

INTRODUCTION

This manual is to be used for ensuring users use the product correctly through a manual, in order to avoid risks or damage of their property happens when they are operating. Before using the product, please read the product manual carefully and keep it safe for future reference.

Overview

This document is applicable for the PoE switch instruction.

Agreement

Symbols appearing in the document are instructed as follows:

Symbol	Illustration
 Instruction	The Instruction Text indicates the supplement and explanation to the main text.
 Caution	The Caution Text remind a user of some important operations or prevents a user from a potential injury and property loss. If it cannot be avoided, someone will suffer from the injury, the equipment will be damaged, and service will be interrupted.
 Danger	The Danger Text indicates a high potential risk. If it cannot be avoided, it will cause a major hazard of personal death.

Precautions for safety use

DANGER

- ◆ In the processing of the installation and usage of this product, strictly abide by the regulations of the national and local electrical safety is necessary.
- ◆ The plug or socket of the device is the equipment that can disconnects from the power. DO NOT block it, for easy insertion and removal.
- ◆ The external conductors connecting the equipment to the hazardous live terminals need to be installed by professionals
- ◆ The protective grounding of the equipment should be connected to the protective grounding of the building equipment.

- ◆ Must cutoff the power supply of the device, when it is connecting cables, disassembling, or installing devices. DO NOT operate with power on.
- ◆ The device is not suitable for the usage scenario where children maybe present.
- ◆ This product contains button batteries, if that are swallowed, it will cause a serious internal burn to lead to DEATH. Children should stay away from new and used batteries.

CAUTION

- ◆ Please use a power adapter which produced by the authorized manufacturer.
- ◆ Keep the device placed horizontally on the desktop when you are using
- ◆ The device should away from an exposed fire sources, for example a lit candle.
- ◆ The device shouldn't suffer from water droplets or splashes. Place any liquid (such as water cups) on the equipment is strictly prohibited.

Chapter 1 Product introduction

Lite managed PoE switch, hereinafter referred to as the “device” , is a Layer 2 PoE network switch that provides advanced technology of Ethernet PoE power-supply based on meeting high-performance access requirements. The product supports Client Management and achieves such functions of the security network as visualized topology management and port management. With high reliability, easy to install, and easy to maintain, this PoE is equipped with multiple access ports to achieve fast switching, and also it is suitable for devices that have access to a small-scale LAN.

This manual applies to the following switch models:

Product Model	Port Number	G port speed rate
SW-04	5	100Mbps
SW-08	9	100/1000Mbps
SW-16P	18	100/1000Mbps

1.1 Install and Power up

Place the switch on a smooth desktop, connect to the power cord, plug in, and connect to the power supply. After booting, switch will automatically initialize, PoE-MAX indicator and the Link / Act of the PoE port will flash.

After extinguishing, indicating that the system has been initialized to complete.

⚠ CAUTION:

1. DO NOT place heavy objects on the switch and ensure that the switch has good ventilation and heat dissipation.
2. Please power OFF before inserting or removing the adapter.
3. Please check the power supply. If the initialization does not comply with the above.

1.2 Appearance part instructions

This chapter describes the detailed instructions of the switch front and rear panels, and the LED indicators.

1.2.1 Front Panel

SW-04



SW-08



SW-16P

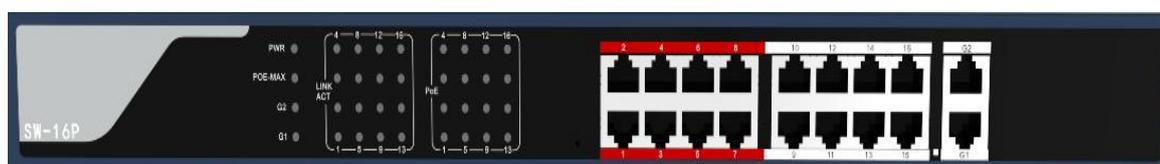


Diagram of front Panel

1. Indicator Light

Indicator	State	Description
PoE	Green light always on	PoE port power supply is normal
	Always off	PoE port is not powered
Link/Act	Yellow light always on	The device is connected with the port normally
	Yellow light is flicking	Data is transmitted by the port
	Always off	Device is not connected with the port
PoE-MAX	Light on	The gross power of the PoE port has reached or exceeded the alarm value
	Light off	The gross power of the PoE port is less than the alarm value or haven't been connected with a powered device

CAUTION:

The priority of the PoE port power supply is as follows: The larger the port number, the lower the priority. If the gross power of all powered PoE equipment is higher than the maximum output power of the device, the switch will cutoff the power supply for the largest port on the connected device. For example, ports number 1,2,5,8 are in the progress of a 14W normal power supply, and the total power supply of the system is 56W. If now a powered equipment with 15W is connected to one of the ports, the system will cutoff the power supply automatically for port 8, because the power supply is overloaded. That is means, ports 1, 2, and 5 are still supplied with 14W power, the new ports supplied with 15W, but Ports 8 will no longer be supplied with the power.

1. Reset Button

Reset hole	Long press for 3 seconds	The device password will be restored to default value
	Long press for 10 seconds	All device parameters are restored to default values

2. Red Port

Red port is a port with a high priority for up-going forwarding, it is identified an area in redon the device, and has the below privileges:

- ◆ Under the circumstance of up-going congestion, data is transmitted firstly on the ports of this area.
- ◆ When the gross power of PoE has exceeded the limit, give priority to the output power of ports in the area.

3. Uplink Port

4 Port switches support 10/100Mbps full-duplex communication, and 8 Port switches support 10/100/1000Mbps full-duplex communication, but do not provide PoE function.

1. Rear Panel

SW-04



SW-08



SW-16P

Diagram of Rear Panel



2. Power Interface

Please use a 48V power supply to connect the powered adapter, if the power supply does not match, the switch will be damaged.

3. Lightning protection grounding pole

Located on the left of the power interface, it must be connected to a lightning protection to prevent the device from a lightning damage.

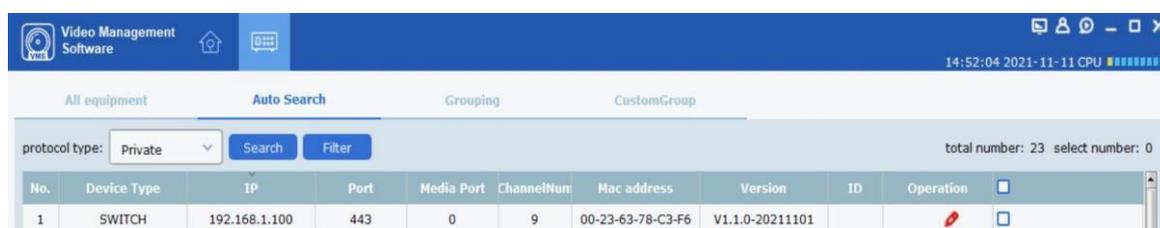
Chapter 2 ADD DEVICE

The device can be configured and managed through the VMS Pro client software, including network parameter configuration, port configuration, and network topology display and searching.

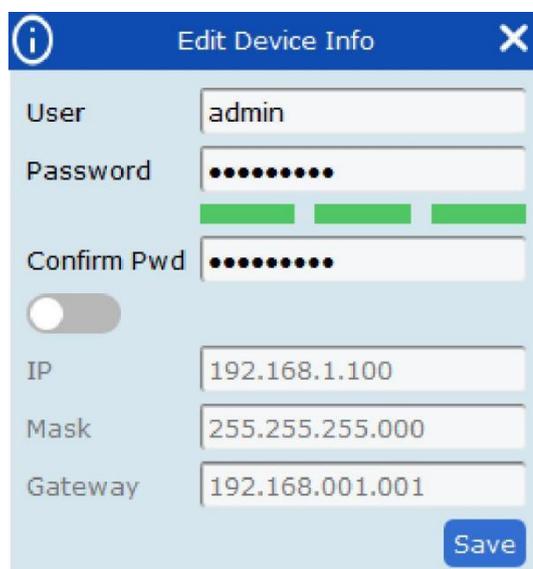
The device used for the first time must be activated first, setup the login password. Please install the VMS Pro client first and follow the instructions.

Operating steps

1. In the interface of *Video Management --> Auto Search*, select the device, Click  for *activation*.



2. Setup and confirm the login password for the device on the popup menu page, then edit the network information to let it have same network segment as the PC which installs VMS Pro client.



Edit Device Info

User:

Password:

Confirm Pwd:

IP:

Mask:

Gateway:

3. Click "Save", the device is activated and add successfully.

Explanation:

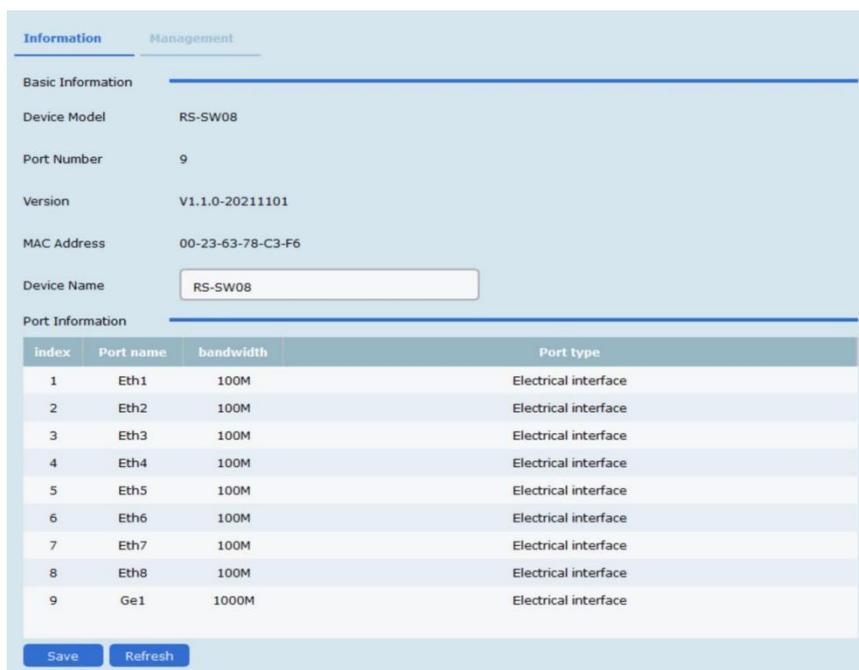
Before activating the device, please ensure the device IP address, subnet mask and gateway are under same network segment as the PC which installs VMS Pro client. So that the device can be added to the client for management

Chapter 3 Remote Configuration

3.1 System Configuration

3.1.1 Device Information

Select *Remote configuration* ---> *Configuration* ---> *Information*, basic device information will be displayed, including the device name, model, number of ports, firmware version, MAC address, and port information, etc.



The screenshot displays the 'Information' tab of the Remote Configuration interface. It is divided into two sections: 'Basic Information' and 'Port Information'.

Basic Information:

- Device Model: RS-SW08
- Port Number: 9
- Version: V1.1.0-20211101
- MAC Address: 00-23-63-78-C3-F6
- Device Name: RS-SW08 (in a text input field)

Port Information:

Index	Port name	bandwidth	Port type
1	Eth1	100M	Electrical interface
2	Eth2	100M	Electrical interface
3	Eth3	100M	Electrical interface
4	Eth4	100M	Electrical interface
5	Eth5	100M	Electrical interface
6	Eth6	100M	Electrical interface
7	Eth7	100M	Electrical interface
8	Eth8	100M	Electrical interface
9	Ge1	1000M	Electrical interface

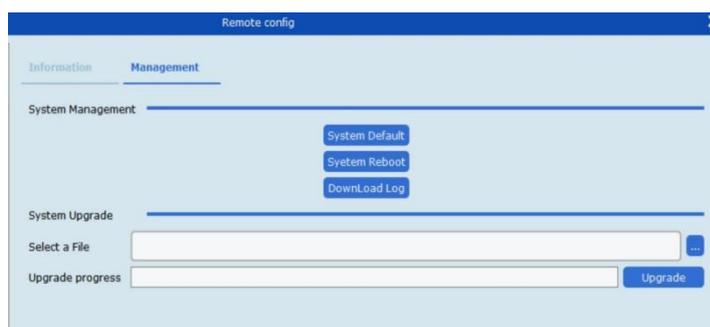
At the bottom of the 'Port Information' section, there are 'Save' and 'Refresh' buttons.

3.1.2 Device Maintenance

You can reboot the device, restore the default Settings, download logs, and upgrade.

Operating Steps

1. Select *Remote config* ---> *Management* ---> *System management*, have access to the Maintenance page.



The screenshot displays the 'Management' tab of the Remote Configuration interface. It is divided into two sections: 'System Management' and 'System Upgrade'.

System Management:

- Buttons: System Default, System Reboot, Download Log

System Upgrade:

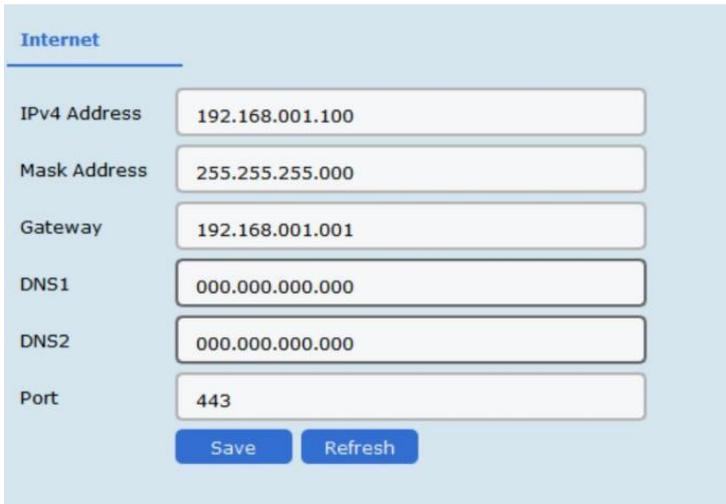
- Select a File: [Text input field]
- Upgrade progress: [Progress bar]
- Upgrade: [Upgrade button]

2. Select function buttons to achieve different functions

System default	All parameters are restored to factory Settings. After the restoration, the device needs to be reactivated.
System Reboot	Remote reboot device.
Download Log	The serial port logs from the switch can be downloaded, you can check the problems through analyzing the error types of the switch.
Upgrade	Click  , Select upgrade documents, click upgrade, the device upgrade. Current Progress shows the upgrade progress.

3.2 Network Configuration

Select *Remote config* --> *Internet*, Network parameters can be configured for different clients. Network parameters include IPv4 address, subnet mask, gateway address, and port.



Internet

IPv4 Address: 192.168.001.100

Mask Address: 255.255.255.000

Gateway: 192.168.001.001

DNS1: 000.000.000.000

DNS2: 000.000.000.000

Port: 443

Save Refresh

① Explanation :

After IPv4 address is reset, it will cause the device IP and the PC IP that are not in the same network segment, so the device management and configuration do not work. Planning the device's IP address at first is suggested when the device being used for the first time.

3.3 Port Configuration

Select *Remote Configuration* ---> *Port* to proceed with the related configuration.

① Explanation :

The supported functions of the device itself exists difference, details is subjected to the actual interface.

3.3.1 Attributes Configuration

In **Attributes Configuration** interface, you can configure the port rate, duplex mode, stream control, and on-off.

Rate	Include automatic negotiation 10Mbps, 100Mbps, 1000Mbps rates, etc. auto-negotiated is default
Duplex	This version only support auto-negotiated mode
Stream Control	When in the processing of the function of the port stream control, after the stream control is opened, it can avoid packet loss effectively. The function is the default open.
On-off	Port on-off, after turnoff, the port haven't transmitted data, other device is still supplied by power.

3.3.2 Remote Configuration

Devices that support the remote function, turn on or turnoff the switch, the port of the remote function can be turned on or off.

When the remote function has been turned on, the transmission distance can reach 250m.

After the remote function has been turned on, the port rate will be matched to 10Mbps; after it has been turned off, the port rate will be restored to auto-negotiated.

3.3.3 PoE Port Configuration

For the devices that support the PoE function, the PoE function can be turned on for providing the power to other PD devices.

Turn on or off the PoE, data transmission is not influenced.

3.3.4 Port mirroring

Port mirroring is a packet acquisition technology. By configuring switches, the data flow of one or more source ports can be forwarded to a specified port. Through data analysis software, the collected data packets can be analyzed, so as to achieve the purpose of network monitoring and troubleshooting network faults.

Select *Remote configuration* --->Port--->*Port mirroring*, select the corresponding port configuration parameters.

Port Name	Port Mirroring
Eth2	Enable
Eth3	Enable
Eth4	Disable
Eth5	Disable
Eth6	Disable
Eth7	Disable
Eth8	Disable
Eth9	Disable
Eth10	Disable
Eth11	Disable
Eth12	Disable
Eth13	Disable

Port mirroring

Enable or disable the selected port mirroring function. The enabled ports is mirroring port.

Monitoring port

The ports used to monitor the mirror port data transfer.

Mirror Method

- Egress: Monitoring the data from the incoming mirror port.
- Ingress: Monitoring the data from the outgoing mirror port.
- Egress and Ingress: Monitoring the data for the incoming and outgoing mirror ports.

① Explanation:

- ◆ At least select 1 mirror port, and the monitoring port must be set after the port mirror is enabled.
- ◆ Ports configured to monitor ports will not display in the port mirroring list.

3.3.5 Port Isolation

Port isolation is to divide each ordinary port and uplink port of the switch into a separate VLAN. The ordinary ports can only communicate with the preset uplink port, but the ordinary ports cannot communicate with each other, thus improving the security of the network and reliability.

In **Port Isolation** configure page, enable or disable this switch to use this function.

Port Name	Port Isolation
Eth1	Enable
Eth2	Disable
Eth3	Disable
Eth4	Disable
Eth5	Disable
Eth6	Disable
Eth7	Disable
Eth8	Disable

① Explanation:

When port isolation is enabled, this port can only communicate with G port and cannot communicate with isolation from other ordinary ports.

3.4 Log management

If the device is abnormal or need to check the operation records, the log of device can be checked at the interface of log searching.

Operating Steps

1. Select *Remote Configuration* ---> **Log** , enter the page of the log.

index	Operating time	Main type	Sub type	Port	ip
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2. Setting Search Conditions

Main Type	When searched by the type, the system, operating, account, warn, that can be selected in the main type, a total of 4.
Start Time	Searching Start Time for log
End Time	Searching End Time for log
Sub Type	Sub Type can select the related type according the different type of Main Type
Port	Searching the login corresponding port

3. Searching Log, click "Search" , the specific log can be viewed.

The screenshot shows a web interface for searching logs. It includes several search filters: Main Type (set to All), Start Time (2021/12/7 0:00), End Time (2021/12/7 23:59), Sub Type (set to All), and Port (set to All). There are buttons for 'Search' and 'Export'. Below the filters is a table with the following data:

index	Operating time	Main type	Sub type	Port	ip
1	12/07/2021 15:15:08	Operate	Search Log		172.20.57.5
2	12/07/2021 15:15:08	Operate	Search Log		172.20.57.5
3	12/07/2021 15:15:08	Operate	Search Log		172.20.57.5
4	12/07/2021 15:15:07	Operate	Search Log		172.20.57.5
5	12/07/2021 15:15:07	Operate	Search Log		172.20.57.5
6	12/07/2021 15:15:07	Operate	Search Log		172.20.57.5
7	12/07/2021 15:15:03	Operate	Search Log		172.20.57.5
8	12/07/2021 15:13:05	Operate	Search Log		172.20.57.5
9	12/07/2021 15:12:45	Operate	Search Dev		172.20.57.5
10	12/07/2021 15:12:34	Account	Login		172.20.57.5
11	12/07/2021 14:19:46	Alarm	Port net link	Eth2	
12	12/07/2021 14:19:44	Alarm	Port net off	Eth2	
13	12/07/2021 07:23:07	Alarm	Port net link	Eth2	
14	12/07/2021 07:23:05	Alarm	Port net off	Eth2	

1) Click **Export** , select Export path.

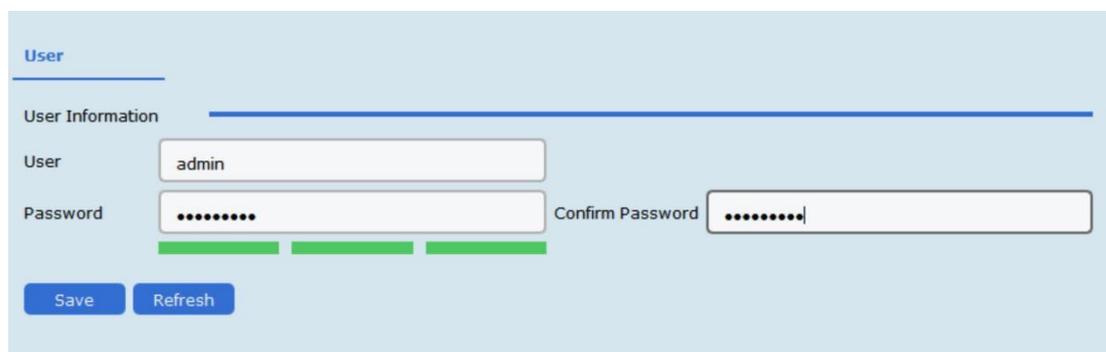
2.) Give the exported document name, format is stored by .xlsx, log back-up has been finished.

3.5 User management

Device only support one admin user, can't add or delete, but can change the password.

Operating Steps

Select *Remote Configuration* ---> *User*, enter the edit interface of user



The screenshot displays the 'User' management interface. At the top, there is a blue header with the word 'User'. Below this, a section titled 'User Information' is highlighted with a blue horizontal line. The form contains three input fields: 'User' with the text 'admin', 'Password' with masked characters '.....', and 'Confirm Password' also with masked characters '.....'. Below the password fields, there are three green progress bars. At the bottom of the form, there are two blue buttons labeled 'Save' and 'Refresh'.

Password

It consists of two or more combinations of 8-16 digits, lowercase letters, uppercase letters or special characters. Passwords are divided into three levels: weak, medium, and strong. To protect your personal privacy and corporate data, and avoid network security issues on your device, it is recommended that you set a strong password that complies with security standards.

3.6 Advanced configuration

3.6.1 Broadcast Storm Control

Broadcast Storm refers to the broadcast frames on the network due to the continuous forwarding, which affects the normal network communication and seriously reduces the network performance. The broadcast storm determines whether a port receives many broadcast frames in a short time. Storm suppression refers to limiting the broadcast traffic allowed to be received on the port. When the traffic exceeds the threshold, the system will discard the broadcast frame beyond the traffic limit to prevent the occurrence of broadcast storm, so as to ensure the normal operation of the network.

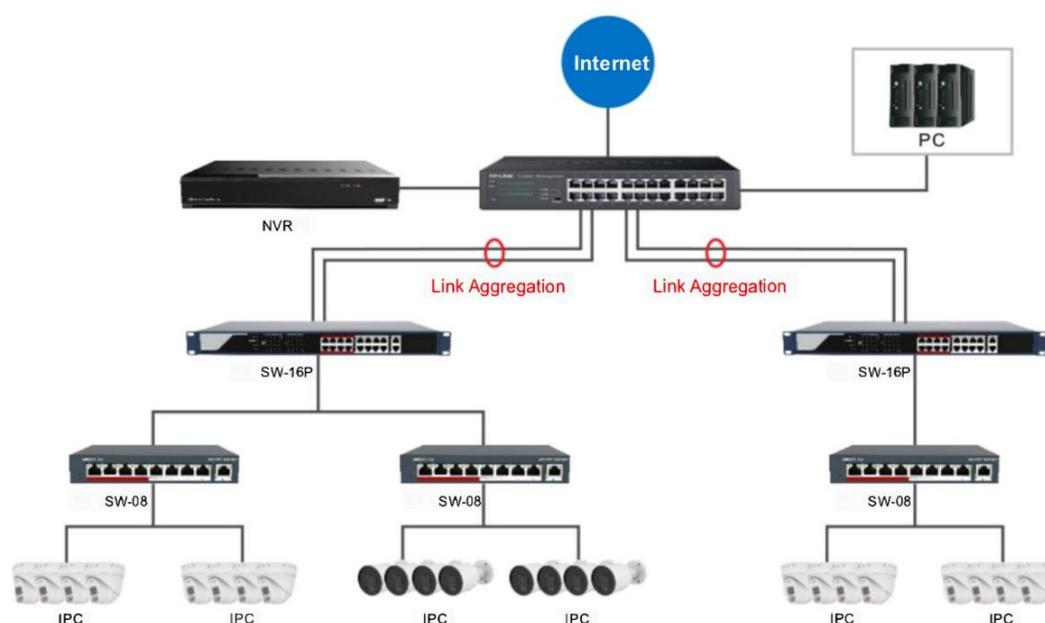
Select *Remote configuration* ---> *Advanced configuration* to enable broadcast storm control setting, it works after the setting saved.

3.6.2 Link aggregation

Link aggregation refers to pooling multiple physical ports together to form a logical port to realize the load sharing of data traffic in each member port and increasing the link bandwidth. When a link failure is detected for one of the member ports, the send port in the remaining links can realize the reliability of the link transmission. Link aggregation function is mainly used in the cascade between switches, to provide high-bandwidth data transmission ability for the data exchange between switches, improve the network speed, break through the network bottleneck, and then greatly improve the network performance.

Select *Remote configuration* ---> *Advanced configuration* to enable link aggregation setting, it works after the setting saved.

Application:



① Explanation:

- ◆ The switch only supports the link aggregation of G port, and the physical attributes of G port must be the same (port status, speed rate, duplex, flow control, VLAN, remote configuration must be consistent)
- ◆ When the G port is configured to monitor the port, the link aggregation function cannot be enabled.
- ◆ When the switch enables the link aggregation, it needs to be used with the full Gigabit switch that supports the link aggregation function.

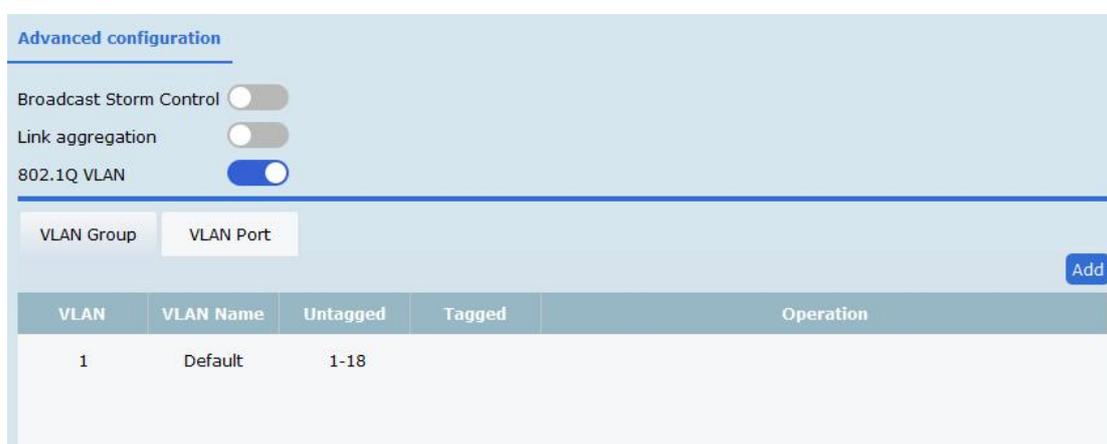
3.6.3 802.1Q VLAN

VLAN (Virtual Local Area Network) is a technology that logically divides LAN devices into network segments, so as to isolate the broadcasting domain within a LAN.

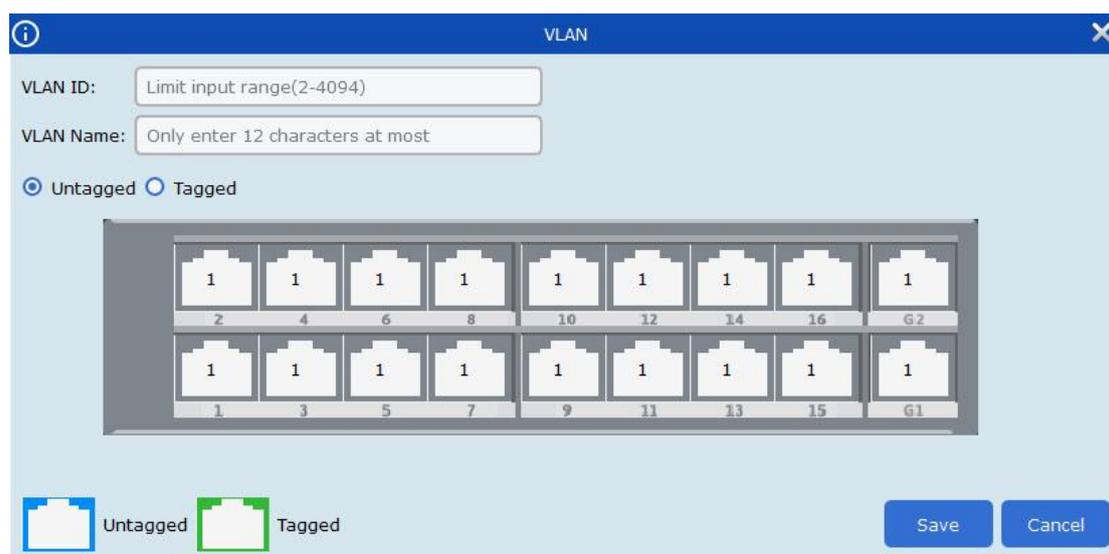
802.1Q VLAN distinguish data streams between different VLAN by labeling the 802.1Q TAG (tag) in the package. It can realize the isolation of the second layer network in the LAN and the exchange of VLAN visits across switches.

Operating steps

1. Select *Remote configuration* ---> *Advanced configuration* to enable 802.1Q VLAN function.



2. Click [Add](#) menu to add VLAN and configure VLAN port.



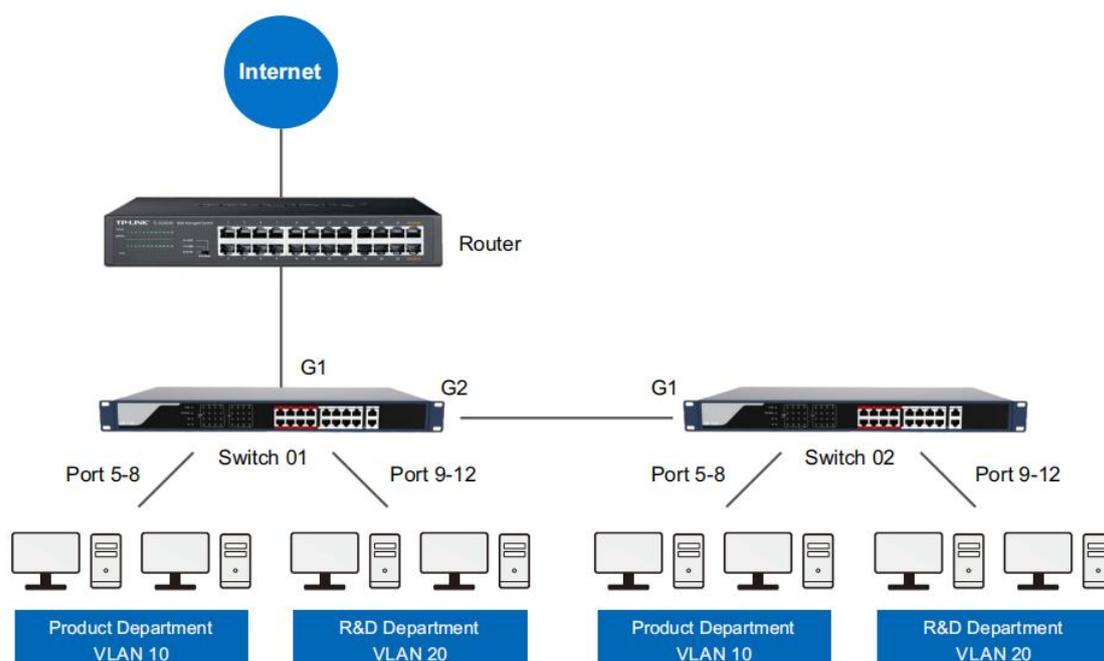
- 1) Enter the VLAN ID to define the VLAN name.
- 2) Configure the VLAN port and set the port VLAN type.
 Untagged VLAN port type is used to connect to the ports of user terminal devices.
 tagged VLAN port type is used for ports connecting between network devices.

ⓘ Explanation:

- 1.The maximum support number is 4,094 VLAN
- 2.VLAN 1 is the default VLAN and cannot be created and deleted

Application:

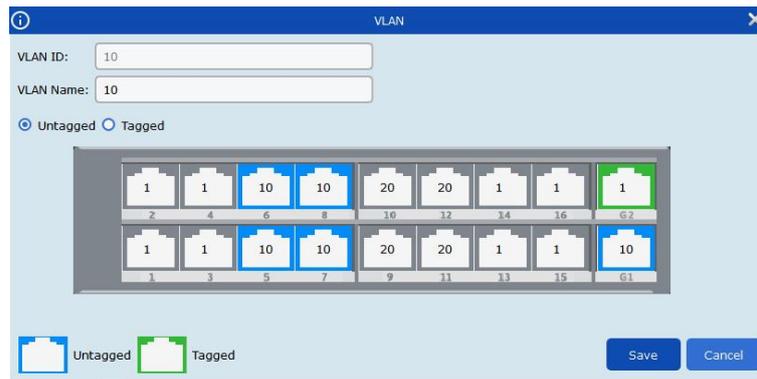
The same department of the same company has multiple different offices, and each office location has its own switch, which cascades into the same LAN. Different departments are required to be isolated from each other and cannot visit each other. Members of the same department under different switches can visit each other. The network topology is as follows:



Setting method:

Take the switch **Switch01** as an example, port G1 is connected to the router, and port G2 is connected to the switch **Switch02's** port G1.

1. In **VLAN** -> **802.1Q VLAN**, select **Enable** and click **Apply**.
2. The division of the VLAN: Enter 10 in the VLAN Name box, select the corresponding port, select the cascade port G2 as **Tagged**, and the remaining ports are **Untagged**. Click **Add** after completion.



Enter 20 in the VLAN Name box, select the corresponding port, the cascade port **G2** is selected as Tagged, and the remaining ports are Untagged. Click **Add** after completion.

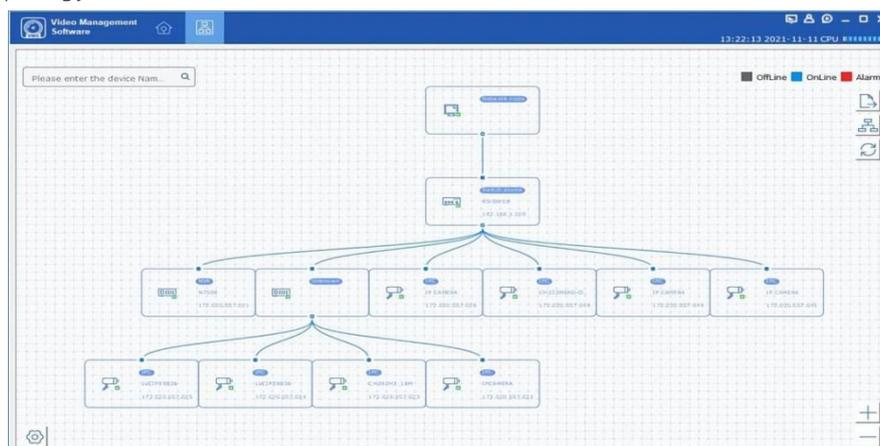
3. The switch **Switch02** is set up roughly the same as the **Switch01**. Only the member ports of VLAN10 and VLAN20 must only contain a cascaded port **G1** with Tagged type port.

Chapter 4 Topology presentation

In the interface of topology presentation, the relation of topology in different added devices can be viewed by the client, and related configuration can be operated.

4.1 Related operating

Select the device which needs checked, selected Control Panel ---> **Topology presentation**, enter the interface of topology.



Interface Description

- Inputting the alias or IP of the device at the top left corner, corresponding topology graph can be viewed.
- The upper right corner show the meaning of different icon color, and icons of export,

refresh topology graph and path.

- Zoom in and zoom out the topology at the bottom of right corner, or zoom in and out directly through scrolling them use wheel.
- The level of the display layer of topology graph can be setup at the bottom left corner.

① Explanation:

Enter the interface of topology graph for the first time, if no topology graph is displayed, please click refresh and try again.

Related Operating/Icons description

Action/Icon	Operating	Details
Double-click Device	Look over the details of device	The type of the device and the information of IP, Panel status, and Port are displayed.
Right-click Device	Look over the device status	Skip to the interface of device status, and see details at <i>device status</i> .
	Run alarm processing	The information of alarm and event is displayed, and perform alarm elimination operation
	Run remote configuration	Skip to the interface of remote configuration, and see details at <i>Remote Configuration</i> .
	Modify the device name	Modify the name on the interface of topology
	Set as root node	Set the current device to the root node in the topology
	Upgrade device	Supports the connected NVR, DVR, and IPC upgrades
	Export topology graph	Select the export path, and export the current topology graph
	Show Path	Select IPC and current device, the path between the selected device can be displayed
	Refresh topology graph	Refresh the interface of topology and display it

4.2 Topology Setting

Operating steps

Click  which at the interface of the bottom of the left corner to proceed with the basic setting of the topology.

- Set the display level: 1~10;
- Click "OK" , save the setting.

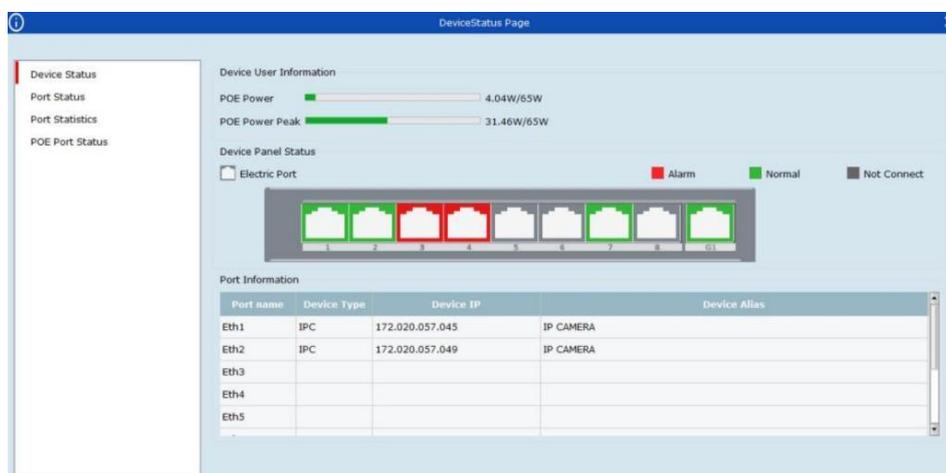


① Explanation:

After the setting changed,  needs to be clicked to refresh for displaying the latest topology.

Chapter 5 Device Status

In the interface of topology graph, right-click the device, then click the Device Status, the device using condition, panel status, port status, PoE port status, and the port statistics can be looked over.



- **Port Status** : Check the condition of the port rate, the duplex mode, and the stream control
- **Port Statistics** : Check the Bytes that sent/received by the port, the packets count, the rate, and the peak rate. Set an interval of refresh automatically, and run Refreshing or Clearing data statistics by hand.
- **PoE Port Status** : Check the port switch and output power corresponding to the port number.