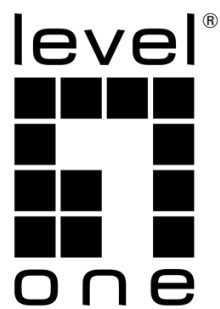# Web Management Guide
(GEP-2841)

Chapter Ⅰ Product Introduction

Product introduction

The LevelOne GEP-2841 Web Smart Gigabit PoE Switch, provides 24 PoE ports 10/100/1000Base-T plus 2 port Gigabit Uplink SFP and 2 port Gigabit Uplink RJ45 to enable high speed network. With the plus the clearly visible status LEDs provide simple monitoring of port link activity. Moreover, the SFP slots support pluggable modules that enabling you to choose from a variety of transceivers. It offers powerful enhanced PoE functionality and a total PoE budget of 375W. and it is fully complied with IEEE802.3af/at/bt PoE standard at maximum 90W(1-2 port) power budget. supports up to 30W output power per PoE port, giving you power distribution flexibility for a wide range of PoE PD devices. It helps to save infrastructure wiring costs dramatically by eliminating electric wiring and less UPS needed.

Front interface

Figure 1-3

Definition of operating mode switch：

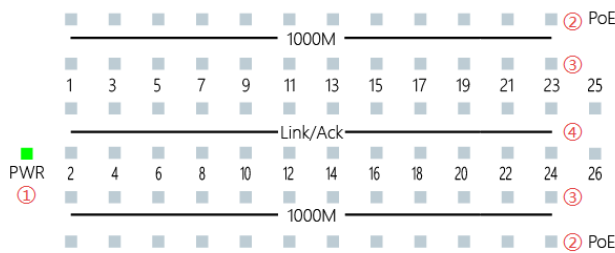| Mark	Work mode	Description
Unmanaged	Unmanaged mode	All ports communicate freely, and the parameters configured in Web mode do not take effect
Web Smart	WEB managed mode	The web network management function is effective, and the switch can be managed and configured

Indicator：

Figure 0-4

S/N	Indicator	Status	Description
①	Power	Light on	Power on
		Light off	No power
②	PoE	Light on	PoE power in
		Light off	PoE without power
③	1000M	Light on	The current operating rate is 1000Mbps
		Light off	The current operating rate is 10 / 100Mbps or the link is not connected
④	Link/Act	Light on	The link is connected
		Light flash	The port has data transceiver
		Light off	the link is not connected

List of accessories

- Master unit
- Power cord
- Quick Installation Guide
- L-shaped bracket and other
- Rubber Feet

Installation guide

For the safe installation and operation of the switch, it is recommended that you：
1. Check that the power cord is securely wrapped around the AC power connector。
2. Ensure proper heat dissipation and ventilation around the switch。
3. Do not stack heavy objects on the switch。

Mounting to rack

1. Check the grounding and stability of the frame。
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, as shown in Figure 2-1。
3. Place the switch in the appropriate position in the rack and supported by the bracket。 Fix the L-shaped bracket on the guide grooves fixed at both ends of the rack with screws to ensure that the switch is stably and horizontally installed on the machine, as shown in
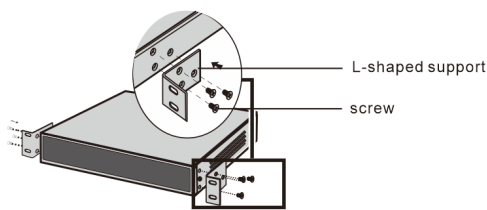
Figure 2-2。

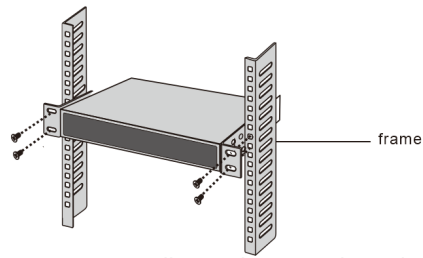
Figure 2-1 installation diagram of switch   Figure 2-2 installation diagram of switch

Power Plug

1. The power line of the switch adopts a single-phase three wire power socket, the middle pin is the grounding wire, the left pin is the zero wire, and the right pin is the live wire. Please check before operation. Figure 2-3

Connect the power cable

1. Check that the selected power supply is consistent with the power supply requirements marked on the switch；
2. Built in without power adapter, it can be directly connected to AC100 ~ 240V, 50 ~ 60Hz mains power; As shown in Figure 2-4
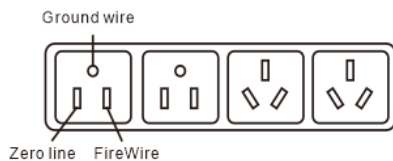
Figure 2-3 single phase three wire power socket   Figure 2-4 schematic diagram of power connection
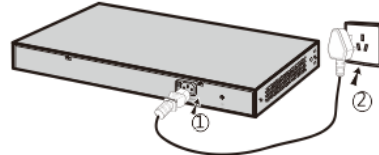
Connect SFP port

The process of installing the optical fiber module in the switch is as follows：
Grasp the optical fiber module from the side and insert it smoothly along the SFP port slot of the switch until the optical fiber module is in close contact with the switch, as shown in Figure 2-5。
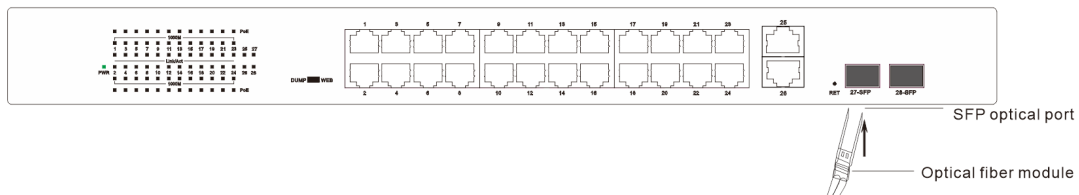
Figure 2-5

Installation inspection

Please check the following items after installation：

1. Check whether there is enough heat dissipation space around the switch and whether the air circulation is smooth；
2. Check whether the power supply of the power socket meets the specification of the switch；
3. Check that the power supply, switch, rack and other equipment are properly grounded；

Chapter Ⅱ Login management interface

Logging on to the equipment

1. Connect the RJ-45 interface cable of a switch with a computer using a network cable.
2. Set the TCP/IP properties of the computer, see the Appendix: Setting up yourcomputer.
3. Logging on to the equipment: Open a browser and type 192.168.1.1 in the address bar, and then press Enter; in the pop-up login interface, enter the factory logon username "admin", password "admin" and click OK.
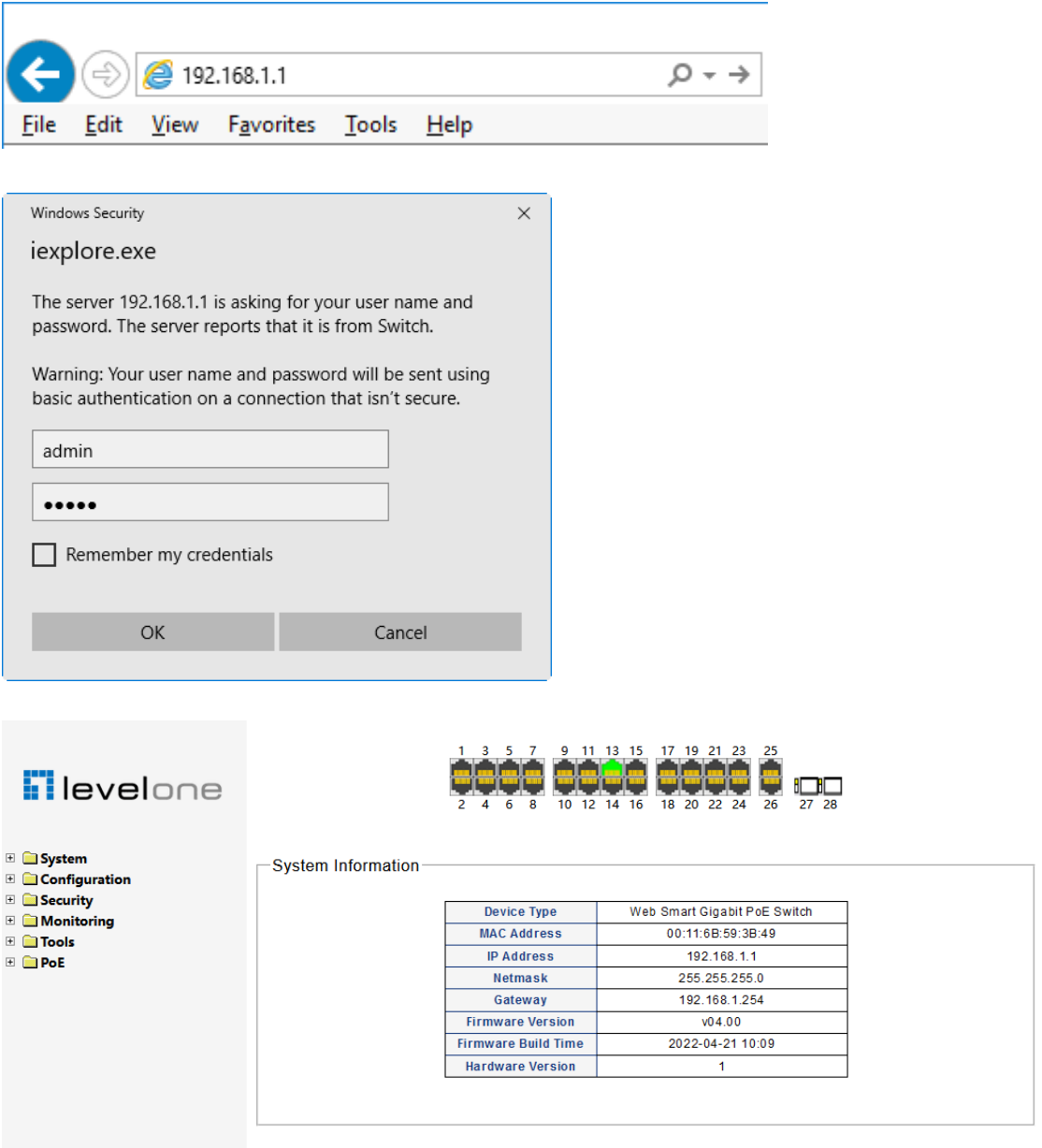
Figure 0-1

Chapter Ⅲ WEB Managed function
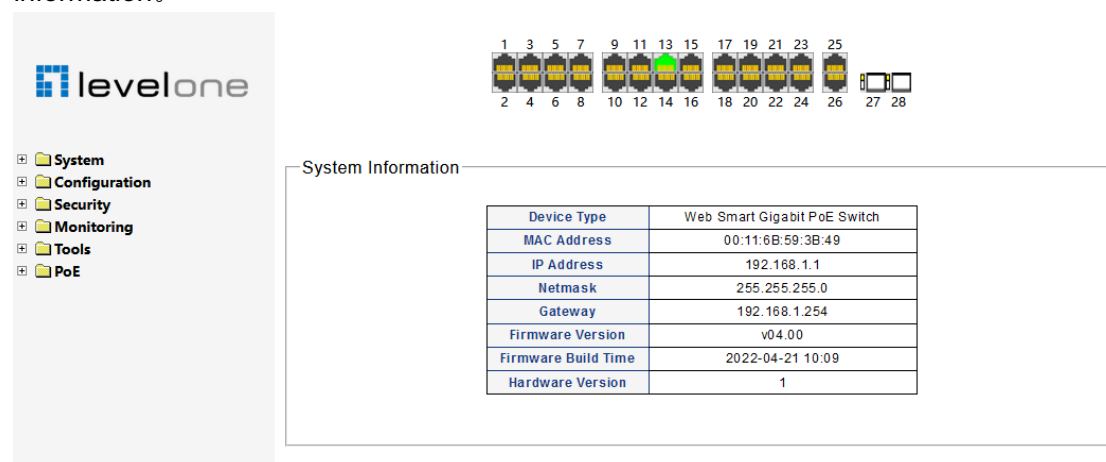
Web details

① Interface status: displays the working status of the port. Green indicates that the port is connected, and unshaded indicates that the port is not connected。

② Function navigation tree: you can quickly switch to the corresponding function page through function navigation。

③ Function details: information display and configuration details of the currently selected function。

System

1. Information

The system information page displays the basic information of the switch system, including equipment model, MAC address, IP information, firmware and hardware version information。

System Information

Device Type	Web Smart Gigabit PoE Switch
MAC Address	00:11:6B:59:3B:49
IP Address	192.168.1.1
Netmask	255.255.255.0
Gateway	192.168.1.254
Firmware Version	v04.00
Firmware Build Time	2022-04-21 10:09
Hardware Version	1

Figure 0-1

2. IP Setting

Displays and sets the management IP address of the switch。
When the IP mode is "static IP", you can manually configure IP address, subnet mask and gateway information。
When the IP mode is "DHCP", the switch will automatically obtain IP information through the DHCP server in the network。

⚠️ When switching IP mode, you need to restart the switch before it takes effect；

After modifying the management IP and restarting it, you need to log in with the new IP address and ensure that the network segment of the management computer matches it。
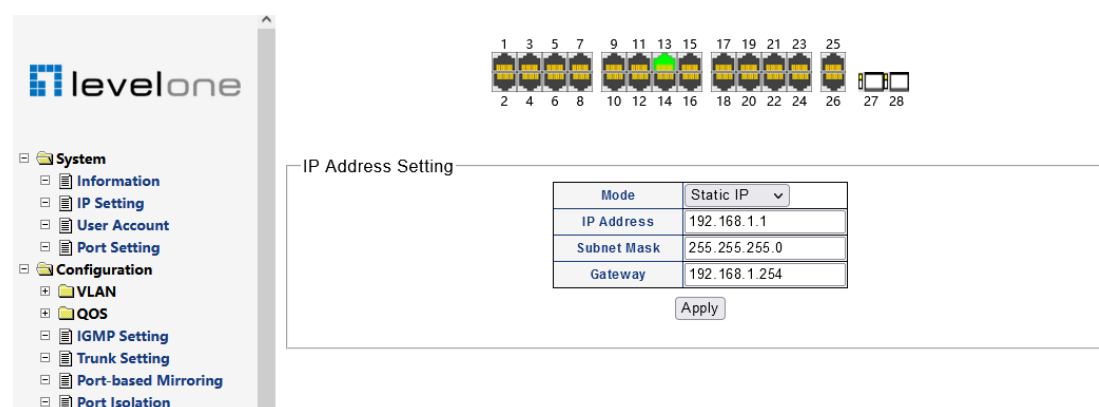
Figure 0-2

3. User Account

The user setting page can modify the user name and password of the switch management account. If a new user name is set on this page, the original user name will become invalid.。

Figure 0-3

4. Port Setting

Figure 0-4

On the port setting page, the user sets and displays the port status, including the following contents：

Alias: used to describe or comment on the port；

Status: "on" and "disabled". If it is set to "disabled", the port will be closed manually and communication cannot be carried out；

Speed / duplex: all interfaces are in "automatic" state by default, i.e. adaptive mode. It can be manually configured as "full duplex / half duplex mode", and the rates of 10m, 100m and 1000m are optional. It is generally recommended to select "automatic" mode；

Flow control: when the flow control is turned on and the port is blocked, the switch will send a "passuse" frame to the informant to inform the information source to suspend sending information for a period of time。

Configuration

VLAN

1. Static VLAN

Figure 0-5

Static VLAN is used to set 802.1Q VLAN properties of switch ports。

VLAN ID：Identifier used to distinguish different VLANs. Terminals between different VLANs cannot communicate directly。

VLAN：The naming or description of the corresponding VLAN is usually used to intuitively distinguish the purposes of different VLANs。

Untagged：For the port identified as untagged, when the data frame exits the port, if it is a frame with VLAN tag, it will be removed and sent again. If it is a data frame without tag, it will be sent directly. For data frames entering the port, the port will be labeled with the corresponding VLAN ID inside the switch. Usually used to access terminal equipment。

Tagged：The port identified as tagged carries the VLAN ID tag when the data frame is sent out. Therefore, the opposite end equipment must be able to identify the VLAN tag, otherwise the data cannot be identified normally. It is usually used to connect trunk and hybrid ports of managed switches or router ports supporting VLAN。

Not Member：When the port is checked, it means that the current port does not belong to the member port of this VLAN。

Add/Delete VLAN

Fill in the VLAN ID and VLAN name to be added (optional)；

Select the corresponding option under the port name according to the untag and tag attributes required by the port (click the "VLAN all" button of the corresponding option to

set all ports as the corresponding attributes)；

Click the "add / modify" button below。

Delete VLAN

Check the delete selection box behind the corresponding VLAN ID in the VLAN list below, and click the "delete" button to delete the corresponding VLAN；

VLAN 1 is the default VLAN and cannot be deleted. Click "select all" to select all VLANs except VLAN 1 and delete all VLANs except VLAN 1。
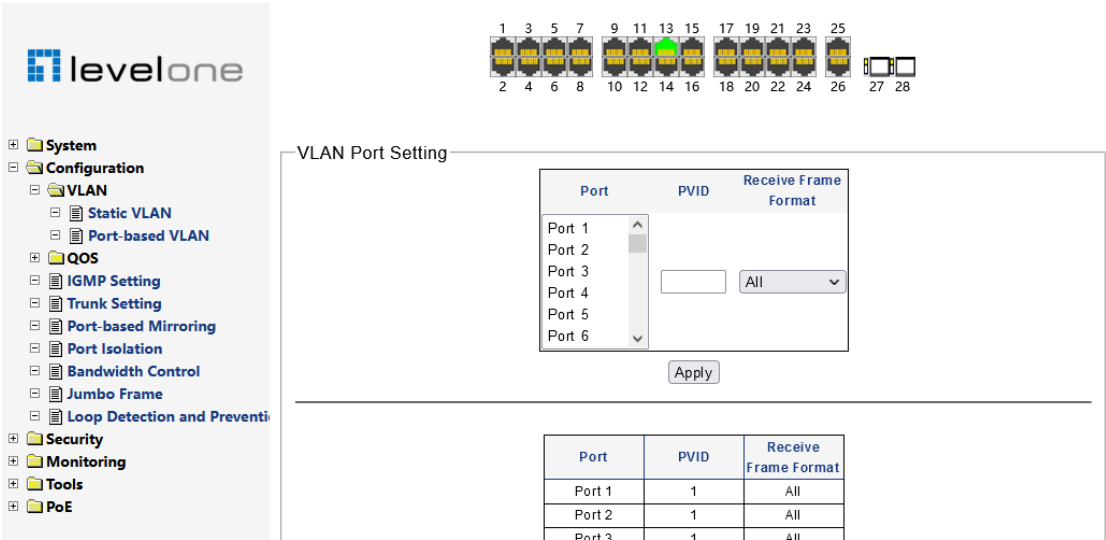
2. Port-based VLAN

Figure 0-6

The VLAN port setting page is used to set the PVID (port based VLAN ID) of the port and the frame format received by the port。

PVID: All ports have only one PVID. When unlabeled data frames enter the switch port, the switch will label the data frames from the port with PVID. The default PVID for all ports is 1。

Receive frame format

ALL：The specified port processes the received frames regardless of whether they are labeled or not. For untagged frames, VLAN tags are marked with PVID for next processing. For the tagged frame, if the port belongs to the member of the corresponding VLAN ID, the next step will be processed. If it does not belong to the member, it will be discarded。

Tag-only：The specified port receives only labeled data frames. General client devices do not support VLAN tagging, so the port connecting the client may not be able to communicate when this option is selected。

Untag-only: The specified port only receives unlabeled data frames. If the peer device interface communicates with multiple VLANs (such as the trunk interface of the switch and the VLAN based sub interface configured in the router), only pvids can communicate。

For example：As shown in Figure 3-8, VLAN 10, 20 and 30 have been configured for the superior equipment, and the corresponding VLAN is allowed to pass through the port connected to the switch. The three terminals connected by Ports 1, 2 and 3 of the machine

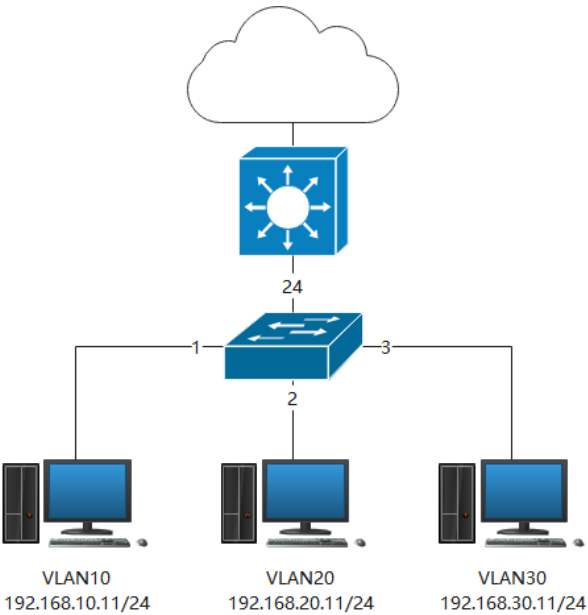are planned to VLAN 10, 20 and 30 respectively。

Figure 0-7

First, add corresponding VLAN and port settings on the static VLAN page. Take vlan10 as an example, fill in VLAN ID 10, select untagged under port 1, and tagged under port 24, and click Add. After all VLANs are added, it should be as shown in Figure 3-9。

VLAN ID	VLAN Name	Member Ports	Tagged Ports	Untagged Ports	Delete
1		1-28		1-28	☐

Delete   Select All

Figure 0-8

Then enter the "VLAN port setting" page, select port 1, fill in PVID 10, and click apply. Set port 2 and port 3 respectively according to this method, and pvids are 20 and 30 respectively. After completion, see Figure 3-10。

Figure 0-9

For example: as shown in Figure 3-11, when it is necessary to access multiple broadband and the number of available physical interfaces of the router is insufficient, it is necessary to expand the WAN port through the switch (this function needs to be supported by the router function)。
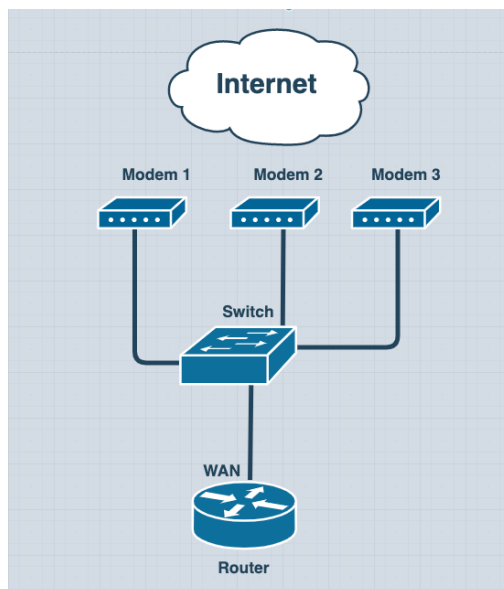

Figure 0-10

The relevant settings of the switch are the same as those in the previous example, except that 24 ports are connected to the router, and 1-3 ports are connected to the corresponding operator access equipment respectively. After completion, use the corresponding VLAN ID in the router to configure the corresponding sub interface or related WAN port configuration。

QoS

1. Priority selection
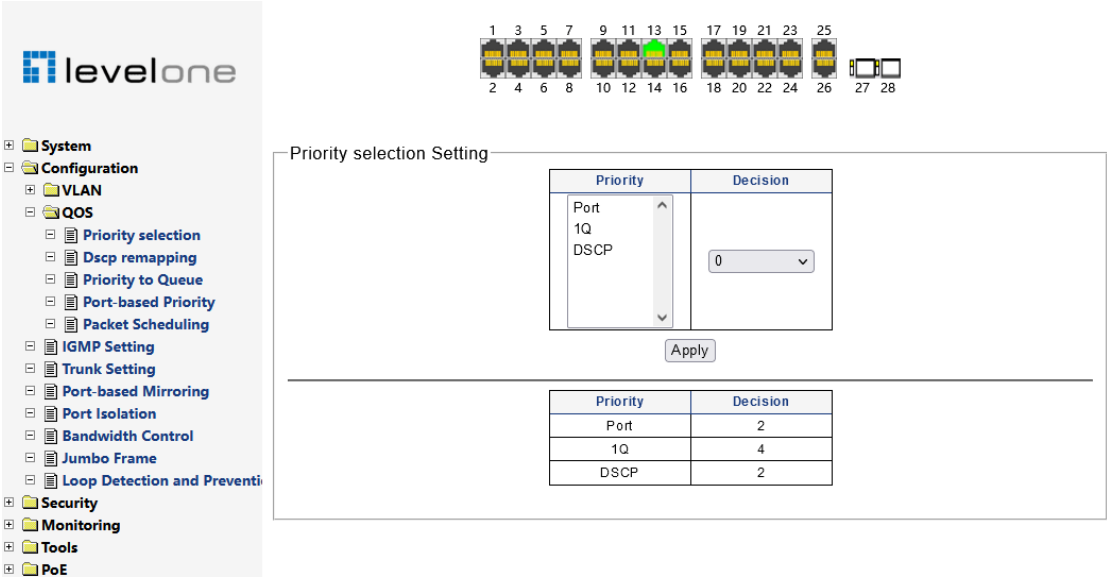
Figure 0-11

The priority selection page sets different types of priorities for packets forwarded by the switch. The higher the value, the higher the priority。
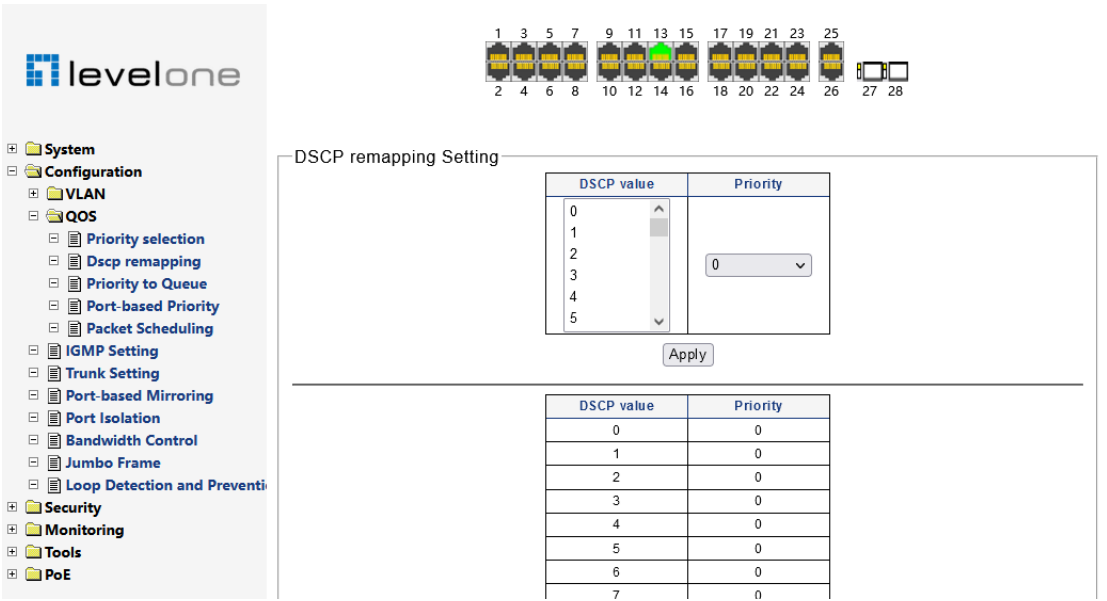
2. Dscp remapping

Figure 0-12

Set the DSCP value in the IP packet entering the switch port, and determine the output queue of the packet according to the DSCP value and priority configured by the user. Select

the DSCP value and level priority value to be set to determine the output queue of data packets。

3. Priority to Queue
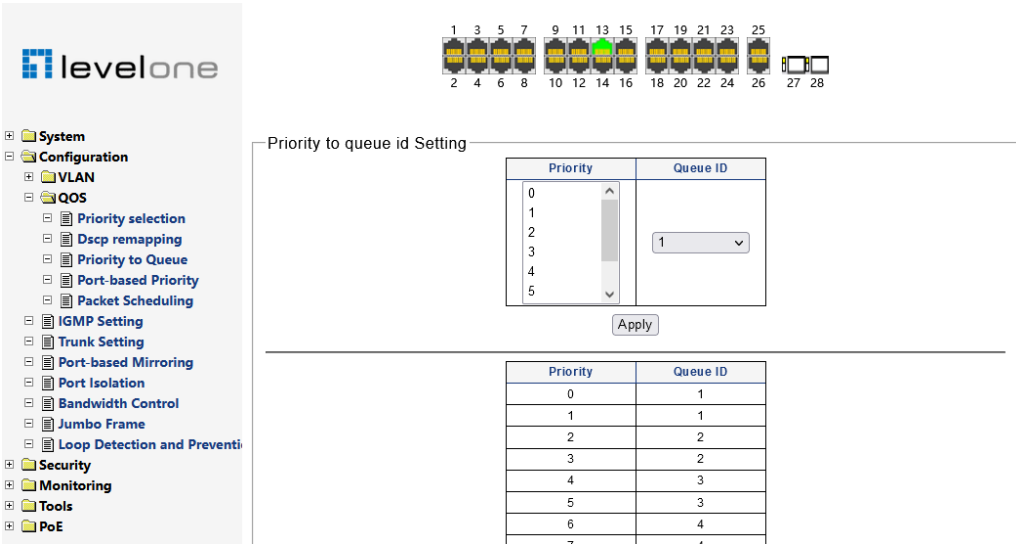
Figure 0-13

The queue priority page is used to prioritize the packet queue output by the switch. The output queue of packets has been determined. The higher the priority value is, the higher the priority is, and the data in this queue will be forwarded first。
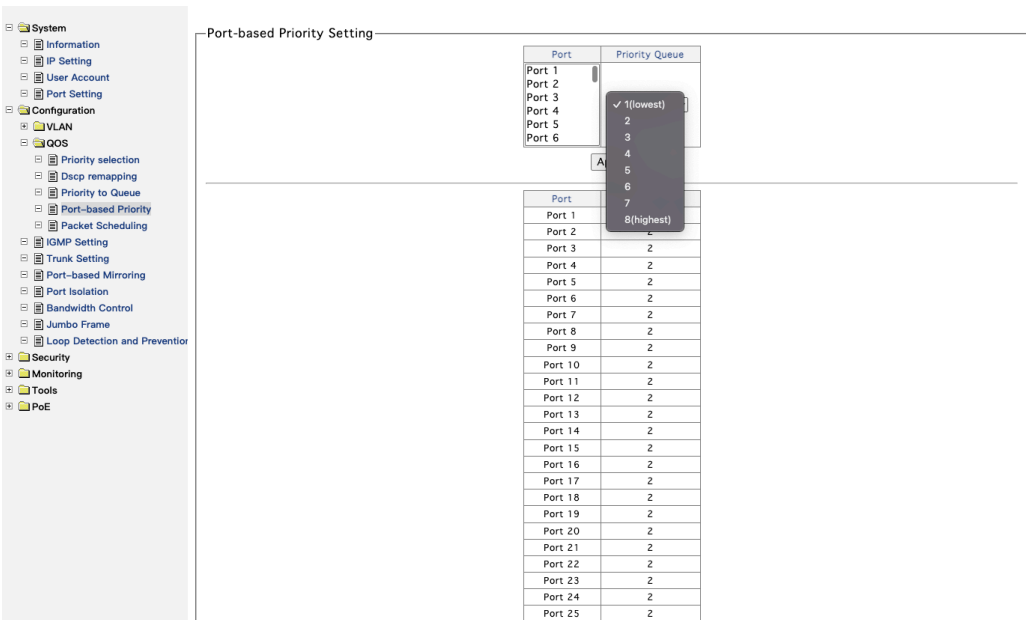
4. Port-based Priority

Figure 0-14

The port priority page is used to prioritize the data packets transmitted by the switch port. The higher the value, the higher the priority。

5. Packet Scheduling

On the queue scheduling page, you can select the scheduling policy and corresponding priority in the queue priority to define the weight value. (weight value min 1 max 15)。

IGMP Setting

Figure 0-15

After IGMP setting is enabled, the multicast message is only forwarded to the corresponding member port. For non member ports, the data message of the multicast group will not be forwarded, and the unknown multicast message will be discarded。
When IGMP function is not enabled, group broadcast messages will be broadcast and forwarded to all ports。

Trunk Setting

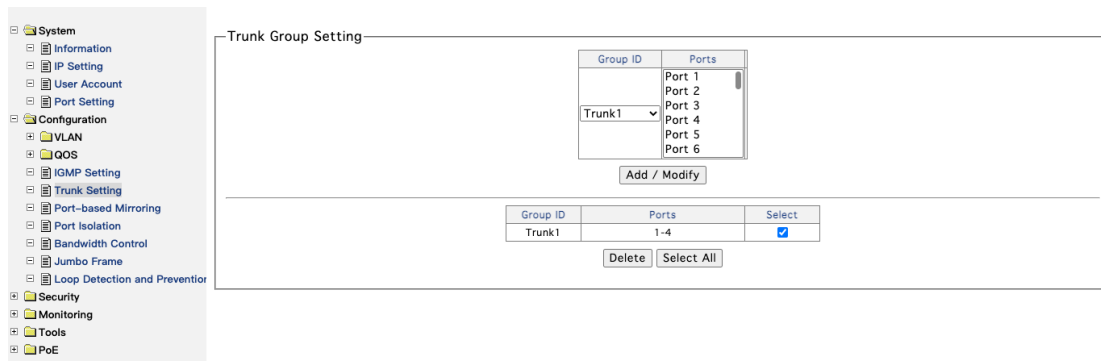Specifies the Ports to which Trunk Group ID.

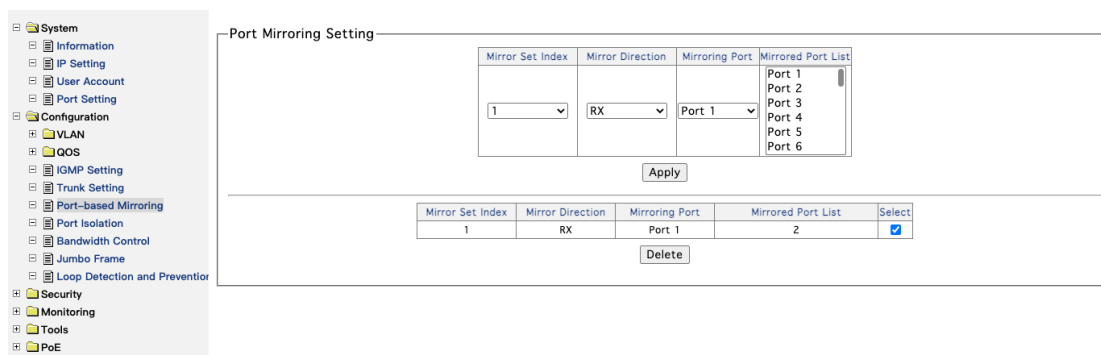Figure 0-16

Port-based Mirroring

Figure 0-17

The port mirroring function can be set to copy the data in the specified direction of the port to the mirrored port. Up to 4 sets of port mirroring can be set。

Direction：RX refers to the data entering the port from the outside of the port, TX refers to the data sent from the port, and both is bidirectional。

Mirroring Port：Port the target port of the mirror image. The mirrored data will be sent to this port. For example, in packet capturing applications, this interface is used to connect computers running packet capturing software。

Mirrored port：The data source port of the port mirroring function. Packets in the specified direction of the mirrored port will be copied to the mirrored port。

For example：As shown in Figure 3-19, the administrator connects the computer with the packet capturing software to port 1 of the switch, and needs to capture and analyze the data sent by the computer connected to port 2。
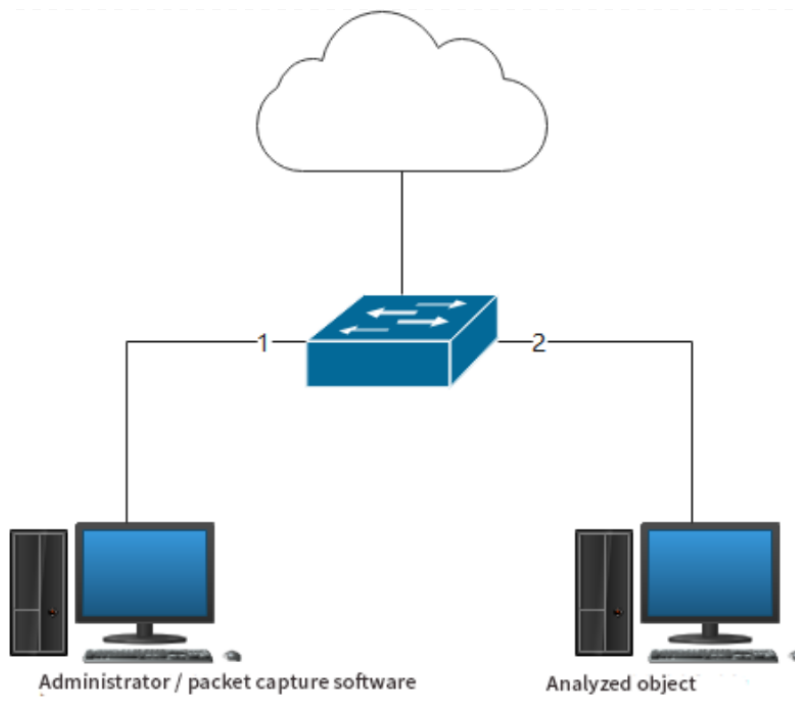
Figure 0-18

As shown in Figure 3-20 below, Rx is selected for the direction (messages sent by the equipment connected to the switch are received for the switch port), 1 is selected for the mirror port, and 2 is selected for the mirrored port。

Figure 0-19

Port Isolation

Figure 0-20

The port isolation function can realize the layer-2 data isolation between different ports and cannot communicate with each other. By default, all ports are not isolated。

Port：Set object port。

Allow forwarding port：The port that allows communication with the object port, that is, the port that is not mirrored and isolated from the object port. Except for the forwarding port, other ports cannot communicate with the object port。

When adding ports, you can press and hold the mouse to drag and select multiple continuous ports. When selecting non continuous ports, you can press and hold the CTRL key to select multiple ports or deselect the corresponding ports。

Example: as shown in Figure 3-22, port 24 of the switch is connected to the Internet through a router, and port 23 is connected to a server. It is required that all terminals of port 1-22 cannot communicate with each other, but are allowed to access the Internet and server。
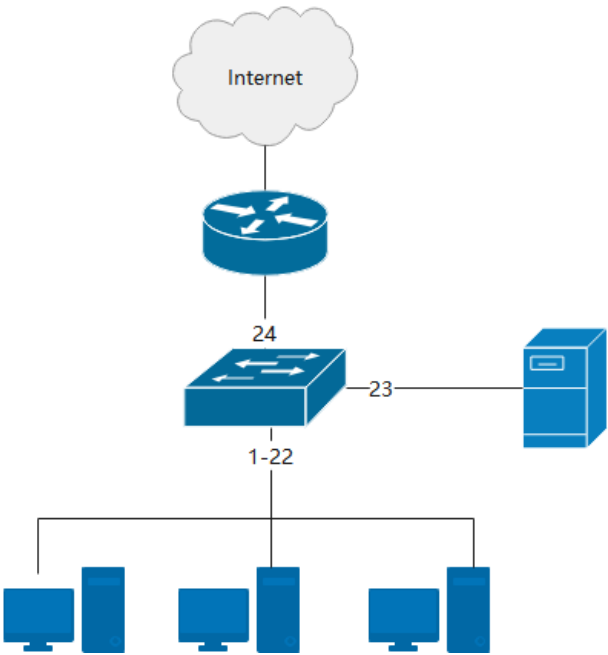
Figure 0-21

Select 1-22 ports in the port column, 23 and 24 ports in the forwarding allowed port column, and click apply. As shown in Figure 3-23：

Figure 0-22

Isolation cannot be set for all SFP ports。

Generally, it is necessary to ensure that the uplink port is in the allowed forwarding

port of all object ports to ensure normal communication with superior equipment。
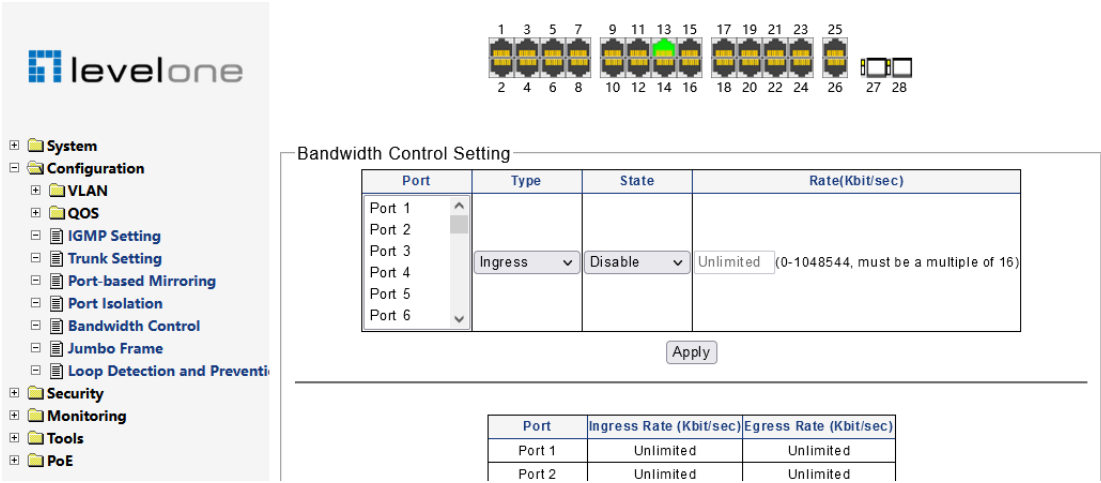
Bandwidth Control

Figure 0-23

The bandwidth control function can limit the maximum rate of the specified port and direction, and the minimum control granularity is 16kbps。

Port：Set object port。

Direction：Receive or send direction。

Status：Enable or disable the bandwidth control function of the object port。

Speed rate：Limit the maximum rate.The rate value must be an integer multiple of 16。

Jumbo Frame

Figure 0-24

Jumbo frames refers to Ethernet frames whose payload exceeds 1500 bytes limited by IEEE 802.3 standard. The minimum setting value of this series of switches is 1522 bytes and the maximum setting value is 10000 bytes。

Security

MAC Address

1. Static MAC
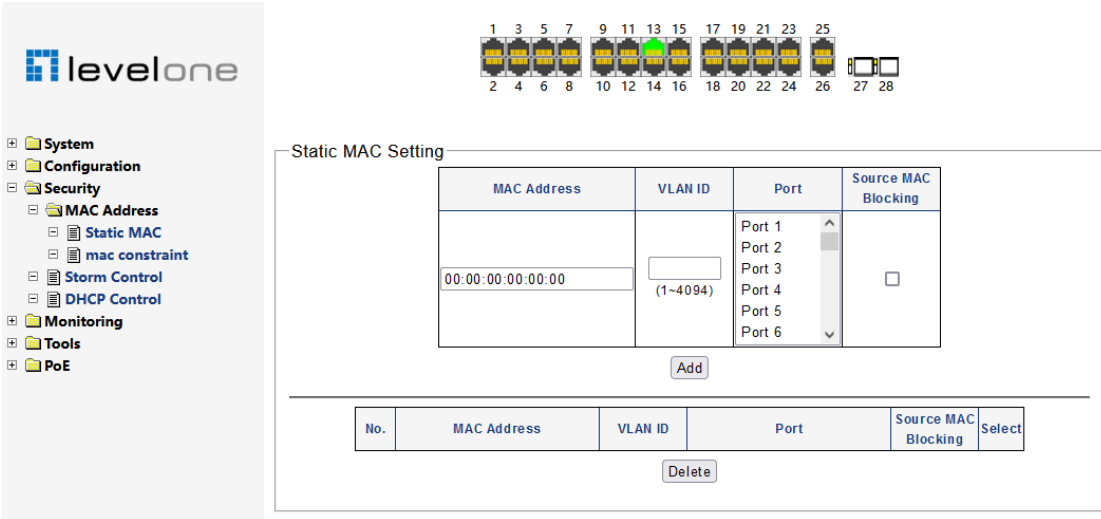
Figure 0-25

The static MAC function can bind or block the specified MAC on the specified port and VLAN。

MAC Address：Controlled MAC address pair。

VLAN ID：Active VLAN ID (integer between 1-4094)。

Port：Active port (if not selected, it will take effect for all ports)。

Source MAC blocking：Controlled mode: if checked, the MAC address will be blocked accordingly. If unchecked, the MAC address will be bound。

Example: as shown in Figure 3-27, this configuration example binds MAC address 4A: 3A: 84: C3: ab: D8 to port 3 and VLAN 10. At this time, if the device is connected to other ports or VLANs, it will not be able to communicate。
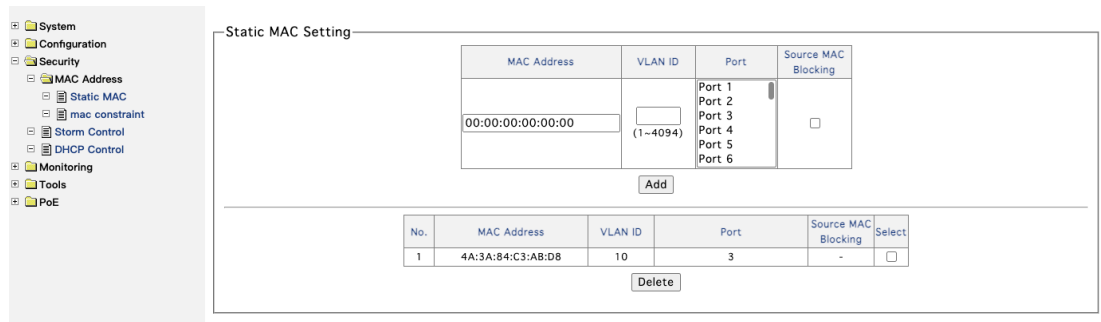
Figure 0-26

Example：As shown in Figure 3-28, the configuration content is similar to figure 3-27, but the source MAC blocking is checked. At this time, the device cannot communicate when it

is connected to port 3 and VLAN 10, and can communicate normally when it is in other ports or VLANs。

Figure 0-27

2. mac constraint

Storm Control

Figure 0-28

The storm control function can limit the packet rate of broadcast, multicast, unknown unicast and unknown multicast types on the specified port。

Type： Control the packet type. The options include broadcast, multicast, unknown unicast and unknown multicast。

Port： Active port (multiple choices)。

Status： Specifies whether the packet control function of this type on the port is turned on

or off。

Speed：Maximum upper speed (in PPS, i.e. packets per second)

DHCP Control

	Port	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7	Port 8	Port 9	Port 10	Port 11	Port 12	Port 13	Port 14	Port 15
	DHCP Server	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	DHCP Client	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Port	Port 16	Port 17	Port 18	Port 19	Port 20	Port 21	Port 22	Port 23	Port 24	Port 25	Port 26	Port 27	Port 28		
	DHCP Server	●	●	●	●	●	●	●	●	●	●	●	●			
	DHCP Client	○	○	○	○	○	○	○	○	○	○	○	○			

Apply

Figure 0-29

The DHCP snooping function can eliminate the confusion of IP addresses caused by the manual configuration of IP addresses by illegal DHCP servers and clients。

Example：As shown in Figure 3-31, port 24 of the switch is connected to a router as a legal DHCP server. No IP address is assigned to the intranet terminal. At this time, port 23 is connected to an illegal DHCP server. Figure 3-31
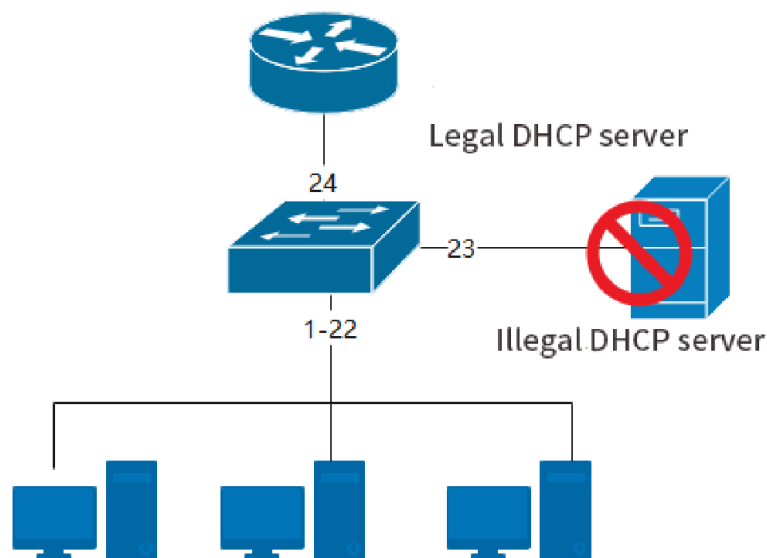

Figure 0-30

Follow the example in figure 3-32 below. Select port 1-23 as DHCP client and port 24-26 as DHCP server. Through the above configuration, the switch will discard the DHCP offer message sent by the interface other than port 24-26, so as to prevent the DHCP server other than port 24-26 from providing illegal address allocation services。
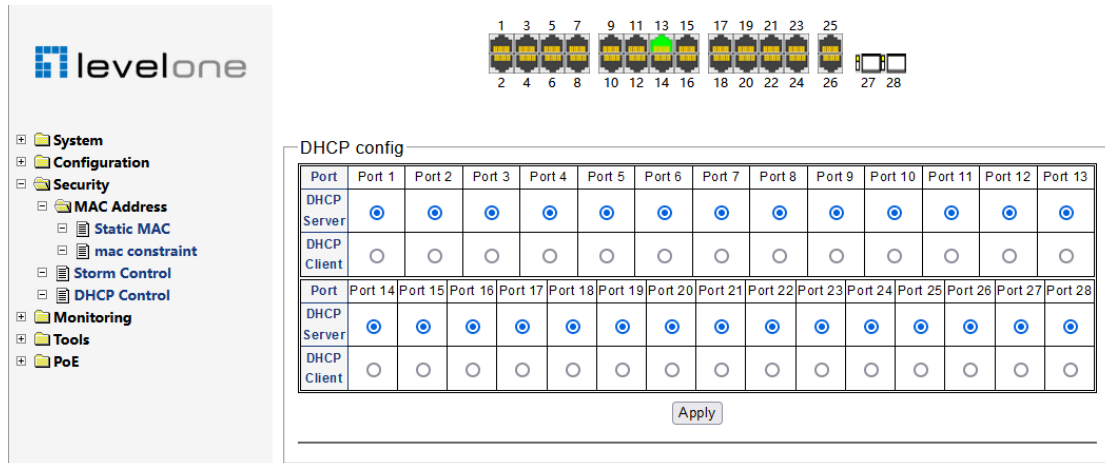
Figure 0-31

At the same time, the IP address obtained by non DHCP method on the port selected as DHCP client will not be able to communicate。

After the DHCP snooping function is configured, after the device on the port selected as DHCP client obtains the address for normal communication through the DHCP service, if the switch is restarted, the binding relationship will be invalid and communication will not be possible. It is necessary to obtain the address through DHCP again before normal communication。
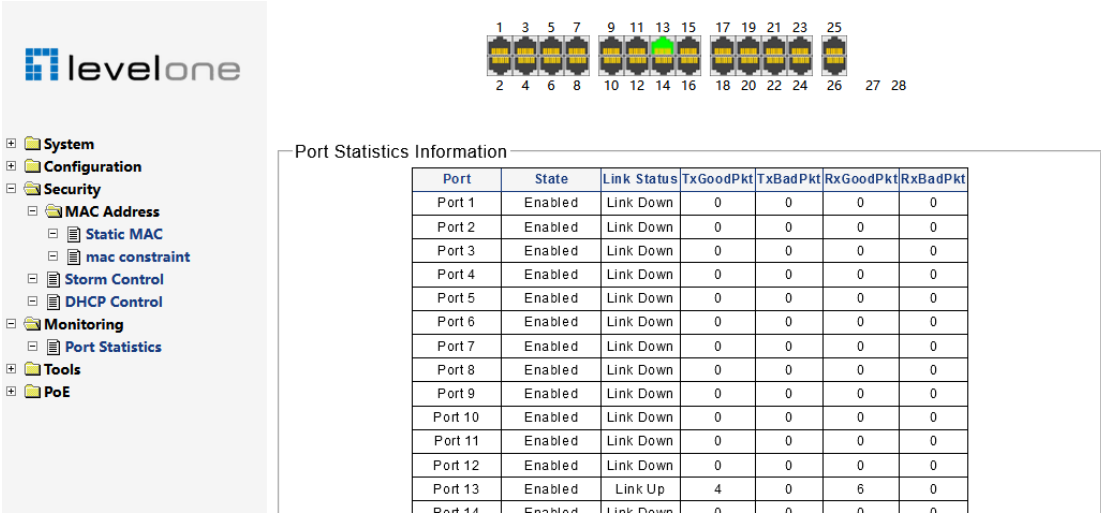
Monitoring

Port Statistics

Figure 0-32

Port Statistics status displays the management status, link status, and statistics of sending and receiving packets of the port. Click the "reset" button to reset the statistical information。
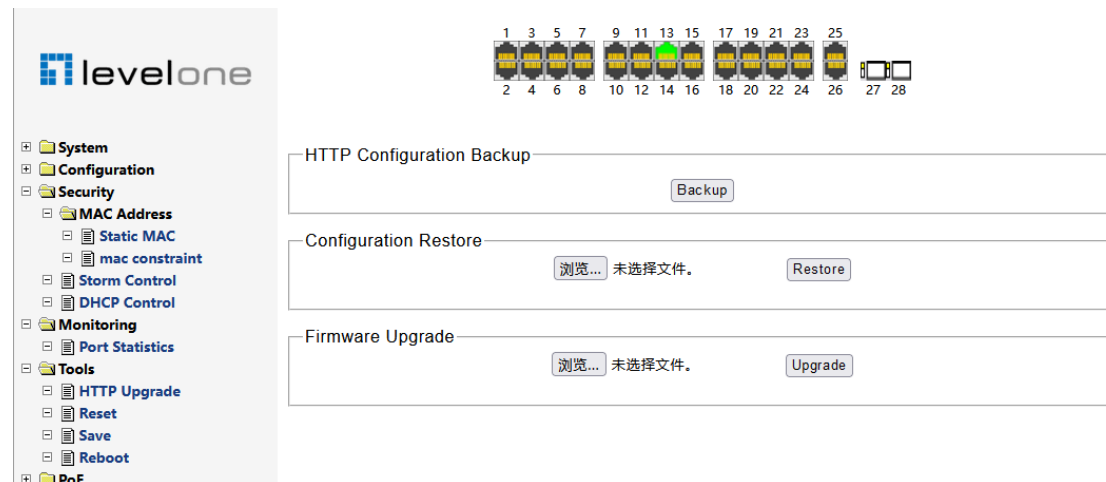
Tools

HTTP Upgrade

Figure 0-33

The firmware update page contains configuration export, import, and firmware upgrade functions。

Export configuration：Export the configuration on this switch for configuration backup。

Import configuration：Import the backed up configuration into the switch for configuration recovery。

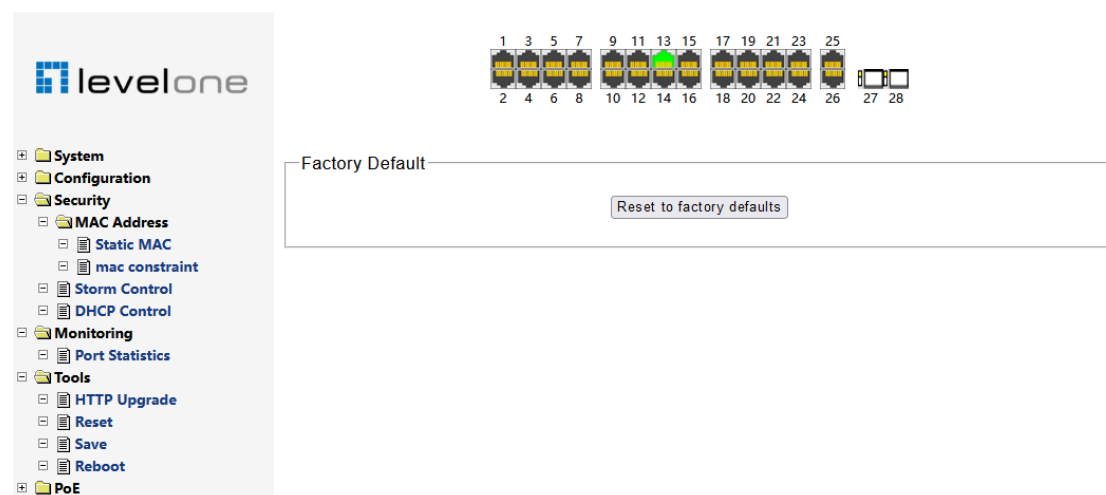**Firmware update**：Update switch system software。

Reset

Figure 0-34

Restore the switch to the factory default setting, click "restore factory value" and restart the switch to take effect.

When the web management interface cannot be restored due to configuration errors and other reasons, press and hold the reset key on the front panel of the switch until all indicators flash, and then restore the factory settings。
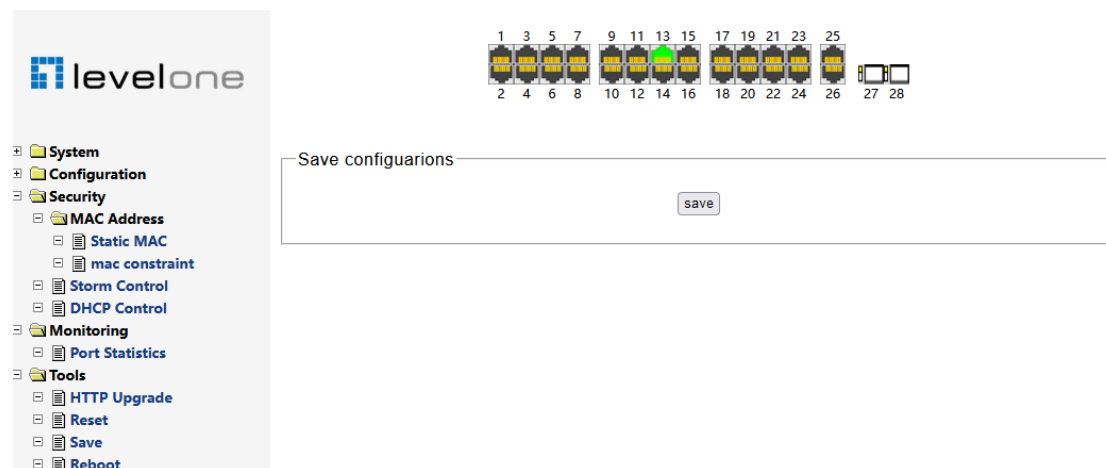
Save

Figure 0-35

Save the changes made in the management page, and the unsaved

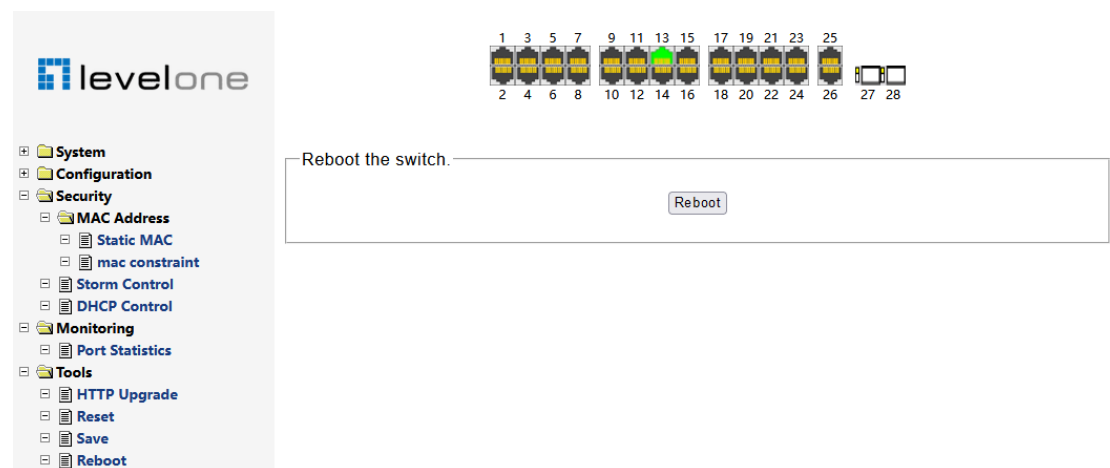configuration will be lost at the next restart。

ii.   Restart

Figure 0-36

Restart the switch。

b) PoE

i. PoE

Figure 0-37

This page can configure the POE function of the port and display the POE working status of the system and port。

Select the port list： The port selected below will be displayed in the list and used for setting the functions below。

PoEManagement status： Turns PoE on or off for the selected port。

PoE Watchdog： Turns the PoE watchdog function on or off for the selected port. When this function is enabled, the PoE function of the port will be restarted when it is detected that the port link is disconnected or the amount of received data is lower than the threshold。

PoE Type： Sets the maximum PoE protocol allowed for the selected port. According to the highest power supply of each protocol, BT (90W) > hipoe (71w) > AF (30W) > at (15.4W). 1-2 ports can support BT, hipoe, AF and at protocols, and 3-24 ports can support AF and at protocols。

PoE voltage(V)： PoE power supply voltage。

Total power(W)： Total PoE power available from the switch。

Total load power (W)： Total power of PoE power supply currently provided by the switch。

Percentage of power used： Proportion of current load power and total power supply power of the switch。