Grandstream Networks, Inc.

GWN780x Pro Series Managed switches

User Manual

INTRODUCTION

The **GWN780x Pro Series** is are **Layer 2++ managed** network switch designed for small-to-medium enterprises that require scalable, secure, and high-performance networks with simplified management.

Each model delivers high-speed **Gigabit Ethernet** connectivity with **SFP or SFP+ uplink ports**, providing switching capacities up to **216 Gbps** to meet demanding business needs.

The series supports advanced features such as:

- **VLAN configuration** for flexible traffic segmentation
- **QoS** for precise traffic prioritization
- **IGMP/MLD Snooping** to optimize multicast performance
- **Comprehensive security functions**, including ARP inspection, IP source guard, and DoS protection

PoE-capable models offer **intelligent dynamic PoE/PoE+/PoE++ power allocation**, supplying power to IP phones, cameras, access points, and other network devices.

Management is versatile and free to use, with options including:

- **Embedded Web UI controller**
- **GDMS Networking** (cloud)
- **GWN Manager** (on-premise software)
- **GWN Series Routers**
- **Command-Line Interface (CLI)**

Combining enterprise-class performance, robust security, and flexible management, the **GWN780x Pro Series** delivers a complete switching solution ideal for modern business environments.

PRODUCT OVERVIEW

Technical Specifications

<table>
<tr><th>Feature</th><th>GWN7801P Pro</th><th>GWN7802P Pro</th><th>GWN7803 Pro</th><th>GWN7803PL Pro</th><th>GWN7803PH Pro</th><th>GWN7806PL Pro</th><th>GWN7806PH Pro</th></tr>
<tr><td colspan="8"><b>Interfaces</b></td></tr>
<tr><td><b>Gigabit Ethernet Ports</b></td><td>8</td><td>16</td><td colspan="3">24</td><td colspan="2">48</td></tr>
<tr><td><b>SFP/SFP+ Ports</b></td><td>2x 2.5G SFP</td><td colspan="4">2x SFP+</td><td colspan="2">6x SFP+</td></tr>
<tr><td><b>Maximum Amount of Supported Modules</b></td><td colspan="5">SM-10G: 2
MM-10G: 2
RJ45-10G: 2</td><td colspan="2">SM-10G: 6
MM-10G: 6
RJ45-10G: 3
<i>*Note: RJ45-10G modules must be interval inserted</i></td></tr>
<tr><td><b>MGMT Ports</b></td><td colspan="7">1x Console port</td></tr>
<tr><td><b>Auxiliary Ports</b></td><td colspan="7">1x Reset Pinhole</td></tr>
</table>

<table>
<tr><th colspan="8">LEDs</th></tr>
<tr><td><b>System LEDs</b></td><td colspan="7">1x tri-color LED for device tracking and status indication</td></tr>
<tr><td><b>Power Supply LEDs</b></td><td colspan="2">/</td><td>2x green-color LEDs for per power supply PWR&RPS</td><td>/</td><td colspan="3">2x green-color LEDs for per power supply PWR&RPS</td></tr>
<tr><td><b>Data Transferring LEDs</b></td><td>10x green-color LEDs</td><td>18x green-color LEDs</td><td colspan="3">26x green-color LEDs</td><td colspan="2">54x green-color LEDs</td></tr>
<tr><td><b>PoE Supply LEDs</b></td><td>8x yellow-color LEDs</td><td>16x yellow-color LEDs</td><td>/</td><td colspan="2">24x yellow-color LEDs</td><td colspan="2">48x yellow-color LEDs</td></tr>
<tr><th colspan="8">System</th></tr>
<tr><td><b>Flash</b></td><td colspan="5">32MB Nor Flash</td><td colspan="2">8MB Nor Flash, 128MB Nand Flash</td></tr>
<tr><td><b>RAM</b></td><td>128MB RAM</td><td colspan="4">256MB RAM</td><td colspan="2">512MB RAM</td></tr>
<tr><td><b>CPU</b></td><td colspan="5">Single-core, MIPS interAptive 1GHz</td><td colspan="2">Dual-core, MIPS interAptiveTM 1GHz</td></tr>
<tr><td><b>Forwarding Mode</b></td><td colspan="7">Store-and-forward</td></tr>
<tr><td><b>Total non-blocking throughput</b></td><td>13Gbps</td><td>36Gbps</td><td colspan="3">44Gbps</td><td colspan="2">108Gbps</td></tr>
<tr><td><b>Switching Capability</b></td><td>26Gbps</td><td>72Gbps</td><td colspan="3">88Gbps</td><td colspan="2">216Gbps</td></tr>
<tr><td><b>Forwarding Rate</b></td><td>19.344Mpps</td><td>53.568Mpps</td><td colspan="3">65.472Mpps</td><td colspan="2">160.704Mpps</td></tr>
<tr><td><b>Packet Buffer</b></td><td colspan="7">8.4Mb</td></tr>
<tr><td><b>Network Latency</b></td><td colspan="7"><4μs</td></tr>
<tr><th colspan="8">Power Supply</th></tr>
<tr><td><b>Power Supply</b></td><td colspan="7">100-240V~ 50/60Hz</td></tr>
<tr><td><b>Redundant Power Supply</b></td><td colspan="2">/</td><td>1+1 External RPS, One by default</td><td>/</td><td colspan="3">1+1 External RPS, One by default</td></tr>
<tr><td><b>External Redundant Power Supply (RPS)</b></td><td colspan="2">/</td><td>30W</td><td>/</td><td colspan="2">460W</td><td>800W</td></tr>
<tr><td><b>Max Power Consumption</b></td><td>9.5W / 145.5W (PoE 120W)</td><td>21.8W / 294.4W (PoE 250W)</td><td>21.4W</td><td>27.5W / 299.2W (PoE 250W)</td><td>30.5W / 471.4W (PoE 400W)</td><td>65.4W / 509.3W (PoE 400W)</td><td>68.0W / 870.9W (PoE 800W)</td></tr>
</table>

Max Output Power	145.5W	294.4W	21.4W	299.2W	471.4W	509.3W	870.9W
PoE							
PoE Standards	IEEE 802.3af/at	IEEE 802.3af/at/bt	/	IEEE 802.3af/at	IEEE 802.3af/at/bt	IEEE 802.3af/at	IEEE 802.3af/at/bt
# of PoE Ports	8	16	/	24		48	
Max Output Power per PoE Port	30W	60W	/	30W	60W	30W	60W
Max Total PoE Output Power	120W	250W	/	250W	400W		800W
Physical							
Unit Dimension	330mm(L) × 175mm(W) × 44mm(H)	440mm(L) × 200mm(W) × 44mm(H)			440mm(L) × 300mm(W) × 44mm(H)		
Unit Weight	1.77Kg	2.9Kg	2.5Kg	3.06Kg	4.15Kg	5.05Kg	5.3Kg
Mounting	Desktop, Wall-Mount, or Rack-Mount (rack-mounting kits included)				Desktop, or Rack-Mount (rack-mounting kits included)		
Package Content	1x Switch 1x 25cm Ground Cable 4x Rubber Footpads 1x Power Cord Anti-Trip 8x Screws (KM3*6) 1x 1.2m(10A) AC Cable 1x Simplified Quick Installation Guide 1x Regulatory Paper						
	1x Extended Rack-Mounting Kits	2x Rack-Mounting Kits					
Environmental							
Temperature	Operation: 0°C to 45°C Storage: -10°C to 60°C						
Humdity	Operation: 10% to 90% RH (Non-condensing) Storage: 5% to 95% RH (Non-condensing)						
MTBF	7000H						
Fan	/	2	/	2	3	4	
CPU Monitoring	Monitoring CPU usage, over-CPU usage alarming						
Memory Usage	Monitoring memory usage, over-memory usage alarming						
Power Supply Monitoring	Monitoring of power supply model and status power supply failure alarming						

Fan Monitoring	Automatic speed adjustment fan failure alarming	
Temperature Monitoring	Temperature monitoring, over-temperature alarming	
Surge Protection	± 6KV CM for power ± 4KV CM for network ports	
ESD	± 12KV for contact discharge	
Compliance	FCC, CE, RCM, IC	
Software Specifications		
Network Protocol	IPv4, IPv6, IEEE 802.3, IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3ae, IEEE 802.3az, IEEE 802.3ad, IEEE 802.3x, IEEE 802.3af/at/bt, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1d, IEEE 802.1w, IEEE 802.1s, IEEE 802.1x	
Stacking	/	Yes, up to 8 devices
Switching	○ Jumbo frame (maximum length: 12288) ○ 4K VLANs, port-based VLAN, IEEE 802.1Q VLAN tagging ○ QinQ ○ MAC-based VLAN ○ Protocol-based VLAN ○ Voice VLAN including auto voice VLAN, tagged OUI and untagged OUI ○ GVRP(pending) ○ ERPS(pending)	
	Spanning tree, support STP/RSTP/MSTP/PVST(+)/RPVST(+), 16 instances for MSTP/PVST(+)/RPVST(+)	Spanning tree, support STP/RSTP/MSTP/ PVST(+)/RPVST(+), 64 instances for MSTP/PVST(+)/RPVST(+)
	/	Private VLAN
	16K MAC addresses including static, dynamic and filtering MAC address	32K MAC addresses including static, dynamic and filtering MAC address
	Link aggregation, including static and LACP	Link aggregation, including static and LACP
	Up to max 8 LAG groups and up to 8 members per LAG group	Up to max 32 LAG groups and up to 8 members per LAG group
IP Service	○ DHCP client, DHCP server, DHCP relay and DHCP snooping ○ DHCPv6 client and DHCPv6 snooping ○ ND snooping ○ DNS	
	64 ARP/NDP, including static and dynamic ARP/NDP	1K ARP/NDP, including static and dynamic ARP/NDP
	16 VLAN virtual interfaces with 9216 MTU	32 VLAN virtual interfaces with 9216 MTU

IP Routing	Policy routing (pending)		
	32(IPv4)/32(IPv6) static routes		1K(IPv4)/1K(IPv6) static routes
Multicast	IGMP Snooping with IGMPv2 and IGMPv3, 256 IGMP Snooping groups	IGMP Snooping with IGMPv2 and IGMPv3, 384 IGMP Snooping groups	IGMP Snooping with IGMPv2 and IGMPv3, 640 IGMP Snooping groups
	MLD Snooping with MLDv1 and MLDv2, 256 MLD Snooping groups	MLD Snooping with MLDv1 and MLDv2, 384 MLD Snooping groups	MLD Snooping with MLDv1 and MLDv2, 640 MLD Snooping groups
QoS	○ Port priority ○ Priority mapping, including 802.1p mapping, DSCP mapping and IP precedence mapping ○ Queue shceduling, including SP, WRR, WFQ, SP-WRR and SP-WFQ ○ Traffic shaping ○ Rate limit		
ACL	128 ACL for Ethernet, IPv4 and IPv6 with 1.5K ACE		256 ACL for Ethernet, IPv4 and IPv6 with 4K ACE
	○ MAC ACLs (hardware ACLs based on source MAC address, destination MAC address, optional Ethernet type, and time range) ○ IPv4 ACLs (hardware ACLs based on source IP address, destination IP address, and optional protocol type, and time range) ○ IPv6 ACLs (hardware ACLs based on source IPv6 address, destination Ipv6 address, and optional protocol type, and time range) ○ Expert ACLs (hardware ACLs based on flexible conbinations of the VLAN ID, Ethernet type, MAC address, IP address, protocol type, and time range) (TBD) ○ Customized ACLs (ACL80) (TBD) ○ ACL redirection ○ ACL advanced settings, including stiatistics, mirror, priority mapping, and rate limit ○ ACL binding, including port and VLAN		
Security	○ User hierarchical management and password protection, HTTPS, SSH, Telnet ○ Identity authentication, including 802.1X and MAC authentication ○ AAA authentication, including RADIUS, TACACS ○ Strom control ○ Port isolation ○ Port security, sticky MAC address, filtering invalid MAC addresses ○ IP/IPv6 source guard, DoS attack prevention, ARP inspection, CPU protection ○ Loop protection, including port loopback detection, BPDU protection, root protection, and loopback protection ○ Kensington Security Slot (Kensington Lock) support ○ Firmware signature		

Reliability	○ Power supply modules in 1+1 redundancy mode ○ Stack intelligent upgrade
Maintenance	○ NTP ○ 1588v2 TC for precise time (Pending) ○ CPU and memory monitoring ○ Fault detection and alarm for power supply and fan ○ SNMP including SNMPv1, SNMPv2c, SNMPv3 ○ RMON including history groups, event groups, alarm groups, and statistics groups ○ LLDP&LLDP-MED ○ Backup and restore ○ Syslog ○ Diagnostics including Ping, traceroute, Ping watchdog, mirror including SPAN and RSPAN, UDLD(TBD), copper test, fiber module, and one-click debugging ○ sFlow (pending) ○ Upgrade via FTPS/ TFTP/ HTTP/ HTTPS or local upload, mass provisioning using DHCP Option/ TR-069 (pending)/ GDMS Networking/ GWN Manager/ GWN series routers
Management Platform	○ Local Web GUI: embedded controller ○ GDMS Networking: free cloud management platform for unlimited GWN78x0 Pro series switches ○ GWN Manager: premise-based software controller ○ GWN APP: integrated GDMS Networking and GWN Manager to manage GWN78x0 Pro series switches via the APP ○ Management Protocol: SNMP, RMON, TR-069 (pending)

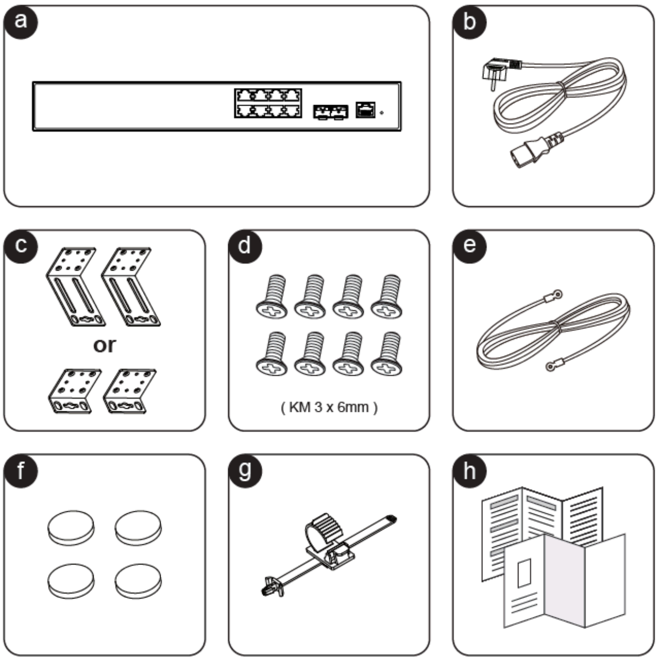
GWN780x Pro *Technical Specifications*

INSTALLATION

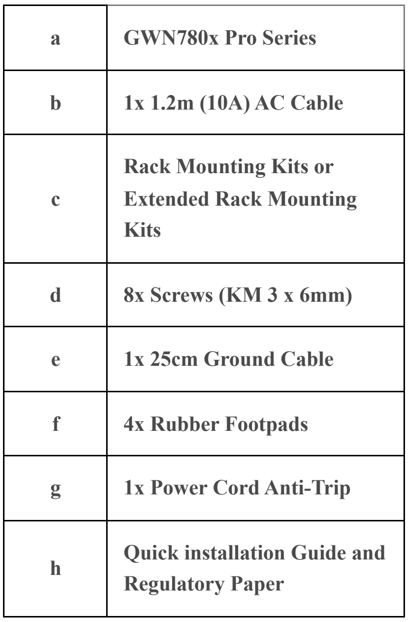
Before deploying and configuring the switches, the device needs to be properly powered up and connected to the network. This section describes detailed information on the installation, connection, and warranty policy of the GWN780x Pro switches.

Package Content

The package content that comes with the GWN780x Pro product contains the following elements.



GWN780x Pro Package Content

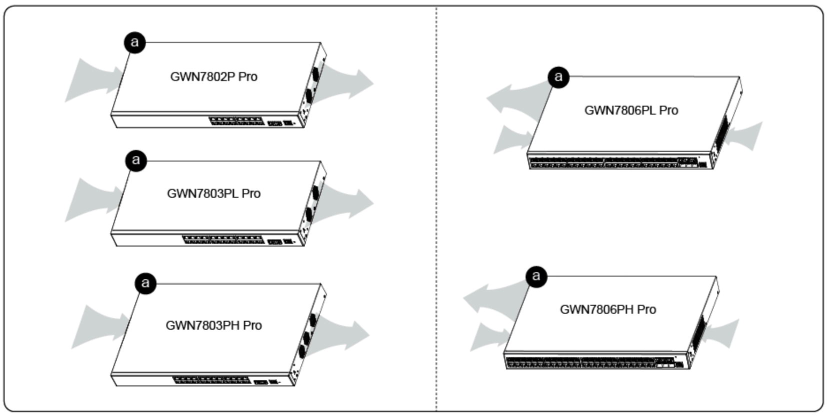


a	**GWN780x Pro Series**
b	**1x 1.2m (10A) AC Cable**
c	**Rack Mounting Kits or Extended Rack Mounting Kits**
d	**8x Screws (KM 3 x 6mm)**
e	**1x 25cm Ground Cable**
f	**4x Rubber Footpads**
g	**1x Power Cord Anti-Trip**
h	**Quick installation Guide and Regulatory Paper**

GWN780x Pro Package Content

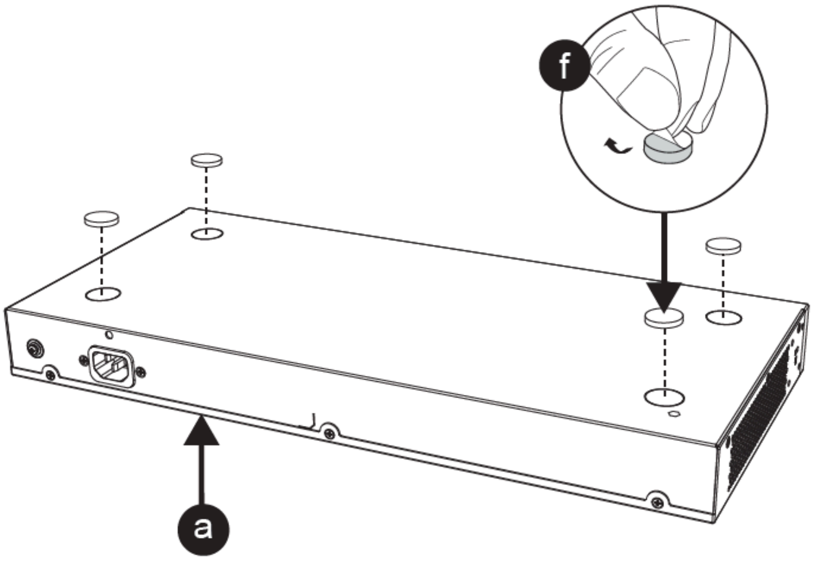
Fan Ventilation

The GWN780x Pro series features a dedicated ventilation system designed to keep the device cool in deployments where it delivers significant power to connected devices. This power delivery increases the device’s workload and internal temperature. Depending on the model, the cooling mechanism and number of fans can vary. The illustration below highlights these differences:



GWN780x Pro Fan Ventilation

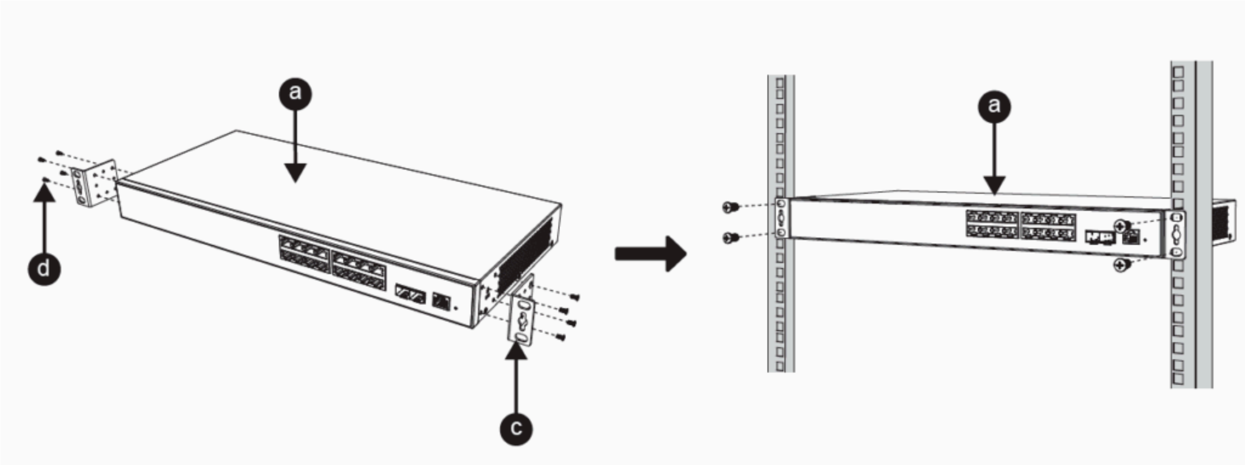
Install on the Desktop



Desktop Installation

1. Place the bottom of the switch on a sufficiently large and stable table.
2. Peel off the rubber protective paper of the four footpads one by one, and stick them in the corresponding circular grooves at the four corners of the bottom of the case.
3. Flip the switch over and place it smoothly on the table.

Install on a 19” Standard Rack



Install on a 19 Standard Rack

1. Check the grounding and stability of the rack.
2. Install the two L-shaped rack-mounting accessories on both sides of the switch, and fix them with the screws provided (KM 3*6).
3. Place the switch in a proper position in the rack and support it with the bracket.
4. Fix the L-shaped rack mounting to the guide grooves at both ends of the rack with screws(prepared by yourself) to ensure that the switch is stably and horizontally installed on the rack.

Powering and Connecting GWN780x Pro

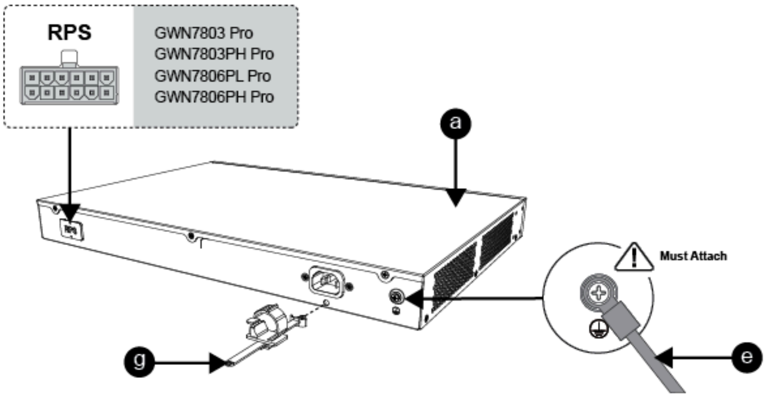
Connect the power cable and the switch first, then connect the power cable to the power supply system of the equipment room.

To protect the power supply from accidental disconnection, it's recommended to purchase a power cord anti-trip for installation:

1. Place the smooth side of the fixing strap towards the power outlet and insert it into the hole on the side of it.
2. After plugging the power cord into the power outlet, slide the protector over the remaining strap until it slides over the end of the power cord.
3. Wrap the strap of the protective cord around the power cord and lock it tightly. Fasten the straps until the power cord is securely fastened.
4. Connect the RPS for the following models: GWN7803 Pro, GWN7803PH, GWN7806 Pro, GWN7806PL, GWN7806PH Pro

Connect the Grounding cable by following the steps below:

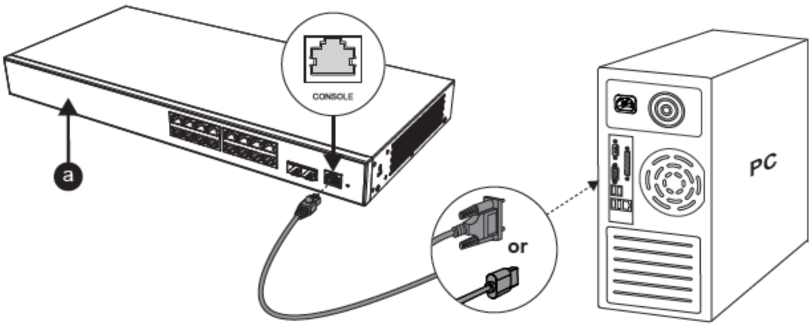
1. Remove the ground screw from the back of the switch, and connect one end of the ground cable to the wiring terminal of the switch.
2. Put the ground screw back into the screw hole, and tighten it with a screwdriver.
3. Connect the other end of the ground cable to another device that has been grounded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



Powering and Connecting GWN780x Pro

Connect to Console Port

1. Connect the RJ45 end of the console cable to the console port of the switch.
2. Connect the other end of the console cable to the DB9 male connector or the USB port on the PC.



Connect to Console Port

Safety Compliances

The GWN780x Pro Network Switch complies with FCC/CE and various safety standards. The GWN780x Pro power adapter is compliant with the UL standard. Use the universal power adapter provided with the GWN780x Pro package only. The manufacturer's warranty does not cover damage to the device caused by unsupported power adapters.

Warranty

If the GWN780x Pro Network 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.

GETTING STARTED

LED Indicators

The front panel of the GWN780x Pro 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
	Solid green	Booting
	Flashing green	Upgrade
	Solid blue	Normal use
	Flashing blue	Provisioning
	Solid red	Upgrade failed
	Flashing red	Factory reset
Port Indicator	Off	● **For all ports:** port off ● **For SFP/SFP+ ports:** port failure
	Solid green	Port connected and there is no activity
	Flashing green	Port connected and data is transferring
	Solid yellow	Ethernet port connected, and there is no activity and PoE powered

	Flashing yellow	Ethernet port connected, data is transferring and PoE powered
	Alternately flashing yellow and green	Ethernet port failure
PWR/RPS Indicator	Off	Uninserted or failure
	Solid Green	○ In use ○ Inserted but not used (only for RPS)

LED Indicators

Note

During the boot sequence, the LED indicator transitions through multiple color states.

Access & Configure

Note

If no DHCP server is available, the GWN780x Pro default IP address is 192.168.0.254.

Login Using the Console Port

1. Use the console cable to connect the console port of the switch and the serial port of the PC.
2. Open the terminal emulation program of PC (e.g., SecureCRT), enter the default 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 GWN780x Pro switch).

Note

The baud rate needs to be set to 115200.

Login Remotely Using SSH

1. Enter **“cmd”** in PC/Start.
2. Enter **ssh <gwn780x Pro_IP>** in the cmd window.
3. Enter the default 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 GWN780x Pro switch).

Note:

Supports SSH and TELNET in #Mode (EXEC mode).

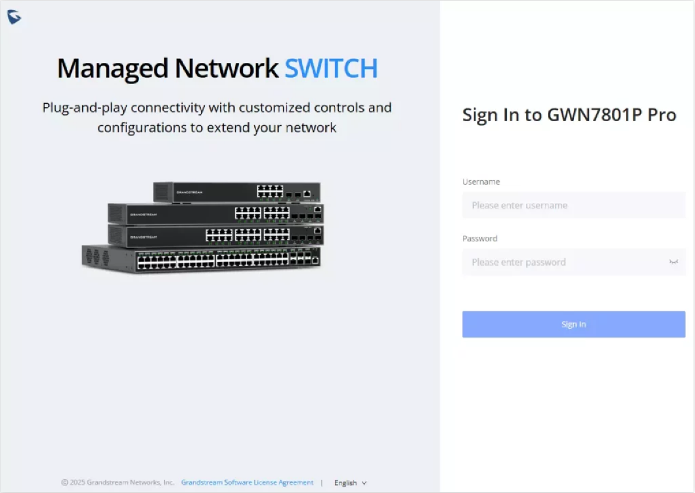
GWN Switches support Web CLI.

Configure Using GDMS Networking

Type **https://www.gdms.cloud** 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.

Login Using the Web UI

The GWN780x Pro embedded Web server responds to HTTPS GET/POST requests. Embedded HTML pages allow users to configure the device through a Web browser such as Microsoft Edge, Mozilla Firefox, or Google Chrome.



Managed Network SWITCH

Plug-and-play connectivity with customized controls and configurations to extend your network

Sign In to GWN7801P Pro

Login 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 default management IP address **https://<GWN780x Pro_IP>** 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 GWN780x Pro switch.)

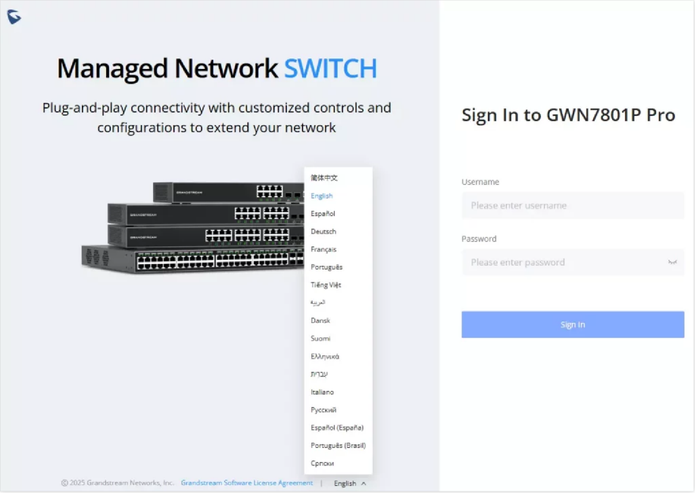
CLI Access

In addition to the web-based configuration, the GWN780x Pro series can also be configured using a Command Line Interface (CLI). For detailed instructions on using the CLI, please refer to the GWN78xx CLI User Guide.

Web GUI Languages

The GWN780x Pro web GUI supports many languages, including ***English, Simplified Chinese, Spanish, French,*** etc.

To change the default language, select the displayed language at the bottom of the web GUI either before or after logging in.

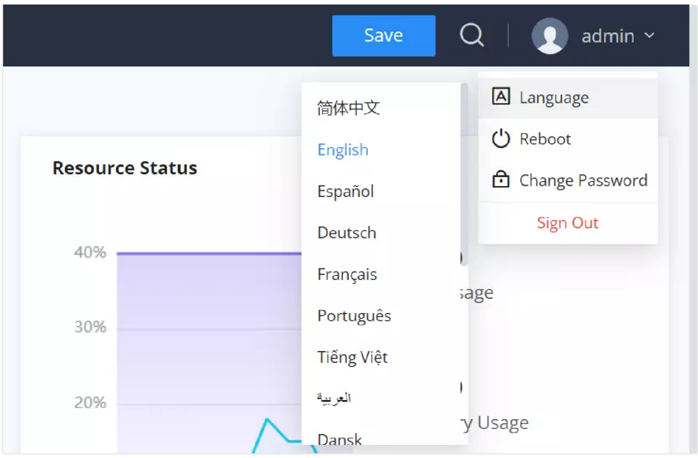


Managed Network SWITCH

Plug-and-play connectivity with customized controls and configurations to extend your network

Sign In to GWN7801P Pro

Web GUI Languages



WEB GUI Start page

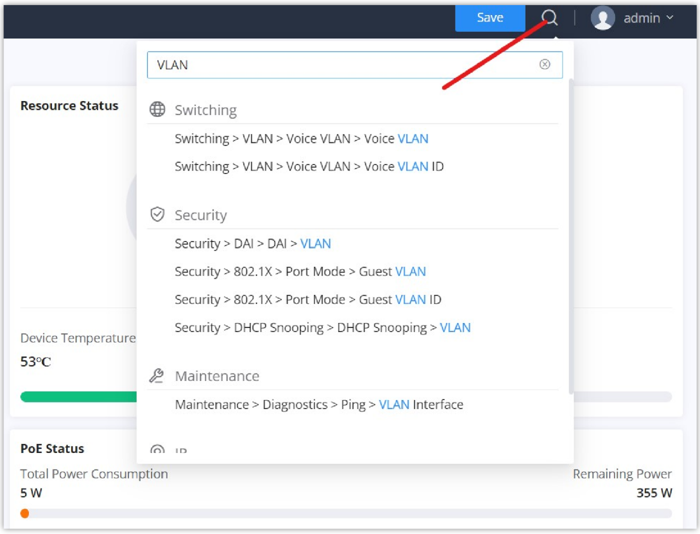
Note:

When the Web GUI language is manually changed from the login page or within the interface, the selected language will be saved in the device's configuration. This preference will persist across sessions, reboots, and browsers, regardless of the system's regional or browser settings.

Search

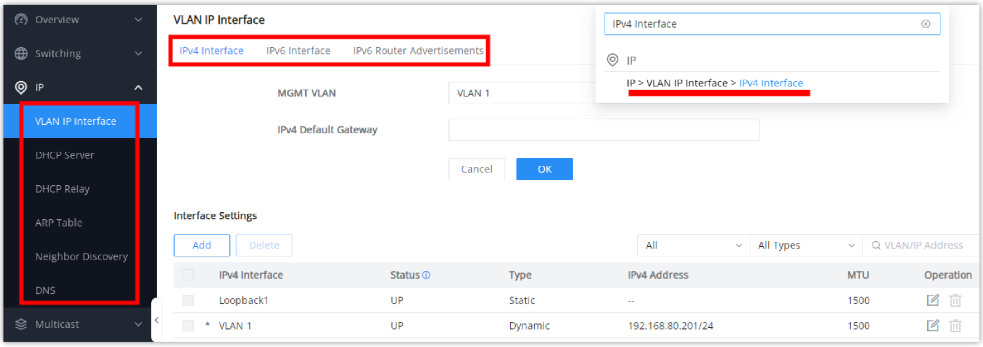
In case it's hard to go through every single section, GWN780x Pro Switches have search functionality to help the user find the right configuration, settings, or parameters, etc.

At 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.


Save
admin
VLAN
Resource Status
Switching
Switching > VLAN > Voice VLAN > Voice VLAN
Switching > VLAN > Voice VLAN > Voice VLAN ID
Security
Security > DAI > DAI > VLAN
Security > 802.1X > Port Mode > Guest VLAN
Security > 802.1X > Port Mode > Guest VLAN ID
Security > DHCP Snooping > DHCP Snooping > VLAN
Maintenance
Maintenance > Diagnostics > Ping > VLAN Interface
IP
Device Temperature
53℃
PoE Status
Total Power Consumption
5 W
Remaining Power
355 W

Search part 1

It's also possible to search through menus and sub-menus, and once the user clicks on the search result, they will jump directly to the specified page. Please see the figure below:



MGMT VLAN	VLAN 1
IPv4 Default Gateway	

	IPv4 Interface	Status	Type	IPv4 Address	MTU	Operation
□	Loopback1	UP	Static	--	1500	
□	* VLAN 1	UP	Dynamic	192.168.80.201/24	1500	

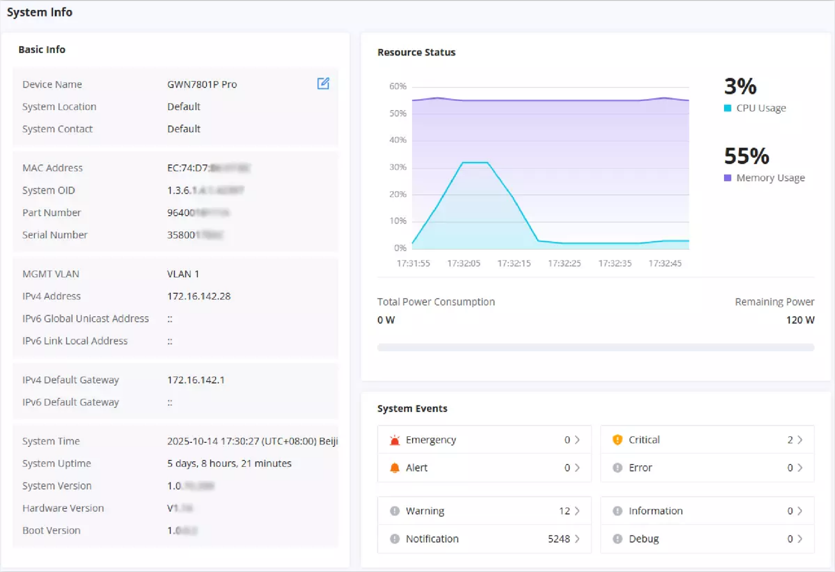
Search part 2

OVERVIEW

Overview is the first section that displays System information in 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 GWN780x Pro system and port status for easy monitoring.

System Info

System Info is the first page after a successful login to the GWN780x Pro Web Interface. It provides an overall view of the GWN780x Pro Switch information presented in a Dashboard style for easy monitoring, including basic info, Resource Status, PoE Status, and System Events.



System Info

Basic Info

Device Name	GWN7801P Pro
System Location	Default
System Contact	Default
MAC Address	EC:74:D7:[redacted]
System OID	1.3.6.[redacted]
Part Number	96400[redacted]
Serial Number	358001[redacted]
MGMT VLAN	VLAN 1
IPv4 Address	172.16.142.28
IPv6 Global Unicast Address	::
IPv6 Link Local Address	::
IPv4 Default Gateway	172.16.142.1
IPv6 Default Gateway	::
System Time	2025-10-14 17:30:27 (UTC+08:00) Beiji
System Uptime	5 days, 8 hours, 21 minutes
System Version	1.0.[redacted]
Hardware Version	V1.[redacted]
Boot Version	1.0[redacted]

Resource Status

Total Power Consumption 0 W

Remaining Power 120 W

System Events

Emergency	0 >	Critical	2 >
Alert	0 >	Error	0 >
Warning	12 >	Information	0 >
Notification	5248 >	Debug	0 >

System Info

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

Basic Info	Displays Device and System general information that includes (Device name, MAC Address, Default Gateway, System Time, System Version etc.)
Resource Status	Displays in real time the usage of CPU and Memory.
PoE Status	Shows the Total Power Consumption and the remaining Power in mA.
System Events	Diplays the total number of events for each category (Emergency, Alert, Warning etc). ***Note:*** *Clicking on any events category will redirect you to the Diagnostics page for further details.*
Fan	Displays the fans operation status and speed.
Power Supply	Shows the status of the built-in power supply as well as the RPS (Redundant Power Supply).

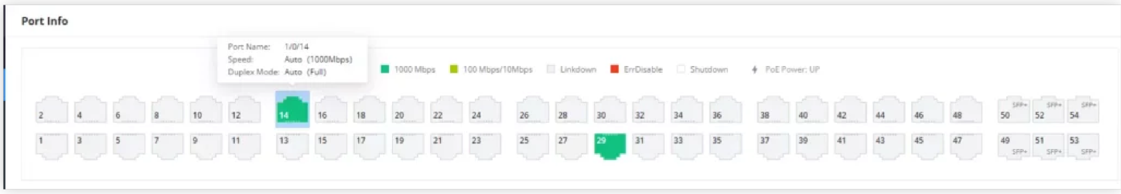
System Info page

Port Info

This page on the GWN switches provides comprehensive port statistics, PoE power supply information, and detailed port and neighbor information. It helps users monitor network performance and manage connected devices efficiently.

- **Port Info**

The “Port Info” section visually displays the status and speed of each port, using different colors for speeds and states. Users can quickly identify active, inactive, or problematic ports and their PoE power status.



Port Info

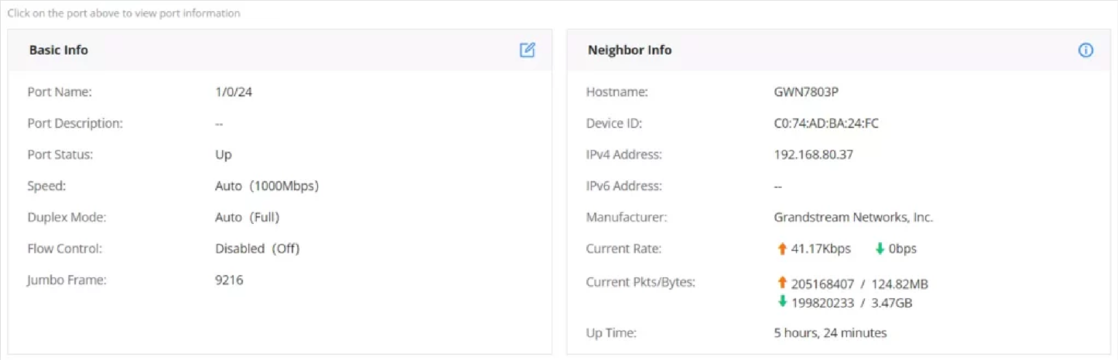
Port Name: 1/0/14
Speed: Auto (1000Mbps)
Duplex Mode: Auto (Full)

🟩 1000 Mbps 🟩 100 Mbps/10Mbps □ Linkdown 🟥 ErrDisable □ Shutdown ϟ PoE Power: UP

Port Info page 1

- **Basic Info and Neighbor Info**

The “Basic Info” section shows specific details for a selected port, including its status and settings. The “Neighbor Info” section provides information about the device connected to the port, such as hostname and current traffic rates.



Click on the port above to view port information

Basic Info

Port Name:	1/0/24
Port Description:	--
Port Status:	Up
Speed:	Auto (1000Mbps)
Duplex Mode:	Auto (Full)
Flow Control:	Disabled (Off)
Jumbo Frame:	9216

Neighbor Info

Hostname:	GWN7803P
Device ID:	C0:74:AD:BA:24:FC
IPv4 Address:	192.168.80.37
IPv6 Address:	--
Manufacturer:	Grandstream Networks, Inc.
Current Rate:	↑ 41.17Kbps ↓ 0bps
Current Pkts/Bytes:	↑ 205168407 / 124.82MB ↓ 199820233 / 3.47GB
Up Time:	5 hours, 24 minutes

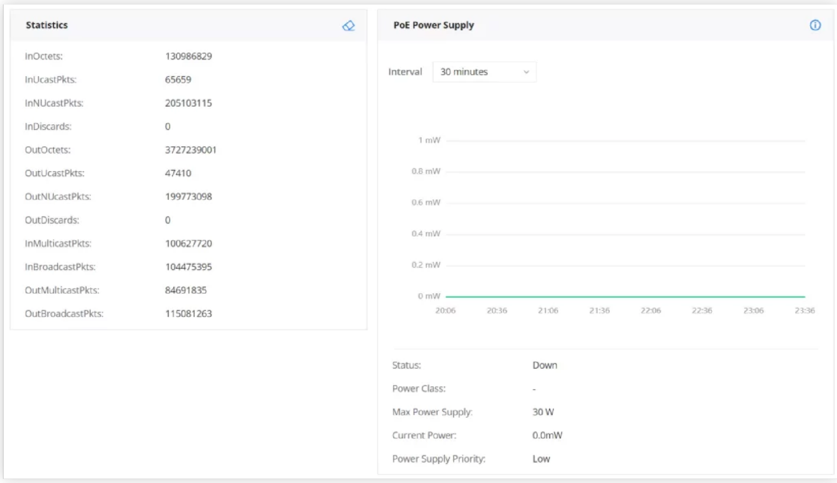
Port Info page 2

- **Statistics**

The “Statistics” section offers detailed metrics on network traffic through the switch. It includes data on octets, packets, and discards, which is crucial for monitoring performance and troubleshooting.

- **PoE Power Supply / Fiber Info**

If the selected port is PoE-capable, the “**PoE Power Supply**” section shows power supply status and usage. If the port is SFP, the “**Fiber Info**” section displays details like signal loss, temperature, RX, and TX power.



Statistics

InOctets:	130986829
InUcastPkts:	65659
InNUcastPkts:	205103115
InDiscards:	0
OutOctets:	3727239001
OutUcastPkts:	47410
OutNUcastPkts:	199773098
OutDiscards:	0
InMulticastPkts:	100627720
InBroadcastPkts:	104475395
OutMulticastPkts:	84691835
OutBroadcastPkts:	115081263

PoE Power Supply

Interval: 30 minutes

Status:	Down
Power Class:	-
Max Power Supply:	30 W
Current Power:	0.0mW
Power Supply Priority:	Low

Port Info page 3

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

1	**Grey:** Linkdown
5	**White:** shutdown

8	**Green:** Ethernet RJ45 port with 1000 Mbps speed
16	**Light green:** Ethernet RJ45 port with 100 Mbps/10 Mbps speed
6	**Red:** ErrDisable
25 SFP1	**Green:** SFP/SFP+ Port set to 1000Mbps
17 SFP+	**Purple:** SFP/SFP+ Port set to 2.5Gbps ***Note:*** *only for GWN7801P pro, GWN7802P Pro, GWN7803(PL/PH) Pro*
1 SFP+	**Blue:** SFP+ port set to 10Gbps ***Note:*** *only for GWN7802P Pro, GWN7803(PL/PH) Pro and GWN7806PL/PH Pro*
⚡	**Symbol:** PoE Power is enabled.

Port Info

Note: *a PoE symbol and color code combination is also possible. Ex:* 2 ⚡ *in this case, the port is using 1000 Mbps speed and also using PoE at the same time.*

Icons Description:

- **Basic Info:** The edit icon forwards users to the Port Basic Settings page, where they can modify the port settings, such as Description, Speed, Duplex Mode, and Flow Control, or enable/disable the port.
- **Neighbor Info:** The details icon forwards users to the LLDP/LLDP-MED Neighbor Info page. Here, users can view additional information about the connected devices, including chassis ID, port ID, device name, system description, and survival time.
- **PoE Power Supply / Fiber Info:** The details icon forwards users to the respective detailed pages. For PoE, it forwards to the PoE Interface page, showing detailed information about PoE settings for each port. For Fiber, it forwards to the Fiber Module page, displaying comprehensive fiber details such as signal loss, temperature, RX, and TX power.
- **Statistics:** The clear icon clears the displayed statistics.

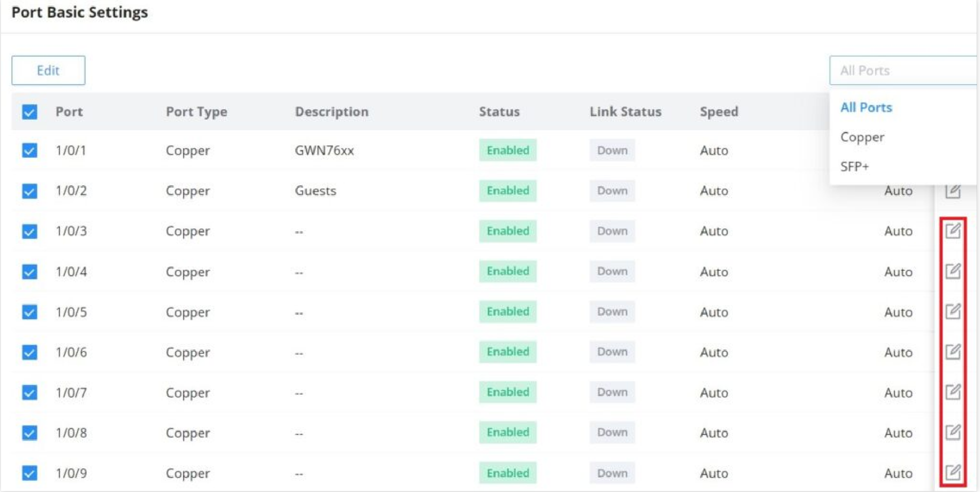
SWITCHING

The switching section is used to configure port settings, link Aggregation, VLAN, Spanning Tree, etc.

Port Basic Settings

On this page, you can configure the basic parameters for GWN780x Pro Switch ports, like disabling or enabling the port, adding a Description, specifying the speed by default as Auto, Duplex Mode, and Flow Control. There is also a filter on in case you want to edit only the Copper ports, which are the Gigabit Ethernet ports, or Fiber ports, which are the SFP+ ports.

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



Port Basic Settings

Edit

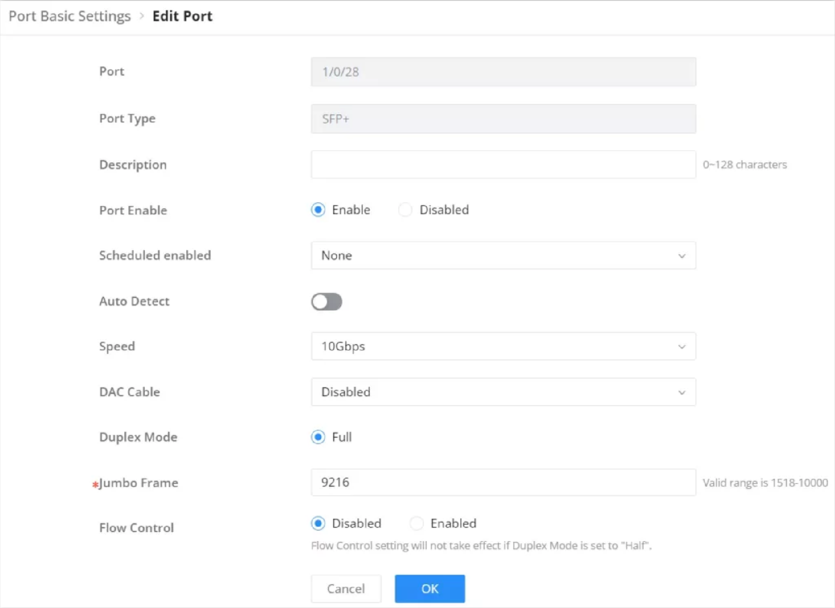
All Ports

- All Ports
- Copper
- SFP+

☑	Port	Port Type	Description	Status	Link Status	Speed		
☑	1/0/1	Copper	GWN76xx	Enabled	Down	Auto		
☑	1/0/2	Copper	Guests	Enabled	Down	Auto	Auto	
☑	1/0/3	Copper	--	Enabled	Down	Auto	Auto	
☑	1/0/4	Copper	--	Enabled	Down	Auto	Auto	
☑	1/0/5	Copper	--	Enabled	Down	Auto	Auto	
☑	1/0/6	Copper	--	Enabled	Down	Auto	Auto	
☑	1/0/7	Copper	--	Enabled	Down	Auto	Auto	
☑	1/0/8	Copper	--	Enabled	Down	Auto	Auto	
☑	1/0/9	Copper	--	Enabled	Down	Auto	Auto	

Port Basic Settings

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



Port Basic Settings > **Edit Port**

Port: 1/0/28

Port Type: SFP+

Description: 0~128 characters

Port Enable: ● Enable ○ Disabled

Scheduled enabled: None

Auto Detect

Speed: 10Gbps

DAC Cable: Disabled

Duplex Mode: ● Full

*Jumbo Frame: 9216 Valid range is 1518-10000

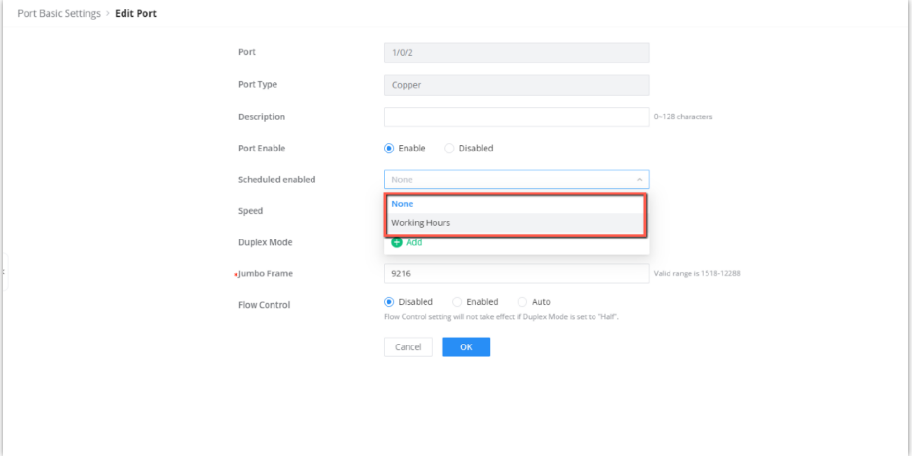
Flow Control: ● Disabled ○ Enabled

Flow Control setting will not take effect if Duplex Mode is set to "Half".

Cancel OK

Port Basic Settings Edit port

Users can define schedules for specific ports, this is to enables precise control over when configurations are applied. These schedules dictate the exact times during which port settings will take effect.



Port Basic Settings > **Edit Port**

Port: 1/0/2

Port Type: Copper

Description: 0~128 characters

Port Enable: ● Enable ○ Disabled

Scheduled enabled: None

- None
- Working Hours
- Add

Speed

Duplex Mode

*Jumbo Frame: 9216 Valid range is 1518-12288

Flow Control: ● Disabled ○ Enabled ○ Auto

Flow Control setting will not take effect if Duplex Mode is set to "Half".

Cancel OK

Port Basic Settings scheduled enabled

Port	The selected Port to be configured, it can be either Gigabit Ethernet port or SFP port.
Port Type	Displays the Port Type (Copper or SFP).

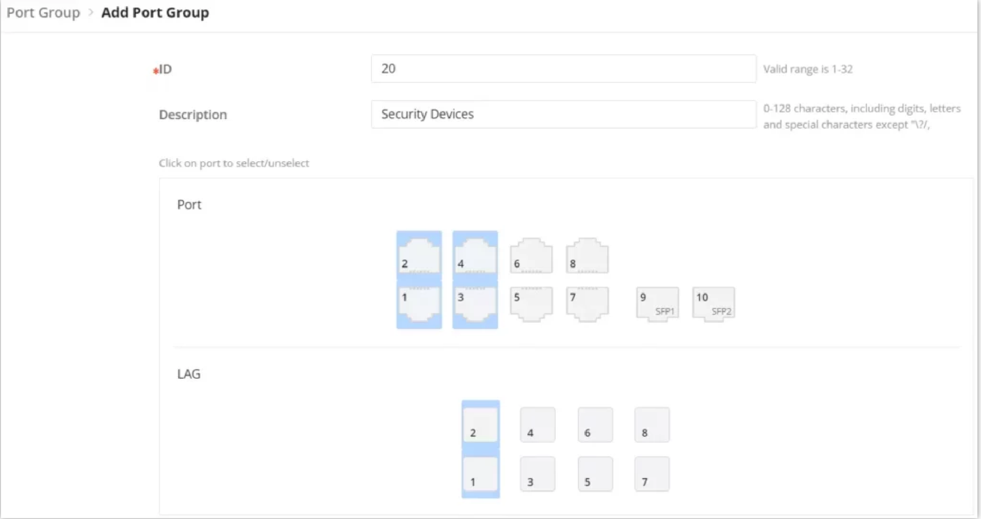
Description	It is used to configure the information description of this interface , which can be a description of usage, etc., with a maximum of 128 characters, and the characters limited to input are numbers 0-9 , letters az / AZ and special characters.
Port Enable	Set whether to enable the interface. *it is enabled by default.*
Scheduled enabled	From the drop-down list, select the schedule for when the port (including physical and LAG ports) will be enabled.
Speed	Set the rate of the interface: ● **Ethernet port (Copper):** the options are {Auto, 10Mbps, 100Mbps, 1000Mbps}, The default is auto-negotiation. ● **SFP/SFP+ port:** the options are: • **GWN7801P Pro 2.5G SFP:** 100Mbps, 1000Mbps, 2.5Gbps. Default: 2.5Gbps • **GWN7802P Pro/GWN7803(PL/PH) Pro SFP+:** 100Mbps, 1000Mbps, 2.5Gbps, 10Gbps. Default: 10Gbps • **GWN7806PL/PH Pro SFP+:** 100Mbps, 1000Mbps, 10Gbps. Default: 10Gbps ***Notes:*** ● *When set to Auto, the rate of the interface is automatically negotiated between the interface and the peer port .* ● *When configuring a fixed speed, ensure the peer port is set to the same value. Otherwise, the port may not function properly*.
Duplex Mode	Set the duplex mode of the interface. The GE ports options are { auto-negotiation, full-duplex, half-duplex}. The default is auto-negotiation. ● **Auto-negotiation:** The duplex state of an interface is determined by the auto-negotiation between the interface and the peer port. ● **Duplex:** the interface send and receive data packets. ● **Half-duplex:** interface can only send/ receive packets. ***Notes:*** ● *Optical ports only support full-duplex mode.* ● *When setting Duplex Mode manually (Duplex or Half-duplex), ensure the same mode is configured on the peer port. Otherwise, the port may not work normally.*
Jumbo Frame	Specify the Jumbo Frame, the valid range is 1518-12288. Default is 9216
Flow Control	Set the flow control on the interface, the options are {Disabled, Enabled, Auto}. *The default is Disabled.* 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. ***Note:*** *The optical port does not support auto-negotiation mode.*

Port Basic Settings – Edit port

Port Group

The port group feature allows administrators to logically bundle specific ports together under one group with a corresponding group ID. This can be useful when classifying the switch ports for identifying the usage of each set of ports, for example, ports 1 to 4 and LAG 1 and 2 can be set with ID 20, which will be the ports connecting Security devices.

Port group settings can facilitate quick batch settings for port group ports.


Port Group > Add Port Group

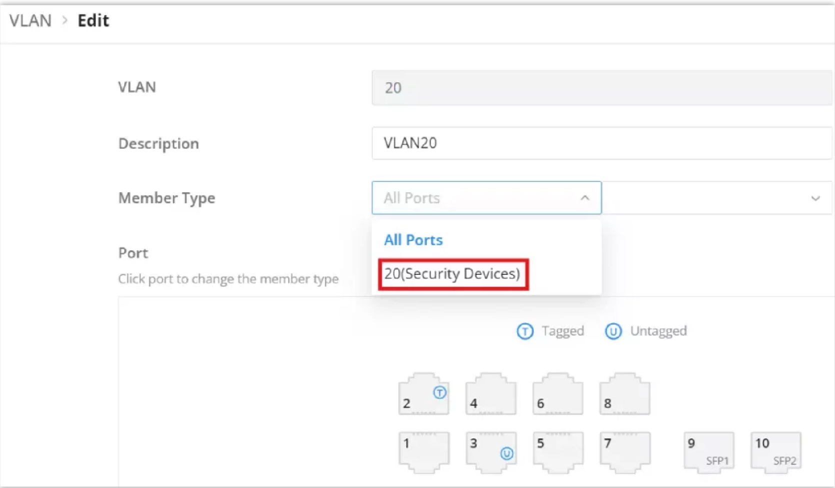
*ID: 20 (Valid range is 1-32)

Description: Security Devices (0-128 characters, including digits, letters and special characters except "\?/,)

Click on port to select/unselect

Port Group

Once the Port Group is created, it can ease the process of selecting and tagging/untagging VLAN ports individually. Under **Switching → VLAN**, select the port group to be used for your VLAN


VLAN > Edit

VLAN: 20

Description: VLAN20

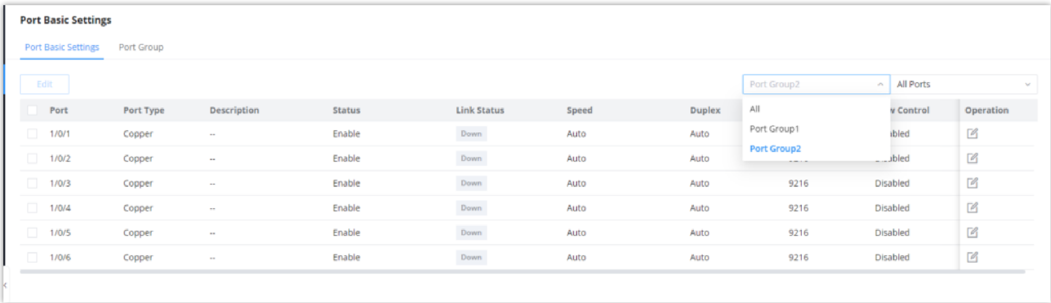
Member Type: All Ports

Port

Click port to change the member type

Port Group Selection

In addition, users can disable/enable specific ports based on the port group created, instead of going through each port selection separately:

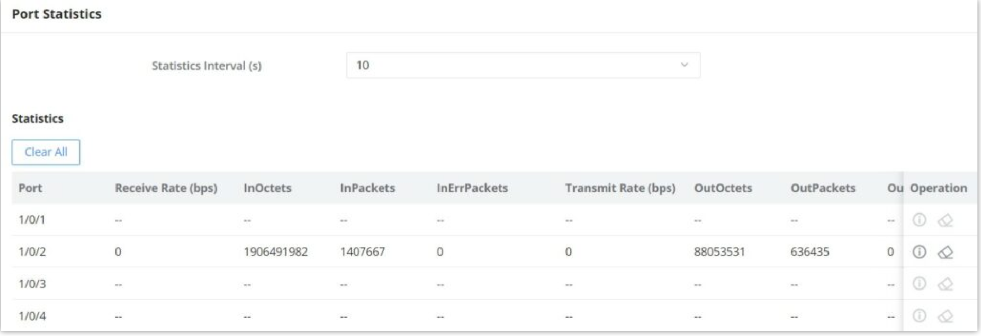

Port Basic Settings

Port	Port Type	Description	Status	Link Status	Speed	Duplex		v Control	Operation
1/0/1	Copper	--	Enable	Down	Auto	Auto		bled	
1/0/2	Copper	--	Enable	Down	Auto	Auto		bled	
1/0/3	Copper	--	Enable	Down	Auto	Auto	9216	Disabled	
1/0/4	Copper	--	Enable	Down	Auto	Auto	9216	Disabled	
1/0/5	Copper	--	Enable	Down	Auto	Auto	9216	Disabled	
1/0/6	Copper	--	Enable	Down	Auto	Auto	9216	Disabled	

Delete Port Group

Port Statistics

For monitoring or even sometimes troubleshooting, the Port Statistics displays in real time the flow of data with different units like Octets, Packets, Transmission Rate, and OurErrPackets. The option to clear all the statistics or a specific port is supported as well.



Port Statistics

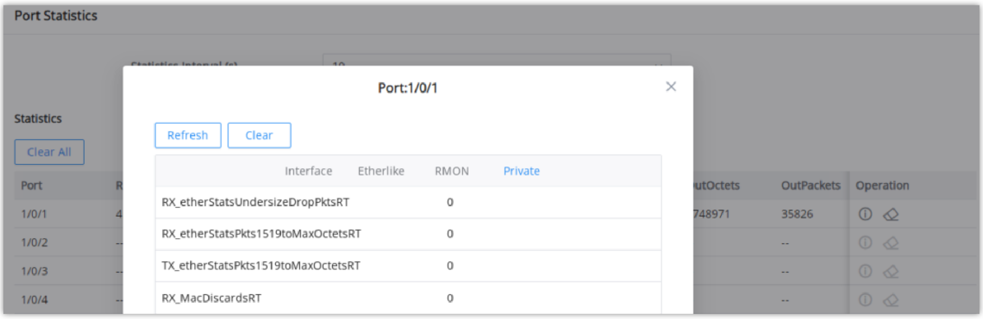
Statistics Interval (s): 10

Statistics

Port	Receive Rate (bps)	InOctets	InPackets	InErrPackets	Transmit Rate (bps)	OutOctets	OutPackets	Ou	Operation
1/0/1	--	--	--	--	--	--	--	--	ⓘ
1/0/2	0	1906491982	1407667	0	0	88053531	636435	0	ⓘ
1/0/3	--	--	--	--	--	--	--	--	ⓘ
1/0/4	--	--	--	--	--	--	--	--	ⓘ

Port Statistics Part 1

To view even more details, like Etherlike (SNMP), RMON, and port Private MIB information.



Port:1/0/1

RX_etherStatsUndersizeDropPktsRT	0
RX_etherStatsPkts1519toMaxOctetsRT	0
TX_etherStatsPkts1519toMaxOctetsRT	0
RX_MacDiscardsRT	0

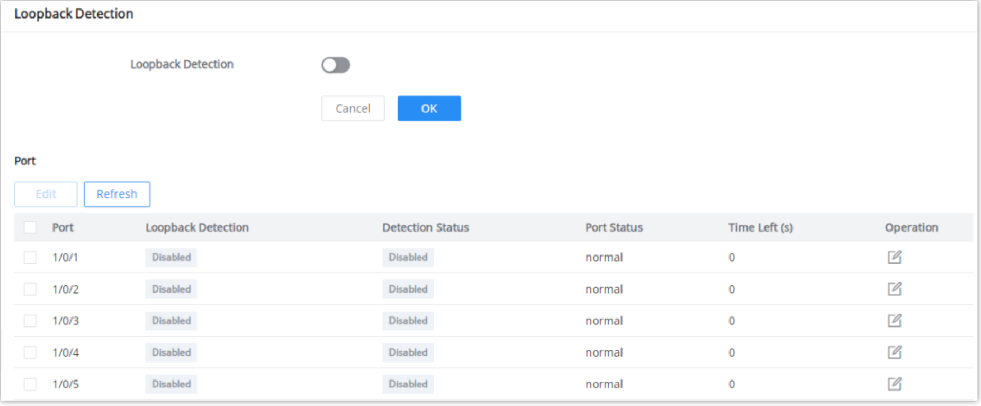
Port Statistics part 2

Loopback Detection

By enabling the loop detection function of the interface, the interface periodically sends detection packets to check whether the packets are returned to the device, and then determines whether there is a loop in the device. If a loop is detected, the port is automatically shut down to eliminate the loop and ensure the normal operation of the network environment.

Note:

Interface Loopback Detection is not effective. If STP is enabled, because STP protection overrides interface Loopback Detection.



Loopback Detection

Loopback Detection: ○

Port

□	Port	Loopback Detection	Detection Status	Port Status	Time Left (s)	Operation
□	1/0/1	Disabled	Disabled	normal	0	✎
□	1/0/2	Disabled	Disabled	normal	0	✎
□	1/0/3	Disabled	Disabled	normal	0	✎
□	1/0/4	Disabled	Disabled	normal	0	✎
□	1/0/5	Disabled	Disabled	normal	0	✎

Loopback Detection

Port Auto Recovery

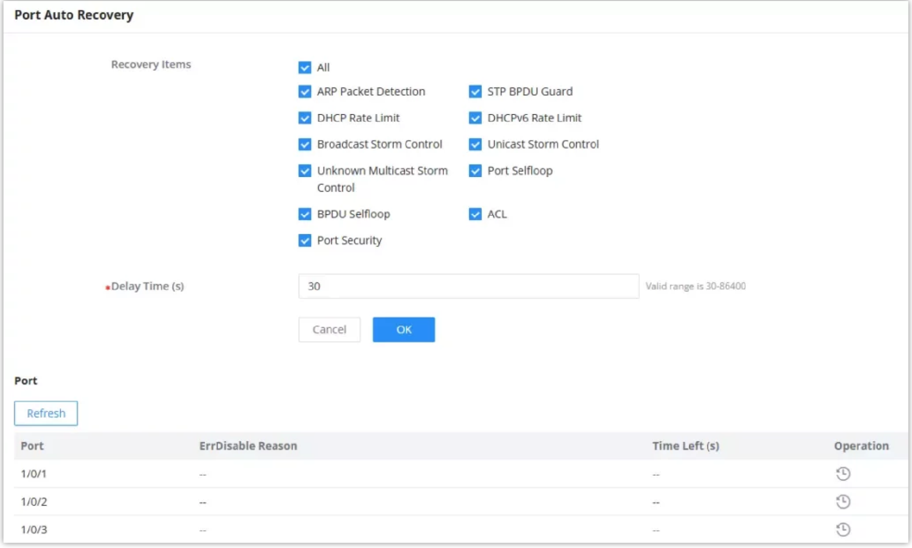
Port Auto Recovery helps recover a port after a specific delay that can be specified by the user. When the following functions of the port trigger the port down, the port automatically returns to the up state after the delay time:

Examples:

- **ARP packet detection:** If the ARP rate in DAI exceeds the set value, the current port will be shut down.
- **STP BPDU Guard:** In the spanning tree, the port enables BPDU Guard. When this function is triggered, the port will be shut down.
- **Port Loop:** When the port is self-looping and the spanning tree is enabled, the port will be shut down.

- **ACL:** When the ACL rule is matched and the action is shutdown, the port will be shut down.
- **Port Security:** When the number of port MAC addresses exceeds the set number, the port will be shut down.

> **Note**
>
> When the recovery time is up and the port is back up, if the condition that triggers the down occurs again, the port will be shut down again.



Port Auto Recovery

Recovery Items
- ☑ All
- ☑ ARP Packet Detection
- ☑ STP BPDU Guard
- ☑ DHCP Rate Limit
- ☑ DHCPv6 Rate Limit
- ☑ Broadcast Storm Control
- ☑ Unicast Storm Control
- ☑ Unknown Multicast Storm Control
- ☑ Port Selfloop
- ☑ BPDU Selfloop
- ☑ ACL
- ☑ Port Security

*Delay Time (s): 30 — Valid range is 30-86400

Cancel | OK

Port

Refresh

Port	ErrDisable Reason	Time Left (s)	Operation
1/0/1	--	--	
1/0/2	--	--	
1/0/3	--	--	

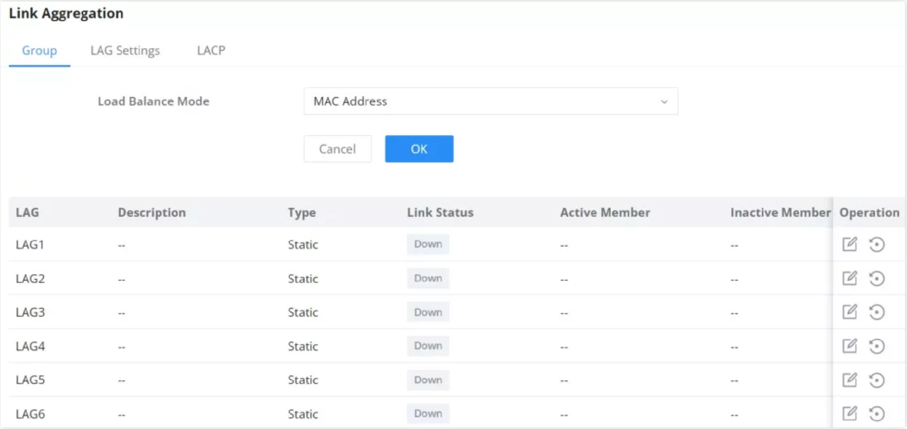
Port Auto Recovery

Link Aggregation

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.

Link Aggregation Group

There are two load balance modes on the GWN780x Pro Switches: either based on the MAC Address or based on the IP–MAC Address. And in terms of the type of LAG, there are either the static option or to use the LACP7 or Link Aggregation Control Protocol, both are supported.



Link Aggregation

Group | LAG Settings | LACP

Load Balance Mode: MAC Address

Cancel | OK

LAG	Description	Type	Link Status	Active Member	Inactive Member	Operation
LAG1	--	Static	Down	--	--	
LAG2	--	Static	Down	--	--	
LAG3	--	Static	Down	--	--	
LAG4	--	Static	Down	--	--	
LAG5	--	Static	Down	--	--	
LAG6	--	Static	Down	--	--	

Link Aggregation Group

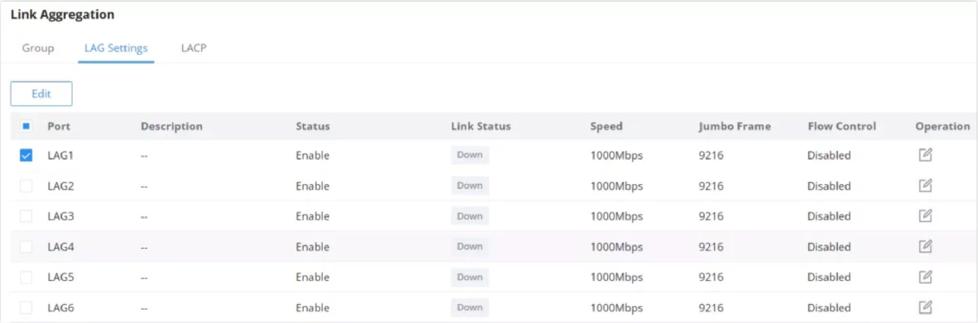
Load Balancing Mode	Select your Load balance mode. **MAC address** – Aggregated group will balance the traffic based on different MAC addresses. Therefore, the packets from different MAC addresses will be sent to different links. **IP/Mac Address** – Aggregated group will balance the traffic based on MAC addresses and IP addresses. Therefore, the packets from same MAC addresses but different IP addresses will be sent to different links.

Edit Group	**Name:** Enter the name of the LA Group. **Type:** Use the drop down menu to specify the type for LAG. ● **Static**– The static aggregated port sends packets over active member without detecting or negotiating with remote aggregated port. ● **LACP**– The LACP aggregated ports place member into active only after negotiated with remote aggregated port for best reliability. **GE**: Click on port to check / uncheck which ones will be part of this LAG.

Link Aggregation Port

LAG Port Settings

On this page, the user can enable the Link Aggregation Group and add a Description as well as specify the speed and the flow control for LAG.



Link Aggregation

■	Port	Description	Status	Link Status	Speed	Jumbo Frame	Flow Control	Operation
☑	LAG1	--	Enable	Down	1000Mbps	9216	Disabled	✎
□	LAG2	--	Enable	Down	1000Mbps	9216	Disabled	✎
□	LAG3	--	Enable	Down	1000Mbps	9216	Disabled	✎
□	LAG4	--	Enable	Down	1000Mbps	9216	Disabled	✎
□	LAG5	--	Enable	Down	1000Mbps	9216	Disabled	✎
□	LAG6	--	Enable	Down	1000Mbps	9216	Disabled	✎

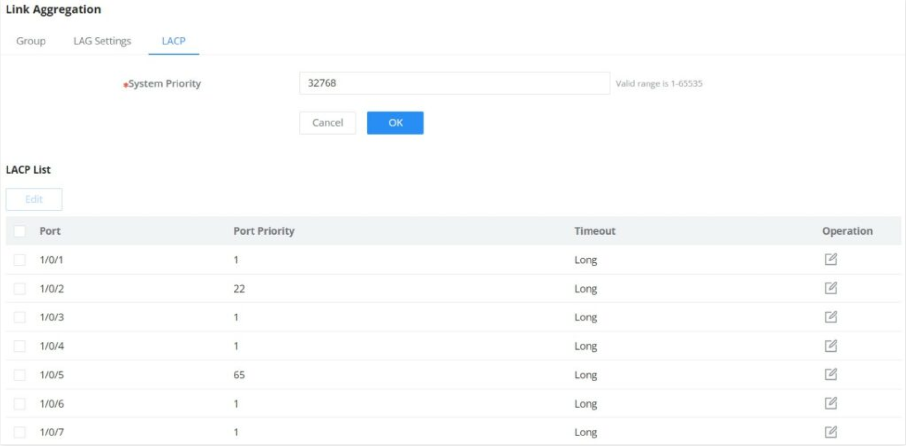
Link Aggregation Port Settings

Port	The selected LAG to be configured.
Description	It is used to configure the information description for this LAG , which can be a description of usage, etc., with a maximum of 128 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 {Auto, 10Mbps, 100Mbps, 1000Mbps}. *The default is auto-negotiation.* ***Note:*** *When set to Auto, the rate of the interface is automatically negotiated between the interface and the peer port .*
Jumbo Frame	Specify the jumpo frame, valid range is 1518-12288. Default value is 9216
Flow Control	Set the flow control on the interface, the options are { Disabled, Enabled, Auto}. *The default is Disabled* 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.

Link Aggregation Settings

LACP

LACP or Link Aggregation Control Protocol is based on the priority, and the user can enable a system priority or even specify the priority for each port individually.



*System Priority: 32768 Valid range is 1-65535

LACP List

□	Port	Port Priority	Timeout	Operation
□	1/0/1	1	Long	✎
□	1/0/2	22	Long	✎
□	1/0/3	1	Long	✎
□	1/0/4	1	Long	✎
□	1/0/5	65	Long	✎
□	1/0/6	1	Long	✎
□	1/0/7	1	Long	✎

Link Aggregation LACP

System Priority	Set the system priority of LACP, the value range is an integer from 1-65535, *the default is 32768.*
Edit LACP	**Port:** Select the switch LAG interface to be configured **Port Priority:**Set the LACP protocol priority of the port , the value range is an integer from 1 to 65535 , *the default is 1.* ***Note:*** *The smaller the priority value of the port , the higher the LACP priority of the port.* **Timeout:** Set the timeout time for receiving LACP packets, the options are { Short, Long} , *the default is Short.* ● **Short mode:** the default timeout period for receiving LACP protocol packets is 3 seconds. ● **Long mode:** the default timeout period for receiving LACP protocol packets is 90 seconds .

Link Aggregation – LACP

MAC Address Table

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.

The entries in the MAC address table are divided into **Dynamic Address**, **Static MAC Address**, **Black Hole Address,** and **Port Security Address**.

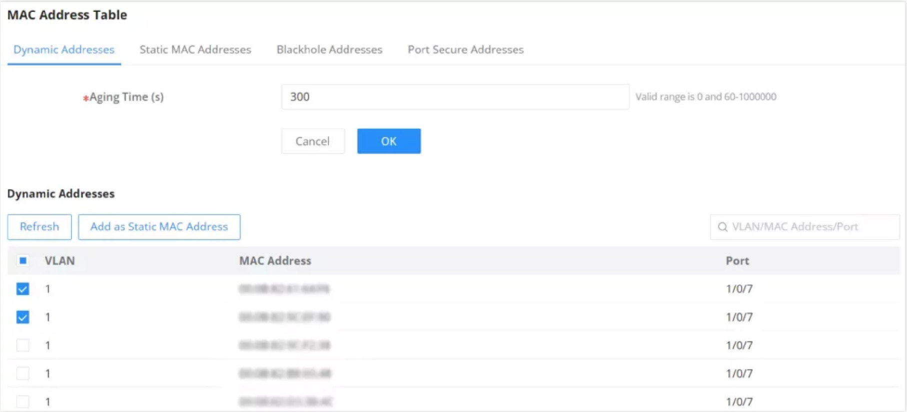
Dynamic Address

The MAC address table is established based on the automatic learning of the source MAC address in the data frame received by the device. If the MAC address entry does not exist in the MAC address table, the device adds the new MAC address and the interface and VLAN corresponding to the MAC address as a new entry into the MAC address table. GWN780x Pro Switch will update the entry by resetting the aging time.

Aging Time:
Dynamic MAC address entries are not always valid. Each entry has a lifetime. The entries that cannot be updated after reaching the lifetime will be deleted. This lifetime is called the Aging Time. If the record is updated before reaching the lifetime, the aging time of the entry will be recalculated.

Notes

- The value range is 0 or 60-1 000000, **the default is 300**. If it is set to 0, it means that dynamic MAC address entries will not be aged
- Dynamic table entries are lost after a system restart.



*Aging Time (s): 300 Valid range is 0 and 60-1000000

Dynamic Addresses

	VLAN	MAC Address	Port
☑	1	[redacted]	1/0/7
☑	1	[redacted]	1/0/7
□	1	[redacted]	1/0/7
□	1	[redacted]	1/0/7
□	1	[redacted]	1/0/7

Dynamic MAC Address Table

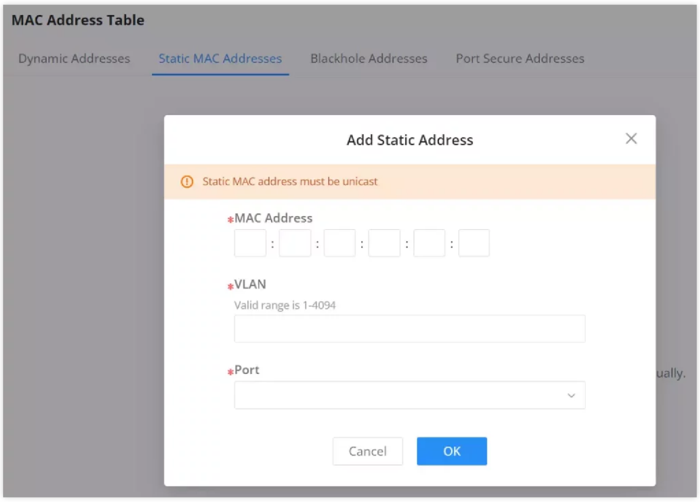
Click on the **"Refresh"** button to update the table, or click on the **"Add Static MAC Address"** button to add the entry to the static MAC address.

Static MAC Address

This section allows the user to manually assign a MAC address to the MAC table. The configuration result will be displayed in the table listed on the lower side of this web page.

Note

The static MAC address must be unicast.



Static MAC address must be unicast

*MAC Address: _ : _ : _ : _ : _ : _

*VLAN
Valid range is 1-4094

*Port

Static MAC Address

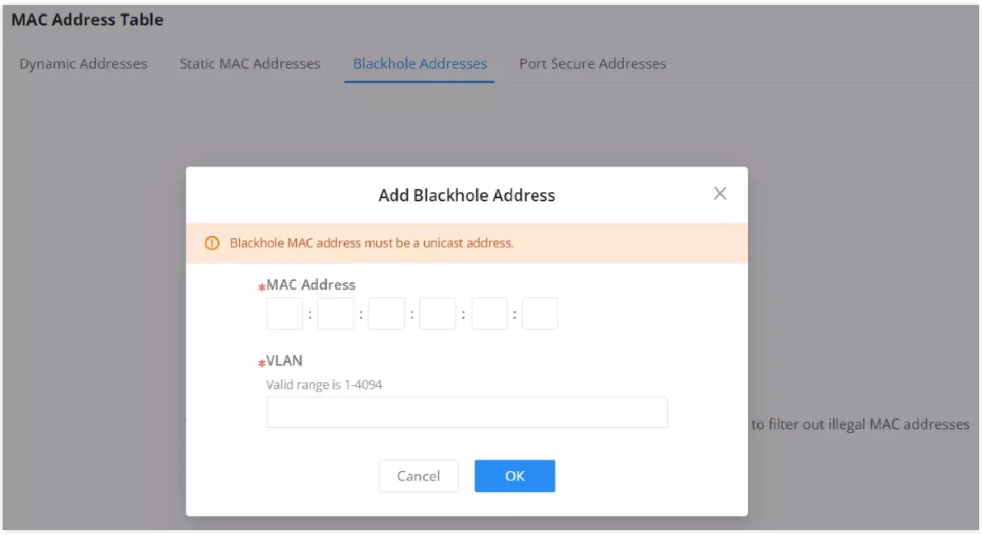
MAC Address	Enter the MAC address that will be forwarded
VLAN	This is the VLAN group to which the MAC address belongs.
Port	Select the port where received frame of matched destination MAC address will be forwarded to.

Static MAC Address

Black Hole Address

If a MAC address is not trusted or insecure, the user can block the traffic of certain MAC Addresses and discard them by adding them to the Black Hole Address Table.

Click on the **"Add"** button, then enter the MAC Address and the VLAN.



MAC Address Table

Dynamic Addresses | Static MAC Addresses | Blackhole Addresses | Port Secure Addresses

Add Blackhole Address

Blackhole MAC address must be a unicast address.

*MAC Address

_ : _ : _ : _ : _ : _

*VLAN

Valid range is 1-4094

to filter out illegal MAC addresses

Cancel | OK

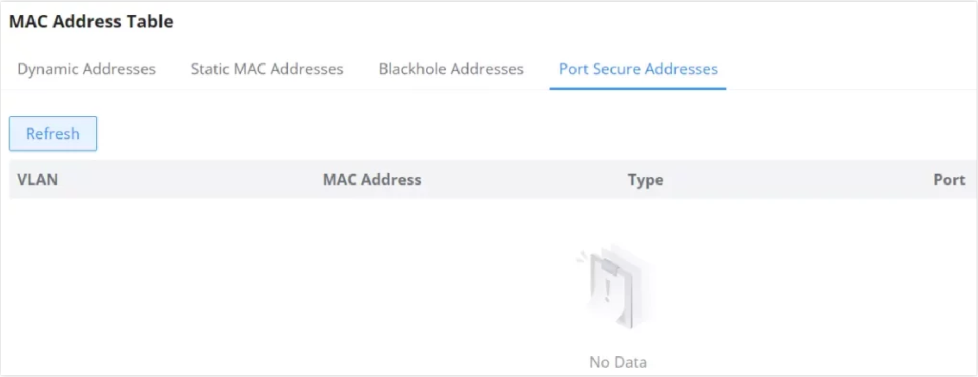
Black Hole Address

Port Security Address

After enabling port security in **Security** → **Port Security**, the addresses will be displayed in the **MAC Address Table** → **Port Security Address** synchronously.
The list shows the interface name, VLAN, and MAC address.

Note

To edit, delete, or add security addresses, please navigate to **Security** → **Port Security**.



MAC Address Table

Dynamic Addresses | Static MAC Addresses | Blackhole Addresses | Port Secure Addresses

Refresh

VLAN	MAC Address	Type	Port

No Data

Port Security Address

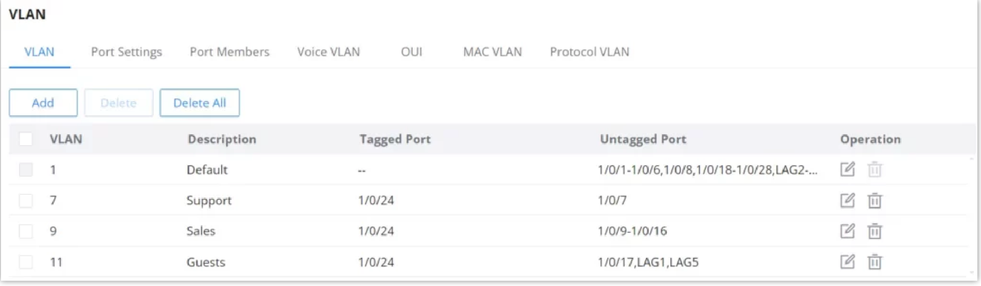
VLAN

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.

A user can click on the "Add" button to add a new VLAN. It is possible to create many VLANs at the same time by specifying a range, for example, (**7-9**) will create VLANs 7,8, and 9, or create different separated VLANs, for example, (11,89) will create VLANs 11 and 89.

Note:

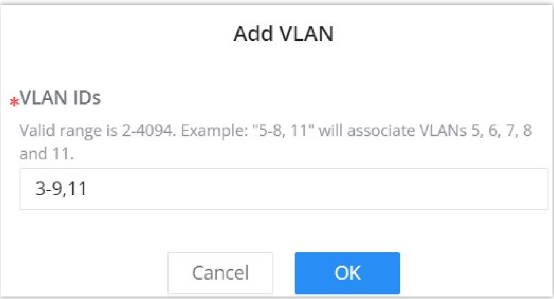
VLAN ID valid range is from 2 to 4094. VLAN 0,1 and 4095 are reserved for the system.



VLAN

□	VLAN	Description	Tagged Port	Untagged Port	Operation
□	1	Default	--	1/0/1-1/0/6,1/0/8,1/0/18-1/0/28,LAG2-...	
□	7	Support	1/0/24	1/0/7	
□	9	Sales	1/0/24	1/0/9-1/0/16	
□	11	Guests	1/0/24	1/0/17,LAG1,LAG5	

VLAN tab



Add VLAN

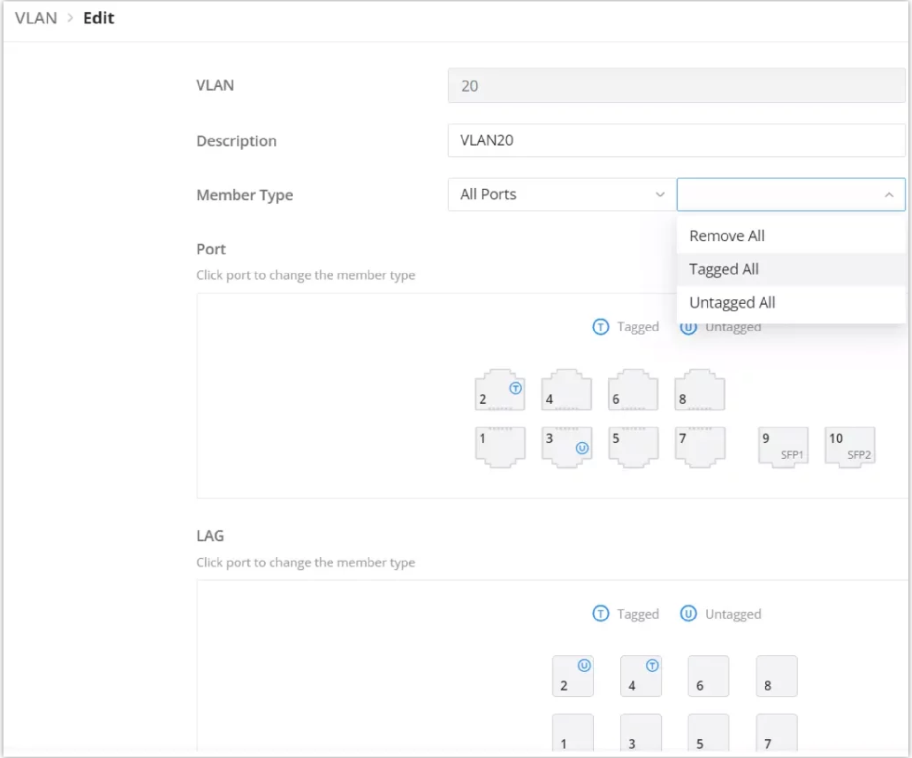
*VLAN IDs

Valid range is 2-4094. Example: "5-8, 11" will associate VLANs 5, 6, 7, 8 and 11.

3-9,11

Add a VLAN

If the VLAN is already created, there is also the option to modify it by clicking on the modify button for more options and settings like Description, Tagged and Untagged ports, and LAGs.



VLAN > Edit

VLAN: 20

Description: VLAN20

Member Type: All Ports

Port

Click port to change the member type

LAG

Click port to change the member type

Edit VLAN

VLAN	The specified VLAN ID
Description	Enter a brief comment for the VLAN ID.
Member Type	Select from the drop-down list: ● **Remove All:** remove all ports GE/LAG from this VLAN ● **Tagged All:** Tag all ports GE/LAG to this VLAN ● **Untagged All:** Untag all ports GE/LAG from this VLAN
GE	Select individually which ports are tagged, untagged or unselected. ***Note:***

	● Unselected ports will not be part of the VLAN ● Tagged ports expects tagged frames (Trunk port) like connecting a switch with another switch. ● Untagged ports expects non-tagged frames (Access port) like connecting a switch with end device.
LAG	Select individually which LAGs are tagged, untagged or unselected.

Edit VLAN

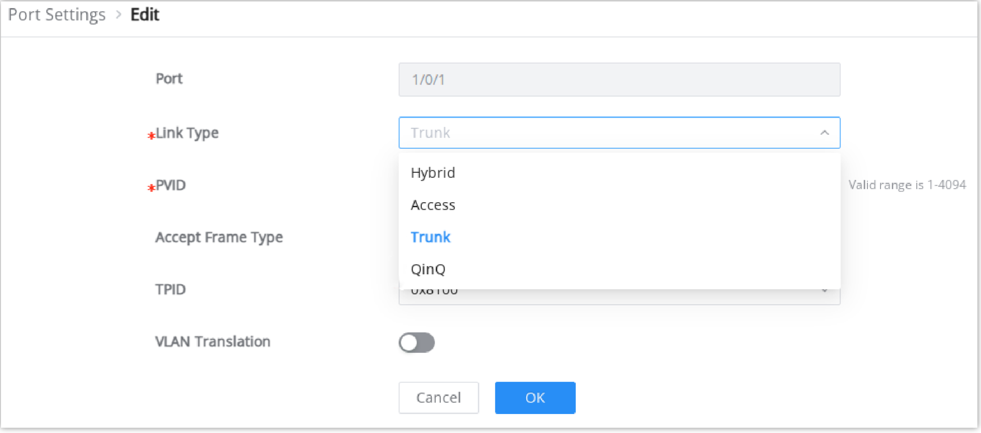
Please refer to the table below for more details about Tagged and Untagged Ports.

Port Type	**Receiving Packets**		**Forwarding Packets**
	Untagged Packets	**Tagged Packets**	**Tagged Packets**
Untagged	When untagged packets are received, the port will add the default VLAN tag, i.e. the PVID of the ingress port, to the packets.	If the VID of packet is allowed by the port, the packet will be received. If the VID of packet is forbidden by the port, the packet will be dropped.	The packet will be forwarded after removing its VLAN tag
Tagged			The packet will be forwarded with its current VLAN tag

VLAN Tagged and Untagged

VLAN Port Settings

The Port Settings page allows for configuring VLAN on each port and LAG by specifying the Link Type (Trunk, Access, Hybrid, or QinQ) as well as the default VLAN or PVID. The user can also enable Ingress Filtering for the selected port, the accepted Frame Type (All, Tag Only, and Untag Only), and more.



Port Settings > **Edit**

Port: 1/0/1

*Link Type: Trunk

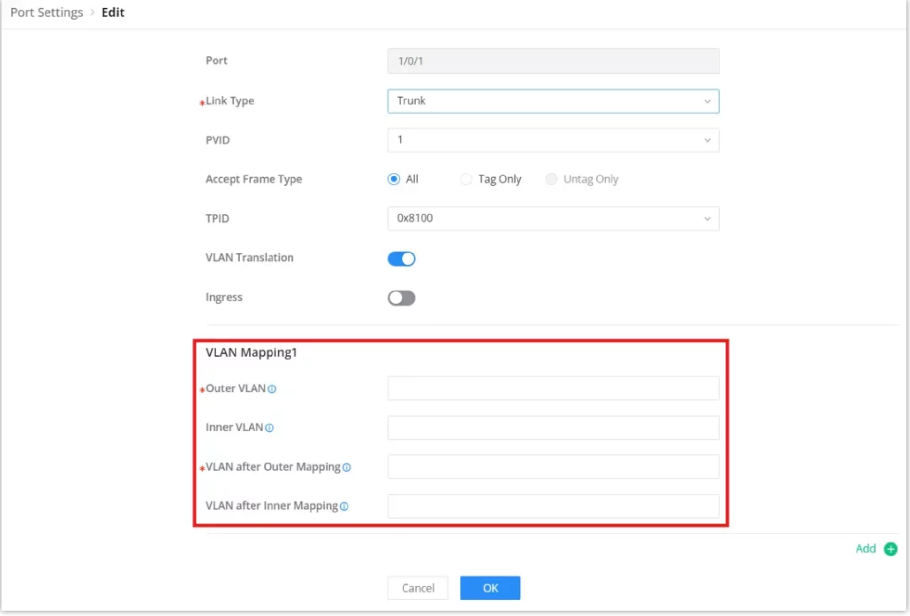
*PVID — Valid range is 1-4094

Accept Frame Type

TPID: 0x8100

VLAN Translation

VLAN Port Settings Link types



Port Settings > Edit

Port: 1/0/1

*Link Type: Trunk

PVID: 1

Accept Frame Type: ● All ○ Tag Only ○ Untag Only

TPID: 0x8100

VLAN Translation: on

Ingress: off

VLAN Mapping1

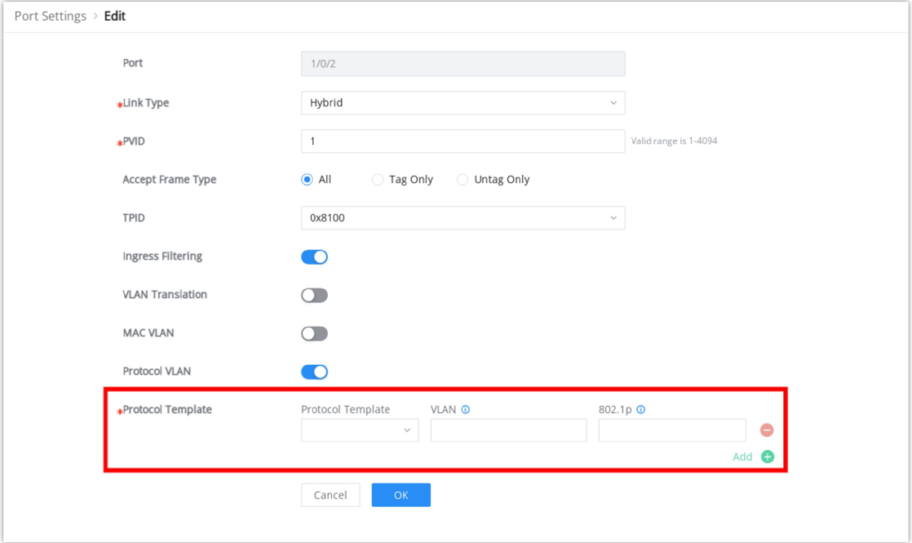
*Outer VLAN

Inner VLAN

*VLAN after Outer Mapping

VLAN after Inner Mapping

VLAN Port Settings VLAN Translation



Port Settings > Edit

Port: 1/0/2

*Link Type: Hybrid

*PVID: 1 Valid range is 1-4094

Accept Frame Type: ● All ○ Tag Only ○ Untag Only

TPID: 0x8100

Ingress Filtering: on

VLAN Translation: off

MAC VLAN: off

Protocol VLAN: on

*Protocol Template: Protocol Template | VLAN | 802.1p

VLAN Port Settings Protocol Template

Port	Shows the selected Port.
Link Type	Select the Link Type: - **Hyprid:** Used for connection between switches, or switch and computer. - **Access:** used to connect the switch and the user terminal. - **Trunk:** used for interconnecting switches or connecting switches and routers, and can carry data frames of multiple different VLANs. - **QinQ:** This is an extended VLAN tagging technique where an additional VLAN tag is added, also known as “double tagging.” It allows Layer 2 tunneling and is often used by service providers to transport customer VLANs.
PVID	Enter the default VLAN ID.
Accept Frame Type	Specifies which types of Ethernet frames are accepted by the port. Options vary depending on the selected **Link Type**: **Hybrid:** - **All:** Accept both tagged and untagged frames (default). - **Tag Only:** Accept only tagged VLAN frames; untagged packets will be dropped. - **Untag Only:** Accept only untagged frames; tagged frames will be dropped. **Access**: - **All:** Only this option is available. Untagged traffic is mapped to the configured PVID. **Trunk**:

	● **All:** Accept both tagged and untagged frames; untagged frames are assigned to the PVID (default behavior). ● **Tag Only:** Accept only tagged frames; untagged traffic will be dropped (disables native VLAN). **QinQ**: ● **All:** Only this option is available due to double tagging structure. ***Note:*** *Setting Tag Only is the recommended method to* ***disable native VLAN*** *behavior on trunk and hybrid ports, providing better traffic control and increased security.*
Ingress Filtering	Set whether to enable the inbound filtering function of the interface. Ingress Filtering is only available for Hybrid port, and it's enabled by default. ***Note:*** *Ingress filtering is a method used by enterprises and internet service providers (ISPs) to prevent suspicious traffic from entering a network.*
VLAN Translation	Allows translating one VLAN ID to another at the port level. It's useful for scenarios where different parts of the network use different VLAN IDs but need to communicate with each other.
MAC VLAN	Allows the switch to assign VLANs based on the MAC address of the incoming traffic. It can be used for more dynamic VLAN assignment, where devices can be automatically placed into specific VLANs based on their MAC addresses.
Protocol VLAN	Allows VLAN assignments based on the protocol type in the frame, such as IP or ARP. It enables grouping traffic from certain protocols into specific VLANs for easier network management.

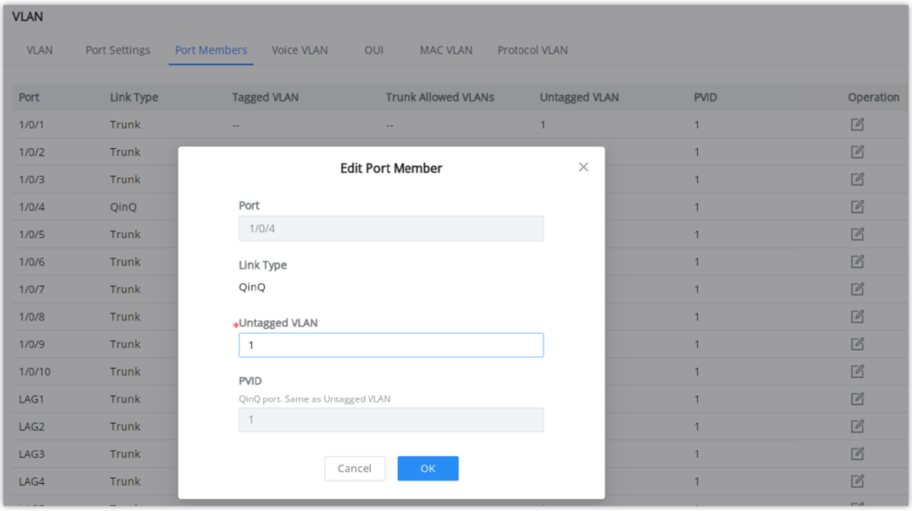
VLAN Port Settings

VLAN Port Members

On this page, the user can define both Tagged and Untagged VLANs (members) for each port individually.

Note

Example: Enter "5-8, 11" to associate 5 VLANs of "5, 6, 7, 8, and 11".



Port	Link Type	Tagged VLAN	Trunk Allowed VLANs	Untagged VLAN	PVID	Operation
1/0/1	Trunk	--	--	1	1	
1/0/2	Trunk				1	
1/0/3	Trunk				1	
1/0/4	QinQ				1	
1/0/5	Trunk				1	
1/0/6	Trunk				1	
1/0/7	Trunk				1	
1/0/8	Trunk				1	
1/0/9	Trunk				1	
1/0/10	Trunk				1	
LAG1	Trunk				1	
LAG2	Trunk				1	
LAG3	Trunk				1	
LAG4	Trunk				1	

Edit Port Member

Port: 1/0/4

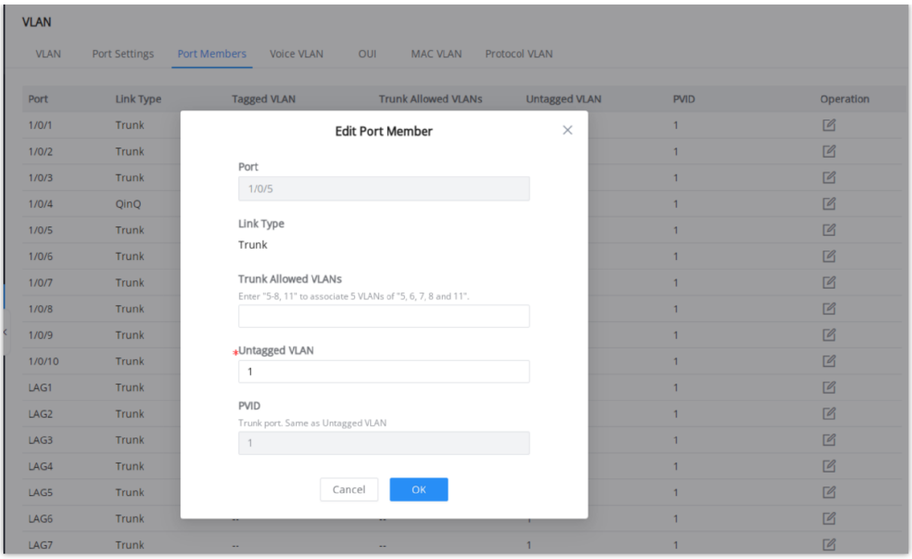
Link Type: QinQ

*Untagged VLAN: 1

PVID: 1
QinQ port. Same as Untagged VLAN

VLAN Port Members QinQ

Trunk Allowed VLANs allow the configuration of VLANs that do not yet exist on the switch and are only effective for configured VLANs.



Port	Link Type	Tagged VLAN	Trunk Allowed VLANs	Untagged VLAN	PVID	Operation
1/0/1	Trunk				1	✎
1/0/2	Trunk				1	✎
1/0/3	Trunk				1	✎
1/0/4	QinQ				1	✎
1/0/5	Trunk				1	✎
1/0/6	Trunk				1	✎
1/0/7	Trunk				1	✎
1/0/8	Trunk				1	✎
1/0/9	Trunk				1	✎
1/0/10	Trunk				1	✎
LAG1	Trunk				1	✎
LAG2	Trunk				1	✎
LAG3	Trunk				1	✎
LAG4	Trunk				1	✎
LAG5	Trunk				1	✎
LAG6	Trunk	--	--	1	1	✎
LAG7	Trunk	--	--	1	1	✎

Edit Port Member

Port: 1/0/5

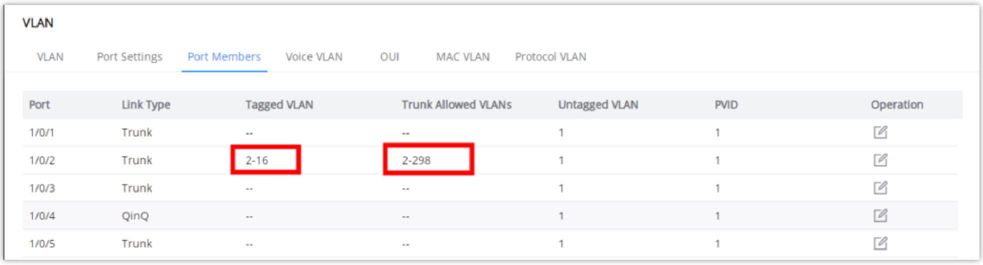
Link Type: Trunk

Trunk Allowed VLANs
Enter "5-8, 11" to associate 5 VLANs of "5, 6, 7, 8 and 11".

*Untagged VLAN: 1

PVID
Trunk port. Same as Untagged VLAN
1

VLAN Port Members Trunk



Port	Link Type	Tagged VLAN	Trunk Allowed VLANs	Untagged VLAN	PVID	Operation
1/0/1	Trunk	--	--	1	1	✎
1/0/2	Trunk	2-16	2-298	1	1	✎
1/0/3	Trunk	--	--	1	1	✎
1/0/4	QinQ	--	--	1	1	✎
1/0/5	Trunk	--	--	1	1	✎

VLAN Port Members

Voice VLAN

A voice VLAN (virtual local area network) is a dedicated VLAN specifically designed to carry voice traffic, such as IP phone calls. By isolating voice traffic from other types of network traffic, voice VLANs help ensure that voice calls are prioritized and experience minimal latency or jitter. This is critical to maintaining clear and uninterrupted voice communications.

Voice VLAN advantages:

- **Improved voice quality:** By isolating voice traffic from other types of network traffic, voice VLANs help reduce the latency and jitter that can cause choppy or distorted audio during voice calls.
- **Reduced congestion:** By prioritizing voice traffic, voice VLANs help prevent other types of network traffic from interfering with voice calls, even during periods of heavy network usage.
- **Simplified network management:** Voice VLANs can simplify network management by making it easier to troubleshoot and resolve voice-related issues.

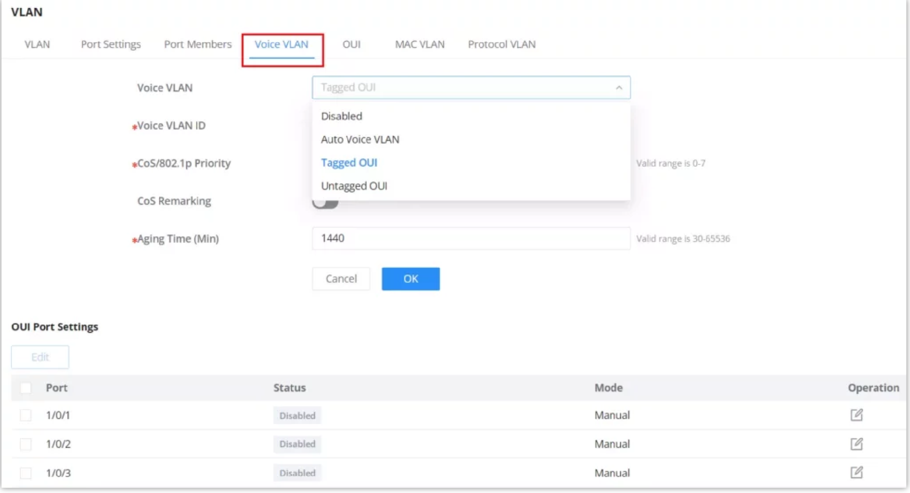
For example, when an IP phone is connected to a GWN780x Pro switch port, the switch prioritizes traffic in the voice VLAN, ensuring that voice packets are forwarded before other types of packets.

The user can select more than one way to set up the voice VLAN:

- Auto Voice VLAN using LLDP
- Tagged OUI using LLDP
- Tagged OUI using VLAN Tag
- Untagged OUI

For more details, please visit this guide: GWN78xx(P) – Voice VLAN Guide.

To configure Voice VLAN, please navigate to **Web UI → Switching → VLAN page → Voice VLAN tab**.



VLAN

VLAN | Port Settings | Port Members | Voice VLAN | OUI | MAC VLAN | Protocol VLAN

Voice VLAN: Tagged OUI
- Disabled
- Auto Voice VLAN
- Tagged OUI
- Untagged OUI

*Voice VLAN ID

*CoS/802.1p Priority — Valid range is 0-7

CoS Remarking

*Aging Time (Min): 1440 — Valid range is 30-65536

Cancel | OK

OUI Port Settings

Edit

□	Port	Status	Mode	Operation
□	1/0/1	Disabled	Manual	✎
□	1/0/2	Disabled	Manual	✎
□	1/0/3	Disabled	Manual	✎

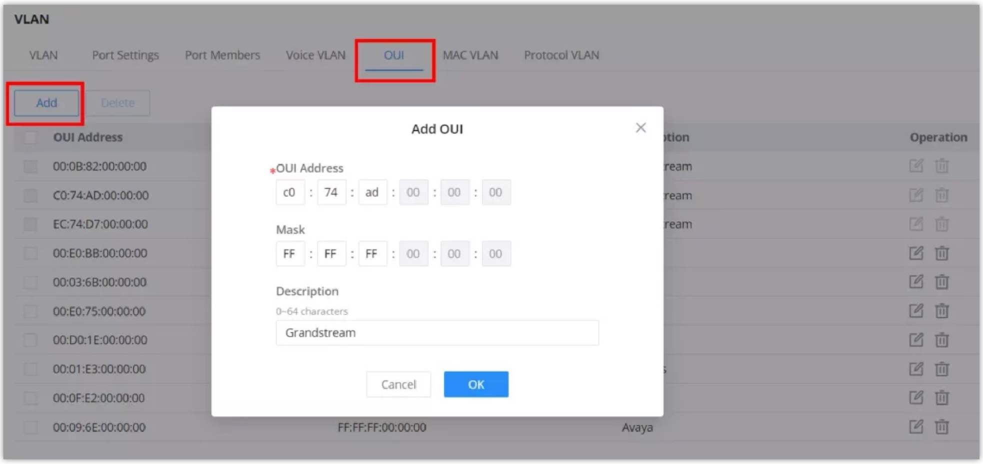
Voice VLAN

Voice VLAN	Select from the drop-down list the Voice VLAN method: ● Disabled ● Auto Voice VLAN ● Tagged OUI ● Untagged OUI *By default is disabled.*
Voice VLAN ID	Select a VLAN as the voice VLAN from the VLAN list. ***Note:*** *The default VLAN 1 cannot be used as a voice VLAN.*
CoS/802.1p Priority	Specify the CoS/802.1p Priority, Valid range is 0-7.
If Auto Voice VLAN is selected	
DSCP	Specify the DSCP priority, an integer ranging from 0 to 63.
LLDP/LLDP MED Auto Config	If Auto Voice VLAN for Voice VLAN mode is selected, then you need to go to LLDP to set network policies. LLDP automatic configuration is added to voice VLANs to make it easier and faster for users to configure them with one click.
If Tagged or Untagged OUI is selected	
CoS	Set whether to enable CoS Remarking.
Aging Time	Set the aging time of the voice VLAN. *The value range is an integer from 30 to 65536 , and the default is 1440 minutes .*
Edit Port Settings	**Port:** Displays the selected port. **Status:** Set whether to enable the voice VLAN function of the port. *it is disabled by default.* **Mode:** Set the working mode of the voice VLAN on the port. *The default is manual.* ***Note:*** *When set to " Manual ", the port must be added to the voice VLAN manually, and the LLDP function needs to be used.*

Voice VLAN

OUI

An OUI address is a unique identifier assigned by IEEE (Institute of Electrical and Electronics Engineers) to a device vendor. It comprises the first 24 bits of a MAC address. You can recognize which vendor a device belongs to according to the OUI address. The following table shows the OUI addresses of several manufacturers. There is also the option to add a custom one based on user needs.



OUI Address		tion	Operation
00:0B:82:00:00:00		ream	
C0:74:AD:00:00:00		ream	
EC:74:D7:00:00:00		ream	
00:E0:BB:00:00:00			
00:03:6B:00:00:00			
00:E0:75:00:00:00			
00:D0:1E:00:00:00			
00:01:E3:00:00:00			
00:0F:E2:00:00:00			
00:09:6E:00:00:00	FF:FF:FF:00:00:00	Avaya	

Add OUI

*OUI Address: c0 : 74 : ad : 00 : 00 : 00

Mask: FF : FF : FF : 00 : 00 : 00

Description
0~64 characters
Grandstream

VLAN OUI

MAC VLAN

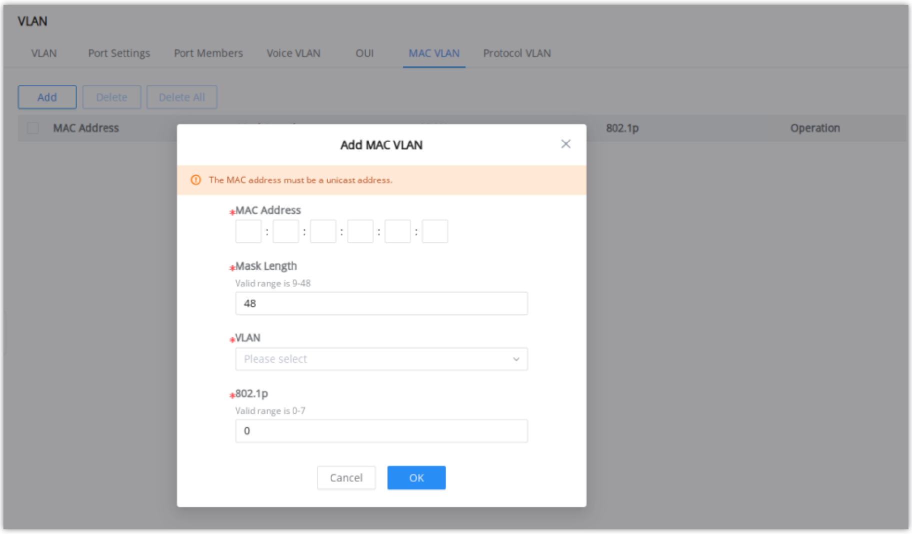
MAC VLAN is a networking technique where each VLAN is based on the source MAC address of incoming frames. Devices with the same MAC address share a VLAN. This segmentation enables isolated communication between devices within the same VLAN based on MAC addresses.

VLANs are divided according to the source MAC address of the data frame. Through the configured MAC address and VLAN mapping table, when the switch receives an untagged frame, it adds the specified VLAN Tag to the data frame based on the mapping table.

To add a MAC address to VLAN mapping, click on the “Add” button, then specify the MAC Address, Mask Length, VLAN, and the priority (802.1p).

Note:

Only effective for Hybrid port.



Add MAC VLAN

The MAC address must be a unicast address.

*MAC Address: _ : _ : _ : _ : _ : _

*Mask Length
Valid range is 9-48
48

*VLAN
Please select

*802.1p
Valid range is 0-7
0

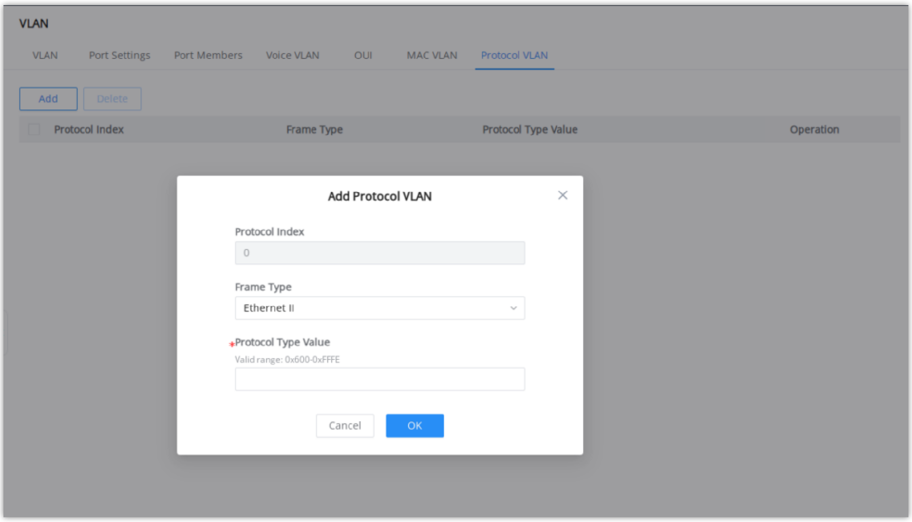
VLAN MAC VLAN

Protocol VLAN

VLANs are divided according to the protocol (family) type and encapsulation format to which the data frame belongs. Through the configured protocol domain and VLAN mapping table in the Ethernet frame, when the switch receives an untagged frame, it adds the specified VLAN Tag based on the mapping table.

Note:

Only effective for Hybrid port.



VLAN

VLAN | Port Settings | Port Members | Voice VLAN | OUI | MAC VLAN | Protocol VLAN

Add | Delete

□	Protocol Index	Frame Type	Protocol Type Value	Operation

Add Protocol VLAN

Protocol Index: 0

Frame Type: Ethernet II

*Protocol Type Value
Valid range: 0x600-0xFFFE

Cancel | OK

VLAN Protocol VLAN

Spanning Tree

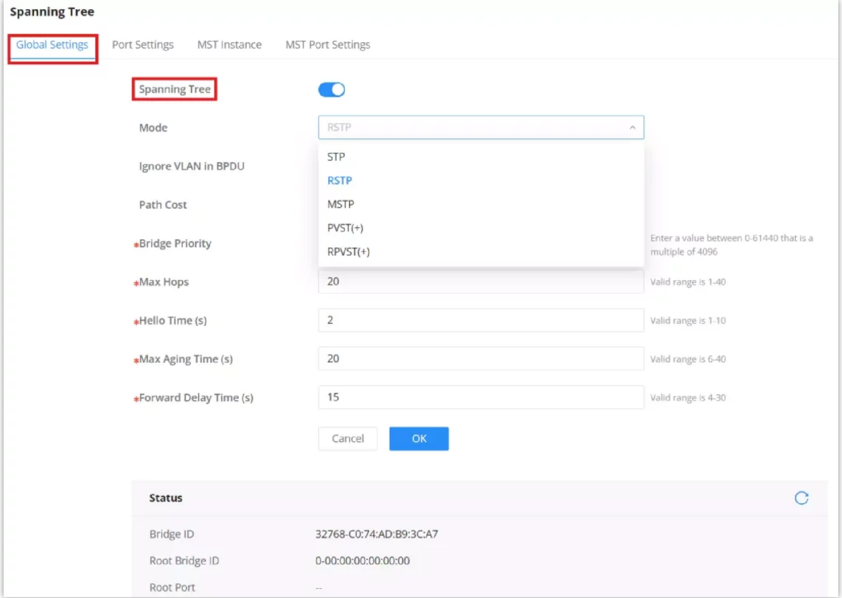
Spanning Tree Protocol (STP) prevents network loops by automatically detecting redundant links and blocking unnecessary ones. Without it, switches could forward packets in circles, causing broadcast storms and major outages.

This switch supports multiple versions of STP, each with different speed, complexity, and use cases:

- **STP** (Spanning Tree Protocol): The original standard. It prevents loops but takes 30+ seconds to recover from topology changes. Use only if required by old devices.
- **RSTP** (Rapid Spanning Tree Protocol): A faster, modern version of STP with sub-second failover. Ideal for most networks that don't require per-VLAN control.
- **MSTP** (Multiple Spanning Tree Protocol): Groups multiple VLANs into one spanning tree instance, reducing overhead. Best for large networks with many VLANs and structured VLAN planning.
- **PVST(+)** (Per-VLAN Spanning Tree Plus): Runs a separate spanning tree for each VLAN. Allows detailed control but increases CPU/memory usage. Good when VLAN isolation and per-VLAN optimization are required.
- **RPVST(+)** (Rapid PVST Plus): Adds fast convergence to PVST(+). Ideal for modern, VLAN-heavy networks needing both speed and per-VLAN flexibility.

Choosing a Mode:

- Use **RSTP** if you're not sure. It's fast and widely compatible.
- Choose **RPVST(+)** for VLAN-specific loop prevention with quick failover.
- Go with **MSTP** if you want scalable performance across many VLANs.
- **STP** is maintained for backward compatibility with legacy devices. It is not recommended for modern networks due to its slower convergence time.



Spanning Tree: on

Mode: RSTP

Ignore VLAN in BPDU

Path Cost

*Bridge Priority: Enter a value between 0-61440 that is a multiple of 4096

*Max Hops: 20 (Valid range is 1-40)

*Hello Time (s): 2 (Valid range is 1-10)

*Max Aging Time (s): 20 (Valid range is 6-40)

*Forward Delay Time (s): 15 (Valid range is 4-30)

Status

Bridge ID	32768-C0:74:AD:B9:3C:A7
Root Bridge ID	0-00:00:00:00:00:00
Root Port	--

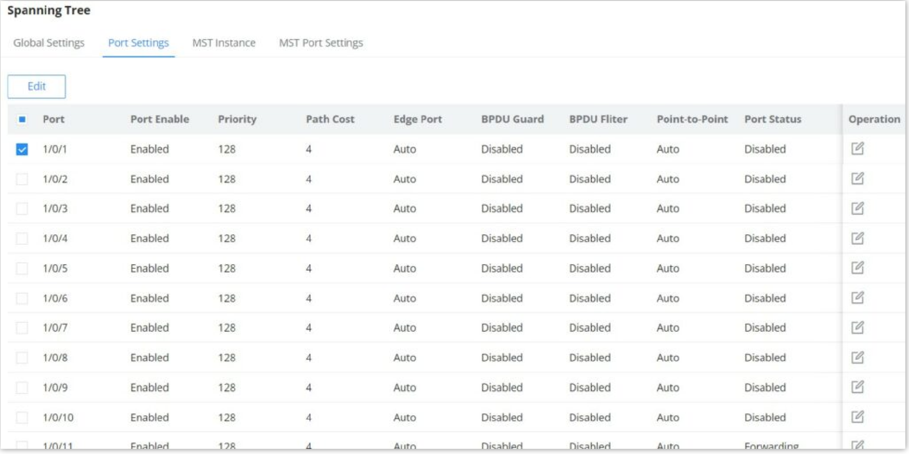
Spanning Tree Global Settings

Spanning Tree	Set whether to enable Spanning Tree.
Mode	Set the operating mode of Spanning Tree (STP). ● **STP:** Standard Spanning Tree Protocol. Provides basic loop prevention but has slow convergence. Use only for compatibility with older or legacy network devices. ● **RSTP:** Rapid Spanning Tree Protocol. Faster convergence than STP, suitable for most modern networks. Recommended as the default for typical deployments. ● **MSTP:** Multiple Spanning Tree Protocol. Allows grouping of multiple VLANs into a single STP instance. Best suited for large networks with many VLANs that require efficient resource use. ● **PVST+:** Per-VLAN Spanning Tree Plus. Runs one STP instance per VLAN, offering detailed control of loop prevention per VLAN. Good for networks with high segmentation. ● **RPVST(+):** Rapid Per-VLAN Spanning Tree Plus. Combines the benefits of RSTP and PVST(+), offering fast convergence for each VLAN. Ideal for high-availability environments with VLAN-based traffic control.
Ignore VLAN in BPDU	This feature allows the switch to ignore VLAN-specific information in Bridge Protocol Data Units (BPDUs). This prevents VLAN configurations from influencing Spanning Tree Protocol (STP) decisions across multiple VLANs.
Path Cost	Specify the path cost method (Short, Long, or Legacy). *Default is Short.*
Bridge Priority	Select the Bridge Priority, In an STP network, the device with the smallest bridge ID is elected as the root bridge. *Default is 32768.* ***Note:*** *The valid range is 0~61440, which must be a multiple of 4096*
Max Hops	Select the Max Hops (the range is 1 – 40). *Default is 20*
Hello Time (s)	Specify the Hello Time in seconds (the range is 1 -10). *Default is 2.* ***Note:*** *The time interval at which the device running the STP protocol sends the configuration message BPDU , which is used by the device to detect whether the link is faulty.*
Max Aging Time (s)	Select The aging time of BPDU packets of the port (the range is 6 – 40). *Default is 20.*
Forward Delay Time (s)	Specify the Forward Delay Time in seconds (the range is 4 -30). *Default is 15.*

STP Global Settings

STP Port Settings

To configure STP on each port and LAG, then navigate to WEB UI → Spanning Tree → Port Settings, then click on the "**Edit**" button.



Spanning Tree

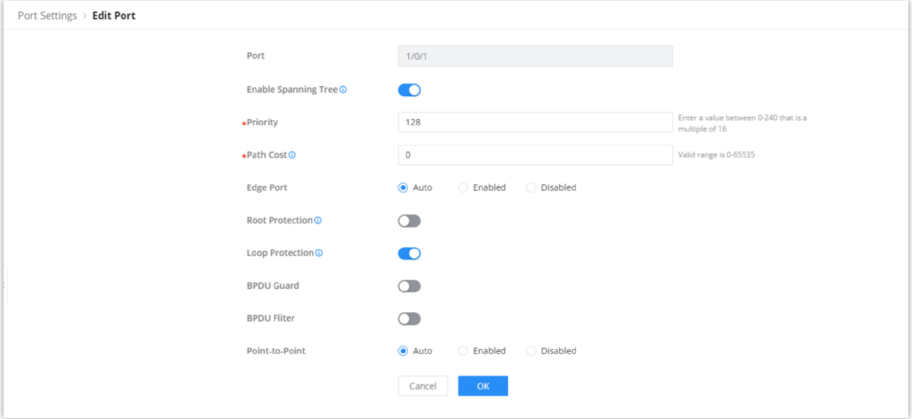
Global Settings | Port Settings | MST Instance | MST Port Settings

Edit

■	Port	Port Enable	Priority	Path Cost	Edge Port	BPDU Guard	BPDU Fliter	Point-to-Point	Port Status	Operation
☑	1/0/1	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/2	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/3	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/4	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/5	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/6	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/7	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/8	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/9	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/10	Enabled	128	4	Auto	Disabled	Disabled	Auto	Disabled	✎
☐	1/0/11	Enabled	128	4	Auto	Disabled	Disabled	Auto	Forwarding	✎

Spanning Tree Port Settings

For each port or LAG, the user can enable STP and specify the priority, Path Cost, Edge port, BPDU Guard, and Filter and Point-To-Point.



Port Settings > **Edit Port**

Port: 1/0/1

Enable Spanning Tree ⓘ: ☑

*Priority: 128 — Enter a value between 0-240 that is a multiple of 16

*Path Cost ⓘ: 0 — Valid range is 0-65535

Edge Port: ● Auto ○ Enabled ○ Disabled

Root Protection ⓘ: ☐

Loop Protection ⓘ: ☑

BPDU Guard: ☐

BPDU Fliter: ☐

Point-to-Point: ● Auto ○ Enabled ○ Disabled

Cancel | OK

Spanning Tree Edit Port Settings

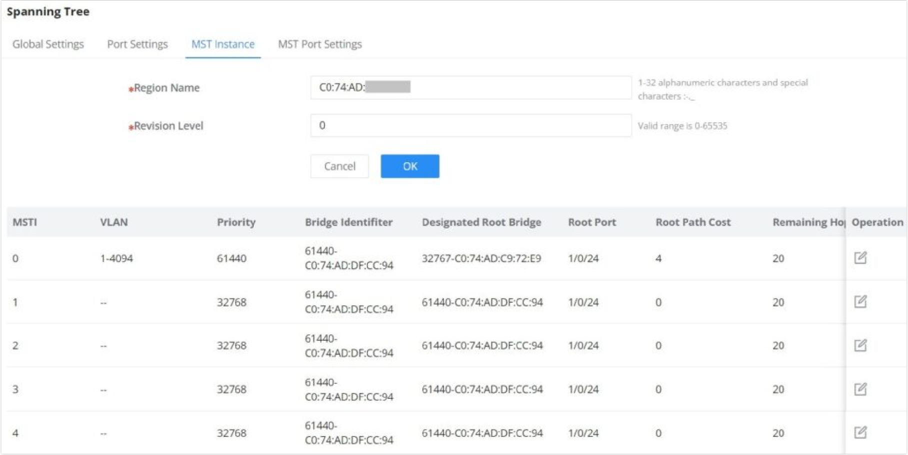
Port	Displays the selected GE/LAG Port.
Enable STP	Set whether to enable STP on this port.
Priority	Priority is an important basis for determining whether the port will be selected as the root port. The port with higher priority under the same conditions will be selected as the root port . The smaller the value , the higher the priority . An integer in the range of 0-240, with a step size of 16, and a default of 128 . ***Note:*** *The valid range is 0~240, which must be a multiple of 16*
Path Cost	Set the path cost of the port on the specified spanning tree. The default value is 0, which means that path cost calculation is performed automatically. ***Note:***The valid range of path cost depends on the path cost settings in Global Settings.If set to "Short" in Global Settings, the valid range is 0-65535; if set to "Long", the valid range is 0-200000000; if set to "legacy", the valid range is 0-200000.
Edge Port	Set whether to enable Edge Port or disable it, by default it's on auto. ***Notes:*** ● *A port is considered as an edge port when it is directly connected to the user terminal or server, instead of any other switches or shared network segments. The edge port will not cause a loop upon network topology changes.* ● *In the edge mode, the interface would be put into the Forwarding state immediately upon link up. While in auto mode it will detect if the port is an edge or not.*

Root Protection	Safeguards the root bridge by preventing designated ports from becoming the root port, thus protecting the current root bridge from being displaced by lower-priority BPDUs.
Loop Protection	Prevents Layer 2 loops by ensuring a blocking state on ports that stop receiving BPDUs, avoiding the formation of network loops.
BPDU Guard	Set whether to enable BPDU Guard. ***Note:*** *BPDU Guard further protects your switch by turning this port into error state and shutdown if any BPDU received from this port.*
BPDU Filter	Set whether to enable BPDU Filter. ***Note:*** *Drop all BPDU packets and no BPDU will be sent.*
Point-to-Point	Select Point-to-Point option (Auto, Enabled or Disabled). *Default is Auto.* ***Note:*** *determines the STP of link type for this port automatically if set to Auto.*

STP Port Settings

Multiple Spanning Tree Instances

MST or Multiple Spanning Tree Instance allows traffic of different VLANs to be mapped into different MST Instances. GWN780x Pro Switch supports up to 16 independent MST instances (0~15), where each instance can be associated with many VLANs.

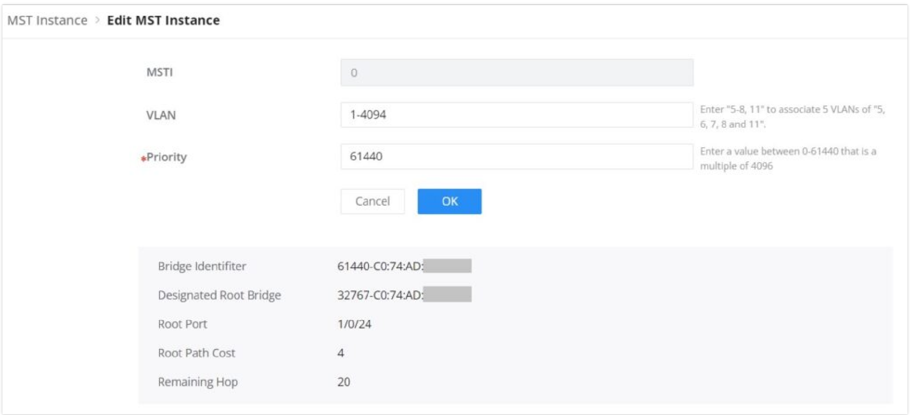


*Region Name: C0:74:AD:[redacted]
1-32 alphanumeric characters and special characters :-._

*Revision Level: 0
Valid range is 0-65535

MSTI	VLAN	Priority	Bridge Identifiter	Designated Root Bridge	Root Port	Root Path Cost	Remaining Ho	Operation
0	1-4094	61440	61440-C0:74:AD:DF:CC:94	32767-C0:74:AD:C9:72:E9	1/0/24	4	20	✎
1	--	32768	61440-C0:74:AD:DF:CC:94	61440-C0:74:AD:DF:CC:94	1/0/24	0	20	✎
2	--	32768	61440-C0:74:AD:DF:CC:94	61440-C0:74:AD:DF:CC:94	1/0/24	0	20	✎
3	--	32768	61440-C0:74:AD:DF:CC:94	61440-C0:74:AD:DF:CC:94	1/0/24	0	20	✎
4	--	32768	61440-C0:74:AD:DF:CC:94	61440-C0:74:AD:DF:CC:94	1/0/24	0	20	✎

Multiple Spanning Tree Instances



MSTI: 0

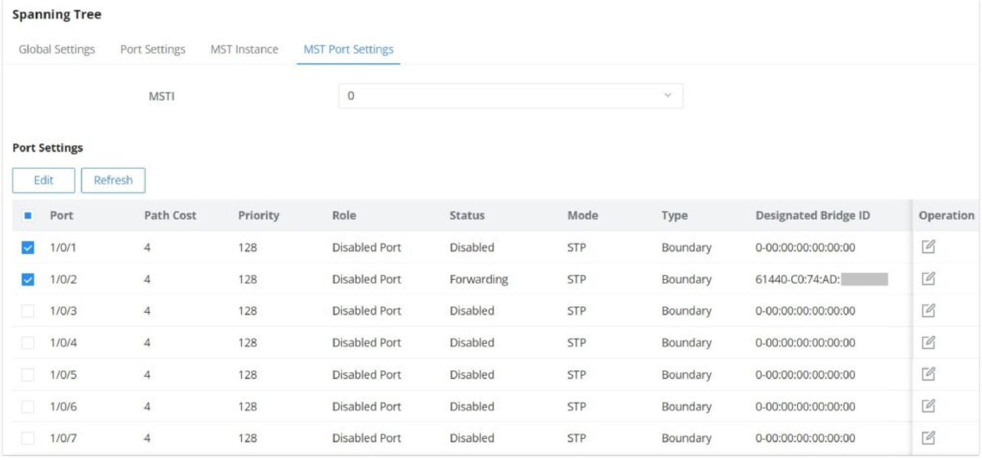
VLAN: 1-4094
Enter "5-8, 11" to associate 5 VLANs of "5, 6, 7, 8 and 11".

*Priority: 61440
Enter a value between 0-61440 that is a multiple of 4096

Bridge Identifiter	61440-C0:74:AD:[redacted]
Designated Root Bridge	32767-C0:74:AD:[redacted]
Root Port	1/0/24
Root Path Cost	4
Remaining Hop	20

MST Edit Port

MST Port Settings is used to configure the GE port / LAG group settings for each MST instance.
The table displays the MST parameters for each port.



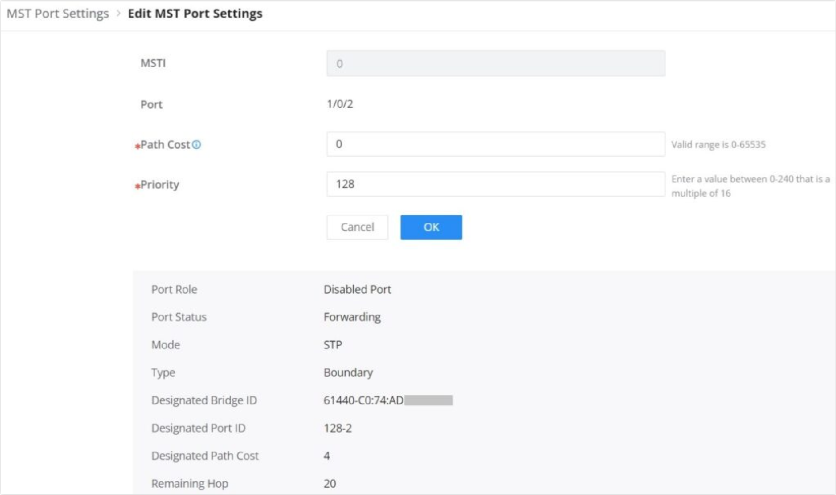
MSTI: 0

Port Settings

■	Port	Path Cost	Priority	Role	Status	Mode	Type	Designated Bridge ID	Operation
☑	1/0/1	4	128	Disabled Port	Disabled	STP	Boundary	0-00:00:00:00:00:00	✎
☑	1/0/2	4	128	Disabled Port	Forwarding	STP	Boundary	61440-C0:74:AD:[redacted]	✎
□	1/0/3	4	128	Disabled Port	Disabled	STP	Boundary	0-00:00:00:00:00:00	✎
□	1/0/4	4	128	Disabled Port	Disabled	STP	Boundary	0-00:00:00:00:00:00	✎
□	1/0/5	4	128	Disabled Port	Disabled	STP	Boundary	0-00:00:00:00:00:00	✎
□	1/0/6	4	128	Disabled Port	Disabled	STP	Boundary	0-00:00:00:00:00:00	✎
□	1/0/7	4	128	Disabled Port	Disabled	STP	Boundary	0-00:00:00:00:00:00	✎

MST Port Settings

Click on the “Edit” button ✎ to edit the MST Port Settings for each Port/LAG individually, and the user can even specify the Path Cost and Priority per Port/LAG as well.



MSTI: 0

Port: 1/0/2

*Path Cost: 0 — Valid range is 0-65535

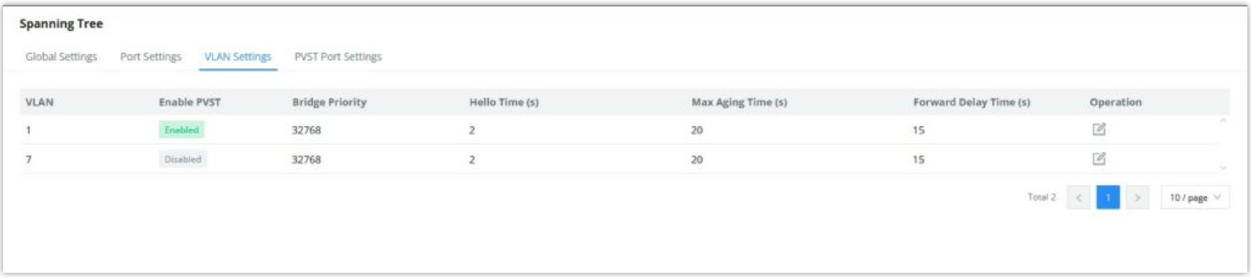
*Priority: 128 — Enter a value between 0-240 that is a multiple of 16

Port Role	Disabled Port
Port Status	Forwarding
Mode	STP
Type	Boundary
Designated Bridge ID	61440-C0:74:AD[redacted]
Designated Port ID	128-2
Designated Path Cost	4
Remaining Hop	20

MST Port Settings Edit port

PVST VLAN Settings

When the Per VLAN Spanning Tree protocol is selected as the STP protocol to be used, then the VLAN settings can be defined.



VLAN	Enable PVST	Bridge Priority	Hello Time (s)	Max Aging Time (s)	Forward Delay Time (s)	Operation
1	Enabled	32768	2	20	15	✎
7	Disabled	32768	2	20	15	✎

The following parameters are to be configured:

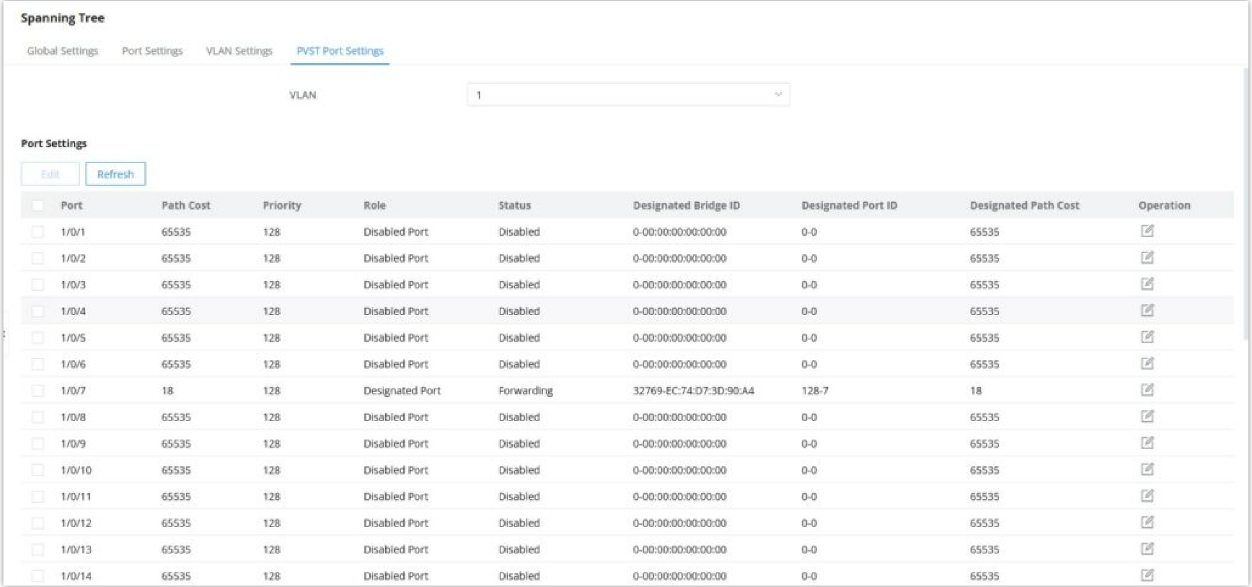
VLAN	Disaplays the VLAN on which the PVST rule will PVST protocol will be applied
Enable PVST	Enables/disables PVST per VLAN
Bridge Priority	Defines the bridge priority for the VLAN, valid range is 0-61440, default value is 32768. **Note:** All values should be a multiple of 4096
Hello Time (s)	Specify the Hello Time in seconds (the range is 1 -10). Default is 2. Note: The time interval at which the device running the STP protocol sends the configuration message BPDU , which is used by the device to detect whether the link is faulty.

Max Aging Time (s)	Select The aging time of BPDU packets of the port (the range is 6 – 40). Default is 20.
Forward Delay Time (s)	Specify the Forward Delay Time in seconds (the range is 4 -30). Default is 15.

PVST Port Settings

The PVST Port settings define the priority and path cost for each port of the switch, for each VLAN.

It also displays, for each port, its role, designated Bridge ID, designated Port ID, and designated Path Cost.



VLAN 1

Port Settings

□	Port	Path Cost	Priority	Role	Status	Designated Bridge ID	Designated Port ID	Designated Path Cost	Operation
□	1/0/1	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/2	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/3	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/4	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/5	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/6	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/7	18	128	Designated Port	Forwarding	32769-EC:74:D7:3D:90:A4	128-7	18	✎
□	1/0/8	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/9	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/10	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/11	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/12	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/13	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎
□	1/0/14	65535	128	Disabled Port	Disabled	0-00:00:00:00:00:00	0-0	65535	✎

The parameters to be defined are

Port	Displays the port, or ports that the settings will be applied on.
Priority	Displays the single port priority. valid range is 0-240 and the default value is 18. **Note:** The value must be a multiple of 16
Path Cost	Configures the port path cost for the port on the specified spanning tree. The value must be an integer between 0-65535. The default value is 0, which means the path cost calculation will be performed automatically.

IP

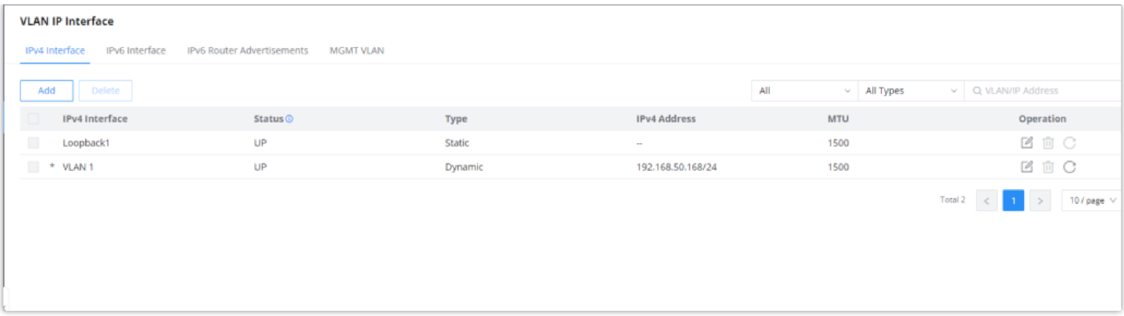
VLAN IP Interface

Hosts in different VLANs cannot communicate directly and need to be forwarded through routers or layer 3 switching protocols.

A VLAN interface is a virtual interface in Layer 3 mode and is mainly used to implement Layer 3 communication between VLANs; it does not exist on the device as a physical entity. Each VLAN corresponds to an interface by configuring an IP address for it; it can be used as the gateway address of each port in the VLAN, so that packets between different VLANs can be forwarded to each other on Layer 3 routing through the VLAN interfaces. GWN switches support IPv4 interfaces as well as IPv6.

IPv4/IPv6 Interface

To add an IP Interface, please click on the “**Add**” button, refer to the figure below:

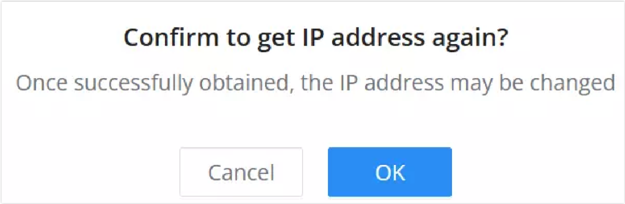


VLAN IP Interface

IPv4 Interface	Status	Type	IPv4 Address	MTU	Operation
Loopback1	UP	Static	--	1500	
* VLAN 1	UP	Dynamic	192.168.50.168/24	1500	

VLAN IP Interface MGMT VLAN

Use the “**refresh icon**” to request a new IP address from the DHCP server. This action will prompt a confirmation dialog; clicking “OK” will obtain a new IP address, which may change upon successful retrieval.



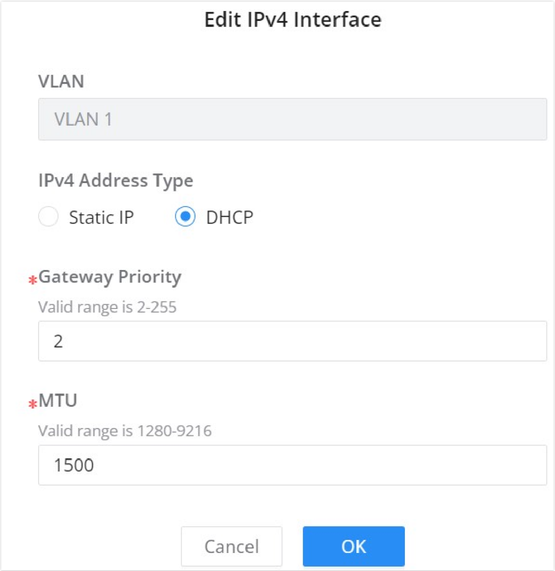
Confirm to get IP address again?

Once successfully obtained, the IP address may be changed

Refresh IP address

Address Type:

- **If DHCP is selected**: hosts will obtain IP addresses automatically from the DHCP server pool is configured (a router, for example).



Edit IPv4 Interface

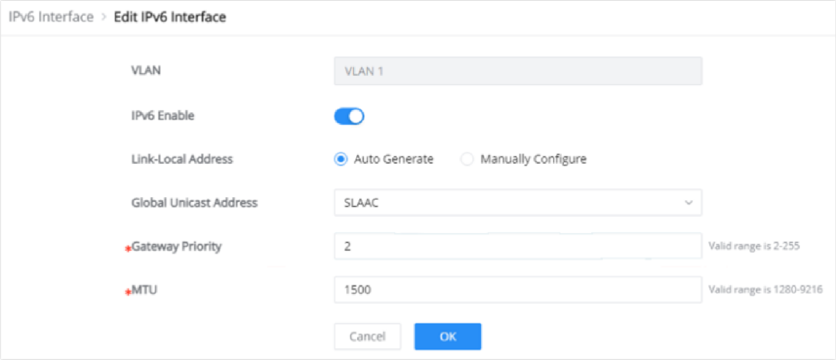
VLAN: VLAN 1

IPv4 Address Type: ○ Static IP ● DHCP

*Gateway Priority
Valid range is 2-255
2

*MTU
Valid range is 1280-9216
1500

Add VLAN IP Interface DHCP IPv4



IPv6 Interface > Edit IPv6 Interface

VLAN: VLAN 1

IPv6 Enable: ●

Link-Local Address: ● Auto Generate ○ Manually Configure

Global Unicast Address: SLAAC

*Gateway Priority: 2 Valid range is 2-255

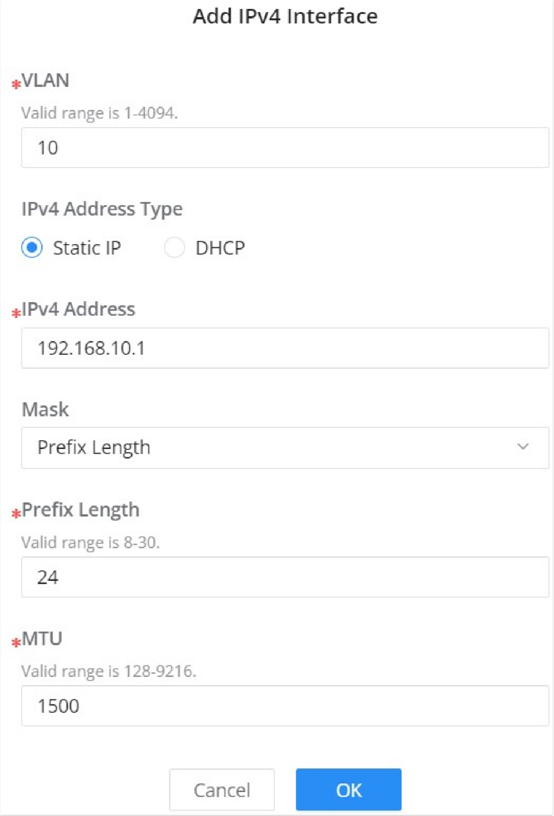
*MTU: 1500 Valid range is 1280-9216

Add VLAN IP Interface DHCP IPv6

Gateway Priority: valid range from 2 [very important] to 255 [least important],

MTU (Maximum Transmission Unit): valid range is 1280-9216.

- **If Static IP is selected**: the user can specify the IPv4 or IPv6 manually.



Add IPv4 Interface

*VLAN

Valid range is 1-4094.

10

IPv4 Address Type

● Static IP ○ DHCP

*IPv4 Address

192.168.10.1

Mask

Prefix Length

*Prefix Length

Valid range is 8-30.

24

*MTU

Valid range is 128-9216.

1500

Add VLAN IP Interface

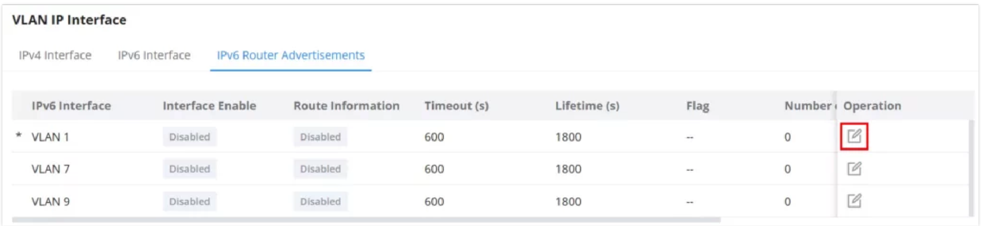
Note:

Gateway Usage Priority:

- Statically configured gateway (manually set) has the highest priority.
- Gateway with a specified priority (smaller priority value means higher priority).
- If priorities are the same, the gateway with the smaller VLAN ID will be used.

IPv6 Router Advertisements

IPv6 Router Advertisements (RAs) are messages sent by routers to provide information to devices on the network, such as the default gateway, DNS servers, and network prefixes. These advertisements help devices configure their IP addresses and routing automatically without the need for manual configuration. In the VLAN IP Interface section, you can configure RAs for each VLAN to manage IPv6 network settings.

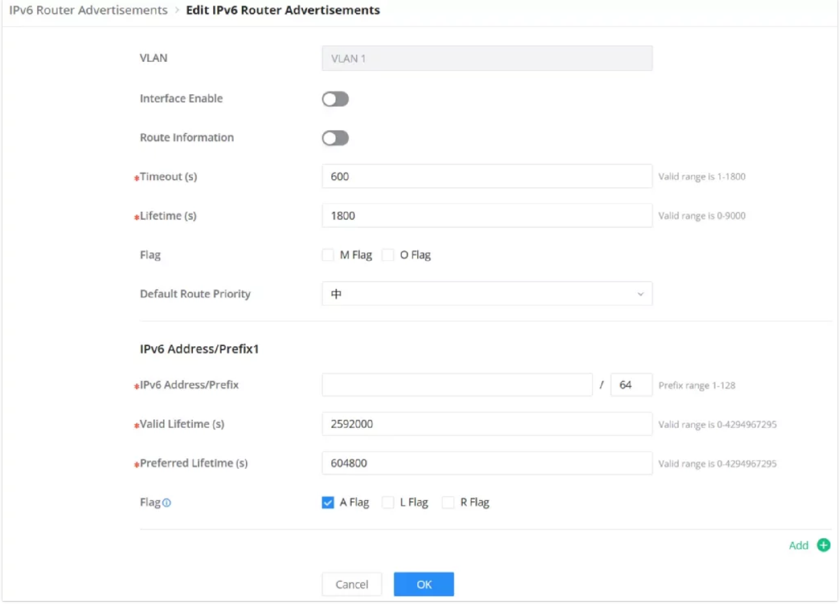


VLAN IP Interface

IPv6 Interface	Interface Enable	Route Information	Timeout (s)	Lifetime (s)	Flag	Number (	Operation
* VLAN 1	Disabled	Disabled	600	1800	--	0	
VLAN 7	Disabled	Disabled	600	1800	--	0	
VLAN 9	Disabled	Disabled	600	1800	--	0	

IPv6 Router Advertisement

In the Edit IPv6 Router Advertisements screen, you can customize settings for a specific VLAN. This includes enabling or disabling the interface, setting route information, and configuring timeouts and lifetimes for the advertisements. You can also define IPv6 addresses and prefixes, adjust flags for additional configurations, and set the priority of the default route. This allows for fine-tuning the behavior of the advertisements to suit your network requirements.



IPv6 Router Advertisements > **Edit IPv6 Router Advertisements**

VLAN: VLAN 1

Interface Enable: off

Route Information: off

*Timeout (s): 600 (Valid range is 1-1800)

*Lifetime (s): 1800 (Valid range is 0-9000)

Flag: □ M Flag □ O Flag

Default Route Priority: 中

IPv6 Address/Prefix1

*IPv6 Address/Prefix: / 64 (Prefix range 1-128)

*Valid Lifetime (s): 2592000 (Valid range is 0-4294967295)

*Preferred Lifetime (s): 604800 (Valid range is 0-4294967295)

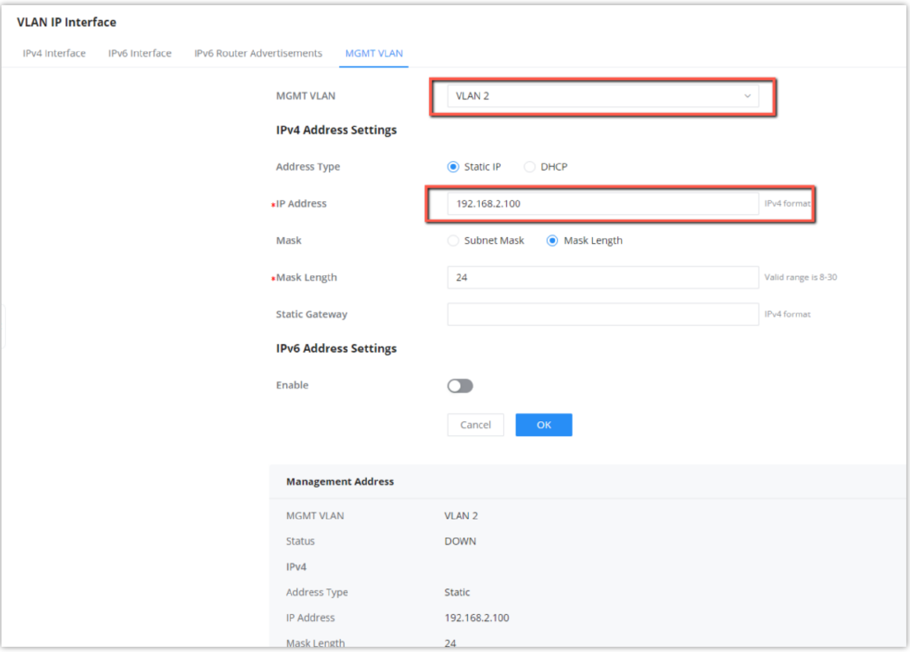
Flag: ☑ A Flag □ L Flag □ R Flag

Edit IPv6 Router Advertisement

MGMT VLAN

When you assign an IP address to the management VLAN interface, the system synchronizes this IP configuration with the corresponding VLAN interface in the device’s Layer 3 IP interface configuration. This ensures that the IP address used for managing the device is consistent with the VLAN’s routing and switching setup.

For example, if you configure the management VLAN with an IP address `192.168.2.100` on VLAN 2, this IP will also be reflected in the IP interface configuration for VLAN 2, ensuring both management and routing functions are aligned.



VLAN IP Interface

MGMT VLAN: VLAN 2

IPv4 Address Settings

Address Type: ● Static IP ○ DHCP

*IP Address: 192.168.2.100 (IPv4 format)

Mask: ○ Subnet Mask ● Mask Length

*Mask Length: 24 (Valid range is 8-30)

Static Gateway: (IPv4 format)

IPv6 Address Settings

Enable: off

Management Address

MGMT VLAN	VLAN 2
Status	DOWN
IPv4	
Address Type	Static
IP Address	192.168.2.100
Mask Length	24

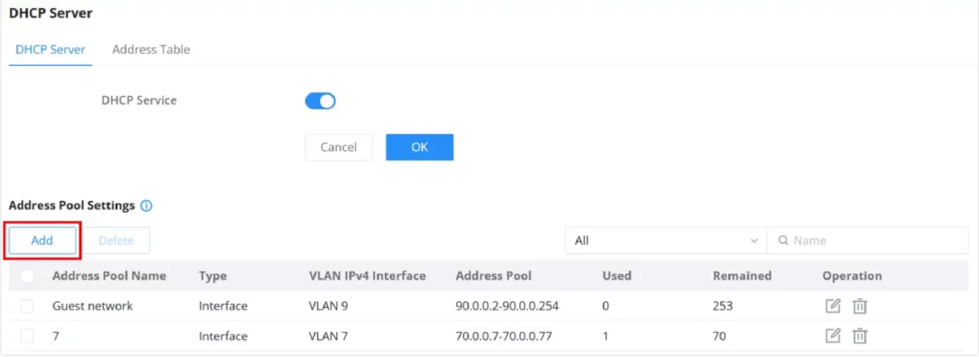
MGMT VLAN

DHCP Server

When creating a VLAN IP Interface with a static IP, the user can link it with a DHCP Server for hosts to obtain IP addresses.

Please navigate to the **Web UI → IP → DHCP Server** page.

Step 1: Enable the DHCP Server.



DHCP Server

DHCP Server | Address Table

DHCP Service: ●

Cancel | OK

Address Pool Settings ⓘ

Add | Delete | All | Name

	Address Pool Name	Type	VLAN IPv4 Interface	Address Pool	Used	Remained	Operation
□	Guest network	Interface	VLAN 9	90.0.0.2-90.0.0.254	0	253	
□	7	Interface	VLAN 7	70.0.0.7-70.0.0.77	1	70	

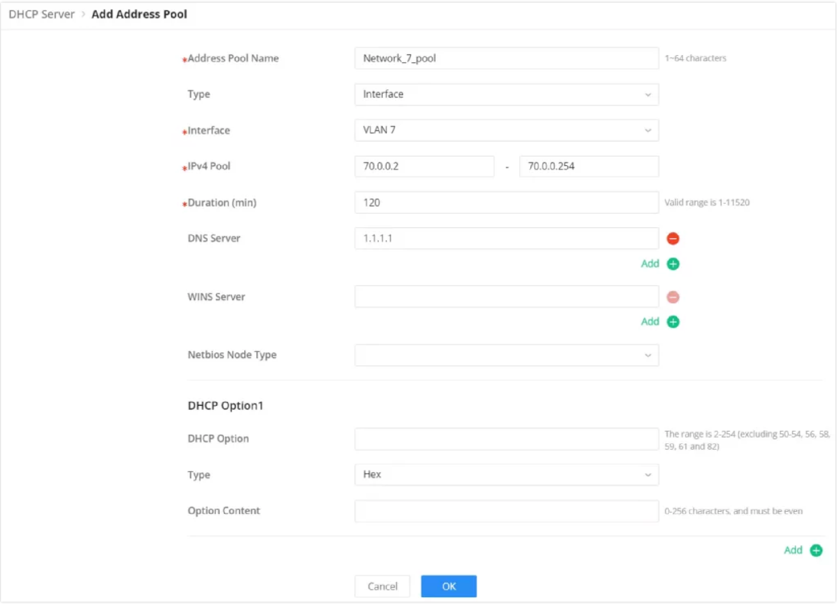
DHCP Global Settings

Step 2: In the Address Pool Settings section, click on the "**Add**" button to add a new address pool.

Note:

- The global address pool is only used for IP address allocation to the DHCP relay.
- When a VLAN is configured to use DHCP to automatically get an IP address, the system can now prioritize which **gateway** (the device routing traffic to other networks) to use.

Add a pool range for the DHCP Server, then select the interface (VLAN).



DHCP Server › Add Address Pool

*Address Pool Name	Network_7_pool	1~64 characters
Type	Interface	
*Interface	VLAN 7	
*IPv4 Pool	70.0.0.2 - 70.0.0.254	
*Duration (min)	120	Valid range is 1-11520
DNS Server	1.1.1.1	
WINS Server		
Netbios Node Type		

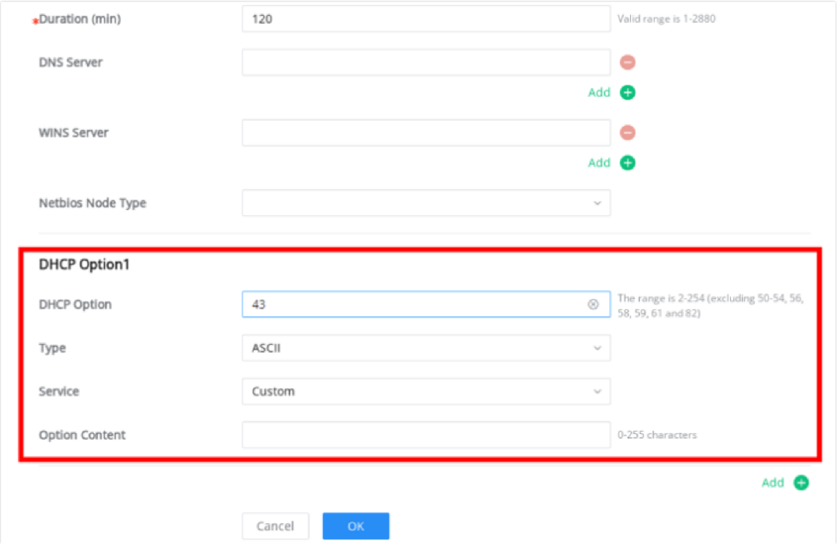
DHCP Option1

DHCP Option		The range is 2-254 (excluding 50-54, 56, 58, 59, 61 and 82)
Type	Hex	
Option Content		0-256 characters, and must be even

Add | Cancel | OK

DHCP Add Pool

In this section, the user can configure DHCP Options like the type, Service (for option 43), and option content. It's also possible to add more DHCP Options by clicking on the "**Add**" icon, as shown below:



*Duration (min)	120	Valid range is 1-2880
DNS Server		
WINS Server		
Netbios Node Type		

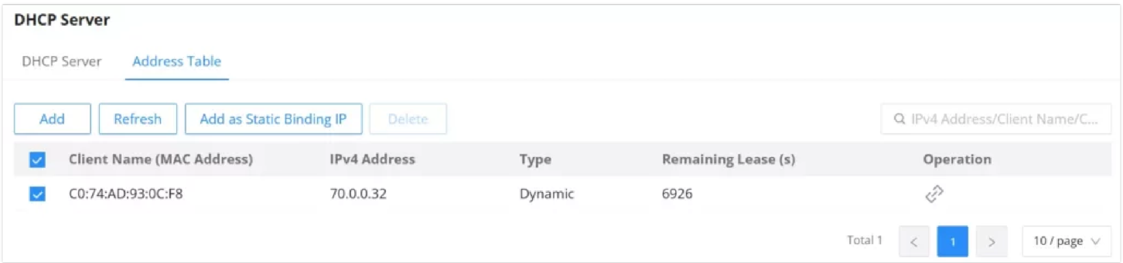
DHCP Option1

DHCP Option	43	The range is 2-254 (excluding 50-54, 56, 58, 59, 61 and 82)
Type	ASCII	
Service	Custom	
Option Content		0-255 characters

Add | Cancel | OK

DHCP Server Add Pool DHCP Options

The address table will display the hosts (devices) MAC Addresses and the IP addresses when using the DHCP Server. Also, it's possible to make an entry a static one by clicking on the "**Add as Static Binding IP**" button.



DHCP Server

DHCP Server | Address Table

Add | Refresh | Add as Static Binding IP | Delete | IPv4 Address/Client Name/C...

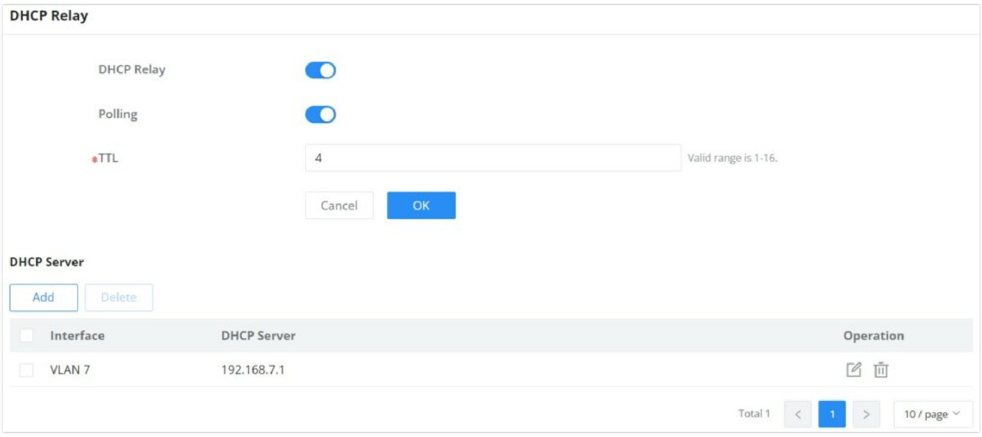
☑	Client Name (MAC Address)	IPv4 Address	Type	Remaining Lease (s)	Operation
☑	C0:74:AD:93:0C:F8	70.0.0.32	Dynamic	6926	

Total 1 < 1 > 10 / page

DHCP DHCP Server

DHCP Relay

DHCP relay on the GWN780x Pro switch helps a network device pass DHCP messages between clients and servers that are on completely different networks. When you have a DHCP server that needs to serve clients on different subnets (or VLANs). A DHCP relay agent is a network device that can route between the client's subnet and the server's subnet. The relay agent gets the broadcast request from the client and sends it to the server, putting its own interface address as the gateway address (giaddr) field in the packet. This way, the server can tell which subnet the client is on and assign a suitable IP address. The server then sends the reply back to the relay agent, which passes it to the client.



DHCP Relay

DHCP Relay: ●

Polling: ●

*TTL: 4 Valid range is 1-16.

Cancel | OK

DHCP Server

Add | Delete

□	Interface	DHCP Server	Operation
□	VLAN 7	192.168.7.1	

Total 1 < 1 > 10 / page

DHCP Relay

DHCP Relay	Set whether to enable the global DHCP relay function *the default is off.*
Polling	Set whether to enable the polling function of the DHCP relay *disabled by default.*
TTL	Set the TTL value of the DHCP request message after being forwarded by the DHCP relay layer 3. *the value is an integer from 1 to 16 , and the default is 4 .*
DHCP Server	
Interface	Select from the existing VLAN interfaces.
DHCP Server	Set the address of the DHCP server. ***Note:*** *The DHCP server address cannot be the interface IP address of the DHCP relay gateway , otherwise the DHCP client cannot obtain an IP address.*

DHCP Relay

ARP Table

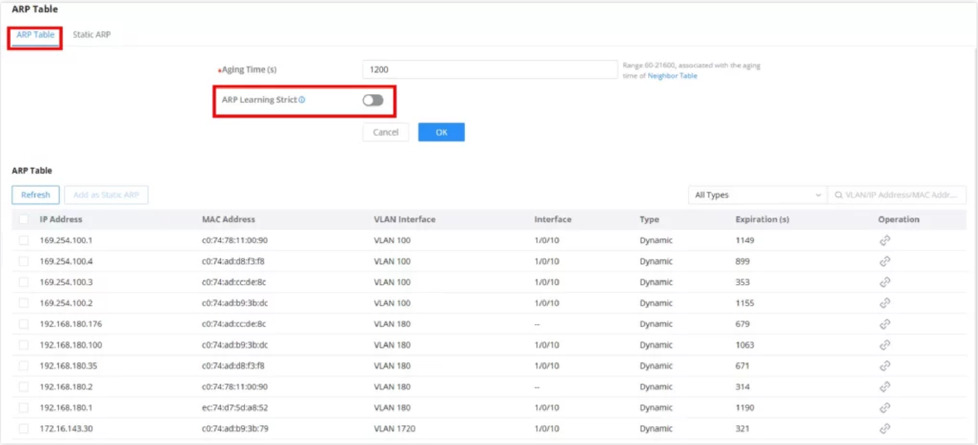
The ARP Table page provides tools to view and manage IP-to-MAC address mappings on the switch. It is divided into two tabs:

- **ARP Table**: Displays dynamically learned ARP entries. You can configure the **aging time** and enable **Strict ARP Learning**, which limits ARP entries to only those required for actual traffic forwarding.

Note: *On models such as **GWN7801P Pro**, **GWN7802P Pro**, and **GWN7803PL/PH Pro**, ARP capacity is limited to **64 entries**. To prevent the table from filling with unnecessary data, enable **Strict ARP Learning** under **Web UI → IP → ARP Table**. When enabled, it is also recommended to go to **Web UI → Routing → Routing Table** and set the **Forwarding Mode** to **Manual** for consistent forwarding behavior.*

- **Static ARP**: Allows administrators to define permanent IP-to-MAC address mappings that cannot be overwritten or aged out. This is typically used to ensure reliable communication with critical devices and to prevent spoofing.

To configure the ARP Table, please navigate to **Web UI → IP → ARP Table**.



ARP Table

ARP Table | Static ARP

*Aging Time (s): 1200 — Range 60-21600, associated with the aging time of Neighbor Table

ARP Learning Strict: ○

Cancel | OK

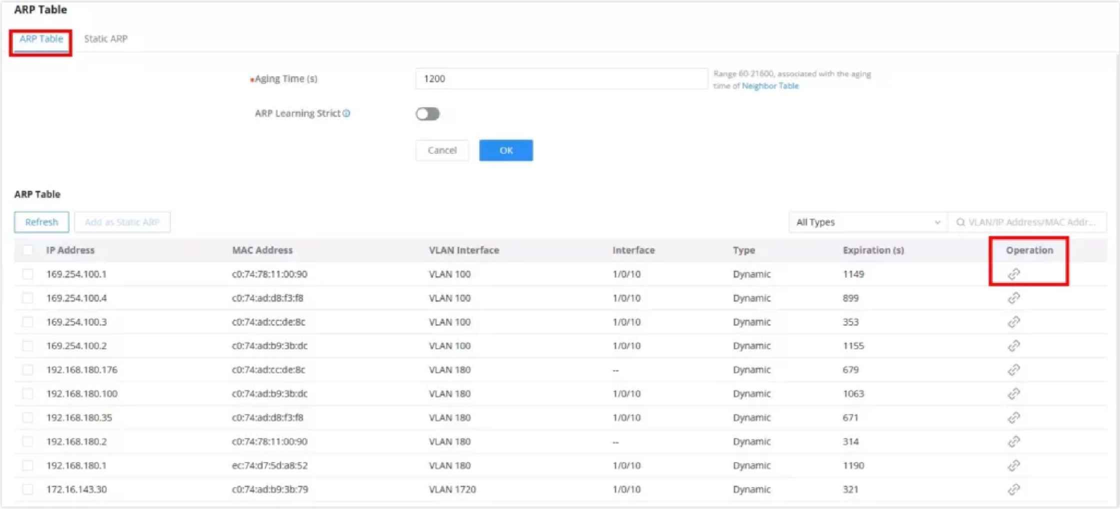
ARP Table

Refresh | Add as Static ARP | All Types | VLAN/IP Address/MAC Addr...

IP Address	MAC Address	VLAN Interface	Interface	Type	Expiration (s)	Operation
169.254.100.1	c0:74:78:11:00:90	VLAN 100	1/0/10	Dynamic	1149	🔗
169.254.100.4	c0:74:ad:d8:f3:f8	VLAN 100	1/0/10	Dynamic	899	🔗
169.254.100.3	c0:74:ad:cc:de:8c	VLAN 100	1/0/10	Dynamic	353	🔗
169.254.100.2	c0:74:ad:b9:3b:dc	VLAN 100	1/0/10	Dynamic	1155	🔗
192.168.180.176	c0:74:ad:cc:de:8c	VLAN 180	--	Dynamic	679	🔗
192.168.180.100	c0:74:ad:b9:3b:dc	VLAN 180	1/0/10	Dynamic	1063	🔗
192.168.180.35	c0:74:ad:d8:f3:f8	VLAN 180	1/0/10	Dynamic	671	🔗
192.168.180.2	c0:74:78:11:00:90	VLAN 180	--	Dynamic	314	🔗
192.168.180.1	ec:74:d7:5d:a8:52	VLAN 180	1/0/10	Dynamic	1190	🔗
172.16.143.30	c0:74:ad:b9:3b:79	VLAN 1720	1/0/10	Dynamic	321	🔗

ARP Table

Aging time (seconds): Set the aging time of dynamic ARP entries. After the aging time expires, dynamic ARP entries are automatically deleted. The value range is an integer from 15 to 21600, and the default is 1200 seconds.



ARP Table

ARP Table | Static ARP

*Aging Time (s): 1200 — Range 60-21600, associated with the aging time of Neighbor Table

ARP Learning Strict: ○

Cancel | OK

ARP Table

Refresh | Add as Static ARP | All Types | VLAN/IP Address/MAC Addr...

IP Address	MAC Address	VLAN Interface	Interface	Type	Expiration (s)	Operation
169.254.100.1	c0:74:78:11:00:90	VLAN 100	1/0/10	Dynamic	1149	🔗
169.254.100.4	c0:74:ad:d8:f3:f8	VLAN 100	1/0/10	Dynamic	899	🔗
169.254.100.3	c0:74:ad:cc:de:8c	VLAN 100	1/0/10	Dynamic	353	🔗
169.254.100.2	c0:74:ad:b9:3b:dc	VLAN 100	1/0/10	Dynamic	1155	🔗
192.168.180.176	c0:74:ad:cc:de:8c	VLAN 180	--	Dynamic	679	🔗
192.168.180.100	c0:74:ad:b9:3b:dc	VLAN 180	1/0/10	Dynamic	1063	🔗
192.168.180.35	c0:74:ad:d8:f3:f8	VLAN 180	1/0/10	Dynamic	671	🔗
192.168.180.2	c0:74:78:11:00:90	VLAN 180	--	Dynamic	314	🔗
192.168.180.1	ec:74:d7:5d:a8:52	VLAN 180	1/0/10	Dynamic	1190	🔗
172.16.143.30	c0:74:ad:b9:3b:79	VLAN 1720	1/0/10	Dynamic	321	🔗

ARP Table Operation

Click on the “Link” icon to make the dynamic entry a static entry.

Static ARP

The **Static ARP** tab allows administrators to manually configure fixed IP-to-MAC address mappings. These entries do not expire and cannot be overwritten by dynamic ARP learning, making them ideal for securing communication with critical network devices.

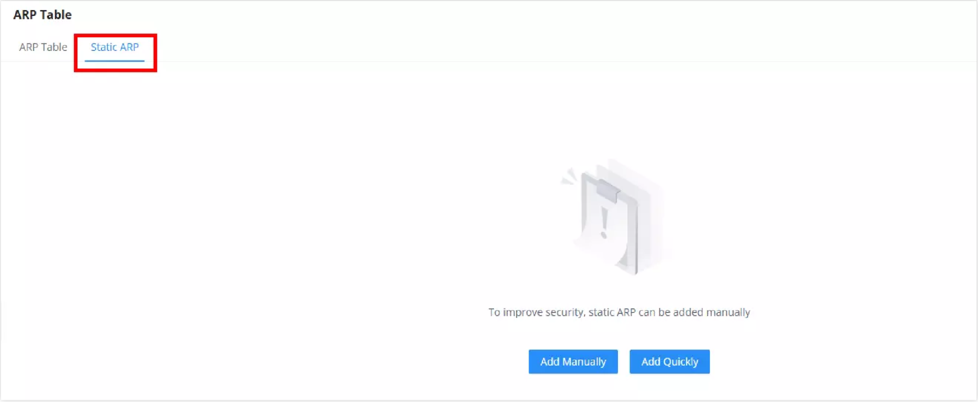
To improve network stability and security, especially in environments vulnerable to spoofing or with limited ARP table size, static entries ensure the device only uses predefined address pairs for specific peers.

Click **"Add Manually"** to create a new entry by specifying:

- **VLAN** – Select the VLAN interface the entry applies to
- **IP Address** – Must be in a valid IPv4 format
- **MAC Address** – Must be a unicast MAC address

Alternatively, click **"Add Quickly"** to select one or more existing dynamic ARP entries and convert them into static entries in bulk.

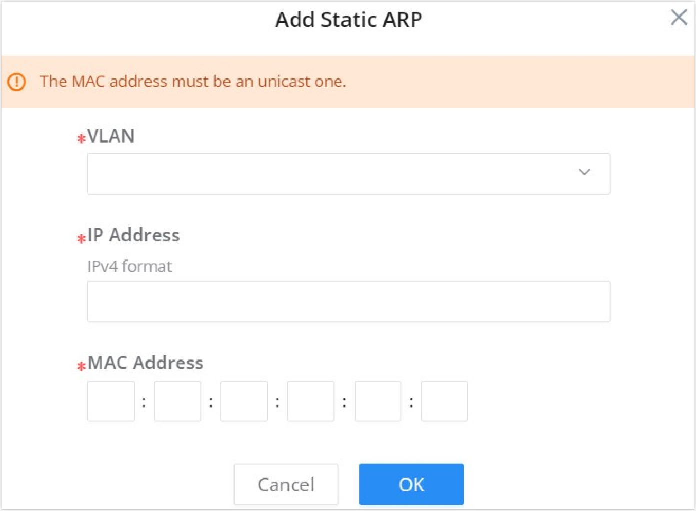
Access this tab via **Web UI → IP → ARP Table → Static ARP**


ARP Table

ARP Table | Static ARP

To improve security, static ARP can be added manually

Add Static ARP


Add Static ARP

The MAC address must be an unicast one.

*VLAN

*IP Address
IPv4 format

*MAC Address
: : : : :

Add Static ARP

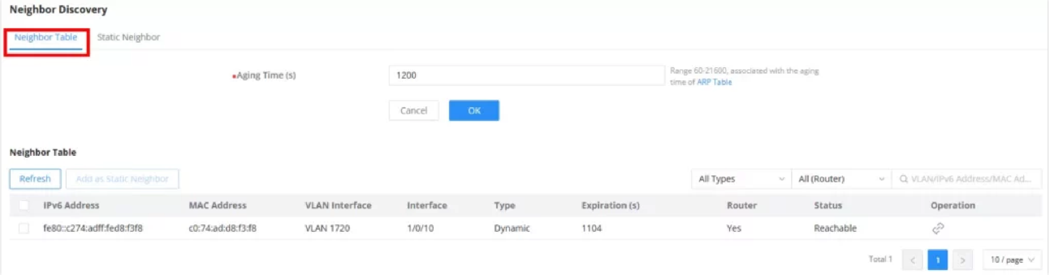
Neighbor Discovery

Neighbor Discovery Protocol (NDP) is an important basic protocol in the IPv6 protocol system. It replaces the ARP and ICMP router discovery of IPv4. It defines the use of ICMPv6 packets to achieve address resolution, neighbor unreachability detection, duplicate address detection, router discovery, redirection, ND proxy, and other functions.

IPv6 address auto-configuration and router discovery rely on two kinds of ICMPv6 messages: RS (Router Solicitation) and RA (Router Advertisement). Hosts send RS messages to ask routers on the same link to send RA messages right away. Routers send RA messages to let hosts know they are there and give them information like IPv6 prefixes, hop limit, MTU, and configuration flags.

To configure ND please navigate to **Web UI → IP → Neighbor Discovery.**

Neighbor Table



Neighbor Discovery

*Aging Time (s): 1200

Range 60-21600, associated with the aging time of ARP Table

Neighbor Table

IPv6 Address	MAC Address	VLAN Interface	Interface	Type	Expiration (s)	Router	Status	Operation
fe80::c274:adff:fed8:f3f8	c0:74:ad:d8:f3:f8	VLAN 1720	1/0/10	Dynamic	1104	Yes	Reachable	

Total 1 < 1 > 10 / page

Neighbor Discovery

Aging time (seconds): Set the aging time of dynamic neighbor entries. After the aging time expires, the dynamic neighbor entry is automatically deleted. The value range is an integer from 15 to 21600, and the default is 1200 seconds.

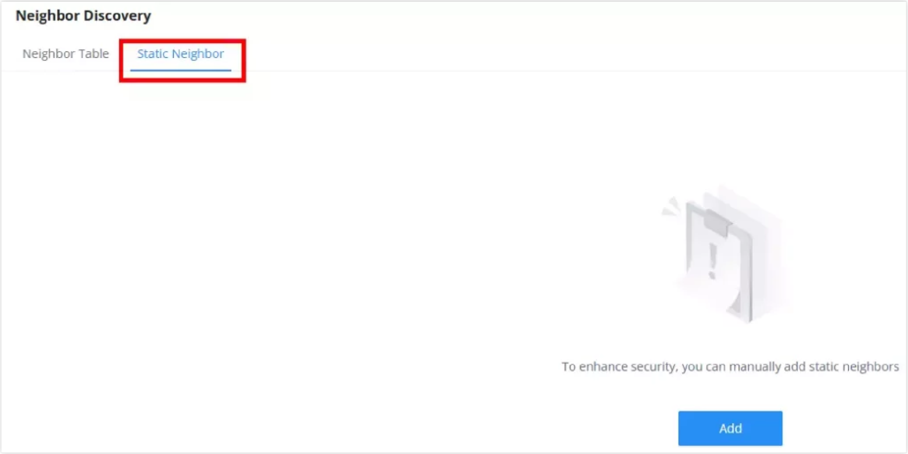
Note:

Aging time applies only to dynamic entries.

Click on the "**Refresh**" button to refresh the list for dynamic entries.

Static Neighbor

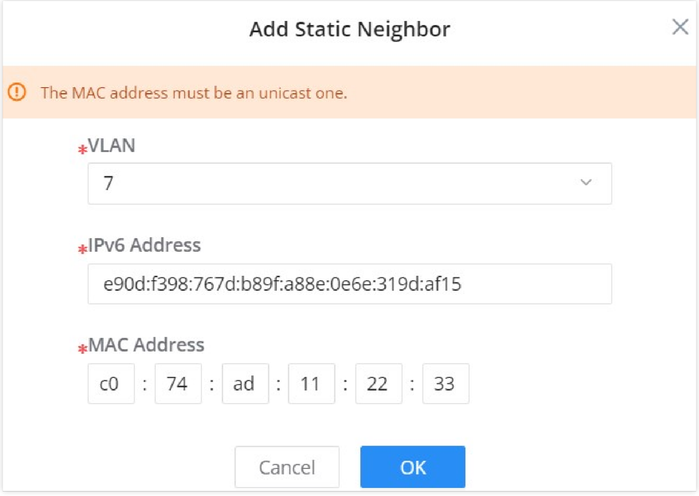
Click on the "**Add**" button to add a static entry, refer to the figure below:



Neighbor Discovery

To enhance security, you can manually add static neighbors

Add Static Neighbor



Add Static Neighbor

The MAC address must be an unicast one.

*VLAN: 7

*IPv6 Address: e90d:f398:767d:b89f:a88e:0e6e:319d:af15

*MAC Address: c0 : 74 : ad : 11 : 22 : 33

Add Static Neighbor

Select the VLAN from the drop-down list, then enter the unicast IPv6 address and MAC address then click on the "**OK**" button.

DNS

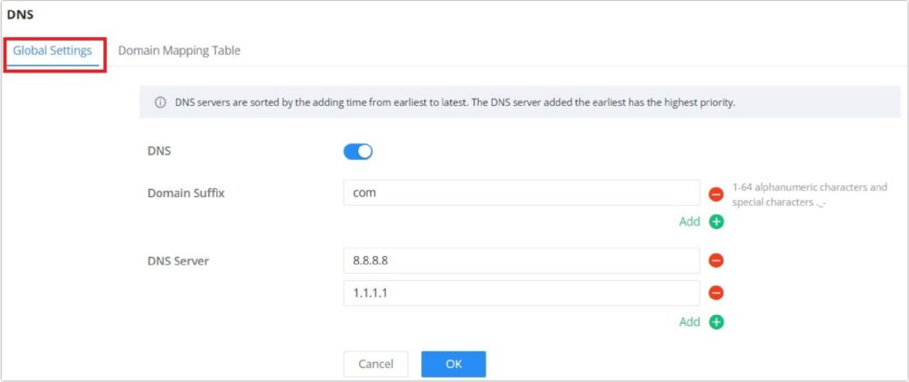
Domain Name System DNS provides translation services between domain names and IP addresses. GWN780x Pro Switches act as a DNS client. When users perform certain applications on the device (such as Telnet to a device or host), they can directly use a memorable and meaningful domain name, and resolve the domain name to the correct address through the domain name system.

DNS domain name resolution is divided into static domain name resolution and dynamic domain name resolution, which can be used together when parsing domain names. If the static domain name resolution is unsuccessful, then dynamic domain name resolution will be used, since dynamic domain name resolution may take a certain amount of time and requires the cooperation of the domain name server. Some commonly used domain names can be put into the static domain name resolution table, which can greatly improve the effect of domain name resolution.

Global Settings

On this page, the user can designate the switch as a DNS client to resolve DNS names to IP addresses through one or more configured DNS servers. It's enabled by default.

To configure DNS on GWN780x Pro switches, navigate to **Web UI → IP → DNS**, then click on the **Global Settings** tab.



ⓘ DNS servers are sorted by the adding time from earliest to latest. The DNS server added the earliest has the highest priority.

DNS: ●

Domain Suffix: com — 1-64 alphanumeric characters and special characters ._-

DNS Server: 8.8.8.8

1.1.1.1

DNS Global Settings

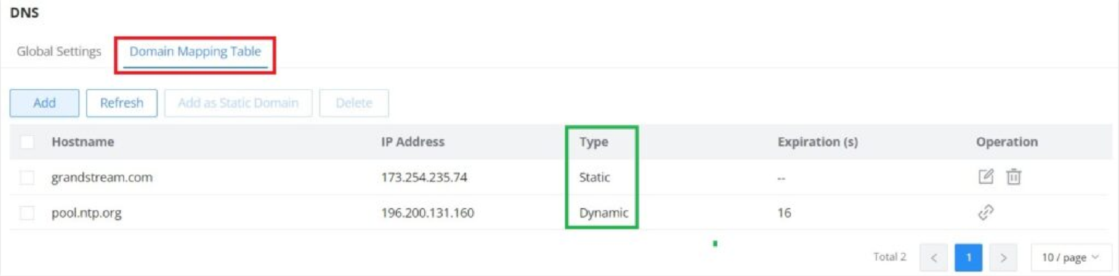
Up to 8 Domain Suffixes and 8 DNS Servers can be added. To add a Domain Suffix or DNS Server, click on the "+" icon, and to delete, click on the "**–**" icon.

Note:

DNS servers are sorted from far to near according to the time added, and the earliest added servers have the highest priority.

Domain Mapping Table

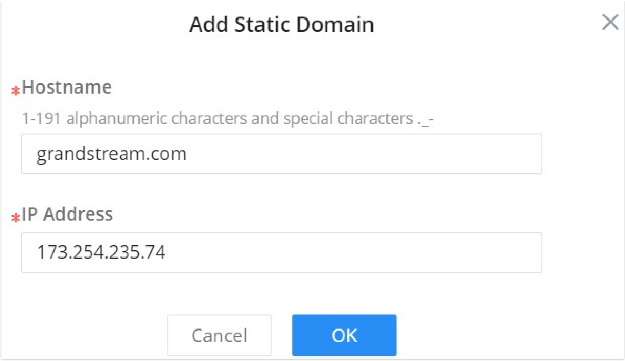
To add a static DNS or to view the Dynamic ones, click on the **Domain Mapping Table** tab.



Hostname	IP Address	Type	Expiration (s)	Operation
grandstream.com	173.254.235.74	Static	--	
pool.ntp.org	196.200.131.160	Dynamic	16	

DNS Domain Mapping Table

Click on "**Add**" button to add a new static DNS entry.



Add Static Domain

*Hostname

1-191 alphanumeric characters and special characters ._-

grandstream.com

*IP Address

173.254.235.74

Add Static Domain

Note:

Up to 32 static domain names can be added.

The user can also select the dynamic domains and then click on the “Add as a static domain” button or 🔗 icon to make them static ones.

MULTICAST

IP multicast is a technique for one-to-many communication over an IP infrastructure in a network. To avoid the incoming data broadcasting to all GE/LAG ports, multicast is useful to transfer the data/message to specified GE/LAG ports for IGMP snooping or MLD Snooping. When the Switch receives a message “subscribed” by the client, it must decide to transfer the data to the specified GE/LAG ports according to the location of the client (subscribed member).

IGMP Snooping

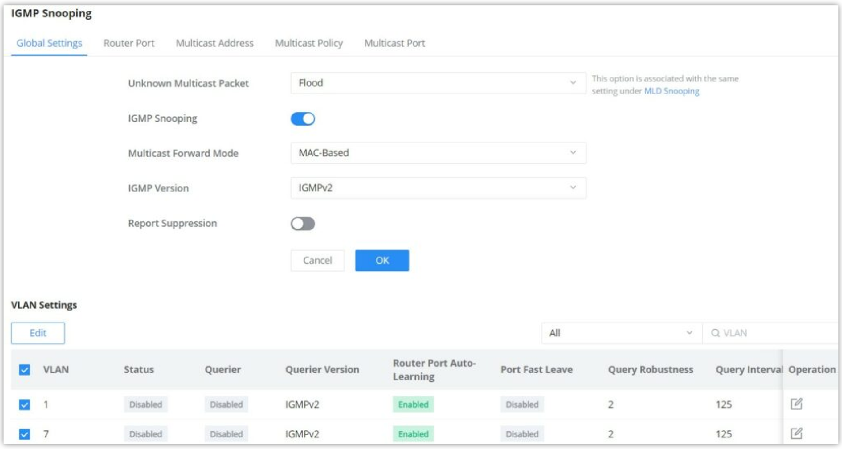
As an IPv4 Layer 2 multicast protocol, IGMP snooping is the process of listening to Internet Group Management Protocol (IGMP) network traffic. The feature allows a network switch to listen in on the IGMP conversation between hosts and routers. By listening to these conversations, the switch maintains a map of which links need which IP multicast streams. Multicasts may be filtered from the links that do not need them, and thus control which ports receive specific multicast traffic.

IGMP Snooping Global Settings

This page allows the user to enable/disable the IGMP Snooping function, select snooping version, and enable/disable snooping report suppression, also select the Multicast Forward Mode, and what to do with Unknown Multicast Packet.

Note:

Unknown Multicast Packet: This option is associated with the same one as MLD Snooping. Whatever option is selected here will be the same as MLD Snooping and vice versa.



IGMP Snooping

Unknown Multicast Packet: Flood

This option is associated with the same setting under MLD Snooping

IGMP Snooping: ●

Multicast Forward Mode: MAC-Based

IGMP Version: IGMPv2

Report Suppression: ○

VLAN Settings

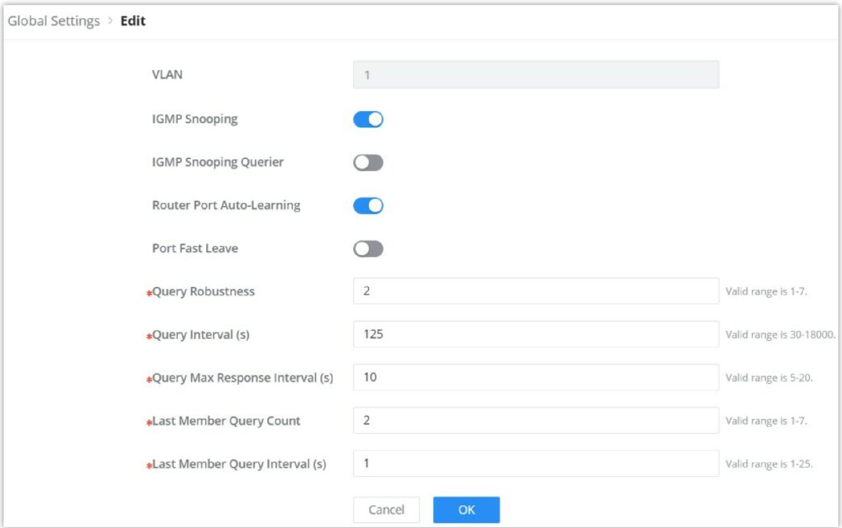
☑	VLAN	Status	Querier	Querier Version	Router Port Auto-Learning	Port Fast Leave	Query Robustness	Query Interval	Operation
☑	1	Disabled	Disabled	IGMPv2	Enabled	Disabled	2	125	✎
☑	7	Disabled	Disabled	IGMPv2	Enabled	Disabled	2	125	✎

IGMP Snooping Global Settings

Unknown Multicast Packet	Select an action for switch to handle with unknown multicast packet. ● **Drop:** Drop the unknown multicast data. ● **Flood:** Flood the unknown multicast data. ● **Forward to Router port:** Forward the unknown multicast data to router port.
IGMP Snooping	Enable or disable GlobaI IGMP Snooping
Multicast Forward Mode	Set the Multicast Forward Mode. ● **MAC-Based:** Forward using MAC address. ● **IP-Based**: Forward using IP address
IGMP Version	Select the IGMP Version.
Report Suppression	Enable or disable the switch to handle IGMP reports between router and host, suppressing bandwidth used by IGMP.

IGMP Snooping Global Settings

The user can also Enable/Disable IGMP Snooping and IGMP Snooping Querier per VLAN, and much more.



VLAN	1	
IGMP Snooping	●	
IGMP Snooping Querier	○	
Router Port Auto-Learning	●	
Port Fast Leave	○	
*Query Robustness	2	Valid range is 1-7.
*Query Interval (s)	125	Valid range is 30-18000.
*Query Max Response Interval (s)	10	Valid range is 5-20.
*Last Member Query Count	2	Valid range is 1-7.
*Last Member Query Interval (s)	1	Valid range is 1-25.

IGMP Snooping Edit VLAN

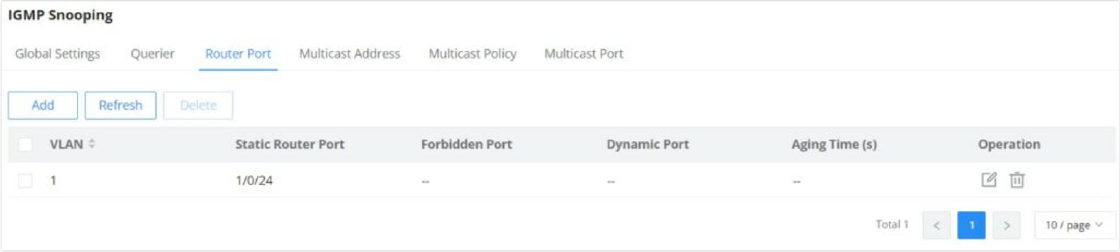
VLAN	Displays the selected VLAN
MLD Snooping	Click on the toggle button to enable MLD Snooping for the selected VLAN.
MLD Snooping Querier	Click the toggle button to enable the MLD Snooping Querier.
MLD Snooping Querier Version	Select from the drop-down list the MLD Snooping Querier Version.
Router Port Auto-Learning	Click on the toggle button to learn router port by MLD query.
Port Fast Leave	Select Enable/Disable Fast Leave feature for the desired port. ***Note:*** *If Fast Leave is enabled for a port, the switch will immediately remove this port from the multicast group upon receiving MLD leave messages.*

Query Robustness	Set a number which allows tuning for the expected packet loss on a subnet. *The valid range is 1-7*
Query Interval (s)	Set the interval of querier send general query.
Query Max Response Interval (s)	It specifies the maximum allowed time before sending a responding report. ***Note:*** *The valid range is 5-20 in seconds.*
Last Member Query Count	After quering for specified times and still not receiving any response from the subscribed member, GWN7806(P) series switches will stop transmitting data to the related GE port(s). ***Note:*** *The valid range is 1-7*
Last Member Query Interval (s)	Set The maximum time interval between counting each member query message with no responses from any subscribed member. ***Note:*** *The valid range is 1-25 in seconds*

IGMP Snooping Edit VLAN

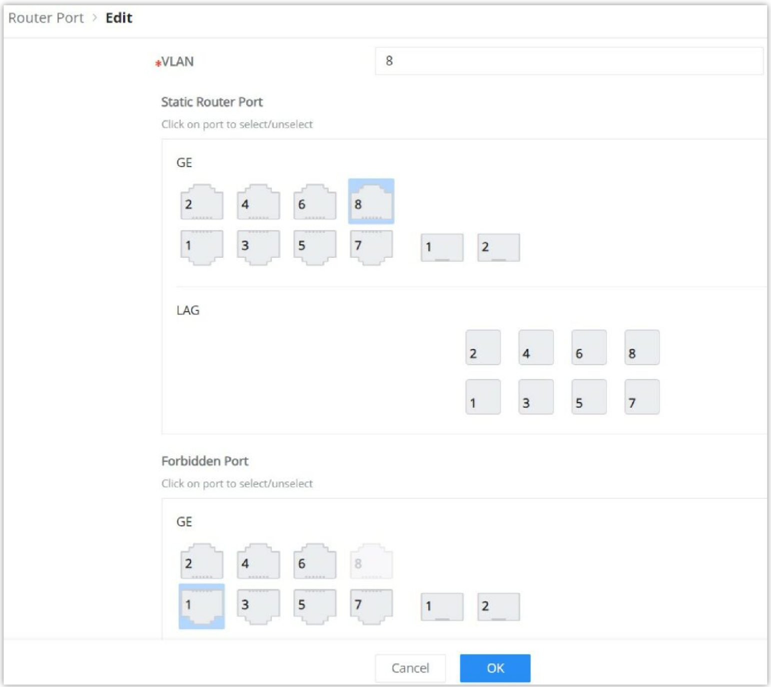
IGMP Snooping Router Port

This page shows the IGMP querier router known to this switch. Click on “Add” to add another one, or click on the “Edit” icon to modify an already created one.



VLAN	Static Router Port	Forbidden Port	Dynamic Port	Aging Time (s)	Operation
1	1/0/24	--	--	--	

IGMP Snooping Router Port


Router Port > **Edit**

*VLAN: 8

Static Router Port

Click on port to select/unselect

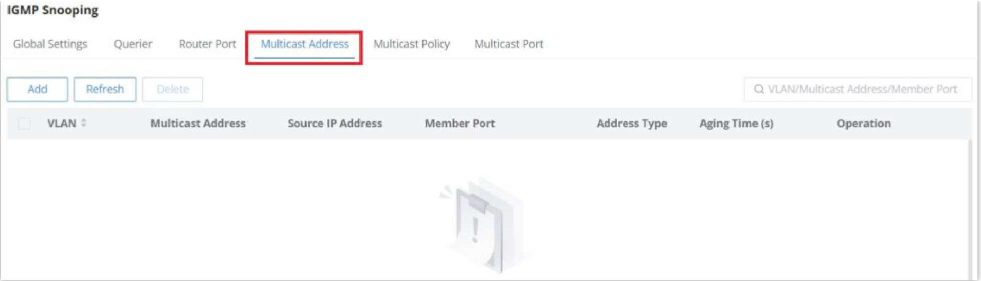
Forbidden Port

Click on port to select/unselect

IGMP Snooping Router Port add or edit

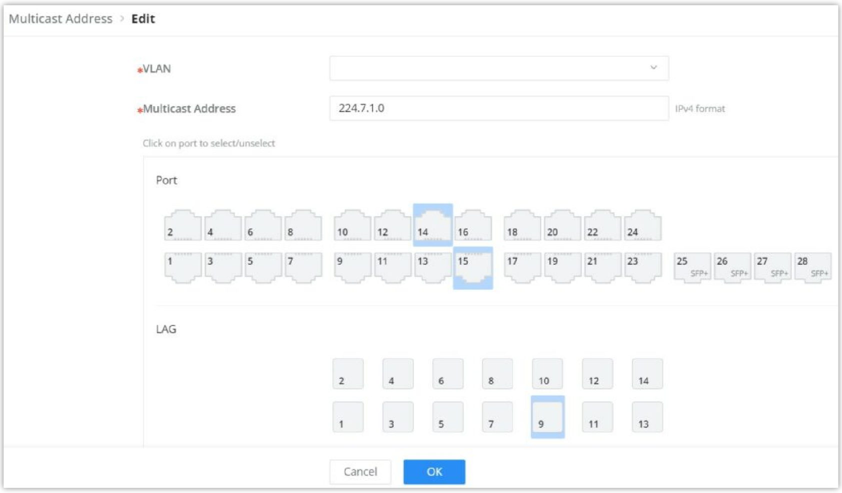
IGMP Snooping Multicast Address

Dynamic multicast addresses will be listed here, and the user can also add static multicast address entries based on VLAN by clicking on “Add” Add button or clicking “Edit” ✎ icon to edit.



VLAN	Multicast Address	Source IP Address	Member Port	Address Type	Aging Time (s)	Operation

IGMP Snooping Multicast Address page



*VLAN

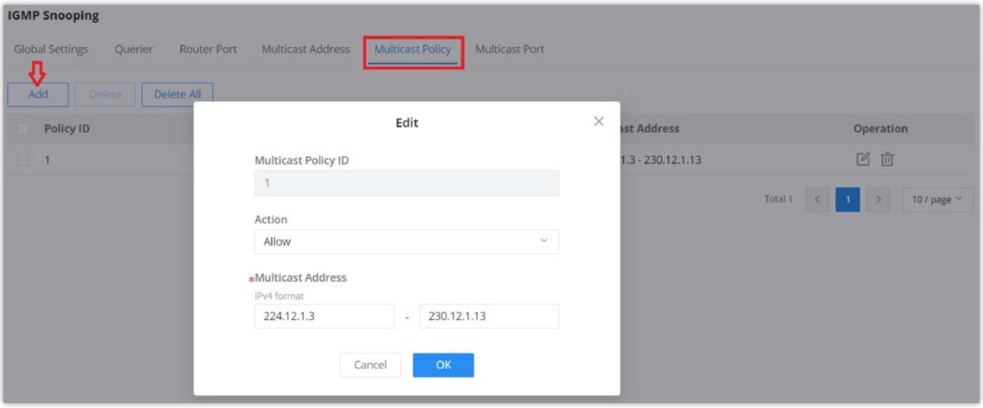
*Multicast Address: 224.7.1.0 IPv4 format

Click on port to select/unselect

Add IGMP Snooping Multicast Address

IGMP Snooping Multicast Policy

In this page, the user can add a Multicast Policy up to 128 Policy IDs to Allow or Reject a range of Multicast Addresses.



Multicast Policy ID: 1

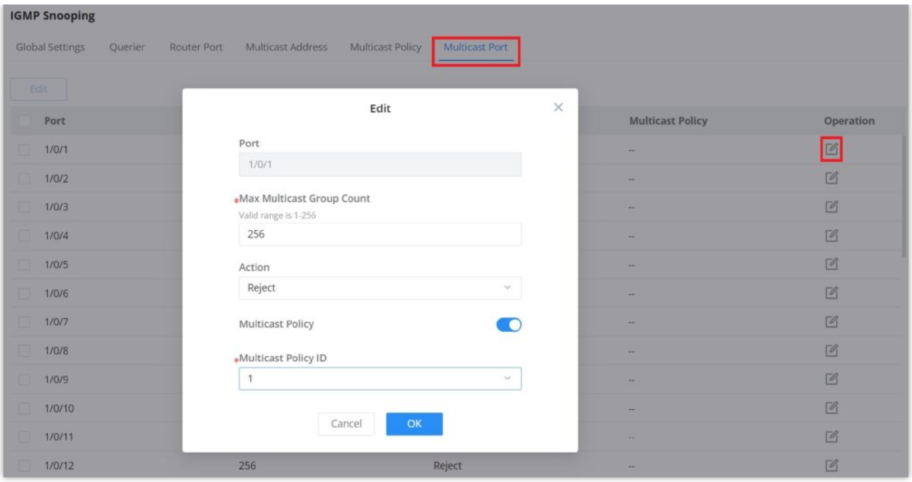
Action: Allow

*Multicast Address (IPv4 format): 224.12.1.3 - 230.12.1.13

IGMP Snooping Multicast Policy

IGMP Snooping Multicast Port

Once the Multicast Policy is created, the user is able to apply this policy to a port.



IGMP Snooping

Edit

Port: 1/0/1

*Max Multicast Group Count (Valid range is 1-256): 256

Action: Reject

Multicast Policy: enabled

*Multicast Policy ID: 1

Port			Multicast Policy	Operation
1/0/1			--	
1/0/2			--	
1/0/3			--	
1/0/4			--	
1/0/5			--	
1/0/6			--	
1/0/7			--	
1/0/8			--	
1/0/9			--	
1/0/10			--	
1/0/11			--	
1/0/12	256	Reject	--	

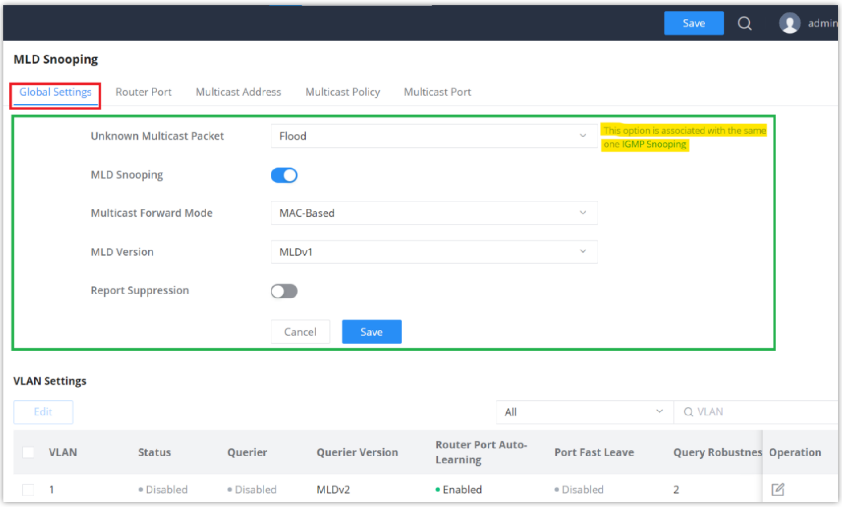
IGMP Snooping Multicast Port

MLD Snooping

MLD Snooping Global Settings

As an IPv6 Layer 2 multicast protocol, MLD Snooping maintains the outgoing port information of multicast packets by listening to the multicast protocol packets sent between Layer 3 multicast devices and user hosts, so as to manage and control multicast data. Forwarding of packets at the data link layer. When an MLD protocol packet transmitted between a host and an upstream Layer 3 device passes through a Layer 2 device, MLD Snooping analyzes the information carried in the packet, establishes and maintains a Layer 2 multicast forwarding table based on the information, and guides multicast data in the data stream.

The Global Settings page gives the user the ability to enable MLD Snooping as well as select Multicast Forward Mode, etc.



MLD Snooping

Unknown Multicast Packet: Flood

This option is associated with the same one IGMP Snooping

MLD Snooping: enabled

Multicast Forward Mode: MAC-Based

MLD Version: MLDv1

Report Suppression: disabled

VLAN Settings

VLAN	Status	Querier	Querier Version	Router Port Auto-Learning	Port Fast Leave	Query Robustnes	Operation
1	• Disabled	• Disabled	MLDv2	• Enabled	• Disabled	2	

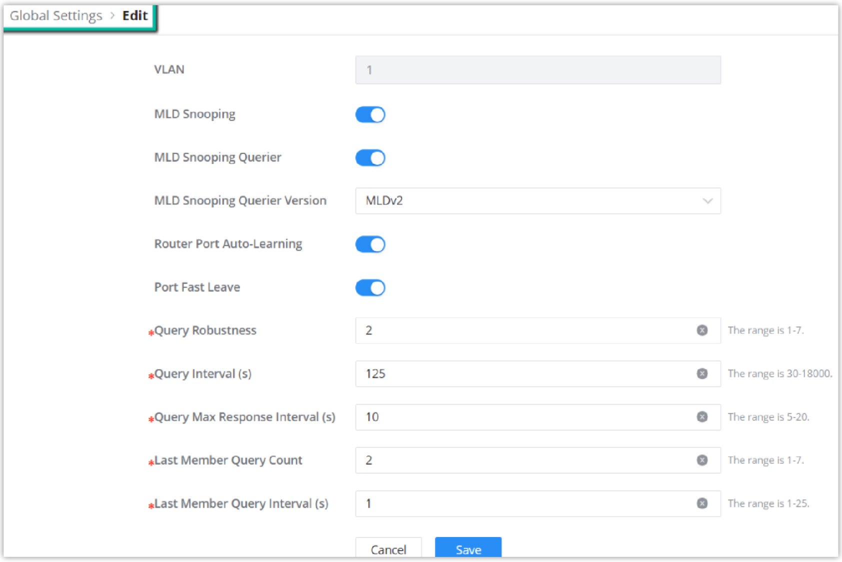
MLD Snooping Global Settings

Unknown Multicast Packet	Select an action for switch to handle with unknown multicast packet. ● **Drop:** Drop the unknown multicast data. ● **Flood:** Flood the unknown multicast data. ● **Forward to Router port:** Forward the unknown multicast data to router port. ***Note:*** *This option is associated with the same one IGMP Snooping.*
MLD Snooping	Enable or disable Global MLD Snooping

Multicast Forward Mode	Set the Multicast Forward Mode. ● **MAC-Based:** Forward using MAC address. ● **IP-Based**: Forward using IP address
MLD Version	Select the MLD Version.
Report Suppression	Enable or disable the switch to handle MLD reports between router and host, suppressing bandwidth used by MLD.

MLD Snooping Global Settings

Once Global MLD Snooping is enabled, the user can enable more settings per VLAN.



Global Settings > Edit

VLAN	1
MLD Snooping	●
MLD Snooping Querier	●
MLD Snooping Querier Version	MLDv2
Router Port Auto-Learning	●
Port Fast Leave	●
*Query Robustness	2 The range is 1-7.
*Query Interval (s)	125 The range is 30-18000.
*Query Max Response Interval (s)	10 The range is 5-20.
*Last Member Query Count	2 The range is 1-7.
*Last Member Query Interval (s)	1 The range is 1-25.

MLD Snooping Edit VLAN

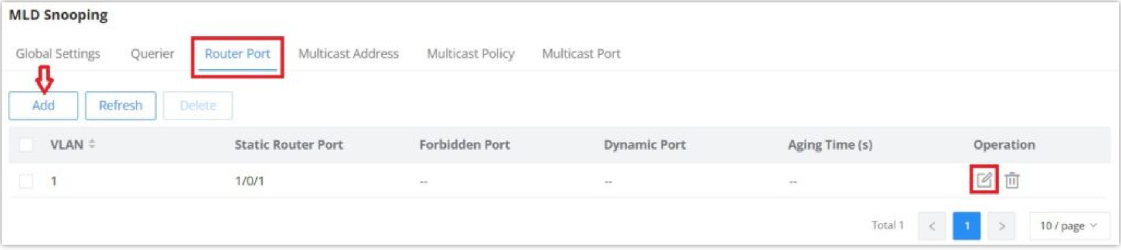
VLAN	Displays the selected VLAN
MLD Snooping	Click on the toggle button to enable MLD Snooping for the selected VLAN.
MLD Snooping Querier	Click the toggle button to enable the MLD Snooping Querier.
MLD Snooping Querier Version	Select from the drop-down list the MLD Snooping Querier Version.
Router Port Auto-Learning	Click on the toggle button to learn router port by MLD query.
Port Fast Leave	Select Enable/Disable Fast Leave feature for the desired port. ***Note:*** *If Fast Leave is enabled for a port, the switch will immediately remove this port from the multicast group upon receiving MLD leave messages.*
Query Robustness	Set a number which allows tuning for the expected packet loss on a subnet. *The valid range is 1-7*
Query Interval (s)	Set the interval of querier send general query.
Query Max Response Interval (s)	It specifies the maximum allowed time before sending a responding report. ***Note:*** *The valid range is 5-20 in seconds.*

Last Member Query Count	After quering for specified times and still not receiving any response from the subscribed member, the switch will stop transmitting data to the related GE port(s). ***Note:*** *The valid range is 1-7*
Last Member Query Interval (s)	Set The maximum time interval between counting each member query message with no responses from any subscribed member. ***Note:*** *The valid range is 1-25 in seconds*

MLD Snooping – Edit VLAN

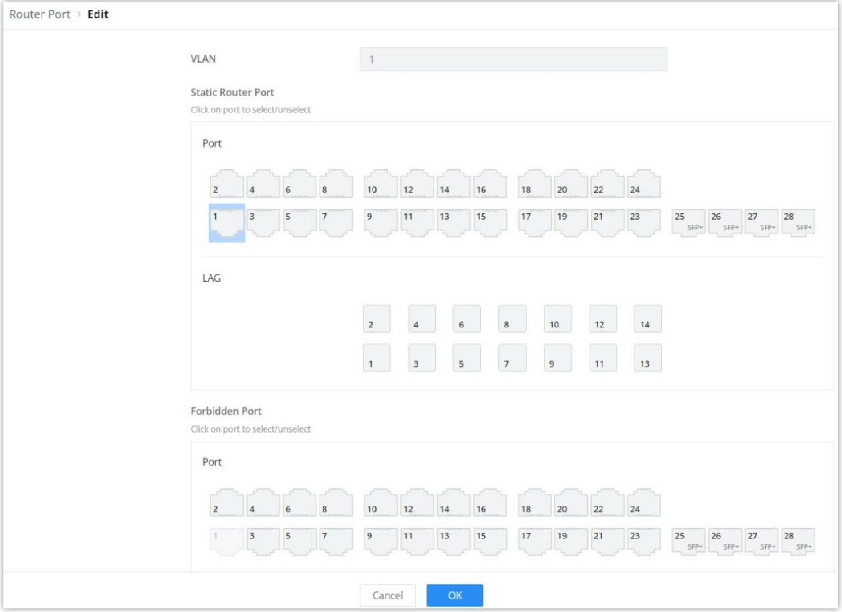
MLD Snooping Router Port

If the router port is statically configured, the Layer 2 device will also forward the MLD report and leave message to the static router port. If a static member port is configured, the interface will be added as the outgoing interface in the forwarding table. After a Layer 2 multicast forwarding table entry is established on a Layer 2 device, when the Layer 2 device receives a multicast data packet, it searches for the forwarding table according to the VLAN to which the packet belongs and the destination address of the packet (that is, the IPv6 multicast group address). Whether the item has the corresponding “outbound interface information”. If it exists, the packet is sent to all multicast group member ports; if it does not exist, the packet is discarded or broadcast in the VLAN.



VLAN	Static Router Port	Forbidden Port	Dynamic Port	Aging Time (s)	Operation
1	1/0/1	--	--	--	

MLD Snooping Router Port page

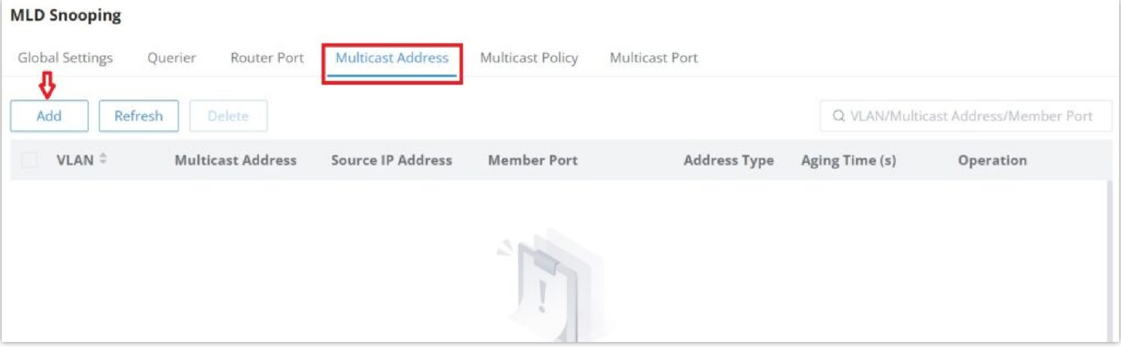

Router Port > Edit
Static Router Port
Click on port to select/unselect
Port
2 4 6 8 10 12 14 16 18 20 22 24
1 3 5 7 9 11 13 15 17 19 21 23 25 SFP+ 26 SFP+ 27 SFP+ 28 SFP+
LAG
2 4 6 8 10 12 14
1 3 5 7 9 11 13
Forbidden Port
Click on port to select/unselect
Port
2 4 6 8 10 12 14 16 18 20 22 24
1 3 5 7 9 11 13 15 17 19 21 23 25 SFP+ 26 SFP+ 27 SFP+ 28 SFP+
Cancel
OK

VLAN: 1

Add MLD Snooping Router Port

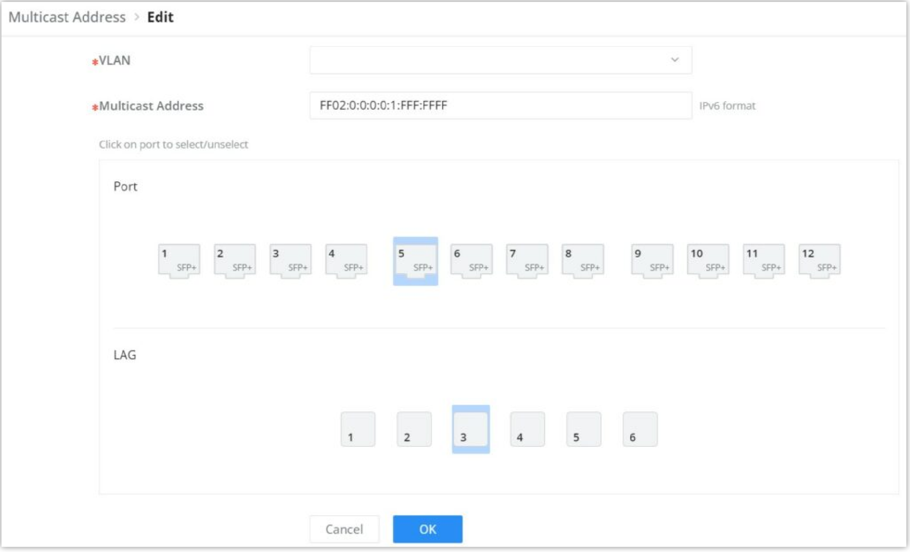
MLD Snooping Multicast Address

GWN780x Pro Switches also support adding static multicast addresses by specifying the VLAN and member port.



VLAN	Multicast Address	Source IP Address	Member Port	Address Type	Aging Time (s)	Operation

MLD Snooping Multicast Address page



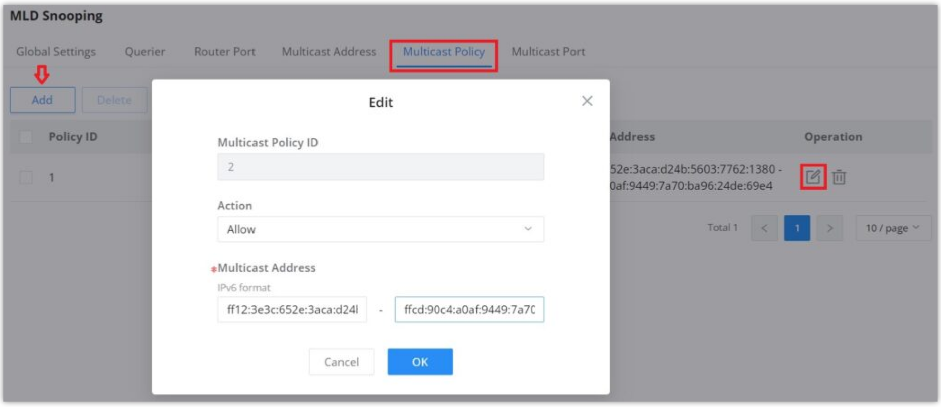
*VLAN:

*Multicast Address: FF02:0:0:0:0:1:FFF:FFFF (IPv6 format)

Add MLD Snooping Multicast Address

MLD Snooping Multicast Policy

Multicast Policy can be created in this page to allow or reject a range of IPv6 Multicast Addresses. Up to 128 policies can be created.



Policy ID	Address
1	52e:3aca:d24b:5603:7762:1380 - 0af:9449:7a70:ba96:24de:69e4

Multicast Policy ID: 2

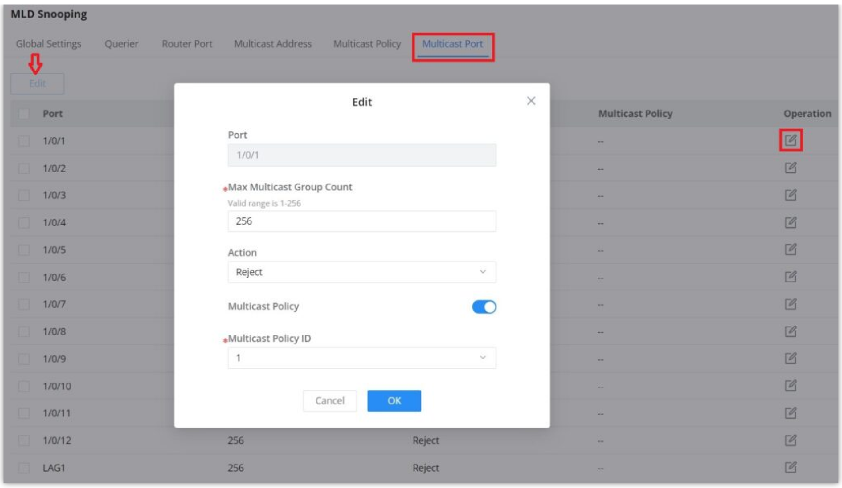
Action: Allow

*Multicast Address (IPv6 format): ff12:3e3c:652e:3aca:d24l - ffcd:90c4:a0af:9449:7a7C

MLD Snooping Multicast Policy

MLD Snooping Multicast Port

The multicast policy can be applied to the Gigabit Ethernet/LAG port. The user can also set the maximum number of multicast groups that the port is allowed to join and set the action when the port multicast exceeds the limit; the default is rejected.



Edit

Port: 1/0/1

*Max Multicast Group Count (Valid range is 1-256): 256

Action: Reject

Multicast Policy: On

*Multicast Policy ID: 1

Port			Multicast Policy
1/0/1			--
1/0/2			--
1/0/3			--
1/0/4			--
1/0/5			--
1/0/6			--
1/0/7			--
1/0/8			--
1/0/9			--
1/0/10			--
1/0/11			--
1/0/12	256	Reject	--
LAG1	256	Reject	--

MLD Snooping Multicast Port

ROUTING

Routing is a process in which the router selects the optimal path according to the destination address of the received data packet and forwards it to the next network node leading to the target network, and the last routing node under this path forwards the data to the target host. (Router refers to both a router in the traditional sense and an Ethernet switch running a routing protocol).

GWN780x Pro supports IPv4 and IPv6 static routing.

Routing Table

The Routing Table page displays the routes used by the switch to forward packets between networks or VLANs. Routing enables the switch to function as a Layer 3 device, allowing it to make packet forwarding decisions based on destination IP addresses.

GWN780x Pro switches support both **IPv4** and **IPv6** static routing. This section includes options for viewing current routes and configuring the **Forwarding Mode**.

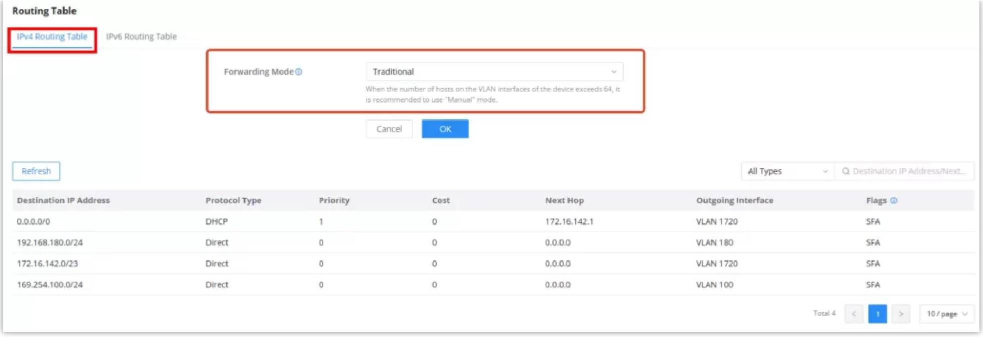
Forwarding Mode
Choose between **Traditional** and **Manual**.

- **Traditional** → automatic ARP/neighbor learning for routing between VLANs.
- **Manual** → disables that automation; forwarding depends only on static routes and static ARP entries.

Notes:

- *If the number of hosts on VLAN interfaces exceeds **64** (as with models like GWN7801P Pro, GWN7802P Pro, or GWN7803PL/PH Pro), it is recommended to use **Manual mode** to ensure proper routing behavior and compatibility with **Strict ARP Learning**.*
- *When **Strict ARP Learning** is enabled under **Web UI → IP → ARP Table**, the **Forwarding Mode** should be manually set here to ensure stable communication and avoid exceeding ARP limits.*

To view and manage routes:
Go to **Web UI → Routing → Routing Table**.



Routing Table

Forwarding Mode: Traditional

When the number of hosts on the VLAN interfaces of the device exceeds 64, it is recommended to use "Manual" mode.

Destination IP Address	Protocol Type	Priority	Cost	Next Hop	Outgoing Interface	Flags
0.0.0.0/0	DHCP	1	0	172.16.142.1	VLAN 1720	SFA
192.168.180.0/24	Direct	0	0	0.0.0.0	VLAN 180	SFA
172.16.142.0/23	Direct	0	0	0.0.0.0	VLAN 1720	SFA
169.254.100.0/24	Direct	0	0	0.0.0.0	VLAN 100	SFA

Routing Table

IPv4 Routing Table

In the **IPv4 Routing Table** tab, users can view and manage all IPv4 routing entries. Each entry defines how packets should be forwarded based on their destination IP address and subnet mask.

The table displays the following details for each entry:

- **Destination IP Address**
- **Protocol Type** (Static, DHCP, or Direct)
- **Priority**
- **Cost**
- **Next Hop**
- **Outgoing Interface**
- **Flags**

Forwarding Mode

The **Forwarding Mode** option defines how the switch handles routing and neighbor table behavior.

- **Traditional:** Direct routes and neighbor tables take effect normally.
- **Manual:** Direct routes become invalid, and only static entries in the neighbor table are used.

Tip: *When the number of hosts on VLAN interfaces exceeds 64, it is recommended to use Manual mode for improved stability and performance.*

IPv6 Routing Table

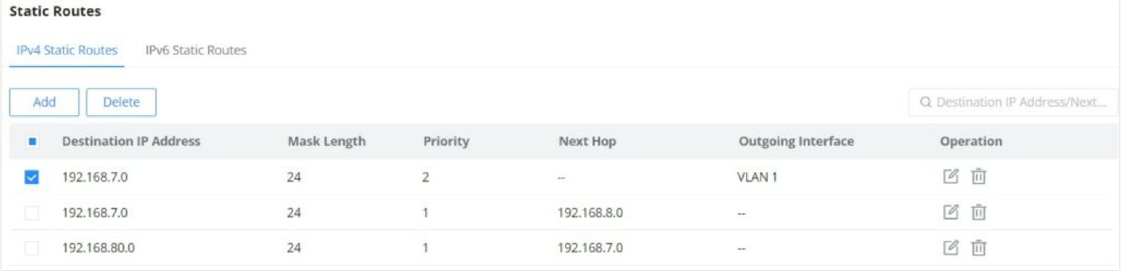
The **IPv6 Routing Table** tab allows configuration and monitoring of IPv6 routes. It provides the same functional options as the IPv4 table but applies to IPv6 addressing and neighbor discovery mechanisms.

Static Routes

The static route is a special route that requires manual configuration by an administrator. Static routes have different purposes in different network environments:

- When the network structure is relatively simple, the network can work normally only by configuring static routes.
- In complex network environments, configuring static routes can improve network performance and ensure bandwidth for important applications; however, when the network fails or the topology changes, the static routes are not automatically updated and must be reconfigured manually.

To add a static route, please navigate to the **Web UI → Routing → Static Routes** page.



Static Routes

IPv4 Static Routes | IPv6 Static Routes

Add | Delete

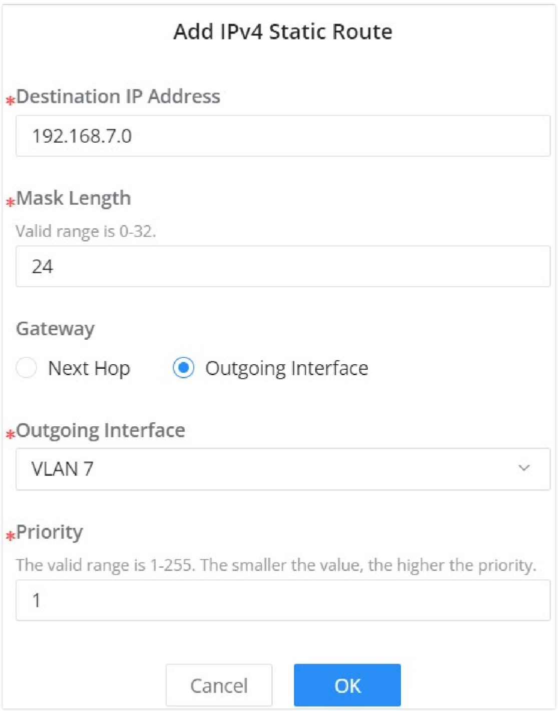
Destination IP Address/Next...

■	Destination IP Address	Mask Length	Priority	Next Hop	Outgoing Interface	Operation
☑	192.168.7.0	24	2	--	VLAN 1	
□	192.168.7.0	24	1	192.168.8.0	--	
□	192.168.80.0	24	1	192.168.7.0	--	

Static Routes

Click on the “Add” button to add a new static route. Then fill in the Destination IP Address with the mask length, then select the next hop or the outgoing interface (VLAN) with specifying the priority.

Please refer to the figure below:



Add IPv4 Static Route

*Destination IP Address
192.168.7.0

*Mask Length
Valid range is 0-32.
24

Gateway
○ Next Hop ● Outgoing Interface

*Outgoing Interface
VLAN 7

*Priority
The valid range is 1-255. The smaller the value, the higher the priority.
1

Cancel | OK

Add a static route

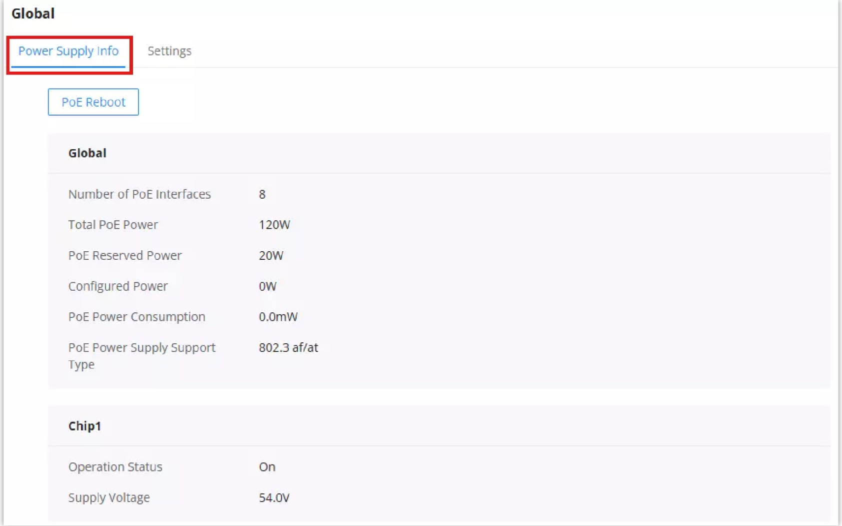
POE

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.

Global

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



Global

Number of PoE Interfaces	8
Total PoE Power	120W
PoE Reserved Power	20W
Configured Power	0W
PoE Power Consumption	0.0mW
PoE Power Supply Support Type	802.3 af/at

Chip1

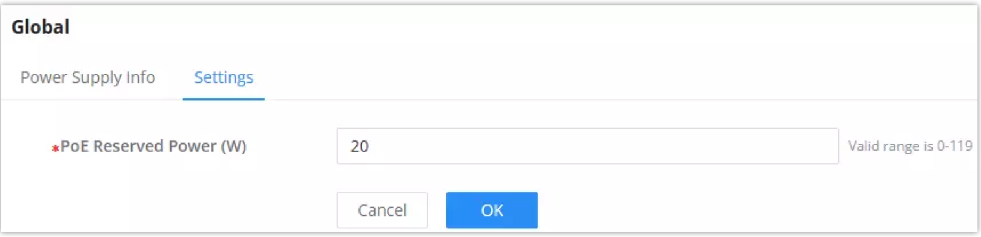
Operation Status	On
Supply Voltage	54.0V

PoE Global → Power Supply Info

Click on the "**PoE Reboot**" button to soft-restart the PoE module function.

PoE Reserved power

PoE Reserved power(W): specify the total reserved power of the PoE power supply; the default is 20 W.



*PoE Reserved Power (W): 20 Valid range is 0-119

PoE Global Settings

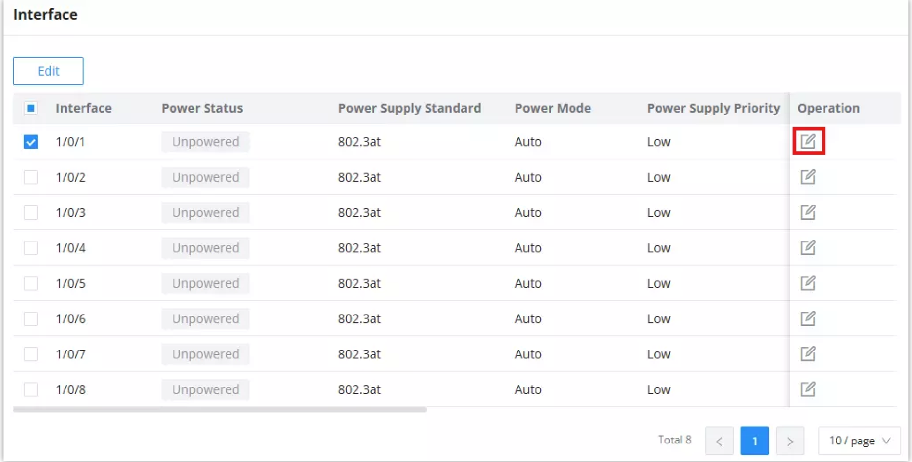
Application scenarios:

The device will dynamically allocate power to each interface according to the power consumed by each interface. During the running process of each PD device, its power consumption will continue to change, and the system will periodically calculate the total power required by all currently connected PDs. Whether the upper limit of the available PoE power is exceeded, if it exceeds, the system will automatically power off the PD device on the interface with lower priority to ensure the normal operation of other devices. However, sometimes there will be a sudden surge in power consumption, the remaining available power of the system cannot support this surge in demand, and the system has not yet had time to calculate the total power consumption exceeding the limit, to disconnect the power supply of the interface with lower priority. When the PoE power supply is overloaded, the overload protection will be powered off, and all PD devices will be powered off. Use the PoE power-reserved command to reasonably set the reserved power of the system. In the event of a sudden surge in power demand, the reserve power of the system can support the sudden demand and ensure that the system has time to power off the devices on the interfaces with low priority. method to ensure the stable operation of other equipment.

Interface PoE configuration

Select the switch interface that supports the PoE power supply to be configured. Multiple choices are possible.

Click on the "**Edit**" button or icon to change the configuration per port, including Power Supply Standard, Power Mode, Power Limit Mode, and Power Supply Priority.



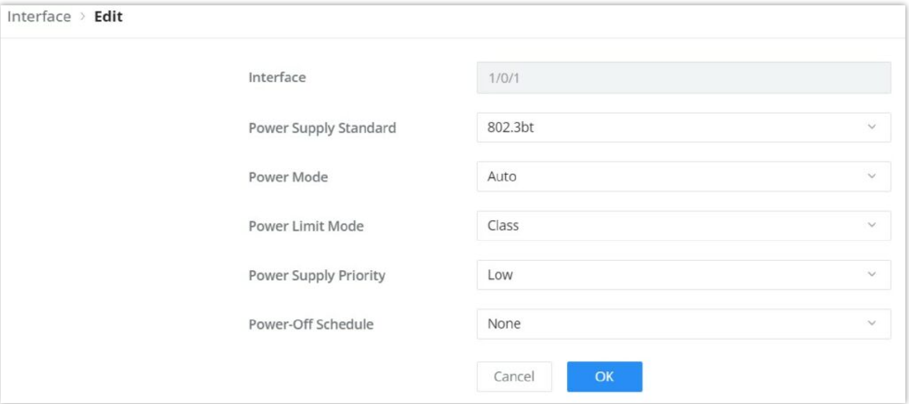
Interface

Edit

■	Interface	Power Status	Power Supply Standard	Power Mode	Power Supply Priority	Operation
☑	1/0/1	Unpowered	802.3at	Auto	Low	✎
□	1/0/2	Unpowered	802.3at	Auto	Low	✎
□	1/0/3	Unpowered	802.3at	Auto	Low	✎
□	1/0/4	Unpowered	802.3at	Auto	Low	✎
□	1/0/5	Unpowered	802.3at	Auto	Low	✎
□	1/0/6	Unpowered	802.3at	Auto	Low	✎
□	1/0/7	Unpowered	802.3at	Auto	Low	✎
□	1/0/8	Unpowered	802.3at	Auto	Low	✎

Total 8 < 1 > 10 / page

PoE Interface page



Interface > Edit

Interface	1/0/1
Power Supply Standard	802.3bt
Power Mode	Auto
Power Limit Mode	Class
Power Supply Priority	Low
Power-Off Schedule	None

Cancel OK

PoE Interface edit port

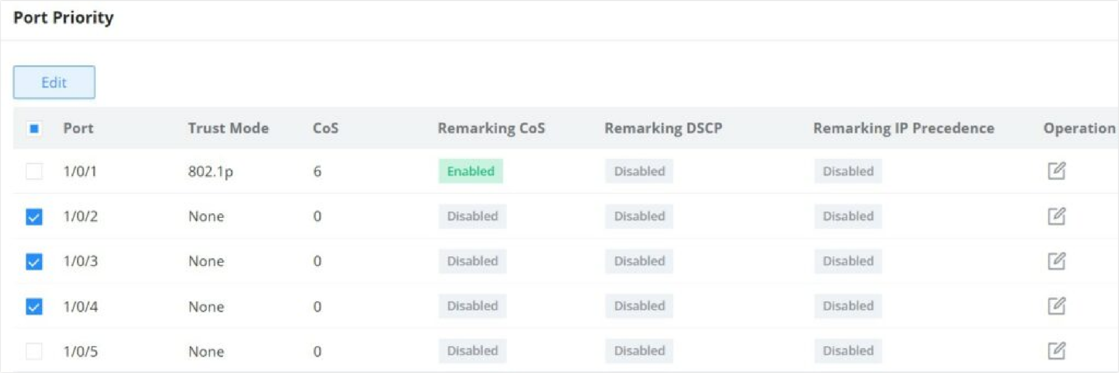
QoS

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 a " Guaranteed " policy that governs 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.

Port Priority

On this page, the user can enable/disable port priority for each interface (port/LAG), supported modes are (CoS, DSCP, CoS-DSCP, or IP-Precedence).

Please navigate to **Web UI → QoS → Port Priority** page.



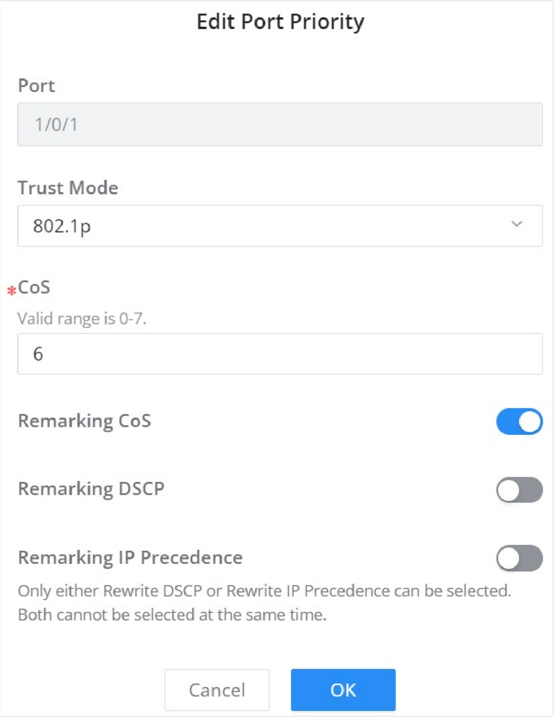
Port Priority

Edit

■	Port	Trust Mode	CoS	Remarking CoS	Remarking DSCP	Remarking IP Precedence	Operation
□	1/0/1	802.1p	6	Enabled	Disabled	Disabled	✎
☑	1/0/2	None	0	Disabled	Disabled	Disabled	✎
☑	1/0/3	None	0	Disabled	Disabled	Disabled	✎
☑	1/0/4	None	0	Disabled	Disabled	Disabled	✎
□	1/0/5	None	0	Disabled	Disabled	Disabled	✎

QoS Port Priority

Then the user can click on the “**Edit**” button for further configuration per Port/LAG.



Edit Port Priority

Port

1/0/1

Trust Mode

802.1p

*CoS

Valid range is 0-7.

6

Remarking CoS

Remarking DSCP

Remarking IP Precedence

Only either Rewrite DSCP or Rewrite IP Precedence can be selected. Both cannot be selected at the same time.

Edit Port Priority

Port	Displays the selected port GE/LAG.
Trust Mode	Select the QoS operation mode: ● **None:** no packet priority is trusted, and the interface default priority is used. ● **CoS:** Traffic is mapped to queues based on the CoS Queue Mapping, it can configured in QoS → Priority Mapping → CoS Mappging page. ● **DSCP:** All IP traffic is mapped to queues based on the DSCP field in the IP header. If the traffic is not IP traffic, it is mapped to the lowest priority queue. ● **CoS-DSCP:** All IP traffic is mapped to queues based on the DSCP field in the IP header. If the traffic is not IP traffic but has VLAN tag, mapped to queues based on the CoS value in the VLAN tag. it can configured in **QoS** → **Priority Mapping** → **DSCP Mapping** page. ● **IP-Precedence:** The IP precedence is a 3-bit field in TOS that threats high priority packets as more important than other packets. it can configured in **QoS** → **Priority Mapping** → **IP Mapping** page.
CoS	Set the CoS value of the interface, the value range is an integer from 0 to 7 (7 is the highest priority), *the default is 0.*
Remarking CoS	Set whether to enable Remarking CoS function of outgoing packets, *which is disabled by default.*
Remarking DSCP	Set whether to enable Remarking DSCP function of outgoing packets, *and it is disabled by default.*
Re-marking IP Precedence	Set whether to enable Remarking IP Precedence function of outgoing packets, *and it is disabled by default.* ***Note** : Only one of DSCP and IP Precedence re-marking can be enabled.*

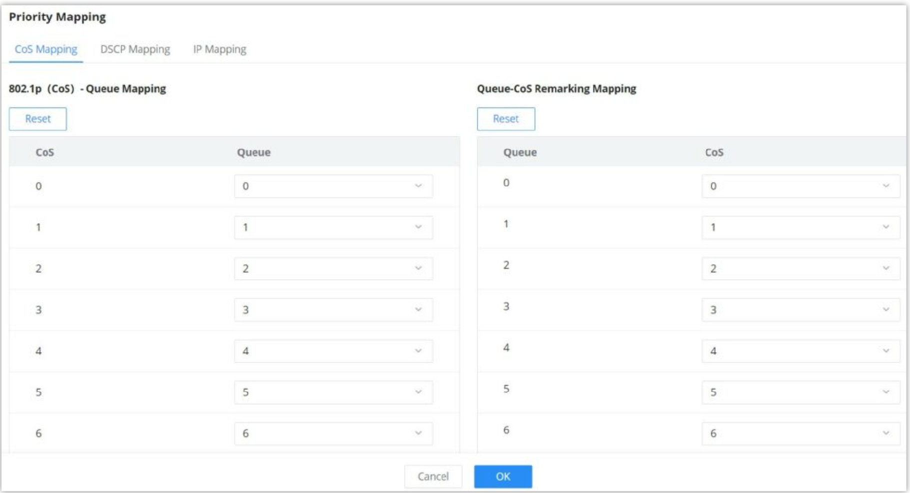
QoS Port Priority

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.

- **CoS Mapping**

Shows the mapping relationship between queues and CoS remarking priorities.



Priority Mapping

802.1p（CoS）- Queue Mapping

CoS	Queue
0	0
1	1
2	2
3	3
4	4
5	5
6	6

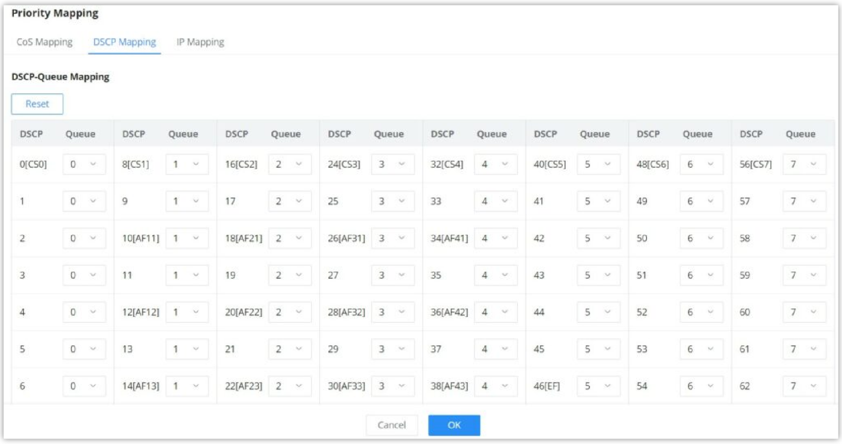
Queue-CoS Remarking Mapping

Queue	CoS
0	0
1	1
2	2
3	3
4	4
5	5
6	6

CoS Mapping

- **DSCP Mapping**

Shows the mapping relationship between DSCP values and queue priorities.



Priority Mapping

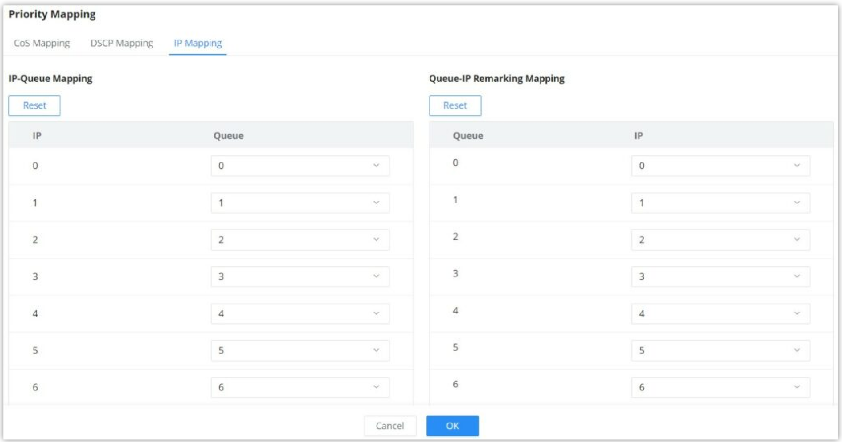
DSCP-Queue Mapping

DSCP	Queue	DSCP	Queue	DSCP	Queue	DSCP	Queue	DSCP	Queue	DSCP	Queue	DSCP	Queue	DSCP	Queue
0[CS0]	0	8[CS1]	1	16[CS2]	2	24[CS3]	3	32[CS4]	4	40[CS5]	5	48[CS6]	6	56[CS7]	7
1	0	9	1	17	2	25	3	33	4	41	5	49	6	57	7
2	0	10[AF11]	1	18[AF21]	2	26[AF31]	3	34[AF41]	4	42	5	50	6	58	7
3	0	11	1	19	2	27	3	35	4	43	5	51	6	59	7
4	0	12[AF12]	1	20[AF22]	2	28[AF32]	3	36[AF42]	4	44	5	52	6	60	7
5	0	13	1	21	2	29	3	37	4	45	5	53	6	61	7
6	0	14[AF13]	1	22[AF23]	2	30[AF33]	3	38[AF43]	4	46[EF]	5	54	6	62	7

DSCP Mapping

- **IP Mapping**

Shows the mapping relationship between IP priority and queue.



Priority Mapping

IP-Queue Mapping

IP	Queue
0	0
1	1
2	2
3	3
4	4
5	5
6	6

Queue-IP Remarking Mapping

Queue	IP
0	0
1	1
2	2
3	3
4	4
5	5
6	6

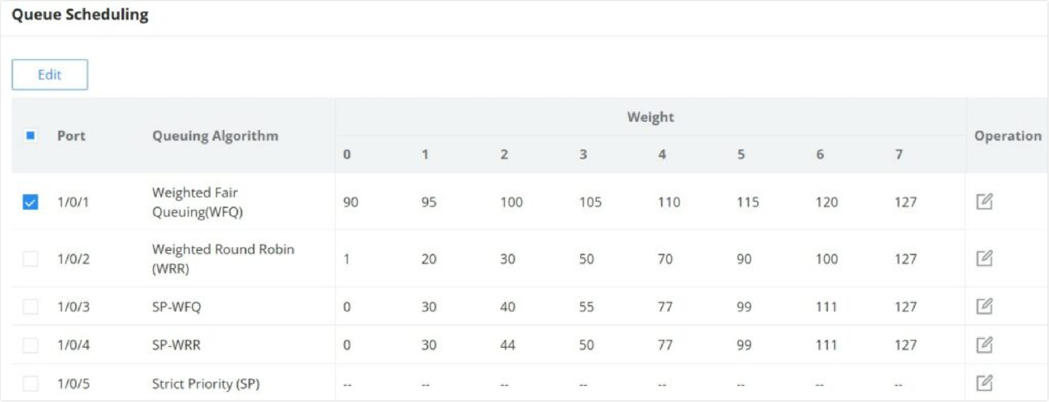
IP Mapping

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.

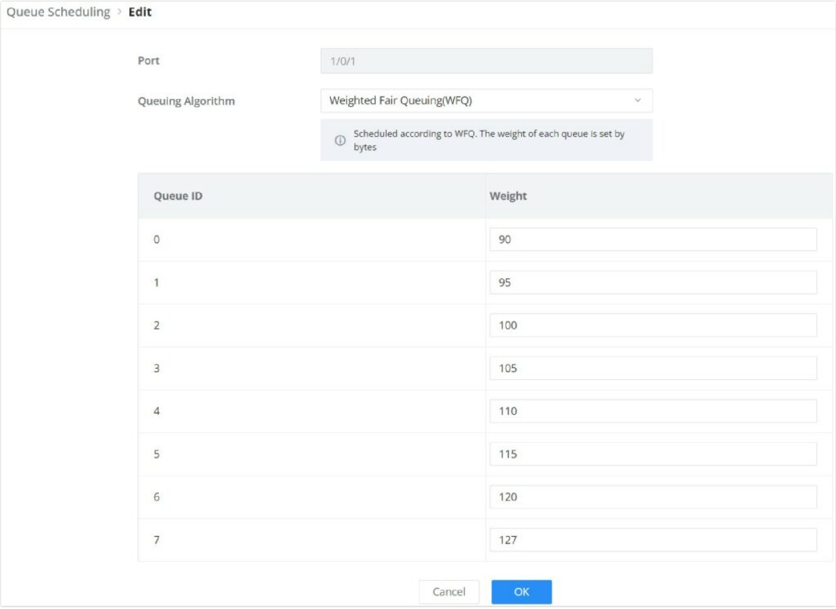
- **Strict priority (SP, Strict Priority) scheduling:** The flow with the highest priority is served first, and the flow with the second highest priority is served until there is no flow at that priority. Each interface of the switch supports 8 queues (queues 0-7), queue 7 is the highest priority queue, 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 Round Robin (WRR, Weighted Round Robin) scheduling**: each priority queue is allocated a certain bandwidth, and provides services for each priority queue according to the priority from high to low. When the high-priority queue has used up all the allocated bandwidth, it is automatically switched to the next priority queue to serve it.
- **Weighted Fair Queuing (WFQ)**: 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.
- **SP-WRR:** the switch schedules packets in the SP scheduling group preferentially, and when the SP scheduling group is empty, schedules the packets in the WRR scheduling group. Queues in the SP scheduling group are scheduled with the SP queue scheduling algorithm. Queues in the WRR scheduling group are scheduled with WRR.
- **SP-WFQ**: the switch schedules packets of queues in the WFQ group based on their minimum guaranteed bandwidth settings, then uses SP queuing to schedule the queues in the SP scheduling group, then uses WFQ to schedule the queues in the WFQ scheduling group in a round robin fashion according to their weights.



Queue Scheduling

■	Port	Queuing Algorithm	Weight								Operation
			0	1	2	3	4	5	6	7	
☑	1/0/1	Weighted Fair Queuing(WFQ)	90	95	100	105	110	115	120	127	✎
□	1/0/2	Weighted Round Robin (WRR)	1	20	30	50	70	90	100	127	✎
□	1/0/3	SP-WFQ	0	30	40	55	77	99	111	127	✎
□	1/0/4	SP-WRR	0	30	44	50	77	99	111	127	✎
□	1/0/5	Strict Priority (SP)	--	--	--	--	--	--	--	--	✎

Queue Scheduling



Queue Scheduling > **Edit**

Port: 1/0/1

Queuing Algorithm: Weighted Fair Queuing(WFQ)

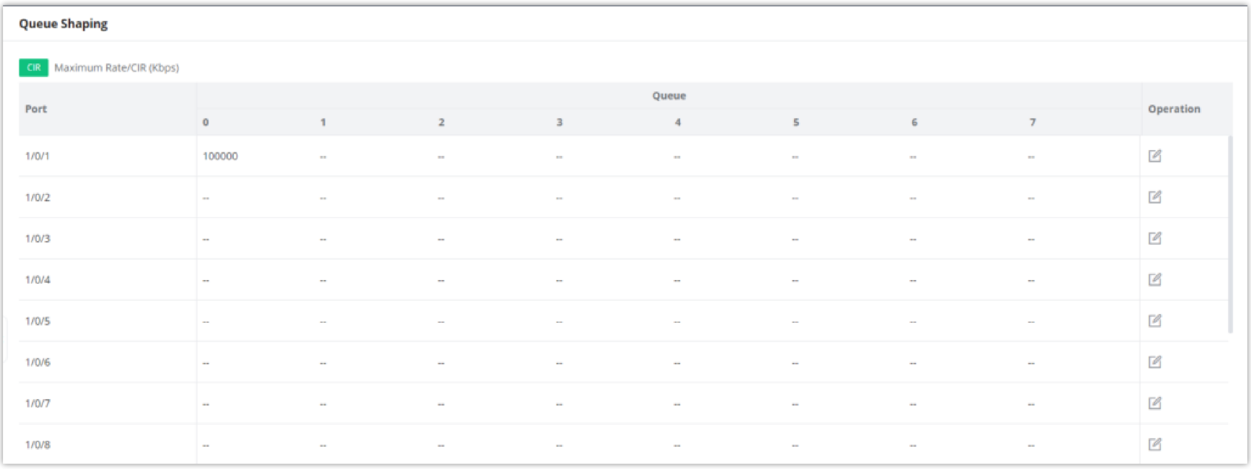
ⓘ Scheduled according to WFQ. The weight of each queue is set by bytes

Queue ID	Weight
0	90
1	95
2	100
3	105
4	110
5	115
6	120
7	127

Queue Scheduling Edit port

Queue Shaping

When the packet sending rate is higher than the receiving rate, or the interface rate of the downstream device is lower than the interface rate of the upstream device, network congestion may occur. If the size of the service traffic sent by users is not limited, the continuous burst of service data from a large number of users will make the network more congested. To make the limited network resources serve users more effectively, it is necessary to restrict the service flow of users.



Queue Shaping

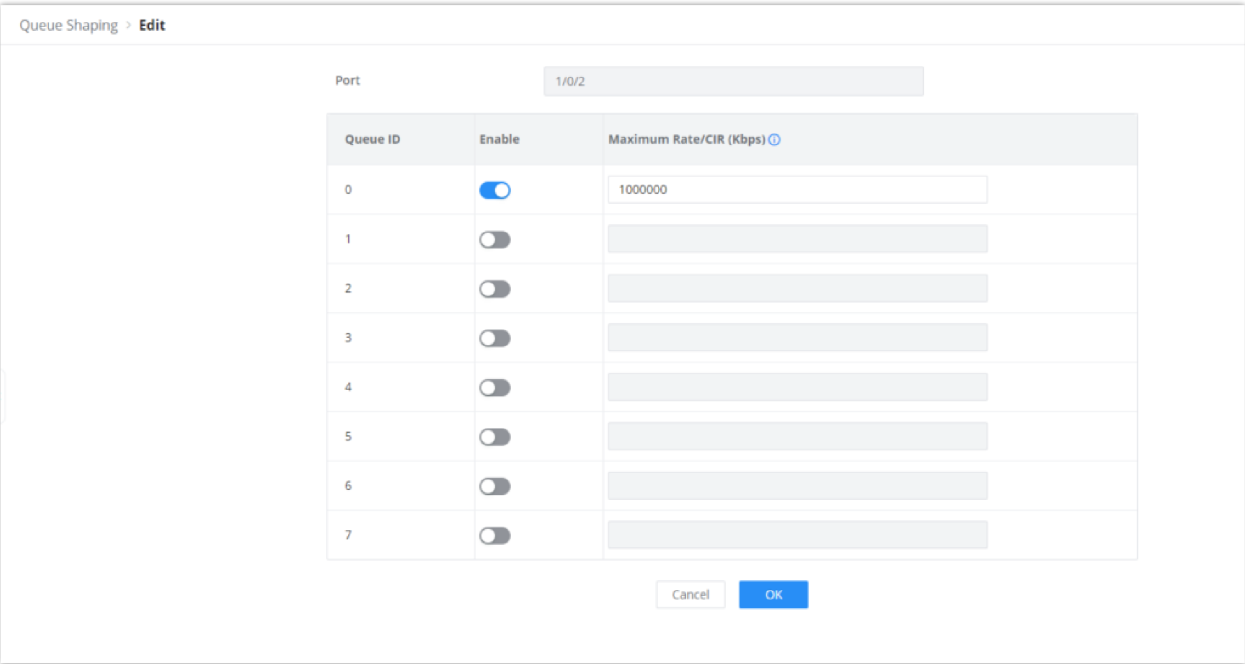
CIR Maximum Rate/CIR (Kbps)

Port	Queue								Operation
	0	1	2	3	4	5	6	7	
1/0/1	100000	--	--	--	--	--	--	--	📝
1/0/2	--	--	--	--	--	--	--	--	📝
1/0/3	--	--	--	--	--	--	--	--	📝
1/0/4	--	--	--	--	--	--	--	--	📝
1/0/5	--	--	--	--	--	--	--	--	📝
1/0/6	--	--	--	--	--	--	--	--	📝
1/0/7	--	--	--	--	--	--	--	--	📝
1/0/8	--	--	--	--	--	--	--	--	📝

Queue Shaping

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

Maximum Rate/CIR (Kbps): Configures the maximum rate of shaping. The value must be an integer between 16-1000000 Kbps and must be multiple of 16. By default, it's the port rate.



Queue Shaping > Edit

Port: 1/0/2

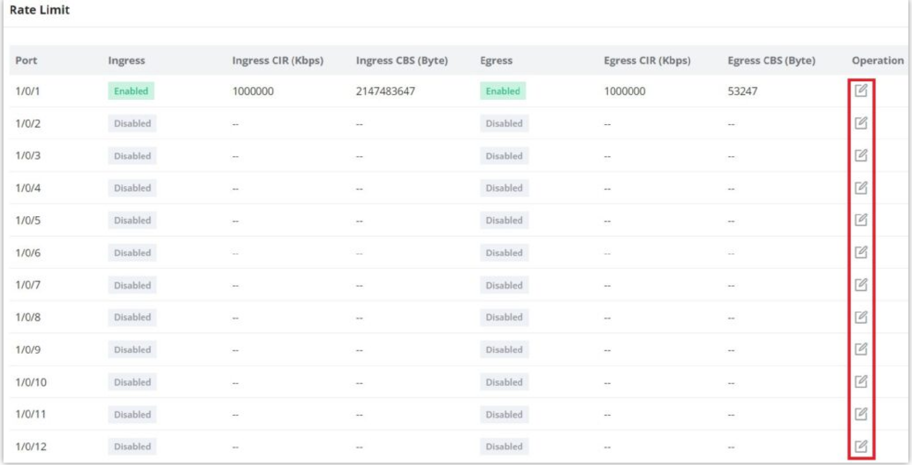
Queue ID	Enable	Maximum Rate/CIR (Kbps) ⓘ
0	●	1000000
1	○	
2	○	
3	○	
4	○	
5	○	
6	○	
7	○	

Configuration of Maximum Rate

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 **Web UI → QoS → Rate Limit**.



Rate Limit

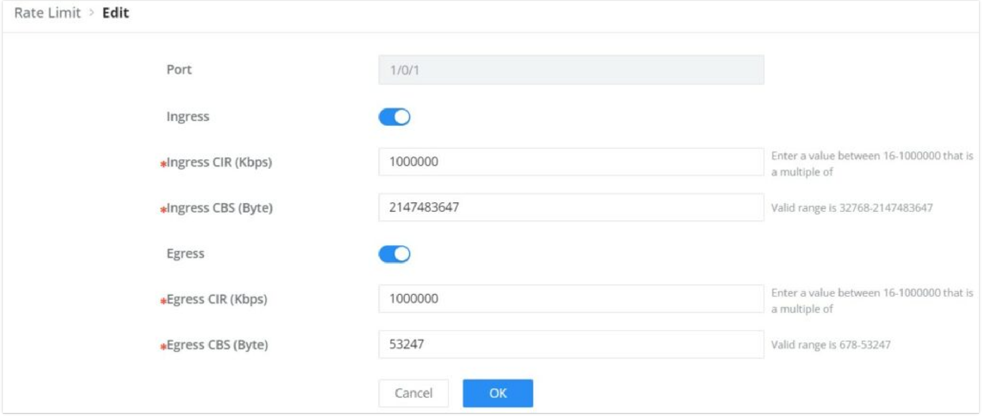
Port	Ingress	Ingress CIR (Kbps)	Ingress CBS (Byte)	Egress	Egress CIR (Kbps)	Egress CBS (Byte)	Operation
1/0/1	Enabled	1000000	2147483647	Enabled	1000000	53247	✎
1/0/2	Disabled	--	--	Disabled	--	--	✎
1/0/3	Disabled	--	--	Disabled	--	--	✎
1/0/4	Disabled	--	--	Disabled	--	--	✎
1/0/5	Disabled	--	--	Disabled	--	--	✎
1/0/6	Disabled	--	--	Disabled	--	--	✎
1/0/7	Disabled	--	--	Disabled	--	--	✎
1/0/8	Disabled	--	--	Disabled	--	--	✎
1/0/9	Disabled	--	--	Disabled	--	--	✎
1/0/10	Disabled	--	--	Disabled	--	--	✎
1/0/11	Disabled	--	--	Disabled	--	--	✎
1/0/12	Disabled	--	--	Disabled	--	--	✎

Rate Limit

To configure a port, click on the "**Edit**" icon under the operation column, then set the CIR and CBS for both Ingress and Egress.

CIR (Committed Information Rate): the guaranteed average transmission rate or the minimum guaranteed traffic delivered in the network.

CBS (Committed Burst Size): the average volume of burst traffic that can pass through an interface.



Rate Limit > Edit

Port	1/0/1	
Ingress	●	
*Ingress CIR (Kbps)	1000000	Enter a value between 16-1000000 that is a multiple of
*Ingress CBS (Byte)	2147483647	Valid range is 32768-2147483647
Egress	●	
*Egress CIR (Kbps)	1000000	Enter a value between 16-1000000 that is a multiple of
*Egress CBS (Byte)	53247	Valid range is 678-53247

Rate Limit Edit a port

SECURITY

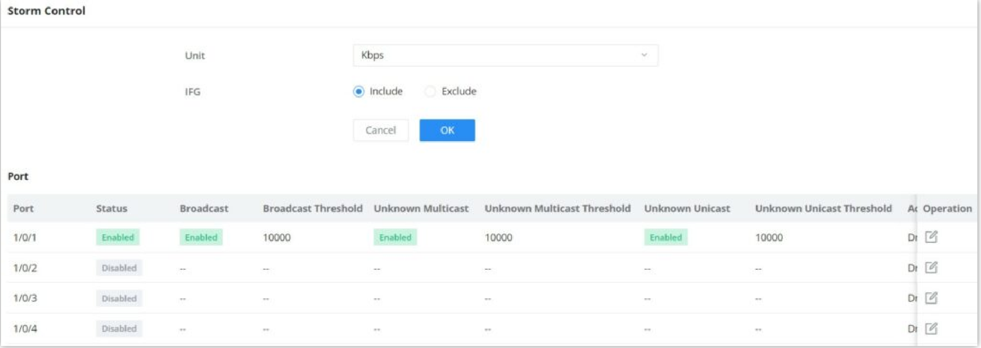
GWN780x Pro Switches series supports many tools and features to enhance the security of the device against misconfiguration or attacks.

Storm Control

Traffic suppression can limit the rate of broadcast, unknown multicast, unknown unicast, known multicast, and known unicast packets by configuring thresholds, preventing broadcast, unknown multicast packets, and unknown unicast packets from generating broadcast storms. Large traffic impact of known multicast packets and known unicast packets.

Storm control can block the traffic of broadcast, unknown multicast, and unknown unicast packets by blocking packets or shutting down ports. The device supports storm control for the above three types of packets on the interface according to the packet rate, byte rate, and percentage. During a detection interval, the device monitors the average rate of three types of packets received on the interface and compares it with the configured maximum threshold. When the packet rate is greater than the configured maximum threshold, the device performs storm control on the interface and executes the configured storm control actions. Storm control actions include dropping packets or shutting down interfaces.

- If packets are blocked, when the average rate of receiving packets on the interface is less than the specified minimum threshold, storm control will release the blocking of the packets on the interface.
- If the action is to shut down / shutdown the interface, you need to manually run the command to bring up the interface, or enable the interface state to automatically return to UP. It's also possible to use the **Auto Recovery** function to bring up the interface automatically.



Storm Control

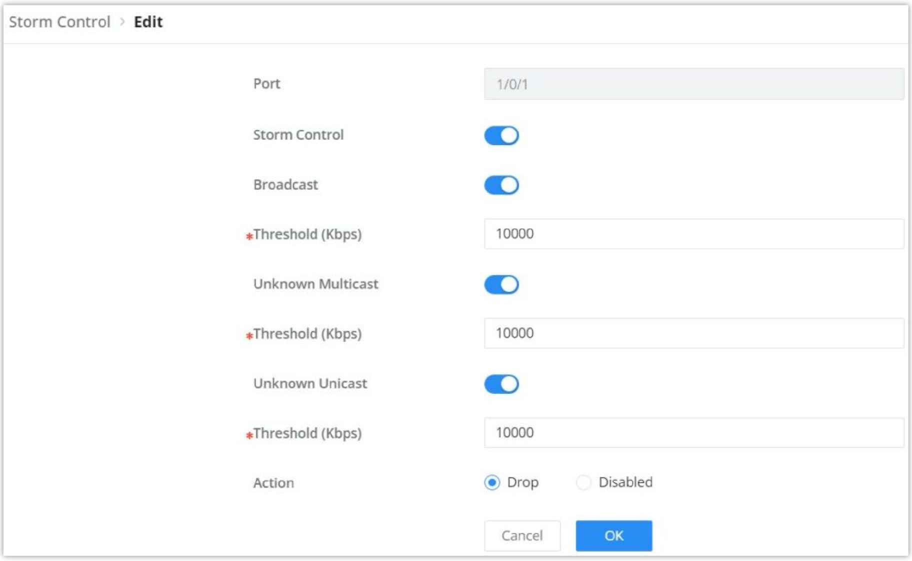
Unit: Kbps

IFG: ● Include ○ Exclude

Port

Port	Status	Broadcast	Broadcast Threshold	Unknown Multicast	Unknown Multicast Threshold	Unknown Unicast	Unknown Unicast Threshold	Ac	Operation
1/0/1	Enabled	Enabled	10000	Enabled	10000	Enabled	10000	Dr	
1/0/2	Disabled	--	--	--	--	--	--	Dr	
1/0/3	Disabled	--	--	--	--	--	--	Dr	
1/0/4	Disabled	--	--	--	--	--	--	Dr	

Storm Control page



Storm Control › Edit

Port: 1/0/1

Storm Control: on

Broadcast: on

*Threshold (Kbps): 10000

Unknown Multicast: on

*Threshold (Kbps): 10000

Unknown Unicast: on

*Threshold (Kbps): 10000

Action: ● Drop ○ Disabled

Storm Control edit port

Unit	Select Unit: ● kbps: Storm control rate will be calculated by octet-based. ● **pps**: Storm control rate will be calculated by packet-based.
IFG	Select IFG (Inter Frame Gap): ● **Excluded:** Exclude IFG when count ingress storm control rate. ● **Included:** Include IFG when count ingress storm control rate.
Storm Control → Edit	
Port	Displays the selected port.
Storm Control	Select whether to enable Storm Control on the selected port or not.
Broadcast	Set whether to enable the storm threshold setting for broadcast packets. If Enabled Please enter a Treshhold (Kbps). ***Note:*** *The valid range is 16~1000000, which must be a multiple of 16. Default is 10000.*
Unknown Multicast	Set whether to enable the storm threshold setting for the Unknown Multicast packets If Enabled Please enter a Treshhold (Kbps). ***Note:*** *The valid range is 16~1000000, which must be a multiple of 16. Default is 10000.*
Unknown Unicast	Set whether to enable the storm threshold setting for the Unknown Unicast packets. If Enabled Please enter a Treshhold (Kbps). ***Note:*** *The valid range is 16~1000000, which must be a multiple of 16. Default is 10000.*

Action	Select the state of setting ● **Drop:** Packets exceed storm control rate will be dropped. ● **Shutdown:** Port exceeds storm control rate will be shutdown.

Storm Control

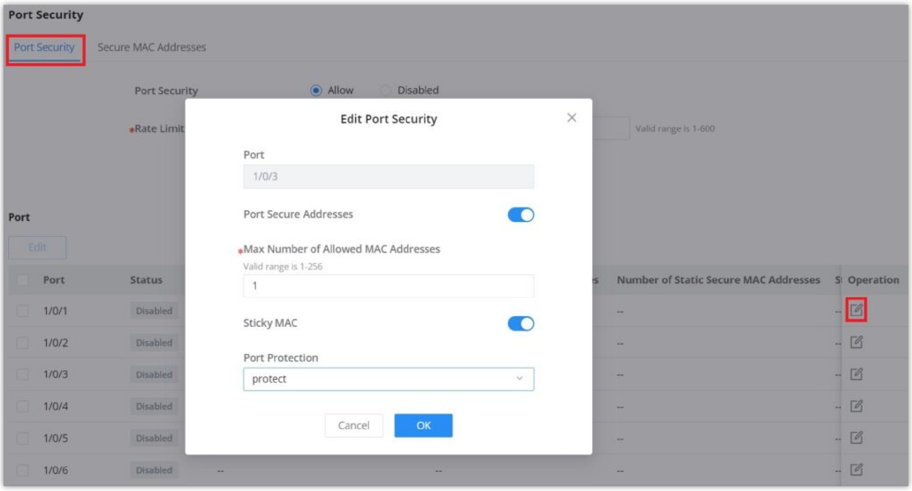
Port Security

By converting the MAC address learned by the interface into secure MAC addresses (including secure dynamic MAC addresses, secure static MAC addresses, and Sticky MAC), port security prevents illegal users from communicating with the switch through this interface, thereby enhancing the security of the device.

Security MAC addresses are divided into: Secure Dynamic MAC, Secure Static MAC, and Sticky MAC.

Secure Dynamic MAC Address	If enabled but the Sticky MAC function is not enabled.	If the device is restarted, the entries will be lost and need to be relearned.
Secure Static MAC Address	Static MAC address manually configured when port security is enabled.	The entries will not be aged, and will not be lost after a reboot.
Sticky MAC Address	The MAC address converted after the port security is enabled and the Sticky MAC function is enabled at the same time	The entries will not be aged , and the addresses will not be lost after restarting the device.

Secure MAC Address Types



Edit Port Security

Port: 1/0/3

Port Secure Addresses: enabled

*Max Number of Allowed MAC Addresses (Valid range is 1-256): 1

Sticky MAC: enabled

Port Protection: protect

Port Security

Port Security	Click Allow to set the port security function to be enabled globally , by default is disabled.
Rate Limit (packet/s)	Set the rate at which the port MAC address is learned. The value is an integer from 1 to 600, the default is 100.
Edit Port Security	
Port	Displays the selected ports.
Port Security Address	Click to enable Port Security Address, by default is disabled.
Maximum MAC Number	Set the maximum number of MAC addresses to be learned by the interface , the value range is an integer from 1 to 256 , and the default is 1 . After the maximum number is reached , if the switch receives a packet whose source MAC address does not exist, regardless of whether the destination MAC

	address exists, the switch considers that there is an attack by an illegal user, and will protect the interface according to the port protection configuration (Protect, Restrict or Shutdown).
Sticky MAC	When the port security is enabled, the Sticky MAC function can be enabled, by default it's disabled . When enabled, the interface will convert the learned secure dynamic MAC address into a Sticky MAC. If the maximum number of MAC addresses has been reached, the MAC address in the non-sticky MAC entry learned by the interface will be discarded , and a trap alarm will be reported according to the interface protection mode configuration.
Port Protection	Set the protection action when the number of MAC addresses learned by the interface reaches the maximum number or static MAC address flapping occurs . There are three modes **(Protect, Restrict or Shutdown)**, the default is Protect. ● **Protect:** Only discard the packets whose source MAC address does not exist, and does not report an alarm. ● **Restrict:** Discard packets with nonexistent source MAC addresses and report an alarm. ● **Shutdown:** The interface state is set to error-down and an alarm is reported. ***Note:*** *By default, an interface will not automatically recover after being shut down, and the interface can only be enabled by the network administrator under the interface. If you want the shut down interface to be restored automatically , you can enable Port Auto Recovery function to automatically restore the interface status to Up.*

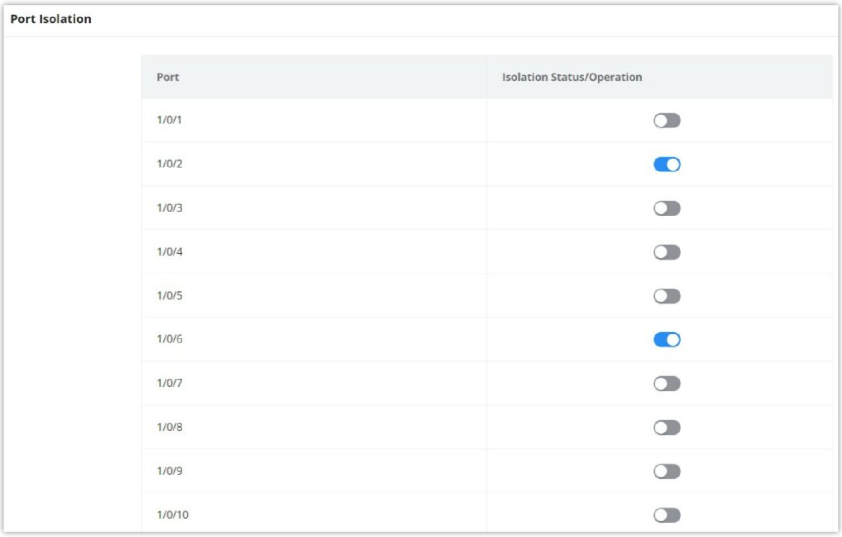
Port Security

Port Isolation

With the port isolation function, the isolation between ports in the same VLAN can be realized. As long as the user adds the port to the isolation group, the Layer 2 data isolation between the ports in the isolation group can be realized. The port isolation function provides users with a safer and more flexible networking solution.

Note:

Due to software limitations, only one isolation group is currently supported, and the port isolation function is disabled by default; that is, the port is added to the default isolation group. After joining, two-way isolation is performed between ports.



Port Isolation

Port	Isolation Status/Operation
1/0/1	○
1/0/2	●
1/0/3	○
1/0/4	○
1/0/5	○
1/0/6	●
1/0/7	○
1/0/8	○
1/0/9	○
1/0/10	○

Port Isolation

ACL

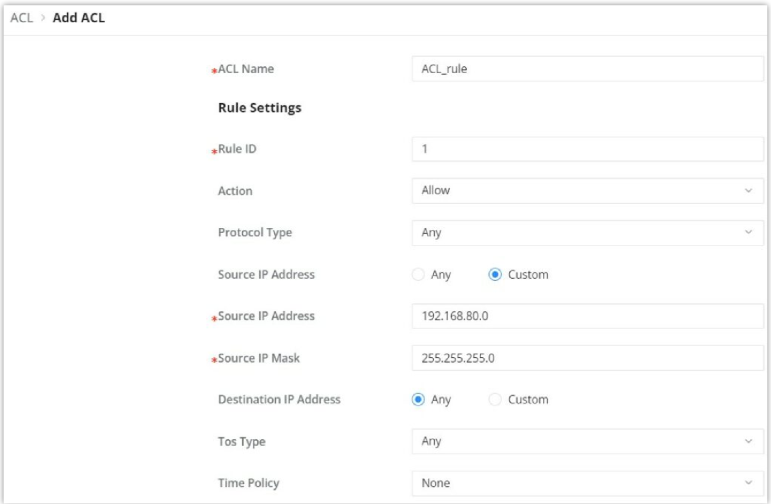
Access control list (ACL) is a collection of one or more rules. A rule is a judgment statement that describes the matching conditions of a packet. These conditions can be the source address, destination address, port number, etc., of the packet. ACL is essentially a packet filter, and the rule is the filter element of the filter. The device matches packets based on these rules, filters out specific packets, and allows or organizes the packets to pass through according to the processing policy of the service module that applies the ACL.

Notes:

- One ACL supports setting multiple rules. When the rule settings (except the rule number) are identical, it will prompt "This rule already exists."
- If there is no match after all the rules are traversed, the Deny message will be sent directly.

IPv4/IPv6 ACL

To add an IPv4 or IPv6 ACL rule, navigate to **Security → ACL → IPv4 tab or IPv6 tab**, then click on the "**Add**" button to add an IPv4/IPv6-based ACL rule.



ACL > **Add ACL**

*ACL Name: ACL_rule

Rule Settings

*Rule ID: 1

Action: Allow

Protocol Type: Any

Source IP Address: ○ Any ● Custom

*Source IP Address: 192.168.80.0

*Source IP Mask: 255.255.255.0

Destination IP Address: ● Any ○ Custom

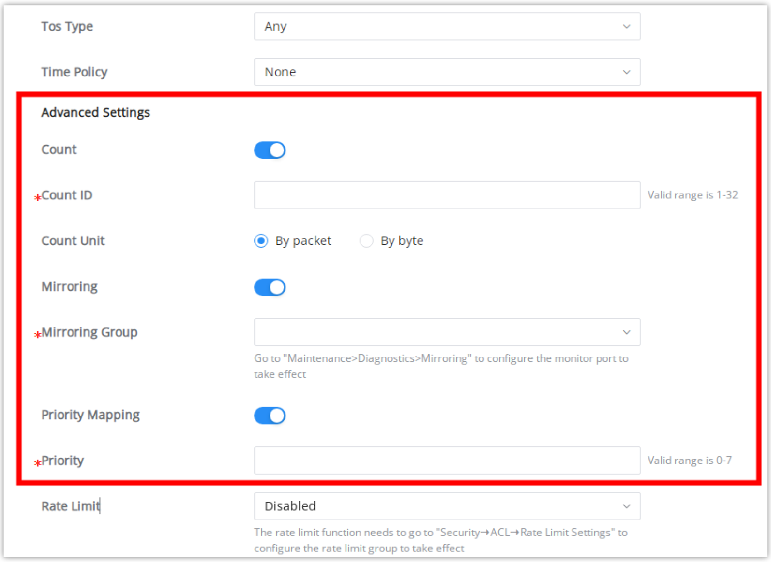
Tos Type: Any

Time Policy: None

ACL IPv4IPv6

The rules action can be defined in one of the four ways below:

- **Drop**: This action denies or blocks traffic that matches the specified ACL rule, which prevents the packet from being forwarded through the network.
- **Allow**: This action permits traffic that matches the ACL rule, allowing the packet to pass through and continue to its destination.
- **Shut Down**: This action disables the interface or port that the traffic is passing through if the ACL rule is triggered, effectively stopping all traffic on that interface.
- **Redirect to Interface**: This action forwards the traffic matching the ACL rule to a different interface than it was originally destined for, often used for traffic monitoring, load balancing, or security purposes.



Tos Type: Any

Time Policy: None

Advanced Settings

Count: On

*Count ID: Valid range is 1-32

Count Unit: ● By packet ○ By byte

Mirroring: On

*Mirroring Group: Go to "Maintenance>Diagnostics>Mirroring" to configure the monitor port to take effect

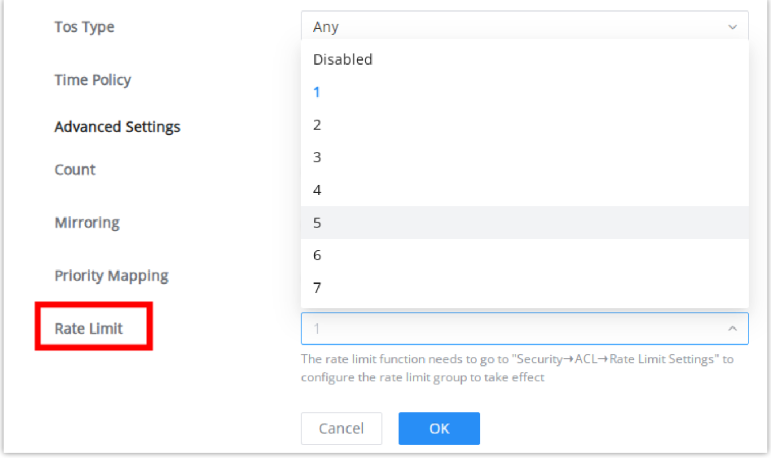
Priority Mapping: On

*Priority: Valid range is 0-7

Rate Limit: Disabled

The rate limit function needs to go to "Security→ACL→Rate Limit Settings" to configure the rate limit group to take effect

ACL IPv4IPv6 Advanced Settings


Tos Type: Any
Time Policy
Advanced Settings
Count
Mirroring
Priority Mapping
Rate Limit: 1

The rate limit function needs to go to "Security→ACL→Rate Limit Settings" to configure the rate limit group to take effect

ACL IPv4IPv6 Rate Limit

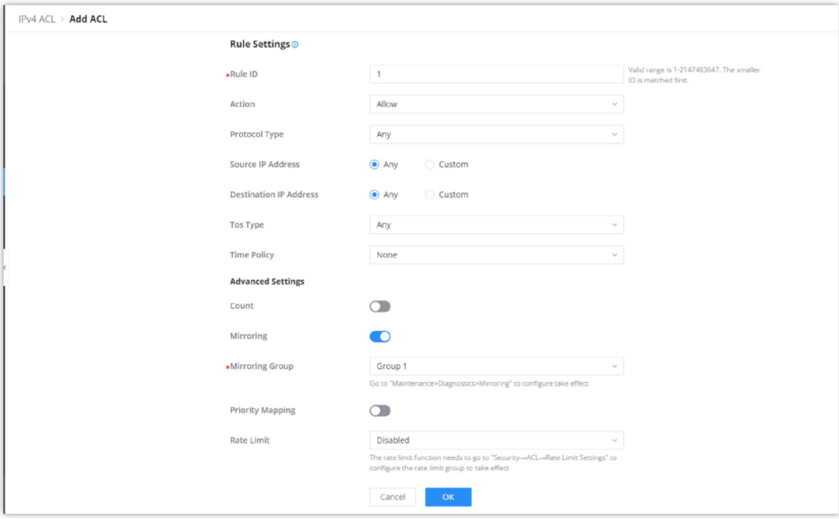
Note

The rate limit function needs to go to "**Security** → **ACL** → **Rate Limit Settings**" to configure the rate limit group to take effect.

Configuring an ACL-based RSPAN

To perform an ACL-based RSPAN, please follow the steps below:

- Select an image group in ACL Image


IPv4 ACL > Add ACL

Rule Settings

*Rule ID: 1

Valid range is 1-2147483647. The smaller ID is matched first.

Action: Allow

Protocol Type: Any

Source IP Address: ● Any ○ Custom

Destination IP Address: ● Any ○ Custom

Tos Type: Any

Time Policy: None

Advanced Settings

Count

Mirroring

*Mirroring Group: Group 1

Go to "Maintenance>Diagnostics>Mirroring" to configure take effect

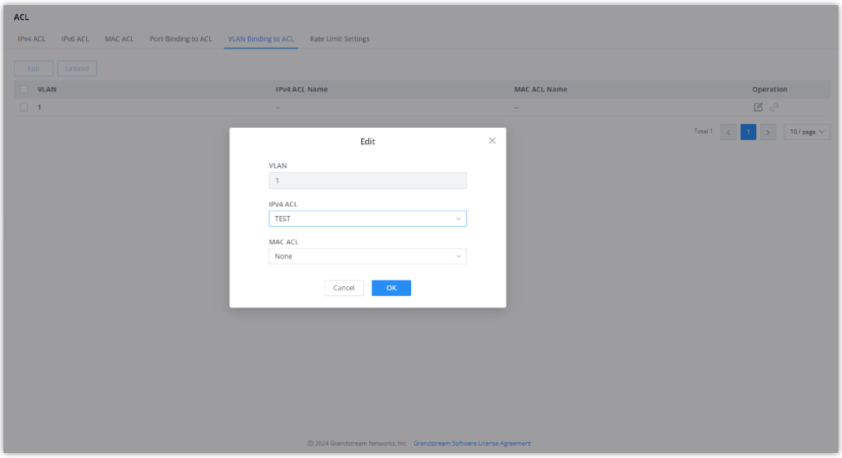
Priority Mapping

Rate Limit: Disabled

The rate limit function needs to go to "Security→ACL→Rate Limit Settings" to configure the rate limit group to take effect

ACL Based RSPAN

- Then, under **ACL →VLAN Binding ACL,** select the corresponding port/VLAN binding ACL.


ACL

VLAN	IPv4 ACL Name	MAC ACL Name	Operation
1	–	–	

Total 1 < 1 > 10 / page

Edit

VLAN: 1

IPv4 ACL: TEST

MAC ACL: None

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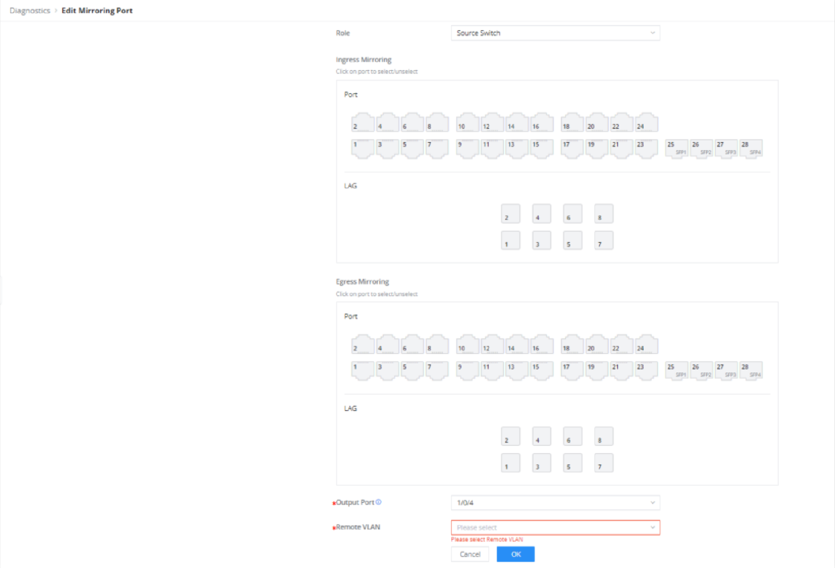
IPv4 ACL VLAN

- Then go to **Diagnostics → Mirroring → Setup Mirroring Group**. If you select RSPAN, you can only use it as a source switch, and you need to set the output port and remote VLAN.



Diagnostics > **Edit Mirroring Port**

Role: Source Switch

Ingress Mirroring

Click on port to select/unselect

Port

LAG

Egress Mirroring

Click on port to select/unselect

Port

LAG

*Output Port: 1/0/4

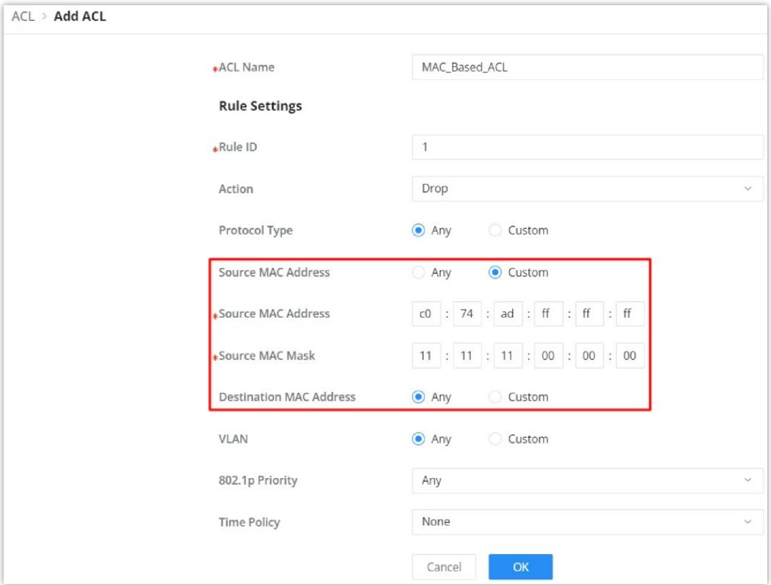
*Remote VLAN: Please select

Please select Remote VLAN

Set up Mirroring Group

MAC ACL

To add an ACL based on the MAC address, on the MAC ACL tab, click on the “**Add**” button to add an ACL rule, then configure the **Source MAC Address** and the **Destination MAC Address** accordingly. Please refer to the figure below:



ACL > **Add ACL**

*ACL Name: MAC_Based_ACL

Rule Settings

*Rule ID: 1

Action: Drop

Protocol Type: ● Any ○ Custom

Source MAC Address: ○ Any ● Custom

*Source MAC Address: c0 : 74 : ad : ff : ff : ff

*Source MAC Mask: 11 : 11 : 11 : 00 : 00 : 00

Destination MAC Address: ● Any ○ Custom

VLAN: ● Any ○ Custom

802.1p Priority: Any

Time Policy: None

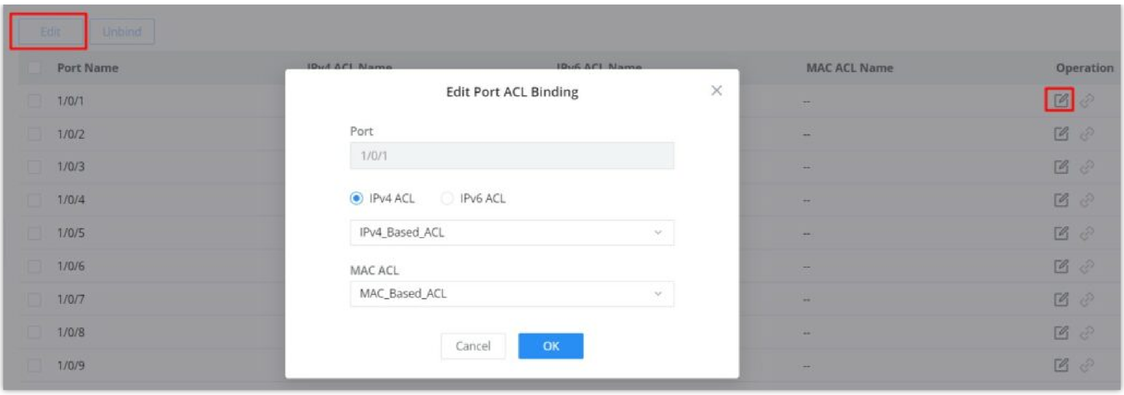
MAC address based ACL

Port Binding to ACL

ACL Binding lets the user bind a MAC ACL or an IP ACL to certain GE/LAG ports.

To apply IP/MAC ACL rules on multiple ports, select the ports first, then click on the “**Edit**” button, and then select the IP and MAC ACL rule from the drop-down list.

To apply the ACL rule on a specific port, click on the “**Edit icon**” on the right side of the page, as shown below:



Edit Port ACL Binding

Port: 1/0/1

● IPv4 ACL ○ IPv6 ACL

IPv4_Based_ACL

MAC ACL: MAC_Based_ACL

Cancel OK

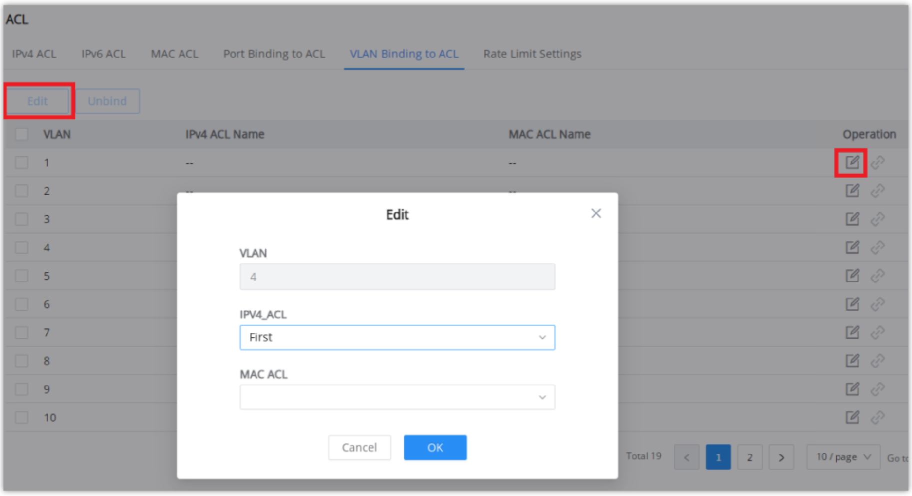
ACL Binding

VLAN Binding to ACL

On this page, the users can bind the IP/MAC ACL rule to a VLAN(s), to apply the ACL rules to multiple VLANs. First, check the VLANs from the list, then click on the "**Edit**" button, select the ACL rule from the drop-down list under IP/MAC ACL.

For example, if the IP/MAC ACL rule is configured with a rate limit and then bound to a VLAN, the bandwidth limit will be applied to the specified VLAN.

Refer to the figure below:



Edit

VLAN: 4

IPV4_ACL: First

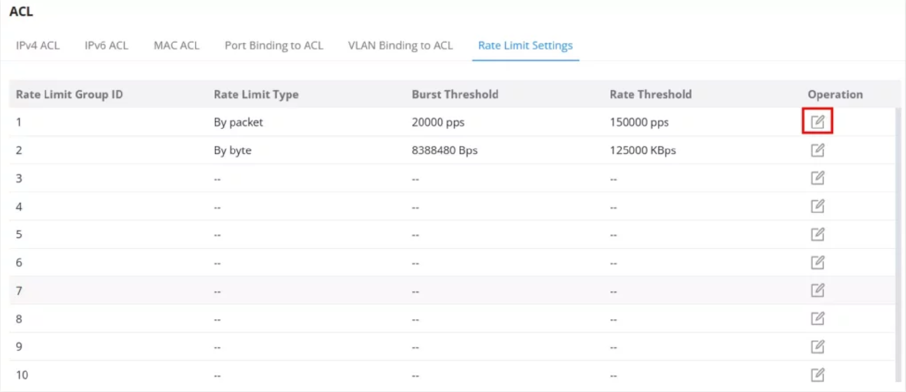
MAC ACL:

Cancel OK

VLAN Binding to ACL

Rate Limit Settings

The Rate Limit Settings section in ACL (Access Control List) allows users to configure rate limiting for up to 128 groups. Rate limiting helps manage and control the amount of traffic sent or received on the network, preventing congestion and ensuring fair usage. This feature is crucial for maintaining optimal network performance and avoiding overloads.



ACL

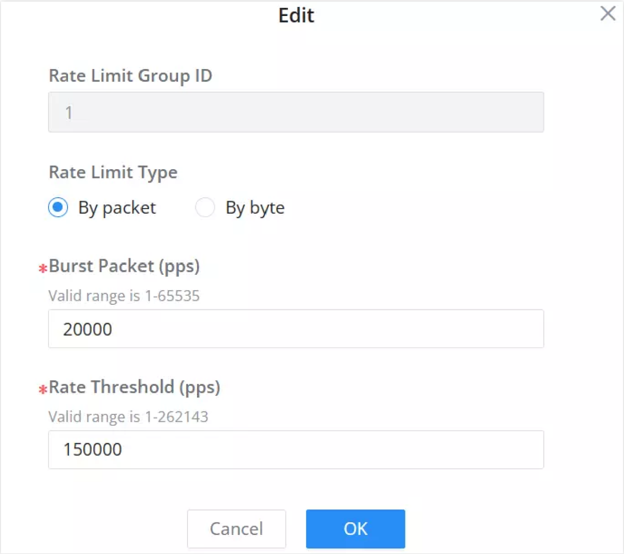
IPv4 ACL | IPv6 ACL | MAC ACL | Port Binding to ACL | VLAN Binding to ACL | Rate Limit Settings

Rate Limit Group ID	Rate Limit Type	Burst Threshold	Rate Threshold	Operation
1	By packet	20000 pps	150000 pps	
2	By byte	8388480 Bps	125000 KBps	
3	--	--	--	
4	--	--	--	
5	--	--	--	
6	--	--	--	
7	--	--	--	
8	--	--	--	
9	--	--	--	
10	--	--	--	

ACL Rate Limit Settings

The users can configure up to 128 groups by clicking on the "**Edit icon**" under the operation column.

- Click on the "**Edit icon**" under the Operation column to configure a group.
- Select the **Rate Limit Type** to determine if the limit will be by **packet or byte**.
- Specify the **Burst Packet/Byte**, which sets the maximum number of packets or bytes allowed to be sent in a burst.
- Set the **Rate Threshold,** which defines the maximum rate of packets or bytes per second.



Edit

Rate Limit Group ID

1

Rate Limit Type

● By packet ○ By byte

*Burst Packet (pps)
Valid range is 1-65535

20000

*Rate Threshold (pps)
Valid range is 1-262143

150000

Cancel OK

ACL Edit Rate Limit Group

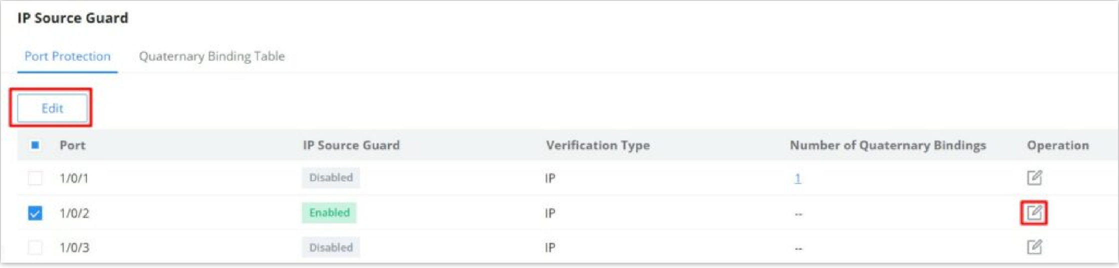
IP Source Guard

IP source guard is a source IP address filtering technology based on the Layer 2 interface. It can prevent malicious hosts from forging IP addresses of legitimate hosts to impersonate legitimate hosts, and also ensure that unauthorized hosts cannot access by specifying their IP addresses. network or attack the network. IPSG uses the binding table (source IP address, source MAC address, VLAN to which it belongs, and the binding of the inbound interface) to match and check the IP packets received on the Layer 2 interface. Only the packets matching the binding table are allowed to pass through.

Note:

It's recommended to enable first DHCP Snooping by navigating to **Security → DHCP Snooping**.

To enable IP Source Guard, first navigate to the **Security → IP Source Guard** page, then select the port and click on "**Edit**" to configure the port.



IP Source Guard

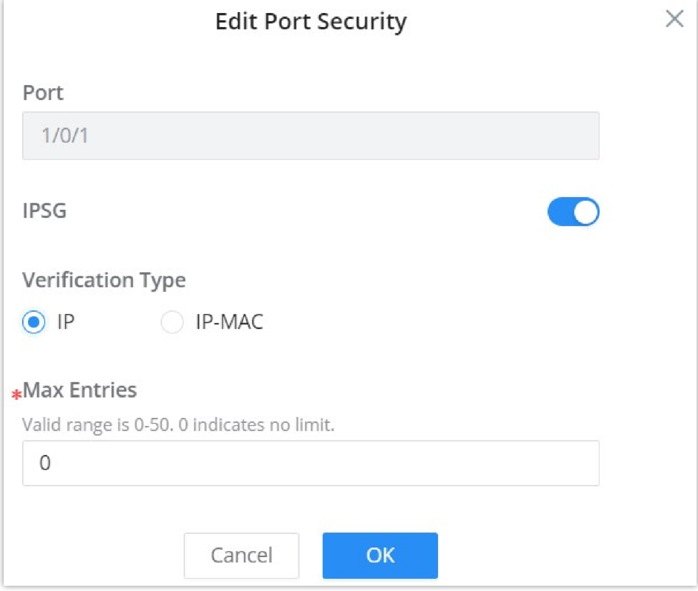
Port Protection | Quaternary Binding Table

Edit

■	Port	IP Source Guard	Verification Type	Number of Quaternary Bindings	Operation
□	1/0/1	Disabled	IP	1	✎
☑	1/0/2	Enabled	IP	--	✎
□	1/0/3	Disabled	IP	--	✎

IP Source Guard

Then, select the **Verification Type** where either the verification will be based on IP addresses or both IP and MAC addresses. **Max Entries** limits the number of IP/MAC addresses (e.g., devices), where 0 indicates no limit.



Edit Port Security

Port: 1/0/1

IPSG: on

Verification Type: ● IP ○ IP-MAC

*Max Entries

Valid range is 0-50. 0 indicates no limit.

0

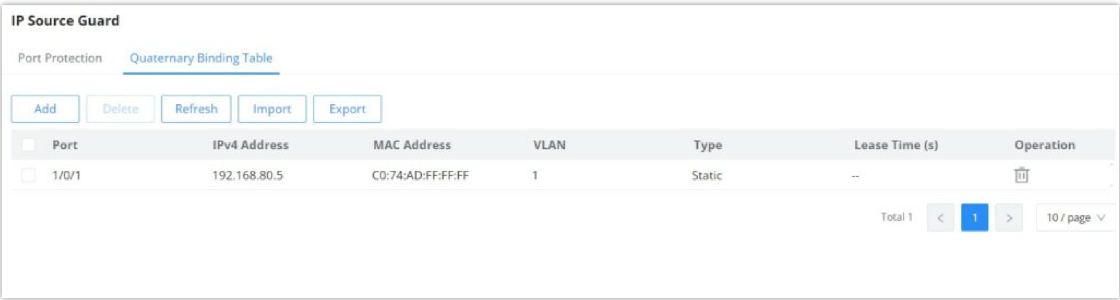
IP Source Guard Edit port

This page displays the dynamic binding (port, IP, MAC, VLAN) generated when DHCP Snooping is enabled on the GWN780x Pro switches. Also, the user can add static binding by clicking on the “Add” button, as shown below:

Note:

Dynamic entries require enabling **DHCP Snooping**.

To import or export the list, click on the import or export button, respectively.

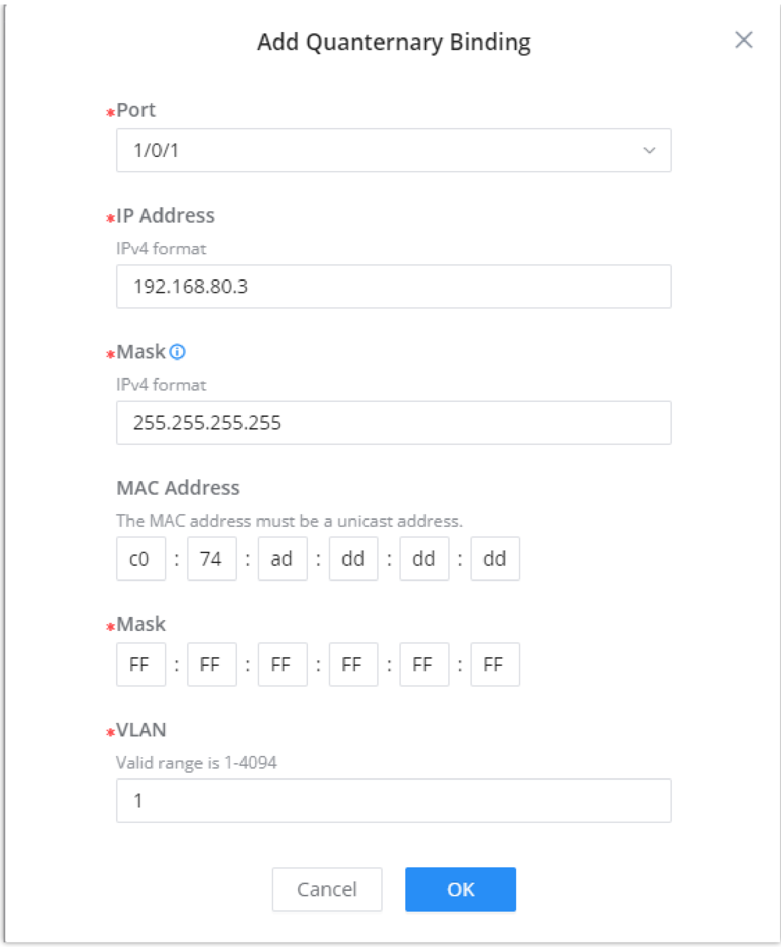


IP Source Guard

Port	IPv4 Address	MAC Address	VLAN	Type	Lease Time (s)	Operation
1/0/1	192.168.80.5	C0:74:AD:FF:FF:FF	1	Static	--	🗑

Quaternary Binding Table

The binding requires specifying the port, IP Address and its mask, MAC address and its mask, and the VLAN ID. This information will be used to verify the traffic and ensure that all the traffic is generated by legitimate users.



Add Quanternary Binding

*Port
1/0/1

*IP Address
IPv4 format
192.168.80.3

*Mask
IPv4 format
255.255.255.255

MAC Address
The MAC address must be a unicast address.
c0 : 74 : ad : dd : dd : dd

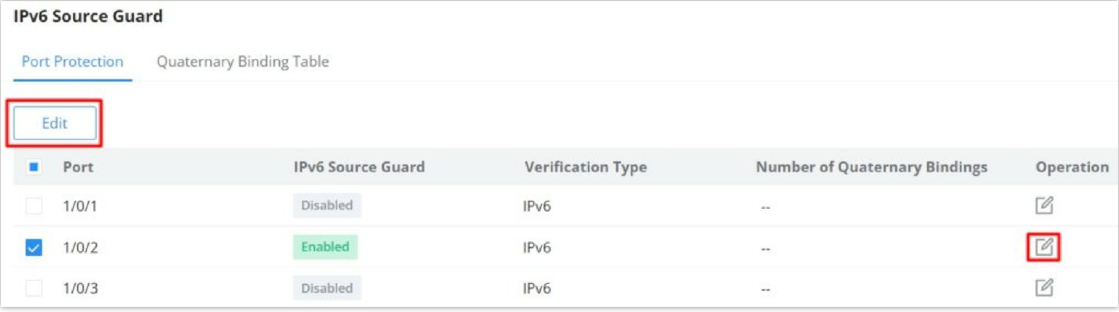
*Mask
FF : FF : FF : FF : FF : FF

*VLAN
Valid range is 1-4094
1

Add Quaternary Binding

IPv6 Source Guard

IPv6 Source Guard is similar to IP Source Guard (based on IPv4); the only difference is that IPv6 Source Guard filters IPv6 addresses.

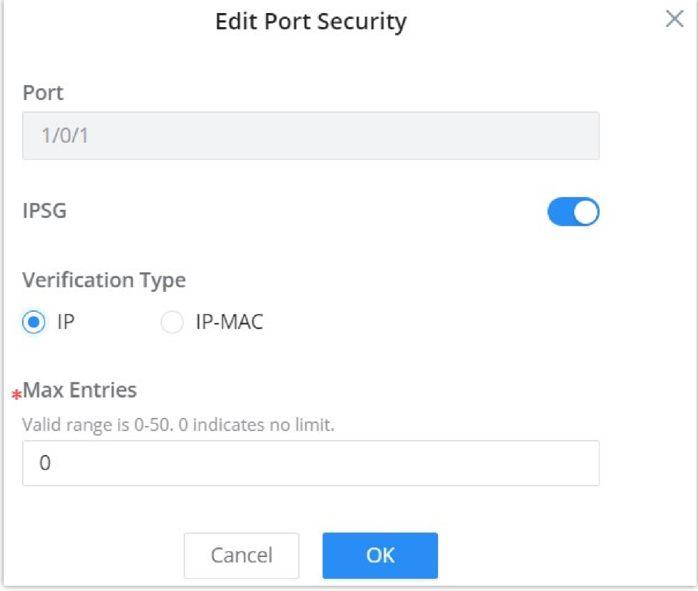


IPv6 Source Guard

■	Port	IPv6 Source Guard	Verification Type	Number of Quaternary Bindings	Operation
□	1/0/1	Disabled	IPv6	--	✎
☑	1/0/2	Enabled	IPv6	--	✎
□	1/0/3	Disabled	IPv6	--	✎

IPv6 Source Guard

To enable IPv6 Source Guard on a port, select the port and click on the “Edit” button under the operation column, then select the **Verification Type** and specify the **Max Entries**.



Edit Port Security

Port: 1/0/1

IPSG: ●

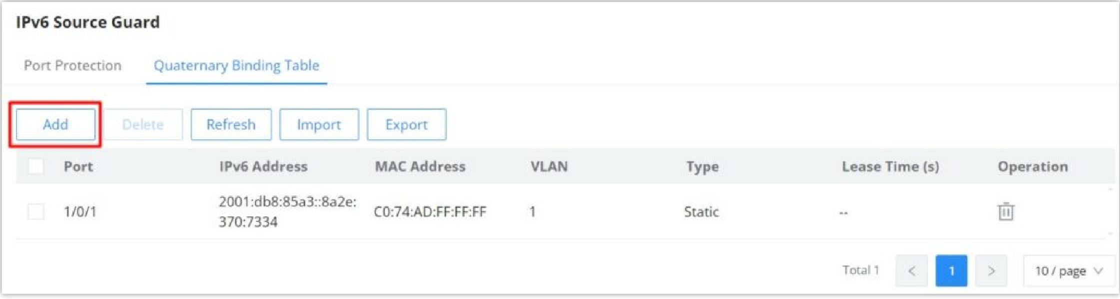
Verification Type: ● IP ○ IP-MAC

*Max Entries
Valid range is 0-50. 0 indicates no limit.
0

IPv6 Source Guard Edit port

On this tab, the user can see the list of bindings, both static and dynamic (DHCP Snooping must be enabled).

To add a static entry, click on the "**Add**" button. It's also possible to import or export the list as shown below:

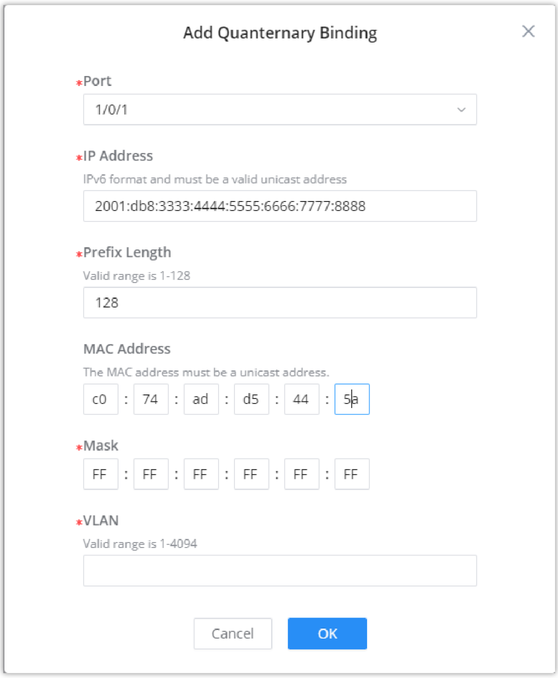


IPv6 Source Guard

	Port	IPv6 Address	MAC Address	VLAN	Type	Lease Time (s)	Operation
□	1/0/1	2001:db8:85a3::8a2e:370:7334	C0:74:AD:FF:FF:FF	1	Static	--	🗑

IPv6 Quaternary Binding Table

Specify the binding (port, IP address, MAC Address, and VLAN), then click on the "**OK**" button to save.



Add Quanternary Binding

*Port
1/0/1

*IP Address
IPv6 format and must be a valid unicast address
2001:db8:3333:4444:5555:6666:7777:8888

*Prefix Length
Valid range is 1-128
128

MAC Address
The MAC address must be a unicast address.
c0 : 74 : ad : d5 : 44 : 5a

*Mask
FF : FF : FF : FF : FF : FF

*VLAN
Valid range is 1-4094

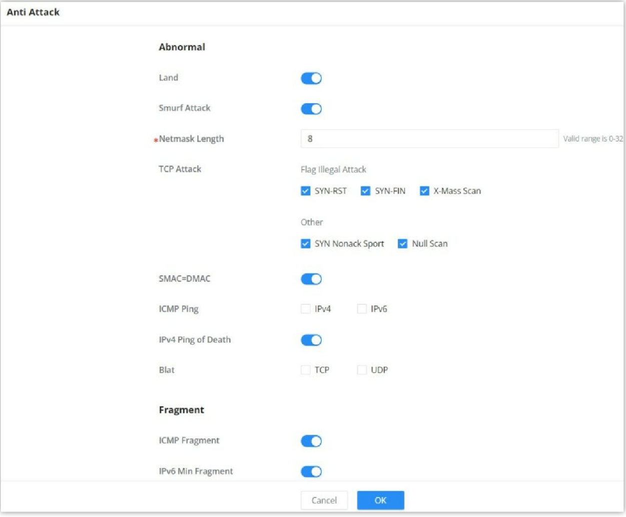
IPv6 Quaternary Binding edit port

Anti Attack

In the network, there are a large number of malicious attack packets targeting the CPU and various types of packets that need to be normally sent to the CPU. Malicious attack packets targeting the CPU will cause the CPU to be busy processing attack packets for a long time, thereby causing interruption of other services or even system interruption; a large number of normal packets will also lead to high CPU usage and performance degradation, thus affecting normal business.

In order to protect the CPU and ensure that the CPU can process and respond to normal services, the switch provides a local attack defense function, which is aimed at the packets sent to the CPU. It operates normally to avoid the mutual influence of various services when the device is attacked.

Attack defense is an important network security feature. It analyzes the content and behavior of the packets sent to the CPU for processing, determines whether the packets have attack characteristics, and configures certain preventive measures against the packets with attack characteristics. Defense attacks are mainly divided into malformed packet attack defense, fragmented packet attack defense, and flood attack defense.



Anti Attack

Abnormal

Land ●

Smurf Attack ●

*Netmask Length: 8 Valid range is 0-32

TCP Attack
Flag Illegal Attack
☑ SYN-RST ☑ SYN-FIN ☑ X-Mass Scan
Other
☑ SYN Nonack Sport ☑ Null Scan

SMAC=DMAC ●

ICMP Ping □ IPv4 □ IPv6

IPv4 Ping of Death ●

Blat □ TCP □ UDP

Fragment

ICMP Fragment ●

IPv6 Min Fragment ●

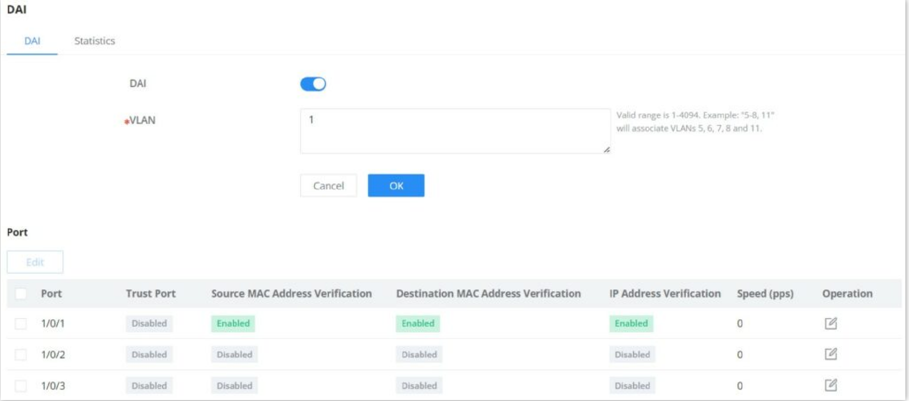
Anti Attack

Dynamic ARP Inspection (DAI)

To defend against man-in-the-middle attacks and prevent data of legitimate users from being stolen by the man-in-the-middle, you can enable dynamic ARP inspection. The device compares the source IP, source MAC, interface, and VLAN information corresponding to the ARP packet with the information in the binding table. If the information matches, it means that the user who sent the ARP packet is legitimate, and the user is allowed. If the ARP packet passes, it is considered an attack, and the ARP packet is discarded.

Dynamic ARP inspection can be enabled in the interface view or VLAN view. When enabled in the interface view, the binding table matching check is performed on all ARP packets received by the interface; when enabled in the VLAN view. Then, the binding table matching check is performed on the ARP packets belonging to the VLAN received by the interface that joins the VLAN.

When the device discards a large number of ARP packets that do not match the binding table, if you want the device to alert the network administrator in the form of an alarm, you can enable the dynamic ARP inspection discarded packet alarm function. When the number of discarded ARP packets exceeds the alarm threshold, the device generates an alarm.



DAI

DAI: ●

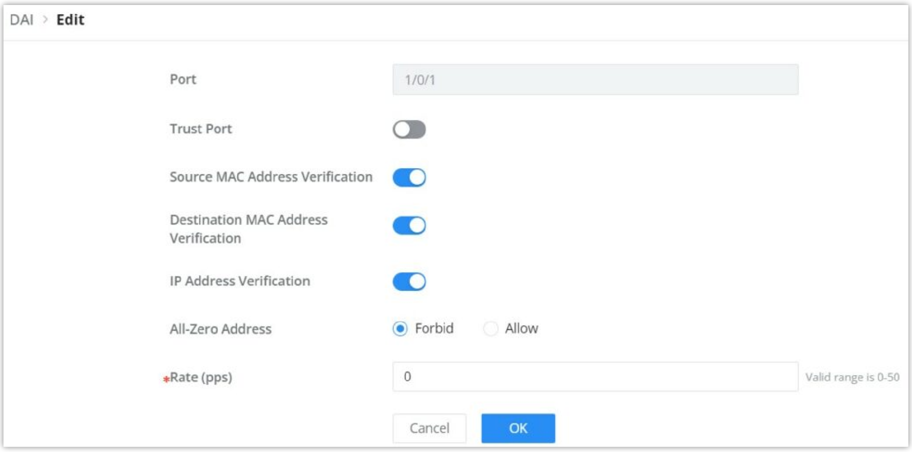
*VLAN: 1

Valid range is 1-4094. Example: "5-8, 11" will associate VLANs 5, 6, 7, 8 and 11.

Port

□	Port	Trust Port	Source MAC Address Verification	Destination MAC Address Verification	IP Address Verification	Speed (pps)	Operation
□	1/0/1	Disabled	Enabled	Enabled	Enabled	0	✎
□	1/0/2	Disabled	Disabled	Disabled	Disabled	0	✎
□	1/0/3	Disabled	Disabled	Disabled	Disabled	0	✎

DAI page



DAI > Edit

Port: 1/0/1

Trust Port: ○

Source MAC Address Verification: ●

Destination MAC Address Verification: ●

IP Address Verification: ●

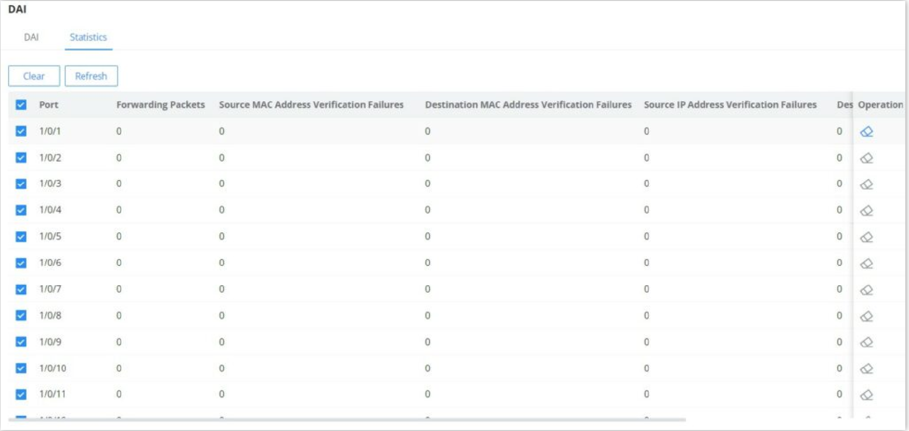
All-Zero Address: ● Forbid ○ Allow

*Rate (pps): 0

Valid range is 0-50

DAI Edit port

The statistics about DAI activities will be listed here for each port GE/LAG, with the options of refreshing the statistics or clearing specified port data.



DAI

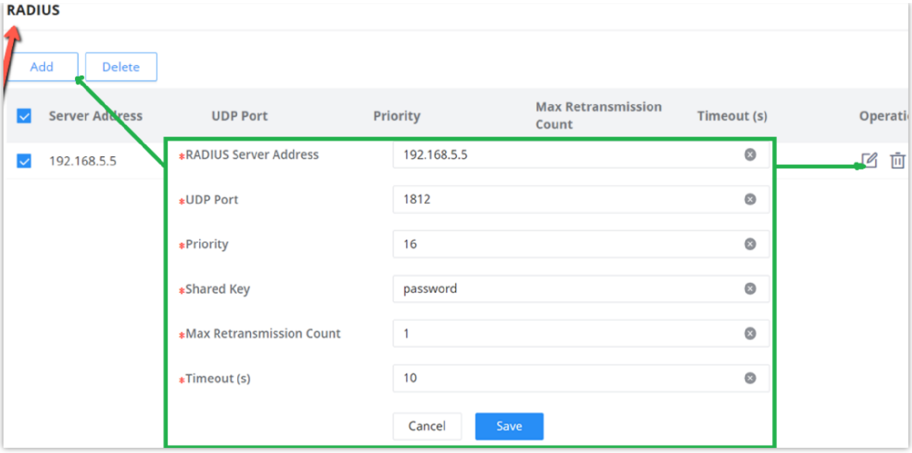
☑	Port	Forwarding Packets	Source MAC Address Verification Failures	Destination MAC Address Verification Failures	Source IP Address Verification Failures	Des	Operation
☑	1/0/1	0	0	0	0	0	⌫
☑	1/0/2	0	0	0	0	0	⌫
☑	1/0/3	0	0	0	0	0	⌫
☑	1/0/4	0	0	0	0	0	⌫
☑	1/0/5	0	0	0	0	0	⌫
☑	1/0/6	0	0	0	0	0	⌫
☑	1/0/7	0	0	0	0	0	⌫
☑	1/0/8	0	0	0	0	0	⌫
☑	1/0/9	0	0	0	0	0	⌫
☑	1/0/10	0	0	0	0	0	⌫
☑	1/0/11	0	0	0	0	0	⌫

DAI Statistics

RADIUS

RADIUS is a distributed, client /server information exchange protocol that can protect the network from unauthorized access. It is often used in various network environments that require high security and allow remote users to access it. This protocol defines the UDP-based RADIUS packet format and its transmission mechanism and specifies destination UDP ports 1812 and 1813 as the default authentication and accounting port numbers, respectively.

Radius provides access services through authentication and authorization, and collects and records the use of network resources by users through accounting. The main features of the RADIUS protocol are client/server mode, secure message exchange mechanism, and good expansibility.



☑ Server Address	UDP Port	Priority	Max Retransmission Count	Timeout (s)	Operati
☑ 192.168.5.5					

*RADIUS Server Address: 192.168.5.5

*UDP Port: 1812

*Priority: 16

*Shared Key: password

*Max Retransmission Count: 1

*Timeout (s): 10

RADIUS

Note:

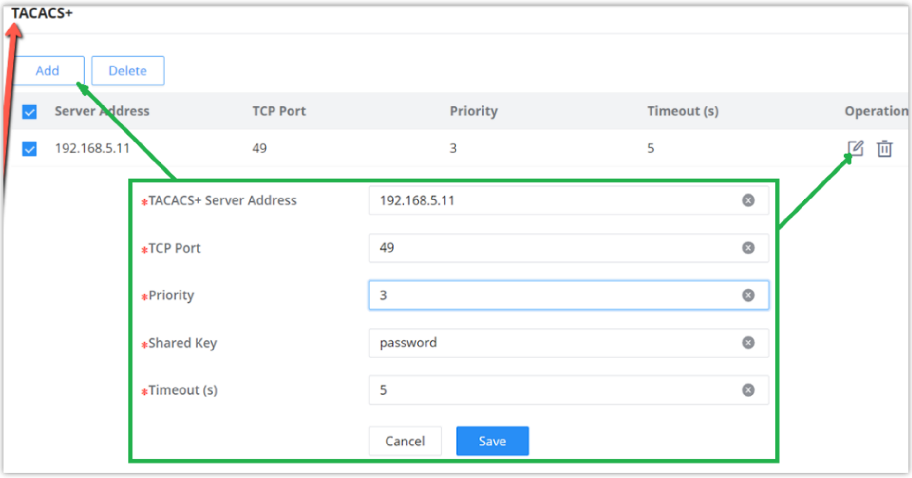
While RADIUS shared keys can be configured via the Web UI, only the CLI supports input of pre-encrypted password strings (e.g., 6...) for secure deployment and automation. For CLI usage and formatting guidelines, refer to the GWN78xx CLI User Guide.

TACACS+

TACACS+ (Terminal Access Controller Control System Protocol) is a security protocol with enhanced functions based on the TACACS protocol. This protocol is similar in function to the RADIUS protocol and uses the client/server mode to implement the communication between the NAS and the TACACS+ server.

TACACS+ is a centralized, client /server structure information exchange protocol, which uses TCP protocol for transmission, and the TCP port number is 49. The authentication, authorization, and accounting servers provided by TACACS+ are independent of each other and can be implemented on different servers. It is mainly used for authentication, authorization, and accounting of access users who access the Internet through point-to-point protocol PPP or virtual private dial-up network VPDN and management users who perform operations.

TACACS+ is similar to the RADIUS protocol : (1) both adopt client /server mode in structure; (2) both use shared keys to encrypt the transmitted user information ; (3) both have better flexibility and expansibility. TACACS+ has more reliable transmission and encryption characteristics and is more suitable for security control.



☑ Server Address	TCP Port	Priority	Timeout (s)	Operation
☑ 192.168.5.11	49	3	5	

*TACACS+ Server Address: 192.168.5.11

*TCP Port: 49

*Priority: 3

*Shared Key: password

*Timeout (s): 5

TACACS+

Note:

While TACACS+ shared keys can be configured via the Web UI, only the CLI supports input of pre-encrypted password strings (e.g., 6...) for secure deployment and automation. For CLI usage and formatting guidelines, refer to the GWN78xx CLI User Guide.

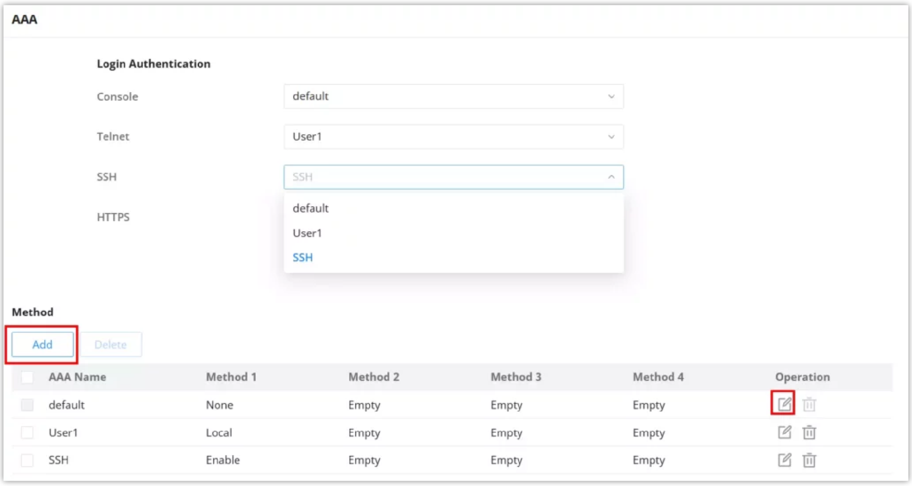
AAA

Access control is used to control which users can access the network and which network resources can be accessed. AAA is short for Authentication, Authorization, and Accounting, and provides a management framework for configuring access control on NAS (Network Access Server) devices.

As a management mechanism of network security, AAA provides services in a modular manner:

- Authentication, confirming the identity of users accessing the network, and judging whether the visitor is a legitimate network user;
- Authorization, giving different users Different permissions, limits the services that the user can use;
- Billing records all operations during the user's use of network services, including the type of service used, start time, data flow, etc., to collect and record the user's usage of network resources, and can realize the charging requirements for events and traffic, and also monitor the network.

AAA adopts a client /server structure. The AAA client runs on the access device, usually referred to as a NAS device, and is responsible for verifying user identity and managing user access; the AAA server is a collective name for the authentication server, authorization server, and accounting server. Responsible for the centralized management of user information. AAA can be implemented through a variety of protocols. Currently, devices support AAA based on RADIUS or TACACS+ + protocol. In practical applications, the RADIUS protocol is most commonly used.



AAA

Login Authentication

Console: default

Telnet: User1

SSH: SSH

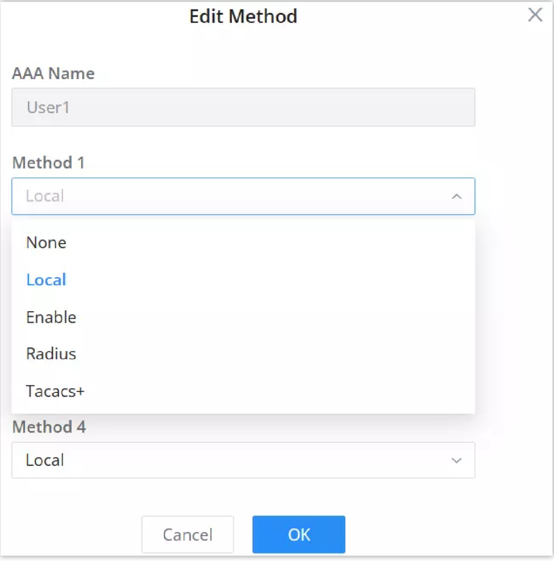
HTTPS

Method

AAA Name	Method 1	Method 2	Method 3	Method 4	Operation
default	None	Empty	Empty	Empty	
User1	Local	Empty	Empty	Empty	
SSH	Enable	Empty	Empty	Empty	

AAA

To add a method, click on the "Add" button, and to modify a method, click on the "**Modify**" icon as shown above:



Edit Method

AAA Name: User1

Method 1: Local

Method 4: Local

AddEdit a method

Method	Description	Applicability

None	No authentication is performed. Users can log in without a username or password. This setting should generally be avoided due to security risks.	Console, Telnet, SSH, Web UI
Local	Uses the local user database on the switch for authentication. User credentials are stored directly on the switch.	Console, Telnet, SSH, Web UI
Enable	Requires users to enter an enable password to gain elevated privileges (admin access). This provides an additional layer of security after initial authentication. **Note:** *The password for user mode to enter privileged mode must be set using CLI.*	Console, Telnet, SSH
RADIUS	Utilizes a RADIUS server for authentication. RADIUS (Remote Authentication Dial-In User Service) is used for centralized Authentication, Authorization, and Accounting management.	Console, Telnet, SSH, Web UI
TACACS+	Utilizes a TACACS+ server for authentication. TACACS+ (Terminal Access Controller Access-Control System Plus) offers more granular control over authorization and is used for centralized AAA management.	Console, Telnet, SSH, Web UI

AAA Methods

Identity Authentication Management

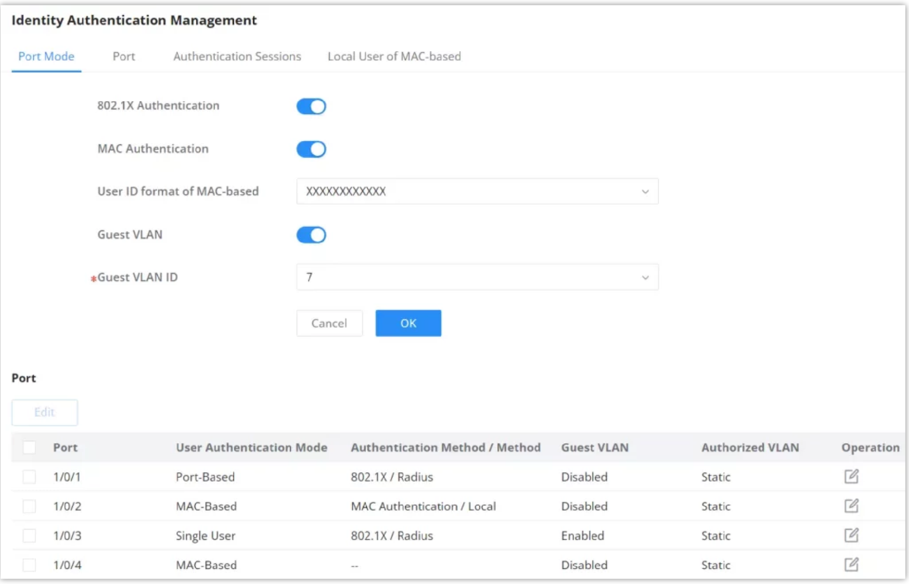
The Identity Authentication Management feature on Grandstream GWN switches provides a robust method for securing network access through 802.1X and MAC-based authentication. It allows administrators to configure and manage user authentication settings, ensuring only authorized devices can connect to the network, thereby enhancing overall network security and control.

The 802.1X protocol is a port-based network access control protocol. Port-based network access control refers to verifying user identities and controlling their access rights at the port level of LAN access devices. The 802.1X protocol is a Layer 2 protocol and does not need to reach Layer 3. It does not require high overall performance of the access device, which can effectively reduce network construction costs. Authentication packets and data packets are separated by logical interfaces to improve security.

Port Mode

To enable 802.1x and MAC authentication, please navigate to **Security → Identity Authentication Management**, then Toggle on "**802.1X Authentication**" and "**MAC Authentication**", and click on the "**OK**" button to save.

On this page, you can specify a **user ID format for MAC-based** and enable a **Guest VLAN**. This ensures these devices remain isolated from the main network while still maintaining limited network connectivity through the Guest VLAN. The Guest VLAN ID directs unauthenticated users to a designated network segment, providing controlled and secure access.



Identity Authentication Management

802.1X Authentication: On

MAC Authentication: On

User ID format of MAC-based: XXXXXXXXXXXX

Guest VLAN: On

*Guest VLAN ID: 7

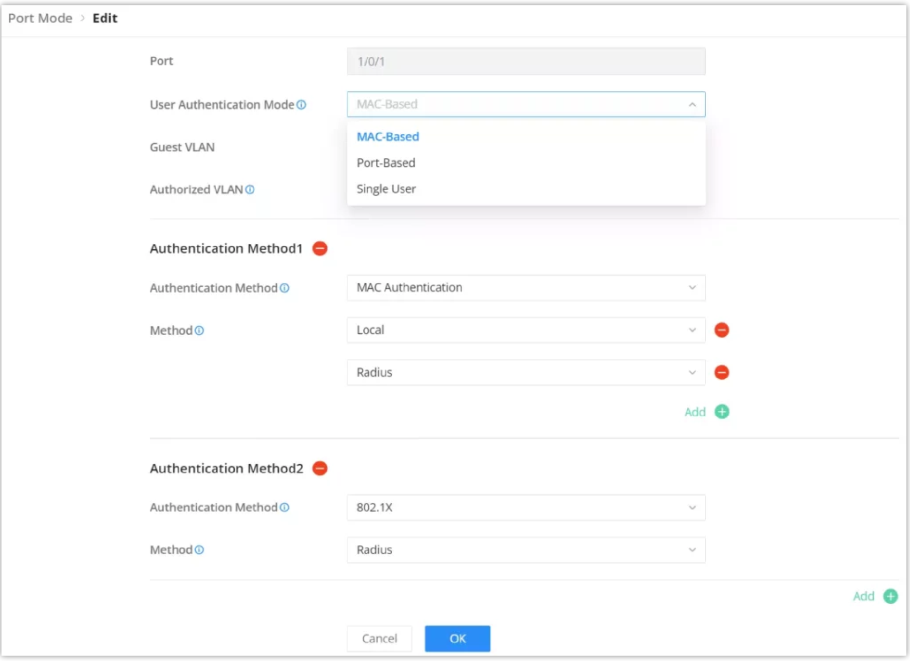
Port

□	Port	User Authentication Mode	Authentication Method / Method	Guest VLAN	Authorized VLAN	Operation
□	1/0/1	Port-Based	802.1X / Radius	Disabled	Static	✎
□	1/0/2	MAC-Based	MAC Authentication / Local	Disabled	Static	✎
□	1/0/3	Single User	802.1X / Radius	Enabled	Static	✎
□	1/0/4	MAC-Based	--	Disabled	Static	✎

Identity Authentication Management Port Mode

To enable it on a port, select port(s) from the list, then click on the “Edit” button or click on the “Edit icon” on the right side under the operation column.

Note: *a RADIUS server must first be added under Security → RADIUS.*



Port: 1/0/1

User Authentication Mode: MAC-Based

Guest VLAN

Authorized VLAN

Authentication Method1

Authentication Method: MAC Authentication

Method: Local

Radius

Authentication Method2

Authentication Method: 802.1X

Method: Radius

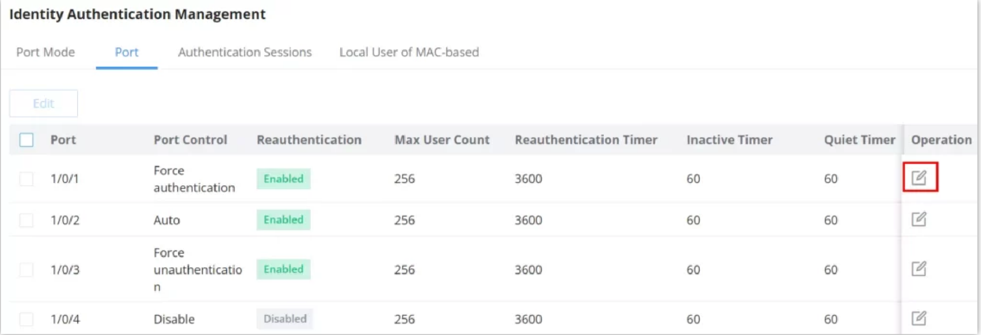
Port Mode Edit port

Port	The specific port being configured. This field shows the port number (e.g.
User Authentication Mode	The mode of user authentication to be used on this port. Options include: MAC-Based
Guest VLAN	Enables or disables the Guest VLAN for this port. If enabled
Authorized VLAN	Specifies the VLAN ID that authenticated users will be assigned to. This ensures that authorized devices are placed in the correct network segment.
Authentication Methods(x) ***Note:*** *click on “Add+” to add another method.*	
Authentication Method1	Select the authentication method, two options: ● **802.1X**: it will use 802.1x authentication, RADIUS must be first added. ● **MAC Authentication**: it will use local MAC Addresses under Security → Identity Authentication Management page → Local User of MAC-based or RADIUS depending on the seleted method.
Method	• If **MAC Authentication** is selected, the user can add two methods: Radius and Local. • If **802.1x** is selected, the user can only select radius. ***Note:*** *When **Radius** is selected, the switch includes the Calling-Station-Id attribute in the Access-Request message, containing the MAC address of the connected device. This allows RADIUS servers to apply identity-based policies and track client devices using their hardware address.*

Port Mode – Edit port

Port

On this tab, the users can enable on which ports the authentication will take effect, select the port(s), and then click on the “**Edit**” button or icon to configure the port(s) as shown below:

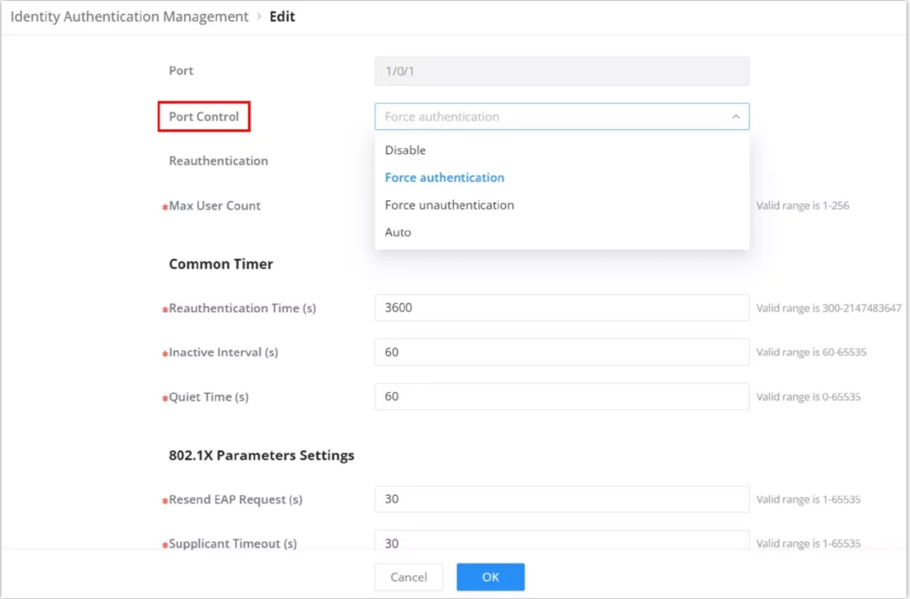


Identity Authentication Management

☐	Port	Port Control	Reauthentication	Max User Count	Reauthentication Timer	Inactive Timer	Quiet Timer	Operation
☐	1/0/1	Force authentication	Enabled	256	3600	60	60	✎
☐	1/0/2	Auto	Enabled	256	3600	60	60	✎
☐	1/0/3	Force unauthenticatio n	Enabled	256	3600	60	60	✎
☐	1/0/4	Disable	Disabled	256	3600	60	60	✎

Identity Authentication Management port page

To enable the authentication on the port(s), under Port Control (Disable, Force authentication, Force unauthentication, Auto) select Auto or Force authentication and then save the configuration.



Identity Authentication Management > Edit

Port: 1/0/1

Port Control: Force authentication

Reauthentication

*Max User Count — Valid range is 1-256

Common Timer

*Reauthentication Time (s): 3600 — Valid range is 300-2147483647

*Inactive Interval (s): 60 — Valid range is 60-65535

*Quiet Time (s): 60 — Valid range is 0-65535

802.1X Parameters Settings

*Resend EAP Request (s): 30 — Valid range is 1-65535

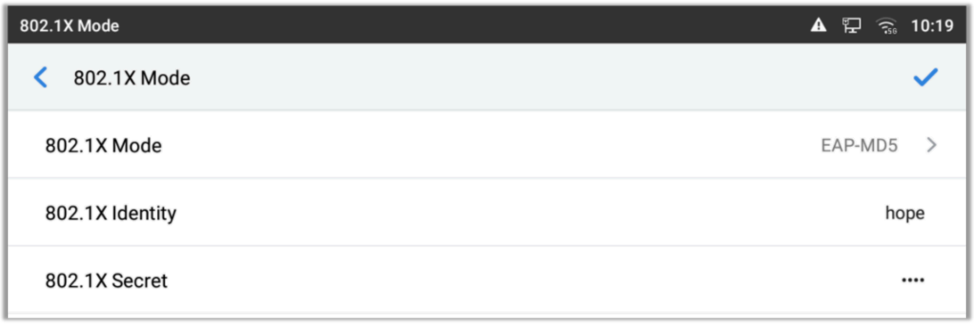
*Supplicant Timeout (s): 30 — Valid range is 1-65535

Identity Authentication Management port edit port

Note:

The 802.1X must be also configured on the device connected to the GWN780x Pro switch port.

Example of 802.1X configuration on GXV3480 IP Video phone.



802.1X Mode: EAP-MD5

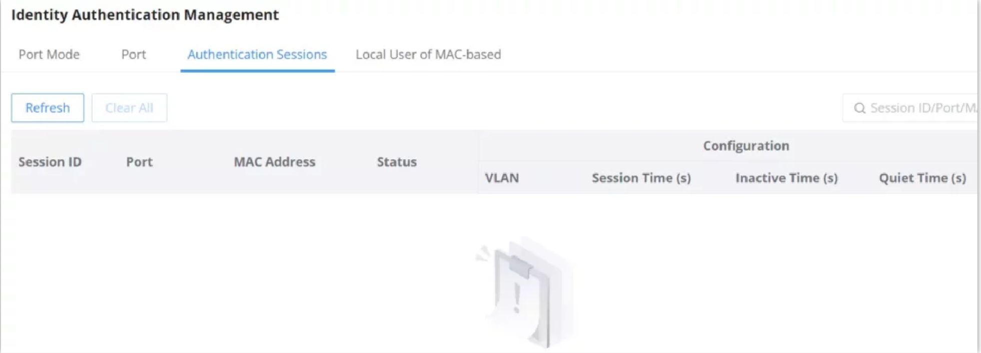
802.1X Identity: hope

802.1X Secret: ••••

8021X Mode on GXV3480

Authentication Sessions

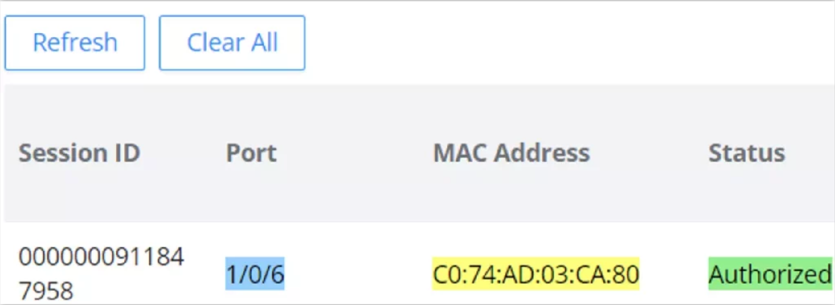
On this tab, the authenticated devices will be listed here with more details. Please refer to the figures below:



Session ID	Port	MAC Address	Status	Configuration			
				VLAN	Session Time (s)	Inactive Time (s)	Quiet Time (s)

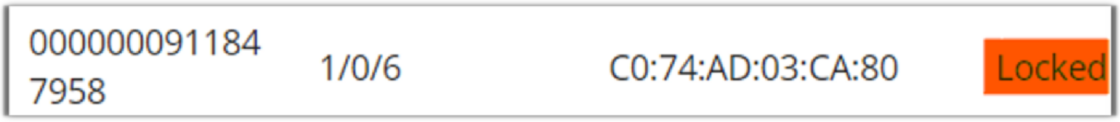
Authentication Sessions

There are three status (Authorized, Locked, Guest):



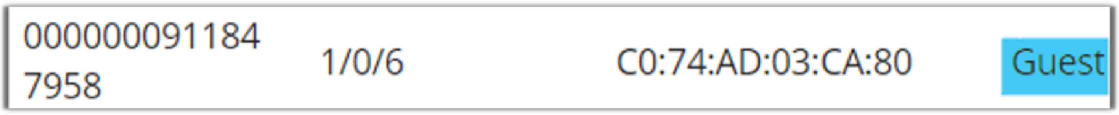
Session ID	Port	MAC Address	Status
0000000911847958	1/0/6	C0:74:AD:03:CA:80	Authorized

Authentication Sessions Status Authorized



0000000911847958	1/0/6	C0:74:AD:03:CA:80	Locked

Authentication Sessions Status Locked

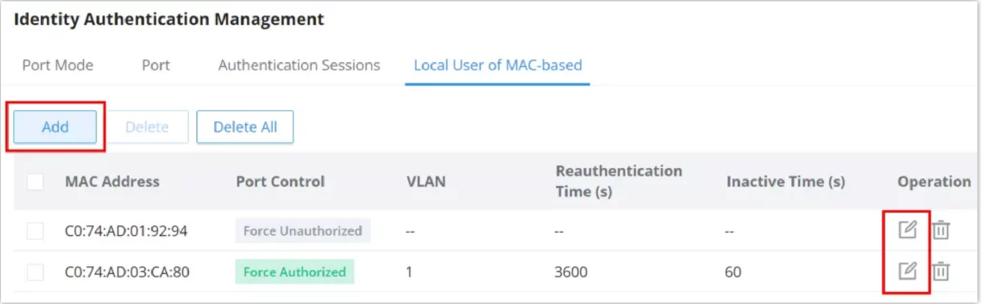


0000000911847958	1/0/6	C0:74:AD:03:CA:80	Guest

Authentication Sessions Status Guest

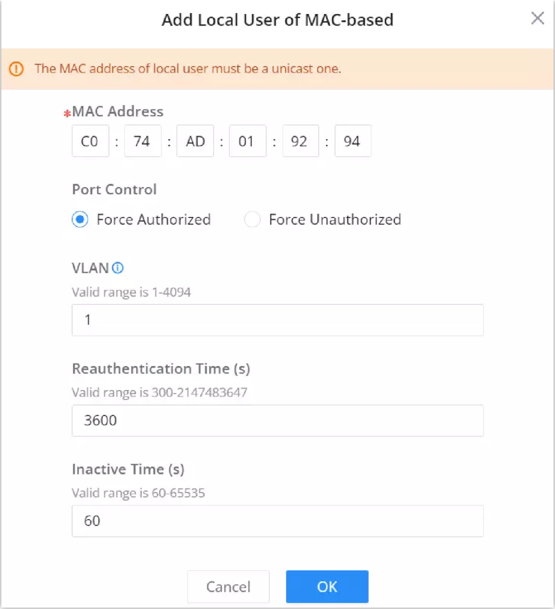
Local User of a MAC-based

The “**Local User of MAC-based**” feature in Grandstream GWN switches provides a way to add and manage users based on their MAC addresses. This feature ensures that only devices with specified MAC addresses are granted network access, enhancing security and control over network resources.



□	MAC Address	Port Control	VLAN	Reauthentication Time (s)	Inactive Time (s)	Operation
□	C0:74:AD:01:92:94	Force Unauthorized	--	--	--	
□	C0:74:AD:03:CA:80	Force Authorized	1	3600	60	

Local User of MAC based



Add Local User of MAC-based

The MAC address of local user must be a unicast one.

*MAC Address
C0 : 74 : AD : 01 : 92 : 94

Port Control
● Force Authorized ○ Force Unauthorized

VLAN
Valid range is 1-4094
1

Reauthentication Time (s)
Valid range is 300-2147483647
3600

Inactive Time (s)
Valid range is 60-65535
60

Add local User of MAC based

MAC Address	The MAC address of the local user must be a unicast one.
Port Control	• **Force Authorized:** Forces the port to authorize the device with the specified MAC address, allowing it access to the network. • **Force Unauthorized:** Forces the port to not authorize the device, preventing it from accessing the network.
VLAN	Valid range is 1-4094.
Reauthentication Time (s)	Valid range is 300-2147483647.
Inactive Time (s)	Valid range is 60-65535.

Add *local User of MAC-based*

DHCP Snooping

DHCP snooping ensures that DHCP clients obtain IP addresses from legitimate DHCP servers and records the correspondence between IP addresses and MAC addresses of DHCP clients to prevent DHCP attacks on the network.

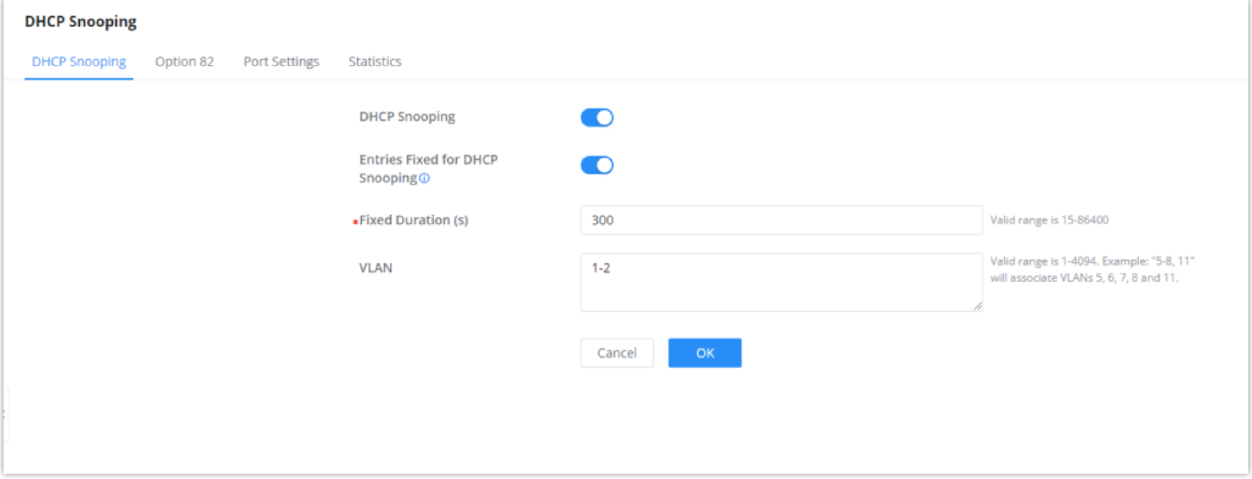
In order to ensure the security of network communication services, the DHCP Snooping technology is introduced, and a firewall is established between the DHCP Client and the DHCP Server to defend against various attacks against DHCP in the network.

When the device reboots, the dynamic binding table for the IP source guard is automatically restored.

Note: Associated with the “Entries Fixed for DHCPv6 Snooping” option of DHCPv6 Snooping.

Users can configure fixed entries for DHCP Snooping, ensuring that when the device reboots, the dynamic binding table for IP source guard is automatically restored after a fixed duration defined in seconds. Note that this is linked to the ‘Entries Fixed for DHCPv6 Snooping’ option in DHCPv6 Snooping.

To enable the DHCP Snooping feature on GWN780x Pro switches, navigate to Security → DHCP Snooping, then enable DHCP Snooping. To enable DHCP snooping on a VLAN, specify the VLANs or a VLAN range, for example, 5-8 means VLANs from 5 to 8, and click the “**OK**” button to save. Please refer to the figure below:



DHCP Snooping

DHCP Snooping | Option 82 | Port Settings | Statistics

DHCP Snooping: ●

Entries Fixed for DHCP Snooping ⓘ: ●

*Fixed Duration (s): 300 — Valid range is 15-86400

VLAN: 1-2 — Valid range is 1-4094. Example: "5-8, 11" will associate VLANs 5, 6, 7, 8 and 11.

Cancel | OK

DHCP Snooping General page

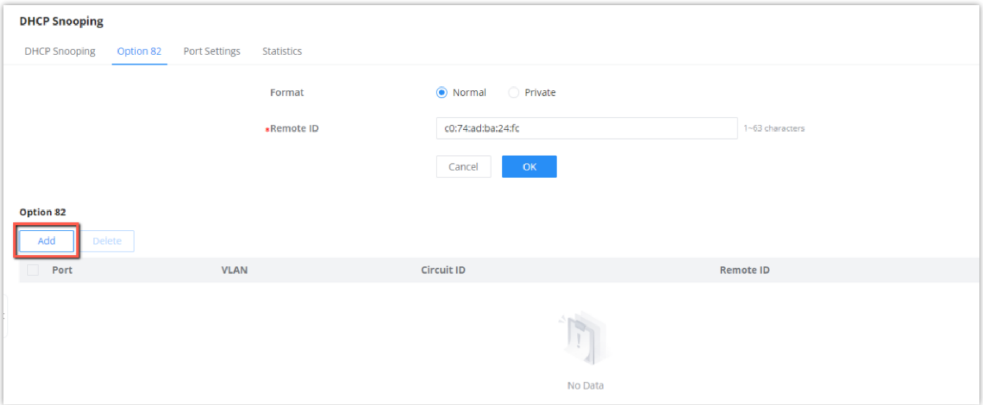
DHCP Snooping Option 82

Option 82 is called the relay agent information option and is inserted by the DHCP relay agent when forwarding client-originated DHCP packets to a DHCP server.

To identify the device accessed by the client, the user specifies the Remote ID. The format can be either Normal (standard) or **Private**:

- **Normal Format:** is generally used when interoperability between different vendors' equipment is required. For GWN780x Pro switches, by default, the MAC Address of the switch will be used, but any other characters in the range of 1-63 can be used.
- **Private Format:** is specific to the vendor's ecosystem and may not be compatible with other vendors' equipment (check the vendor-specific format).

Option 82 is used to identify both the Circuit ID and Remote ID of the specific port. This can be used to identify the VLAN, interface, and other information where the client is located. To define this information, go to DHCP Snooping → Option 82, choose a specific port:



DHCP Snooping

DHCP Snooping | Option 82 | Port Settings | Statistics

Format: ● Normal ○ Private

*Remote ID: c0:74:ad:ba:24:fc — 1~63 characters

Cancel | OK

Option 82

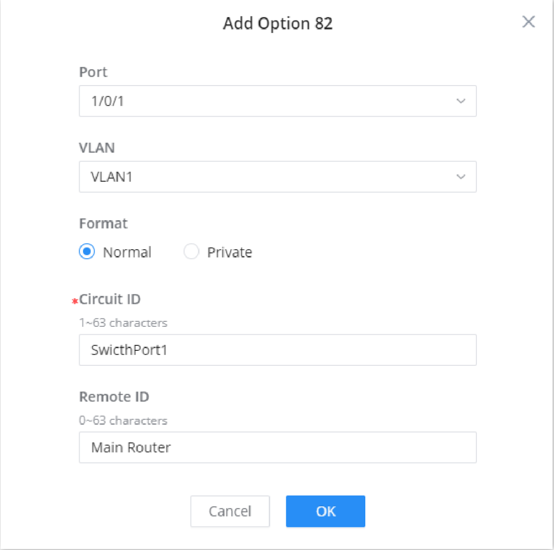
Add | Delete

□	Port	VLAN	Circuit ID	Remote ID

No Data

DHCP Snooping Option 82

Then, select a port, VLAN, and Format, and specify the Circuit ID and Remote ID:



Port: 1/0/1

VLAN: VLAN1

Format: ● Normal ○ Private

*Circuit ID (1~63 characters): SwicthPort1

Remote ID (0~63 characters): Main Router

DHCP Snooping Option 82 Add Circuit

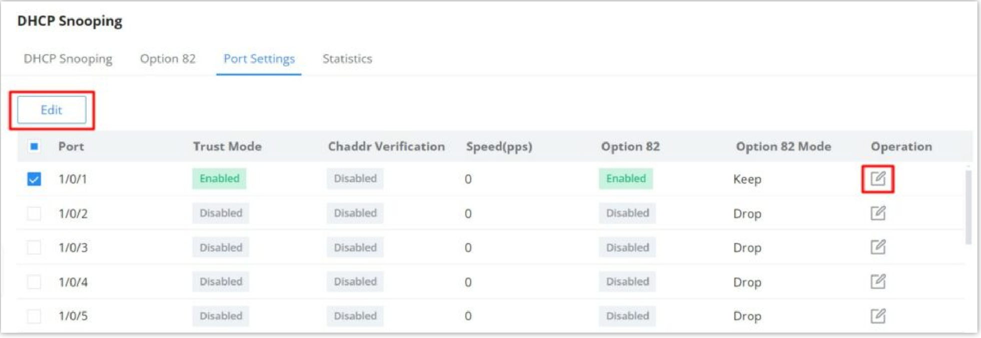
Note

Please note that the Remote ID per port is different from the global remote ID of the switch.

DHCP Snooping Port Settings

On this page, the user can configure the trusted port(s) that will allow DHCP messages; all other ports that are not trusted will discard the DHCP messages. This way, GWN780x Pro will protect users from rogue DHCP servers that are plugged into untrusted ports.

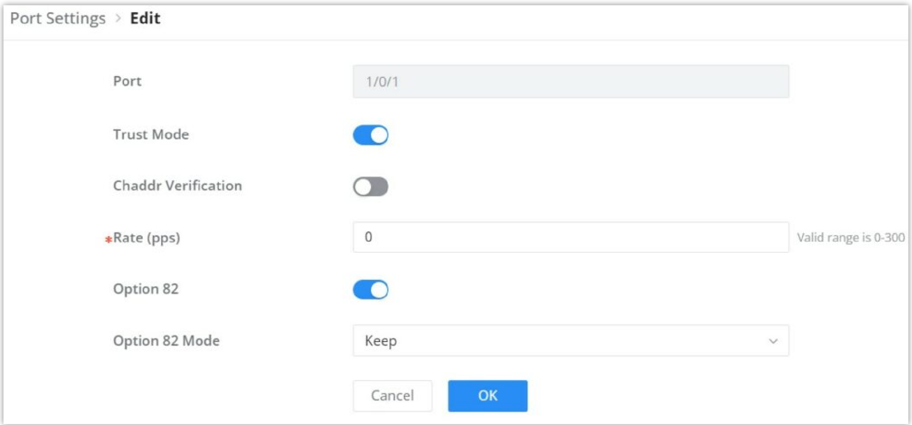
To configure a port(s), either select the port(s) and click on the "**Edit**" button or click on the "**Edit icon**" under the operation column, as seen below:



■	Port	Trust Mode	Chaddr Verification	Speed(pps)	Option 82	Option 82 Mode	Operation
☑	1/0/1	Enabled	Disabled	0	Enabled	Keep	✎
□	1/0/2	Disabled	Disabled	0	Disabled	Drop	✎
□	1/0/3	Disabled	Disabled	0	Disabled	Drop	✎
□	1/0/4	Disabled	Disabled	0	Disabled	Drop	✎
□	1/0/5	Disabled	Disabled	0	Disabled	Drop	✎

DHCP Snooping Port Settings

To make a port trusted, Toggle ON **Trust Mode. More** security parameters can be enabled, too, like **Chaddr Verification**, **Rate** (**pps** = packet per seconds) to limit the number of DHCP packets, and enable Option 82 for this port with three modes (keep, drop, replace). Please refer to the figure below:



Port: 1/0/1

Trust Mode: ON

Chaddr Verification: OFF

*Rate (pps): 0 Valid range is 0-300

Option 82: ON

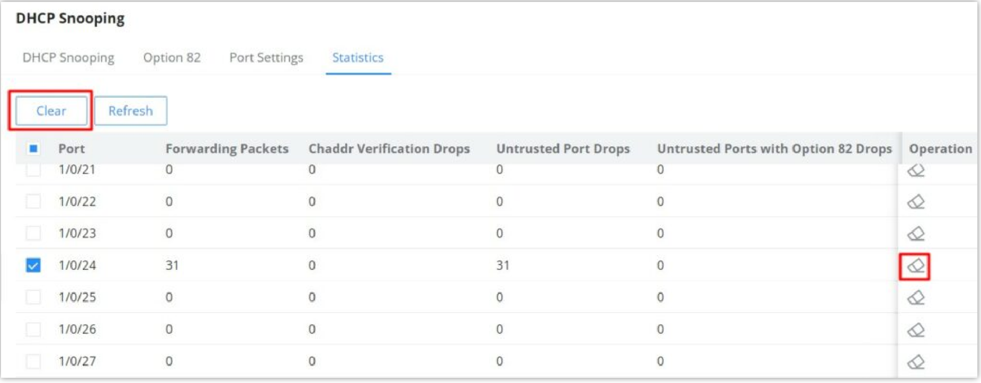
Option 82 Mode: Keep

DHCP Snooping Port Settings Edit

DHCP Snooping Statistics

This page displays all statistics recorded by the DHCP snooping function, including Forwarding packets, Untrusted Port Drops, etc.

To clear the statistics, select the ports and click on the "**Clear**" button as shown below:



DHCP Snooping

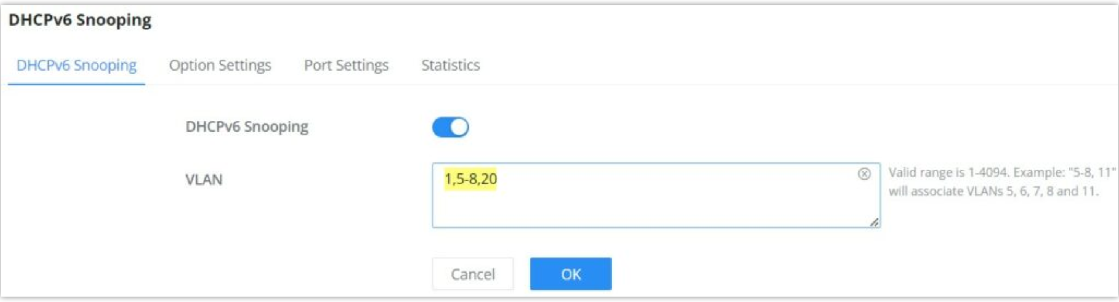
■	Port	Forwarding Packets	Chaddr Verification Drops	Untrusted Port Drops	Untrusted Ports with Option 82 Drops	Operation
□	1/0/21	0	0	0	0	⌫
□	1/0/22	0	0	0	0	⌫
□	1/0/23	0	0	0	0	⌫
☑	1/0/24	31	0	31	0	⌫
□	1/0/25	0	0	0	0	⌫
□	1/0/26	0	0	0	0	⌫
□	1/0/27	0	0	0	0	⌫

DHCP Snooping Statistics

DHCPv6 Snooping

DHCPv6 snooping is a security feature in IPv6 networks that safeguards against unauthorized DHCPv6 server messages and controls IPv6 address assignments, similar to how DHCPv4 snooping operates in IPv4 networks.

To enable the DHCPv6 Snooping feature on GWN780x Pro switches, navigate to **Security → DHCPv6 Snooping**, then enable DHCPv6 Snooping. To make the DHCPv6 snooping enabled on a VLAN, specify the VLANs or a VLAN range, for example, 5-8, which means VLANs from 5 to 8, and click the "**OK**" button to save. Please refer to the figure below:



DHCPv6 Snooping

DHCPv6 Snooping: ●

VLAN: 1,5-8,20

Valid range is 1-4094. Example: "5-8, 11" will associate VLANs 5, 6, 7, 8 and 11.

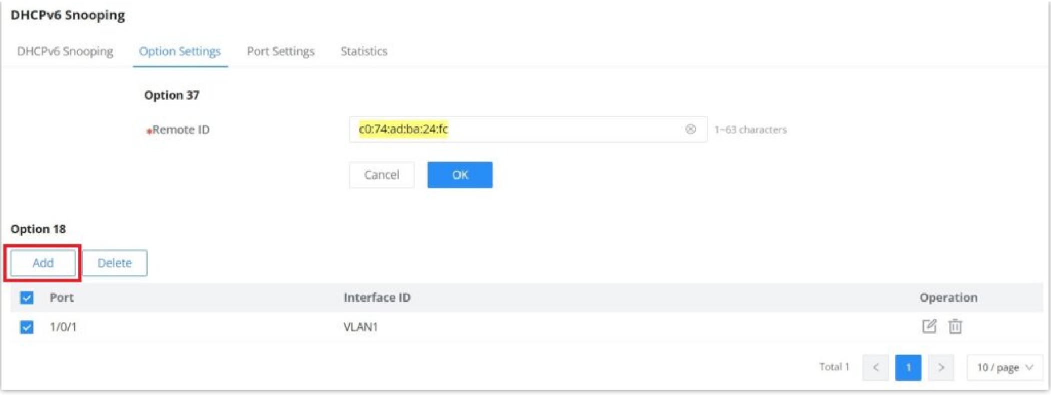
DHCPv6 Snooping

DHCPv6 Snooping Option 18

On this page, the user can configure the Remote ID (Option 37). By default, GWN780x Pro switches use the GWN780x Pro switches' MAC Address.

The DHCPv6 Relay-Option, encompassing Option 18 and Option 37, enables a DHCPv6 relay agent to embed circuit-specific and remote information as a TLV (type-length-value) within the relay message sent to the DHCPv6 server. In this scenario, the managed device functions as a DHCPv6 relay agent.

To add option 18 for a port, click on the "**Add**" button as shown below:



DHCPv6 Snooping

DHCPv6 Snooping | Option Settings | Port Settings | Statistics

Option 37

*Remote ID: c0:74:ad:ba:24:fc (1~63 characters)

Cancel | OK

Option 18

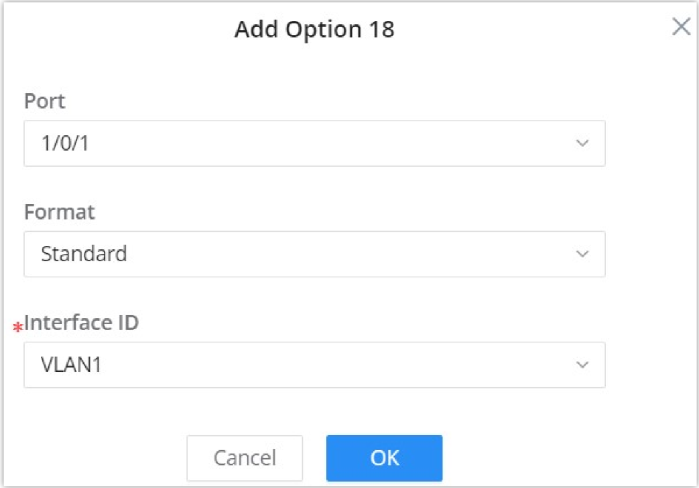
Add | Delete

☑	Port	Interface ID	Operation
☑	1/0/1	VLAN1	

Total 1 < 1 > 10 / page

DHCPv6 Snooping Option Settings

Then, select the port, Format (Standard, Extended). When the Standard format is selected, the user can select the VLAN, and if the Extended Format is selected, the user can interface ID (3~63 characters), click on "**OK**" to save.



Add Option 18

Port: 1/0/1

Format: Standard

*Interface ID: VLAN1

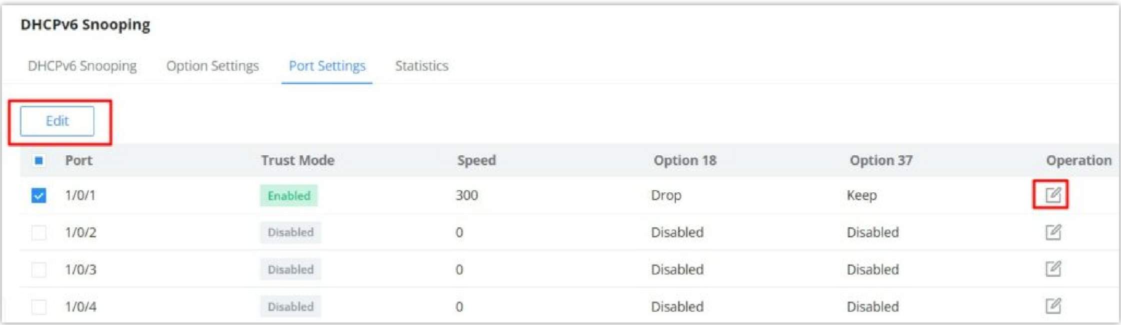
Cancel | OK

DHCPv6 Snooping Add option 18

DHCPv6 Snooping Port Settings

On this page, the user can configure the trusted port(s) that will allow DHCP messages; all other ports that are not trusted will discard the DHCP messages. This way, GWN780x Pro will protect users from rogue DHCP servers that are plugged into untrusted ports.

To configure a port(s), either select the port(s) and click on the "**Edit**" button or click on the "**Edit icon**" under the operation column, as seen below:



DHCPv6 Snooping

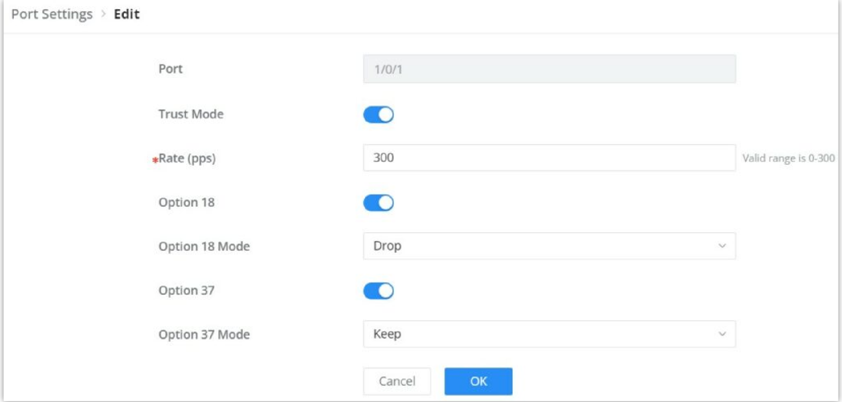
DHCPv6 Snooping | Option Settings | Port Settings | Statistics

Edit

	Port	Trust Mode	Speed	Option 18	Option 37	Operation
☑	1/0/1	Enabled	300	Drop	Keep	
□	1/0/2	Disabled	0	Disabled	Disabled	
□	1/0/3	Disabled	0	Disabled	Disabled	
□	1/0/4	Disabled	0	Disabled	Disabled	

DHCPv6 Snooping Port Settings

To make a port trusted, Toggle ON **Trust Mode. More** security parameters can be enabled too, like Rate (pps = packets per second) to limit the number of DHCPv6 packets, and enable Option 18 and 37 for this port with three modes (keep, drop, replace). Please refer to the figure below:



Port Settings > **Edit**

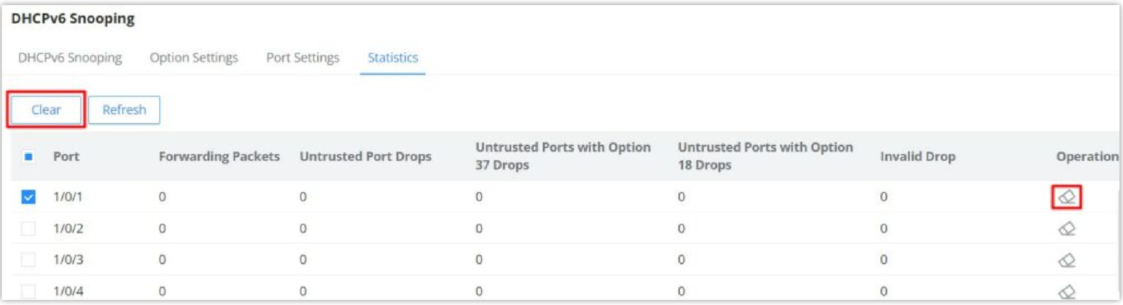
Port	1/0/1
Trust Mode	●
*Rate (pps)	300 — Valid range is 0-300
Option 18	●
Option 18 Mode	Drop
Option 37	●
Option 37 Mode	Keep

DHCPv6 Snooping Port Settings Edit

DHCPv6 Snooping Statistics

This page displays all statistics recorded by the DHCPv6 snooping function, including Forwarding packets, Untrusted Port Drops, etc.

To clear the statistics, select the ports and click on the "**Clear**" button as shown below:



DHCPv6 Snooping

■	Port	Forwarding Packets	Untrusted Port Drops	Untrusted Ports with Option 37 Drops	Untrusted Ports with Option 18 Drops	Invalid Drop	Operation
☑	1/0/1	0	0	0	0	0	◇
□	1/0/2	0	0	0	0	0	◇
□	1/0/3	0	0	0	0	0	◇
□	1/0/4	0	0	0	0	0	◇

DHCPv6 Snooping Statistics

MAINTENANCE

Upgrade

GWN780x Pro 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.

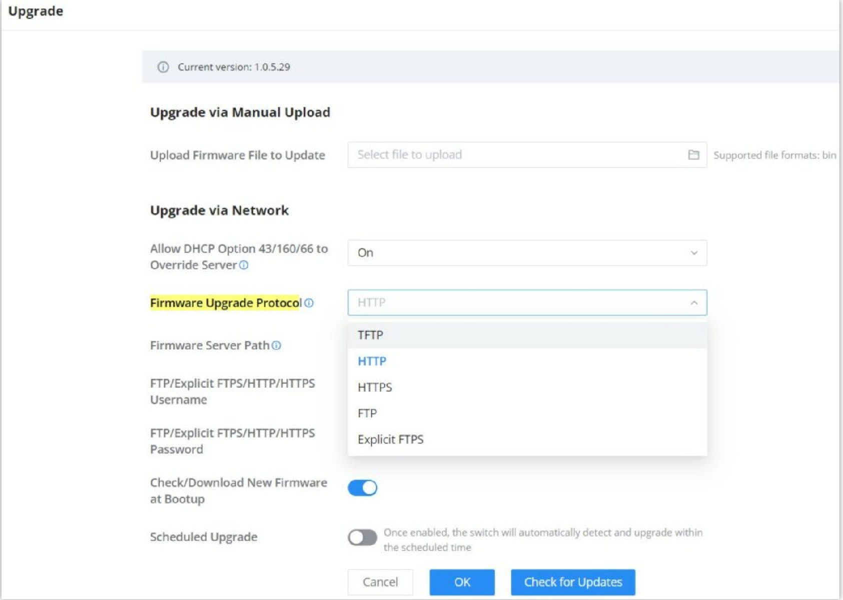
Upgrading via network is also possible using 5 of these protocols:

- TFTP
- HTTP
- HTTPS
- FTP
- Explicit FTPS

Once the protocol is selected, the user needs to specify the firmware Server Path (For example: firmware.grandstream.com).

Note:

- Username and Password must be specified if the Server requires them.
- For FTP protocol use the header "**ftp://**" and for FTPS use "**ftps://**"
- Considering the memory problem of the device, the upload upgrade supports streaming upgrade, and the upgrade is carried out while uploading.



Upgrade

Current version: 1.0.5.29

Upgrade via Manual Upload

Upload Firmware File to Update: Select file to upload — Supported file formats: bin

Upgrade via Network

Allow DHCP Option 43/160/66 to Override Server: On

Firmware Upgrade Protocol: HTTP

Firmware Server Path

FTP/Explicit FTPS/HTTP/HTTPS Username

FTP/Explicit FTPS/HTTP/HTTPS Password

Check/Download New Firmware at Bootup

Scheduled Upgrade — Once enabled, the switch will automatically detect and upgrade within the scheduled time

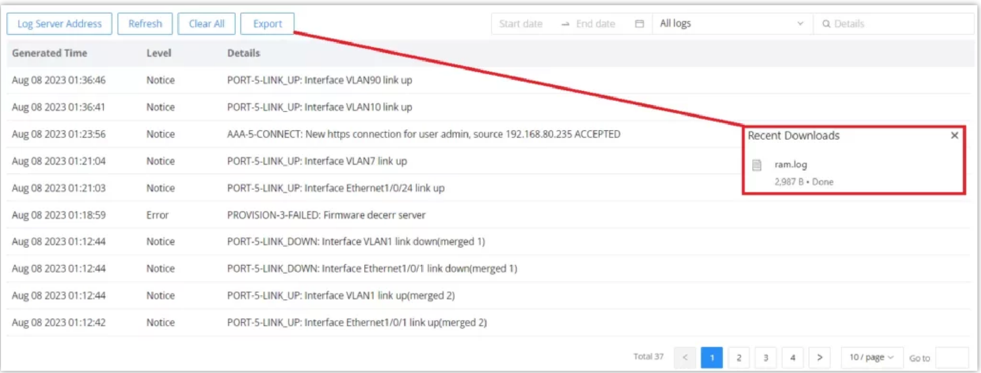
Upgrade

Diagnostics

GWN780x Pro Switches support many diagnostic tools that can help the user troubleshoot the issue and resolve it. These tools include Logs, Ping, Traceroute, Mirroring, Fiber Module, Copper Test, and One-Click Debugging.

Logs

This page lists all the generated Logs with the details level and the generated time, also an option to export the list is available.



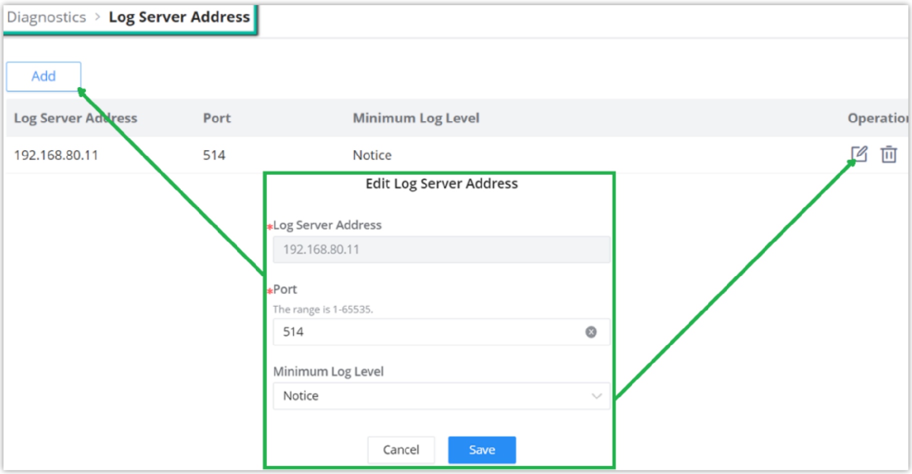
Generated Time	Level	Details
Aug 08 2023 01:36:46	Notice	PORT-5-LINK_UP: Interface VLAN90 link up
Aug 08 2023 01:36:41	Notice	PORT-5-LINK_UP: Interface VLAN10 link up
Aug 08 2023 01:23:56	Notice	AAA-5-CONNECT: New https connection for user admin, source 192.168.80.235 ACCEPTED
Aug 08 2023 01:21:04	Notice	PORT-5-LINK_UP: Interface VLAN7 link up
Aug 08 2023 01:21:03	Notice	PORT-5-LINK_UP: Interface Ethernet1/0/24 link up
Aug 08 2023 01:18:59	Error	PROVISION-3-FAILED: Firmware decerr server
Aug 08 2023 01:12:44	Notice	PORT-5-LINK_DOWN: Interface VLAN1 link down(merged 1)
Aug 08 2023 01:12:44	Notice	PORT-5-LINK_DOWN: Interface Ethernet1/0/1 link down(merged 1)
Aug 08 2023 01:12:44	Notice	PORT-5-LINK_UP: Interface VLAN1 link up(merged 2)
Aug 08 2023 01:12:42	Notice	PORT-5-LINK_UP: Interface Ethernet1/0/1 link up(merged 2)

Recent Downloads

ram.log
2,987 B • Done

Diagnostics Logs

Adding a Log Server Address to the logs to be sent to is also supported on the GWN780x Pro Switches.



Diagnostics > Log Server Address

Log Server Address	Port	Minimum Log Level	Operation
192.168.80.11	514	Notice	

Edit Log Server Address

*Log Server Address: 192.168.80.11

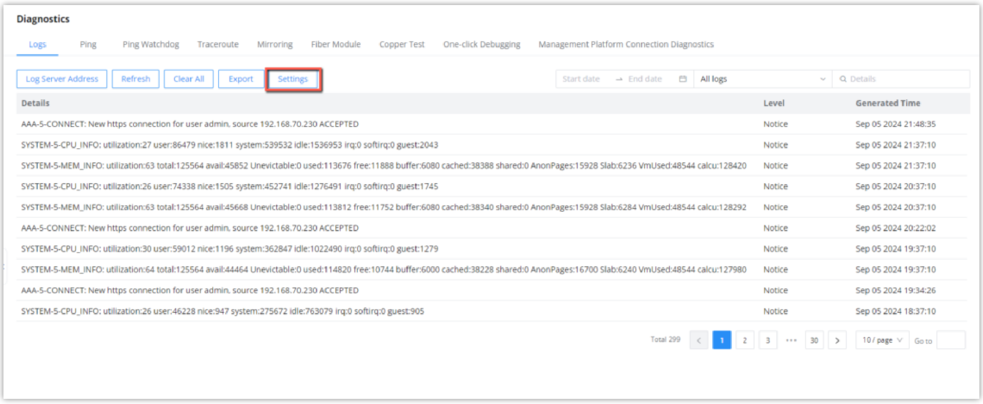
*Port: 514 — The range is 1-65535.

Minimum Log Level: Notice

Log Server Address

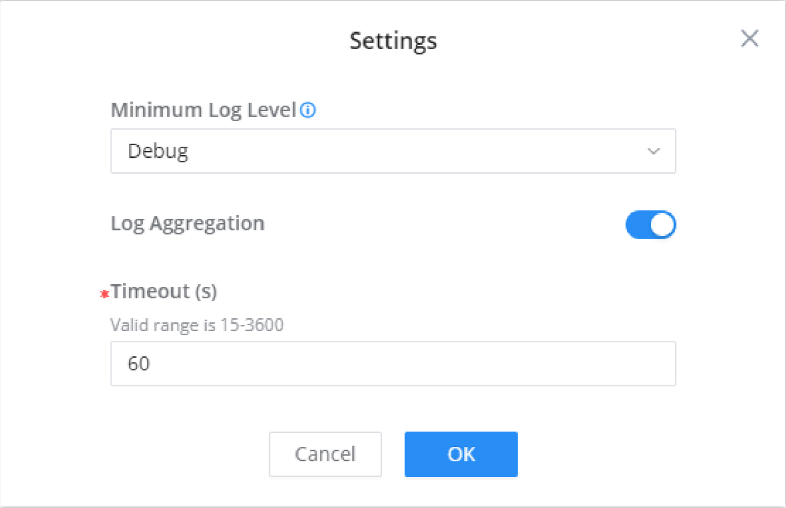
Users can configure the following elements in the logs settings:

- **Minimum log level:** This defines the lowest severity of events that will be logged. “Debug” means all messages, including detailed diagnostic information, will be recorded. Other log levels (e.g., Info, Warning, Error) would filter out lower-priority messages.
- **Log Aggregation:** This option allows you to merge multiple logs from various sources or components into a centralized location for easier monitoring, analysis, and management.
- **Timeout:** This setting defines the time, in seconds, before the logging operation times out. In the example shown, the timeout is set to 60 seconds. The valid range for the timeout is between 15 and 3600 seconds.



Details	Level	Generated Time
AAA-5-CONNECT: New https connection for user admin, source 192.168.70.230 ACCEPTED	Notice	Sep 05 2024 21:48:35
SYSTEM-5-CPU_INFO: utilization:27 user:86479 nice:1811 system:539532 idle:1536953 irq:0 softirq:0 guest:2043	Notice	Sep 05 2024 21:37:10
SYSTEM-5-MEM_INFO: utilization:63 total:125564 avail:45852 Unevictable:0 used:113676 free:11888 buffer:6080 cached:38388 shared:0 AnonPages:15928 Slab:6236 VmUsed:48544 calcu:128420	Notice	Sep 05 2024 21:37:10
SYSTEM-5-CPU_INFO: utilization:26 user:74338 nice:1505 system:452741 idle:1276491 irq:0 softirq:0 guest:1745	Notice	Sep 05 2024 20:37:10
SYSTEM-5-MEM_INFO: utilization:63 total:125564 avail:45668 Unevictable:0 used:113812 free:11752 buffer:6080 cached:38340 shared:0 AnonPages:15928 Slab:6284 VmUsed:48544 calcu:128292	Notice	Sep 05 2024 20:37:10
AAA-5-CONNECT: New https connection for user admin, source 192.168.70.230 ACCEPTED	Notice	Sep 05 2024 20:22:02
SYSTEM-5-CPU_INFO: utilization:30 user:59012 nice:1196 system:362847 idle:1022490 irq:0 softirq:0 guest:1279	Notice	Sep 05 2024 19:37:10
SYSTEM-5-MEM_INFO: utilization:64 total:125564 avail:44464 Unevictable:0 used:114820 free:10744 buffer:6000 cached:38228 shared:0 AnonPages:16700 Slab:6240 VmUsed:48544 calcu:127980	Notice	Sep 05 2024 19:37:10
AAA-5-CONNECT: New https connection for user admin, source 192.168.70.230 ACCEPTED	Notice	Sep 05 2024 19:34:26
SYSTEM-5-CPU_INFO: utilization:26 user:46228 nice:947 system:275672 idle:763079 irq:0 softirq:0 guest:905	Notice	Sep 05 2024 18:37:10

Log Diagnostics


Settings

Minimum Log Level: Debug

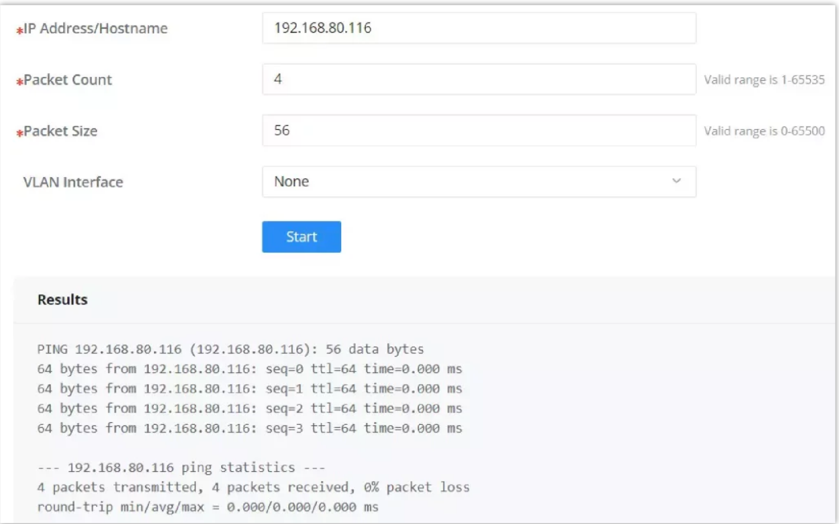
Log Aggregation: ●

*Timeout (s)
Valid range is 15-3600
60

Log Diagnostics

Ping

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


*IP Address/Hostname: 192.168.80.116

*Packet Count: 4 Valid range is 1-65535

*Packet Size: 56 Valid range is 0-65500

VLAN Interface: None

Results

```
PING 192.168.80.116 (192.168.80.116): 56 data bytes
64 bytes from 192.168.80.116: seq=0 ttl=64 time=0.000 ms
64 bytes from 192.168.80.116: seq=1 ttl=64 time=0.000 ms
64 bytes from 192.168.80.116: seq=2 ttl=64 time=0.000 ms
64 bytes from 192.168.80.116: seq=3 ttl=64 time=0.000 ms

--- 192.168.80.116 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 0.000/0.000/0.000 ms
```

Ping

Ping Watchdog

Ping Watchdog is a feature designed to monitor the connectivity of a device by continuously pinging a specified IP address. If the device becomes unresponsive to pings, then corrective actions can be triggered based on the configuration settings.

Port: Specifies the port on the device that will be monitored or managed by Ping Watchdog.

Enable: Toggles the Ping Watchdog feature on or off for the selected port.

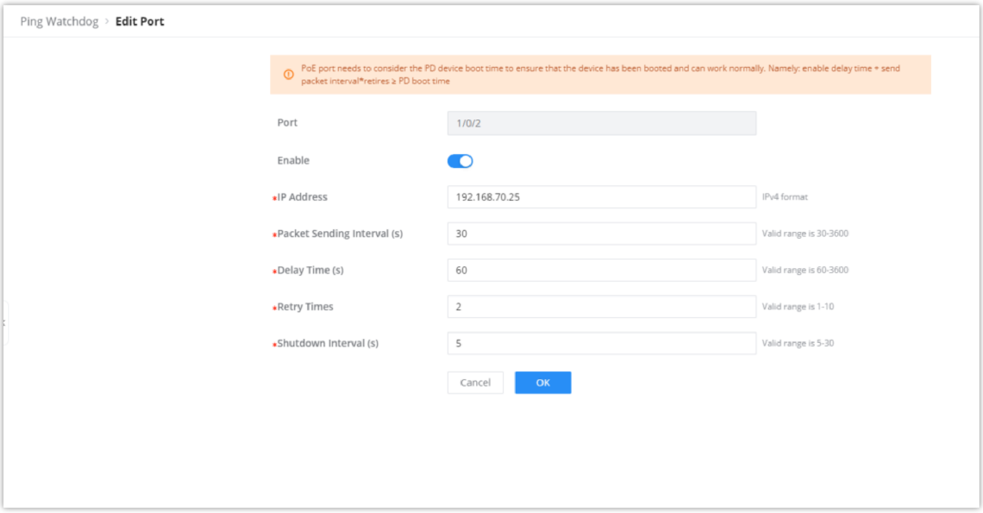
IP Address: The target IP address to which the device will send ping requests.

Packet Sending Interval (s): Defines how frequently (in seconds) ping packets are sent to the specified IP address.

Delay Time (s): This sets a delay before the Ping Watchdog starts monitoring the device after it's enabled or after a reboot.

Retry Times: Specifies how many failed ping attempts are allowed before the watchdog takes action.

Shutdown Interval (s): The time period (in seconds) for which the monitored PoE port will remain shut down after failing the ping test and triggering the shutdown action.



PoE port needs to consider the PD device boot time to ensure that the device has been booted and can work normally. Namely: enable delay time + send packet interval*retires ≥ PD boot time

Port: 1/0/2

Enable: ●

*IP Address: 192.168.70.25 — IPv4 format

*Packet Sending Interval (s): 30 — Valid range is 30-3600

*Delay Time (s): 60 — Valid range is 60-3600

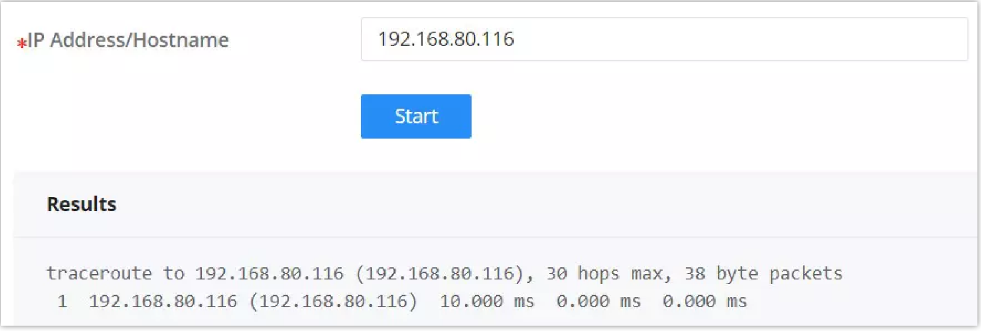
*Retry Times: 2 — Valid range is 1-10

*Shutdown Interval (s): 5 — Valid range is 5-30

Ping watchdog

Traceroute

Another tool is Traceroute, which shows the number of hops, and GWN780x Pro Switches enable the user to run Traceroute commands right from the Switches' WEB UI.



*IP Address/Hostname: 192.168.80.116

```
traceroute to 192.168.80.116 (192.168.80.116), 30 hops max, 38 byte packets
 1  192.168.80.116 (192.168.80.116)  10.000 ms  0.000 ms  0.000 ms
```

Traceroute

Mirroring

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.

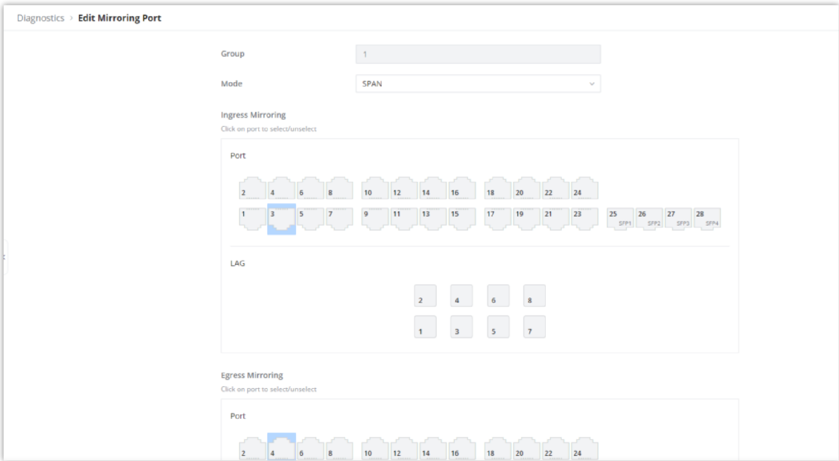
The GWN780x Pro switches support two modes of Port Mirroring: SPAN and RSPAN:

- **SPAN (Local)**: Traffic is mirrored locally within the same switch.
- **RSPAN (Remote)**: Traffic is mirrored remotely across a network using a Remote VLAN.

SPAN

The traffic mirroring occurs locally within the same switch. SPAN allows you to capture traffic from one or more ports and send a copy of it to another port, typically connected to a network analyzer or monitoring tool.

- **Ingress Mirroring**: Captures incoming traffic on the source port(s).
- **Egress Mirroring**: Captures outgoing traffic from the source port(s).
- **Source Port**: Where the traffic originates (the port being monitored).
- **Tx/Rx Regular Data Messages:** defines what type of traffic (transmit, receive, or both) is monitored on the destination switch.



Diagnostics › Edit Mirroring Port

Group: 1

Mode: SPAN

Ingress Mirroring
Click on port to select/unselect

Egress Mirroring
Click on port to select/unselect

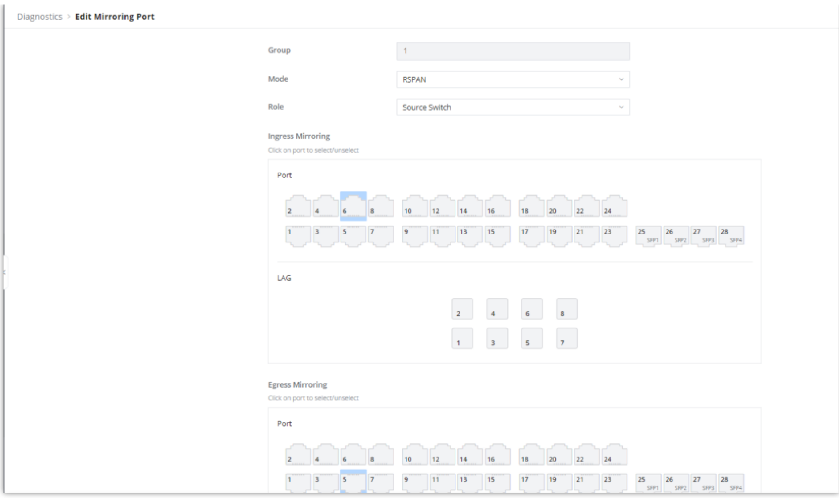
Port Mirroring

RSPAN

RSPAN (Remote Switched Port Analyzer) allows traffic to be mirrored from one switch to another over a network. Unlike SPAN, which is limited to mirroring traffic locally within the same switch, RSPAN uses a **Remote VLAN** to transport mirrored traffic across multiple switches, enabling centralized monitoring.

Source Switch Role (RSPAN)

- **Ingress Mirroring**: This captures incoming traffic on the specified source port(s). It mirrors the packets received by the port before they are processed by the switch, forwarding them to the designated destination for monitoring or analysis.
- **Egress Mirroring**: This captures outgoing traffic from the specified source port(s). It mirrors the packets leaving the port after the switch processes them, forwarding these packets to the monitoring destination.
- **Output Port**: This is the port on the source switch where the mirrored traffic is sent. In SPAN, it’s usually a local port that connects to the monitoring device, but in RSPAN, this traffic is forwarded across a network using the Remote VLAN to the destination switch.
- **Remote VLAN**: This is the VLAN used to transport mirrored traffic between the source switch and the destination switch in an RSPAN configuration. The source switch forwards mirrored traffic to this VLAN, which allows it to be sent across the network to the destination switch for analysis.



Diagnostics > **Edit Mirroring Port**

Group: 1

Mode: RSPAN

Role: Source Switch

Ingress Mirroring

Click on port to select/unselect

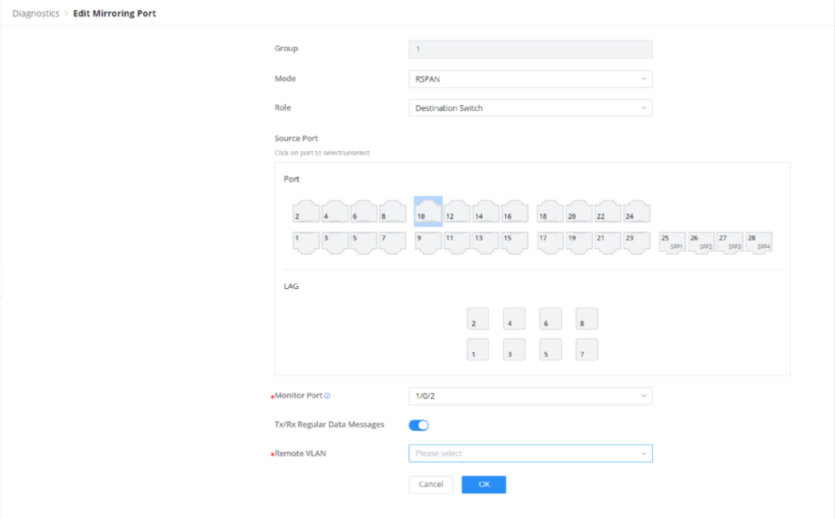
Egress Mirroring

Click on port to select/unselect

Source Switch Role

Destination Switch Role (RSPAN)

- **Source Port**: This is the remote VLAN where the mirrored traffic from the source switch arrives. The destination switch receives the mirrored packets via this VLAN and forwards them to the appropriate monitoring port.
- **Monitor Port TX/RX**: This defines what type of traffic (transmit, receive, or both) is monitored on the destination switch.
- **Remote VLAN**: The VLAN used to receive mirrored traffic from the source switch. It's the same VLAN that the source switch uses to forward the mirrored traffic over the network to the destination switch.



Diagnostics > **Edit Mirroring Port**

Group: 1

Mode: RSPAN

Role: Destination Switch

Source Port

Click on port to select/unselect

*Monitor Port: 1/0/2

Tx/Rx Regular Data Messages: ●

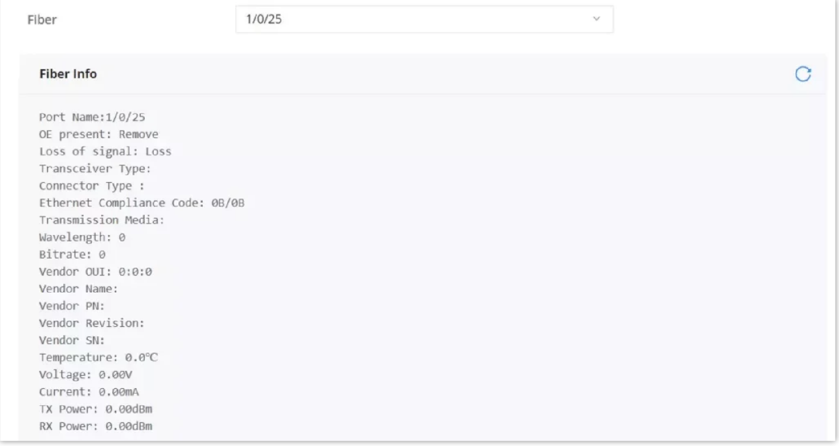
*Remote VLAN: Please select

Destination Switch Role RSPAN

Fiber Module

This page provides the user with information about the fiber module for each Port that supports it. Select the port from the drop-down list and click the refresh icon.

Note: *The information displayed on the optical module of each manufacturer is different.*



Fiber: 1/0/25

Fiber Info

```
Port Name:1/0/25
OE present: Remove
Loss of signal: Loss
Transceiver Type:
Connector Type :
Ethernet Compliance Code: 0B/0B
Transmission Media:
Wavelength: 0
Bitrate: 0
Vendor OUI: 0:0:0
Vendor Name:
Vendor PN:
Vendor Revision:
Vendor SN:
Temperature: 0.0℃
Voltage: 0.00V
Current: 0.00mA
TX Power: 0.00dBm
RX Power: 0.00dBm
```

Fiber Module

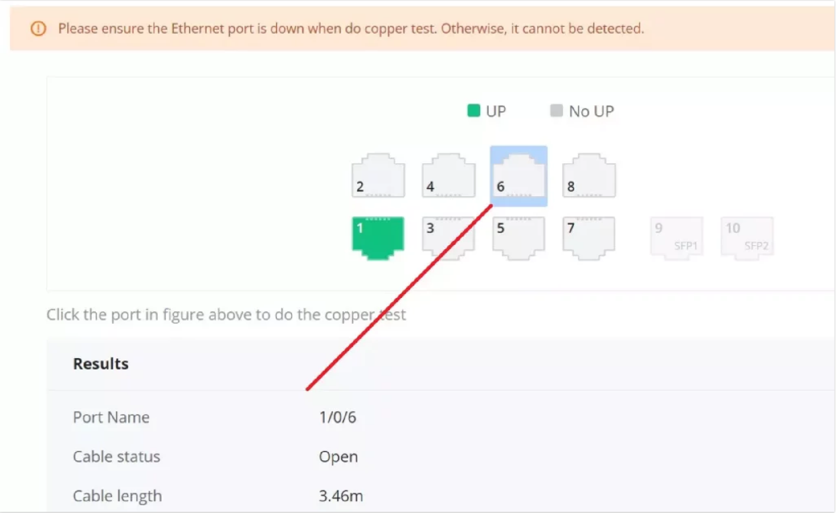
Copper Test

Copper 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 **Web UI** → **Maintenance** → **Diagnostics page** → **Copper Test Tab.**

> **Note:**
>
> When performing cable detection, please ensure that the electrical port is not in the UP state, otherwise the detection result will not be available.

To perform the test simply click on the port, please refer to the figure below:



Please ensure the Ethernet port is down when do copper test. Otherwise, it cannot be detected.

Click the port in figure above to do the copper test

Results

Port Name	1/0/6
Cable status	Open
Cable length	3.46m

Copper Test

After the detection, the cable detection result is displayed as follows:

Cable Status: OK (normal), Open (open circuit), Short (short circuit), Crosstalk (crosstalk), Unknown (unknown).

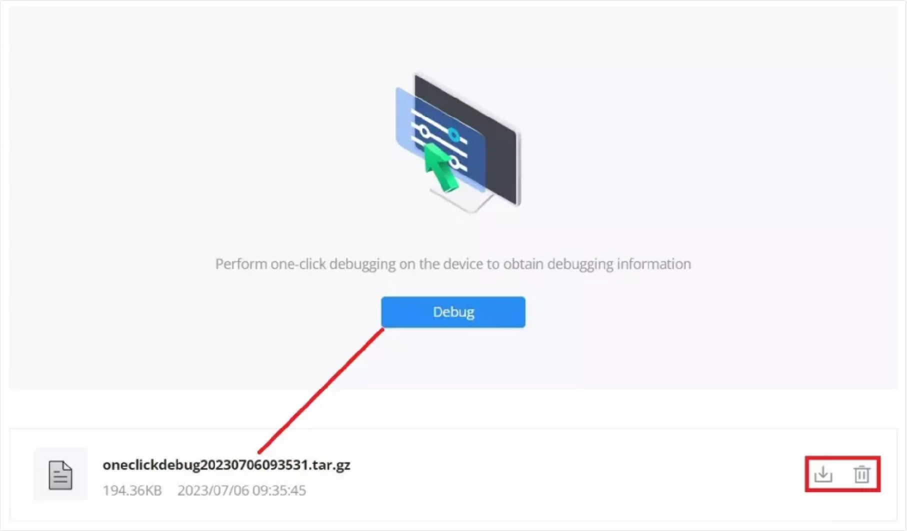
Cable Length:

- When there is a fault, it is the length from the port to the fault location.
- When there is no fault, it is the actual length of the cable.

One-click Debugging

On GWN780x Pro switches, the One-click debugging feature can help administrators or tech support to quickly and easily get debugging information about the GWN switch in a matter of a few minutes.

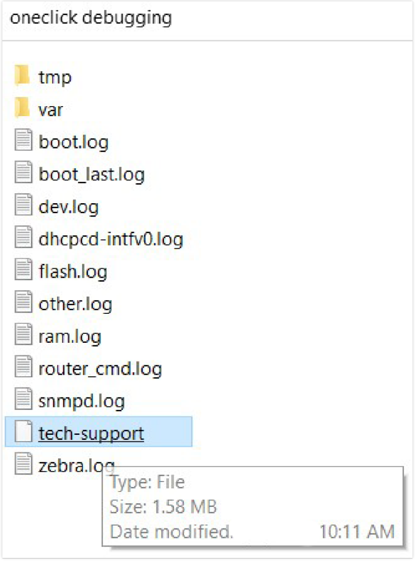
Please navigate to **Web UI → Maintenance → Diagnostics page → One-click Debugging tab**, then click on the "**Debug**" button to start the debugging process.



Perform one-click debugging on the device to obtain debugging information
Debug
oneclickdebug20230706093531.tar.gz
194.36KB 2023/07/06 09:35:45

One click Debugging

It's also possible to delete the generated file or download it locally to share it with tech support for example. The folder contains many log files and even a tech-support file that contains valuable information like the switch configuration, etc.

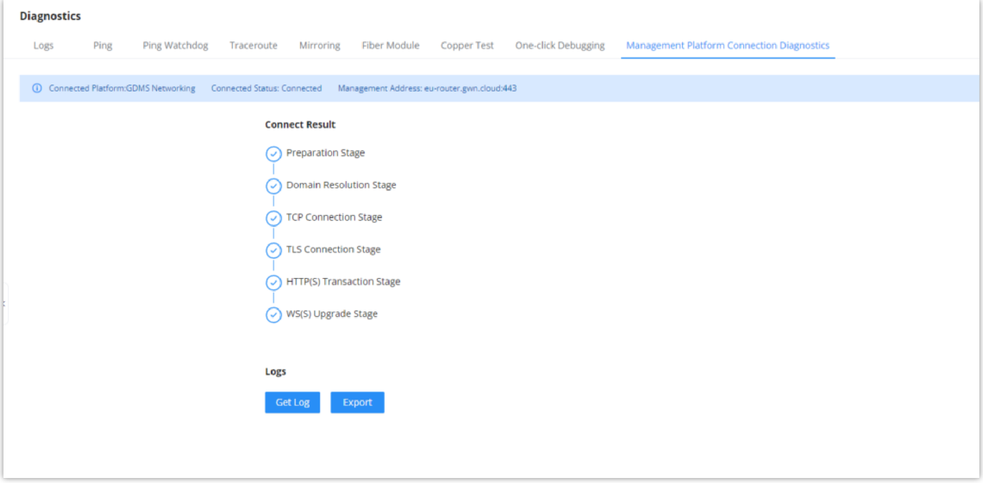


One click Debugging Folder

Management Platform Connection Diagnostics

If the GWN780x Pro switch is added to the GDMS networking, GWN Manager, or a GWN Router, it will display a Cloud icon with a green check mark (as shown in the figure below) indicating it's added to a GDMS Networking account, GWN Manager, or to a GWN Router.

In case there is an issue with the connection, then the user can navigate to **Maintenance → System Diagnosis → Cloud/Manager Connection Diagnostics** and then click on the "**Detection**" or "**Redetection**" button to see in what stage/step the connection has failed. Refer to the figure below:



Diagnostics

Connected Platform:GDMS Networking Connected Status: Connected Management Address: eu-router.gwn.cloud:443

Connect Result

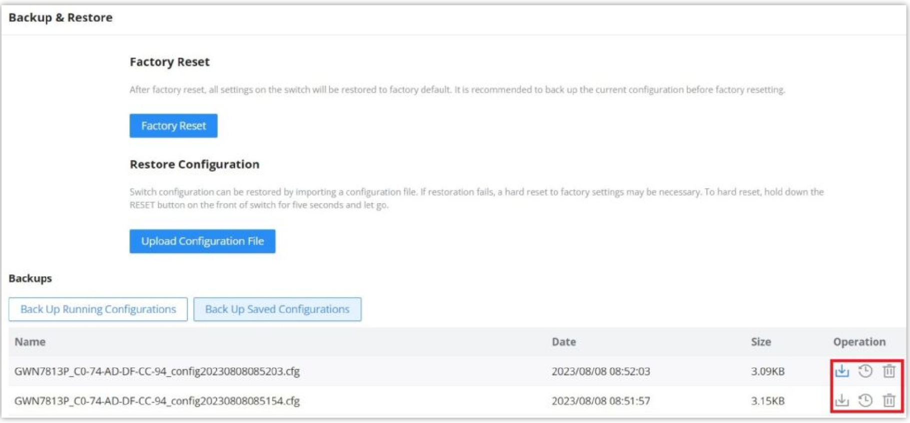
- ✓ Preparation Stage
- ✓ Domain Resolution Stage
- ✓ TCP Connection Stage
- ✓ TLS Connection Stage
- ✓ HTTP(S) Transaction Stage
- ✓ WS(S) Upgrade Stage

Logs

CloudManager Connection Diagnostics

Backup and Restore

Click on the "Factory Reset" button to reset the GWN780x Pro Switch back to default settings, or restore to previously saved backup by uploading a configuration file. These configuration files can be used as a way to back up the device running configuration or saved configuration.



Backup & Restore

Factory Reset

After factory reset, all settings on the switch will be restored to factory default. It is recommended to back up the current configuration before factory resetting.

Restore Configuration

Switch configuration can be restored by importing a configuration file. If restoration fails, a hard reset to factory settings may be necessary. To hard reset, hold down the RESET button on the front of switch for five seconds and let go.

Backups

Name	Date	Size	Operation
GWN7813P_C0-74-AD-DF-CC-94_config20230808085203.cfg	2023/08/08 08:52:03	3.09KB	
GWN7813P_C0-74-AD-DF-CC-94_config20230808085154.cfg	2023/08/08 08:51:57	3.15KB	

Backup and Restore

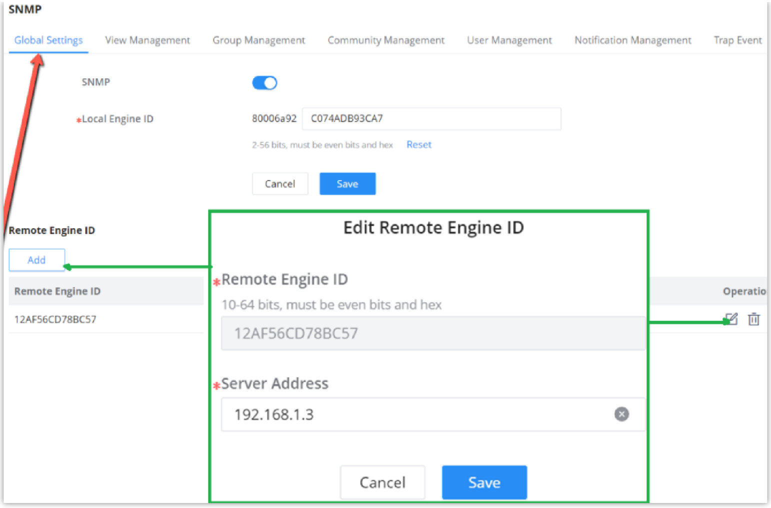
SNMP

Network Management Protocol (SNMP) is an "Internet-standard protocol for managing devices on IP networks". Devices that typically support SNMP include routers, switches, servers, workstations, printers, modem racks, and more. SNMP is used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention. SNMP is a component of the Internet Protocol Suite as defined by the Internet Engineering Task Force (IETF). It consists of a set of standards for network management, including an application layer protocol, a database schema, and a set of data objects. An SNMP-managed network consists of three key components:

- Managed device
- Agent – software that runs on managed devices
- Network management station (NMS) – software that runs on the manager

A managed device is a network node that implements an SNMP interface that allows unidirectional (read-only) or bidirectional (read and write) access to node-specific information. Managed devices exchange node-specific information with the NMSs. Sometimes called network elements, the managed devices can be any type of device, including, but not limited to, routers, access servers, switches, bridges, hubs, IP telephones, IP video cameras, computer hosts, and printers. An agent is a network-management software module that resides on a managed device. An agent has local knowledge of management information and translates that information to or from an SNMP-specific form. A network management station (NMS) executes applications that monitor and control managed devices. NMSs provide the bulk of the processing and memory resources required for network management. One or more NMSs may exist on any managed network.

The global settings page allows the user to enable the SNMP function with the Local Engine ID or add a Remote Engine ID.



SNMP

Global Settings | View Management | Group Management | Community Management | User Management | Notification Management | Trap Event

SNMP: on

*Local Engine ID: 80006a92 C074ADB93CA7

2-56 bits, must be even bits and hex Reset

Cancel Save

Remote Engine ID

Add

Remote Engine ID	Operatio
12AF56CD78BC57	

Edit Remote Engine ID

*Remote Engine ID

10-64 bits, must be even bits and hex

12AF56CD78BC57

*Server Address

192.168.1.3

Cancel Save

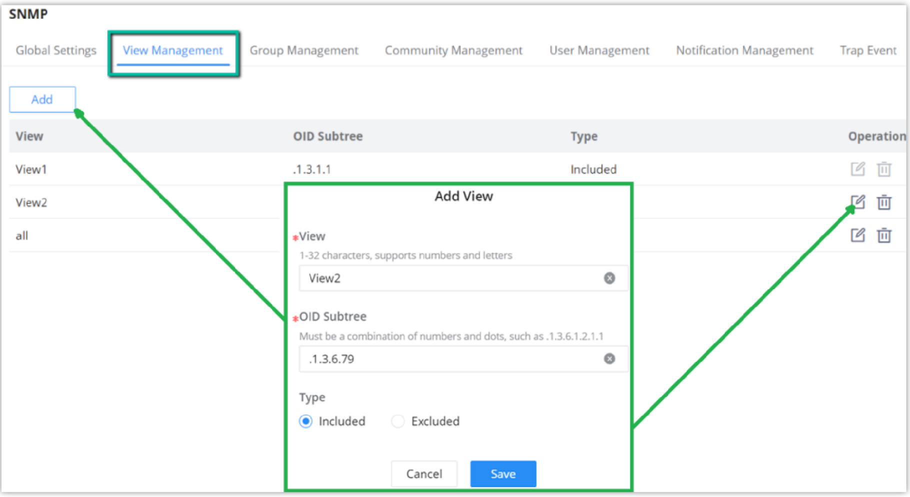
SNMP Global Settings

SNMP	Select whether to enable SNMP.
Local Engine ID	Set the engine ID of the local SNMP entity or click "Reset" to restore to the initial value. ***Note:*** *The default is 8000 A59Dxxxxxxxx, where xxxxxxxx is the device MAC address by default, which can be modified by the user . It is expressed in hexadecimal , and the length is limited between 2 and 56 characters. The number of characters must be an even number .*
Edit Remote Engine ID	
Remote Engine ID	Set the engine ID of the SNMP management side , and the remote user is established under the remote engine. The input length is limited to 10-64 characters, expressed in hexadecimal , and the number of characters must be an even number.
Server Address	Set the address of the network management station server, support input of Hostname and IP address (including IPv4 and IPv6), and need to meet the requirements of various types of address formats, otherwise an error message is required.

SNMP Global Settings

View Management

This page allows the network administrator to create MIB views (Management Information Base) and then include or exclude OID (Object Identifier) in a view.



SNMP

Global Settings | View Management | Group Management | Community Management | User Management | Notification Management | Trap Event

Add

View	OID Subtree	Type	Operation
View1	.1.3.1.1	Included	
View2			
all			

Add View

*View

1-32 characters, supports numbers and letters

View2

*OID Subtree

Must be a combination of numbers and dots, such as .1.3.6.1.2.1.1

.1.3.6.79

Type

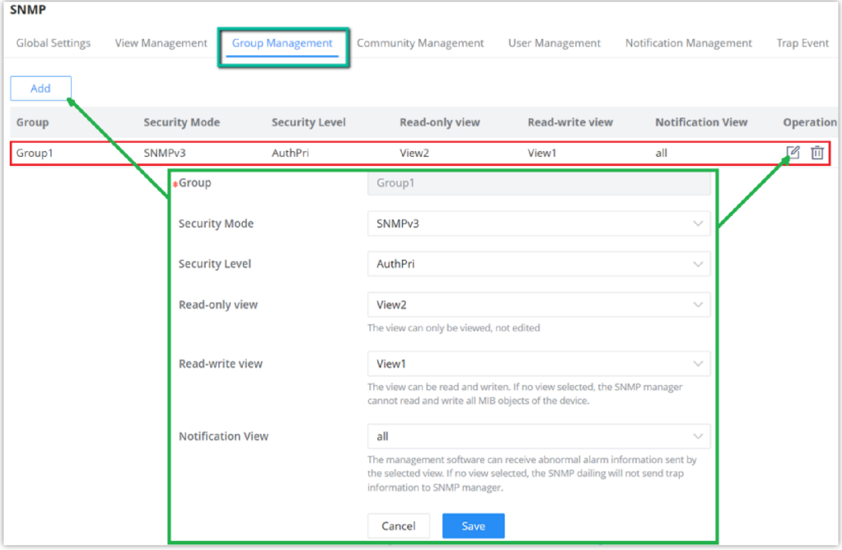
● Included ○ Excluded

Cancel Save

SNMP View Management

Group Management

This page allows the network administrator to group SNMP users and assign different authorization and access privileges.



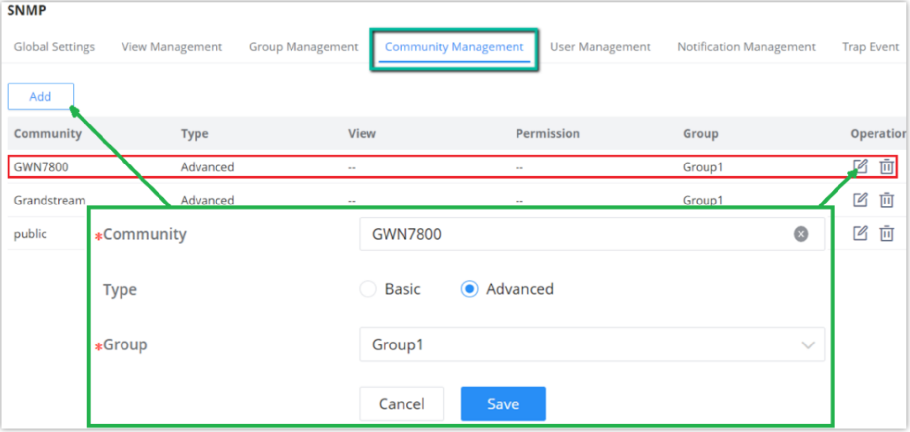
Group	Security Mode	Security Level	Read-only view	Read-write view	Notification View	Operation
Group1	SNMPv3	AuthPri	View2	View1	all	

*Group	Group1
Security Mode	SNMPv3
Security Level	AuthPri
Read-only view	View2 The view can only be viewed, not edited
Read-write view	View1 The view can be read and writen. If no view selected, the SNMP manager cannot read and write all MIB objects of the device.
Notification View	all The management software can receive abnormal alarm information sent by the selected view. If no view selected, the SNMP dailing will not send trap information to SNMP manager.

SNMP Group Management

Community Management

This page allows a user to add/remove multiple communities of SNMP.



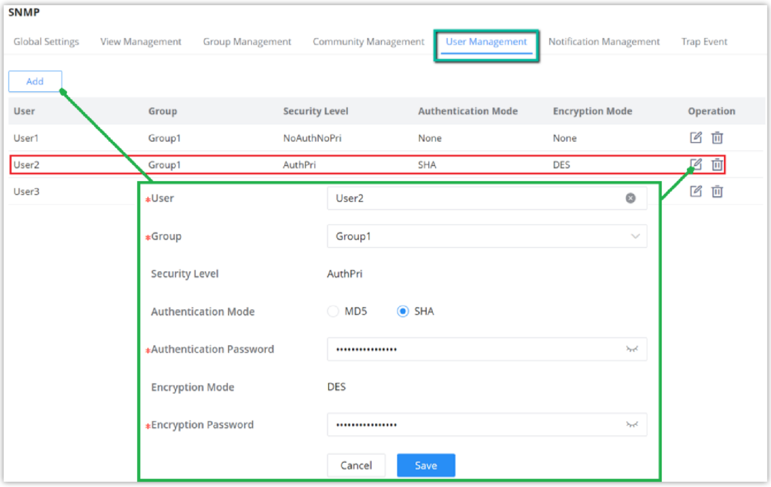
Community	Type	View	Permission	Group	Operatior
GWN7800	Advanced	--	--	Group1	
Grandstream	Advanced	--	--	Group1	
public					

*Community	GWN7800
Type	○ Basic ● Advanced
*Group	Group1

SNMP Community Management

SNMP User Management

This page allows a user to configure the SNMPv3 user profile.



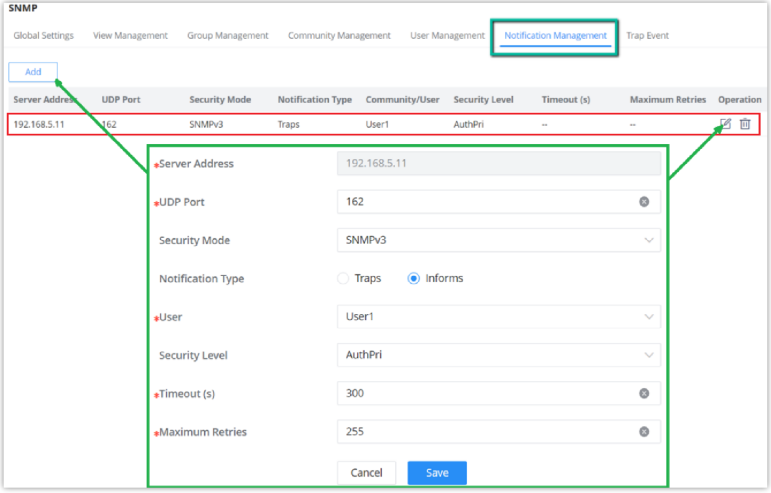
User	Group	Security Level	Authentication Mode	Encryption Mode	Operation
User1	Group1	NoAuthNoPri	None	None	
User2	Group1	AuthPri	SHA	DES	
User3					

*User	User2
*Group	Group1
Security Level	AuthPri
Authentication Mode	○ MD5 ● SHA
*Authentication Password	••••••••••••••••
Encryption Mode	DES
*Encryption Password	••••••••••••••••

SNMP User Management

Notification Management

This page allows a user to configure a host to receive SNMPv1/v2/v3 notifications.



Server Address	UDP Port	Security Mode	Notification Type	Community/User	Security Level	Timeout (s)	Maximum Retries	Operation
192.168.5.11	162	SNMPv3	Traps	User1	AuthPri	--	--	

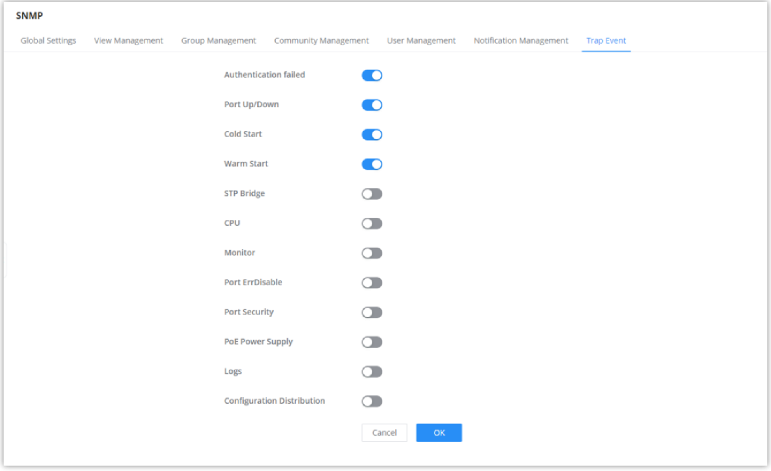
*Server Address	192.168.5.11
*UDP Port	162
Security Mode	SNMPv3
Notification Type	○ Traps ● Informs
*User	User1
Security Level	AuthPri
*Timeout (s)	300
*Maximum Retries	255

SNMP Notification Management

Trap Event

A **Trap event** refers to an alert or notification that is automatically sent by a device or system when a specific event occurs. These events, shown in the SNMP configuration, are various types of conditions that the system is monitoring. When enabled, the device sends a trap to the SNMP manager, notifying it of occurrences like:

- **Authentication failed**: When there is an unauthorized login attempt.
- **Port Up/Down**: When a network port goes offline or comes online.
- **Cold Start/Warm Start**: When the system or device reboots (cold or warm restart).



Authentication failed	●
Port Up/Down	●
Cold Start	●
Warm Start	●
STP Bridge	○
CPU	○
Monitor	○
Port ErrDisable	○
Port Security	○
PoE Power Supply	○
Logs	○
Configuration Distribution	○

SNMP Trap Event

RMON

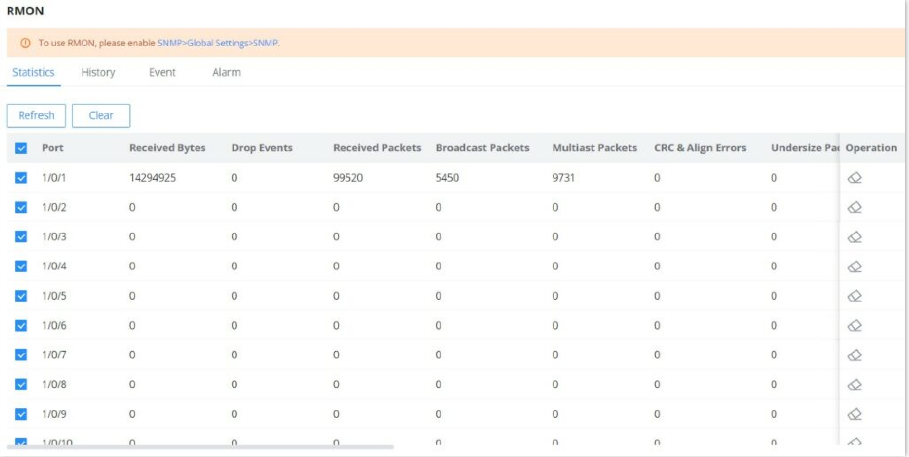
RMON (Remote Monitoring), based on the SNMP (Simple Network Management Protocol) architecture, functions to monitor the network. RMON is currently a commonly used network management standard defined by the Internet Engineering Task Force (IETF), which is mainly used to monitor the data traffic across a network segment or even the entire network to enable the network administrator to take protective measures in time to avoid any network malfunction. In addition, RMON MIB records network statistics information on network performance and malfunction periodically, based on which the management station can monitor the network at any time effectively. RMON is helpful for network administrators to manage large-scale networks since it reduces the communication traffic between the management station and the managed agent.

Note:

ⓘ Please enable SNMP>Global Settings>SNMP first before RMON takes effect

RMON Statistics

Ethernet statistics function (corresponding to the statistics group in the RMON MIB): The system collects basic statistics of each network being monitored. The system will continuously count the traffic of a certain network segment and the distribution of various types of packets, the number of error frames of various types, the number of collisions, etc. The number of data packets, the number of broadcast and multicast packets, the number of received bytes, the number of received packets, etc.



RMON

To use RMON, please enable SNMP>Global Settings>SNMP.

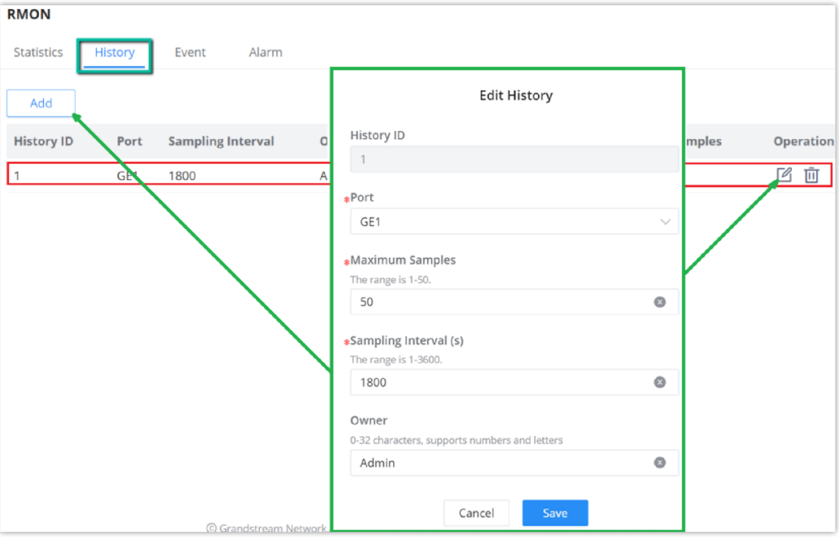
☑	Port	Received Bytes	Drop Events	Received Packets	Broadcast Packets	Multiast Packets	CRC & Align Errors	Undersize Pa	Operation
☑	1/0/1	14294925	0	99520	5450	9731	0	0	◇
☑	1/0/2	0	0	0	0	0	0	0	◇
☑	1/0/3	0	0	0	0	0	0	0	◇
☑	1/0/4	0	0	0	0	0	0	0	◇
☑	1/0/5	0	0	0	0	0	0	0	◇
☑	1/0/6	0	0	0	0	0	0	0	◇
☑	1/0/7	0	0	0	0	0	0	0	◇
☑	1/0/8	0	0	0	0	0	0	0	◇
☑	1/0/9	0	0	0	0	0	0	0	◇
☑	1/0/10	0	0	0	0	0	0	0	◇

RMON Statistics

RMON History

The system will periodically collect statistics on various traffic information, including bandwidth utilization, number of error packets, and total number of packets based on the History ID.

Click on the “Add” button to create a History ID specifying the Port as well.



RMON

History ID	Port	Sampling Interval	O	mples	Operation
1	GE1	1800	A		

Edit History

History ID: 1

*Port: GE1

*Maximum Samples (The range is 1-50.): 50

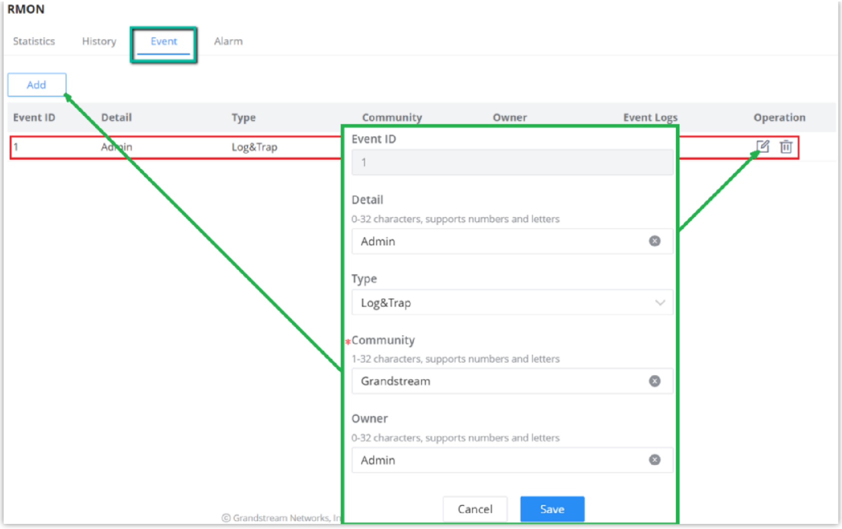
*Sampling Interval (s) (The range is 1-3600.): 1800

Owner (0-32 characters, supports numbers and letters): Admin

RMON History

RMON Event

The event group controls the events and prompts from the device and provides all events generated by the RMON Agent. When an event occurs, it can record logs or send a Trap to the network management station.



Event ID	Detail	Type	Community	Owner	Event Logs	Operation
1	Admin	Log&Trap				

Event ID: 1

Detail (0-32 characters, supports numbers and letters): Admin

Type: Log&Trap

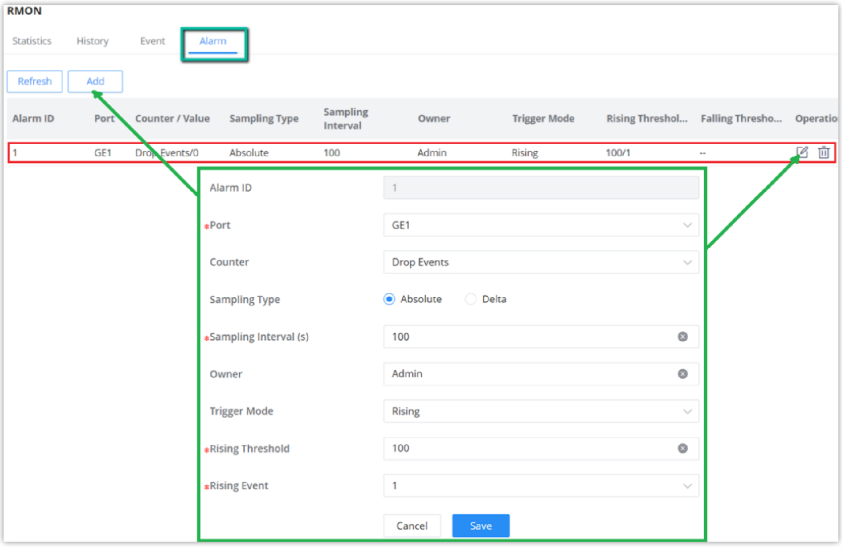
*Community (1-32 characters, supports numbers and letters): Grandstream

Owner (0-32 characters, supports numbers and letters): Admin

RMON Event

RMON Alarm

The system monitors the specified alarm variable. After pre-defining a set of thresholds and sampling time for the specified alarm, the system will obtain the value of the specified alarm variable according to the defined time period. When the value of the alarm variable is greater than or equal to the upper threshold, an upper alarm event will be triggered. When the value of the alarm variable is less than or equal to the lower threshold, a lower alarm event is triggered.



Alarm ID	Port	Counter / Value	Sampling Type	Sampling Interval	Owner	Trigger Mode	Rising Threshol...	Falling Thresho...	Operatio
1	GE1	Drop Events/0	Absolute	100	Admin	Rising	100/1	--	

Alarm ID: 1

*Port: GE1

Counter: Drop Events

Sampling Type: ● Absolute ○ Delta

*Sampling Interval (s): 100

Owner: Admin

Trigger Mode: Rising

*Rising Threshold: 100

*Rising Event: 1

RMON Alarm

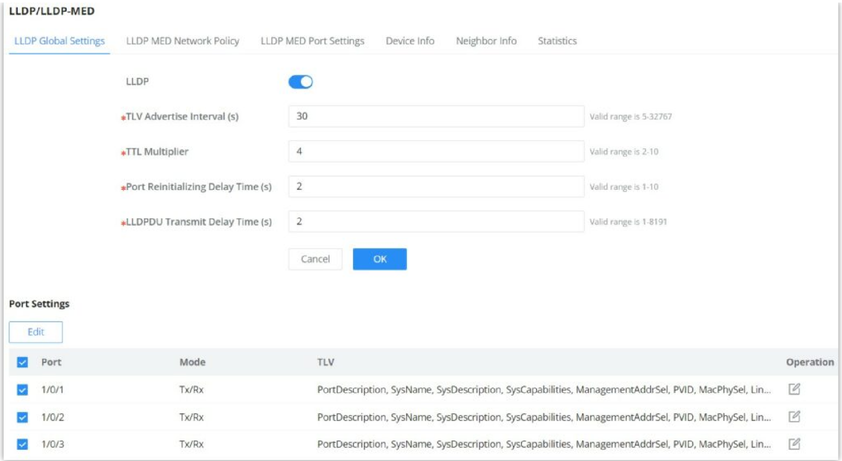
LLDP/LLDP MED

LLDP/LLDP MED is a one-way protocol; there are no request/response sequences. Information is advertised by stations implementing the transmit function, and is received and processed by stations implementing the receive function.

LLDP MED is an enhancement to LLDP that provides additional functionality to support media devices. LLDP MED features include: enabling network policy advertisement and discovery for real-time applications (such as voice and/or video);

LLDP Global Settings

This page allows a user to set general settings for LLDP, including enabling LLDP and other parameters.



LLDP/LLDP-MED

LLDP Global Settings | LLDP MED Network Policy | LLDP MED Port Settings | Device Info | Neighbor Info | Statistics

LLDP: ●

*TLV Advertise Interval (s): 30 — Valid range is 5-32767

*TTL Multiplier: 4 — Valid range is 2-10

*Port Reinitializing Delay Time (s): 2 — Valid range is 1-10

*LLDPDU Transmit Delay Time (s): 2 — Valid range is 1-8191

Cancel | OK

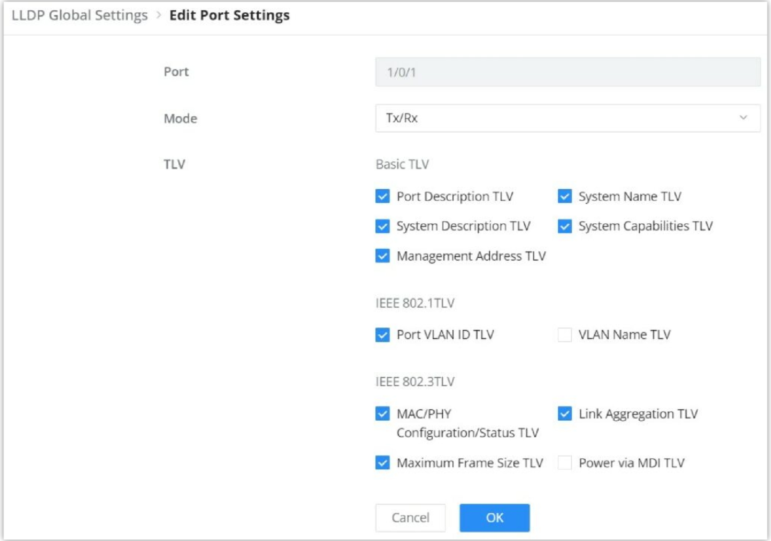
Port Settings

Edit

☑	Port	Mode	TLV	Operation
☑	1/0/1	Tx/Rx	PortDescription, SysName, SysDescription, SysCapabilities, ManagementAddrSel, PVID, MacPhySel, Lin...	✎
☑	1/0/2	Tx/Rx	PortDescription, SysName, SysDescription, SysCapabilities, ManagementAddrSel, PVID, MacPhySel, Lin...	✎
☑	1/0/3	Tx/Rx	PortDescription, SysName, SysDescription, SysCapabilities, ManagementAddrSel, PVID, MacPhySel, Lin...	✎

LLDP Global Settings

More configurations can be adjusted per port (GE1 to GE10).



LLDP Global Settings > **Edit Port Settings**

Port: 1/0/1

Mode: Tx/Rx

TLV:

Basic TLV

☑ Port Description TLV ☑ System Name TLV

☑ System Description TLV ☑ System Capabilities TLV

☑ Management Address TLV

IEEE 802.1TLV

☑ Port VLAN ID TLV □ VLAN Name TLV

IEEE 802.3TLV

☑ MAC/PHY Configuration/Status TLV ☑ Link Aggregation TLV

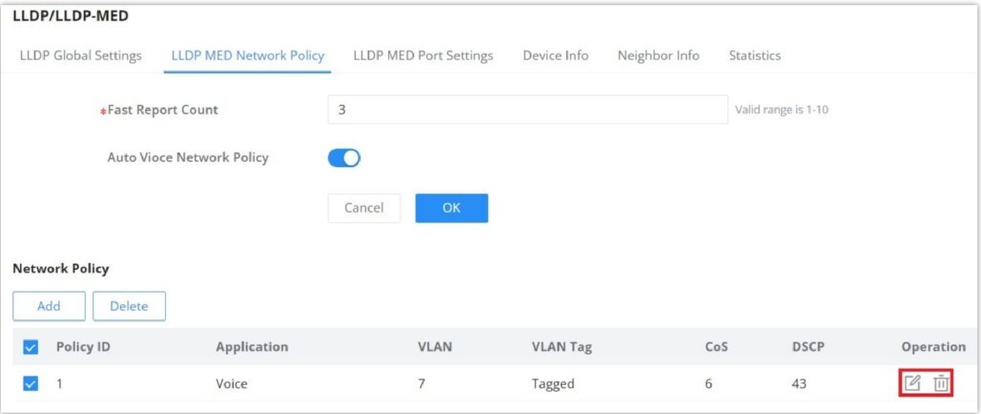
☑ Maximum Frame Size TLV □ Power via MDI TLV

Cancel | OK

LLDP Port Settings

LLDP MED Network Policy

This page allows the network administrator to set the MED (Media Endpoint Discovery) network policy. Click on the "**Add**" button to add a Network Policy or toggle ON **Auto Voice Network Policy** (Voice VLAN has to be configured as well).



LLDP/LLDP-MED

LLDP Global Settings | LLDP MED Network Policy | LLDP MED Port Settings | Device Info | Neighbor Info | Statistics

*Fast Report Count: 3 — Valid range is 1-10

Auto Vioce Network Policy: ●

Cancel | OK

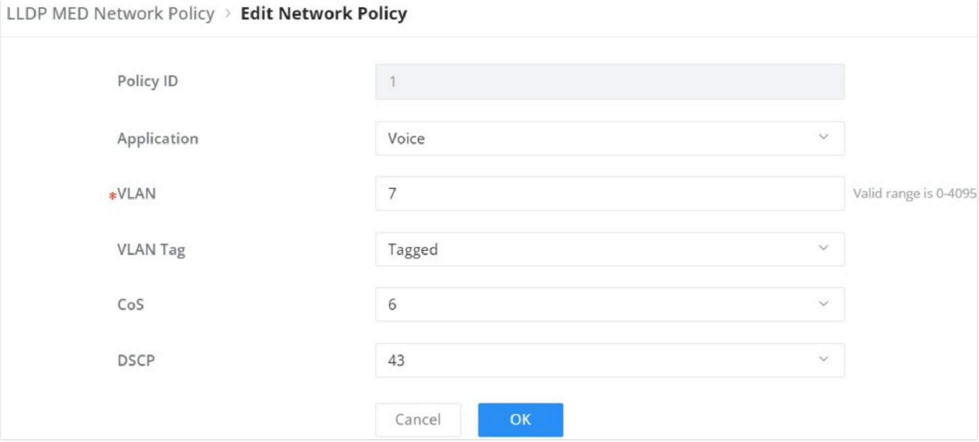
Network Policy

Add | Delete

☑	Policy ID	Application	VLAN	VLAN Tag	CoS	DSCP	Operation
☑	1	Voice	7	Tagged	6	43	✎ 🗑

LLDP MED Network Policy

To add a Network Policy, click on the "**Add**" button or click on the "**Edit**" icon under the Operation column to edit.

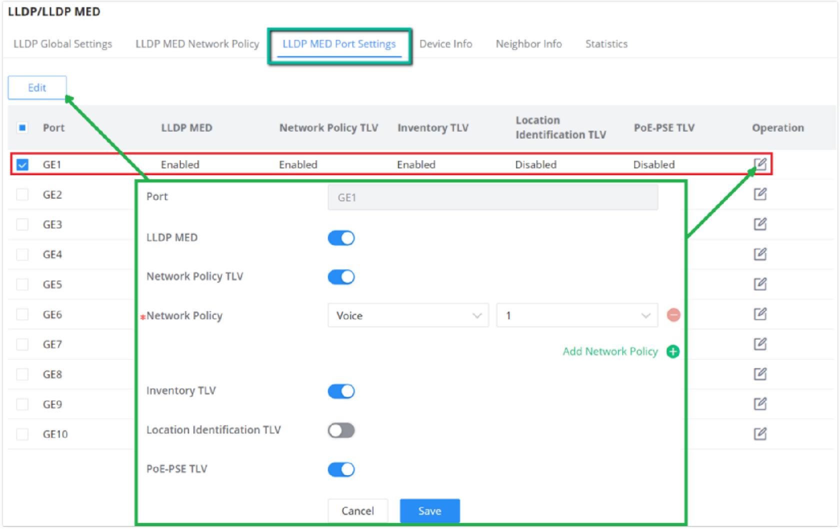


Policy ID	1
Application	Voice
*VLAN	7 (Valid range is 0-4095)
VLAN Tag	Tagged
CoS	6
DSCP	43

AddEdit Network Policy

LLDP MED Port Settings

The user can configure LLDP MED Settings for each port on this page.



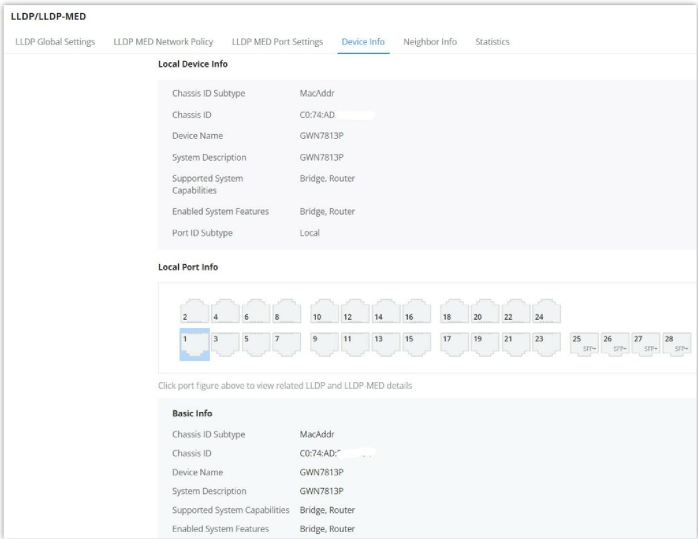
■	Port	LLDP MED	Network Policy TLV	Inventory TLV	Location Identification TLV	PoE-PSE TLV	Operation
☑	GE1	Enabled	Enabled	Enabled	Disabled	Disabled	✎
□	GE2						✎
□	GE3						✎
□	GE4						✎
□	GE5						✎
□	GE6						✎
□	GE7						✎
□	GE8						✎
□	GE9						✎
□	GE10						✎

Port	GE1
LLDP MED	●
Network Policy TLV	●
*Network Policy	Voice / 1
	Add Network Policy ⊕
Inventory TLV	●
Location Identification TLV	○
PoE-PSE TLV	●

LLDP MED Port Settings

LLDP Device Info

This page displays information for the LLDP Local Device connected to each port. Click on the port to view related LLDP information about that port. The information includes: Basic Info, **IEEE 802.1 TLVs** information, **IEEE 802.3 TLVs (802.3 bt)** information, **MED Details**, **Network Policy**…



Local Device Info

Chassis ID Subtype	MacAddr
Chassis ID	C0:74:AD [redacted]
Device Name	GWN7813P
System Description	GWN7813P
Supported System Capabilities	Bridge, Router
Enabled System Features	Bridge, Router
Port ID Subtype	Local

Local Port Info

2 4 6 8 10 12 14 16 18 20 22 24
1 3 5 7 9 11 13 15 17 19 21 23 25 SFP+ 26 SFP+ 27 SFP+ 28 SFP+

Click port figure above to view related LLDP and LLDP-MED details

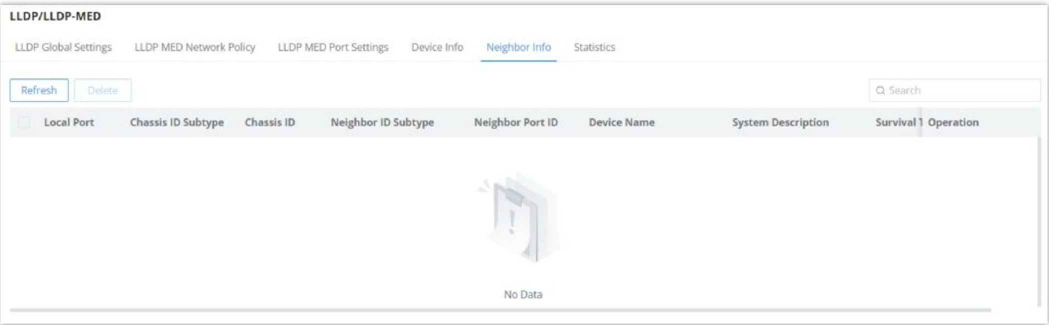
Basic Info

Chassis ID Subtype	MacAddr
Chassis ID	C0:74:AD:[redacted]
Device Name	GWN7813P
System Description	GWN7813P
Supported System Capabilities	Bridge, Router
Enabled System Features	Bridge, Router

LLDP Device Info

Neighbor Info

This page lists the neighbors obtained on the switch ports. Click on the “Refresh” button to update the list.



LLDP/LLDP-MED

LLDP Global Settings | LLDP MED Network Policy | LLDP MED Port Settings | Device Info | Neighbor Info | Statistics

Refresh | Delete | Search

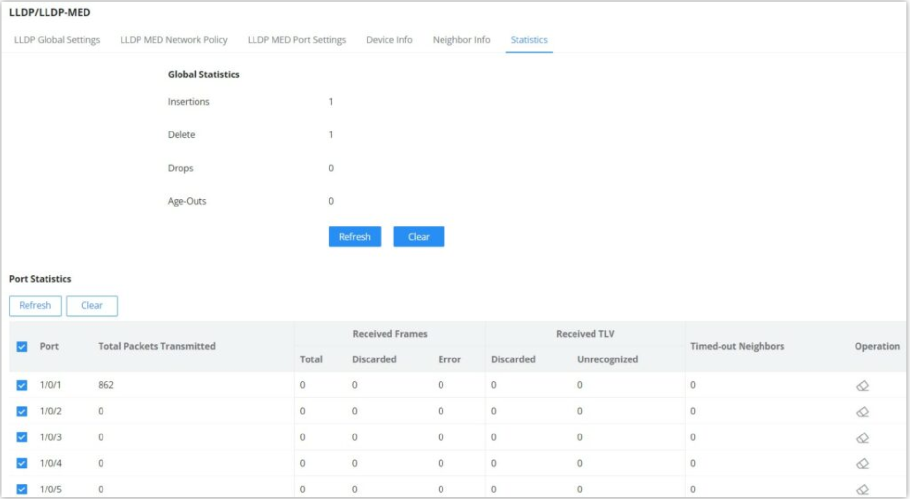
□	Local Port	Chassis ID Subtype	Chassis ID	Neighbor ID Subtype	Neighbor Port ID	Device Name	System Description	Survival T	Operation

No Data

LLDP Neighbor Info

LLDP Statistics

View the LLDP statistics of the local device through this feature. Click on “Refresh” to update the list.



LLDP/LLDP-MED

LLDP Global Settings | LLDP MED Network Policy | LLDP MED Port Settings | Device Info | Neighbor Info | Statistics

Global Statistics

Insertions	1
Delete	1
Drops	0
Age-Outs	0

Refresh | Clear

Port Statistics

Refresh | Clear

☑	Port	Total Packets Transmitted	Received Frames			Received TLV		Timed-out Neighbors	Operation
			Total	Discarded	Error	Discarded	Unrecognized		
☑	1/0/1	862	0	0	0	0	0	0	⌫
☑	1/0/2	0	0	0	0	0	0	0	⌫
☑	1/0/3	0	0	0	0	0	0	0	⌫
☑	1/0/4	0	0	0	0	0	0	0	⌫
☑	1/0/5	0	0	0	0	0	0	0	⌫

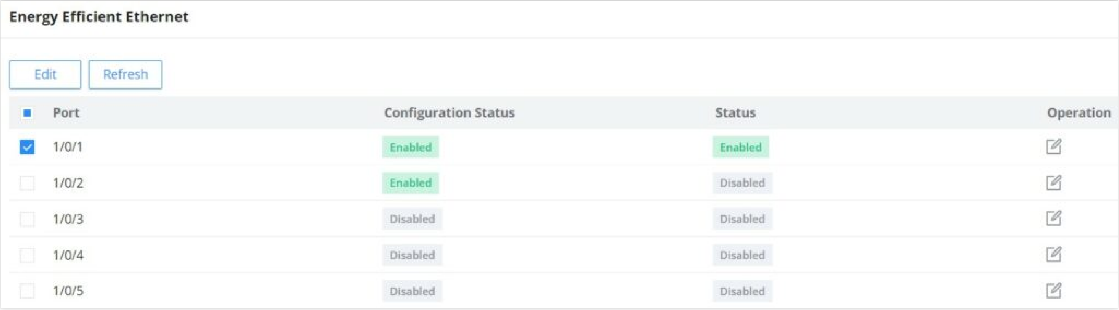
LLDP Statistics

Energy Efficient Ethernet

EEE or **Energy Efficient Ethernet** helps in reducing the power consumption on interfaces like GWN780x Pro switches Ethernet port, it achieves this by using power only during data transmission.

Navigate to **Maintenance → Energy Saving Management**, select a port to edit, then enable 802.3 EEE.

- **Configuration Status:** shows if the configuration is enabled.
- **Status:** if a supported device is connected to the GWN780x Pro switch, it will show if it’s enabled or not.



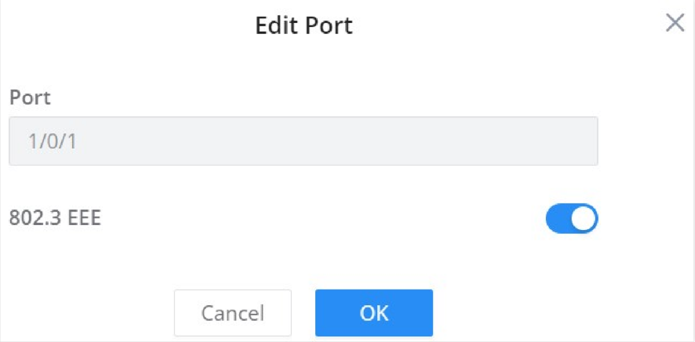
Energy Efficient Ethernet

Edit | Refresh

■	Port	Configuration Status	Status	Operation
☑	1/0/1	Enabled	Enabled	✎
□	1/0/2	Enabled	Disabled	✎
□	1/0/3	Disabled	Disabled	✎
□	1/0/4	Disabled	Disabled	✎
□	1/0/5	Disabled	Disabled	✎

Energy Efficient Ethernet

To enable EEE on a port, select a port, then click on the “Edit” button, then toggle ON 802.3 EEE as shown below:



Edit Port

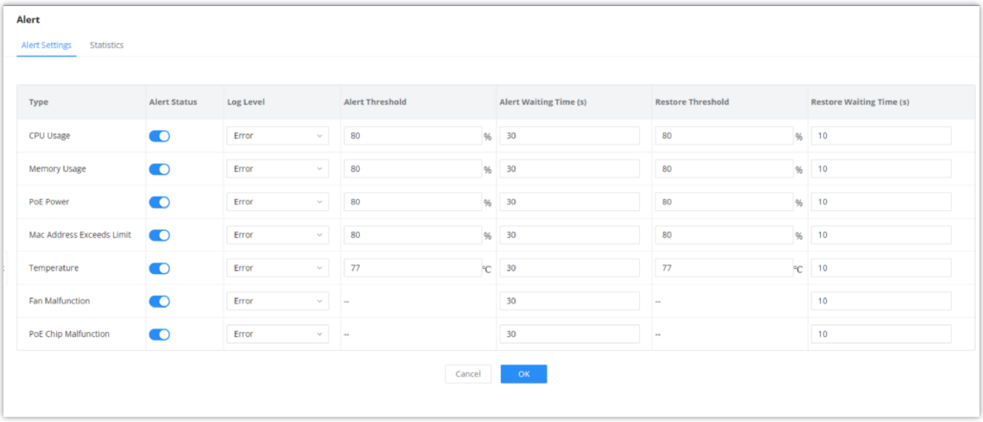
Port: 1/0/1

802.3 EEE: ●

Energy Efficient Ethernet

Alert

The Alerts section allows administrators to set up alert statuses for different types of system reactions for hardware components. This can be configured based on the component's performance, which can include factors such as CPU Usage, Memory Usage, PoE Power, MAC Address Exceeds Limit, Temperature, Fan Malfunctioning, PoE Chip Malfunctioning…

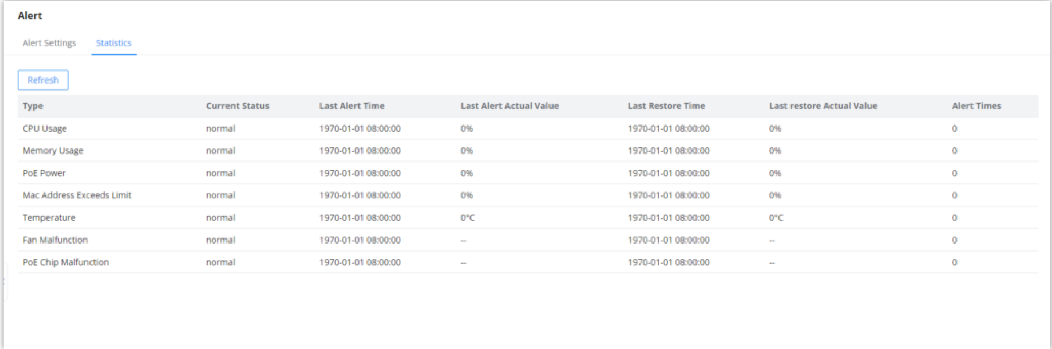


Type	Alert Status	Log Level	Alert Threshold	Alert Waiting Time (s)	Restore Threshold	Restore Waiting Time (s)
CPU Usage	●	Error	80 %	30	80 %	10
Memory Usage	●	Error	80 %	30	80 %	10
PoE Power	●	Error	80 %	30	80 %	10
Mac Address Exceeds Limit	●	Error	80 %	30	80 %	10
Temperature	●	Error	77 °C	30	77 °C	10
Fan Malfunction	●	Error	--	30	--	10
PoE Chip Malfunction	●	Error	--	30	--	10

Alert Settings

Alert Statistics

The statistics section shows the current status of the Hardware components. In addition to some other hardware information, it also displays the last alert time and last restore time of the service



Type	Current Status	Last Alert Time	Last Alert Actual Value	Last Restore Time	Last restore Actual Value	Alert Times
CPU Usage	normal	1970-01-01 08:00:00	0%	1970-01-01 08:00:00	0%	0
Memory Usage	normal	1970-01-01 08:00:00	0%	1970-01-01 08:00:00	0%	0
PoE Power	normal	1970-01-01 08:00:00	0%	1970-01-01 08:00:00	0%	0
Mac Address Exceeds Limit	normal	1970-01-01 08:00:00	0%	1970-01-01 08:00:00	0%	0
Temperature	normal	1970-01-01 08:00:00	0°C	1970-01-01 08:00:00	0°C	0
Fan Malfunction	normal	1970-01-01 08:00:00	--	1970-01-01 08:00:00	--	0
PoE Chip Malfunction	normal	1970-01-01 08:00:00	--	1970-01-01 08:00:00	--	0

Alert Statistics

SYSTEM

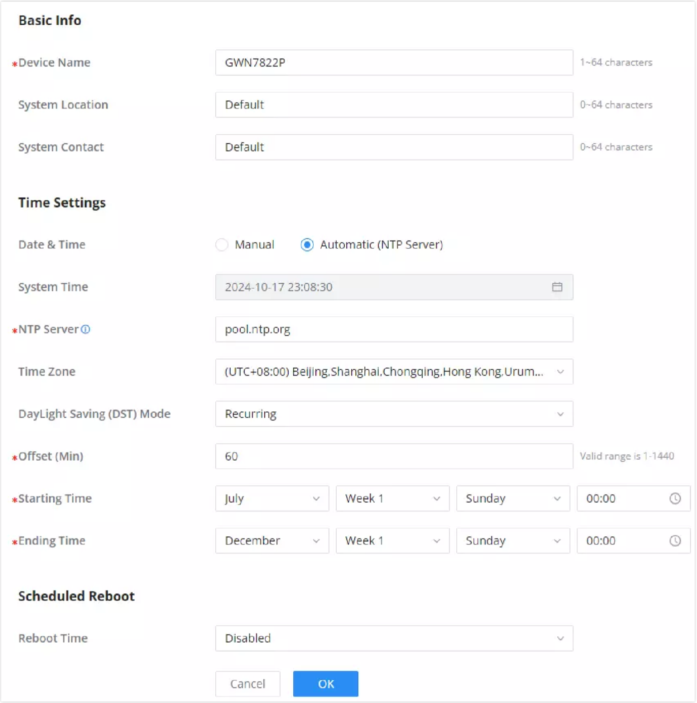
Basic Settings

The basic settings page is split into three categories:

- **Basic Info:** first section, the user can specify a name for the GWN780x Pro switch with a system location and contact.
- **Time Settings**: In this section, the users can configure the time either manually or using an NTP Server. It's also possible to configure Daylight Saving (DST) Mode according to the location or recurrence.

- **Scheduled Reboot**: The users can enable scheduled reboot by adding a schedule under the Time Policy.

Please navigate to the **System** → **Basic Settings** page.



Basic Info

*Device Name	GWN7822P	1~64 characters
System Location	Default	0~64 characters
System Contact	Default	0~64 characters

Time Settings

Date & Time	○ Manual	● Automatic (NTP Server)		
System Time	2024-10-17 23:08:30			
*NTP Server	pool.ntp.org			
Time Zone	(UTC+08:00) Beijing,Shanghai,Chongqing,Hong Kong,Urum...			
DayLight Saving (DST) Mode	Recurring			
*Offset (Min)	60	Valid range is 1-1440		
*Starting Time	July	Week 1	Sunday	00:00
*Ending Time	December	Week 1	Sunday	00:00

Scheduled Reboot

Reboot Time	Disabled

Cancel OK

Basic Settings

Basic Info	
Device Name	Specify a name for the device.
System Location	Enter system location.
System Contact	Specify the system contact.
Time Settings	
Date & Time	Select time synchronization method: Manual or Automatic (NTP Server). ● **Manual**: specify the time manually. ● **Automatic (NTP Server)**: time will be synced automatically with NTP Server. ***Note:*** *if the device is added to the GDMS Networking and Auto Sync Time feature (under Settings → System) is enabled then the local NTP setting on the device will be disabled. All managed devices will synchronize the time from GDMS Networking.*
System Time	● **If Manual is selected**, the user can specify the date and time. ● **If Automatic (NTP Server) is selected**, the current time and time will be displayed,
NTP Server	If Date & Time is set to Automatic (NTP Server), please specify the NTP Server address, by default is set to "pool.ntp.org" .
Time Zone	Select the time zone from the drop-down list.
DayLight Saving (DST) Mode	● **Disabled:** DayLight Saving mode will be disabled. ● **Recurring:** if the Daylight saving is recurring (repetitive). ● **Non Recurring:** if selected the user can specify the offset (min) and daylight saving time start date and end date. ● **Recurring USA:** for USA region.

	● **Recurring EU:** for EU region
Offset (Min)	Specify the Offset by minutes, range from 1 to 1440.
Starting Time	Specify the starting date and time.
Ending Time	Specify the ending date and time.
Scheduled Reboot	
Reboot Time	Select a reboot time from the drop-down list or click on "+" button to add a schedule. By default is disabled.

Basic Settings

Access Control

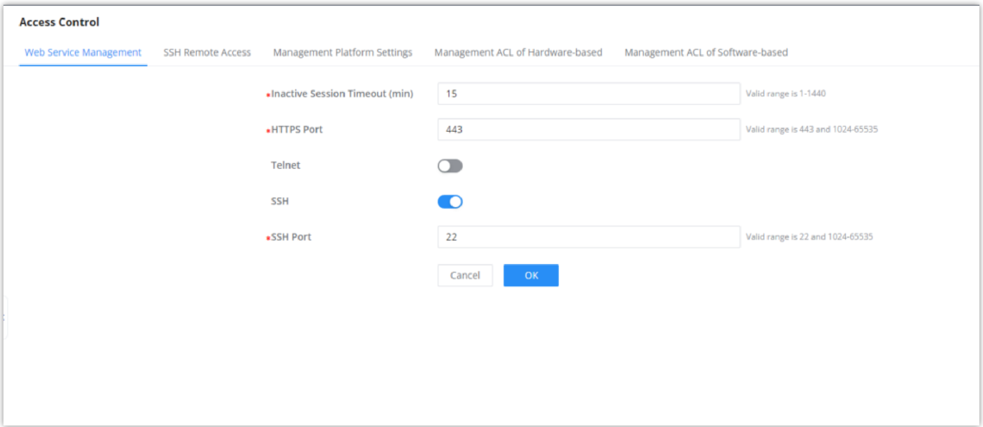
In this section, the user can configure access to GWN780x Pro switches.

Please navigate to **System → Access Control**.

Web Service Management

On the first tab, the user can configure the following:

- **Inactive Session Timeout (min):** (the range is from 15 seconds to 1440), which is how much time before the GWN780x Pro switch will log out automatically.
- **HTTPS**: the HTTPS port, by default, is 443. It can be changed if necessary. (It's recommended to keep it 443).
- **Telnet:** can be enabled, but by default is disabled (it's recommended to keep it disabled, it's not secure, and use SSH instead).
- **SSH**: SSH is enabled by default, and it's a better alternative to Telnet. The default port is 22. It can be changed if necessary. (It's recommended to keep it to 22)


Access Control
Web Service Management
SSH Remote Access
Management Platform Settings
Management ACL of Hardware-based
Management ACL of Software-based
Cancel
OK

*Inactive Session Timeout (min): 15 Valid range is 1-1440

*HTTPS Port: 443 Valid range is 443 and 1024-65535

Telnet: ○

SSH: ●

*SSH Port: 22 Valid range is 22 and 1024-65535

Access Control Web Service Management

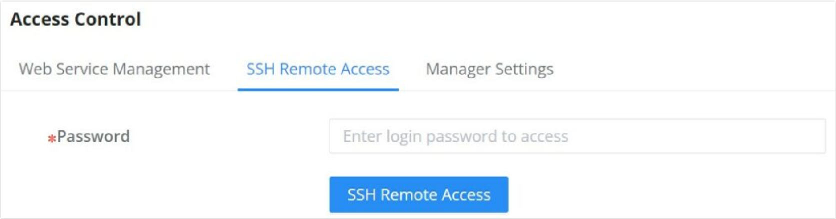
Note:

VTY (Virtual Teletype) sessions allow remote management of network devices through a command-line interface. GWN780x Pro switches now support up to 12 simultaneous VTY sessions, enabling concurrent SSH or Telnet access for administrators.

SSH Remote Access

Note:

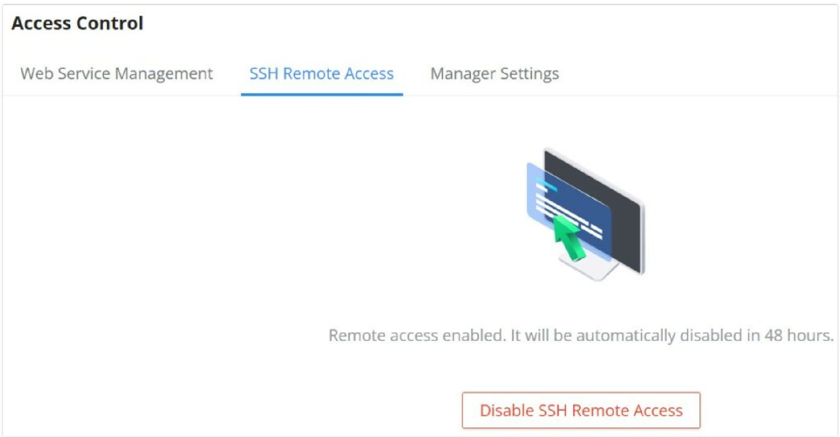
This feature is exclusively used for troubleshooting purposes by our developers and support engineers. When remote access is requested by either party, please enter the current user's password to grant permission to access to the device.



*Password: Enter login password to access

Access Control SSH Remote Access disabled

Enter the password, then click on the "**SSH Remote Access**" button. It will be automatically disabled in 48 hours.

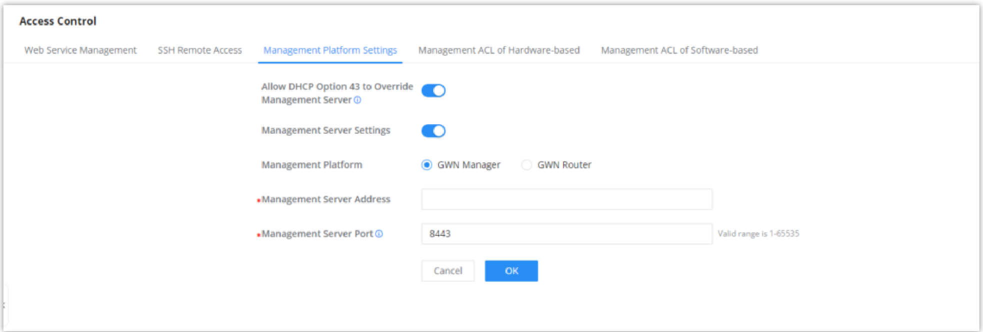


Remote access enabled. It will be automatically disabled in 48 hours.

Access Control SSH Remote Access enabled

Management Platform Settings

The Manager Settings tab allows users to configure GWN Manager or GWN Router access parameters (Server address and port). It's also possible to allow DHCP option 43, and if it's enabled If enabled, the server address assigned by DHCP Option 43 will be preferred.


Access Control
Web Service Management
SSH Remote Access
Management Platform Settings
Management ACL of Hardware-based
Management ACL of Software-based
Cancel
OK

Allow DHCP Option 43 to Override Management Server ⓘ: ●
Management Server Settings: ●
Management Platform: ● GWN Manager ○ GWN Router
*Management Server Address:
*Management Server Port ⓘ: 8443 Valid range is 1-65535

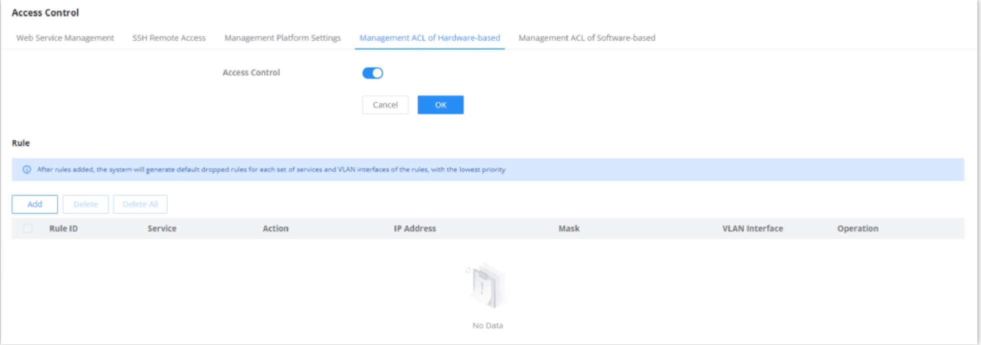
Access Control Manager Settings

Note:

When the GWN Manager wants to take over a managed switch, it can force the takeover by entering the switch's current password.

Management ACL of Hardware-based

On a GWN780x Pro switch, the hardware management Access Control List (ACL) is designed to optimize resource efficiency by filtering traffic directly at the hardware level before it reaches the CPU. This pre-processing step ensures that only traffic matching the defined security rules is forwarded for further handling, effectively reducing unnecessary CPU load and enhancing overall performance. By offloading the initial traffic validation to the switch hardware, the GWN780x Pro improves both network efficiency and security.



Access Control

Web Service Management
SSH Remote Access
Management Platform Settings
Management ACL of Hardware-based
Management ACL of Software-based

Access Control ●

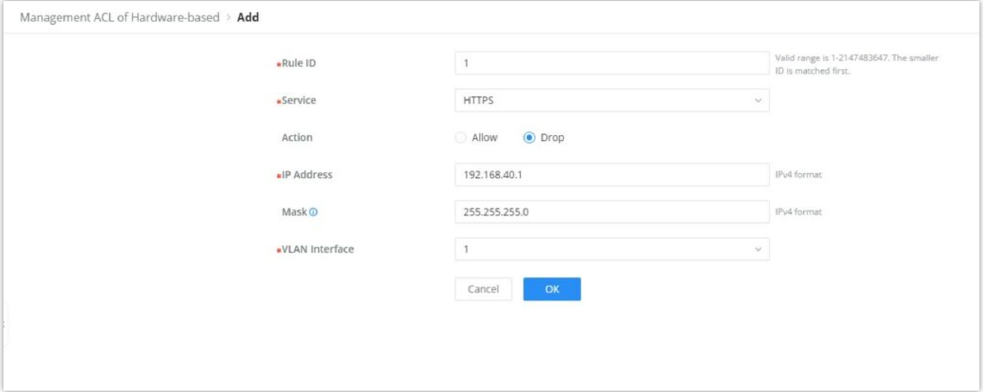
Rule

ⓘ After rules added, the system will generate default dropped rules for each set of services and VLAN interfaces of the rules, with the lowest priority

□	Rule ID	Service	Action	IP Address	Mask	VLAN Interface	Operation

No Data

Management ACL of Hardware based



Management ACL of Hardware-based › **Add**

*Rule ID: 1 — Valid range is 1-2147483647. The smaller ID is matched first.

*Service: HTTPS

Action: ○ Allow ● Drop

*IP Address: 192.168.40.1 — IPv4 format

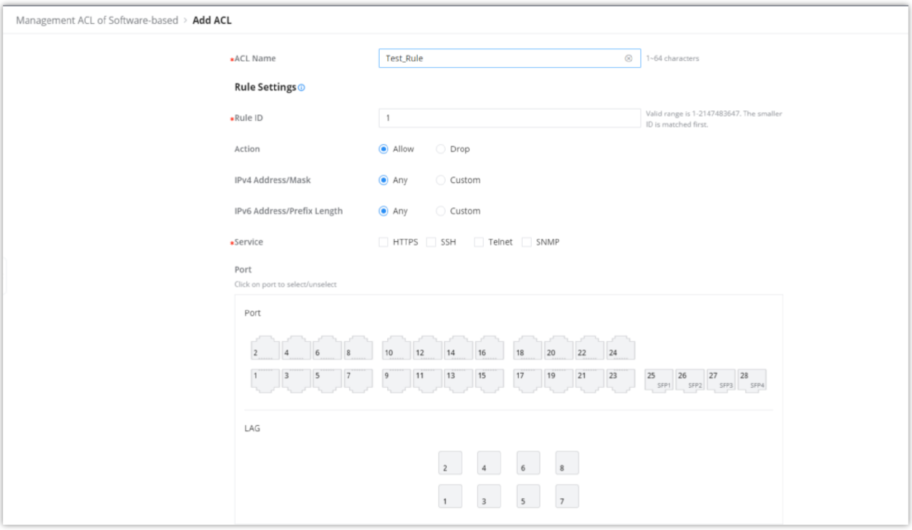
Mask ⓘ: 255.255.255.0 — IPv4 format

*VLAN Interface: 1

Add a Hardware based ACL Rule

Management ACL of Software-based

On the GWN780x Pro switch, the software-based Management ACL uses firewall-like rules to control who can access the network and its management features. This means it sets up restrictions to make sure that only authorized users and devices can access important parts of the switch, helping to keep the network secure and well-managed.



Management ACL of Software-based › **Add ACL**

*ACL Name: Test_Rule — 1~64 characters

Rule Settings ⓘ

*Rule ID: 1 — Valid range is 1-2147483647. The smaller ID is matched first.

Action: ● Allow ○ Drop

IPv4 Address/Mask: ● Any ○ Custom

IPv6 Address/Prefix Length: ● Any ○ Custom

*Service: □ HTTPS □ SSH □ Telnet □ SNMP

Port

Click on port to select/unselect

Port
2 4 6 8 10 12 14 16 18 20 22 24
1 3 5 7 9 11 13 15 17 19 21 23 25 SFP1 26 SFP2 27 SFP3 28 SFP4
LAG
2 4 6 8
1 3 5 7

Management ACL of Software based

User Management

There are three levels of users, namely administrator, operator, and monitor. The administrator authenticates and authorizes users who log in to the switch according to management needs, where each user has different permissions and passwords.

1. **Administrator**

- Each device has one and only one administrator.
- The highest privileges can execute any command.
- The username admin cannot be changed; only the password can be changed.
- Support adding and deleting operators and monitors.

2. **Operator**

- Added by an administrator, there can be multiple accounts as Operators.
- The second-highest authority can execute all commands except the administrator's key operations and important mandatory commands
- Can't change the username, only the password.
- Support adding and deleting Monitor users.

Note:

All features of the admin are allowed except setting the management IP address and factory reset.

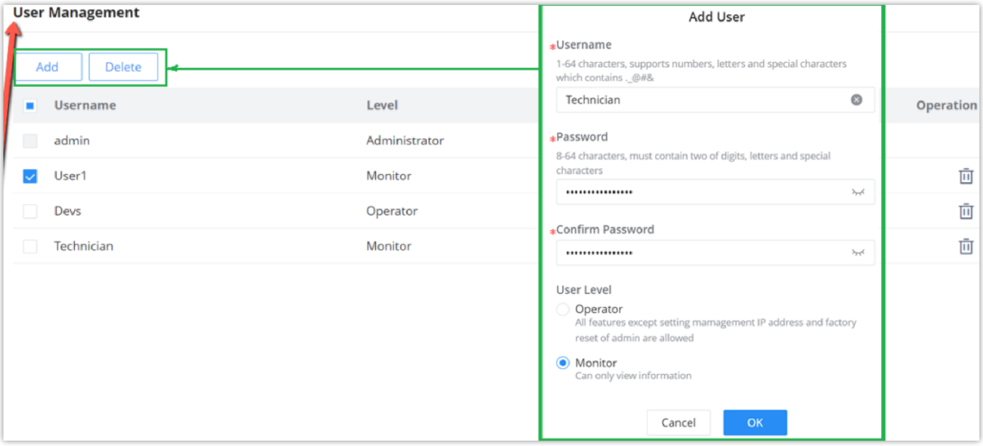
3. **Monitor**

- Multiple Monitors are possible with the permission of an Administrator or Operator.
- The lowest authority can only view switch status and statistics without any execution or configuration authority.
- Can't change the username, only the password.

Note:

Can only view information.

Click on the "Add" button to add a new user, then specify the password and the user level (Operator or Monitor).



User Management

Add | Delete

■	Username	Level	Operation
□	admin	Administrator	
☑	User1	Monitor	🗑
□	Devs	Operator	🗑
□	Technician	Monitor	🗑

Add User

*Username
1-64 characters, supports numbers, letters and special characters which contains ._@#&
Technician

*Password
8-64 characters, must contain two of digits, letters and special characters
••••••••••••••••

*Confirm Password
••••••••••••••••

User Level
○ Operator
All features except setting mamagement IP address and factory reset of admin are allowed
● Monitor
Can only view information

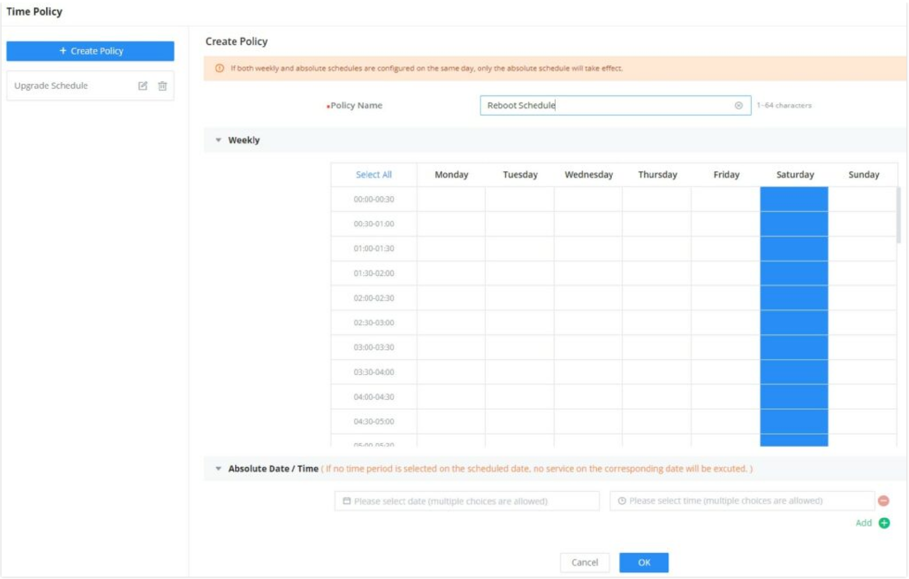
Cancel | OK

User Management

Time Policy

The time policy page helps to create schedules, for example, Office working hours, Upgrade schedules, or reboot schedules.

To create a schedule, Please navigate to **Web UI** → **System** → **Time Policy** page, then click on "**Create Policy**" button, there are weekly schedules or absolute Date/Time schedules, for weekly schedules please select from the table the hours and days and as for absolute Date/Time select the days from the drop-down calendars and times from the drop-down menu. Please refer to the figure below.



Time Policy

+ Create Policy

Upgrade Schedule

Create Policy

ⓘ If both weekly and absolute schedules are configured on the same day, only the absolute schedule will take effect.

*Policy Name: Reboot Schedule (1-64 characters)

▾ Weekly

Select All	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
00:00-00:30						■	
00:30-01:00						■	
01:00-01:30						■	
01:30-02:00						■	
02:00-02:30						■	
02:30-03:00						■	
03:00-03:30						■	
03:30-04:00						■	
04:00-04:30						■	
04:30-05:00						■	

▾ Absolute Date / Time (If no time period is selected on the scheduled date, no service on the corresponding date will be excuted.)

Please select date (multiple choices are allowed)

Please select time (multiple choices are allowed)

Add

Cancel OK

Time Policy

Note:

- If both weekly and absolute schedules are configured on the same day, only the absolute schedule will take effect.
- If no time period is selected on the scheduled date, no service on the corresponding date will be executed.

STACK

Stacking allows multiple supported GWN780x Pro switch models to operate as a single logical unit, simplifying network management, increasing redundancy, and expanding port density. This feature is available only on the following models:

Note:

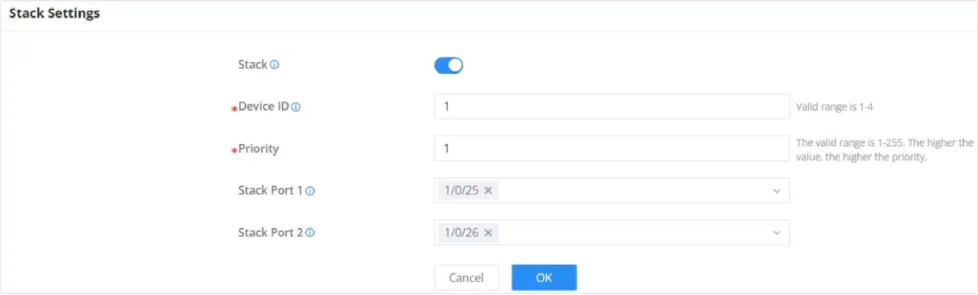
Supported Models: GWN7806PL/PH Pro.

To access this feature, navigate to: **Web UI → Stack → Stack Settings**

For full configuration examples, topology use cases, and best practices, please refer to the GWN78xx Stacking Feature Guide.

Stack Settings

In this section, you can enable stack mode, assign a device ID and priority, and define the physical ports used for stacking.



Stack Settings

Stack ⓘ: ●

*Device ID ⓘ: 1 — Valid range is 1-4

*Priority: 1 — The valid range is 1-255. The higher the value, the higher the priority.

Stack Port 1 ⓘ: 1/0/25 ×

Stack Port 2 ⓘ: 1/0/26 ×

Cancel OK

Stack Settings

- **Stack**

Enable or disable stacking functionality.

- When enabled, this device becomes part of a stack group.
- Make sure the ports used are in shutdown status before configuration.

- Only 10G fiber modules are supported.

> **Note:**
>
> After setting and saving, reboot the switch to take effect. Cross connect the switches and power them on (it is recommended to power on the preset primary switch first) to form a stacking system.

- **Device ID**

Unique identifier for the device in the stack.

- Range: **1–4**
- Must be **unique** across all devices in the same stack.

> **Note:**
>
> Device ID must be unique; otherwise switch cannot join the stack.

- **Priority**

Sets the priority level for master election during stack formation.

- Range: **1–255**
- Higher value = higher priority
- **Stack Port 1 & Stack Port 2**

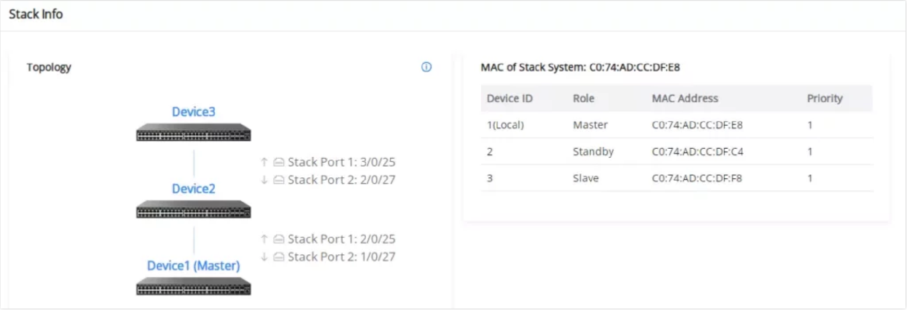
Select the two physical ports to use for stacking interconnection.

- Must be 10G ports
- Ensure that these ports are correctly cross-connected between switches

> **Note:**
>
> After configuring Stack settings, you must click Save and reboot the switch for changes to take effect.

Stack Info

This page displays the current stack topology and status, including member switches and their roles (Master/Member), device IDs, priorities, and port mappings.



MAC of Stack System: C0:74:AD:CC:DF:E8

Device ID	Role	MAC Address	Priority
1(Local)	Master	C0:74:AD:CC:DF:E8	1
2	Standby	C0:74:AD:CC:DF:C4	1
3	Slave	C0:74:AD:CC:DF:F8	1

Stack Info

- If no data appears, ensure stack settings are properly configured and devices are connected.
- All stacked switches must be running the same firmware version.

CHANGE LOG

This section documents significant changes from previous versions of the GWN780x Pro switches’ user manuals. Only major new features or major document updates are listed here. Minor updates for corrections or editing are not documented here.

Version 1.0.15.211

Product Name: GWN7801P Pro / GWN7802P Pro / GWN7803 Pro / GWN7803PL Pro / GWN7803PH Pro / GWN7806PL Pro / GWN7806PH Pro

- This is the initial version.