your eyes as this may cause eye injury.*

Before Powering On
- Check whether the outlet power supply meets the switch specifications.
- Check the power, switches, racks and other equipment have been properly grounded.
- Check whether the switch and other network devices are connected properly.

Device Initialisation

The switch automatically initialises when the power switch is turned on. Indicator will appear the following situation:
- After the power is turned on, the power indicator remains on, the other indicator is off at this time.
- After about 1 second, all lights except for the power light turn on for about 35 seconds and then turn off.
- When the SYS light flashes, the system runs normally.
- Port LED's indicates the connection status of each port, indicating that the switch has started to work normally
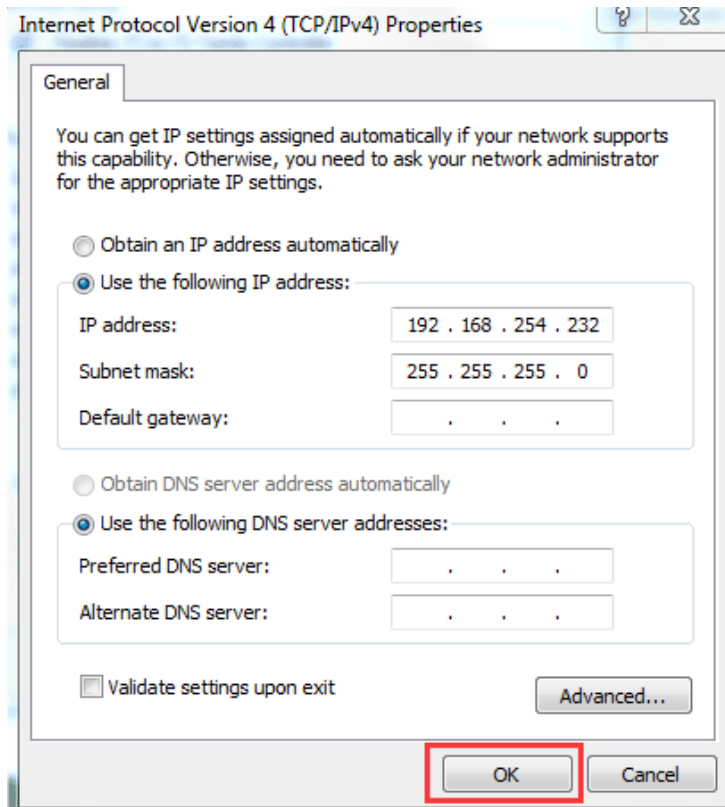
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Web Login
Step 1:
In the normal operation of the device, connect the computer to the switch's RJ45 port by network cables.
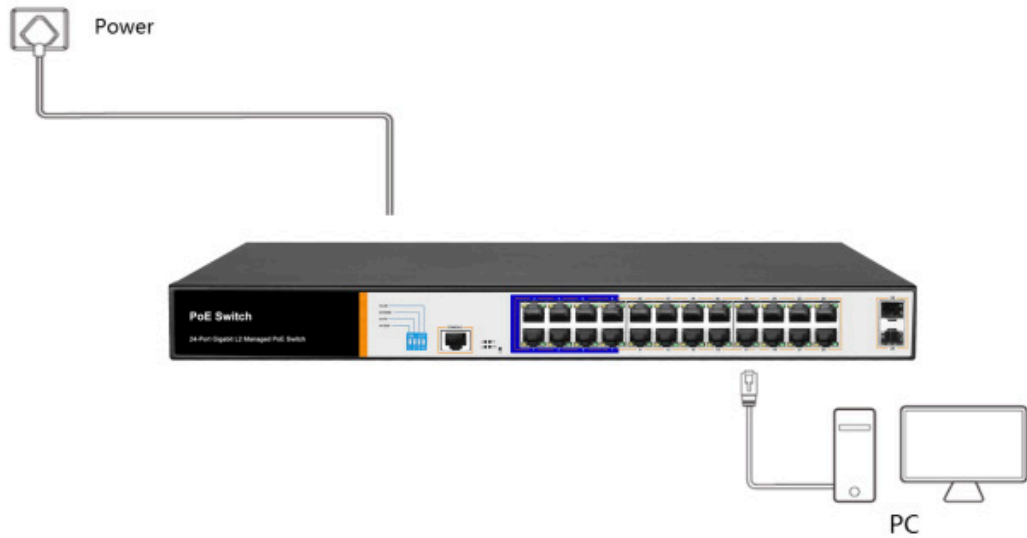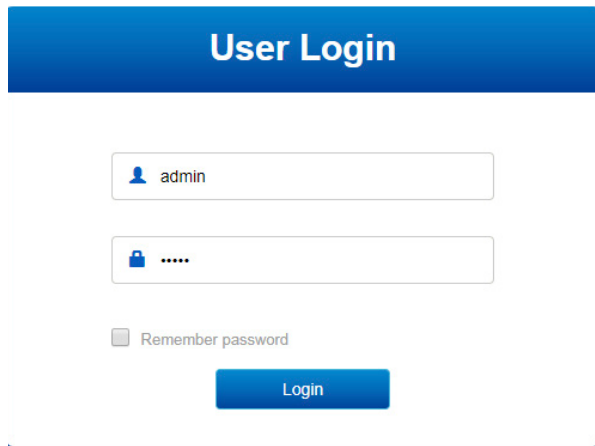

Step 2:
Manually changed the computer IP address to 192.168.254.X (X is 2 ~ 254), subnet mask is 255.255.255.0.
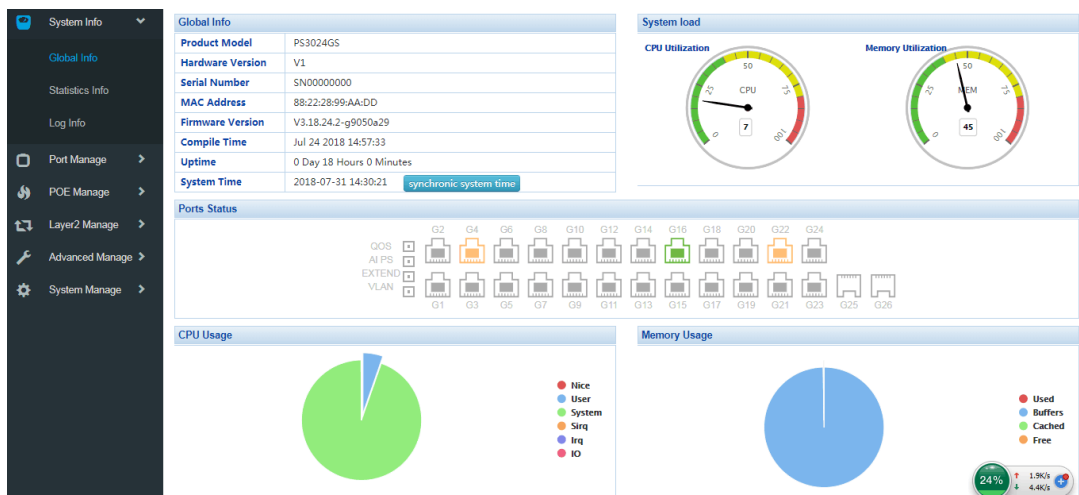
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Step 3:
Open computer's browser, type 192.168.254.1 in the address box, hit the Enter key.

Step 4:
Enter the default username and password "admin" and then click Login.

Step 5:
Entered the switch web management interface successfully when you see picture as below, you can begin to configure the switch

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4.0 Hardware Specifications

Network Standard	IEEE 802.3i, IEEE 802.3u, IEEE 802.3x, IEEE 802.3ab, IEEE 802.3af, IEEE 802.3at
Port	24 10/100/1000Mbps RJ45 port
	2 gigabit SFP
	1 Console
PoE	24 10/100/1000Mbps RJ45 port support PoE+
	Max 150W
	Single port max 46W
LED's	26 Link/Act LED's
	24 PoE LED's
	1 SYS LED
	1 Power LED
Performance	Forwarding mode: Store and forward
	Bandwidth: 52Gbps
	Packet forwarding rate: 38.688Mpps
	8K MAC address table
Lightning Protection	6KV
Input	100-240V/50-60Hz
Dimensions	440 × 180 × 44 mm

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5.0 Software Specifications

Protocol Standard	IEEE 802.3: Ethernet Media Access Control (MAC) Protocol	PoE Management	Supports PoE power limit
	IEEE 802.3i: 10BASE-T Ethernet		Supports PoE chip status view
	IEEE 802.3u: 100BASE-TX Fast Ethernet		Supports setting PoE port priority
	IEEE 802.3ab: 1000BASE-T Gigabit Ethernet		Supports setting PoE power supply time period
	IEEE 802.3z: 1000BASE-X Gigabit Ethernet (fiber)	Access Control (ACL)	Supports L2 (Layer 2) ~ L4 (Layer 4) packet filtering
	IEEE 802.3ad: Standard method for performing link aggregation		Supports port mirroring, port redirection, flow rate limiting, QoS re-marking
	IEEE 802.3x: Flow control	Quality of Service (QoS)	Supports 8 port queue
	IEEE 802.1p: LAN Layer 2 QoS/Cos protocol for traffic priority (multi-cast filtering)		Supports port priority, 802.1p priority, DSCP priority
	IEEE 802.1q: VLAN	Spanning Tree	Supports STP (IEEE 802.1d), RSTP (IEEE 802.1w) and MSTP (IEEE 802.1s) protocol
	IEEE 802.1d: STP Spanning tree		
	IEEE 802.1s: MSTP Spanning tree		Supports loop protection, root bridge protection, TC protection, BPDU protection, BPDU filtering
	IEEE 802.1w: RSTP Spanning tree	Multicast	Supports IGMP v1/v2 Snooping
	IEEE 802.3af		Supports fast leave mechanism
	IEEE 802.3at		Supports multicast VLAN
Shortcut Function	One key AI VLAN		Supports multicast filtering, packet statistics, and unknown multicast discards.
	One key AI Extend (1–8 Port 250m PoE distance)	Storm Suppression	Supports multi-cast suppression
	One key AI PoE		Supports broadcast suppression
	One key Q0S (Video priority)		Supports unknown unicast suppression
DHCP	Supports DHCP Snooping		Supports static aggregation
VLAN	Supports 4K VLAN		Supports dynamic aggregation
	Supports 802.1Q VLAN, MAC VLAN ,IP VLAN		Supports IP, MAC, and hybrid load balancing modes
	Voice VLAN		Supports up to 32 aggregation groups
MAC Address Table	Comply the IEEE 802.1d standard, Supports MAC address learning and aging automatically. Supports static, dynamic, filter address table	IPv6	Supports IPv6 Ping, IPv6 Tracert, IPv6 Telnet
			Supports IPv6 SSH, IPv6 SSL
Safety	Password protection	Management and Maintenance	Supports Web network management (HTTP, HTTPS, SSL V3)
	Supports based on the port number, IP address, MAC address restrictions on user access		Supports CLI (Telnet, SSH V1/V2, local serial port)
	Supports HTTPS, SSL V3, TLS V1, SSH V1/V2		Support SNMP V1/V2/V3
	Supports IP-MAC-PORT ternary binding		Supports LLDP, RMON
	Supports ARP protection, IP source protection, DoS protection		Supports ARP protection, IP source protection, DoS protection
	Supports DHCP Snooping, DHCP attack protection		Supports CPU monitoring, memory monitoring
	Supports 802.1X certificated, AAA		Supports system log, grading warning
	Supports port security, port isolation		Supports Ping, Tracert detection, cable detection
	Supports CPU protection		

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