Grandstream Networks, Inc.

GWN772x Series

User Manual

INTRODUCTION

The GWN7721(P) are 10-port Layer 2 Lite Managed Switches, equipped with 8x 2.5G Ethernet ports and 2x 10Gigabit SFP+ ports, suitable for small-to-medium businesses to build scalable, secure, and smart networks. They support complex VLAN traffic segmentation and enhance the transmission priority of voice data streams. And integrate Port-based, DSCP/802.1p QoS priority management modes, as well as bandwidth control, greatly improving the overall network performance. Support IGMP Snooping and comprehensive security protection. The GWN7721P model's 8 Ethernet ports all support PoE power output, suitable for devices such as IP phones, cameras, and Wi-Fi access points.

The GWN7721(P) devices are easy to manage through the local web user interface, GWN Manager, and the cloud using the Grandstream Device Management System (GDMS). The series supports both desktop and wall-mount installations and is widely applicable in network construction scenarios across industries such as hotels, home offices, and small to medium-sized enterprises.

PRODUCT OVERVIEW

Feature Highlights

- **GWN7721**

 GWN7721	● 8 × **2.5G Ethernet** ports (non-PoE) ● 2 × **10G SFP+** uplink ports ● Whisper Quiet: fanless ● LED Indicators; Per Port: Link/Activity/power state Per Device. ● **IGMP Snooping** to optimize multicast traffic ● Comprehensive protection features (e.g., port security, MAC filtering)

GWN7721 Features at a glance

- **GWN7721P**

 GWN7721P	● 8 × **2.5G Ethernet** ports — **all support PoE output** ● 2 × **10G SFP+** uplink ports ● LED Indicators; Per Port: Link/Activity/power state/PoE. ● **IGMP Snooping** to optimize multicast traffic ● Comprehensive protection features (e.g., port security, MAC filtering)

GWN7721P Features at a glance

GWN7721/P Technical Specifications

	GWN7721	GWN7721P
Network Protocol	IPv4, IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3x, IEEE 802.1p, IEEE 802.3af, IEEE 802.3at	
2.5 Gigabit Ethernet Ports	8	
10Gigabit SFP+ Ports	2	
Maximum no. of Supported Modules	SM-10G: 2 MM-10G: 2 RJ45-10G: 1	
PoE Out Ports	/	8
Power Supply	External 12VDC/1 A	Internal 110~220V AC
PoE Output	/	Port 1-8 support 802.3af/at standard PoE out: – Up to 30W per port PoE out
Max Total PoE Output Power	/	130W
Max Output Power per PoE Port	/	30W
Auxiliary Ports	1x Reset Pinhole	
Forwarding Mode	Store-and-forward	
Total non-blocking throughput	40Gbps	
Switching Capability	80Gbps	
Jumbo Frame	1518/2048/3072/4096/5120/6144/7168/8192/9216.	
Forwarding Rate	59.52Mpps	
Pack Buffer	8Mb	
MAC	16K MAC address capacity	
VLAN	Supports up to 32 VLANs (out of 4K VLAN IDs) port-based VLAN, 802.1Q VLAN	
LAG	5	
Multicast	IGMP Snooping ,Report Message Suppression	
QoS	Auto prioritization of the incoming port of the packet Priority Mapping (TBD) Queue scheduling, including SP, WFQ Supports port priority, 802.1P priority, and DSCP priority Bandwidth controll Rate limit	
DHCP	DHCP client	
Maintenance	Backup and restore, system reboot , Factory Reset,firmware upgrade,Support MAC address search, SNMP, LLDP Monitoring including port statistics, port mirroring cable test, Ping	
Security	DHCP Snooping Spanning tree	

	Loop prevention PoE Watchdog Kensington Security Slot (Kensington Lock) support	
Mounting	Desktop/ Wall-Mount	Desktop/ Wall-Mount/Rack-Mount
LED Indicators	Per device: Power- Green Per port: Link/Activity – Green GWN7721P Port 1-8: PoE power state – Yellow	
Environmental	Operating Temperature: 0 to 45 C (32 to 113 F) Storage Temperature: -20 to 60 C (-4 to 140 F) Operating Humidity: 10% to 90% Non-condensing Storage Humidity: 10% to 90% Non-condensing	
Dimensions (L x W x H)	Unit: 190 x 100 x 28mm Package:300 x 130 x 53mm	Unit:280x180x44mm Package: 366x211x53mm
Enclosure	Metal	
Weight	Unit: 0.52KG Entire Package: 0.74KG	Unit: 1.45KG Entire Package: 2.06KG
Package Content	1x Switch, 1x Power Adapter, 1x QIG	1x Switch, 1x 1.2m(10A) AC Cable, 1x Ground Cable, 4x Rubber Feet, 2x Lug Ear, 1x QIG
Compliance	FCC, CE, RCM, IC	

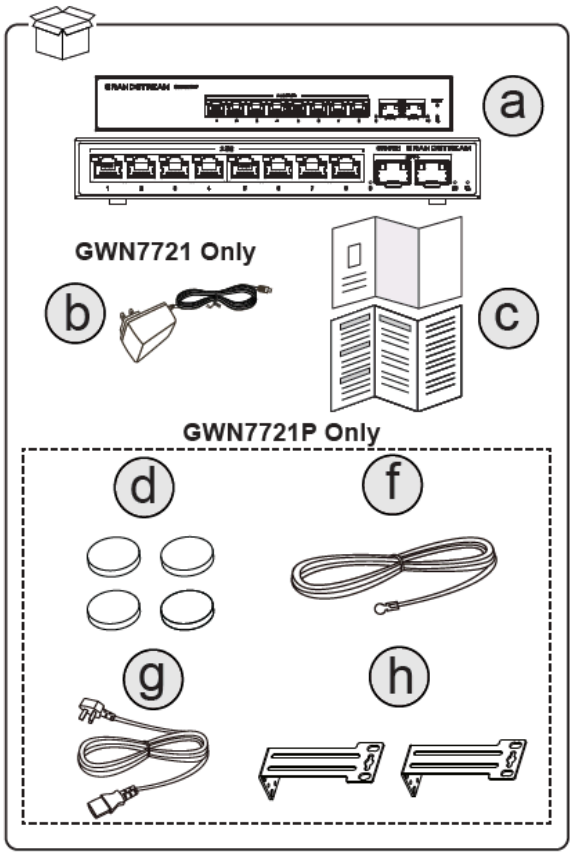
GWN7721(P) *Technical Specifications*

INSTALLATION

Before deploying and configuring the GWN772x switch, the device needs to be properly powered up and connected to the network. This section describes detailed information on the installation, connection, and warranty policy of the GWN772x switch.

Package Contents

- **GWN7721(P)**

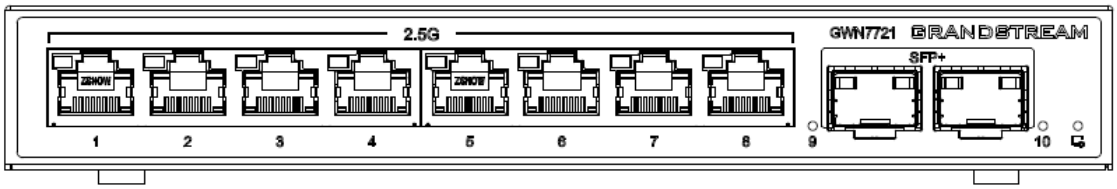


GWN7721P package contents

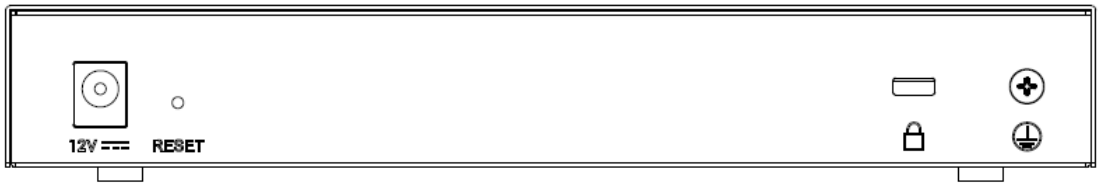
a	**GWN772x Series**
b	**1x 12V Power Adapter**
c	**Quick installation Guide and Regulatory Paper**
d	**4x Rubber Footpads**
f	**1x 25cm Ground Cable**
g	**1x 1.2m (10A) AC Cable**
h	**Extended Rack Mounts**

Port Description

- **GWN7721(P)**



GWN7721 Ports Front View



GWN7721 Ports Back View

GWN7721P Ports Front View

GWN7721P Ports Back View

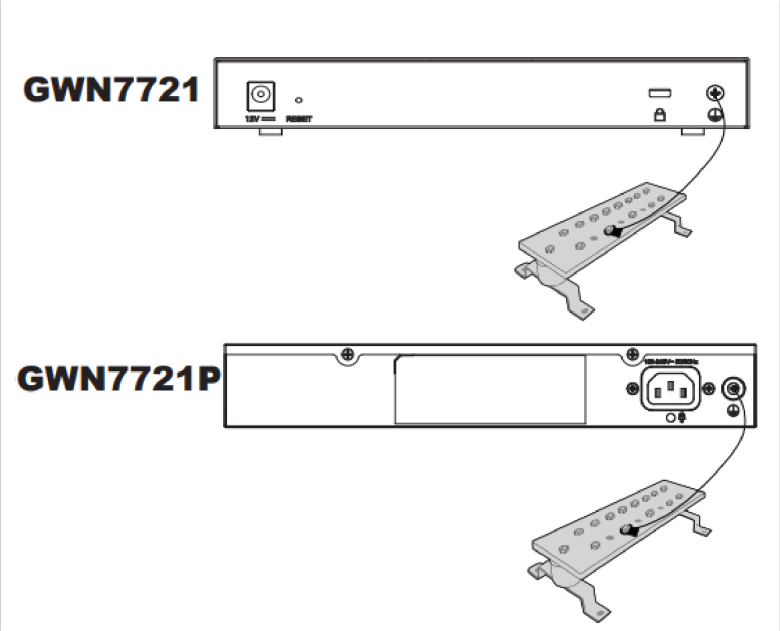
	GWN7721	GWN7721P
2.5 Gigabit Ethernet Ports	8	
10Gigabit SFP+ Ports	2	
PoE Output	/	**Port 1-8 support 802.3af/at standard PoE out:** ● Up to 30W per port PoE out
Auxiliary Port	1x Reset Pinhole	
Power Supply	External 12VDC/1 A	Internal 110~220V AC
Grounding Terminal	Safely divert electrical surges and reduce interference	
Kensington Lock	Physical security lock to stop theft and unauthorized movement of the unit	

GWN7721(P) Ports

Grounding and Accessing GWN772x

Grounding the GWN7721/P Switch

1. Remove the ground screw from the back of the switch, and connect one end of the ground cable to the wiring terminal of the switch.
2. Put the ground screw back into the screw hole, and tighten it with a screwdriver.
3. Connect the other end of the ground cable to the other device that has been grounded or directly to the terminal of the ground bar in the equipment room.



GWN7721P Grounding the switch

Safety Compliances

The GWN7721(P) Switch complies with FCC/CE and various safety standards. The GWN7721(P) power adapter is compliant with the UL standard. Use the universal power adapter provided with the GWN7721(P) package only. The manufacturer's warranty does not cover damages to the device caused by unsupported power adapters.

Warranty

If GWN7721(P) Switch was purchased from a reseller, please contact the company where the device was purchased for replacement, repair or refund. If the device was purchased directly from Grandstream, contact our Technical Support Team for an RMA (Return Materials Authorization) number before the product is returned. Grandstream reserves the right to remedy the warranty policy without prior notification.

GWN7721(P) Deployment Cases

802.3af/at PoE+ Power and Data Transmission

Each Ethernet port provides up to 30W of 802.3af/at standard PoE+, and the optical port offers a transmission rate of up to 10 Gbps

- Port 1: 2.5G Gaming PC
- Port 3: 802.3af/at PoE+ GRP VoIP Phone
- Port 5: 802.3af/at PoE Camera
- Port 6: 802.3af PoE IP Video Intercom System
- Port 8: Wireless 802.3af PoE WiFi 6/6E AP
- Port 9: 10Gbps SFP+ Port for NAS Transmission
- Port 10: SFP+ optical port 10Gbps rate transmission

8023afat PoE+ Power and Data Transmission

PoE Watchdog

Use VLAN to isolate the IP Camera/Internet/IPTV traffic. Use link aggregation to increase upstream bandwidth.

Anomaly Detection: The PoE switch continuously monitors the network operation status of connected powered devices (such as cameras, APs, IP phones, etc.).

Automatic Restart: If a device fails to respond within the set time, PoE Watchdog will proactively cut off its power supply and reboot it to restore functionality.

Reduced Manual Intervention: Eliminates the need for manual power plugging/unplugging or on-site maintenance, enhancing network reliability

PoE Watchdog

GETTING STARTED

Device LED Indicators

The front panel of the GWN772x has LED indicators for power and interface activities. The table below describes the LED indicators' status.

LED Indicator	Status	Description
System Indicator	Off	Power off
	Green On	Power on
	Green Flashing	Upgrade

	Blue On	Normal use
	Blue Flashing	Provisioning
	Red On	Upgrade failed
	Red Flashing	Factory reset
Port Indicator	Off	No connected device or abnormal
	Green On	Port connected and there is no activity
	Green Flashing	Port connected and data is transferring
PoE LED （GWN7721P)	Off	Not providing PoE power
	Yellow On	Standard PoE normal power supply (connect PD to negotiate power supply);
	Yellow Flashing	PoE power supply anomaly（Port Overload/PSE Throttling）

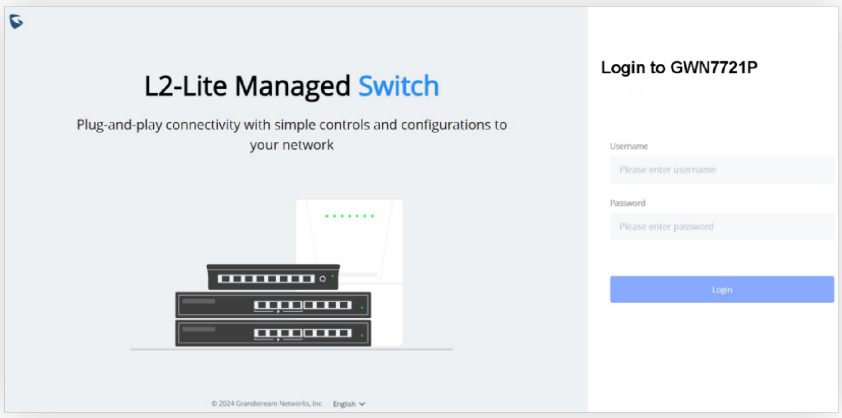
GWN7721(P) LED Indicators

Access and configure

> **Note:**
>
> If no DHCP server is available, the GWN772x default IP address is 192.168.0.254.

Log in using the Web UI

1. A PC uses a network cable to correctly connect any RJ45 port of the switch.
2. Set the Ethernet (or local connection) IP address of the PC to 192.168.0.x ("x" is any value between 1-253), and the subnet mask to 255.255.255.0, so that it is in the same network segment as the switch IP address. If DHCP is used, this step could be skipped.
3. Type the switch's management IP address http:// in the browser, and enter the username and password to log in. (The default administrator username is "admin" and the default random password can be found on the sticker on the GWN772x switch.)

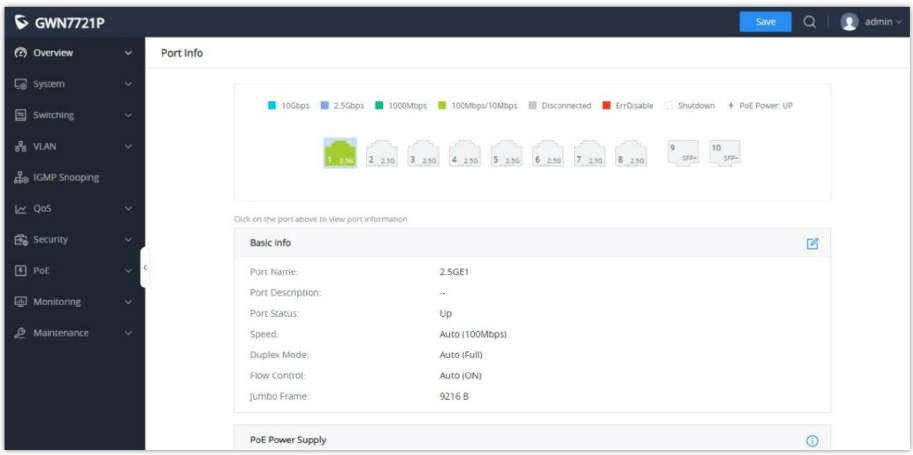


Configure using GDMS Networking/GWN Manager

Type https://www.gdms.cloud (https://<gwn_manager_IP> for GWN Manager) in the browser, and enter the account and password to log in to the cloud platform. If you don't have an account, please register first or ask the administrator to assign one for you. To add a GWN switch to the GDMS Networking/GWN manager, refer to the online documentation: https://documentation.grandstream.com.

WebUI Configuration

GWN772x WebUI includes 10 main sections to configure and manage the switch and check the connection status.

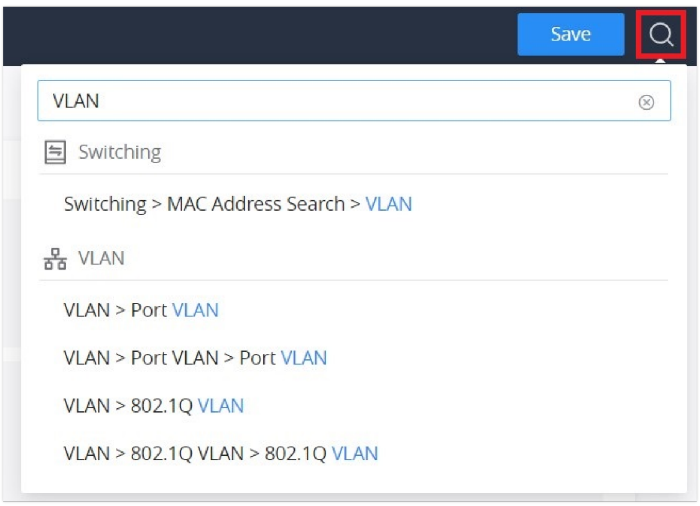


WebUI configuration

Search

GWN772x Switches have search functionality to help the user find the right configuration, settings, parameters, etc.

On the top of the page, there is a search icon; the user can click on it and then enter the keyword relevant to their search, and then they will get all the possible locations of that keyword.

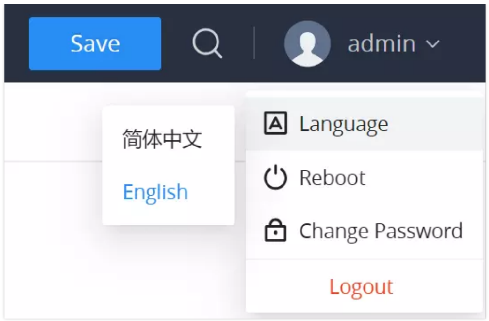


Search

Language

To change the language on the GWN772x switch interface:

- Navigate to the top right corner of the interface where the username is displayed.
- Click on the drop-down menu next to the username.
- Select "Language" from the drop-down options.
- After selecting the language, the interface will switch to the chosen language.

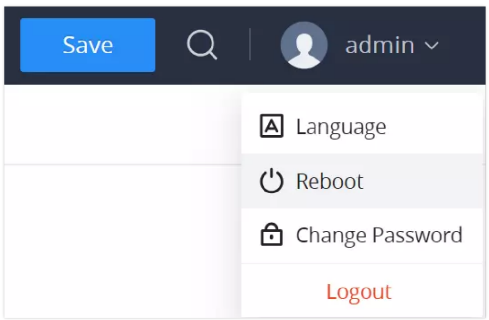


Language

Reboot

To reboot the GWN772x switch:

- Navigate to the top right corner of the interface where the username is displayed.
- Click on the drop-down menu next to the username.
- Select “Reboot” from the drop-down options.
- Confirm the action to reboot the device.
- The device will automatically restart after a brief delay.

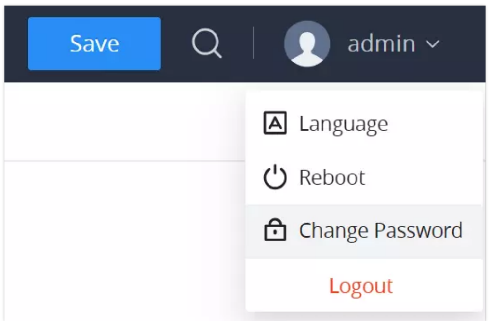


Reboot

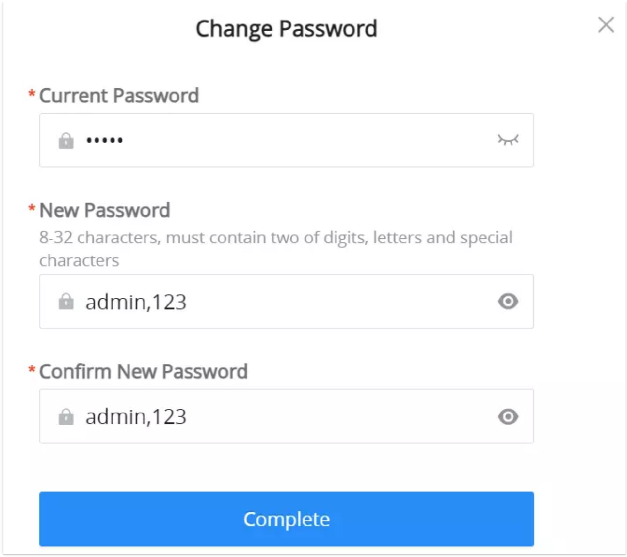
Change Password

To change the password on your GWN772x switch:

- Navigate to the top right corner of the interface where the username is displayed.
- Click on the drop-down menu next to the username.
- Select “Change Password” from the drop-down options.
- A “Change Password” dialog box will appear.
- Enter the current password in the **Current Password** field.
- In the **New Password** field, input a new password that meets the criteria: it must contain 8-32 characters and include at least two of the following: digits, letters, and special characters (e.g., `admin,123`).
- Enter the same password in the **Confirm New Password** field.
- Click “Complete” to apply the changes.



Change password option

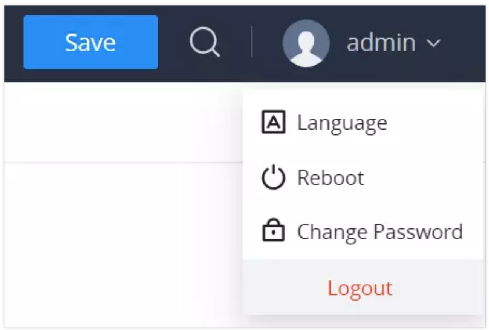


Change password

Logout

To log out of the GWN772x switch:

- Navigate to the top right corner of the interface where the username is displayed.
- Click on the drop-down menu next to the username.
- Select “Logout” to safely log out of the current session.



Logout

OVERVIEW

The overview is the first section that displays System information on the first page, “System Info”, and Port status on the second page, “Port Info”. This section provides the user with a general and global view of the GWN772x system and port status for easy monitoring.

System Info

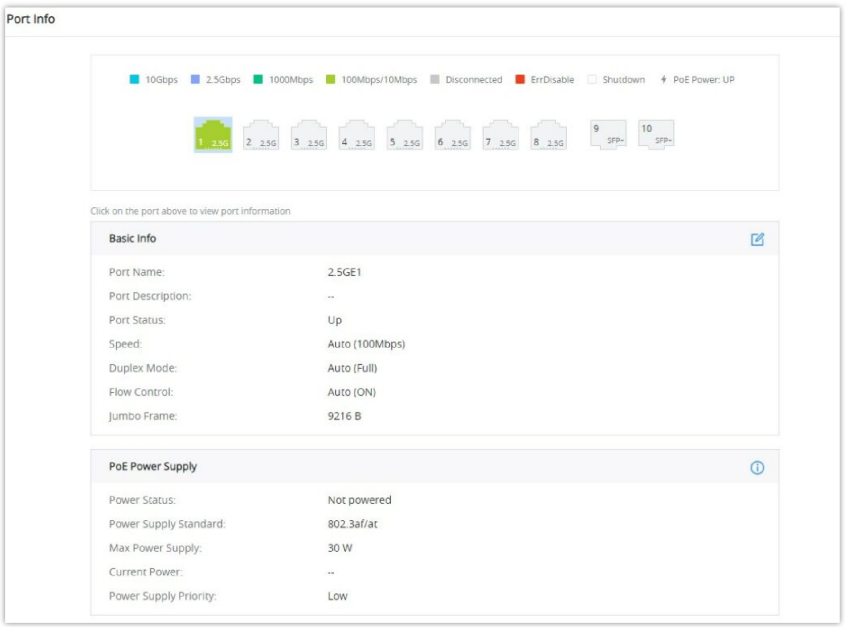
System Info is the first page after successfully logging into the GWN772x Web Interface. It provides an overall view of the GWN772x Switch information, like Device name, MAC Address, System Version, etc.

To name the device, please click on , then enter the desired name.

System Info

Port Info

This page displays the status for each port on the GWN772x switches indicated by color code (green, red, grey, white, etc) and PoE symbol. Please refer to the figure below:



Port Info page

The following table explains the color code and the symbols used:

	Grey: Linkdown
	**White:** shutdown
	**Blue:** 10 Gbps speed
	**Purple:** 2.5 Gbps speed

	**Green:** 1000 Mbps speed
	**Light green:** 100 Mbps/10 Mbps speed
	**Red:** ErrDisable
	**Symbol:** PoE Power is enabled.

Ports Labels and Color Code

Note: A PoE symbol and color code combination is also possible. Ex:  in this case, the port is using 1000 Mbps speed and also using PoE at the same time.

There are 3 main sections for each port:

- **Basic Info:** displays info about the port name, speed, status, etc.

Note: *Click on*  *to modify the port settings like Description, Speed, Duplex Mode, and Flow Control, or to enable or disable the port.*

- **PoE Power Supply:** displays PoE Current Power and priority, Status, etc.

Note: *Click on*  *to change PoE settings.*

SYSTEM

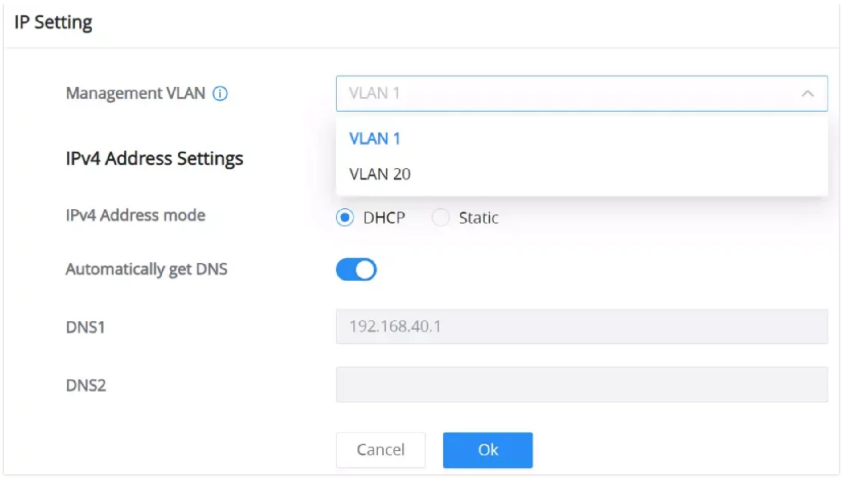
IP Setting

The **IP Setting** page allows users to configure the switch's IP address and management VLAN. The user can assign a **Management VLAN**, choose between **DHCP** or **Static** for IP configuration, and manually set DNS servers when necessary. These settings are essential for ensuring network management and connectivity.

Management VLAN

The **Management VLAN** field allows users to assign the VLAN used for accessing the switch's management interface. Only ports belonging to this VLAN will have access to the web UI.

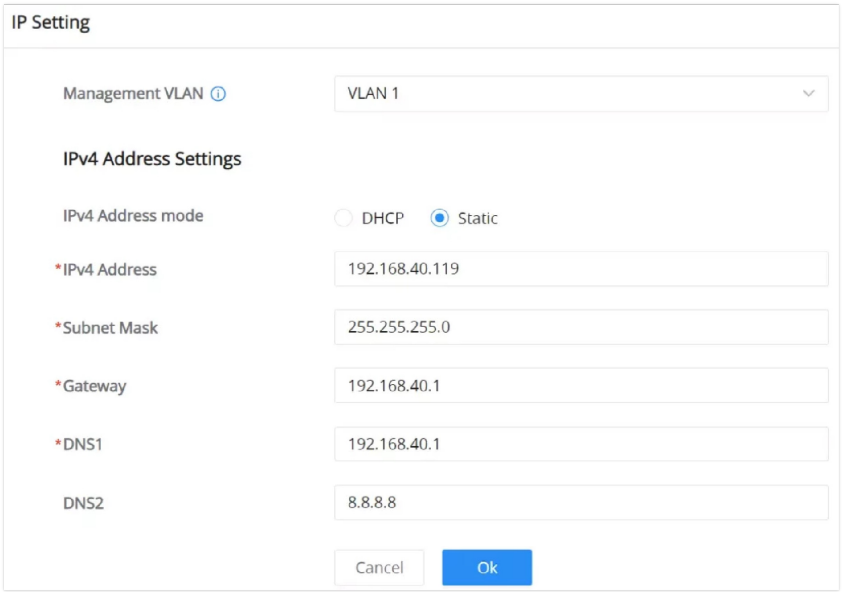
> **Note:**
>
> The Management VLAN is only valid for 802.1Q VLAN configurations. The default is VLAN1, and only devices in this VLAN can access the web page.



IP Setting Management VLAN

IPv4 Address Settings

These settings define how the switch obtains its IP address and DNS settings.



IP Setting IPv4 Address Settings

Field Name	Description
Management VLAN	Selects the VLAN used to access the management interface. Only ports in this VLAN can access the web UI. ***Note:*** *Management VLAN is only valid for 802.1Q VLAN, default VLAN1, that is, only ports under VLAN1 can access the Web page.*
IPv4 Address Mode	Choose between automatic (DHCP) or manual (Static) IP configuration.
Automatically Get DNS	Enables automatic DNS retrieval from the DHCP server when set to DHCP mode. When disabled you can manually configure DNS1 and DNS2.
DNS1	Primary DNS server address. ***Note:*** *This field is available in both DHCP and Static modes when the Automatically Get DNS option is disabled.*
DNS2	Secondary DNS server address (optional). ***Note:*** *This field is available in both DHCP and Static modes when the Automatically Get DNS option is disabled.*

IPv4 Address	Manually enter the desired static IP address for the switch. ***Note:*** *This field is only available when Static mode is selected.*
Subnet Mask	Defines the subnet mask determining the network portion of the IP address. ***Note:*** *This field is only available when Static mode is selected.*
Gateway	Defines the gateway used for external communications. ***Note:*** *This field is only available when Static mode is selected.*

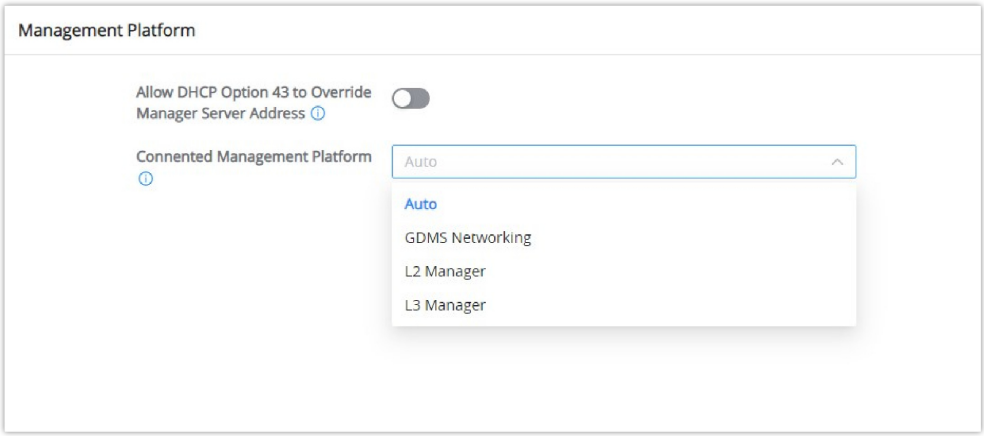
IP Setting

Management Platform

The **Management Platform** allows users to configure how the GWN772x switch connects to a management platform. The switch supports multiple management platforms, including GDMS Networking and GWN Manager. The management platform selection can either be automatic or manually specified by the user.

Steps to Configure the Management Platform

1. **Navigate to**: System → Management Platform.
2. **Enable DHCP Option 43**: If needed, toggle on "Allow DHCP Option 43 to Override."
3. **Select Connection Management Platform**:
   - Choose **Auto** for automatic platform selection.
   - Select **GDMS Networking** or **L2/L3 Manager**, based on your setup.
4. **Specify Server Address and Port** (if applicable):
   - If a specific platform is selected (e.g., L3 Manager), input the server address and port number.
5. **Save** your configuration.



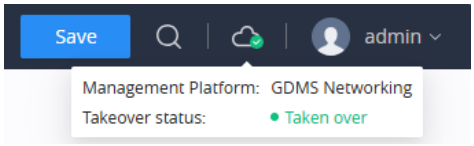
For more details, refer to this table:

Field	Description	Notes
Allow DHCP Option 43 to Override	Enable or disable the DHCP Option 43 override.	If enabled, the server address assigned by DHCP Option 43 will be preferred.
Connection Management Platform	Select the management platform type. Options include: Auto, GDMS Networking, L2 Manager, L3 Manager	Only one platform can be connected at a time, as well as discovered and taken over by one platform. By default, it is automatic, and the priority is to GDMS Networking.

Server Address	Specify the server address of the selected management platform.	Only available when a manual platform (L3 Manager) is selected. Enter the IP address of the server.
Server Port	Specify the server port of the selected management platform.	Only available when a manual platform (L3 Manager) is selected. Enter the server port number (Range: 1-65535).

Management platform

When the switch is successfully connected to a platform (either GDMS Networking or GWN Manager), a corresponding **Cloud Icon** with a green check mark will appear at the top of the Web UI. This icon signifies that the switch is now integrated with the management platform, and some configurations from the platform may now be applied to the switch, as shown below:



Management platform icon

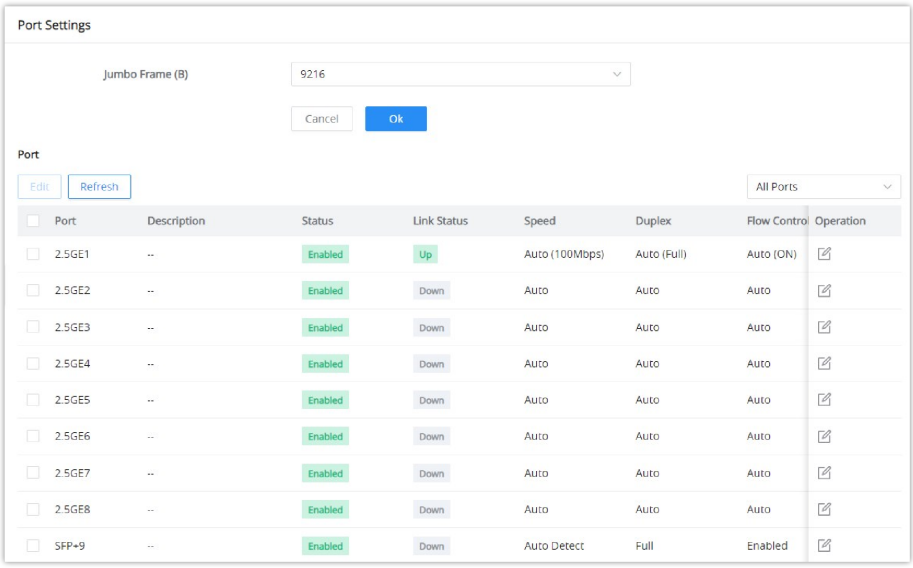
SWITCHING

The switching section covers Ports and LAG (Link Aggregation Group) configurations.

Port Settings

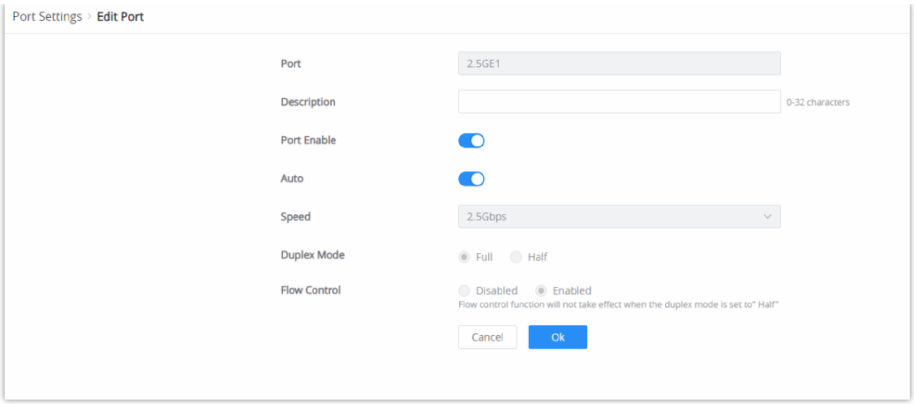
On this page, you can configure the basic parameters for GWN772x Switch ports, like disabling or enabling the port, adding a Description, specifying the speed, Duplex mode, and Flow Control.

To configure a port, please navigate to **Switching → Port Settings.**



Port Settings

To configure a port, click on the "Edit" icon under the operation column.



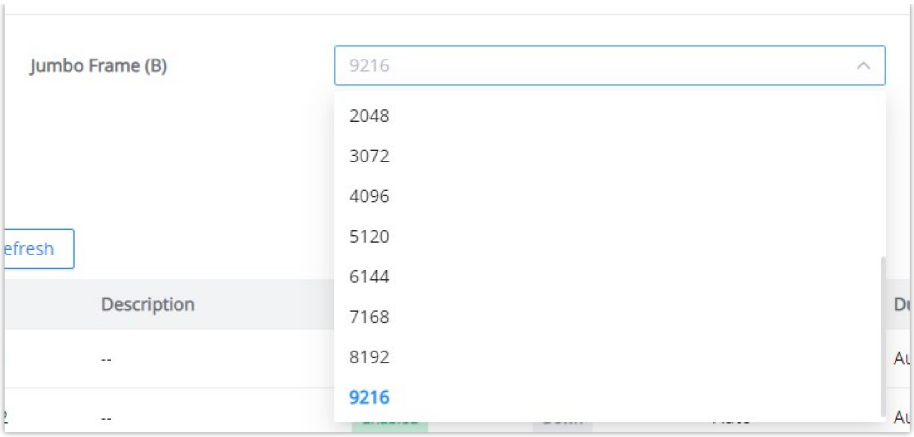
Port Settings Edit port

Port	The selected Port to be configured.
Description	It is used to configure the information description of this interface , which can be a description of usage, etc., with a maximum of 32 characters, and the characters limited to input are numbers 0-9 , letters az / AZ and special characters.
Port Enable	Set whether to enable the interface. *it is enabled by default.*
Auto	toggle ON or OFF Auto Detect, if it's ON the speed, Duplex Mode and Flow Control will be selected automatically, and if it's OFF the user can select speed, Duplex Mode and Flow Control manually.
Speed	Set the rate of the interface: ● **Ethernet port:** the options are {10Mbps, 100Mbps, 1000Mbps, 2.5Gbps}, The default is 2.5Gbps. ● **SFP+ ports:** the options are {1000Mbps, 2.5Gbps, and 10Gbps}, the default is 10Gbps.
Duplex Mode	Set the duplex mode of the interface. The options are {full-duplex, half-duplex}. *The default is Duplex.* ● **Duplex:** the interface send and receive data packets. ● **Half-duplex:** interface can only send/ receive packets.
Flow Control	Set the flow control on the interface, the options are {Disabled, Enabled}. *The default is Enabled.* After enabling it, if the local device is congested, it will send a message to the peer device to notify the peer device to temporarily stop sending packets, after receiving the message, the peer device will temporarily stop sending packets to the local and vice versa. Thus, the occurrence of packet loss is avoided.

Port Settings – Edit port

Jumbo Frame

The maximum Transmission Payload or MTU is typically 1500 bytes. In case the user requires even a bigger MTU length for a specific scenario, there is an option on the GWN772x Switch to enable Jumbo Frame; the maximum Ethernet frame size ranges from 1518 to 9216 bytes. The default value is 9216 bytes.



Jumbo Frame

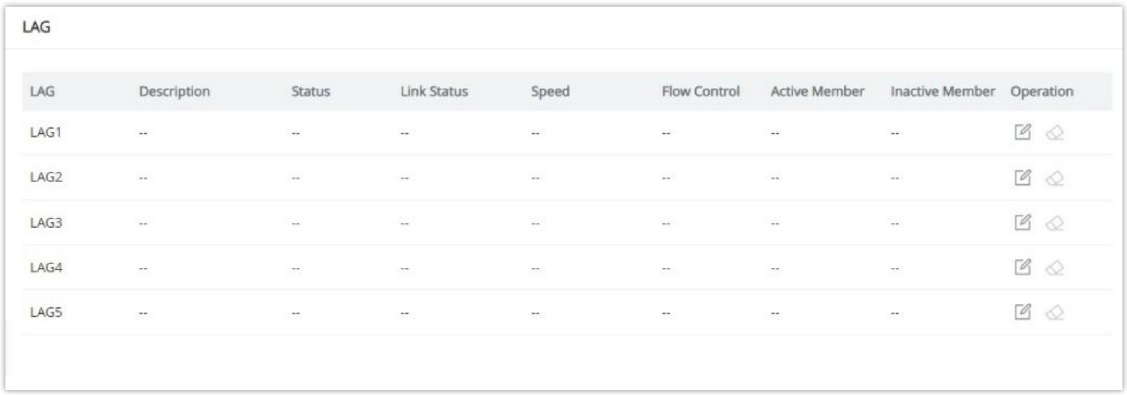
LAG

LAG means Link Aggregation Group, which groups some physical ports to make a single high-bandwidth data path. Thus, it can implement traffic load sharing among the member ports in a group to enhance the connection reliability.

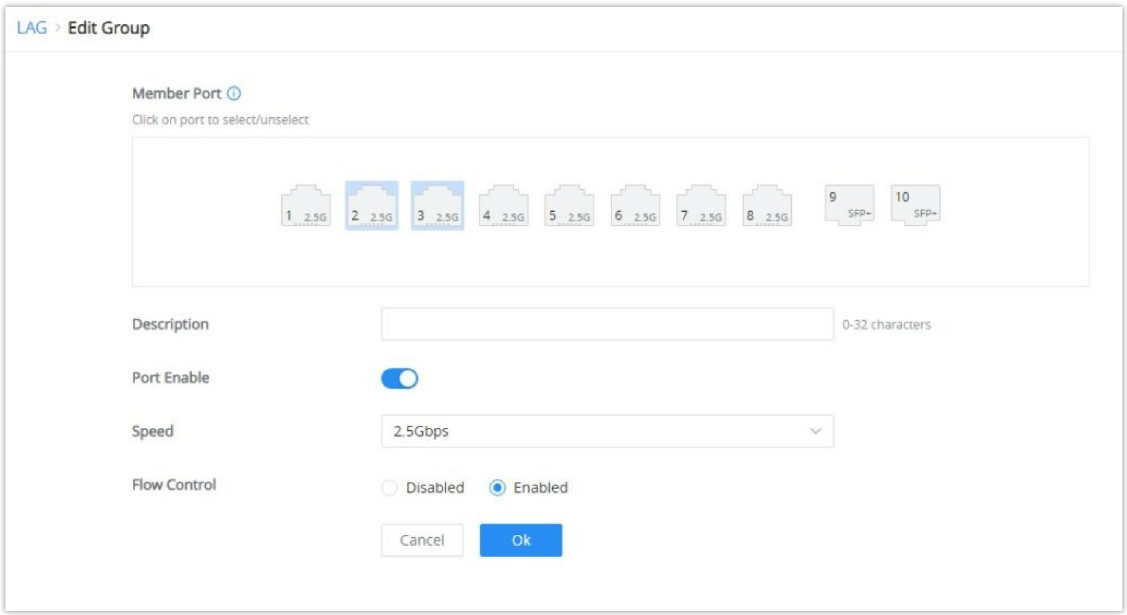
To configure LAG, please navigate to **Switching** → **LAG**.

GWN772x switches support up to 5 link aggregation groups, as shown in the figure below:

To edit/configure a LAG, click on the "**Edit**" icon under the operation column.



LAG groups



Edit LAG

Member Port	Click on ports to be part of this LAG group.

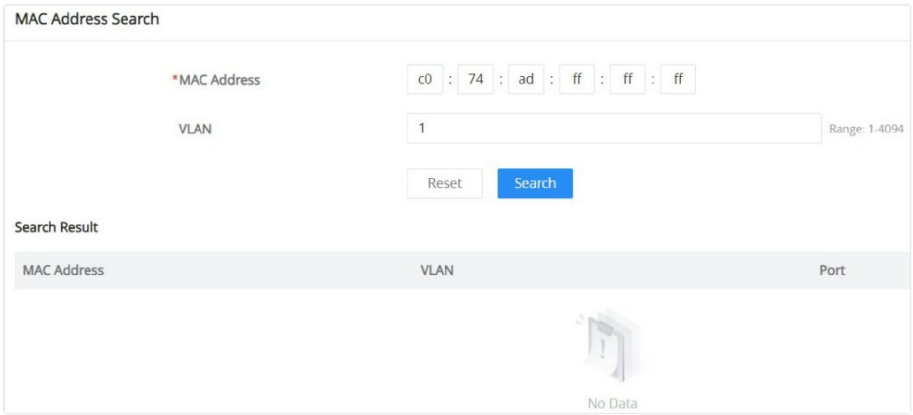
Description	It is used to configure the information description for this LAG , which can be a description of usage, etc., with a maximum of 32 characters, and the characters limited to input are numbers 0-9 , letters az / AZ and special characters.
Port Enable	Set whether to enable the interface. *it is enabled by default.*
Speed	Set the rate of the interface, the options are {10Mbps, 100Mbps, 1000Mbps, 2.5Gbps} for ethernet ports and {1000Mbps, 2.5Gbps, and 10Gbps} for SFP+ ports. *The default is 2.5Gbps for Ethernet ports, and 10Gbps for SFP+ ports.*
Flow Control	Set the flow control on the interface, the options are { Disabled, Enabled}. *The default is Enabled.* After enabling it, if the local device is congested, it will send a message to the peer device to notify the peer device to temporarily stop sending packets, after receiving the message, the peer device will temporarily stop sending packets to the local and vice versa. Thus, the occurrence of packet loss is avoided.

Edit LAG

MAC Address Search

The MAC address table records the correspondence between the MAC addresses of other devices learned by the switch and the interfaces, as well as information such as the VLANs to which the interfaces belong. When forwarding a packet, the device queries the MAC address table according to the destination MAC address of the packet. If the MAC address table contains an entry corresponding to the destination MAC address of the packet, it directly forwards the packet through the outbound interface in the entry. If the MAC address table does not contain an entry corresponding to the destination MAC address of the packet, the device will use broadcast mode to forward the packet on all interfaces in the VLAN to which it belongs, except the receiving interface.

On this page, the user can search using the MAC address and the VLAN. If the device's MAC address is found, it will be displayed on the Search Result section.



MAC Address Search

Note:

The GWN772x supports pasting a MAC address that is separated by hyphens ('-') into the MAC field. For example, you can enter the MAC address in this format: 00-0B-82-8C-4D-F8. The system will recognize and process it accordingly, eliminating the need to manually remove or replace the hyphens.

Spanning Tree

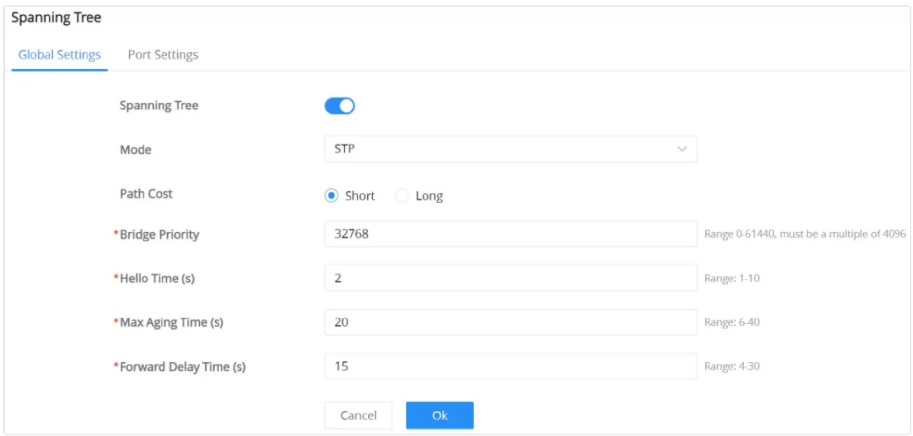
The Spanning Tree Protocol (STP) prevents network loops by creating a loop-free topology in Ethernet networks. It allows redundant paths without causing broadcast storms or multiple frame copies.

Global Settings – Spanning Tree

The **Global Settings** tab in the Spanning Tree section lets administrators configure general Spanning Tree settings and view real-time status.

To access Spanning Tree Global Settings:

1. Navigate to **Switching** → **Spanning Tree** → **Global Settings**.
2. Enable Spanning Tree by toggling the switch to **ON**.
3. Configure the following fields:

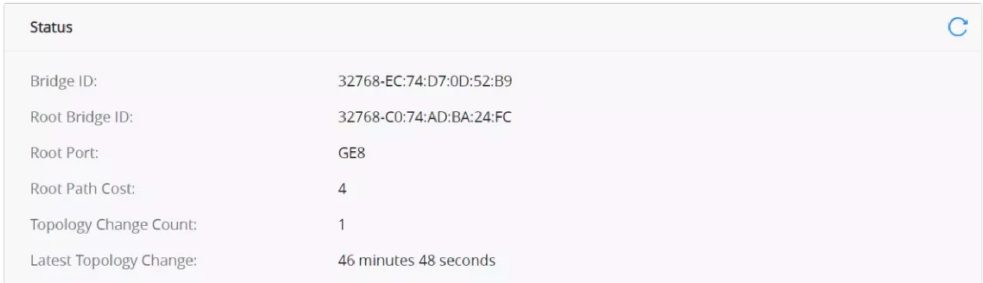


Spanning Tree Global Settings

Field Name	Description	Range
Mode	Choose between STP (Spanning Tree Protocol) and RSTP (Rapid Spanning Tree Protocol). ***Note:*** *RSTP is faster in convergence and more efficient in modern networks.*	–
Path Cost	Select either Short or Long path cost calculation. ***Note:*** *Short uses the IEEE 802.1D standard while Long supports larger path costs for higher-speed links.*	–
Bridge Priority	The lower the value the higher the chance of this switch becoming the root bridge. ***Note:*** *Adjust this based on network topology.*	Range 0-61440, must be a multiple of 4096
Hello Time (s)	Defines the time interval between BPDU transmissions by the root bridge.	1 – 10 seconds
Max Aging Time (s)	Sets how long the switch will keep BPDU information before discarding it.	6 – 40 seconds
Forward Delay Time (s)	Determines how long a port spends in Listening and Learning states before transitioning to Forwarding.	4 – 30 seconds

Spanning Tree – Global Settings

This section displays the current status of the spanning tree topology. You can refresh the information by clicking the **Refresh** icon.



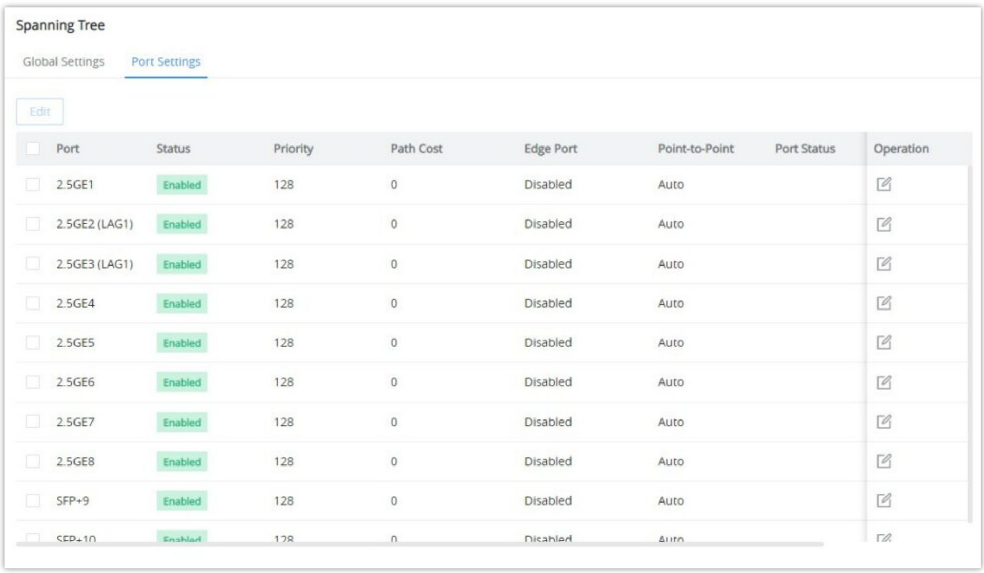
Spanning Tree Real Time Status Information

Field Name	Description
Bridge ID	The unique identifier for the current bridge (switch).
Root Bridge ID	The identifier for the root bridge in the spanning tree topology.
Root Port	The port used to reach the root bridge.
Root Path Cost	The cost of the path to the root bridge from this switch.
Topology Change Count	The number of times the network topology has changed.
Latest Topology Change	The time since the last topology change.

Spanning Tree – Real-Time Status Information

Port Settings – Spanning Tree

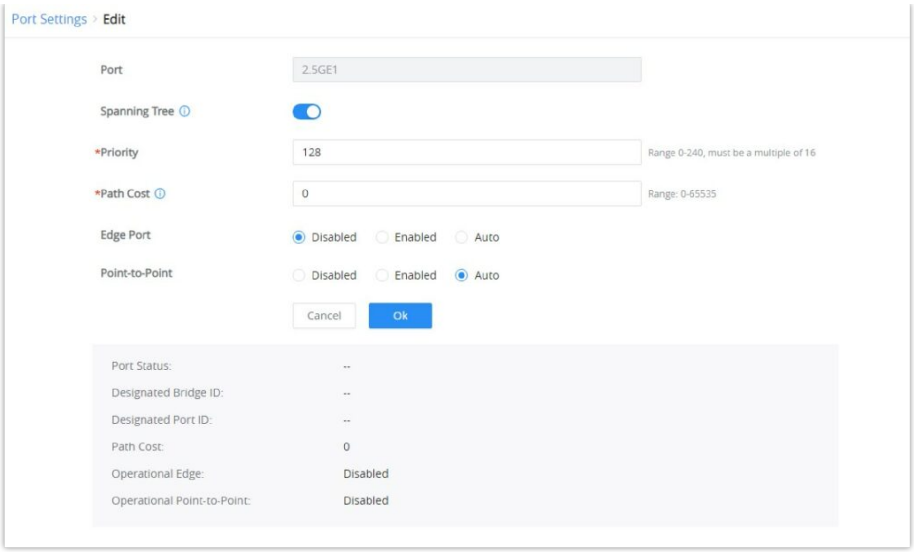
The **Port Settings** tab allows configuration of Spanning Tree on a per-port basis, enabling administrators to control port behavior, priority, path cost, and monitor port status.



Spanning Tree Port Settings

To configure Spanning Tree on specific ports:

1. Navigate to **Switching** → **Spanning Tree** → **Port Settings**.
2. Select the port you wish to configure and click **Edit**.
3. Configure the following fields:



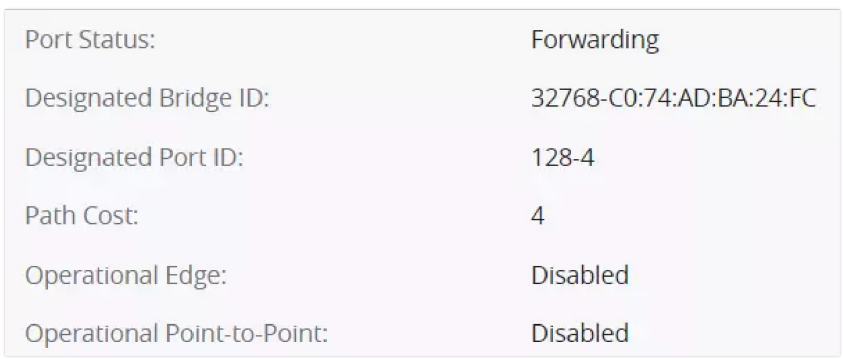
Spanning Tree Port Settings

Field Name	Description	Range
Port	The specific port being configured for Spanning Tree Protocol.	–
Spanning Tree	Enables or disables Spanning Tree for the selected port. ***Note:*** *If the port is self-looping, the port will be automatically shut down, and the port needs to be manually enabled again.*	–
Priority	Assigns priority to the port. Lower values make this port more likely to become the root port in case of a tie.	0 – 240 (multiples of 16)
Path Cost	Defines the cost of using this port to reach the root bridge. Lower costs indicate more desirable paths. The default value is 0 meaning the switch automatically calculates based on link speed.	Range: 0-65535
Edge Port	Enable if the port is connected to an end device and is not expected to receive BPDUs. Auto will detect if the port should behave as an edge port.	–
Point-to-Point	Specifies whether the port operates as a point-to-point link. Auto allows detection of the link type.	–

Spanning Tree – Port Settings

Port Status

This section provides real-time information about the selected port's spanning tree status.



Spanning Tree Port Status

Field Name	Description
Port Status	Indicates whether the port is currently active
Designated Bridge ID	The bridge ID of the designated bridge for the port.
Designated Port ID	The ID of the port designated for this spanning tree configuration.
Path Cost (Status)	Displays the actual path cost currently being used by the port.
Operational Edge	Shows whether the port is operating as an edge port.
Operational Point-to-Point	Displays whether the port is operating as a point-to-point link.

Spanning Tree – Port Status

VLAN

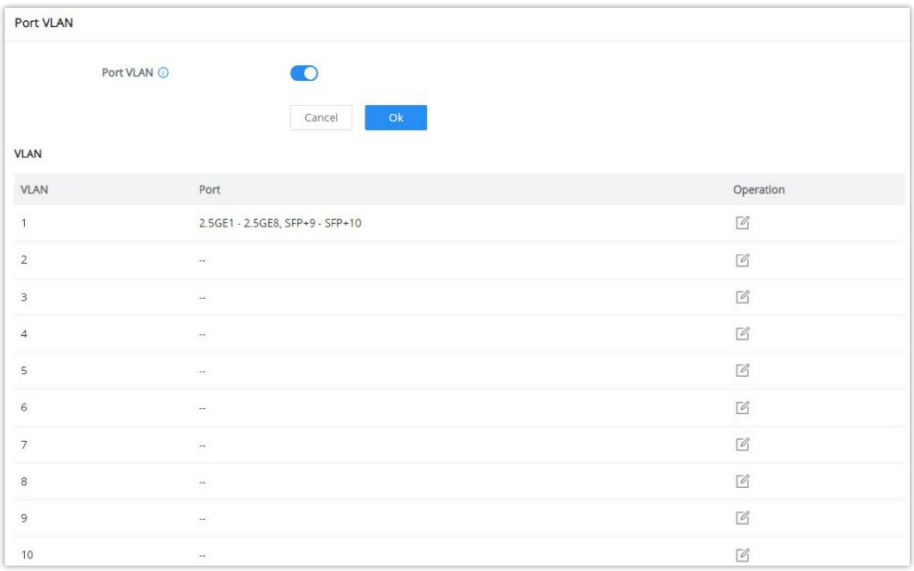
A virtual local area network, virtual LAN or VLAN, is a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location. A VLAN has the same attributes as a physical local area network (LAN), but it allows for end stations to be grouped even if they are not located on the same network switch. VLAN membership can be configured through software instead of physically relocating devices or connections.

Port VLAN

On this page, the user can select which VLANs (a preset from 1 to 8) can be allowed on GWN772x ports. This is a simplified way to manage VLANs from 1 to 8. To have more flexibility and control, please enable 802.1Q VLAN, and the Port VLAN will be disabled automatically.

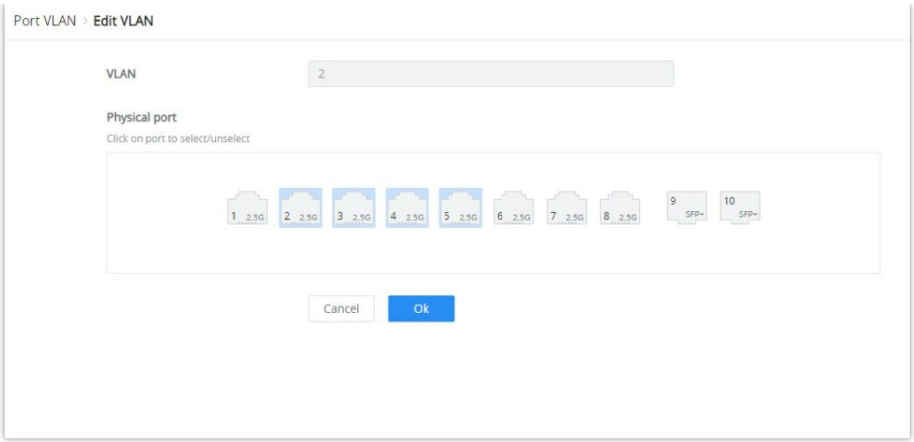
First, enable Port VLAN as shown below:

When Port VLAN is enabled, 802.1Q VLAN will be automatically disabled, and the configured information will be lost.



Port VLAN

Click the "**Edit**" icon under the Operation column to edit a VLAN, then select which ports this VLAN will be allowed on.



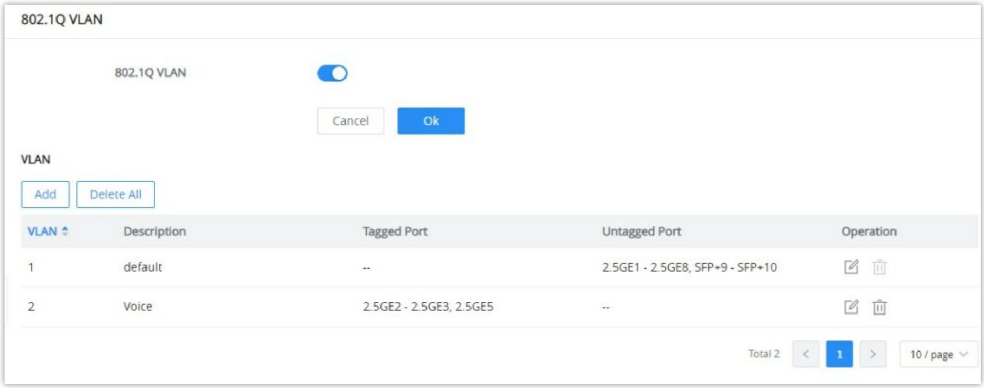
Port VLAN Edit VLAN

802.1Q VLAN

For more flexibility and control over VLAN configuration, the user can enable 802.1Q VLAN, and in this case, the user is not only restricted to VLANs from 1 to 8.

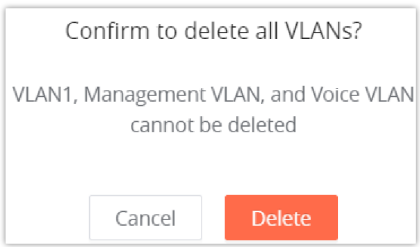
Click on the "**Add**" button to add a VLAN, as shown below:

> When 802.1Q VLAN is enabled, Port VLAN will be automatically disabled and the configured information will be lost.



8021Q VLAN

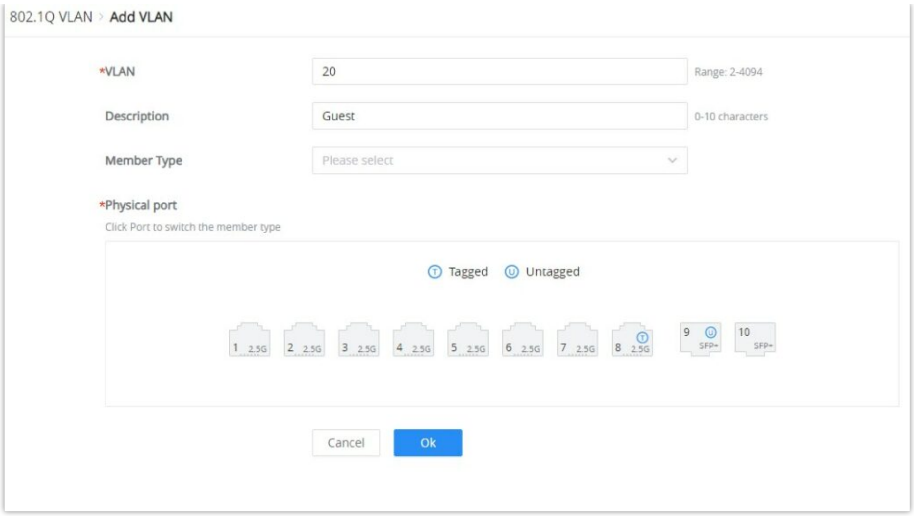
> **Alert: Deleting VLANs**
>
> When clicking Delete All, a confirmation dialog will appear. Please note that "VLAN1, Management VLAN, and Voice VLAN cannot be deleted". Only other user-created VLANs will be removed.



Delete all VLANs

On this screen, the user can configure the VLAN:

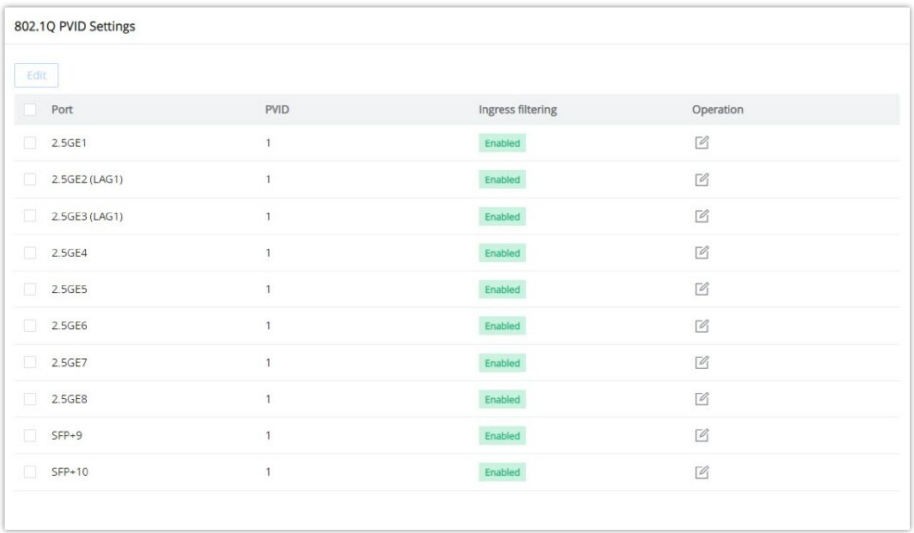
- **VLAN:** specify the VLAN ID (Range 2-4094).
- **Description:** Enter a description for the VLAN.
- **Member Type:** a shortcut to untag/tag or remove all members.
- **Physical port:** select the tagged/untagged ports accordingly.



8021Q VLAN addedit VLAN

802.1Q PVID Settings

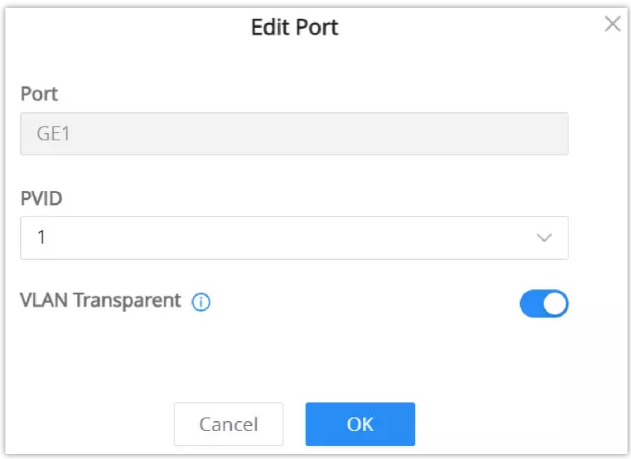
If the **802.1Q VLAN** is enabled, the user can select the PVID (Port VLAN ID) or native VLAN when there is more than one VLAN on a port. Click on the "**Edit**" icon under operation to modify the PVID on a specific port.



8021Q PVID Settings

When editing a port, the following options are available:

- **PVID (Port VLAN ID):** Assigns the default VLAN ID for untagged traffic entering the port. All untagged packets received on this port will be associated with the configured PVID.
- **VLAN Transparent:** When enabled, the port bypasses the local 802.1Q VLAN table and directly forwards all VLAN-tagged packets without modification. This allows the port to act as a VLAN-agnostic pass-through, useful when the switch should not enforce VLAN isolation (e.g., when passing VLANs between two VLAN-aware devices).

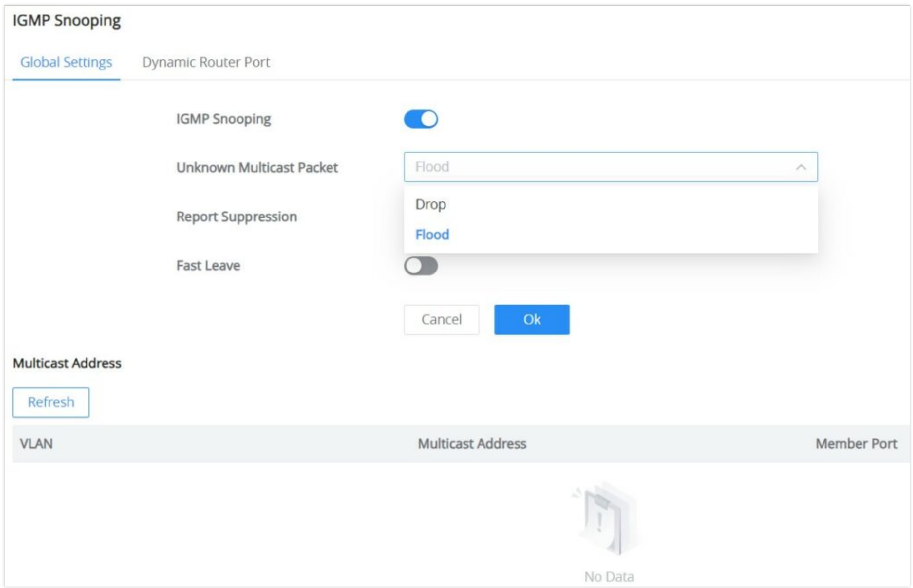


8021Q PVID Settings edit port

IGMP SNOOPING

The GWN772x switches support IGMP snooping, which is an IPv4 Layer 2 multicast protocol that optimizes the handling of multicast traffic in a network by intelligently forwarding traffic only to the ports where interested hosts are located, based on the monitoring of IGMP messages.

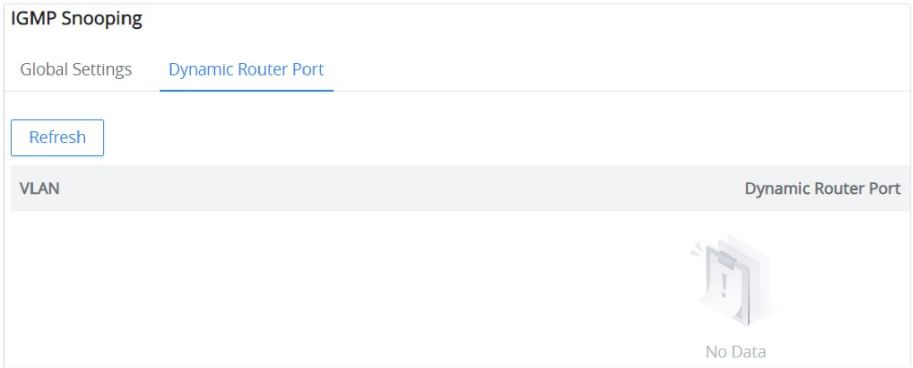
On the **Global Settings tab**, the users can enable the IGMP Snooping feature by toggling ON the feature, and for an Unknown Multicast Packet will be either dropped or flooded as shown below:



IGMP Snooping Global Settings

IGMP snooping dynamically identifies router ports by monitoring IGMP General Query messages and optimizes the forwarding of multicast traffic to those ports for efficient use of network bandwidth.

The **Dynamic Router Port** tab displays all the discovered dynamic router ports. The users can click on the "**Refresh**" button to refresh the list.



IGMP Snooping Dynamic Router Port

QOS

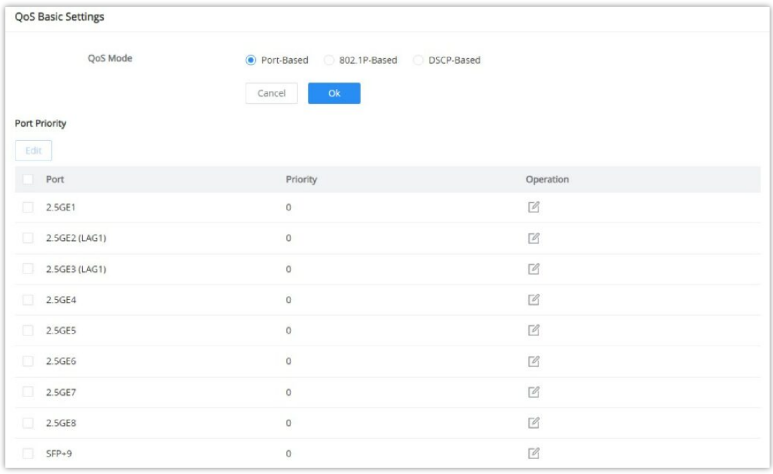
The popularity of the network and the diversification of services have led to a surge in Internet traffic, resulting in network congestion, increased forwarding delay, and even packet loss in severe cases, resulting in reduced service quality or even unavailability. Therefore, to carry out these real-time services on the network, it is necessary to solve the problem of network congestion. The best way is to increase the bandwidth of the network, but considering the cost of operation and maintenance, this is not realistic. The most effective solution is to apply" Guaranteed " policies to govern network traffic. QoS technology is developed under this background. QoS is quality of service, and its purpose is to provide end-to-end service quality assurance for various business needs. QoS is a tool for effectively utilizing network resources. It allows different traffic flows to compete for network resources unequally. Voice, video, and important data applications can be prioritized in network equipment.

QoS Basic Settings

On this page, the user can edit the port priority for each port. The supported modes are:

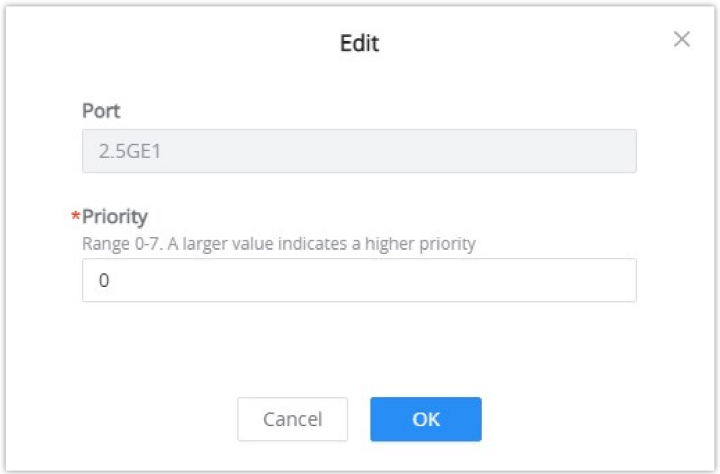
- Port-Based
- 802.1P-Based
- DSCP-Based

Please navigate to **QoS → QoS Basic Settings page**:



QoS Basic Settings

Select one or multiple ports, then click on the “Edit” button to modify the ports’ priority. The priority range is from 0 to 7; a larger value indicates a higher priority, and value 0 is the default value.



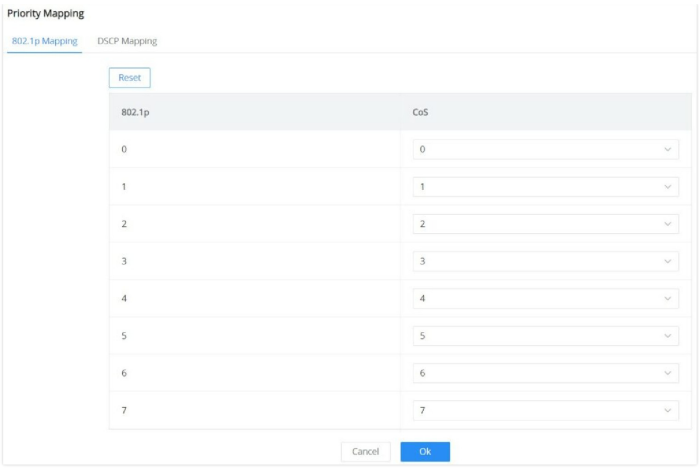
QoS Basic Settings Edit Port Priority

Priority Mapping

Priority mapping is used to realize the conversion between the QoS priority carried in the packet and the internal priority of the device (also known as the local priority, which is the priority used by the device to differentiate the service level of the packet) so that the device provides the Differentiated QoS service quality. Users can use different QoS priority fields in different networks according to network planning.

- **802.1p Mapping**

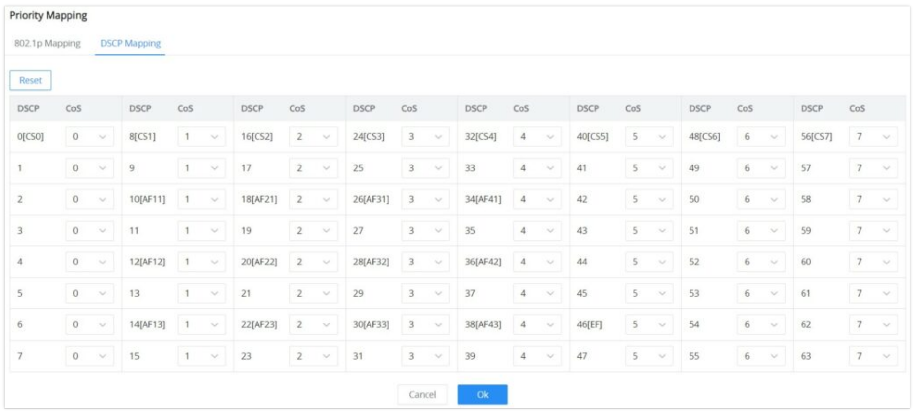
On this tab, the user can map between 802.1p and CoS (Class of Service) where 0 is the lowest priority and 7 is the highest priority for 802.1p, and by default, CoS is set to be the same (it’s recommended to keep it by default only if necessary or a specific network requires it).



Priority Mapping 8021p Mapping

- **DSCP Mapping**

On this tab, the user can map between CoS and DSCP (Differentiated Services Code Point); in this case, 802.1p and CoS mapping must be configured first. (It's recommended to keep the default settings to keep the consistency between all switches, only if it's necessary or the network requires it.)



Priority Mapping DSCP Mapping

> **Note:**
>
> Mapping can be configured based on the specific needs and requirements of the network, and it's important to ensure consistency across all network devices for effective Quality of Service (QoS) management.

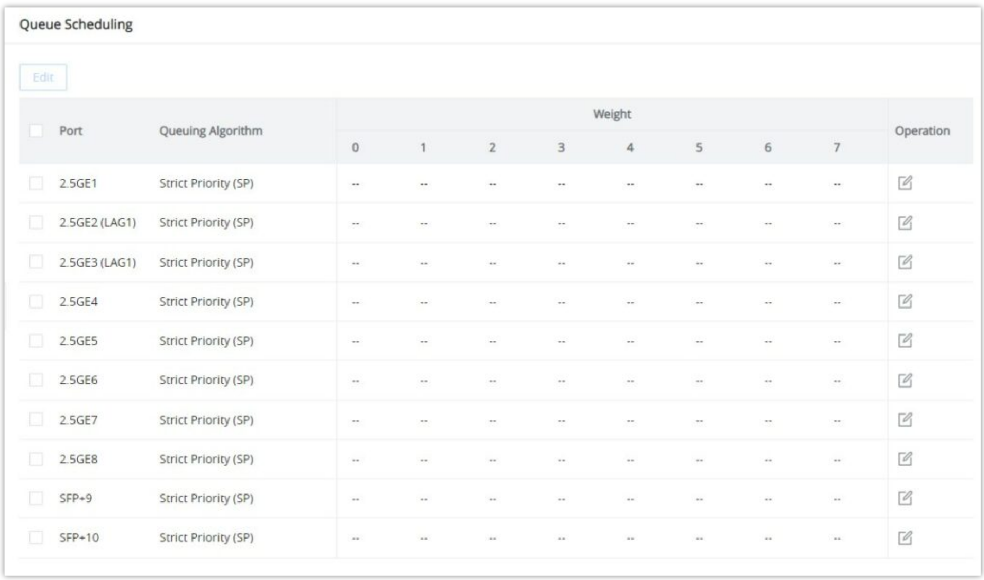
Queue Scheduling

When congestion occurs in the network, the device will determine the processing order of forwarding packets according to the specified scheduling policy, so that high-priority packets are preferentially scheduled.

Queue scheduling algorithm: queue scheduling according to the switch interface.

- **Strict priority (SP) scheduling:** The flow with the highest priority is served first, and the flow with the second highest priority is served until there is no flow at that priority. Each interface of the switch supports 8 queues (queues 0-7), queue 7 is the highest priority queue, and queue 0 is the lowest priority queue. ***Disadvantage***: When congestion occurs, if there are packets in the high-priority queue for a long time, the packets in the low-priority queue cannot be scheduled, and data cannot be transmitted.
- **Weighted Fair Queuing (WFQ) scheduling:** Based on ensuring fairness (bandwidth, delay) as much as possible, priority considerations are added, so that high-priority packets have more opportunities for priority scheduling than low-priority packets. WFQ can automatically classify flows by their "session" information (protocol type, source and destination IP addresses, source and destination TCP or UDP ports, priority bits in the ToS field, etc.) Place each flow evenly into different queues, thus balancing the latency of the individual flows as a whole. When dequeuing, WFQ allocates the bandwidth that each flow should occupy at the egress according to the flow priority (Precedence). The smaller the priority value is, the less bandwidth is obtained; otherwise, the more bandwidth is obtained.

Select one or multiple ports, then click on the "**Edit**" button to modify the ports' **Queuing Algorithm**. The default algorithm is set to Strict Priority (SP).

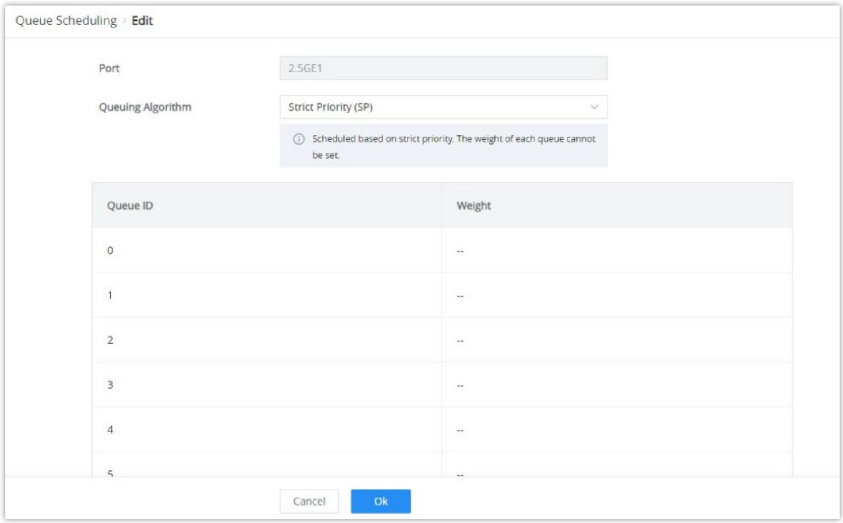


Queue Scheduling

If **Weighted Fair Queuing (WFQ)** is selected, the Weight option can be configured accordingly; the higher the Weight, the higher the traffic priority.

Note:

- **Weighted Fair Queuing (WFQ):** Schedule according to WFQ. The weight of each queue is set in bytes.

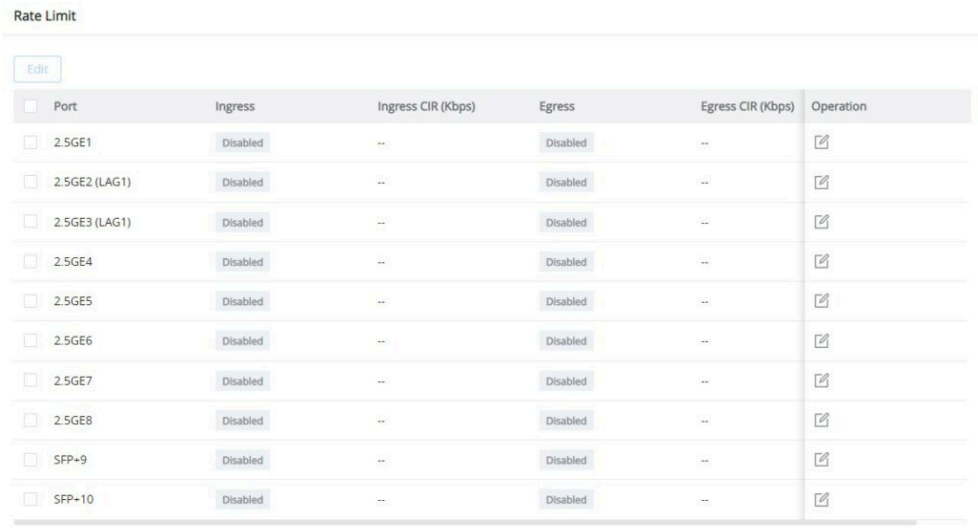


Queue Scheduling Edit

Rate Limit

The interface rate limit can limit the total rate of all packets sent or received on an interface. The interface rate limit also uses the token bucket to control the flow. If an interface rate limit is configured on an interface of the device, all packets sent through this interface must first be processed through the token bucket of the interface rate limiter. If there are enough tokens in the token bucket, the packet can be sent; otherwise, the packet will be discarded or cached.

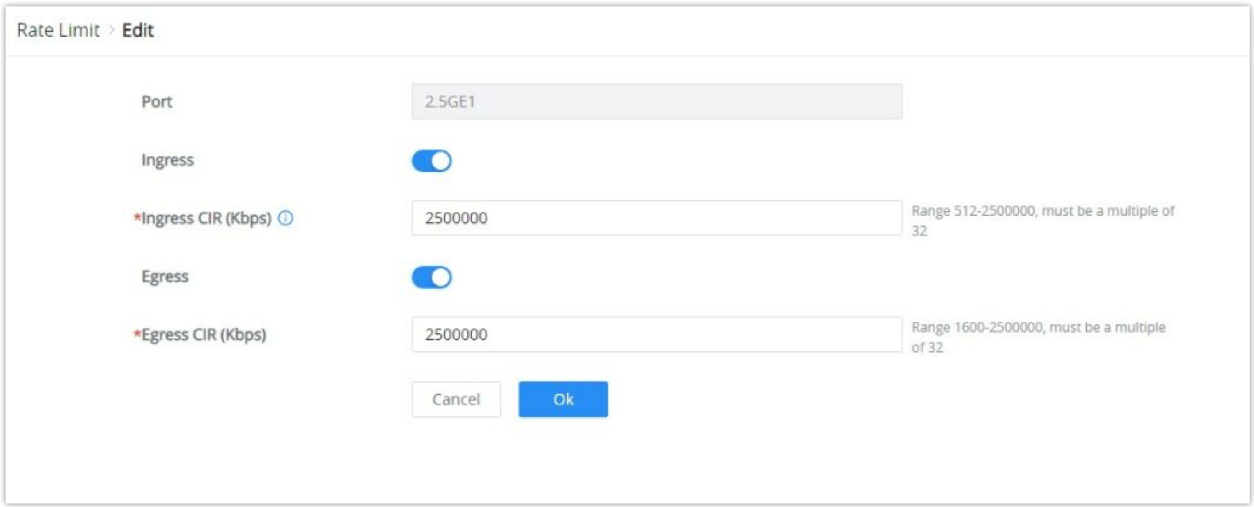
To configure Rate Limit, please navigate to **QoS** → **Rate Limit**, then select one or multiple ports, click on the "**Edit**" button to edit the port(s).



Rate Limit page

Enable the **Ingress** (incoming traffic to the switch) and then set the rate limit (in Kbps), and then enable Egress (**outgoing traffic**) and set the rate limit (in Kbps).

> **Note:**
>
> CIR is the average rate at which traffic can pass. If Ingress is enabled, the smaller value between them takes effect.



Rate Limit Edit port

Security

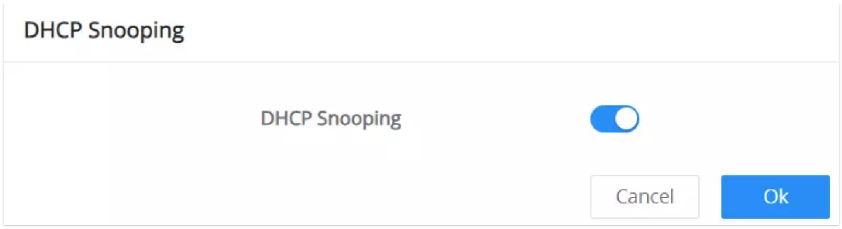
DHCP Snooping

DHCP Snooping is a security feature that protects against rogue DHCP servers. It allows network administrators to specify trusted and untrusted ports, ensuring that only legitimate DHCP servers can provide IP addresses. Untrusted ports will drop DHCP server responses from unauthorized servers, while trusted ports will allow traffic from legitimate DHCP servers.

To enable DHCP Snooping:

1. **Log in to the Web UI** of your GWN772x switch.
2. **Navigate to**:
   - **Security → DHCP Snooping**
3. **Enable DHCP Snooping** globally by toggling the switch at the top of the page.

Once enabled, DHCP Snooping will monitor and filter DHCP traffic on all interfaces.



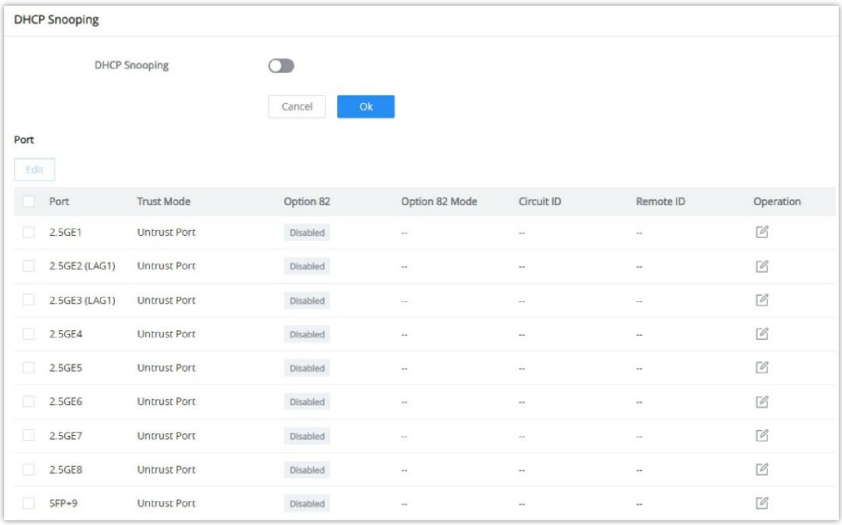
Enable DHCP Snooping

DHCP Snooping Port Settings

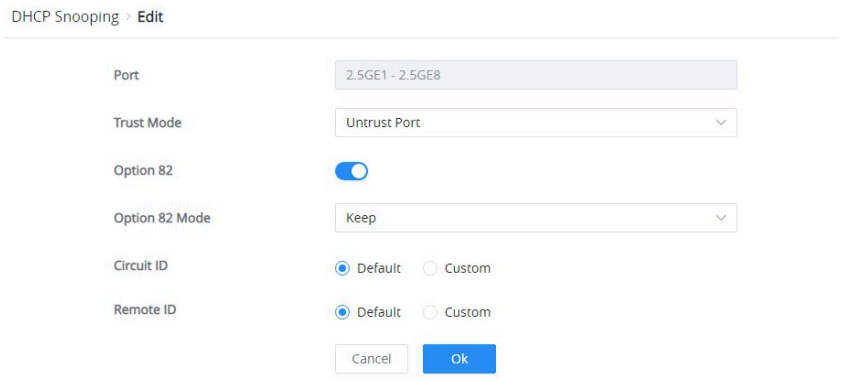
Configure the trusted/untrusted status of each port and whether DHCP Option 82 is enabled, to help with tracking and security.

Port-Specific Settings: You can configure DHCP Snooping on individual ports.

- Click **Edit** next to the port you want to configure.
- The following fields can be adjusted:



DHCP Snooping Port Settings



DHCP Snooping Edit port

Field	Description	Note
Port	The interface where DHCP Snooping is configured.	Available for all ports.
Trust Mode	Specifies whether the port is trusted or untrusted.	***Note:*** *Trusted ports accept DHCP packets from legitimate DHCP servers and untrusted ports drop DHCP server packets.*

Option 82	Enables DHCP Option 82	which is used to add additional information (Relay Agent Information) in DHCP requests.
Option 82 Mode	Determines how the relay information should be handled.	Options are: Keep, Drop and Replace.
Circuit ID	The circuit ID that identifies the connection. Can be set to 'Default' or 'Custom'.	Only available when 'Option 82' is enabled.
Remote ID	The remote ID that provides information about the remote connection. Can be set to 'Default' or 'Custom'.	Only available when 'Option 82' is enabled.

DHCP Snooping Edit port

POE

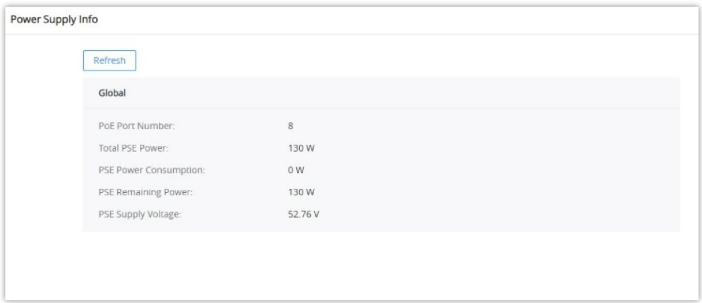
> **Note**
>
> The following configuration section is only for the GWN7721P model.

Power Over Ethernet (PoE) refers to supplying power over an Ethernet network, also known as a local area network-based power supply system, PoL, or Active Ethernet.

Usually, the terminal devices of the access point need to use a DC power supply, but due to insufficient wiring, these devices need unified power management. At this time, the switch interface provides the power supply function, which can solve the above problems and realize the precise control of the port PoE power supply.

Power Supply Info

This page displays the Power Supply Info like the number of PoE, Total, Remaining PoE Power, etc, and even the Supply Voltage.



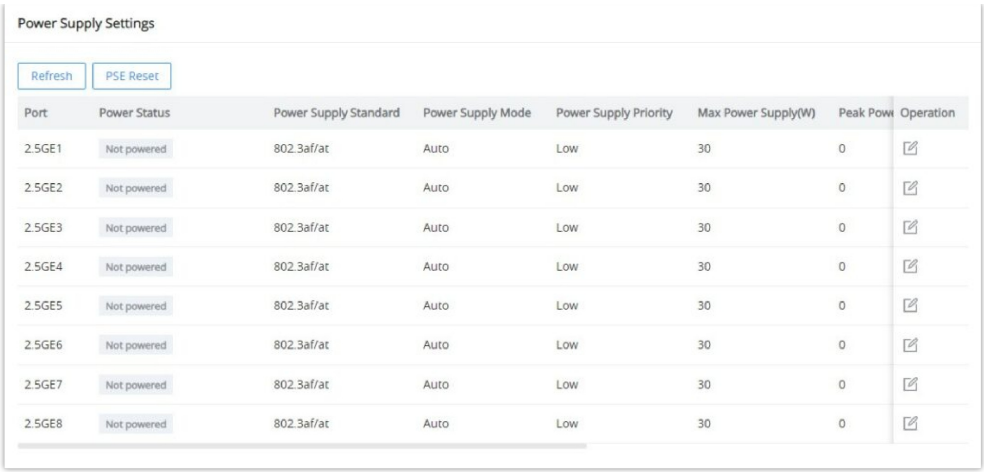
Power Supply Info

Power Supply Setting

On this page, the user can configure on each port that supports PoE: The max power supply, the power supply priority, and the power supply mode. e.g, on the GWN7721P switch model, the ports 1-8 support PoE/PoE+.

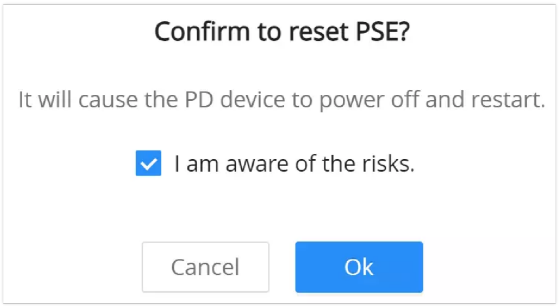
> **Alert:**
>
> Please configure the appropriate power according to the power supply selected. When the configured power exceeds the actual power, it may cause the device to restart repeatedly!

To reset the PSE, click on the "**PSE Reset**" button as shown below:



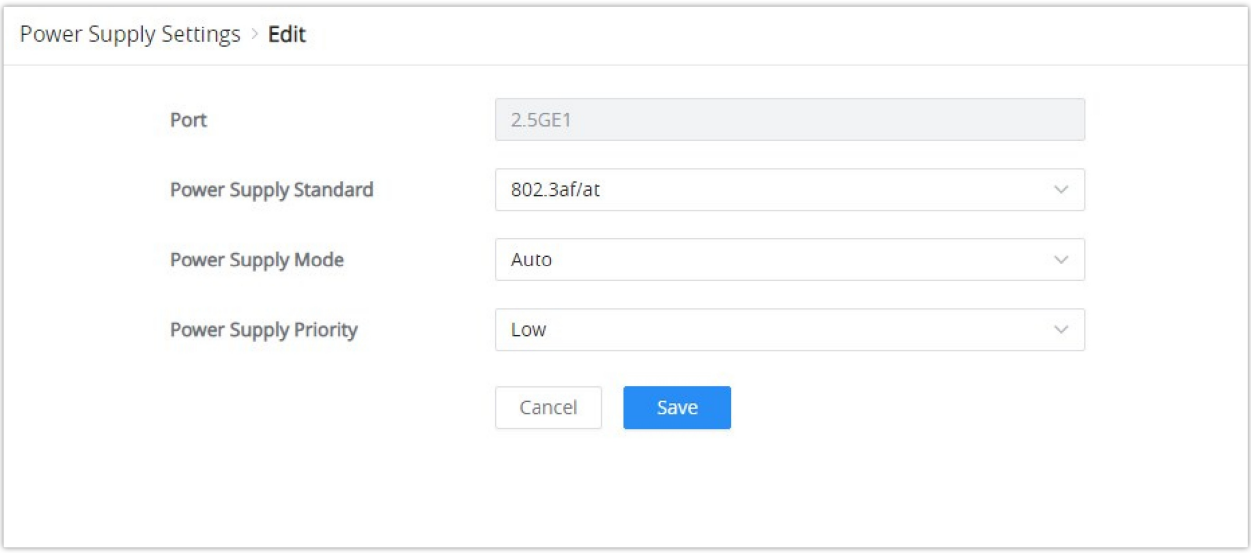
Port PoE Settings prompt

When resetting the Power Sourcing Equipment (PSE) on the GWN7721P switch, a confirmation dialog appears, warning that this action will power off and restart all connected Powered Devices (PDs). The user must acknowledge the risk by selecting the checkbox and clicking "**Ok**" to proceed.



PSE Reset

To edit the PoE parameters on the supported port, click on the "**Edit icon**" under the operation column, then select from the drop-down lists the power supply standard, power supply mode, and power supply priority.



Power Supply Setting Edit port

When multiple Powered Devices (PDs) are connected and the PoE power budget is limited, the GWN772X prioritizes power supply based on the power-on time of the connected devices.

If multiple ports have the same configured PoE priority, the device that was **powered on earlier** will have **higher priority** to retain power.

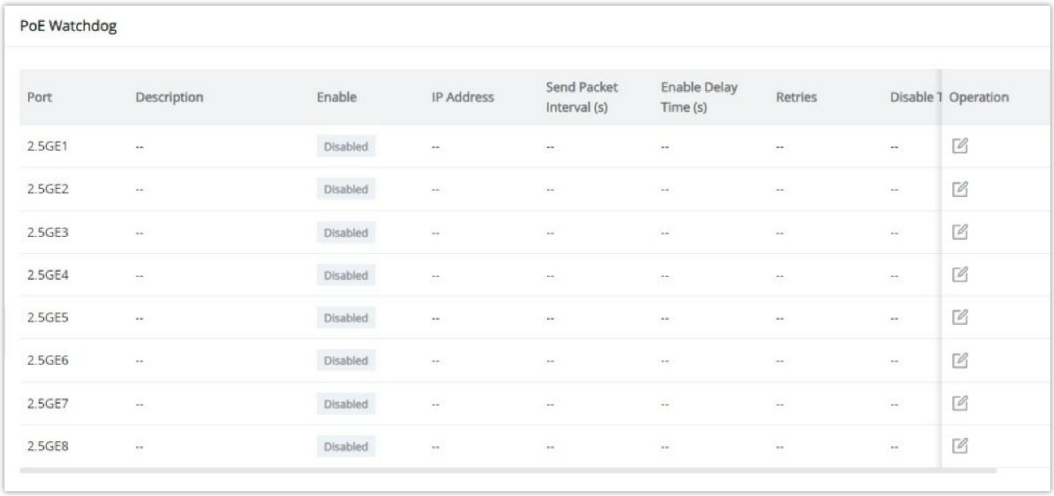
Example: If two PDs are connected to Port 3 and Port 7 with equal priority settings, and the available PoE budget becomes insufficient to power both, the **device that was connected or powered on first** will continue receiving power, while the latter one may be disconnected.

Note

PoE port priority can be manually configured through the web interface. The time-based priority behavior only applies when multiple ports share the same configured priority level.

PoE Watchdog

The PoE Watchdog feature is designed to monitor the connectivity of Powered Devices (PD) on PoE-enabled ports. The switch periodically sends packets to a configured IP address to check the PD's availability. If the PD does not respond, the switch will disable and re-enable the PoE on that port, effectively rebooting the device. This feature is useful for ensuring the continuous operation of critical devices like IP cameras, access points, or VoIP phones.



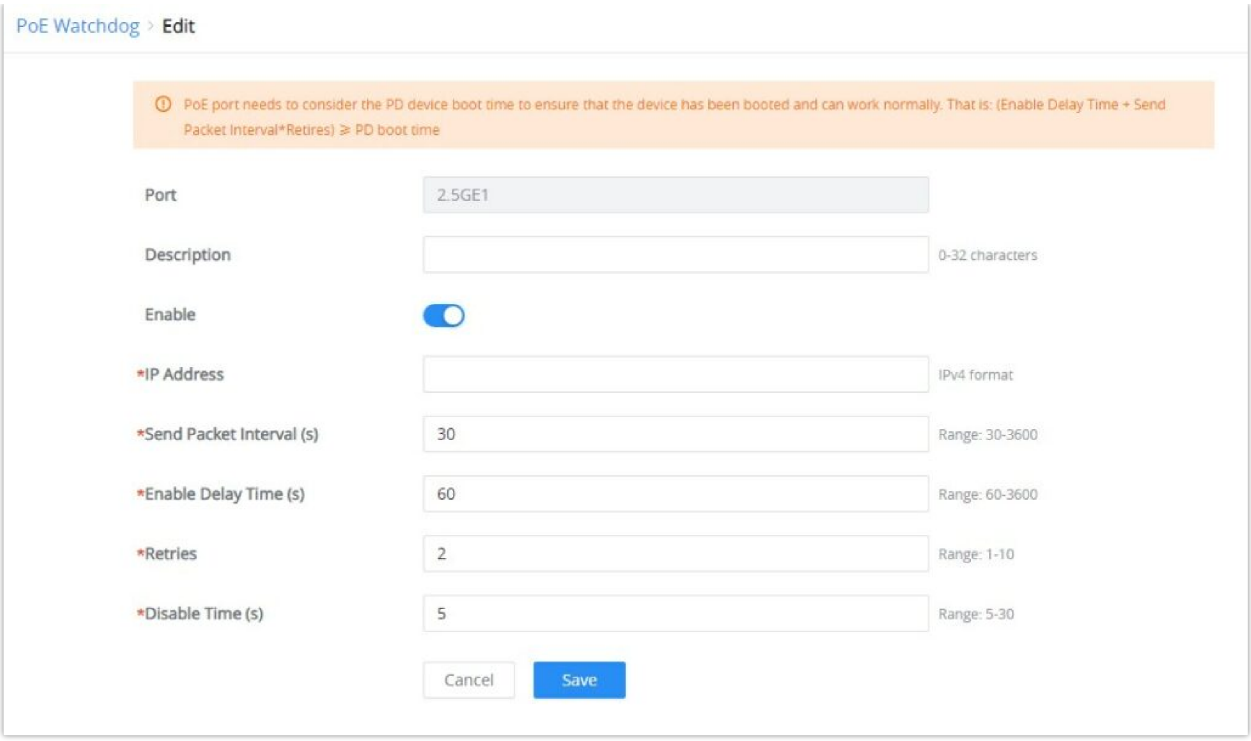
PoE Watchdog

Steps to Configure PoE Watchdog

1. Navigate to **PoE** → **PoE Watchdog** from the web interface.
2. Click on the edit icon next to the port you want to configure.
3. In the edit page, configure the following fields:
   - **Port**: Select the port to monitor.
   - **Description**: (Optional) Describe the port.
   - **Enable**: Toggle to enable or disable PoE Watchdog for this port.
   - **IP Address**: Enter the IP address of the device to ping.
   - **Send Packet Interval (s)**: Set the interval between ping packets.
   - **Enable Delay Time (s)**: Set the delay time before enabling the PoE watchdog.
   - **Retries**: Configure the number of ping retries before considering the device unreachable.
   - **Disable Time (s)**: Set the time to disable PoE before re-enabling it.

Note:

The values for "Send Packet Interval," "Enable Delay Time," and "Retries" need to be calculated based on the Powered Device (PD) boot time to ensure successful monitoring and reboot.



PoE Watchdog Edit port

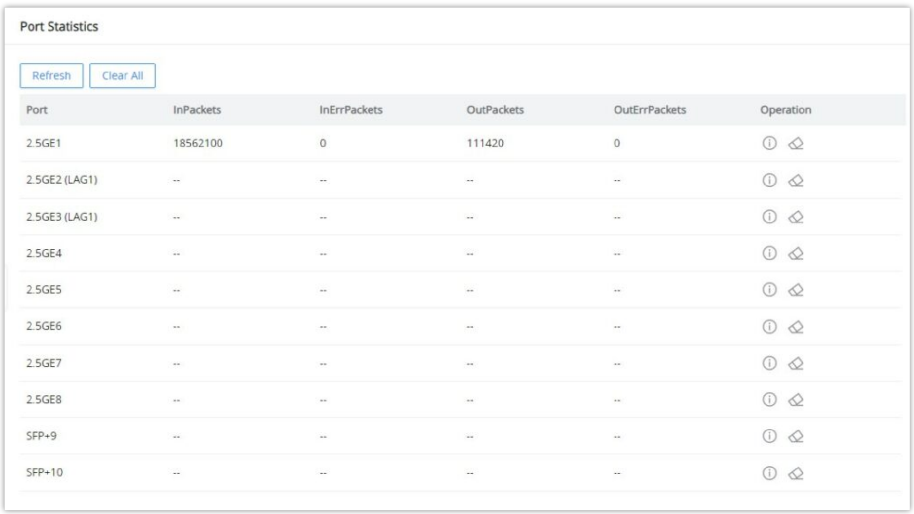
MONITORING

Port Statistics

For monitoring or even sometimes troubleshooting, the Flow Statistics displays in real time the flow of data with different units like Octets, Packets, Transmission Rate, and OutErrPackets.

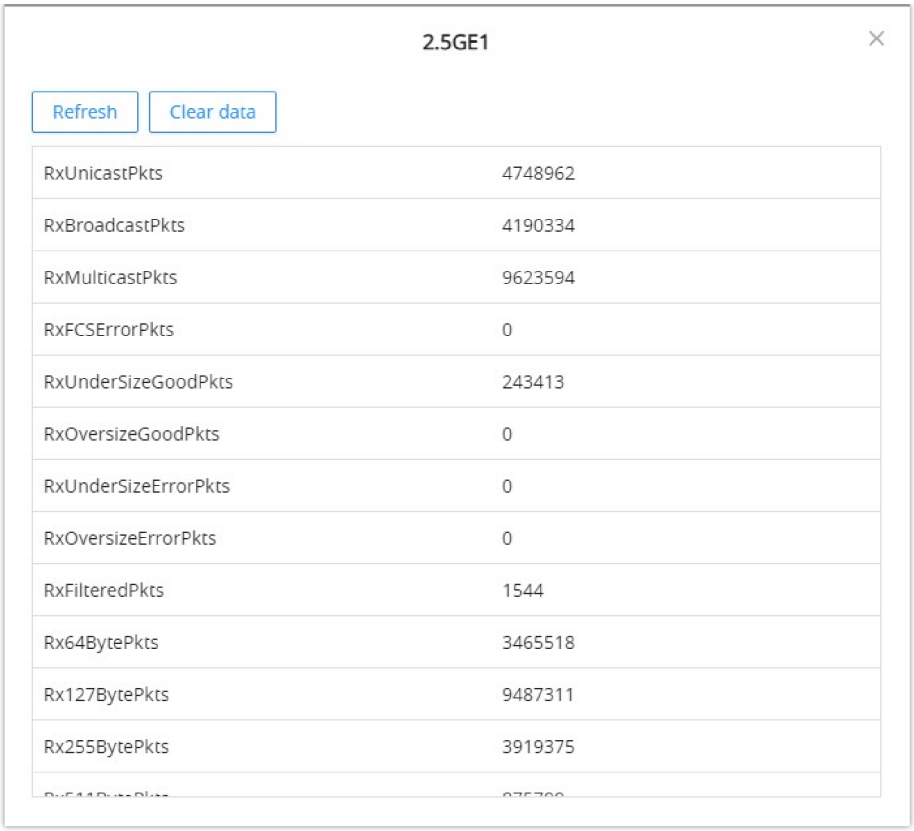
To refresh the statistics, click on the "Refresh" button, and to clear all the statistics, click on the "**Clear All**" button.

To clear the data for a specific port, click on the "**clear icon**" under the operation column.



Port Statistics

For more details, click on the "**Exclamation mark icon**" under the operation column next to each port.



Port Statistics port details

Port Mirror

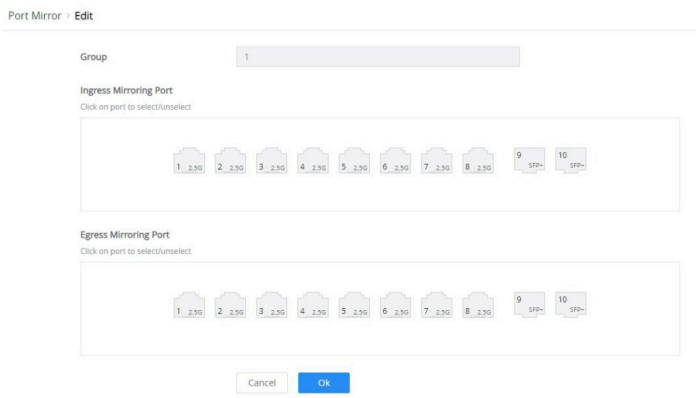
Mirroring refers to copying the packets from the specified source to the destination port. The specified source is called the mirroring source, the destination port is called the observing port, and the copied packet is called the mirroring packet.

Mirroring can make a copy of the original packet without affecting the normal processing of the original packet by the device, and send it to the monitoring device through the observation port to determine whether the service running on the network is normal.

GWN772x switch supports up to 4 groups. To configure/edit a group, click on the "Edit icon" under the operation column.

Port Mirror

To start mirroring a port, first, select the **Ingress** (incoming traffic to the switch) **Mirroring port**, then select the **Egress** (outgoing traffic) **Mirroring port**, and then select from the drop-down list the **Monitor port** (Monitor port cannot be the same as the Mirroring port), please refer to the figure below:



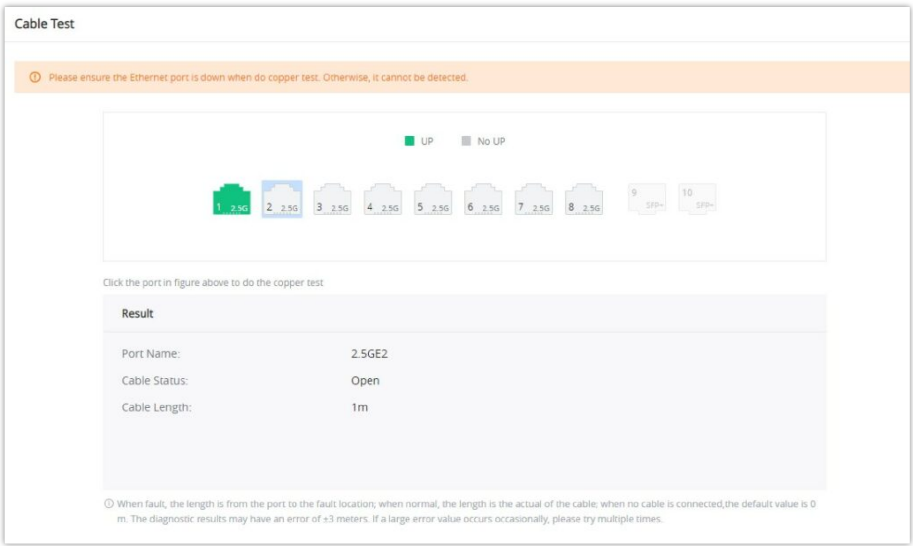
Port Mirror Edit Group

Cable Test

The Cable Test can detect whether the cable connected to the switch is faulty and the location of the fault. Using this function can assist in the daily engineering installation diagnosis.

Please navigate to **Maintenance → Cable Test.**

> **Note:**
>
> Please ensure the Ethernet port is down when doing the Cable Test. Otherwise, it cannot be detected



Cable Test

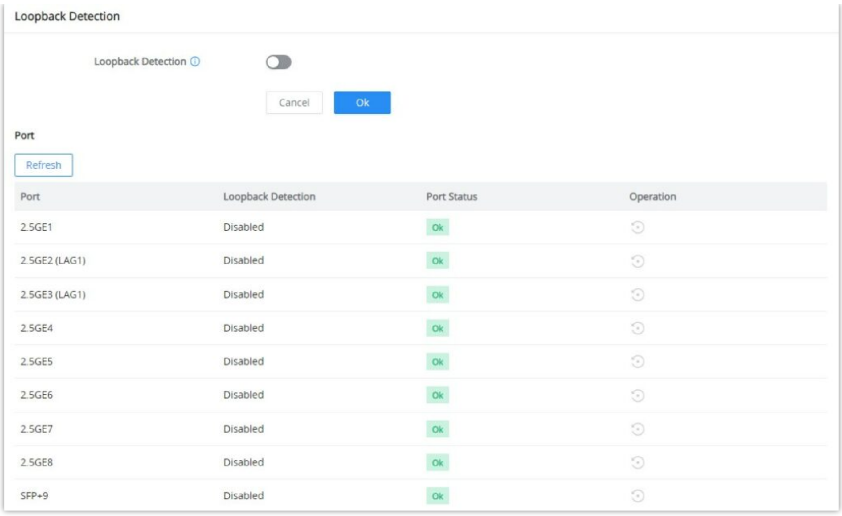
Loopback Detection

The **Loopback Detection** feature helps prevent self-looping on a port, which can disrupt the normal operation of the network. When loopback detection is enabled on a port, if a loop is detected, the port will automatically shut down or take appropriate measures.

> **Note:**
>
> Please note that if Spanning Tree Protocol (STP) is enabled on a port, the loop detection function for that port will not work properly.

Configuration:

1. **Navigate to Monitoring → Loopback Detection** on the GWN772x switch's web UI.
2. Toggle **Loopback Detection** on or off.
3. Click **OK** to save the settings.



Loopback Detection

Field	Description
Port	The physical port on which the loopback detection settings will be applied.
Loopback Detection	Whether loopback detection is enabled or disabled for the specific port.
Port Status	The current operational status of the port. It shows whether the port is functioning normally (‘OK’) or if there is a fault or loop (‘Error’).
Operation	The available actions for the port. For ports that have been disabled due to loop detection the ‘Restore’ option will appear to re-enable them.

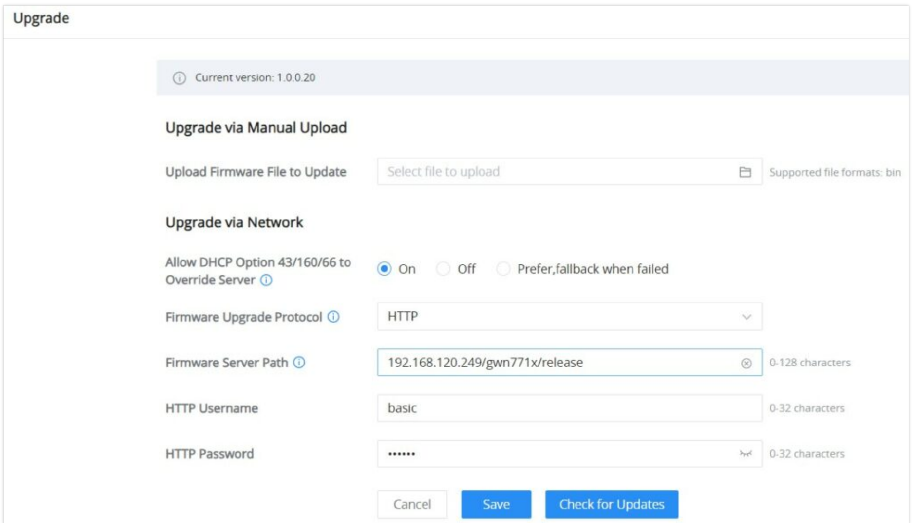
Loopback Detection

MAINTENANCE

Upgrade

GWN772x Switches support manual upload firmware upgrade via a BIN file that can be downloaded from the Grandstream Firmware page: https://www.grandstream.com/support/firmware

Upgrade Via Network is also supported by specifying the Firmware Server Path (For example, firmware.grandstream.com).

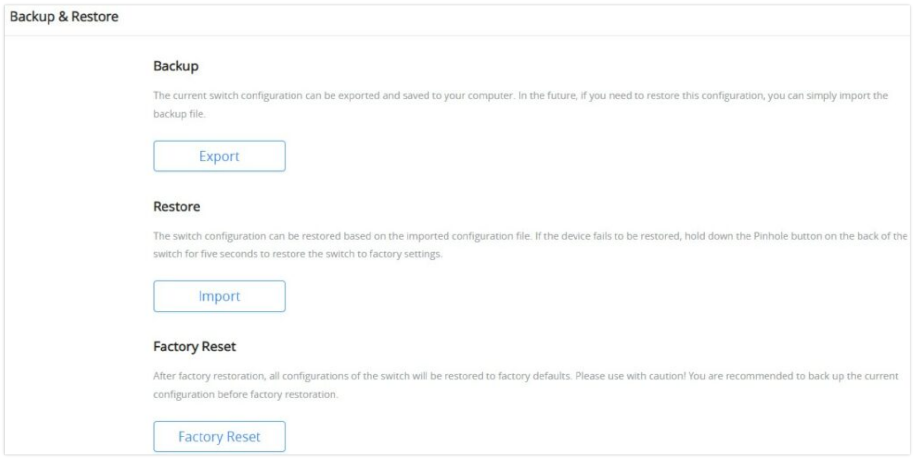


Upgrade

Backup & Restore

On this page, the user can back up the configuration, restore from a previously saved configuration file, or factory reset the GWN772x.

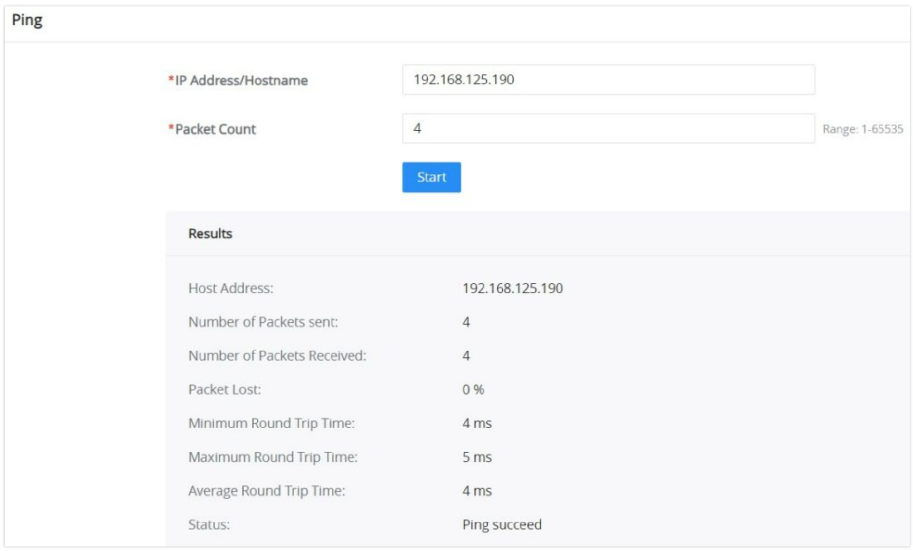
- **Backup:** The current switch configuration can be exported and saved to your computer. In the future, if you need to restore this configuration, you can simply import the backup file.
- **Restore:** The switch configuration can be restored based on the imported configuration file. If the device fails to be restored, hold down the Pinhole button on the back of the switch for five seconds to restore the switch to factory settings.
- **Factory Reset:** After factory restoration, all configurations of the switch will be restored to factory defaults. Please use it with caution! You are recommended to back up the current configuration before factory restoration.



Backup Restore

Ping

The user on this page can enter the IP Address or Hostname and then click "**Start**", the results of the ping command will be shown below.



Ping

SNMP

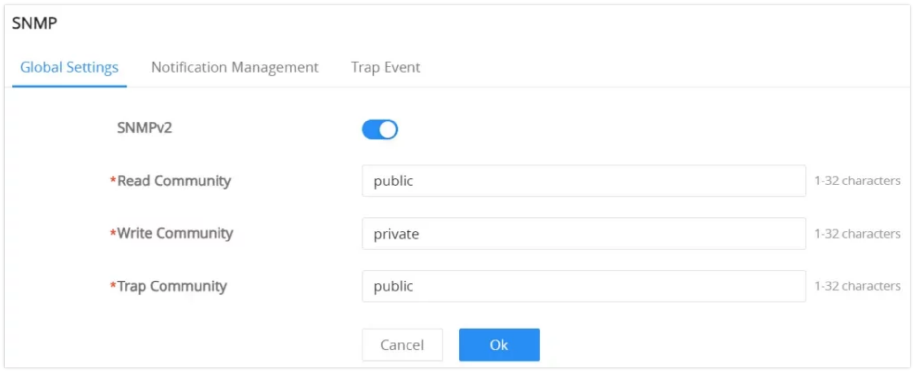
The Simple Network Management Protocol (SNMP) feature allows network administrators to monitor and manage devices within the network. The SNMP feature can be configured to send notifications and traps to an SNMP manager, helping to ensure efficient network operations.

Global Settings – SNMP

The **Global Settings** tab in the SNMP section allows administrators to configure community strings for SNMPv2 operations.

To access SNMP Global Settings:

1. Navigate to **Maintenance → SNMP → Global Settings**.
2. Enable SNMP by toggling the switch to **ON**.



SNMP Global settings

Field Name	Description	Character Limit/Range
Read Community	Defines the community string for read-only access.	1-32 characters
Write Community	Defines the community string for read-write access.	1-32 characters
Trap Community	Defines the community string for sending SNMP traps to the manager.	1-32 characters

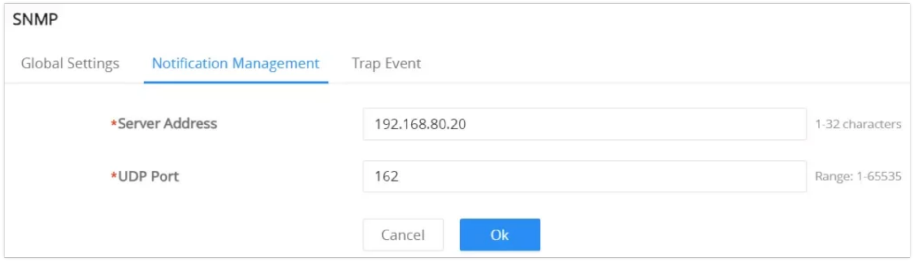
SNMP Global Settings Field Descriptions

Notification Management

The **Notification Management** tab allows the configuration of the SNMP trap server and port.

To configure the trap server:

1. Navigate to **Maintenance → SNMP → Notification Management**.
2. Set the following fields:
   - **Server Address**: Specify the IP address of the SNMP trap server.
   - **UDP Port**: Enter the port used for SNMP trap communication (default is 162).



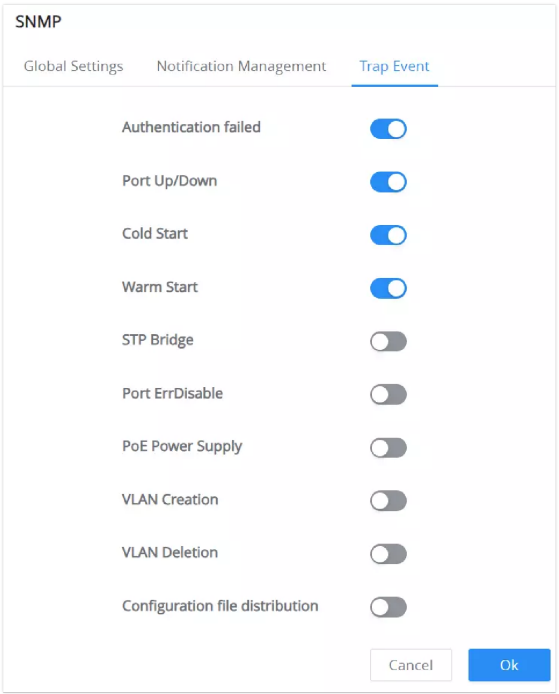
SNMP Notification Management

Trap Event

The **Trap Event** tab allows administrators to select the specific events for which SNMP traps should be sent to the SNMP manager.

To configure SNMP traps:

1. Navigate to **Maintenance → SNMP → Trap Event**.
2. Enable the desired trap events by toggling their switches. The available events are:
   - **Authentication Failed**
   - **Port Up/Down**
   - **Cold Start**
   - **Warm Start**
   - **STP Bridge**
   - **Port ErrDisable**
   - **PoE Power Supply**
   - **VLAN Creation**
   - **VLAN Deletion**
   - **Configuration File Distribution**



SNMP Trap Event

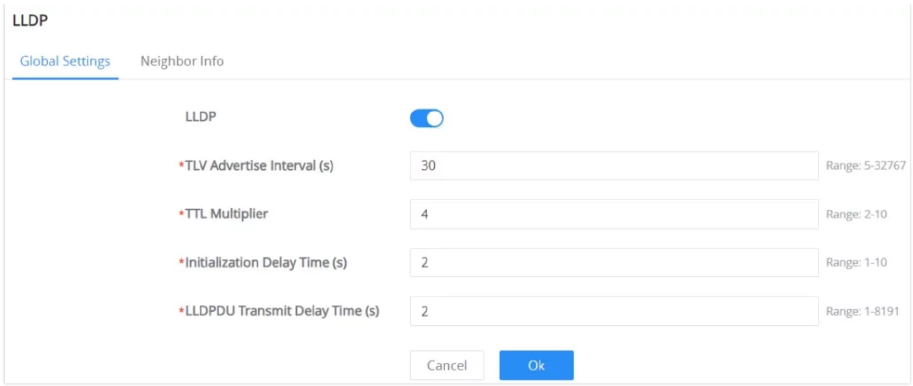
LLDP

The Link Layer Discovery Protocol (LLDP) allows the switch to advertise its identity, capabilities, and status to neighboring devices in the network. LLDP helps administrators efficiently monitor and manage network devices by providing detailed information about devices connected to the network.

Global Settings

To access LLDP Global Settings:

1. Navigate to **Maintenance → LLDP → Global Settings**.
2. Enable LLDP by toggling the switch to **ON**.

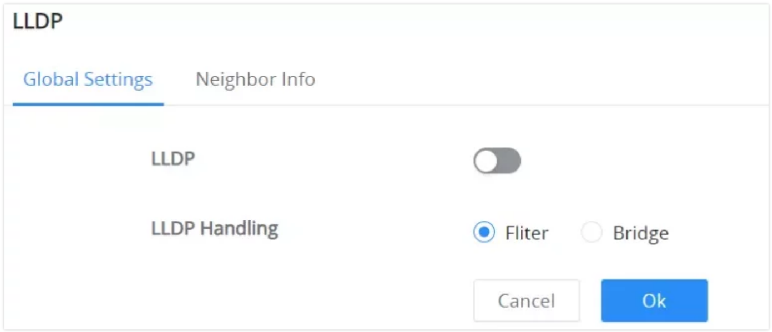


LLDP Global settings Enabled

When LLDP is disabled, the system provides two handling options:

- **Filter**: Stops LLDP packets at the device, using LLDP only for local neighbor information.
- **Bridge**: Forwards LLDP packets to other devices, enabling broader network discovery.

Select the desired LLDP handling method, then click **OK**.



LLDP Global settings Disabled

Field Name	Description	Range
If LLDP is disabled		
Filter	stops LLDP packets at the device, using LLDP only for local neighbor information.	–
Bridge	forwards LLDP packets to other devices, enabling broader network discovery.	–
If LLDP is enabled		
TLV Advertise Interval (s)	Defines the interval (in seconds) at which LLDP advertisements are sent to neighboring devices.	5 – 32767
TTL Multiplier	Specifies the Time-to-Live (TTL) multiplier for LLDP data units, determining their expiration time.	2 – 10
Initialization Delay Time (s)	Configures the delay time before LLDP starts after being enabled.	1 – 10
LLDPDU Transmit Delay Time (s)	Determines the delay between transmissions of LLDP Data Units (LLDPDU).	1 – 8191

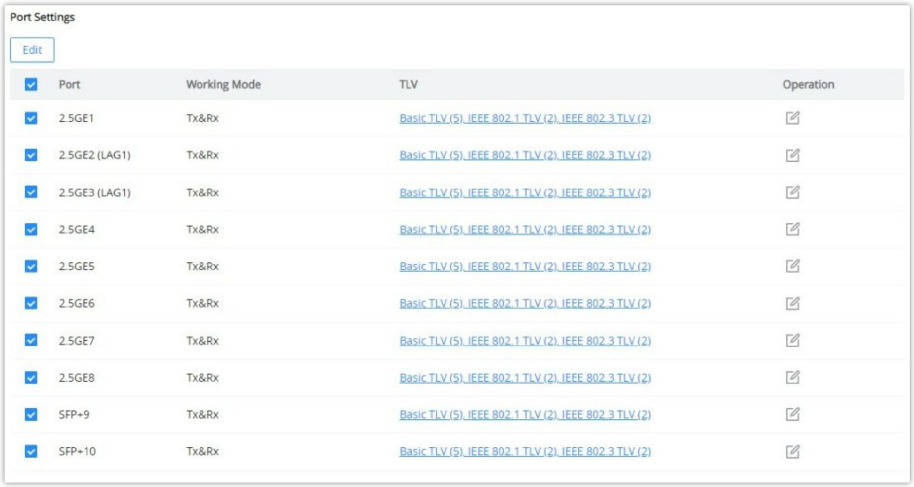
LLDP Global Settings Field Descriptions

Port Settings

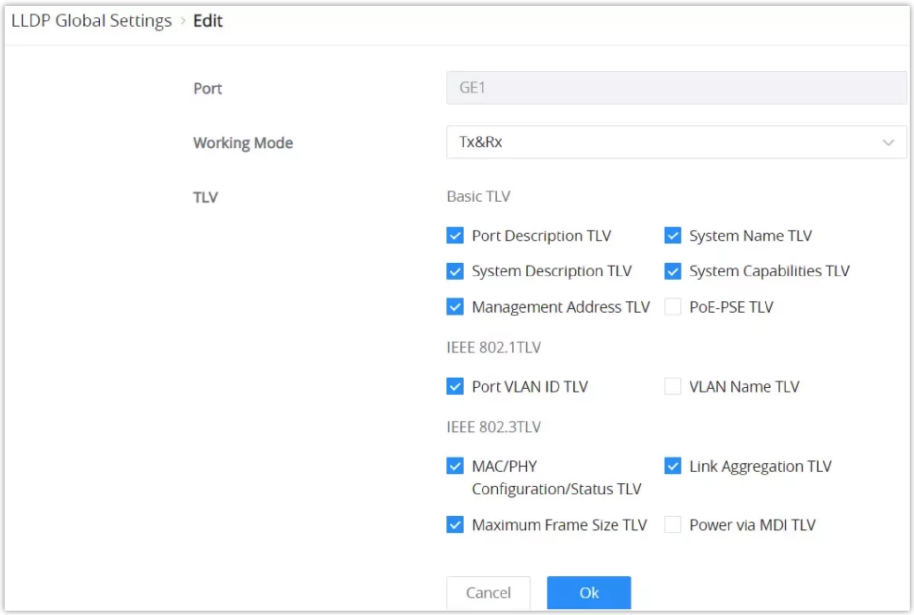
The **Port Settings** section allows the configuration of LLDP operation on a per-port basis. Users can specify how LLDP should behave on each port and select elements to include in the advertisements.

To configure LLDP per port:

1. Under the **Global Settings** tab, scroll down to **Port Settings**.
2. Click **Edit** next to the desired port to modify its LLDP configuration.



LLDP Port Settings



LLDP Edit port

Field Name	Description
Port	Specifies the port being configured.
Working Mode	Select whether the port should • Transmit (Tx) • Receive (Rx) • Transmit and Receive (Tx&Rx) • Disable LLDP on that port
TLV	Select which Type-Length-Value (TLV) elements to advertise.

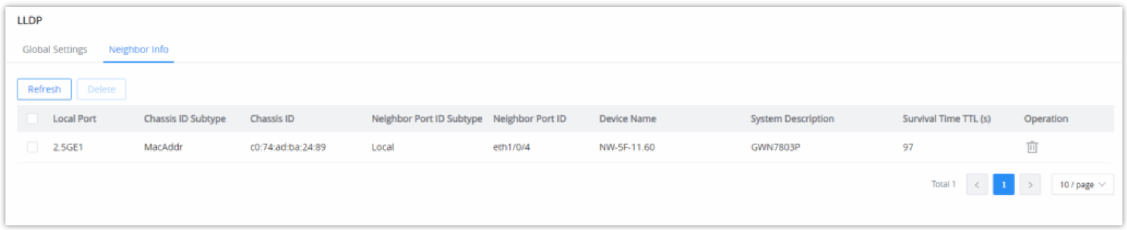
LLDP Port Settings Field Descriptions

Neighbor Info

The **Neighbor Info** tab provides detailed information about the devices connected to the switch via LLDP. This includes the identity, chassis ID, and port information for each neighboring device.

To access Neighbor Info:

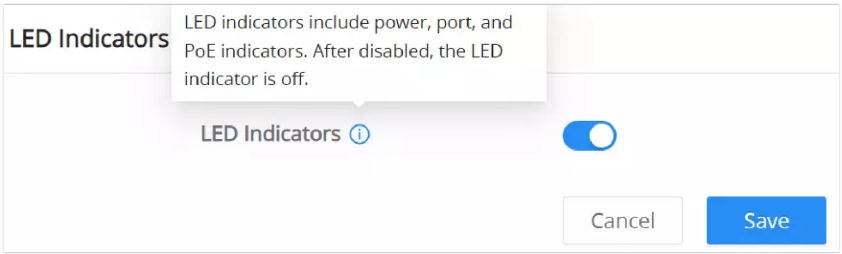
1. Navigate to **Maintenance → LLDP → Neighbor Info**.
2. The page will display the following information for each neighboring device:
   - **Local Port**: The local port connected to the neighbor.
   - **Chassis ID**: The chassis ID of the neighboring device.
   - **Neighbor Port ID**: The port on the neighboring device that is connected to the switch.
   - **Device Name**: The name of the neighboring device.
   - **System Description**: A description of the neighboring device.
   - **Survival Time (TTL)**: The remaining time before the neighbor's LLDP data expires.
3. Click **Refresh** to update the information, or **Delete** to remove neighbor entries.



LLDP Neighbor Info

LED Indicators

The LED indicators (power, port, and PoE indicators) can be toggled ON or OFF through the web interface. This feature allows users to disable the LEDs when needed, providing a cleaner and more discreet appearance while maintaining full functionality.



LED Indicators

To configure the LED indicators:

1. Log in to the switch's web interface.
2. Navigate to **Maintenance → LED Indicators**.
3. Toggle the switch next to **LED Indicators** to enable or disable all LED lights.
4. Click **Save** to apply the settings.

Once disabled, no LED feedback for power, port activity, or PoE states will be shown.

CHANGE LOG

This section documents significant changes from previous versions of the GWN7721(P) switches user manuals. Only major new features or major document updates are listed here. Minor updates for corrections or editing are not documented here.

Firmware Version 1.0.7.105

Product name: GWN7721, GWN7721P

- Added VLAN transparent transmission function for 802.1Q VLAN. [802.1Q PVID Settings]
- Added prompt to notify that VLAN 1, Management VLAN, and Voice VLAN cannot be deleted when clicking “Delete All”. [802.1Q VLAN]
- Updated LLDP to display Link Aggregation information under the IEEE 802.3 TLV section. [LLDP]

Firmware Version 1.0.1.33

Product name: GWN7721, GWN7721P

- This is the initial release.
