

Single PON port
AirLive XGSPON OLT-1XGS
WEB USER MANUAL



V1.0

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Chapter 1 System Description

1.1 Overview

1.1.1 OLT Introduction

The Web management user manual is applicable to the OLT listed in Table 1-1. After you have installed, connected and commissioned the equipment, you can start configuring various services and functions for the equipment.

Table 1-1: OLT Interfaces

Products		Single PON port GPON OLT
Chassis	Racks	1U
1G/10G Uplink Port	QTY	3
	Copper	2*100/1000M auto-negotiation
	SFP(Independent)	1*SFP+ (SFP+ is compatible with 10GE)
XG(S)PON & GPON Combo Port	QTY	1
	Fiber Type	SMF
Management Mode		Console, WEB, Telnet, SSH and SNMP

1.1.2 OS Requirement

For OLT management, it supports or requires the following operation system.

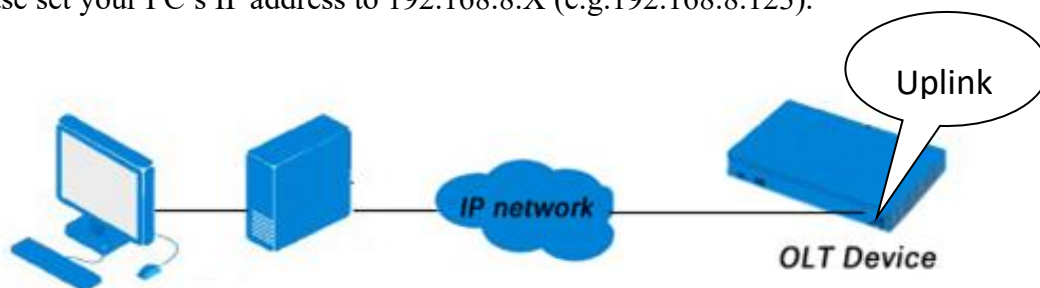
Table 1-2: Operation System requirement

CPU	Memory	DISK	Video Card	Operating System
Frequency above 2GHz	2GB Or above	10GB Disk space	65000 color resolving capability 1024*768 and above	Windows 10 Windows 11

1.2 Connection

Connect the OLT Uplink port to IP network. The OLT default management IP is 192.168.8.200.

Please set your PC's IP address to 192.168.8.X (e.g.192.168.8.123).

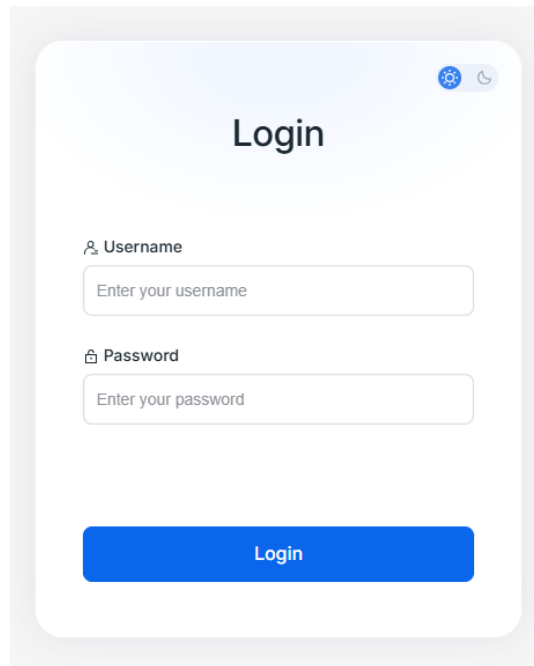


1.3 Login

Follow the steps to login:

1. Conform “1.2 Connection” to connect;
2. The device default IP address is 192.168.8.200;
3. Open your web browser, type the device IP in the address bar;
4. You’ll be prompted to enter the username and password. Enter the default login User Name and Password.

The default username and password is "**admin/Xpon@Olt9417#**".



The screenshot shows a web-based login interface. At the top, there's a light blue header bar containing the word "Login" in a bold, dark font. To the right of the title is a small circular icon with a gear and a moon. Below the header, there are two input fields. The first is labeled "Username" with a small icon of a person, and it contains the placeholder text "Enter your username". The second is labeled "Password" with a small icon of a key, and it contains the placeholder text "Enter your password". At the bottom of the form is a prominent blue button with the word "Login" in white text.

Figure 1.3-1: login

Chapter 2 Monitor

2.1 Overview

The OLT ports connection status are shown on the top of the interface, port and ONU device statistics, protocol activation status, and performance monitoring data are shown below, and the right is the basic information of OLT.

Monitor → Overview

This part allows you to view the port status, such as the number of uplink ports, PON, and ONU, and monitor performance metrics, such as Temperature, CPU Usage, and Memory Usage. It also shows the OLT information such as system name, serial number, hardware version, firmware version, MAC address and system time. The system name can be modified as needed.

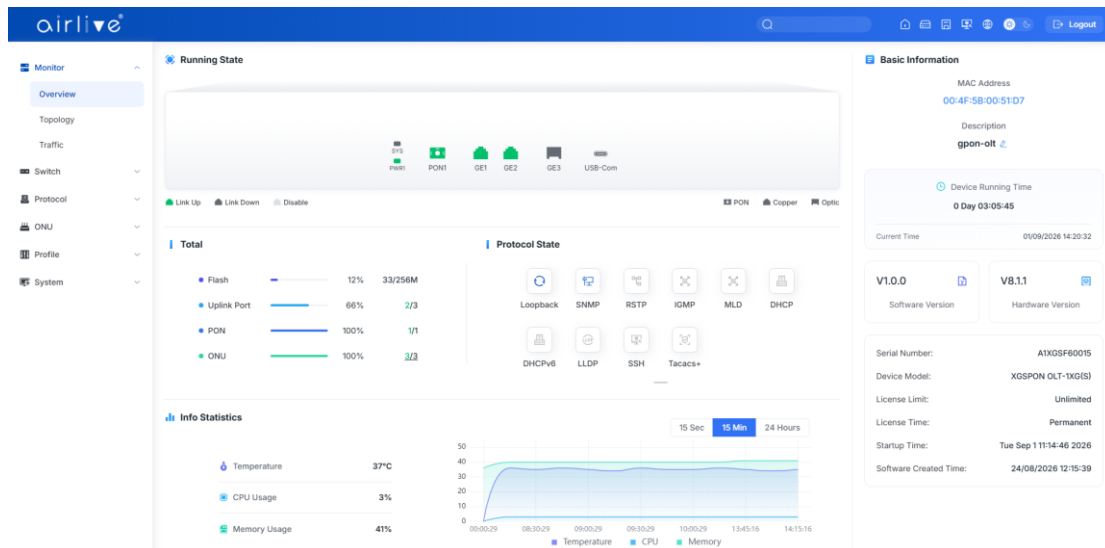


Figure 2.1-1: Overview

2.2 Topology

Monitor → Topology

This part we can view the complete device connection architecture of the OLT on the topology page. Click any connected ONU directly on the topology diagram to check relevant device information, enabling maintenance engineers to quickly inspect and configure devices.

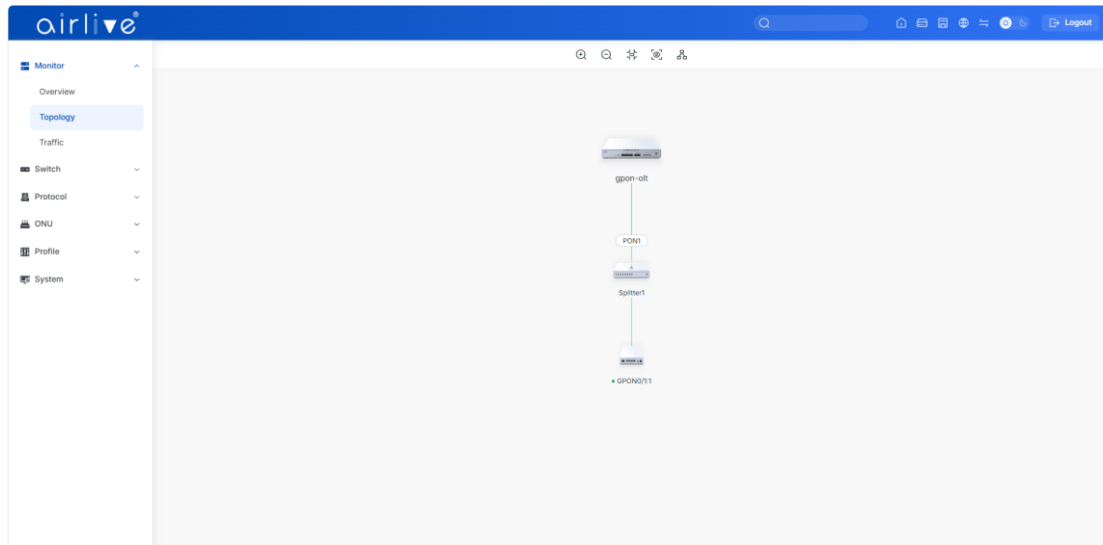


Figure 2.2-1: Topology

2.3 Traffic

The Traffic page can be used to configure traffic monitoring for OLT ports and ONU, allowing us to understand the receiving and sending of data by different ports or ONU devices over a period of time, and directly see the speed of traffic loading.

2.3.1 Port Traffic

Monitor → Traffic → Port Traffic

On this page, you can view the traffic information of all uplink ports. When the Method is set to Rate, you can view InOctetsRate and OutOctetsRate. When the Method is set to Total, you can view values such as InOctets, OutOctets, InPkts, and OutPkts. Of course, you can also view data for Hourly, Daily, and Monthly period. The operation is flexible and the page data is intuitive.

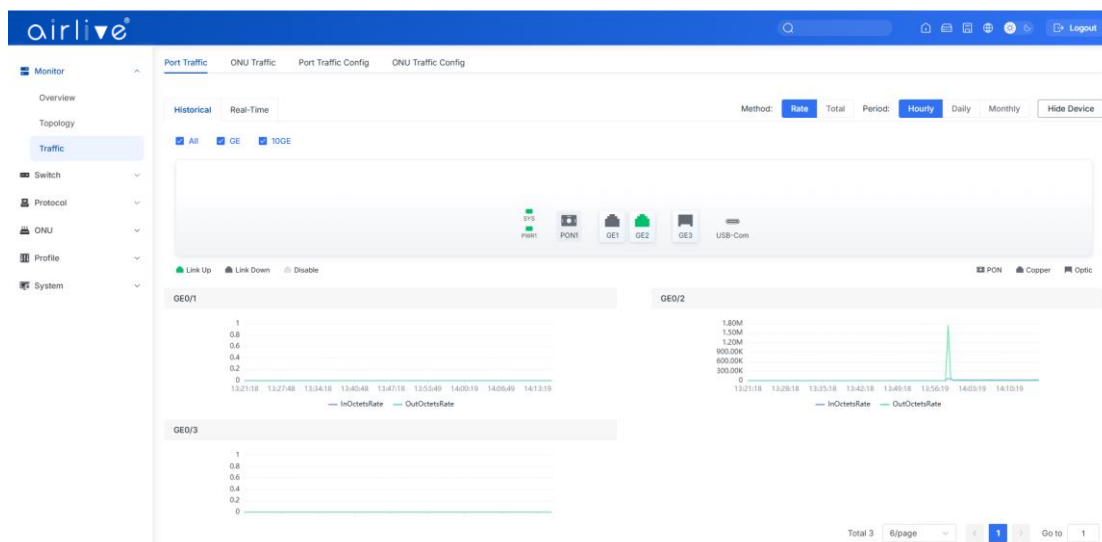


Figure 2.3-1: Port Traffic

2.3.2 ONU Traffic

Monitor → Traffic → ONU Traffic

The function is the same as the above page, but this page is for ONU devices under a PON port. We can view the traffic data of each ONU.

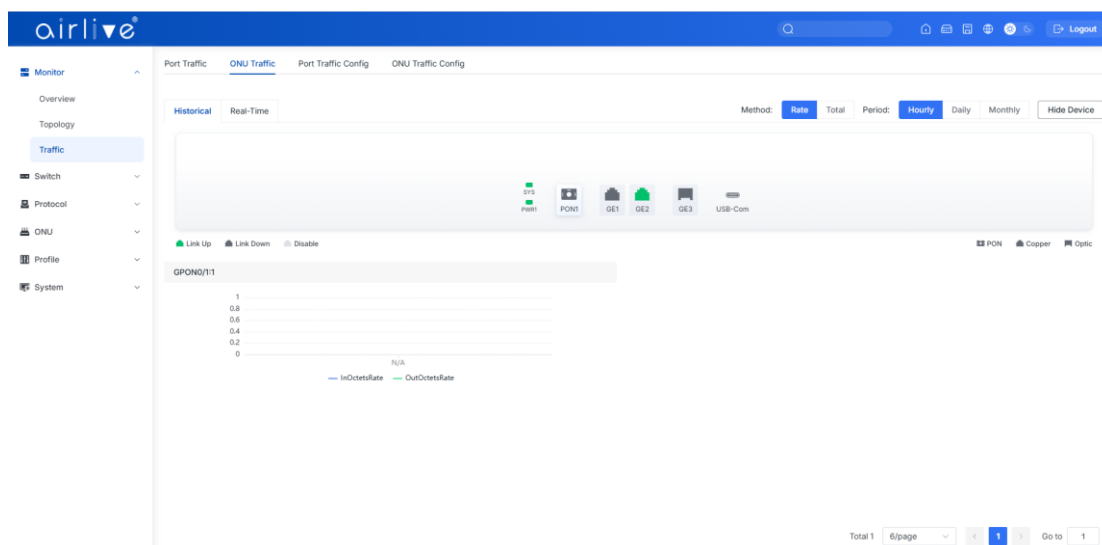


Figure 2.3-2: ONU Traffic

2.3.3 Port Traffic Config

Monitor → Traffic → Port Traffic Config

This page is used to turn on/off the traffic statistics function of OLT ports. When the status is turned on, it will monitor the traffic data on the port. When it is turned off, it will stop monitoring.

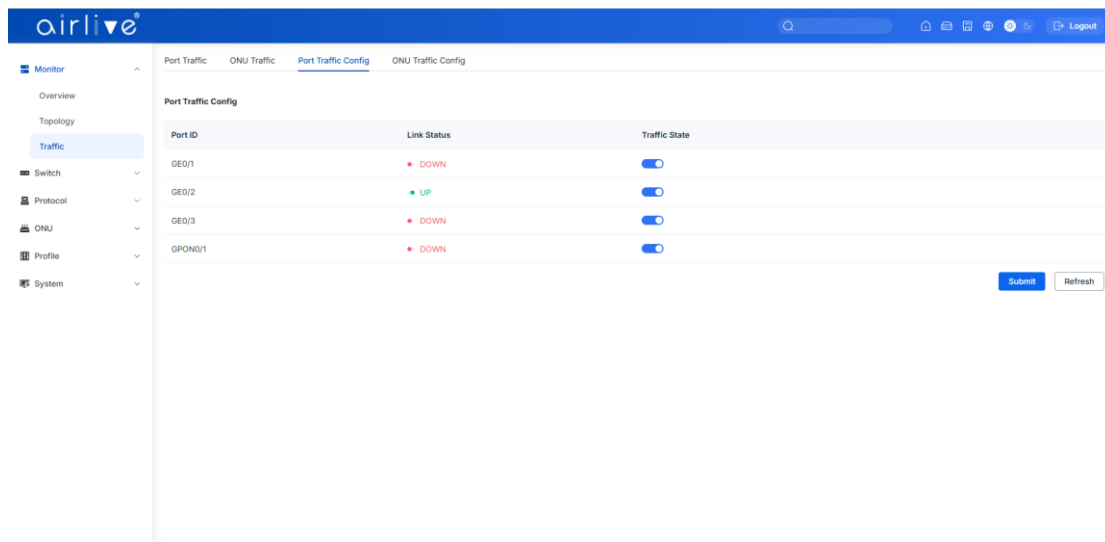


Figure 2.3-3: Port Traffic Config

2.3.4 ONU Traffic Config

Monitor → Traffic → ONU Traffic Config

This page is used to turn on/off the traffic statistics function of ONU. When the status is turned on, it will monitor the traffic data of the port. When it is turned off, it will stop monitoring.

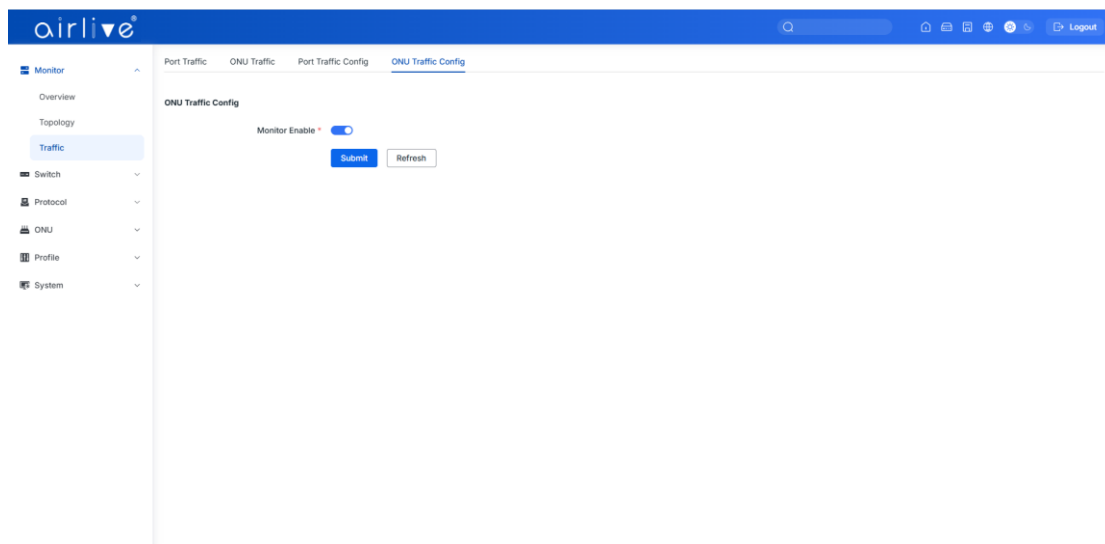


Figure 2.3-4: ONU Traffic Config

Chapter 3 Switch

3.1 VLAN

The OLT is fully compliant with the IEEE802.1Q VLAN standard and has the following main features:

- Support Port-based VLAN and IEEE802.1Q VLAN.
- Support maximum 512 VLANs concurrently (VLAN range: 1-4094).

All switch ports, including uplink ports and downlink ports, support VLAN partition. VLAN 1 is the system reserved VLAN, it includes all switch ports which are untagged mode.

3.1.1 VLAN

Switch → VLAN → VLAN

On this user interface, you can create new VLAN.

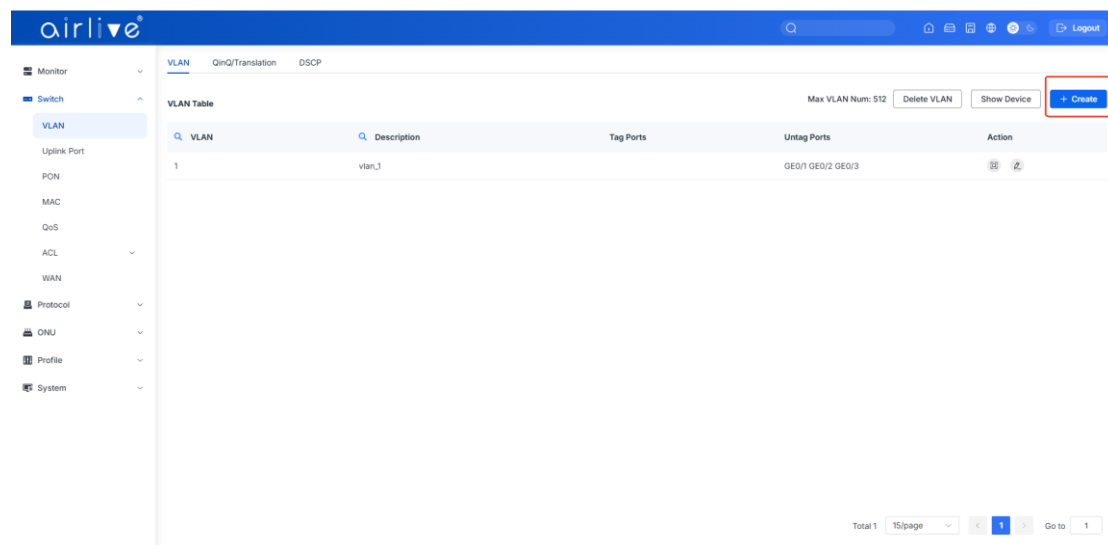


Figure 3.1-1: Create New VLAN

Assign the ports to the VLANs that have been created. You can choose tag or untag VLAN mode.

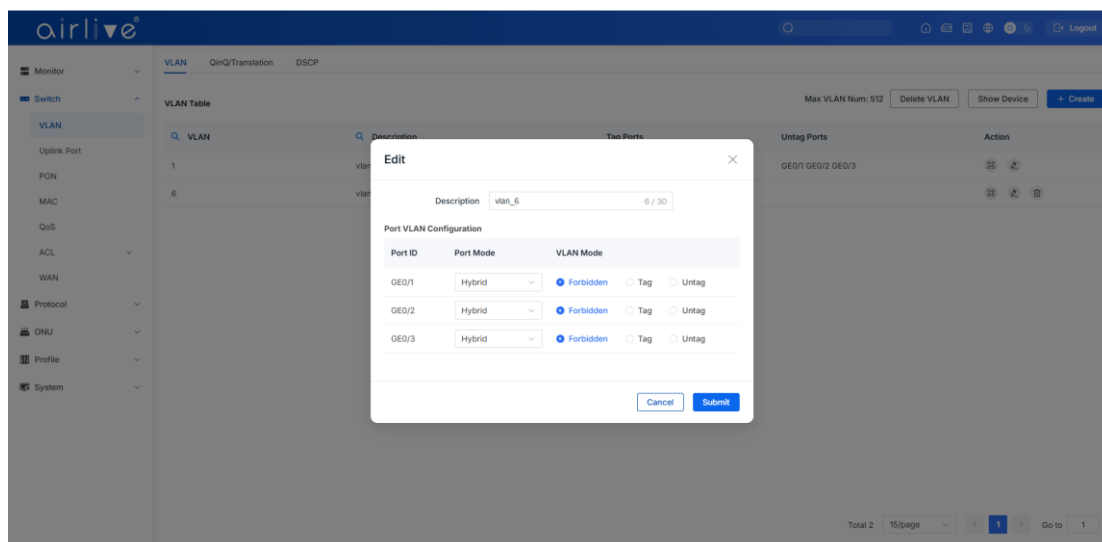


Figure 3.1-2: Add VLAN Port

3.1.2 QinQ/Translation

Switch → VLAN → QinQ/Translation

On this page, VLAN QinQ and VLAN translation can be configured. VLAN QinQ and translation are applied to ingress traffic on a port.

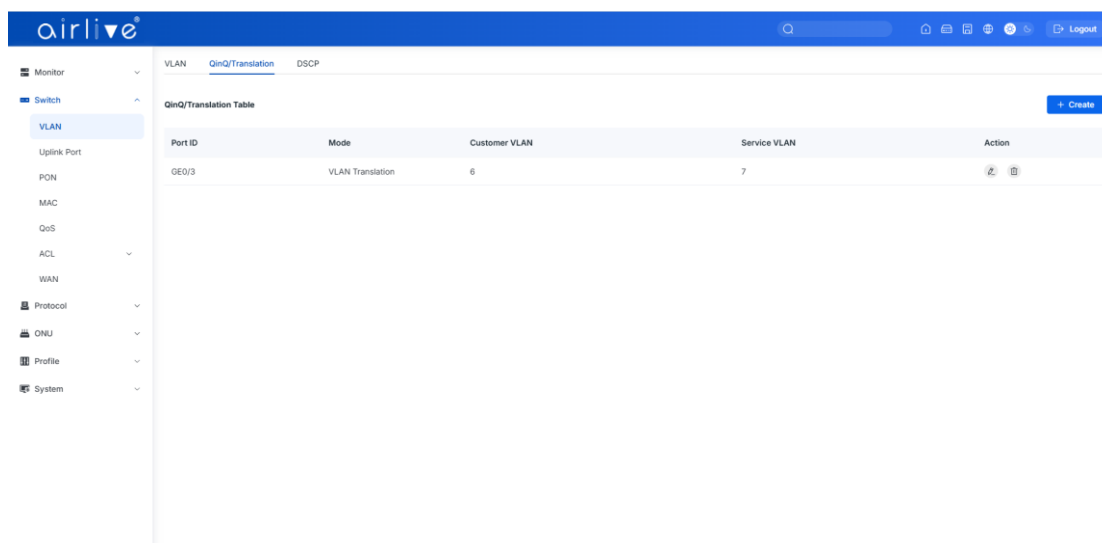


Figure 3.1-3: VLAN QinQ/Translation

3.1.3 DSCP

Switch → VLAN → DSCP

On this page, you can manually configure the DSCP value of IP packets, set the DSCP mapping to a new DSCP, and support the configuration of IP DSCP mapping VLAN priority.

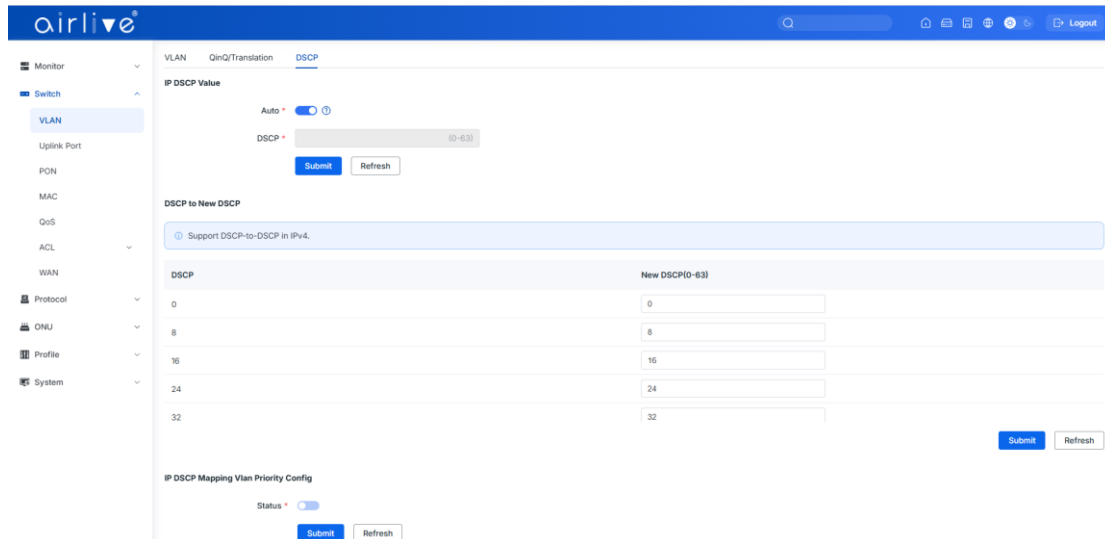


Figure 3.1-4: DSCP Configuration

3.2 Uplink Port

Uplink ports traffic statistics and basic configuration setting.

3.2.1 Traffic Statistics

Switch → Uplink Port → Traffic Statistics

This user interface displays traffic statistics of Uplink ports.

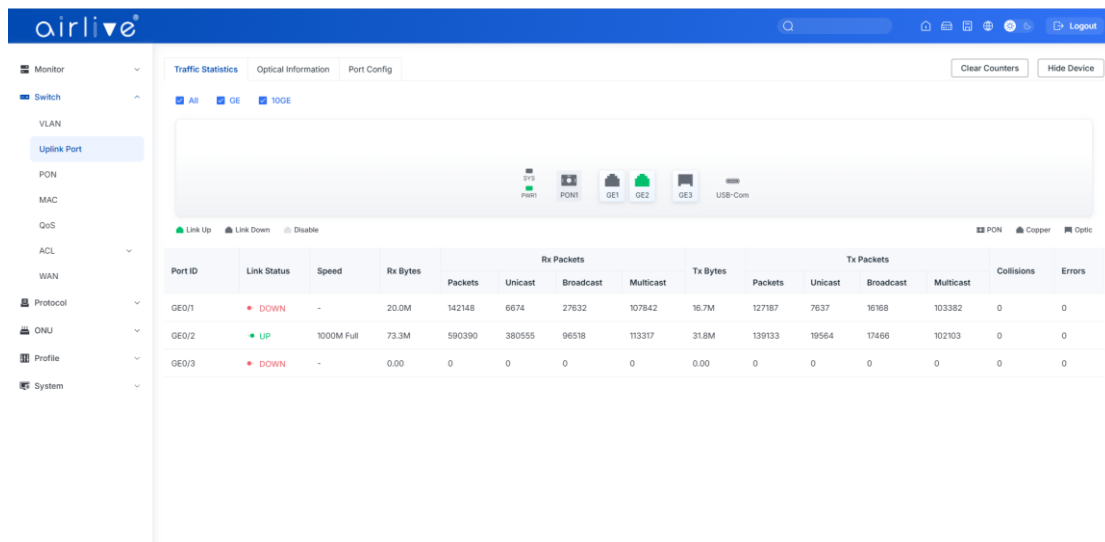


Figure 3.2-1: Uplink port Traffic Statistics

3.2.2 Optical Information

Switch → Uplink Port → Optical Information

This page can be used to view the optical port temperature, voltage, current, transmitted and received optical power and other parameters.

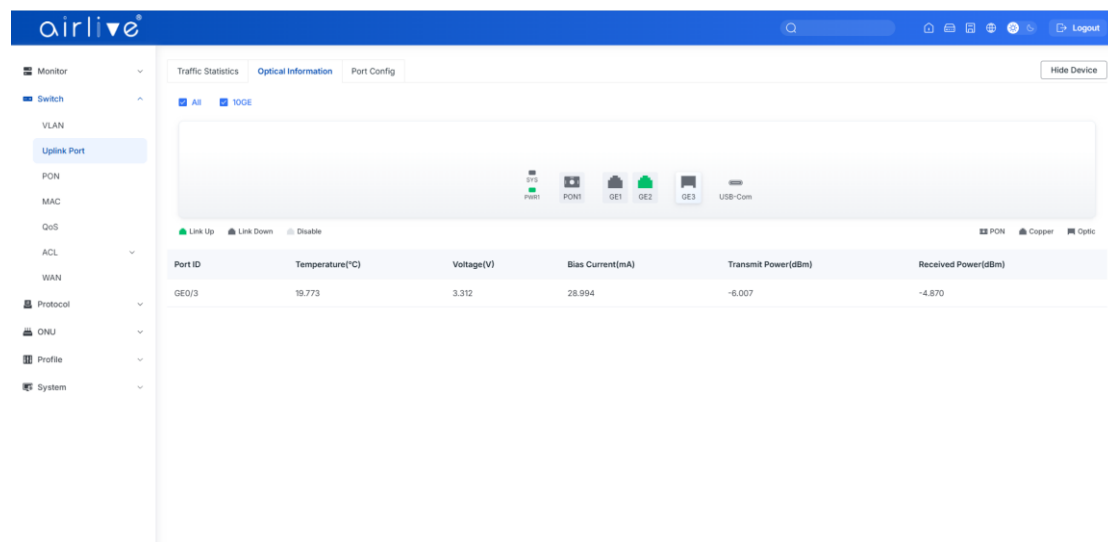


Figure 3.2-2: Uplink Port Optical Information

3.2.3 Port Config

Switch → Uplink Port → Port Config

This user interface is used to configure port related functions and characteristic parameters of Uplink port, such as port attributes, PVID, flow control, rate limit, storm suppression and so on.

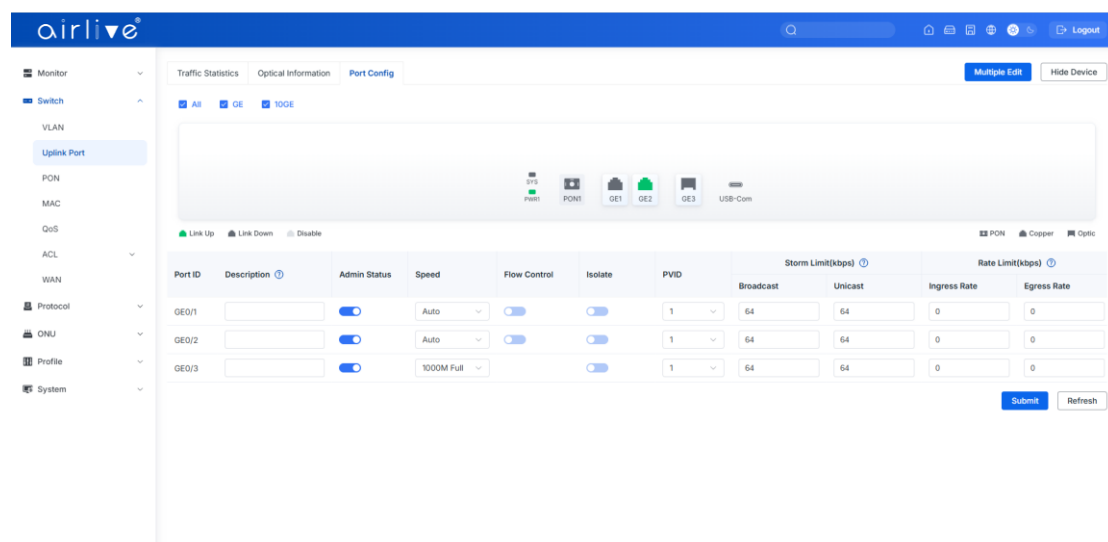


Figure 3.2-3: Uplink Port Config

Illustrations of each parameter:

Parameters	Illustration
Port ID	Uplink port has two types, RJ45 (GE1 and GE2) and SFP+ (GE3).
Description	Descriptions or remarks of port.
Admin Status	Active or inactive status of port. It is enabled by default.
Speed	Configuring Port Rate.
Isolate	If enabled, the port cannot communicate with other ports in the same VLAN.
Flow Control	Enable or disable flow control function of uplink port to control congestion. It is disabled by default.
PVID	Default VLAN ID of the port.
Broadcast	Broadcast storm suppression.
Unknown Unicast	Unknown unicast storm suppression.
Ingress Rate	Port ingress rate.
Egress Rate	Port egress rate.
MAC limit	Number of MAC address can be learned in the port.

3.3 PON

PON ports traffic statistics and basic configuration setting.

3.3.1 Information & Config

3.3.1.1 Traffic Statistics

Switch → PON → Information & Config → Traffic Statistics

This user interface displays traffic statistics of PON ports.

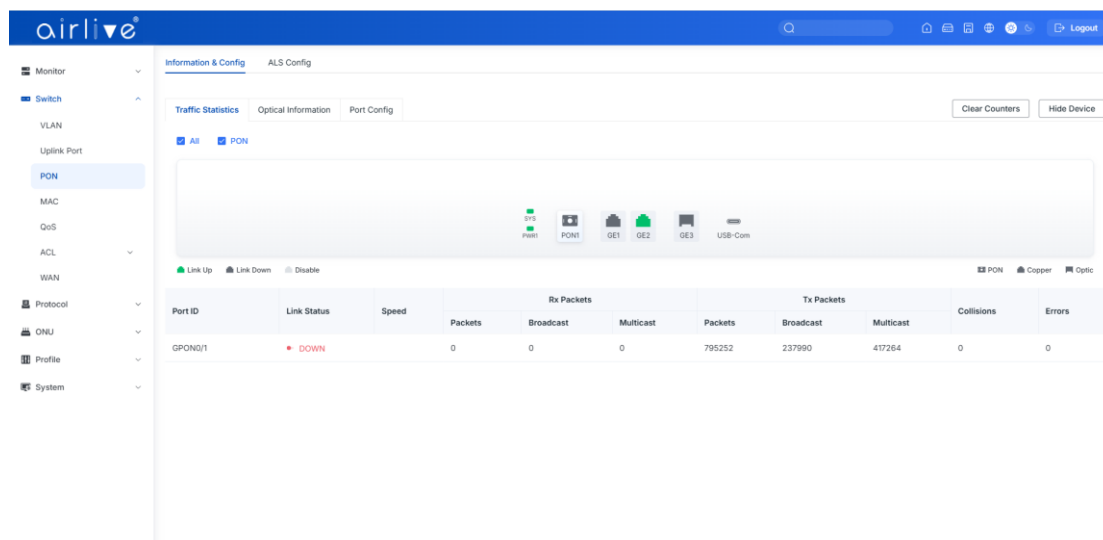


Figure 3.3-1: PON Port Traffic Statistics

3.3.1.2 Optical Information

Switch → PON → Information & Config → Optical Information

This user interface is used to display parameters of PON ports, such as PON module Temperature, Voltage, Bias Current, Transmit Power.

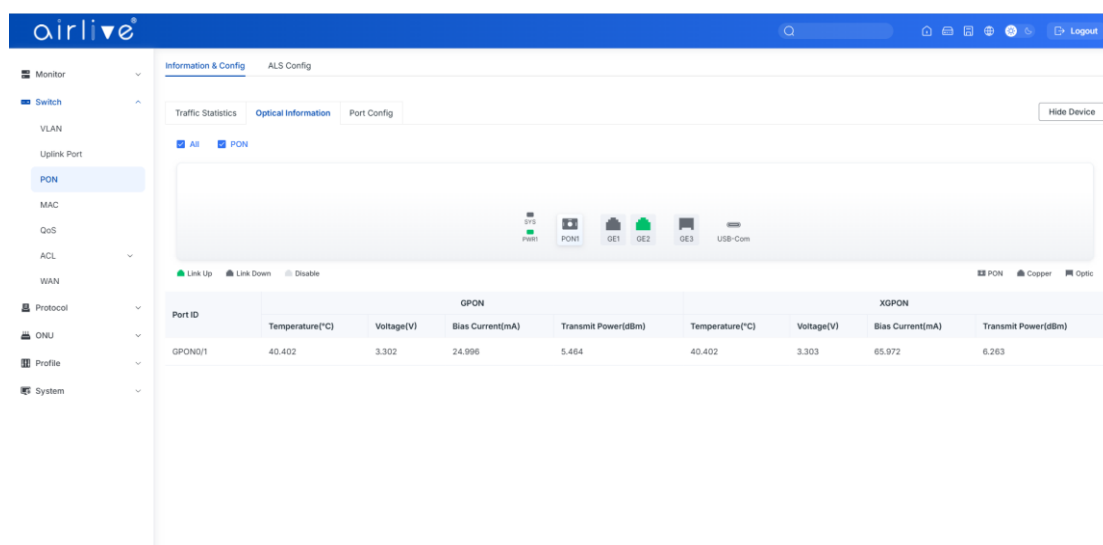


Figure 3.3-2: PON Port Optical Information

3.3.1.3 Port Config

Switch → PON → Information & Config → Port Config

This page is used to configure functions and characteristic parameters of the PON port, such as port attributes, storm suppression, and rate limiting.

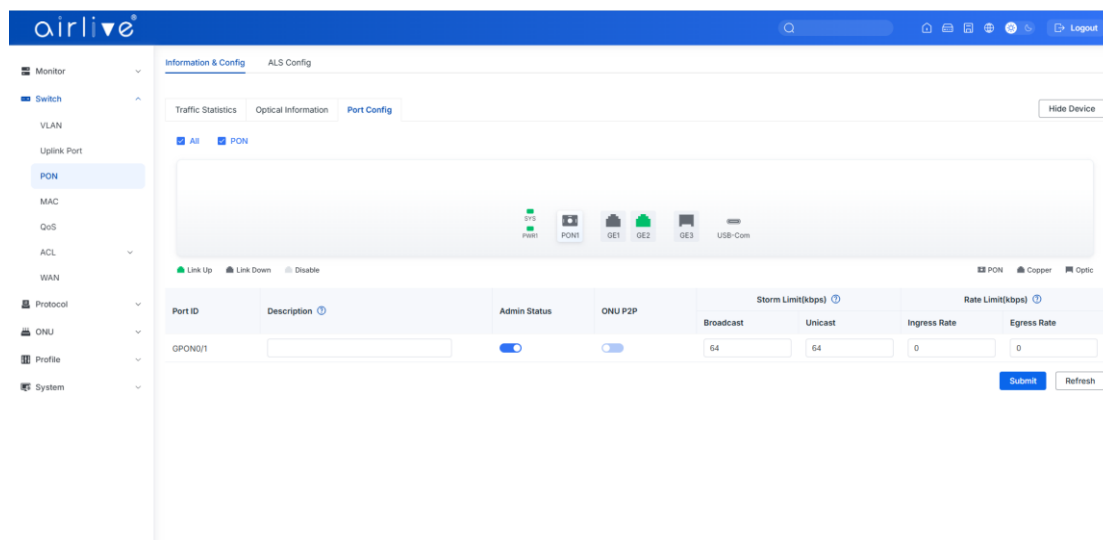


Figure 3.3-3: PON Port Config

3.3.2 ALS Config

Switch → PON → ALS Config

This page is used to configure PON port auto laser switch(ALS) function. When the function is enabled and “PON LOS” is detected, the laser will be shut down.

There are two restart modes: manual and auto.

If the restart mode is auto, the laser is turned on periodically based on the “Interval” parameter. The "Width" parameter indicates how long the laser stays on in each cycle. If an ONU is detected while the laser is on, keep the laser on until a PON LOS signal is received again.

If the restart mode is manual, after the laser is turned off, it needs to be turned on again using the "no shutdown" command in CLI.

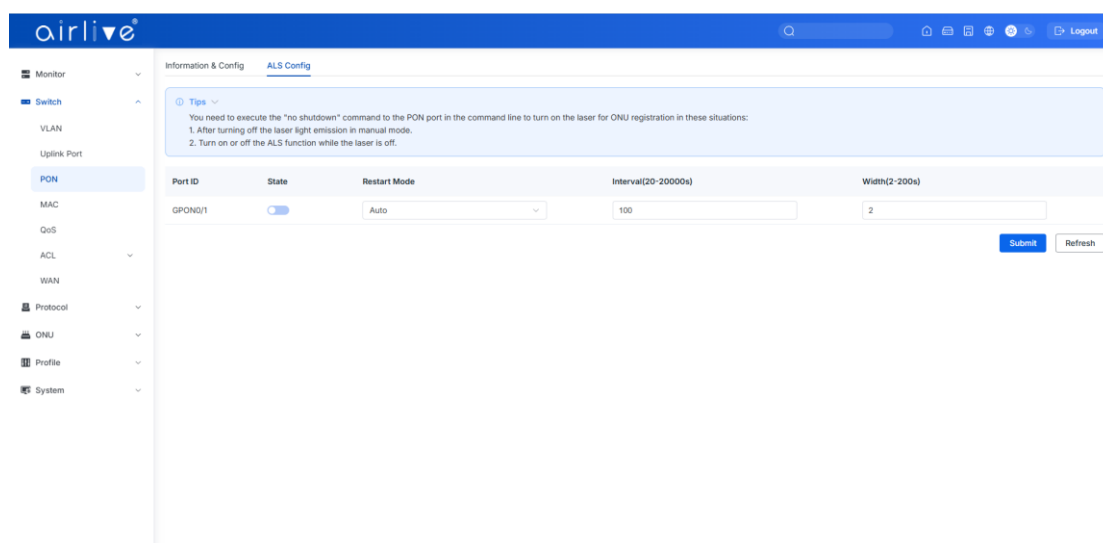


Figure 3.3-4: ALS Config

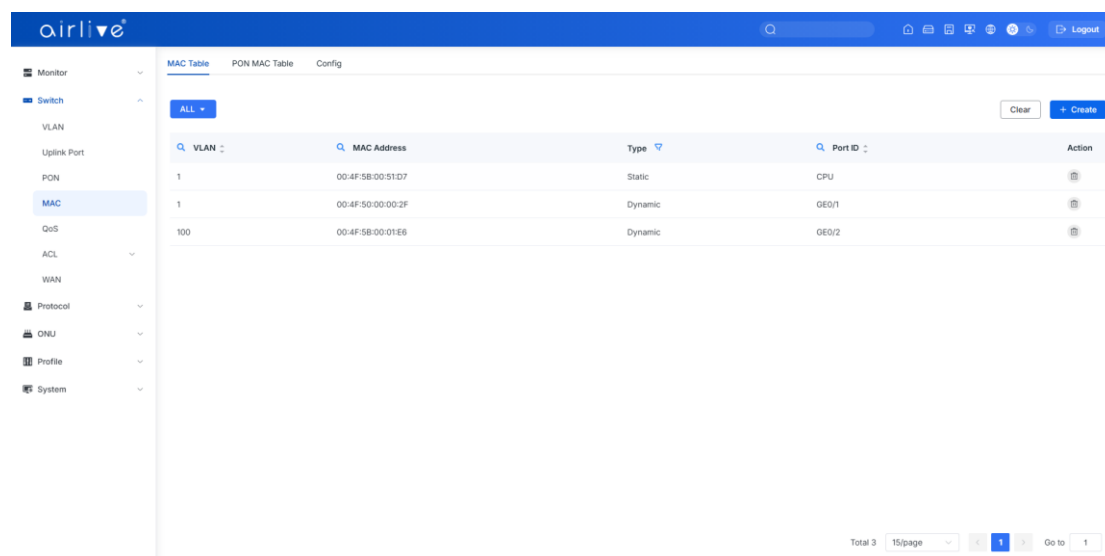
3.4 MAC

In this section, you can check MAC address table of OLT, set MAC aging time and add MAC address manually.

3.4.1 MAC Table

Switch → MAC → MAC Table

This table displays MAC addresses that OLT has learned at PON ports and uplink ports. Also, user can add MAC address to the OLT manually.



VLAN	MAC Address	Type	Port ID	Action
1	00:4F:5B:00:51:D7	Static	CPU	[Edit]
1	00:4F:50:00:00:2F	Dynamic	GE0/1	[Edit]
100	00:4F:5B:00:01:E6	Dynamic	GE0/2	[Edit]

Figure 3.4-1: MAC Address Table

3.4.2 PON MAC Table

Switch → MAC → PON MAC Table

This table displays MAC addresses that OLT has learned at PON ports.

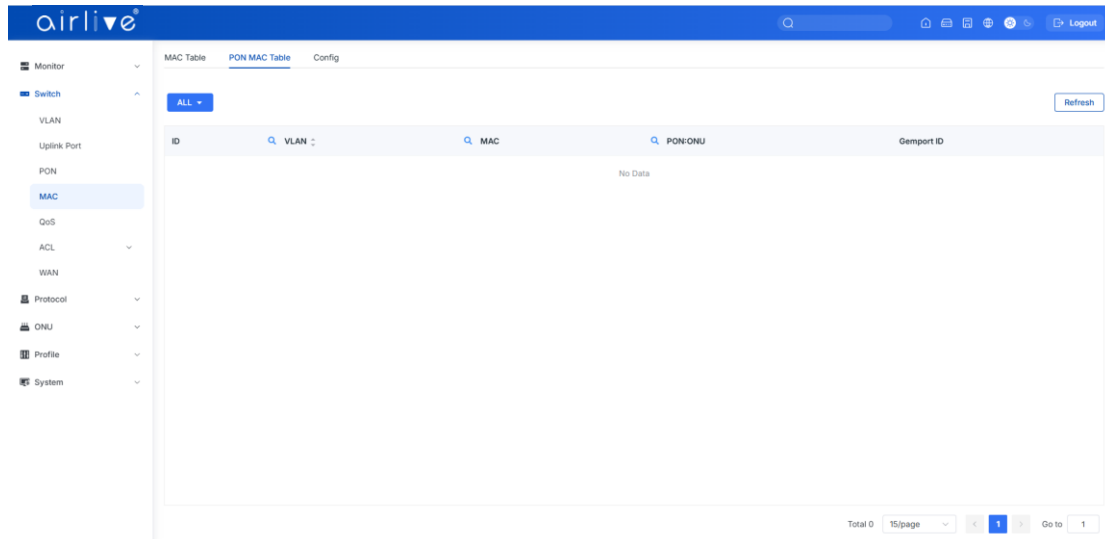


Figure 3.4-2: PON MAC Table

3.4.3 Config

Switch → MAC → Config

The default MAC aging time of OLT is 300s, user can change the value between 10~1000000s.

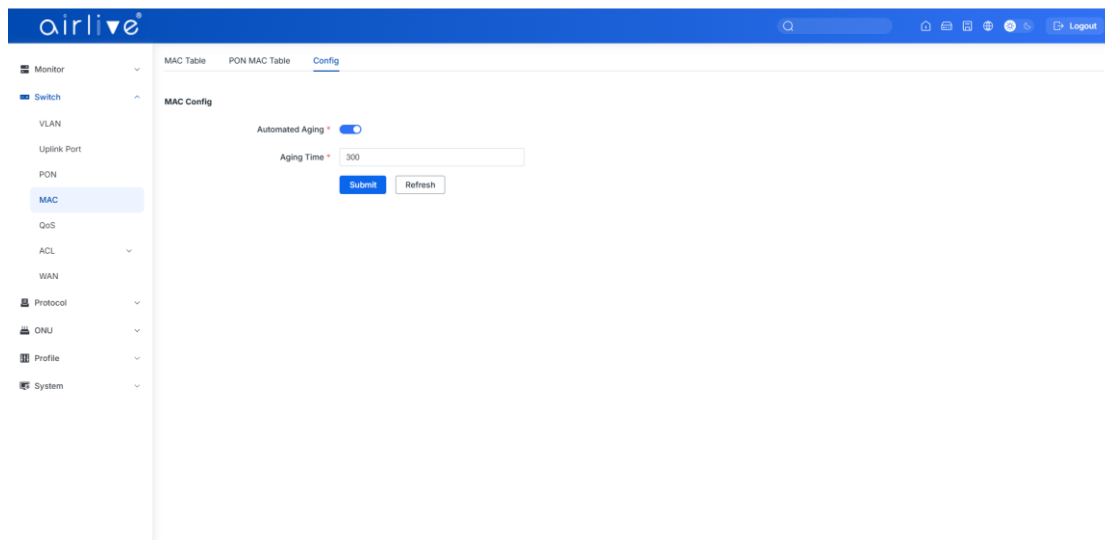


Figure 3.4-3: MAC Config

3.5 QoS

Switch → QoS

When bandwidth is insufficient or there is congestion in the network, queue scheduling can ensure that high priority data traffic passes through the device first. Traffic will be mapped to the queue based on its priority and transmitted within the queue.

OLT supports a total of 8 queues. The queue scheduling modes include strict priority (SP), weighted Round Robin(WRR), and mixed mode (SP-WRR).

Strict priority scheduling guarantees bandwidth for high-priority traffic. Traffic with lower priority will only pass through when there is remaining bandwidth.

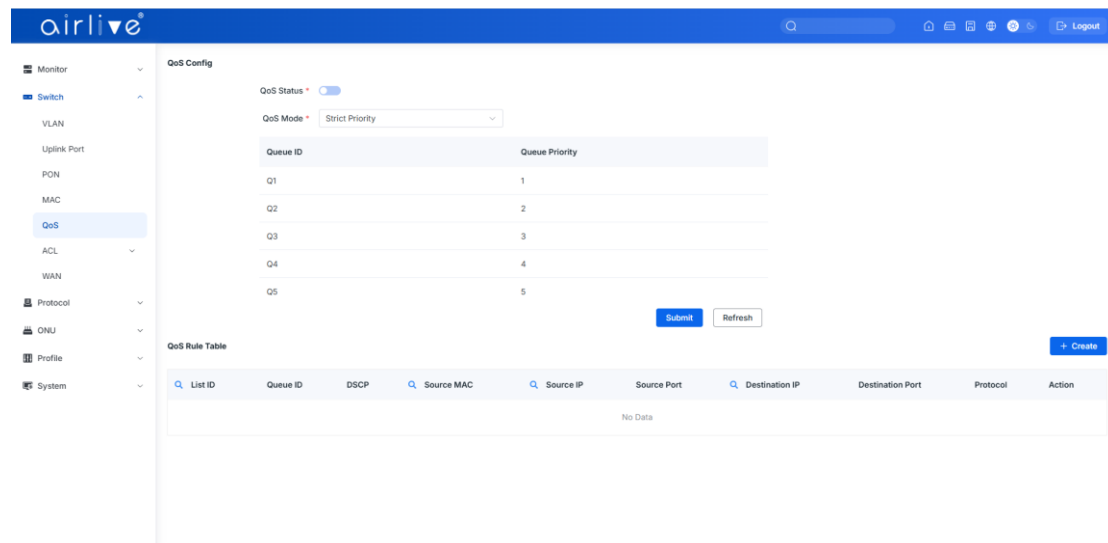


Figure 3.5-1: QoS Configuration

3.6 ACL

3.6.1 ACL IPv4

In order to filter packets, network devices need to set a series of rules to determine the content that needs to be filtered. These packets can only be filtered if they match the rules. Access control lists can achieve this function. The matching criteria for access control list rules can be source address, destination address, Ethernet type, VLAN, protocol port, etc. These access control list rules can also be used in other situations, such as the classification of flows in quality of service. Access control list rules can contain one or more sub rules with different matching conditions.

This device supports the following types of access control lists.

3.6.1.1 IP/MAC Filter

Switch → ACL → ACL IPv4 → IP/MAC Filter

The filter is mainly based on IP/MAC addresses, including source IP address and destination IP address, source MAC address and destination MAC address.

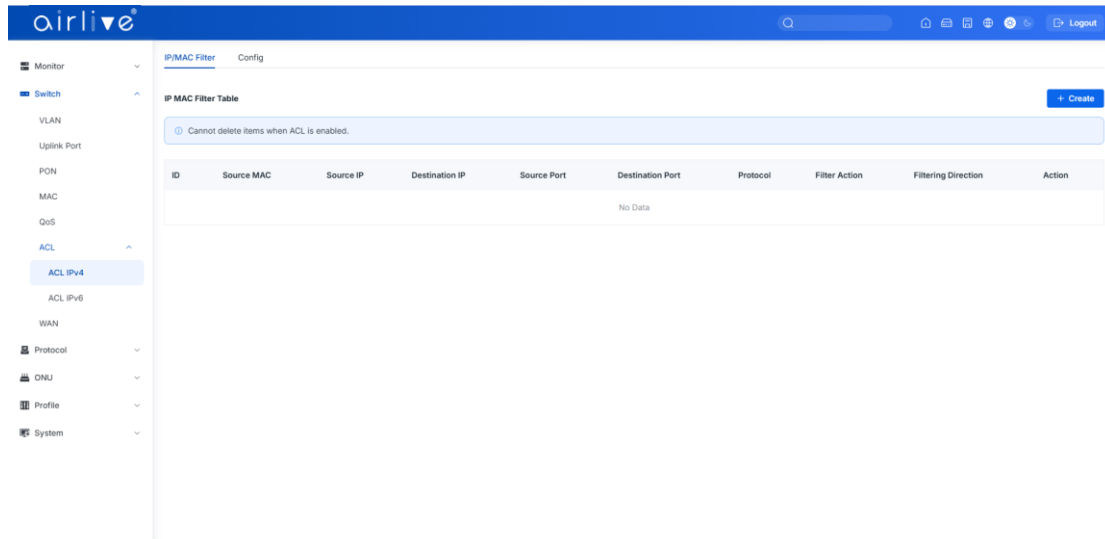


Figure 3.6-1: IP/MAC Filter

3.6.1.2 Config

Switch → ACL → ACL IPv4 → Config

The main configuration controls the access list status and effective period.

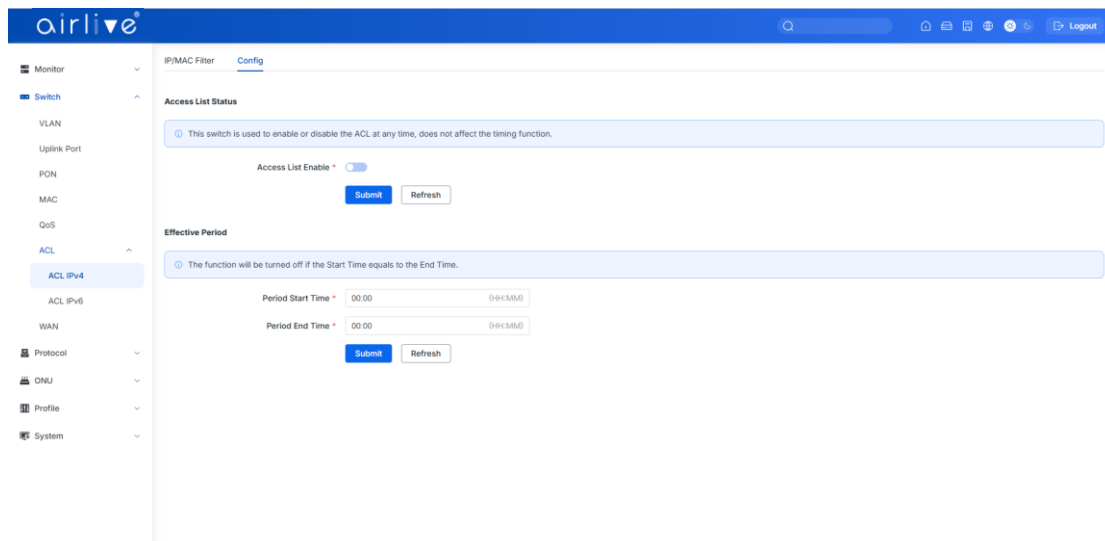


Figure 3.6-2: ACL IPv4 Config

3.6.2 ACL IPv6

This section is about the IPv6 security configuration of OLT. IPv6 access control lists can allow or deny data transmission or access through IPv6 packets.

3.6.2.1 IPv6/MAC Filter

Switch → ACL → ACL IPv6 → IPv6/MAC Filter

The filter is mainly based on IPv6/MAC addresses, including source and destination IPv6 addresses, as well as source and destination MAC addresses.

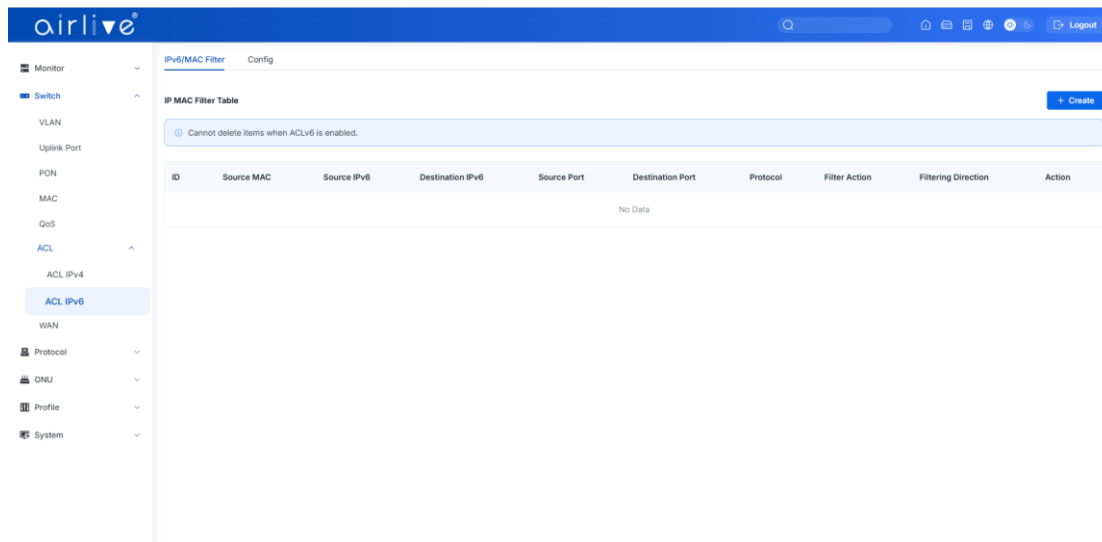


Figure 3.6-3: IPv6/MAC Filter

3.6.2.2 Config

Switch → ACL → ACL IPv6 → Config

The main configuration controls the access list status and effective period.

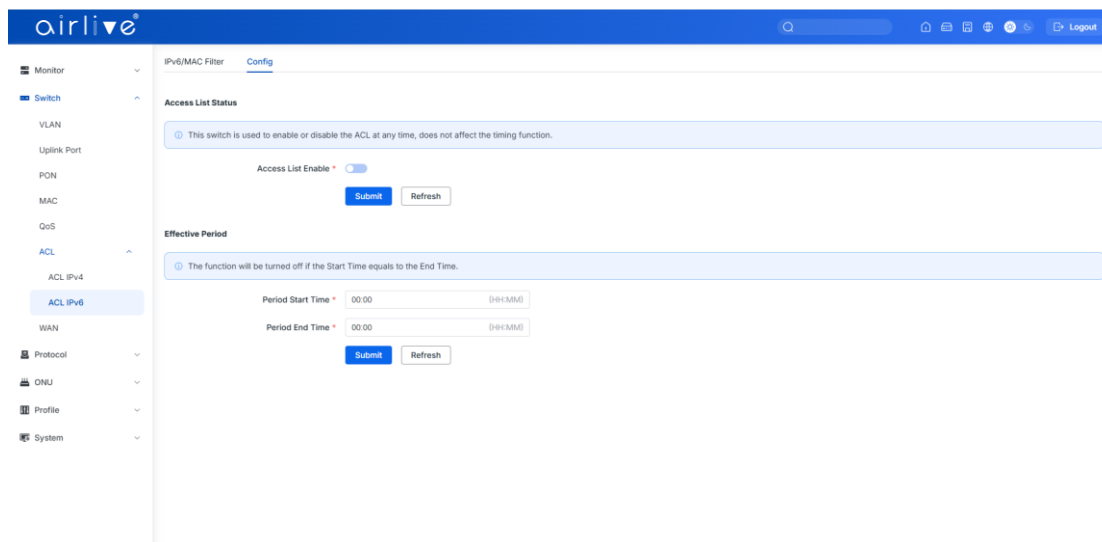


Figure 3.6-4: ACL IPv6 Configuration

3.7 WAN

This function is used to set working mode of the OLT to Layer 3. The OLT can be used as a router, with GE3 as the WAN port, PON port, GE1, and GE2 as the LAN ports. It can support DHCP, PPPoE, and static IP for upstream internet access.

3.7.1 WAN

Switch → WAN → WAN

This page is used to configure WAN.

The screenshot shows the AirLive web interface for WAN configuration. The left sidebar contains a menu with options: Monitor, Switch, VLAN, Uplink Port, PON, MAC, QoS, ACL, ACL IPv4, ACL IPv6, WAN (selected), Protocol, ONU, Profile, and System. The main content area has tabs for WAN, LAN, and NAT. The WAN Config section is active, showing a toggle for WAN (ON), a Multicast Proxy toggle (OFF), a Mode dropdown (Route), an IP Version dropdown (IPv4), a Connect Mode dropdown (Static), and input fields for IP Address (0.0.0.0), Gateway (0.0.0.0), and VLAN ID (1). There are Submit and Refresh buttons at the bottom of the form.

Figure 3.7-1: WAN Config

3.7.2 LAN

Switch → WAN → LAN

This page is configured with LAN side IP address and DHCP server.

The screenshot shows the AirLive web interface with the LAN configuration page selected. The left sidebar contains a menu with options: Monitor, Switch, VLAN, Uplink Port, PON, MAC, QoS, ACL, ACL IPv4, ACL IPv6, WAN, Protocol, ONU, Profile, and System. The main content area has tabs for WAN, LAN, and NAT. The LAN tab is active, showing the following configuration options:

- LAN Config:** IP Address (A.B.C.D/Mask), VLAN ID (1-4094), Submit, Refresh.
- DHCP Server Config:** DHCP Server (toggle), VLAN ID (1-4094), Submit, Refresh.
- DHCP Server Settings:** Start IP Address (192.168.0.20), End IP Address (192.168.0.254), Subnet Mask (0.0.0.0), Gateway (0.0.0.0), Static DNS 1 (0.0.0.0), Static DNS 2 (0.0.0.0), Static DNS 3 (0.0.0.0).

Figure 3.7-2: LAN

3.7.3 NAT

Switch → WAN → NAT

Use this page to configure the routing NAT type and DMZ hosts.

The screenshot shows the AirLive web interface with the NAT configuration page selected. The left sidebar contains a menu with options: Monitor, Switch, VLAN, Uplink Port, PON, MAC, QoS, ACL, ACL IPv4, ACL IPv6, WAN, Protocol, ONU, Profile, and System. The main content area has tabs for WAN, LAN, and NAT. The NAT tab is active, showing the following configuration options:

- NAT Config:** NAT Type (NAT4 (default)), Submit, Refresh.
- NAT -- DMZ Hosts:** DMZ Host (toggle), DMZ Host IP Address (A.B.C.D), Submit, Refresh.

Figure 3.7-3: NAT

Chapter 4 Protocol

4.1 Loopback

Loopback detection identifies and handles looped ports.

4.1.1 Information

Protocol → Loopback → Information

This page displays loopback information, including port, handle mode and aging time.

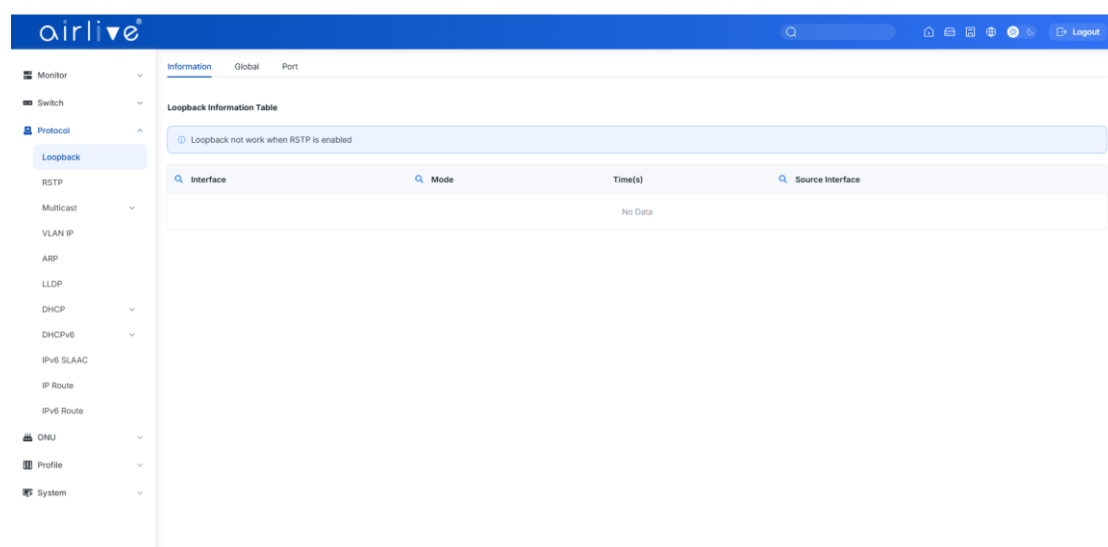


Figure 4.1-1: Loopback Information

4.1.2 Global

Protocol → Loopback → Global

This page is used to enable or disable loopback detect, set the loopback range, mode, and aging time, loopback packet sending mode and packet sending interval.

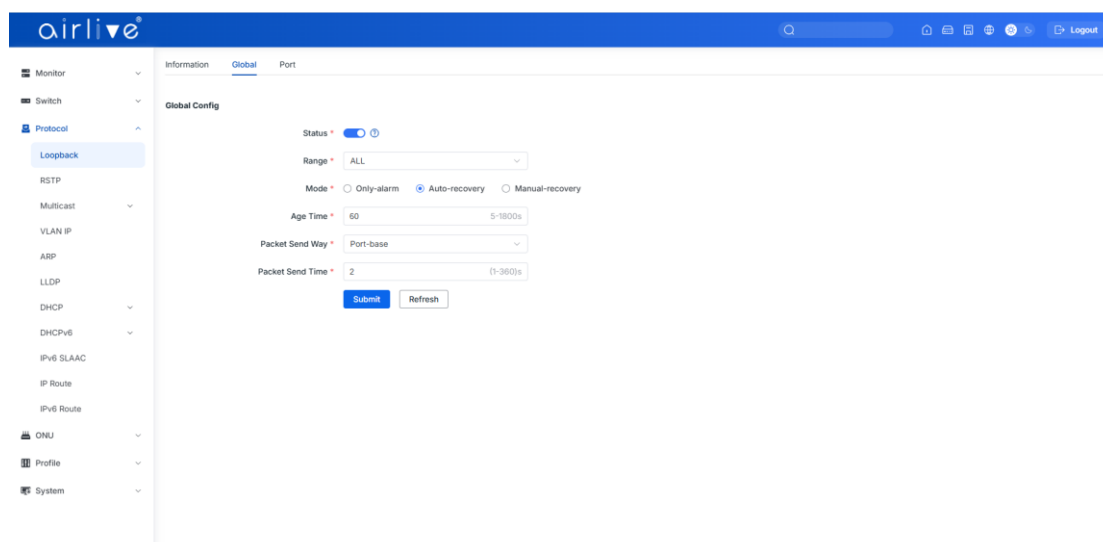


Figure 4.1-2: Loopback Global

4.1.3 Port

Protocol → Loopback → Port

Loopback port configuration is used to specify the port range of loopback function. Loopback will take effect on the port when it is checked.

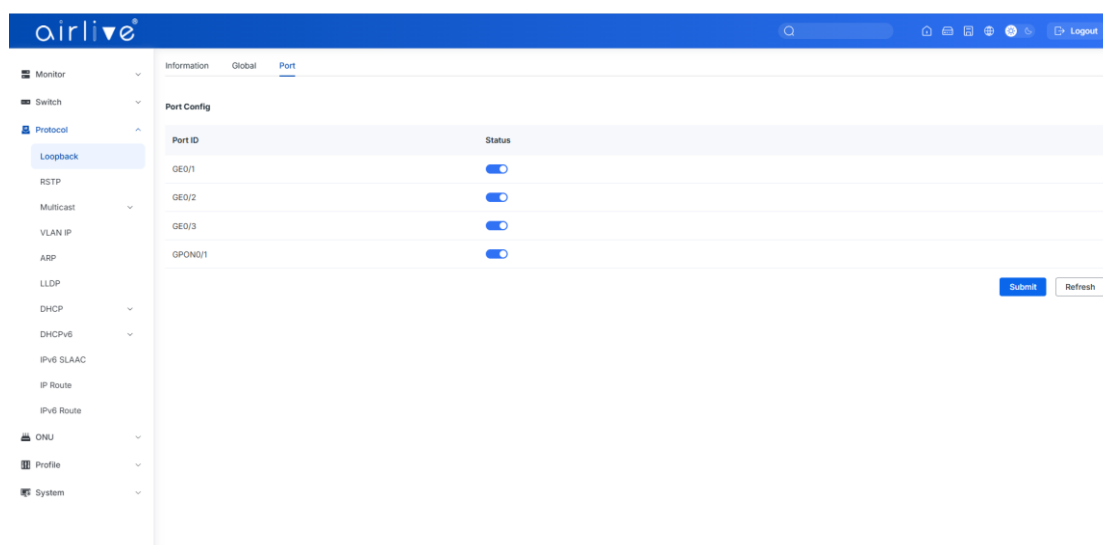


Figure 4.1-3: Loopback Port

4.2 RSTP

The spanning tree protocol is a second layer protocol that eliminates network loops by selectively blocking redundant network links. It also has the feature of link backup. The Fast Spanning Tree Protocol (RSTP) is defined by the IEEE 802.1w standard, which has been improved on the basis of STP to achieve fast convergence of network

topology. Its "speed" is reflected in the fact that when a port is selected as the root port and designated port, the delay for it to enter forwarding state will be greatly reduced, thereby shortening the time required for the network to ultimately reach topological stability.

4.2.1 Information

Protocol → RSTP → Information

The page displays the spanning tree protocol parameters of the root bridge.

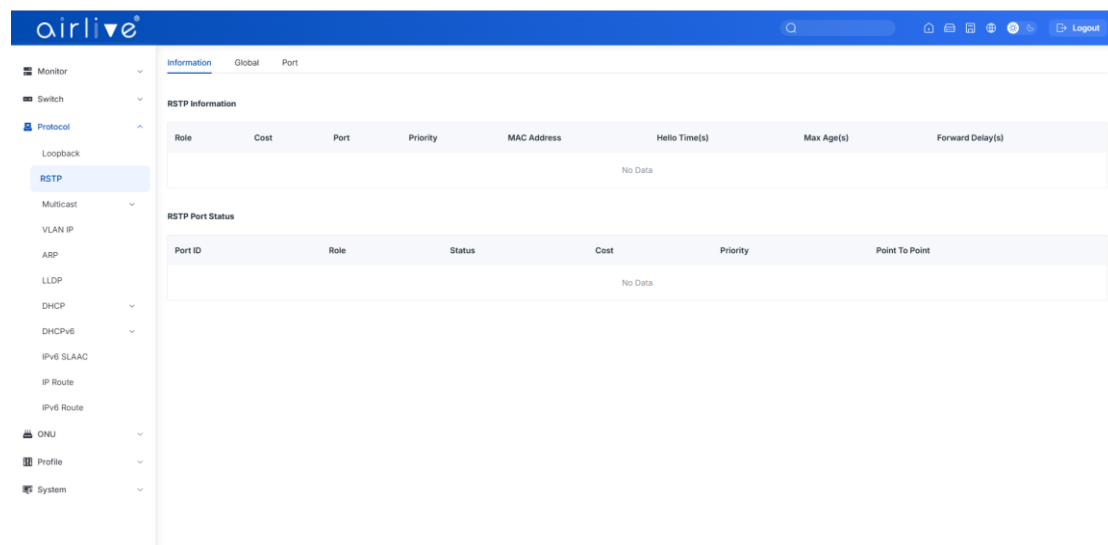


Figure 4.2-1: RSTP Information

4.2.2 Global

Protocol → RSTP → Global

This page is used to set the parameters of the OLT's spanning tree protocol, including spanning tree protocol switch, priority, hello time, maximum aging time, and forwarding delay.

The screenshot shows the 'RSTP Global Config' page in the AirLive web interface. The left sidebar contains a menu with 'Protocol' expanded, showing options like Loopback, RSTP, Multicast, VLAN IP, ARP, LLDP, DHCP, DHCPv6, IPv6 SLAAC, IP Route, and IPv6 Route. The main panel has tabs for 'Information', 'Global', and 'Port', with 'Global' selected. The 'RSTP Global Config' section includes a formula $2 * (HelloTime + 1) \leq MaxAge \leq 2 * (ForwardDelay + 1)$. Below this are fields for 'RSTP Status' (checked), 'Global Priority' (4095), 'Hello Time' (2), 'Max Age' (20), and 'Forward Delay' (15). 'Submit' and 'Refresh' buttons are at the bottom.

Figure 4.2-2: RSTP Global Config

4.2.3 Port

Protocol → RSTP → Port

This page is used to set port fast spanning tree protocol parameters, including spanning tree protocol switches, priority, cost, edge ports, and point-to-point.

The screenshot shows the 'RSTP Port Config' page in the AirLive web interface. The left sidebar is the same as in Figure 4.2-2. The main panel has tabs for 'Information', 'Global', and 'Port', with 'Port' selected. The 'RSTP Port Config' section includes a 'Tips' link and a table with the following data:

Port ID	Status	Priority	Cost	Edge Port	Operating Edge	Point To Point
GE0/1	☒	128	20000	☒	☐	☒
GE0/2	☒	128	0	☒	☐	☒
GE0/3	☒	128	0	☒	☐	☒

'Submit' and 'Refresh' buttons are at the bottom right of the table.

Figure 4.2-3: RSTP Port

4.3 Multicast

4.3.1 IGMP

4.3.1.1 Group Member

Protocol → Multicast → IGMP → Group Member

When there is a multicast group produced, the group will be displayed in this table.

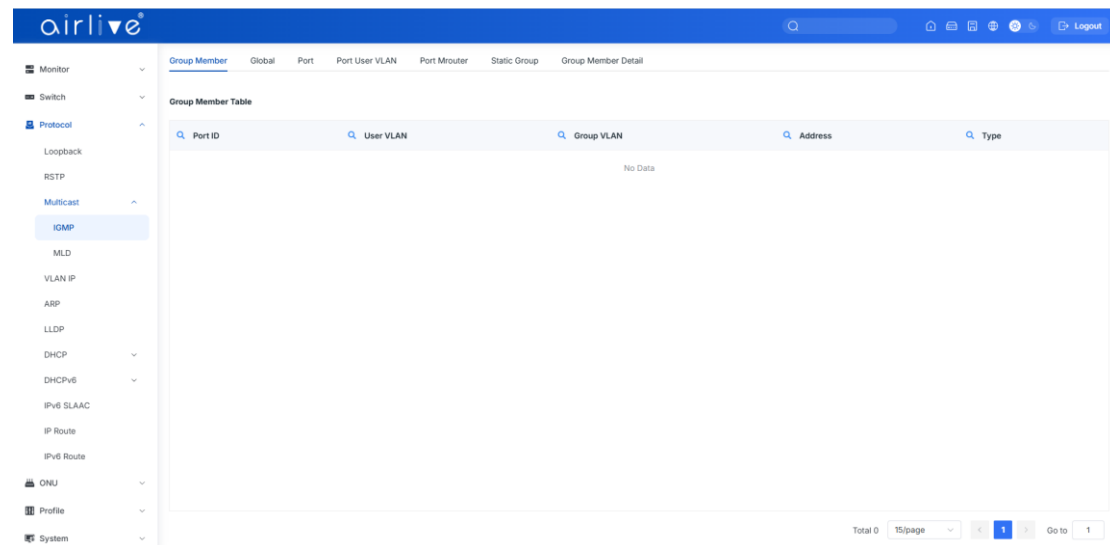


Figure 4.3-1: Group Member

4.3.1.2 Global

Protocol → Multicast → IGMP → Global

IGMP basic configuration mainly contains parameters of query packet and member timeout. When IGMP is enabled, the OLT operates in IGMP Snooping mode. 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 mapping of which devices need which IP multicast streams. Multicast may be filtered from the ports which do not need them and thus controls which ports receive specific multicast traffic. When IGMP status is disabled, OLT works at transparent mode.

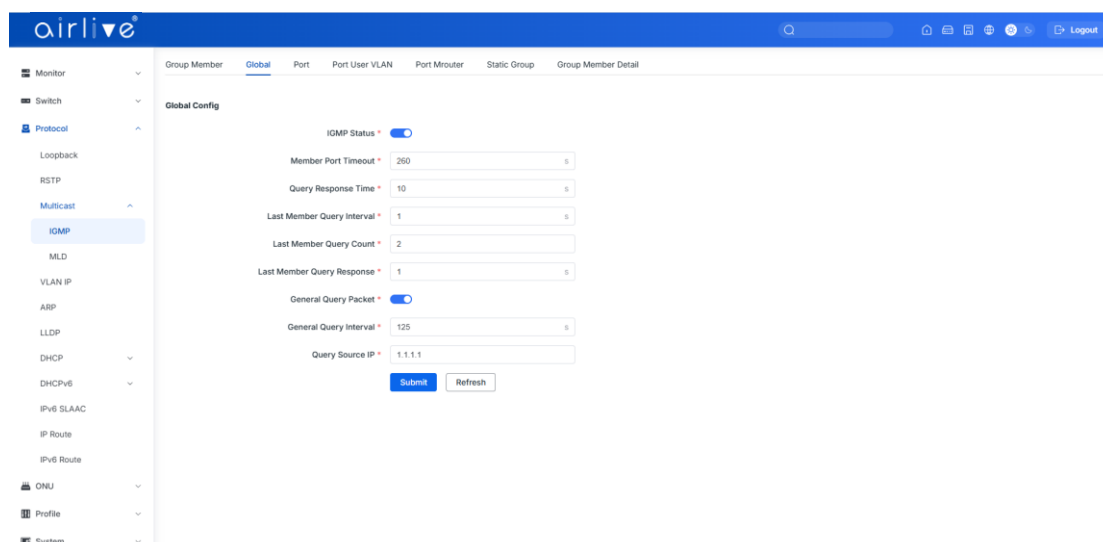


Figure 4.3-2: IGMP Global

4.3.1.3 Port

Protocol → Multicast → IGMP → Port

This configuration is used to set the maximum number of multicast groups and fast leave mode.

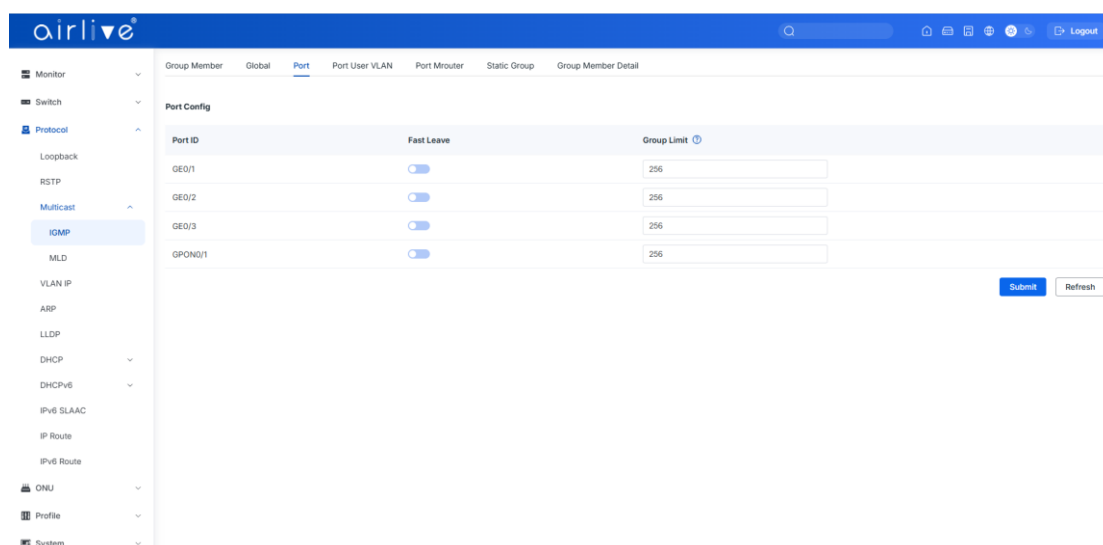


Figure 4.3-3: IGMP Port

4.3.1.4 Port User VLAN

Protocol → Multicast → IGMP → Port User VLAN

This configuration is used to configure IGMP VLAN for OLT. Generally, PON ports should be configured, and user VLAN and group VLAN are the same. If user VLAN and group VLAN are different, multicast VLAN will be translated.

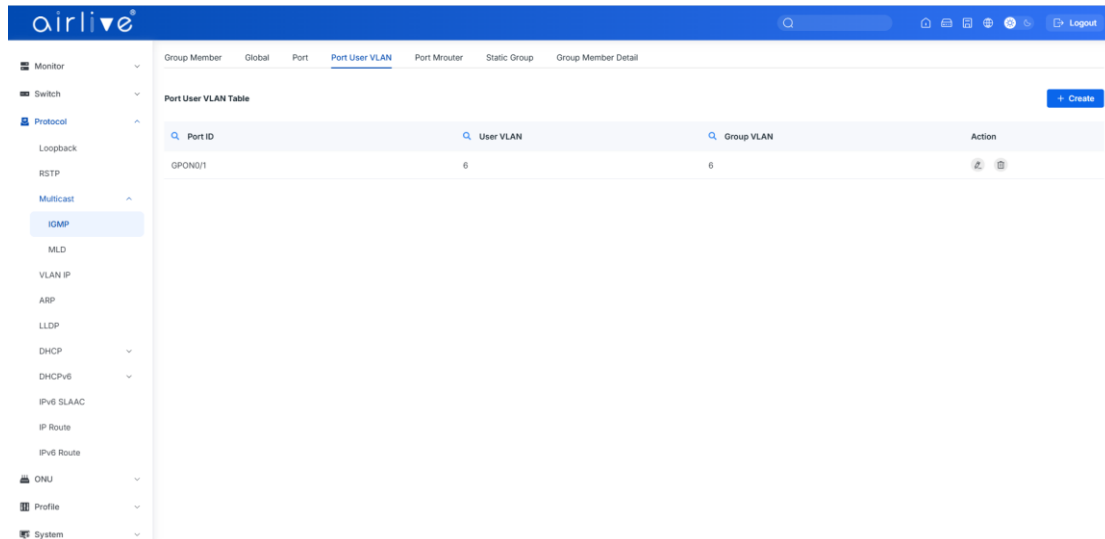


Figure 4.3-4: IGMP Port User VLAN

4.3.1.5 Port Mrouter

Protocol → Multicast → IGMP → Port Mrouter

Multicast router port is used to transmit IGMP signal messages. Generally, OLT uplink ports should be set as multicast router ports.

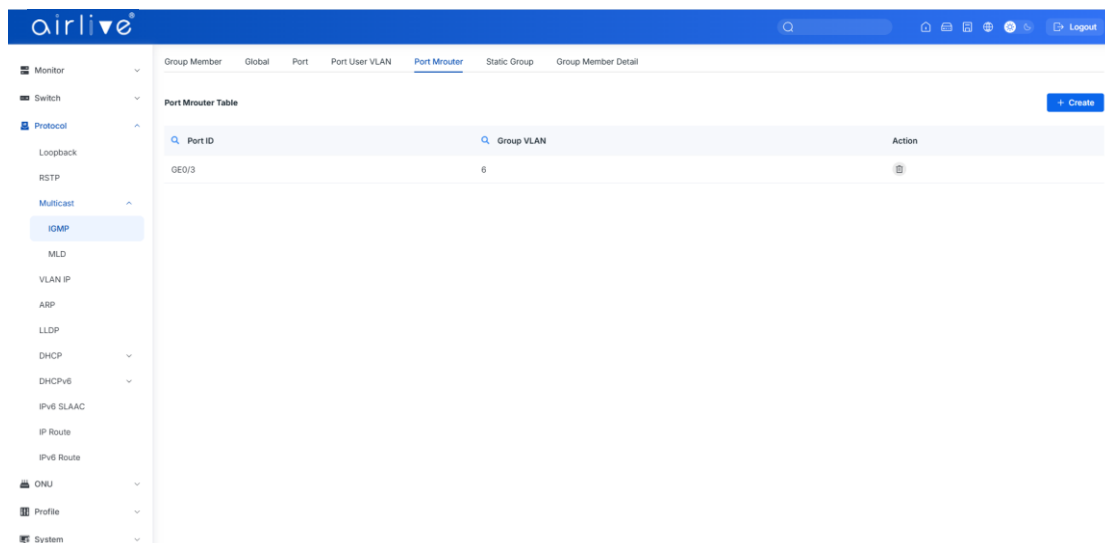


Figure 4.3-5: IGMP Port Mrouter

4.3.1.6 Static Group

Protocol → Multicast → IGMP → Static Group

This configuration is used to bind multicast IP address and VLAN ID.

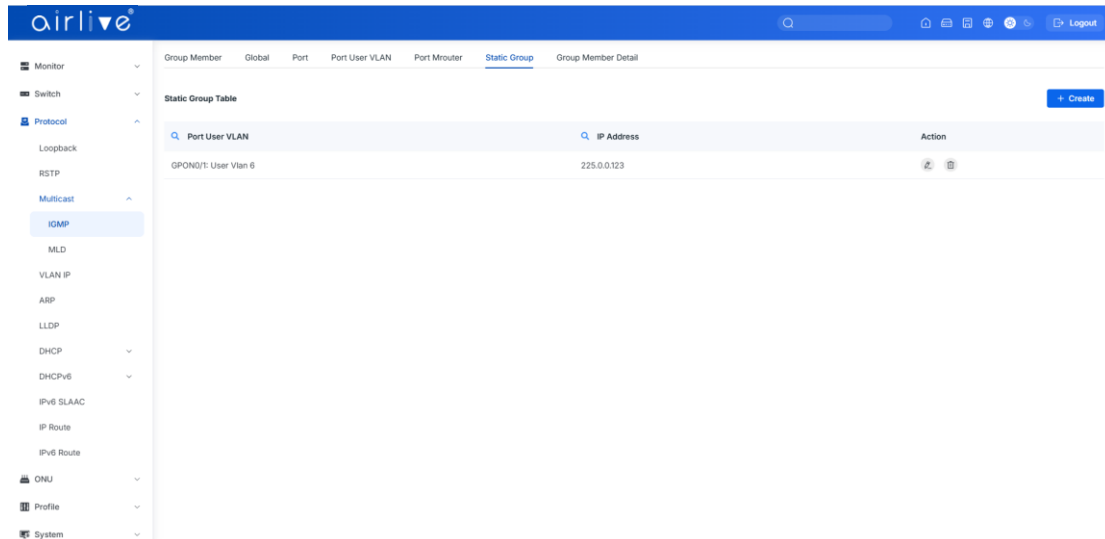


Figure 4.3-6: IGMP Static Group

4.3.1.7 Group Member Detail

Protocol → Multicast → IGMP → Group Member Detail

This page allows you to view more detailed information about the group members, specifically showing the group VLAN ID, multicast group address and client MAC address corresponding to the ONU under that PON port.

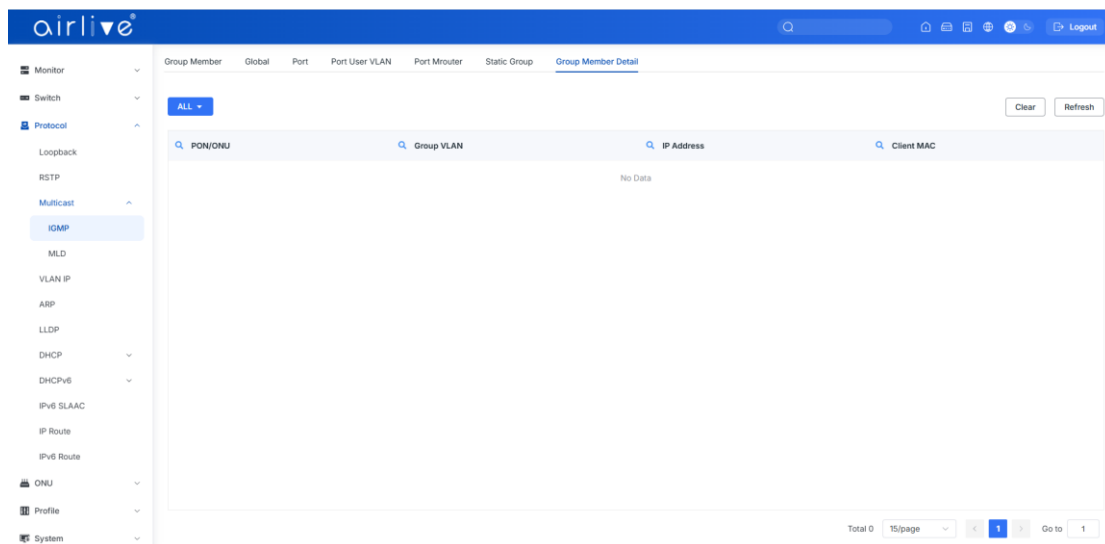


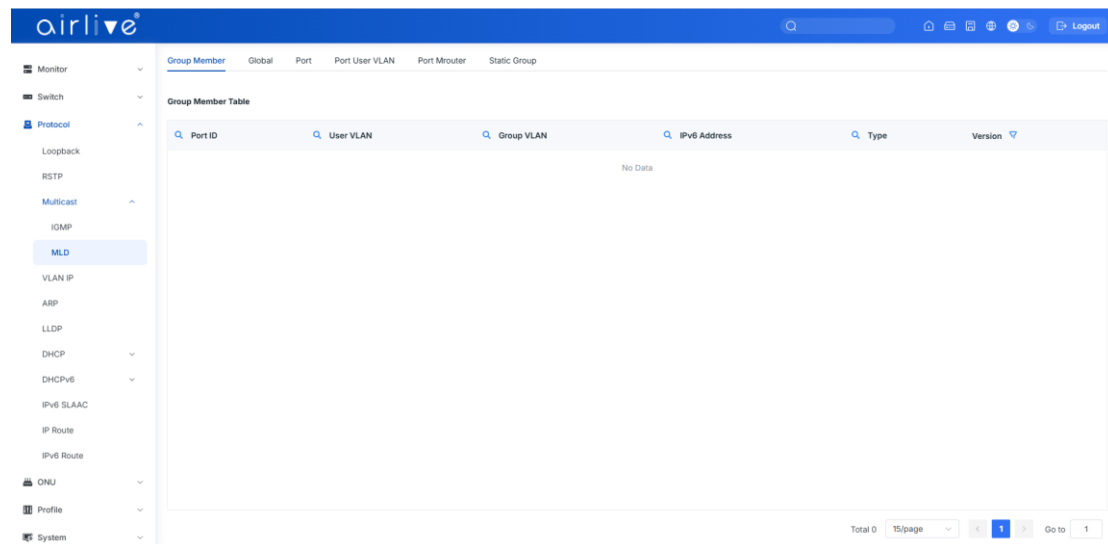
Figure 4.3-7: IGMP Group Member Detail

4.3.2 MLD

4.3.2.1 Group Member

Protocol → Multicast → MLD → Group Member

When a MLD group is generated, it will be displayed in this table.



The screenshot shows the AirLive web interface. On the left is a navigation menu with categories: Monitor, Switch, Protocol, ONU, Profile, and System. Under the 'Protocol' category, 'MLD' is selected. The main content area is titled 'Group Member' and contains a 'Group Member Table'. The table has columns: PortID, User VLAN, Group VLAN, IPv6 Address, Type, and Version. The table is currently empty, displaying 'No Data'. At the bottom right of the table, there is a pagination bar showing 'Total 0', '15/page', and 'Go to 1'.

Figure 4.3-8: Group Member

4.3.2.2 Global

Protocol → Multicast → MLD → Global

The basic configuration of MLD mainly includes query packet parameters and member timeout parameters. When MLD mode is enabled, OLT operates in MLD listening mode. MLD monitoring is the process of monitoring Internet group management protocol (MLD) network traffic. This feature allows network switches to "listen" to MLD conversations between hosts and routers. By monitoring these conversations, the switch maintains a mapping of which devices require which IP MLD streams. MLD can enter line filtering from ports that do not require them, thereby controlling which ports receive specific MLD traffic. When MLD status is disabled, OLT operates in transparent mode.

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Group Member Global Port Port User VLAN Port Mrouter Static Group

Global Config

IPv6 MLD Status ☒

Query Interval 125 s

Query Response Interval 10 s

Robustness Variable 2

Last Listener Query Count 2

Last Listener Query Interval 1 s

Send General Query Packet ☒

MLD Version ☐ MLD V1 ☒ MLD V2

General Query Interval 125 s

Query Source IP fe80::1

Submit Refresh

Figure 4.3-9: MLD Global

4.3.2.3 Port

Protocol → Multicast → MLD → Port

This configuration is used to set the group limit, filtering, and fast departure mode for MLD ports.

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Group Member Global Port Port User VLAN Port Mrouter Static Group

Port Config

Port ID	Fast Leave	Group Limit ⓘ
GE0/1	☒	256
GE0/2	☒	256
GE0/3	☒	256
GPON0/1	☒	256

Submit Refresh

Figure 4.3-10: MLD Port

4.3.2.4 Port User VLAN

Protocol → Multicast → MLD → Port User VLAN

This configuration is used to configure MLD VLAN for OLT. Generally, PON ports should be configured, with the same user VLAN and group VLAN. If they are different, the MLD data VLAN will be converted and forwarded.

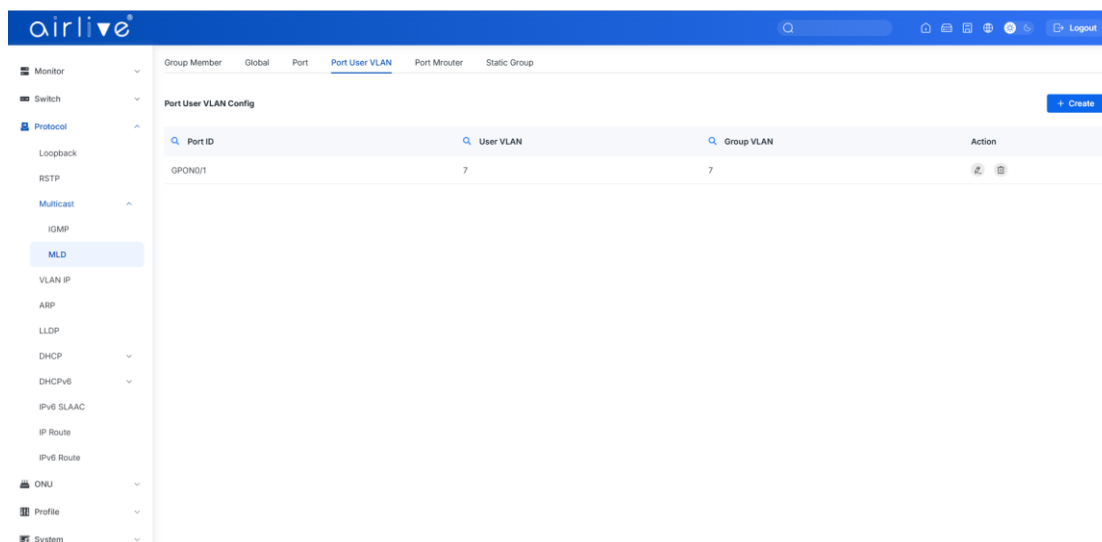


Figure 4.3-11: Port User VLAN

4.3.2.5 Port Mrouter

Protocol → Multicast → MLD → Port Mrouter

The MLD router port is used to transmit MLD signal messages. Usually, the line port on the OLT should be set as a MLD router port.

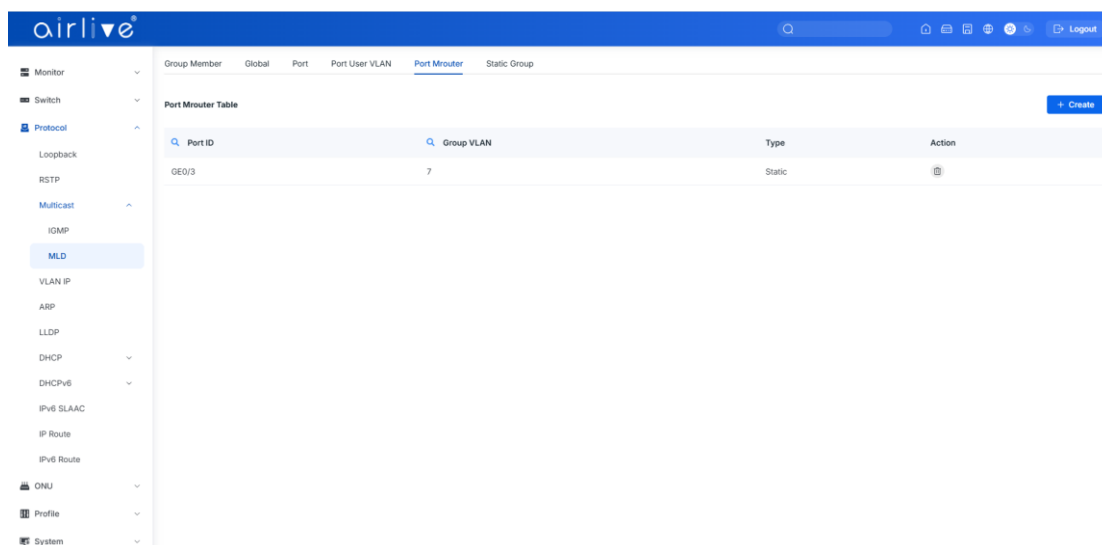


Figure 4.3-12: MLD Port Mrouter

4.3.2.6 Static Group

Protocol → Multicast → MLD → Static Group

This configuration is used to bind MLD IPv6 addresses and VLAN ID.

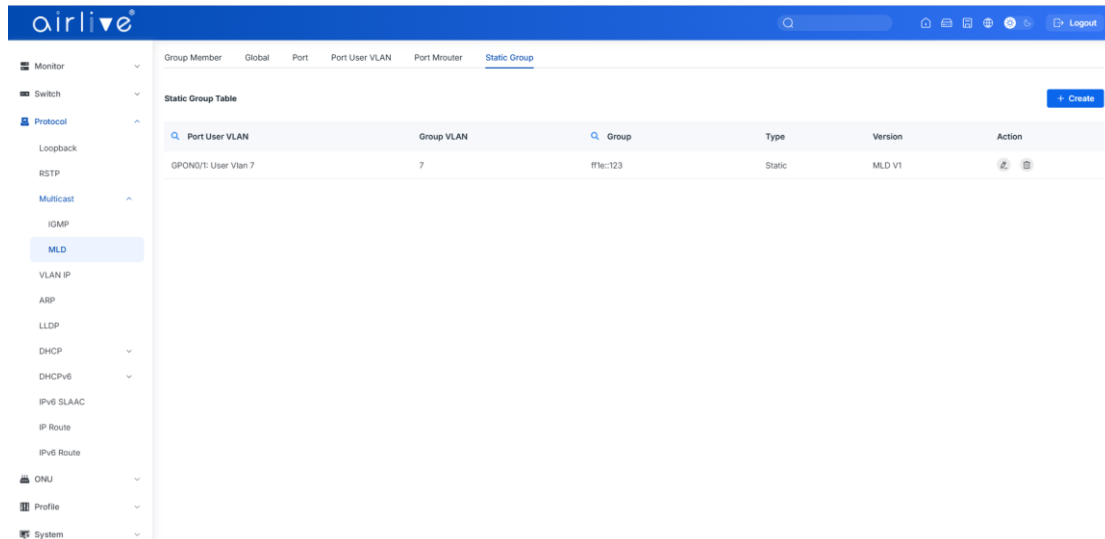


Figure 4.3-13: MLD Static Group

4.4 VLAN IP

4.4.1 VLAN IP

Protocol → VLAN IP → VLAN IP

This page is used to configure IP address for VLAN. When the VLAN is added to a port, the OLT can be accessed via the IP address configured on that VLAN.

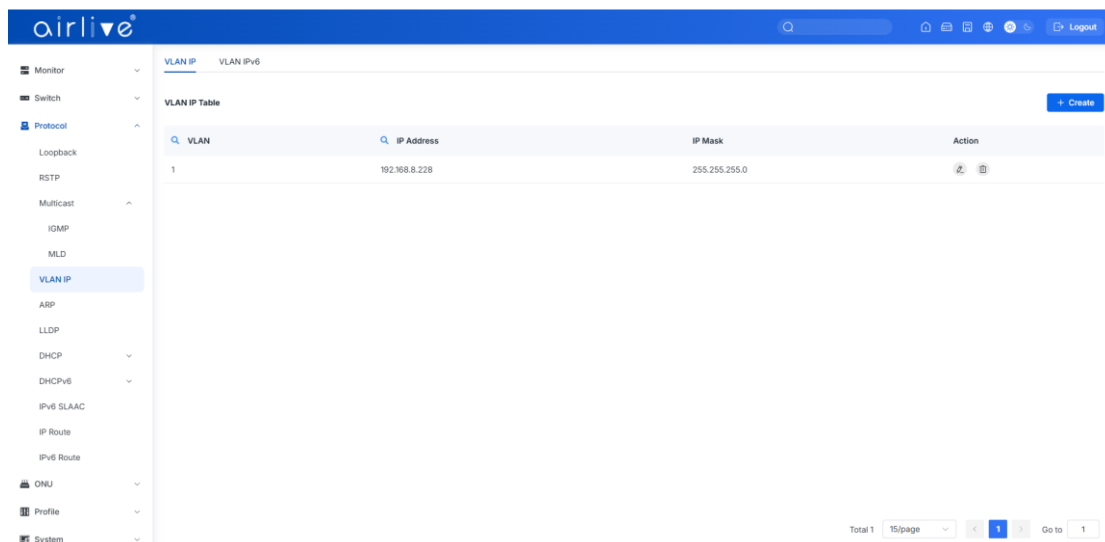


Figure 4.4-1: VLAN IP

4.4.2 VLAN IPv6

Protocol → VLAN IP → VLAN IPv6

This page is used to configure IPv6 addresses for VLAN.

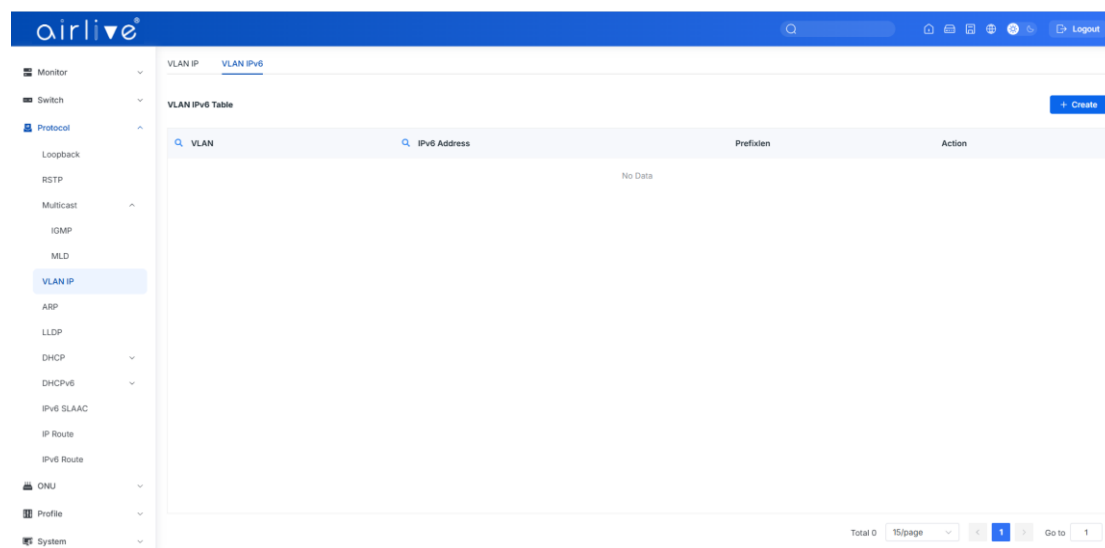


Figure 4.4-2: VLAN IPv6

4.5 ARP Table

The ARP table mainly displays OLT ARP information and ARP restriction function.

4.5.1 ARP Table

Protocol → ARP → ARP Table

This page displays the OLT's dynamic and static ARP information and allows you to manually add entries.

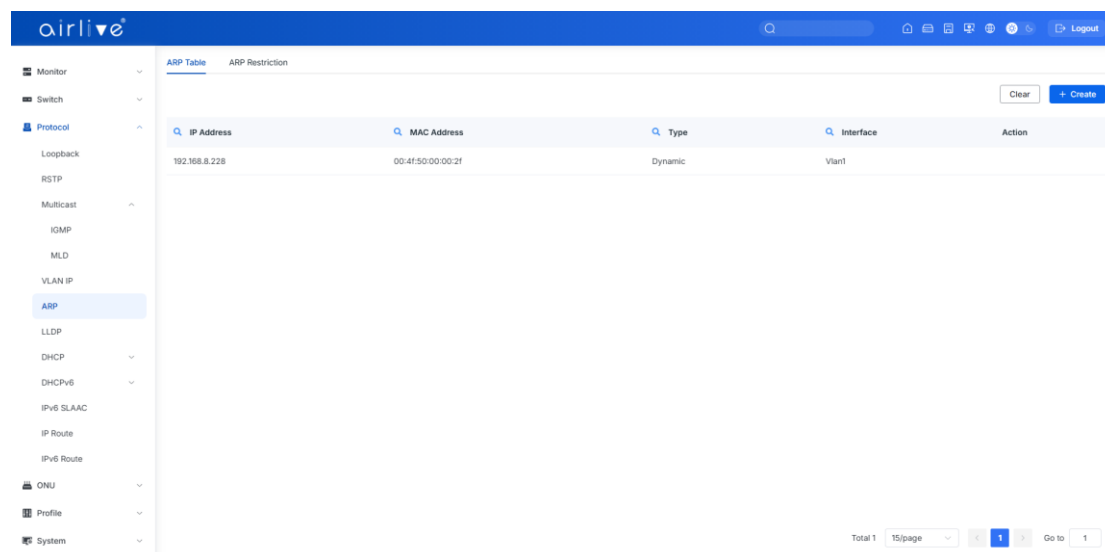


Figure 4.5-1: ARP Table

4.5.2 ARP Restriction

Protocol → ARP → ARP Restriction

This page is used to configure the ARP learning rate and ARP restriction rules.

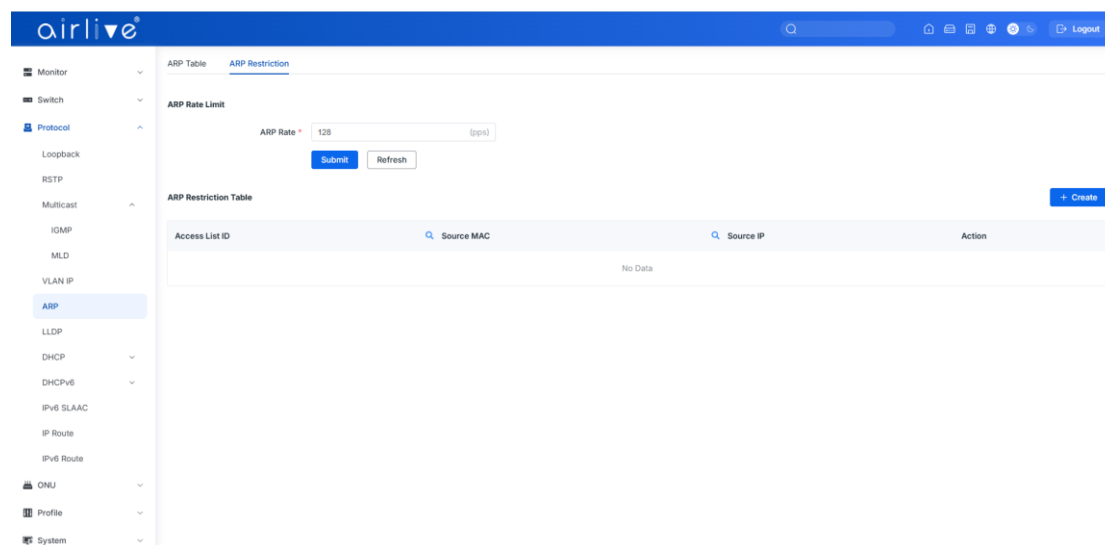


Figure 4.5-2: ARP Restriction

4.6 LLDP

LLDP (Link Layer Discovery Protocol) is a link layer protocol, mainly used for neighbor discovery and information exchange between network devices.

4.6.1 Information

Protocol → LLDP→LLDP Information

This page displays LLDP neighbor information, including the port ID, description and other basic information of the neighboring device.

airlive®

Monitor

Switch

Protocol

Loopback

RSTP

Multicast

IGMP

MLD

VLAN IP

ARP

LLDP

DHCP

DHCPv6

IPv6 SLAAC

IP Route

IPv6 Route

ONU

Profile

System

LLDP Information

LLDP Global

LLDP Port

LLDP Neighbors Information

Refresh

Interface	Chassis			Port		VLAN		TTL
	Chassis ID	System Name	System Description	Port ID	Port Description	PVID	VLAN ID	
No Data								

Total 0

15/page

< 1 >

Go to 1

Figure 4.6-1: LLDP Information

4.6.2 Global

Protocol → LLDP → LLDP Global

This page is used to enable and disable the LLDP protocol and configure the transmission interval and hold time multiplier.

LLDP Global Config

LLDP Enable ☒ Submit Refresh

LLDP Global VLAN Disable Submit Refresh

Tx Interval (5-32768s) Submit Refresh

Tx Hold (2-10s) Submit Refresh

Figure 4.6-2: LLDP Global

4.6.3 Port

Protocol → LLDP → LLDP Port

This page is used to configure the LLDP receive mode on the device port.

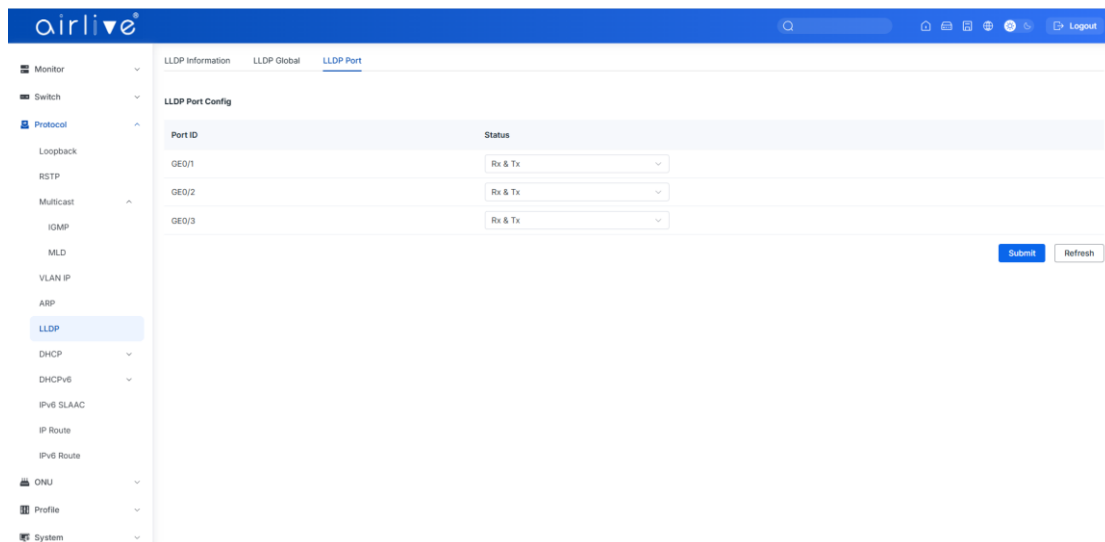


Figure 4.6-3: LLDP Port

4.7 DHCP

OLT can support the following DHCP functions.

- DHCP Server
- DHCP Relay
- DHCP Snooping

4.7.1 DHCP Server

4.7.1.1 Lease

Protocol → DHCP → DHCP Server → Lease

This table displays the MAC addresses, host names and IP addresses, and Lease terms assigned to them.

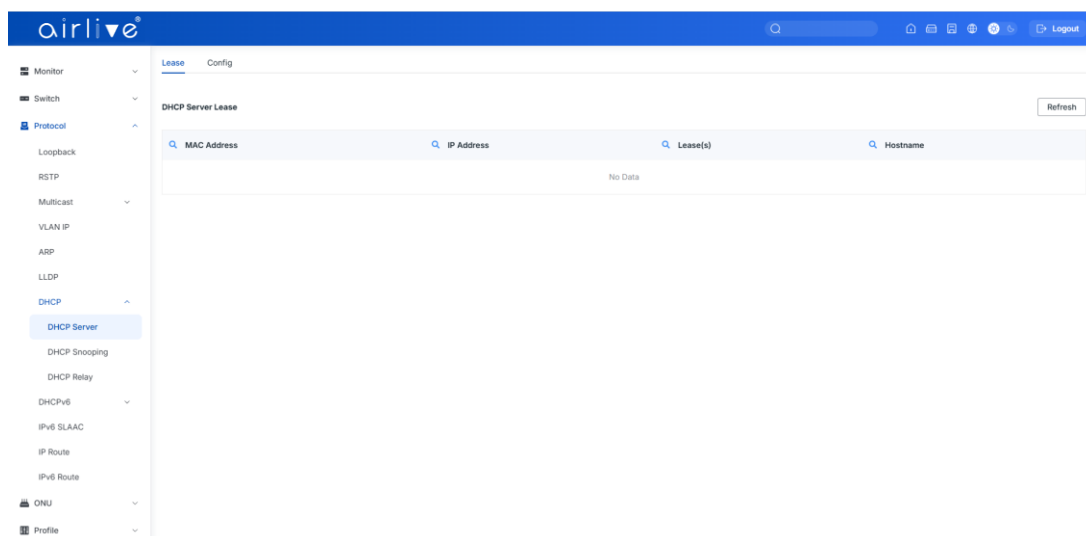


Figure 4.7-1: Lease

4.7.1.2 Config

Protocol → DHCP → DHCP Server → Config

Sometimes devices require dynamic IP addresses, but there are no special DHCP servers in the network. These configurations can solve this problem. OLT will be a DHCP server in the network and allocate IP addresses to other devices.

Before enabling the DHCP server, you must configure an IP address for the VLAN.

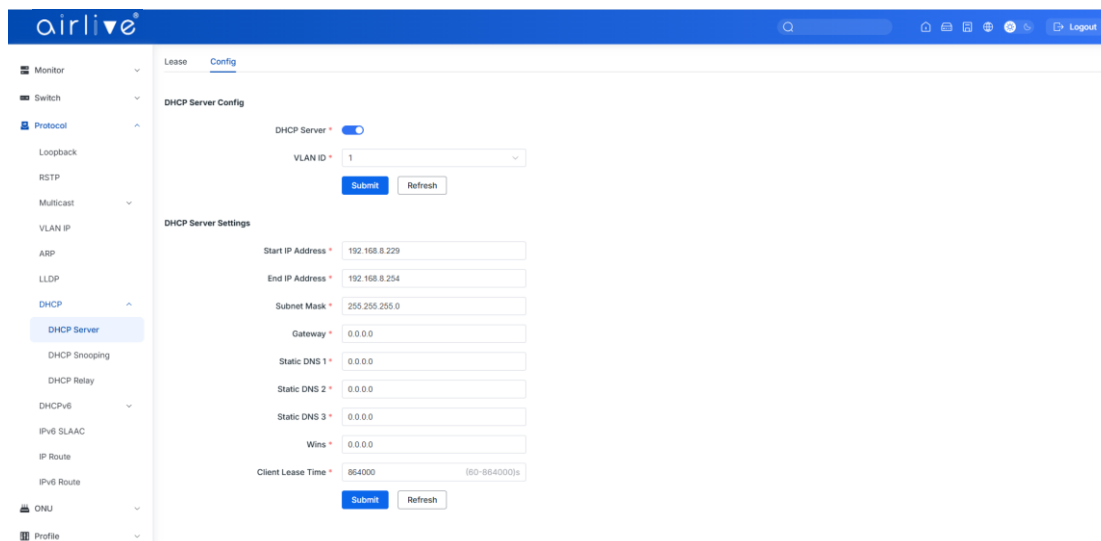


Figure 4.7-2: DHCP Server Config

4.7.2 DHCP Snooping

DHCP Snooping is a security feature that ensures clients obtain IP addresses from legitimate DHCP servers and maintains a binding table of client IP and MAC addresses.

4.7.2.1 Bind List

Protocol → DHCP → DHCP Snooping → Bind List

This page is used to display the correspondence information between DHCP client IP and MAC detected by DHCP.

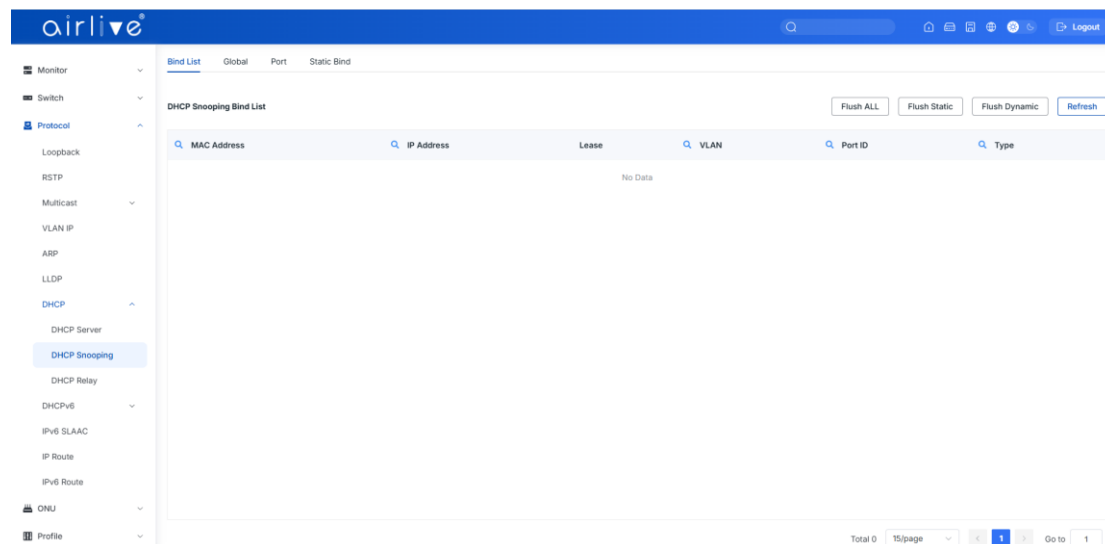


Figure 4.7-3: Bind List

4.7.2.2 Global

Protocol → DHCP → DHCP Snooping → Global

The global configuration of DHCP Snooping mainly includes Option 82 global settings, listening VLAN configuration, and VLAN based Option 82 template (format template) binding.

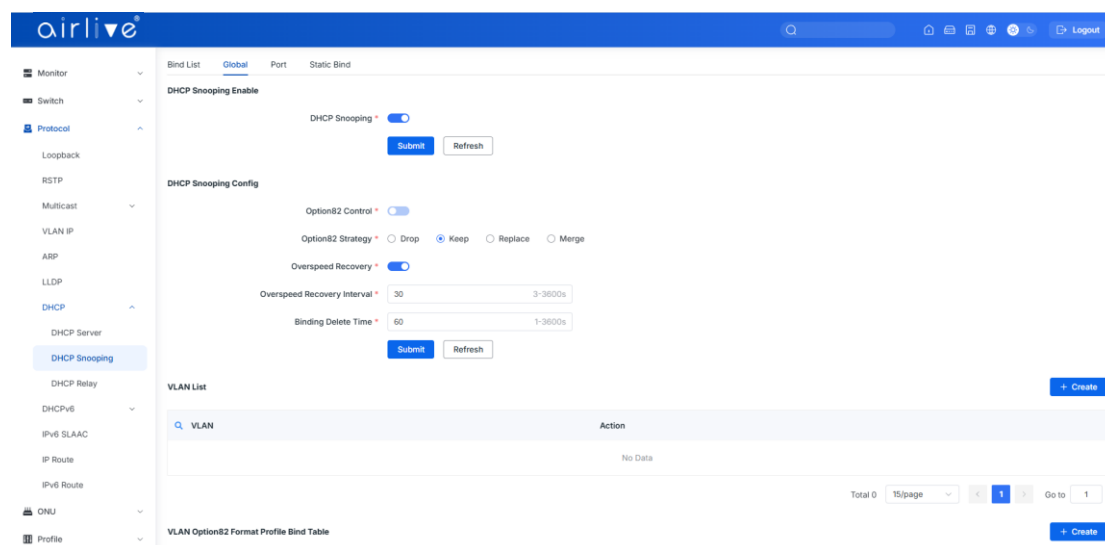


Figure 4.7-4: DHCP Snooping Global

4.7.2.3 Port

Protocol → DHCP → DHCP Snooping → Port

This interface is used to configure DHCP Snooping parameters for ports that include port types, Option 82 parameters, and rate limits.

By default, all ports are untrusted ports. Option 82 parameters (“Circuit ID” and “Remote ID”) are valid for untrusted ports. “Restricted speed” refers to the maximum speed at which a port can receive DHCP packets.

Port ID	Type	Option82 Circuit ID	Option82 Remote ID	Limit Rate(0-4096pps)
GE0/1	Untrust			0
GE0/2	Untrust			0
GE0/3	Untrust			0
GPON0/1	Untrust			0

Figure 4.7-5: DHCP Snooping Port

4.7.2.4 Static Bind

OLT Configuration → DHCP → DHCP Snooping → Static Bind

When a host needs a fixed IP address allocated by a DHCP server from a specific port, DHCP Snooping static binding is very useful.

MAC Address	VLAN	IP Address	Port ID	Lease	Action
No Data					

Figure 4.7-6: Static Bind

4.7.3 DHCP Relay

Due to the DHCP process using broadcast to generate request messages, servers and clients usually need to be in the same network segment. DHCP relay can solve the problem that DHCP servers and clients do not exist in the same network.

4.7.3.1 Relay Server

Protocol → DHCP → DHCP Relay → Relay Server

This page is used to configure the IP and working VLAN of DHCP relay servers.

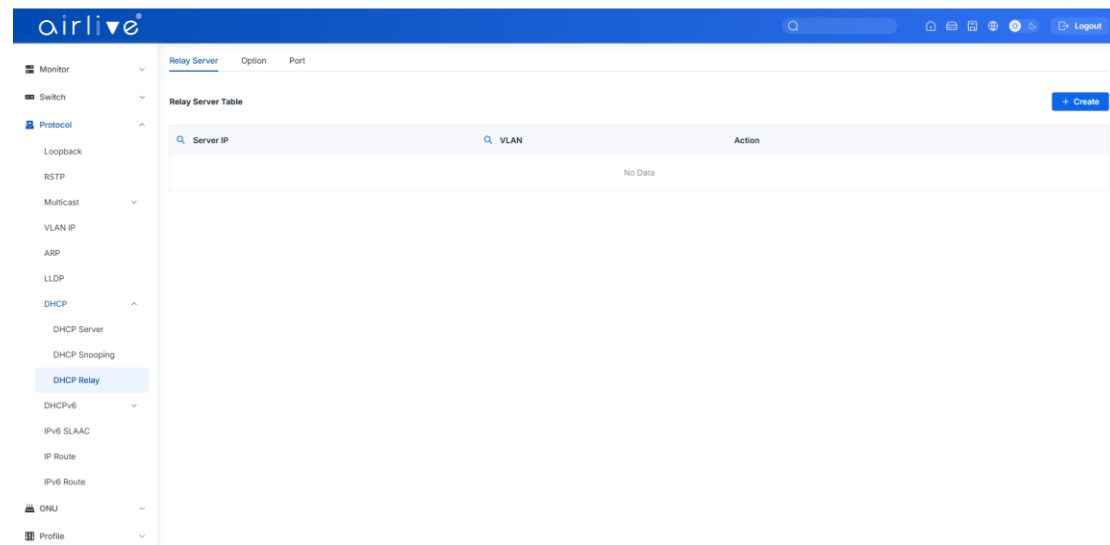


Figure 4.7-7: DHCP Relay Server

4.7.3.2 Option

Protocol → DHCP → DHCP Relay → Option

This page is used to configure the Option 82 function of DHCP relay. After receiving the DHCP request message, the DHCP relay will process the message according to whether it contains Option 82 and the processing strategy and padding mode configured by the user, and forward the processed message to the DHCP server.

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Relay Server Option Port

DHCP Relay Option Config

Option82 Control ☒

Option82 Strategy ☐ Drop ☒ Keep ☐ Replace ☐ Merge

Submit Refresh

VLAN Option82 Format Profile Bind Table

VLAN	Profile Id	Profile Name	Action
No Data			

+ Create

Figure 4.7-8: DHCP Relay Option

4.7.3.3 Port

Protocol → DHCP → DHCP Relay → Port

This page is used to configure the Option 82 line ID and remote ID of the port.

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Relay Server Option Port

DHCP Relay Port Config

Port ID	Option82 Circuit ID	Option82 Remote ID
GE0/1		
GE0/2		
GE0/3		
GPON0/1		

Submit Refresh

Figure 4.7-9: DHCP Relay Port

4.8 DHCPv6

DHCPv6 is a network protocol used to configure IPv6 addresses, IPv6 prefixes, DNS, domains, and other network parameters for hosts running on IPv6 networks.

4.8.1 DHCPv6 Server

4.8.1.1 Bind List

Protocol → DHCPv6 → DHCPv6 Server → Bind List

The DHCPv6 binding information displays the IPv6 address assigned to the host.

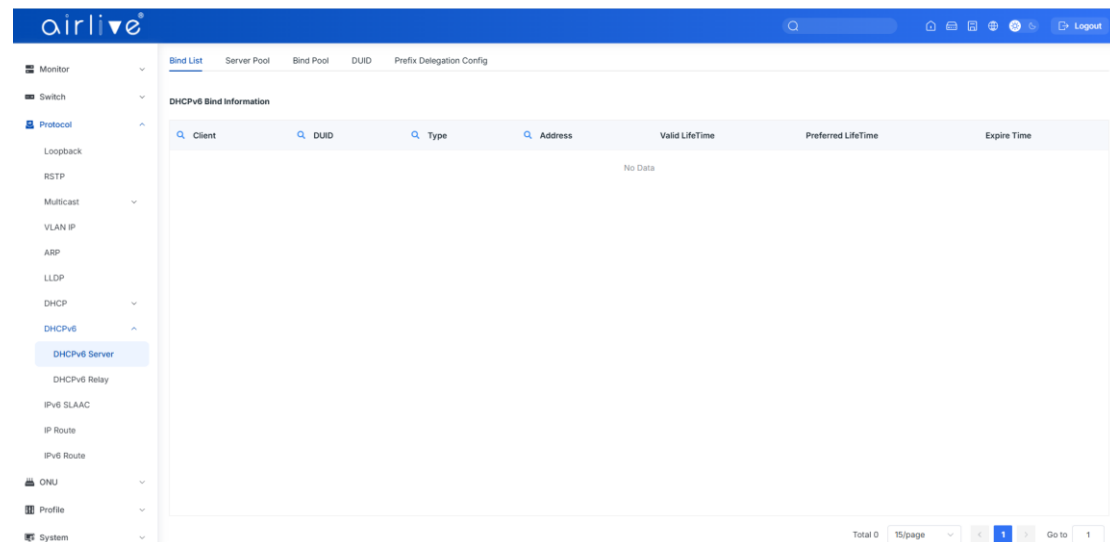


Figure 4.8-1: DHCPv6 Bind List

4.8.1.2 Server Pool

Protocol → DHCPv6 → DHCPv6 Server → Server Pool

DHCPv6 address pool specifies the range of IPv6 addresses. Here, you can also provide the effective time, preferred time, DNS, and domain for DHCPv6 clients.

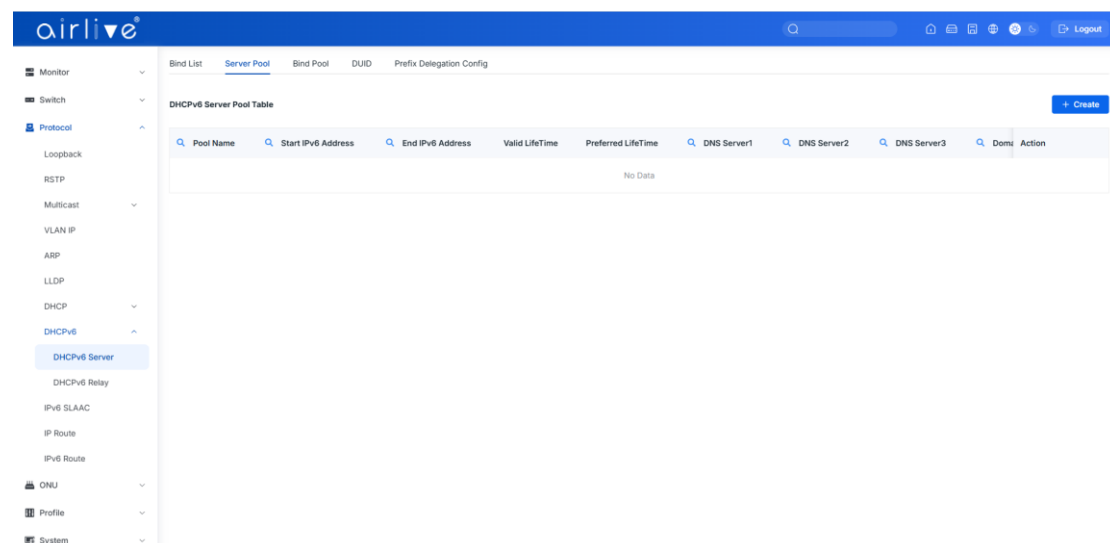


Figure 4.8-2: Server Pool

4.8.1.3 Bind Pool

Protocol → DHCPv6 → DHCPv6 Server → Bind Pool

To configure Bind pool, select VLAN, fill in the DHCPv6 pool name, enable the DHCPv6 service, and then add the VLAN to the table. Before enabling the DHCPv6 service, it is necessary to complete the configuration of VLAN IPv6 address and server address pool information.

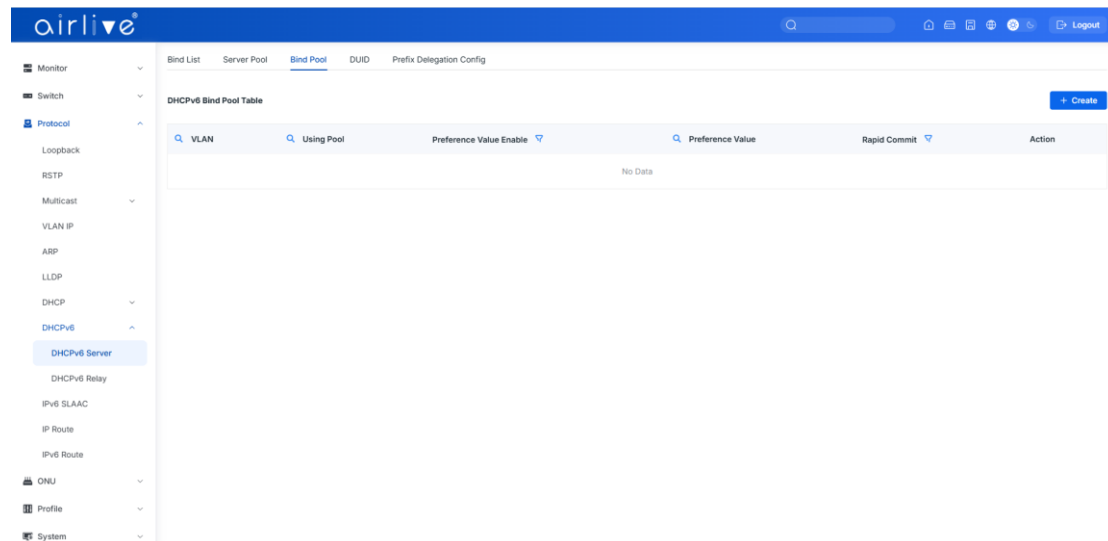


Figure 4.8-3: DHCPv6 Bind Pool

4.8.1.4 DUID

Protocol → DHCPv6 → DHCPv6 Server → DUID

This page is used to configure the DHCPv6 DUID (DHCP Unique Identifier) parameters, which can set the DUID type and view the generated DUID information of the device.

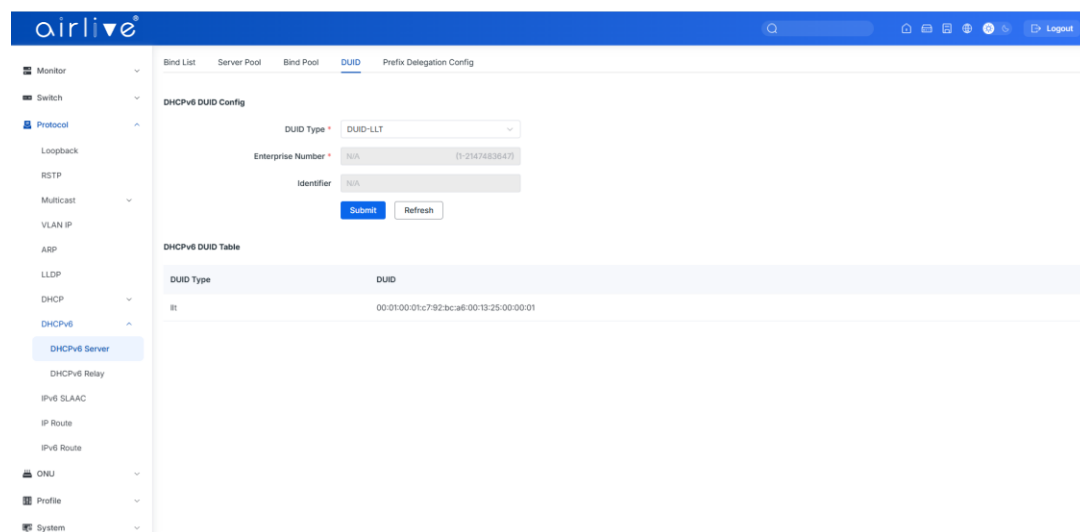


Figure 4.8-4: DUID

4.8.1.5 Prefix Delegation Config

Protocol→DHCPv6→DHCPv6 Server→Prefix Delegation Config

This page supports configuring DHCPv6 prefix proxy, which can configure the prefix information, address prefix validity time, and preferred time allocated by the DHCPv6 service.

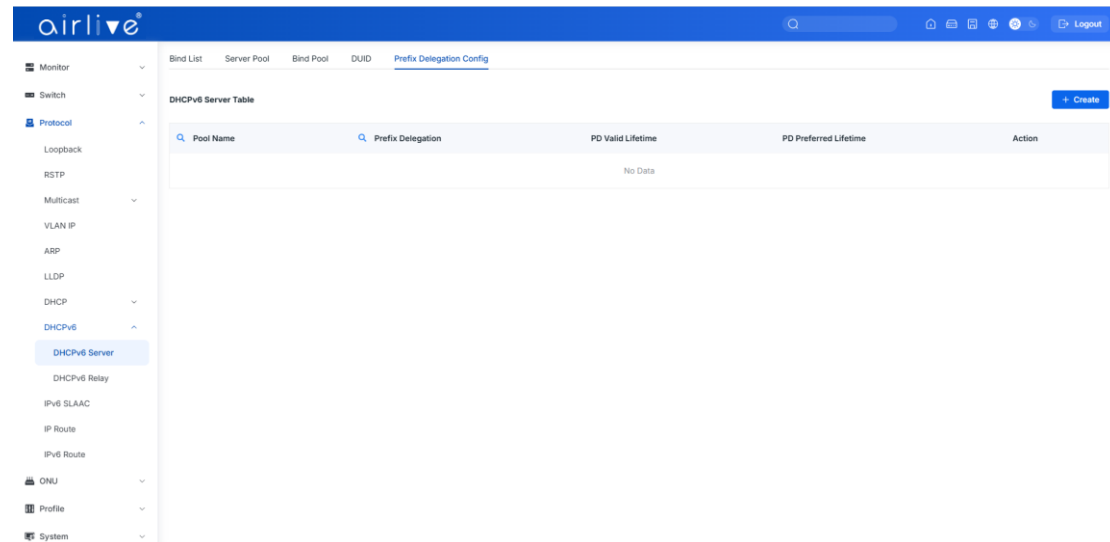


Figure 4.8-5: Prefix Delegation Config

4.8.2 DHCPv6 Relay

4.8.2.1 Relay Server

Protocol → DHCPv6→DHCPv6 Relay → Relay Server

This page configures the DHCPv6 relay to forward client requests to a specified server, enabling dynamic IPv6 address/prefix assignment.

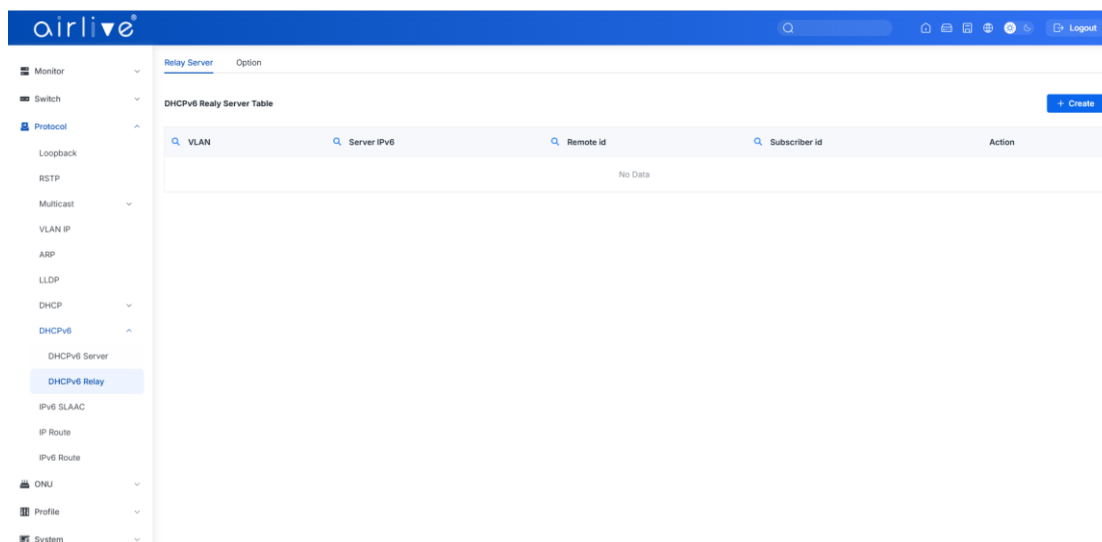


Figure 4.8-6: DHCPv6 Relay Server

4.8.2.2 Option

Protocol → DHCPv6 → DHCPv6 Relay → Option

To enable or disable Option 37 and Option 38 functions on this page.

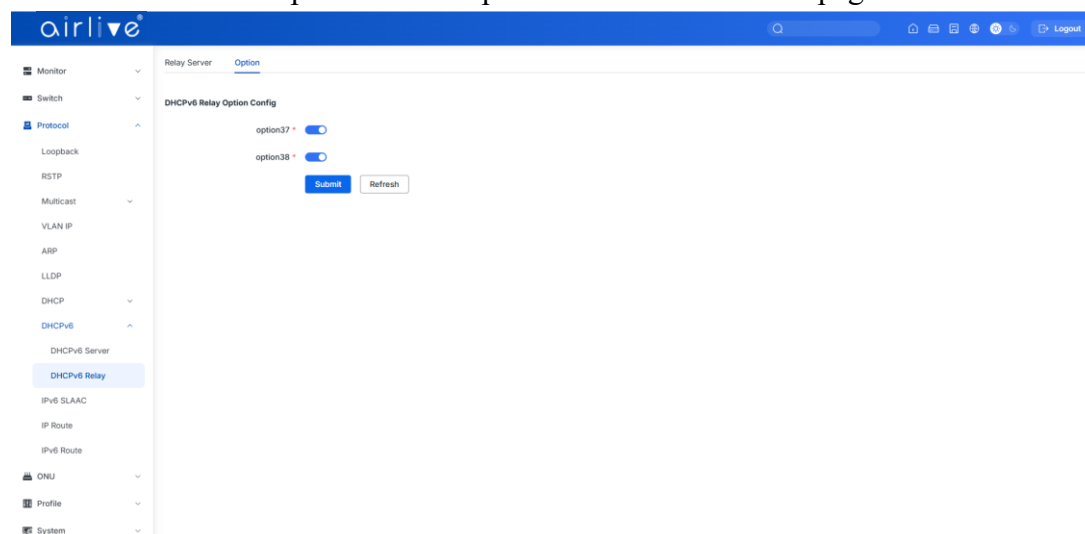


Figure 4.8-7: DHCPv6 Relay Option

4.9 IPv6 SLAAC

IPv6 relies on the ICMPv6 Neighbor Discovery Protocol (NDP) for router and prefix discovery. When an IPv6 host first connects to the network, it uses information from Router Advertisement (RA) messages to autoconfigure its IP address and other parameters, including the prefix and default router.

4.9.1 IPv6 SLAAC

Protocol → IPv6 SLAAC → IPv6 SLAAC

When an IPv6 host uses stateless address configuration (stateless address auto configuration), the OLT will send it an RA packet. This page is used to configure the parameters of RA message.

VLAN	Suppress RA	Send RA Time	RA LifeTime	Reachable Time	Suppress RDNSS	M	O	Router Preference	MTU
1	☒	200	600	30000	☒	☒	☒	MEDIUM	1500

Figure 4.9-1: IPv6 SLAAC

4.9.2 IPv6 SLAAC Prefix

Protocol → IPv6 SLAAC → IPv6 SLAAC Prefix

When IPv6 hosts use stateless address auto configuration, OLT can provide IPv6 prefix. The host will generate an IPv6 address with a prefix.

VLAN	ND Prefix	ND Prefix Length	Valid LifeTime	Preferred LifeTime	Action
No Data					

Figure 4.9-2: IPv6 SLAAC Prefix

4.9.3 RDNSS

Protocol → IPv6 SLAAC → RDNSS

Recursive DNS Server (RDNSS) is a DNS server in the IPv6 network protocol. This interface supports configuring RA messages to carry recursive DNS server information.

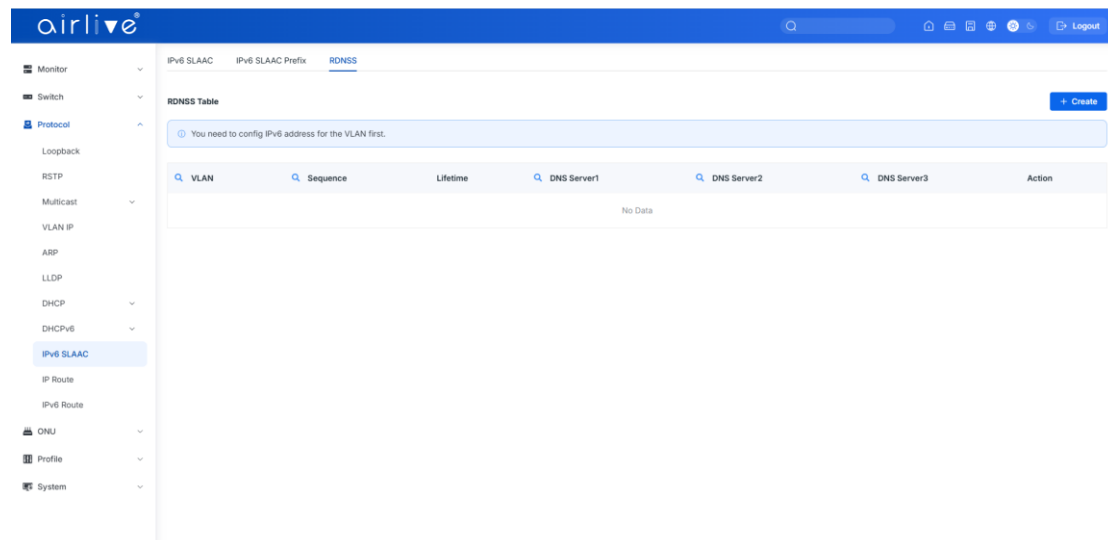


Figure 4.9-3: RDNSS

4.10 IP Route

4.10.1 Static Route

Protocol → IP Route → Static Route

Static routing is routing method that relies on manually configured entries. Unlike dynamic routing, static routes are fixed and do not adapt to network changes. After the VLAN IP address is configured, static routing can be used to enable communication between different network segments.

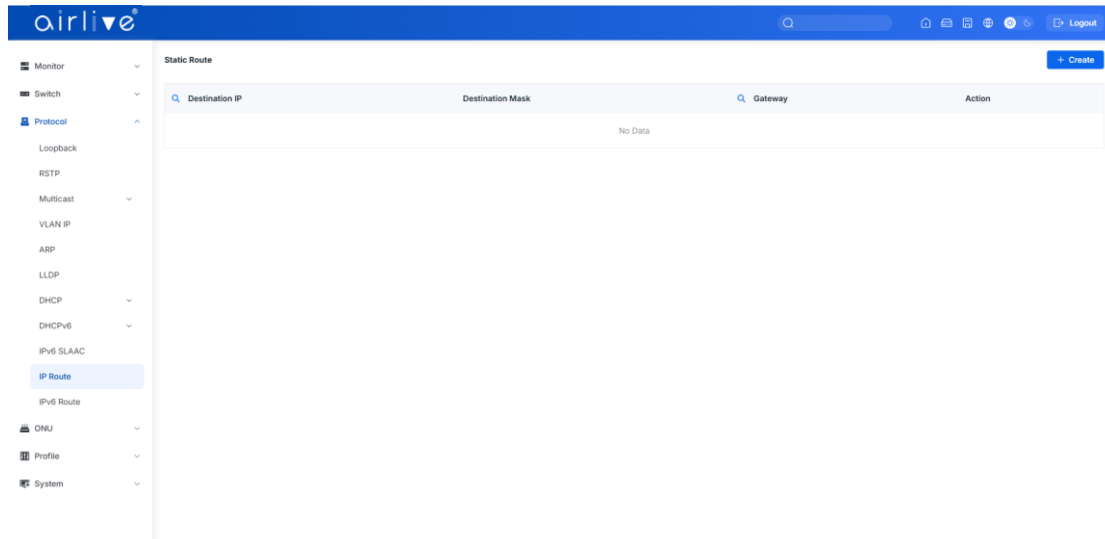


Figure 4.10-1: Static Route

4.11 IPv6 Route

4.11.1 IPv6 Static Route

Protocol → IPv6 Route → IPv6 Static Route Table

This page is used to manually add IPv6 static routing. Even if the network topology has changed, static routing will not alter the configuration.

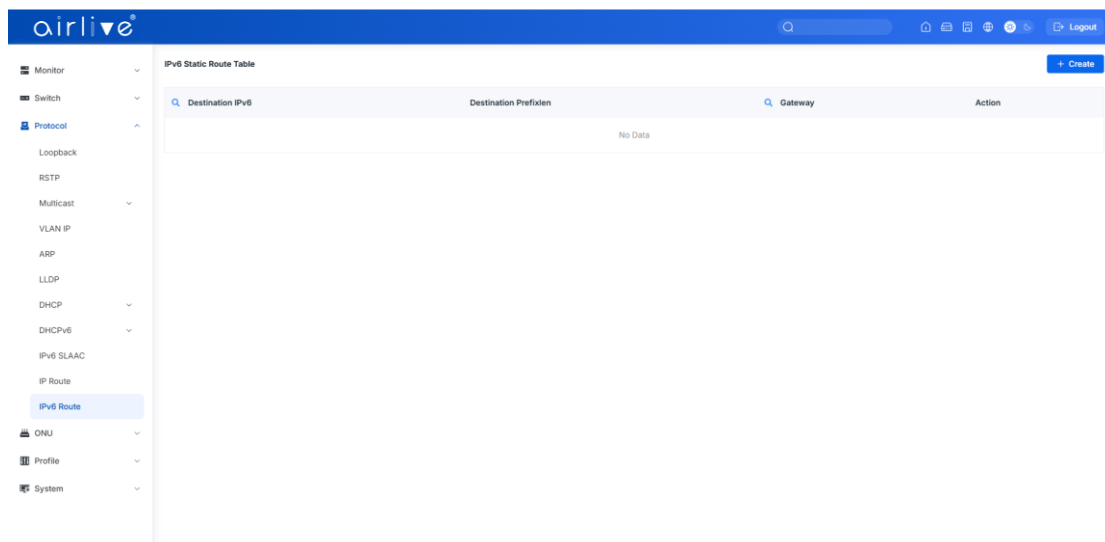


Figure 4.11-1: IPv6 Static Route

Chapter 5 ONU

This chapter is about the ONU management by OLT.

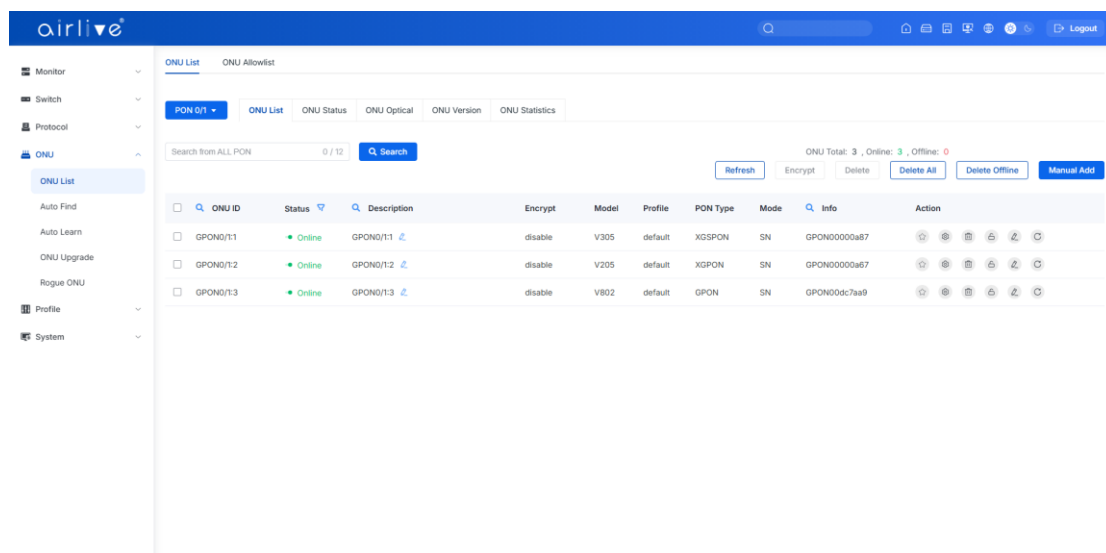
5.1 ONU List

5.1.1 ONU List

5.1.1.1 ONU List

ONU → ONU List → ONU List → ONU List

All registered ONUs will be displayed in this interface. You can check ONU using profile, Registration mode and do some operations on every ONU.



ONU ID	Status	Description	Encrypt	Model	Profile	PON Type	Mode	Info	Action
GPON0/T1	Online	GPON0/T1	disable	V305	default	XGSPON	SN	GPON00000a87	[Icons]
GPON0/T2	Online	GPON0/T2	disable	V205	default	XGPON	SN	GPON00000a87	[Icons]
GPON0/T3	Online	GPON0/T3	disable	V802	default	GPON	SN	GPON00dc7aa9	[Icons]

Figure 5.1-1: ONU List

5.1.1.1.1 Configuration

ONU → ONU List → ONU List → ONU List → Configuration

Configure ONU parameter information which you selected.

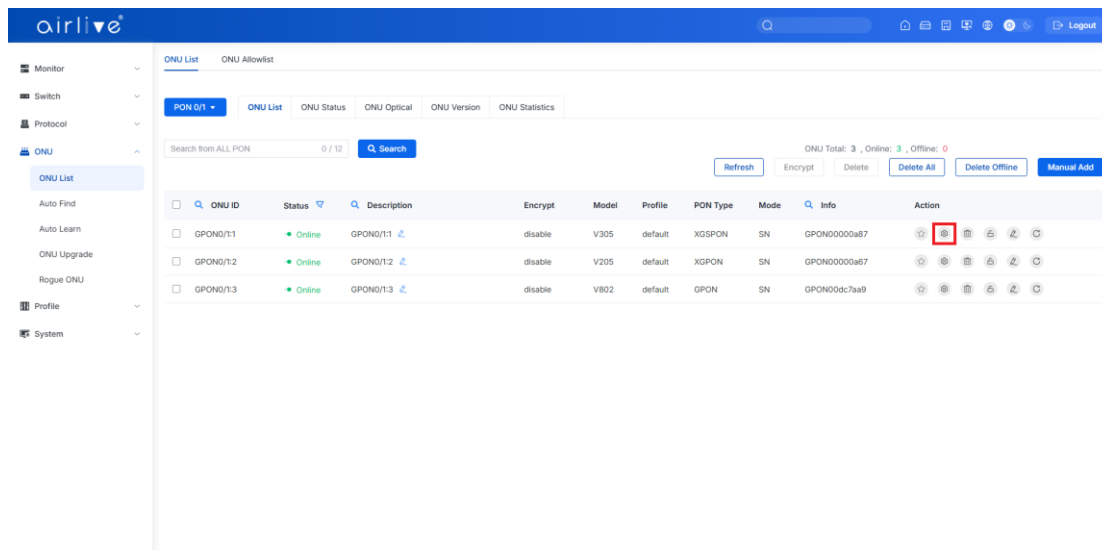


Figure 5.1-2: Configure ONU

5.1.1.1.1 Overview

ONU → ONU List → ONU List → ONU List → Configuration → Overview

This ONU Overview page presents the network topology, real-time optical metrics, and key device details of the connected ONU.

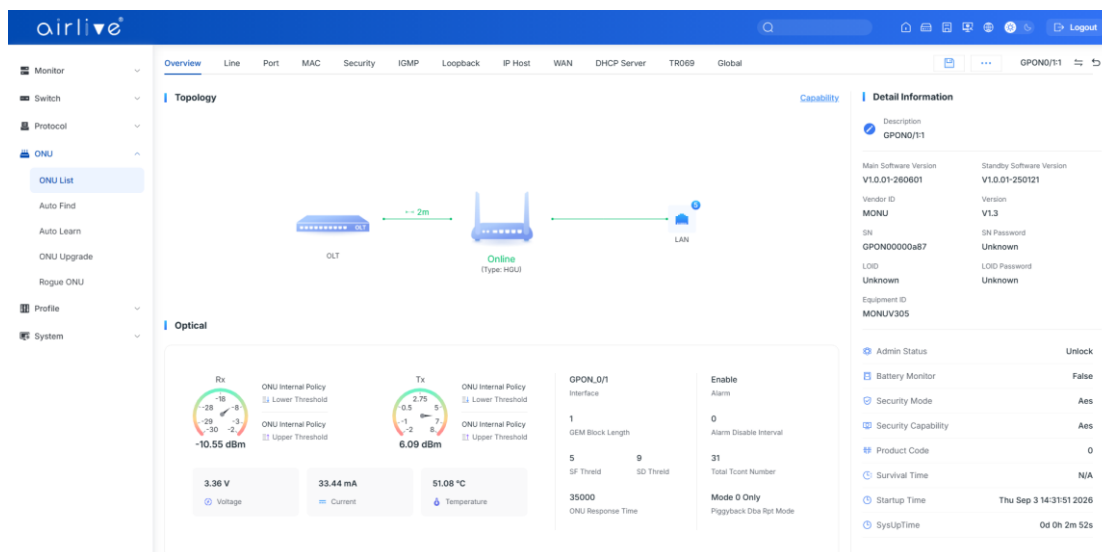


Figure 5.1-3: Overview

5.1.1.1.2 Line

5.1.1.1.2.1 Tcont

ONU → ONU List → ONU List → ONU List → Configuration → Line → Tcont

Create Tcont ID and bind DBA profile. Tcont name is optional.

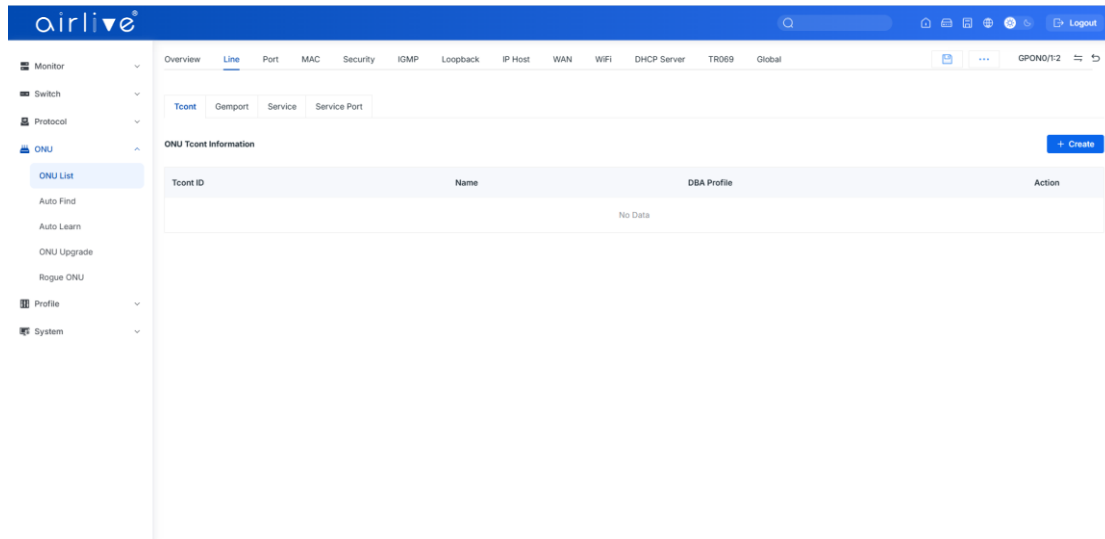


Figure 5.1-4: Create Tcont

5.1.1.1.2.2 Gemport

ONU → ONU List → ONU List → ONU List → Configuration → Line → Gemport

Create Gemport ID and bind Tcont ID.

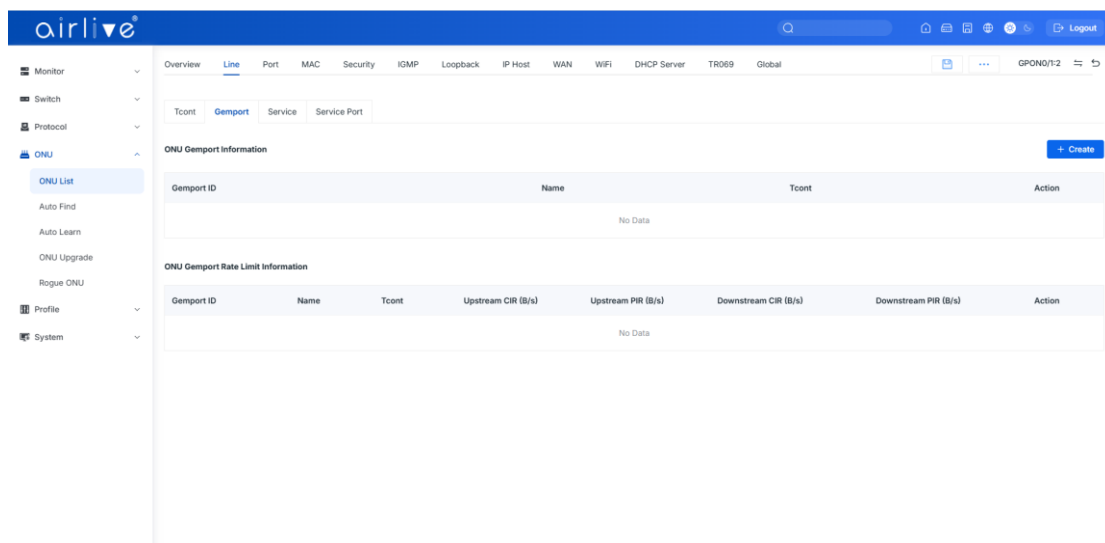


Figure 5.1-5: Create gemport

5.1.1.1.2.3 Service

ONU → ONU List → ONU List → ONU List → Configuration → Line → Service

Create a service, set the VLAN and VLAN mode and bind one Gemport ID.

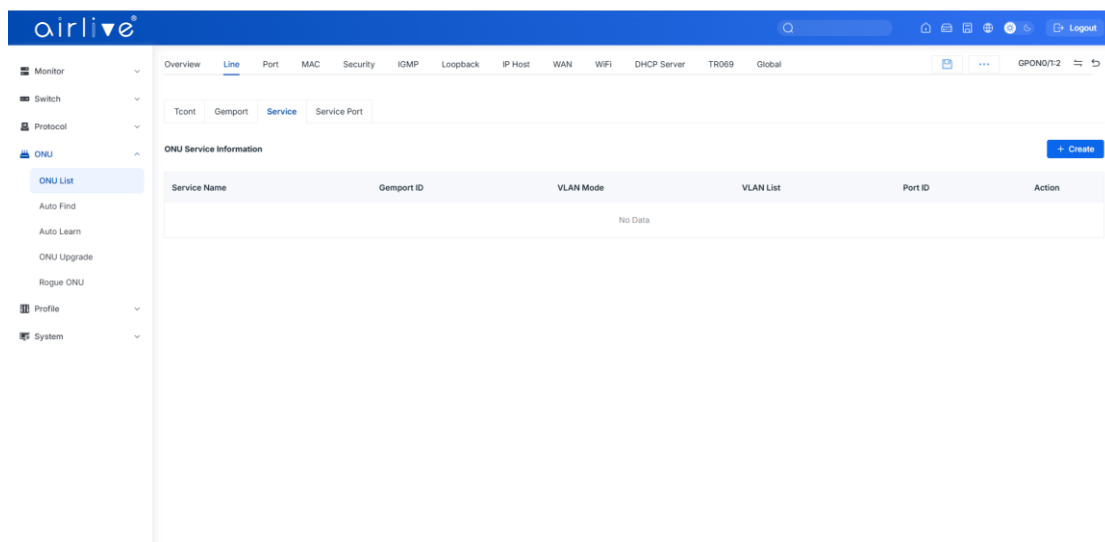


Figure 5.1-6: Create service

5.1.1.1.2.4 Service Port

ONU → ONU List → ONU List → ONU List → Configuration → Line → Service Port

Create a service port, set the user VLAN and translate VLAN and bind one Gemport ID. If VLAN translation is not required, set the 'Translate VLAN' to the same value as the 'User VLAN'.

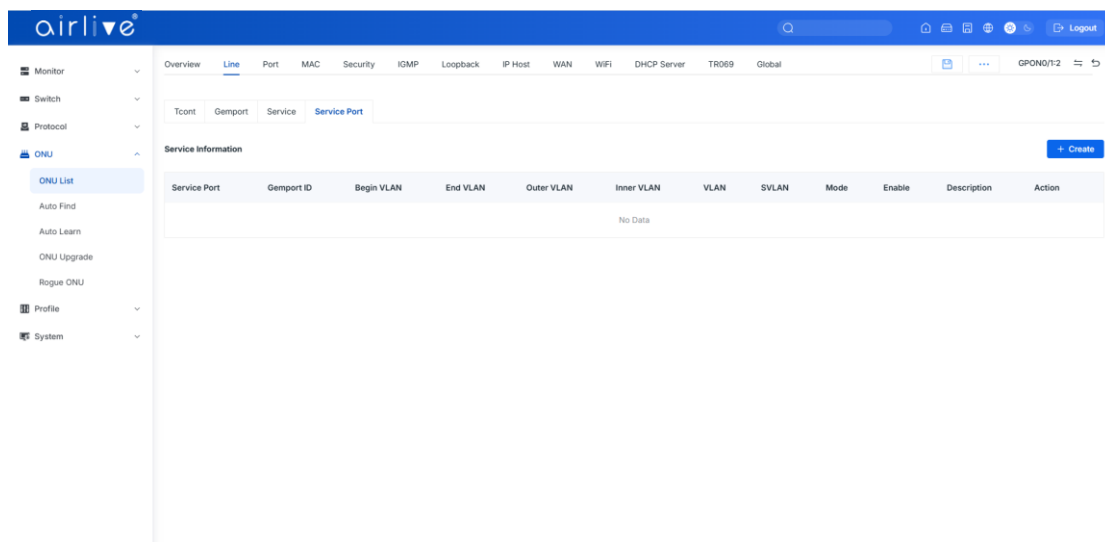


Figure 5.1-7: Create service port

5.1.1.1.3 Port

5.1.1.1.3.1 Port Basic

ONU → ONU List → ONU List → ONU List → Configuration → Port → Port Basic

Set the basic configuration and speed limit of the ONU LAN port.

Please note that you can select the LAN port to configure on the ONU Port.

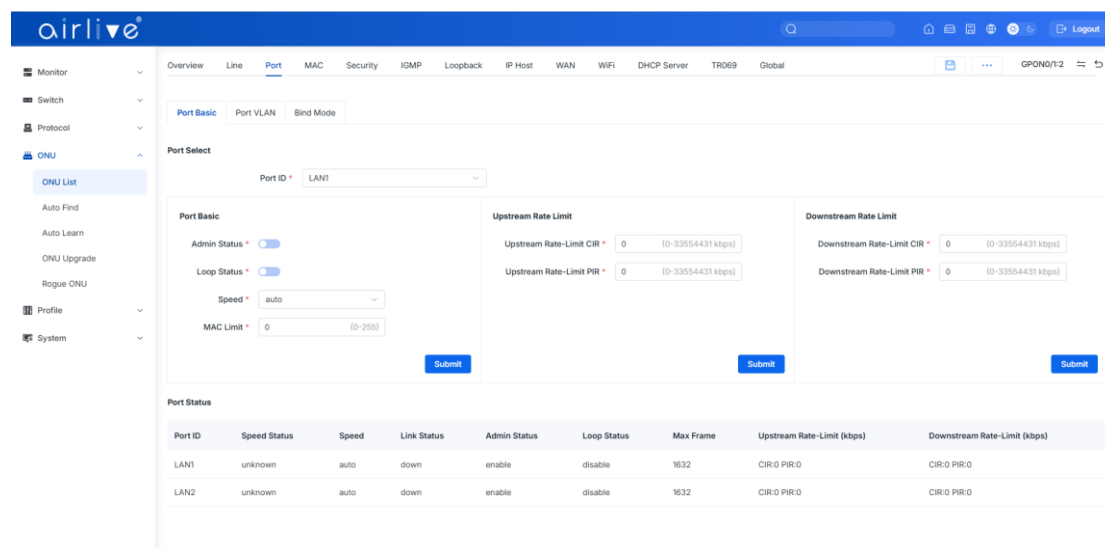


Figure 5.1-8: ONU Port Basic

5.1.1.1.3.2 PortVlan

ONU → ONU List → ONU List → ONU List → Configuration → Port → PortVlan

Set the VLAN mode of the ONU's port. For HGU, need to configure veip 1 transparent; for SFU, configure Ethernet port directly.

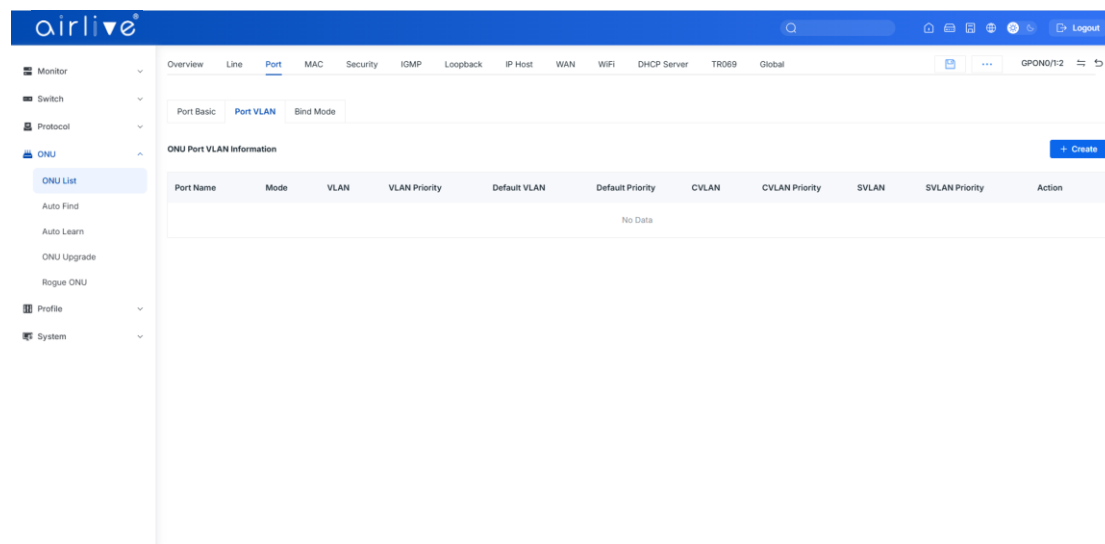


Figure 5.1-9: Configure port VLAN mode

5.1.1.1.3.3 Bind Mode

ONU → ONU List → ONU List → ONU List → Configuration → Port → Bind Mode

ONU LAN bind mode is configured by private OMCI between OLT and ONU. When the connected ONU supports this function, the option "Bind Mode" can be shown on this page.

Figure 5.1-10: LAN Bind Mode Configuration

5.1.1.1.1.4 MAC

5.1.1.1.1.4.1 MAC

ONU → ONU List → ONU List → ONU List → Configuration → MAC → MAC

Configure the MAC counts limit based on ONU or Gempport, and 0 means there is no limit.

This interface can also display the learned MAC addresses of each LAN port of the ONU.

Figure 5.1-11: MAC Limit

5.1.1.1.1.4.2 MAC Table

ONU → ONU List → ONU List → ONU List → Configuration → MAC → MAC Table

This page configures ONU MAC address limits (PON/LAN) and aging time, and displays the learned MAC address table.

Figure 5.1-12: MAC Table

5.1.1.1.1.5 Security

ONU → ONU List → ONU List → ONU List → Configuration → Security

The OLT configures ONU security through private OMCI. With this feature, you can change ONU passwords, firewall level, and device access rules.

Note: To enable device access protocols, set the firewall level to Low or Disabled first.

Protocol	Control	LAN	WAN	Port
Ping	☒	☒	☒	0 (0-65535)
Telnet	☒	☒	☒	0 (0-65535)
FTP	☒	☒	☒	0 (0-65535)
HTTP	☒	☒	☒	0 (0-65535)

Figure 5.1-13: Security Configuration

5.1.1.1.1.6 IGMP

5.1.1.1.1.6.1 IGMP

ONU → ONU List → ONU List → ONU List → Configuration → IGMP →

IGMP

This page supports ONU-specific IGMP configurations. These include limiting the number of IGMP groups, controlling bandwidth, and binding IGMP profiles.

The screenshot shows the 'ONU IGMP Information' configuration page in the AirLive web interface. The page has a sidebar with navigation options like Monitor, Switch, Protocol, and ONU. The main content area is divided into three sections: 'Port ID' (set to 1), 'Port Type' (set to eth), and 'Max Group' (set to 0). Below these are 'Bandwidth' settings (Max Band Width set to 0) and 'Bind Profile' (IGMP Profile set to a dropdown). There are 'Submit' and 'Delete' buttons at the bottom of each section.

Figure 5.1-14: IGMP

5.1.1.1.6.2 Multicast VLAN

ONU → ONU List → ONU List → ONU List → Configuration → IGMP → Multicast VLAN

Set the Multicast VLAN of ONU and the Multicast VLAN mode of ONU's port.

The screenshot shows the 'Multicast VLAN' configuration page in the AirLive web interface. The page has a sidebar with navigation options like Monitor, Switch, Protocol, and ONU. The main content area is divided into two sections: 'Multicast VLAN' and 'Multicast VLAN Tag Strip'. The 'Multicast VLAN' section has a 'MVLAN List' field set to 'N/A' and a 'Submit' button. The 'Multicast VLAN Tag Strip' section has a '+ Create' button and a table with columns 'VLAN Mode', 'Port ID', and 'Action'. The table currently shows 'No Data'.

Figure 5.1-15: Configure multicast VLAN

5.1.1.1.7 Loopback

ONU → ONU List → ONU List → ONU List → Configuration → Loopback

ONU Loopback Detection is configured by private OMCI between OLT and ONU. It supports configuring the loop detection status and parameters of the ONU.

Figure 5.1-16: Loopback Configuration

5.1.1.1.1.8 IP Host

ONU → ONU List → ONU List → ONU List → Configuration → IP Host

Create IP host for ONU wan connection. This provides an IP interface for ONU management.

Figure 5.1-17: Configure IP host

5.1.1.1.1.9 WAN

ONU → ONU List → ONU List → ONU List → Configuration → WAN

ONU WAN connection is configured by private OMCI between OLT and ONU. When the connected ONU supports this function, the option "WAN" can be shown on this page.

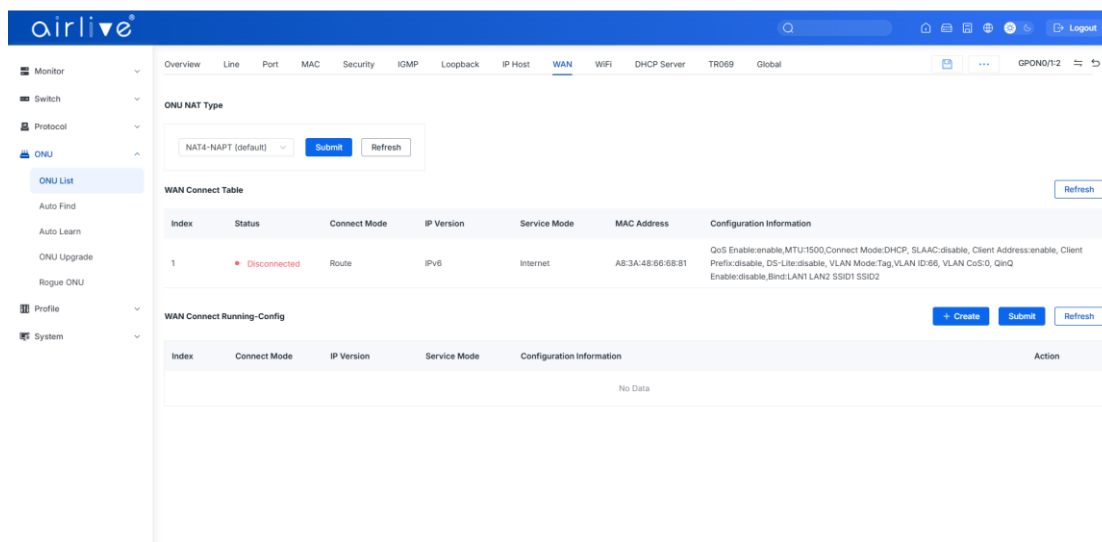


Figure 5.1-18: Configure WAN

5.1.1.1.10 WIFI

ONU → ONU List → ONU List → ONU List → Configuration → WIFI

ONU WIFI is configured by private OMCI between OLT and ONU. When the connected ONU supports this function, the option "WIFI" can be shown on this page.

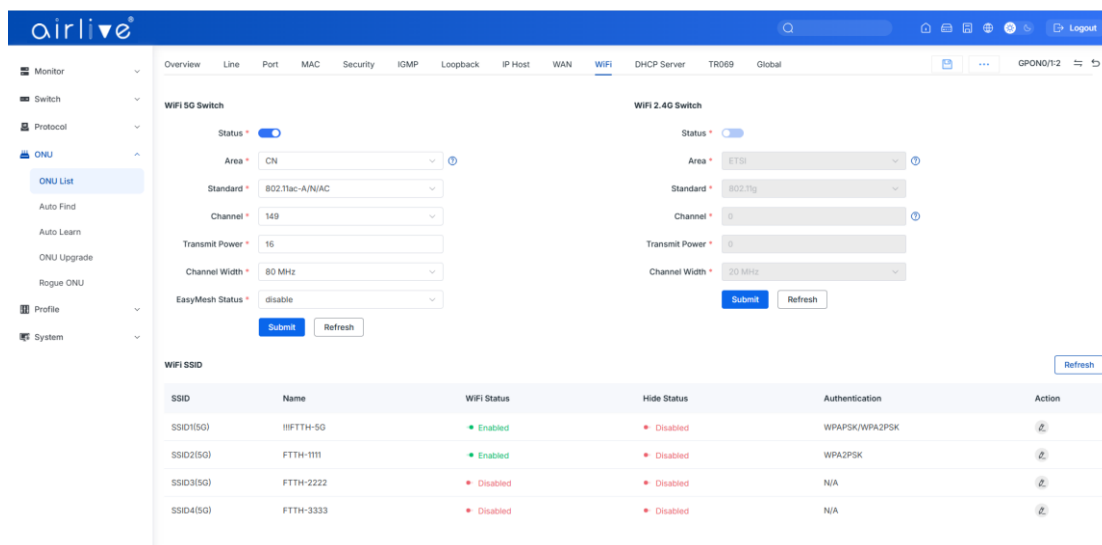


Figure 5.1-19: WIFI Configuration

5.1.1.1.11 DHCP Server

ONU → ONU List → ONU List → ONU List → Configuration → DHCP Server

ONU LAN and DHCP server are configured by private OMCI between OLT and ONU. When the connected ONU supports this function, the option "DHCP Server" can be shown on this page.

Figure 5.1-20: ONU DHCP IPv4 Server

Figure 5.1-21: ONU DHCP IPv6 Server

5.1.1.1.12 Voice

5.1.1.1.12.1 VoIP

ONU → ONU List → ONU List → ONU List → Configuration → Voice → VoIP

This page shows WAN information for the VoIP service, including the IP address and VLAN. You can also manage the VoIP module here. The "VoIP" option appears only when the connected ONU supports VoIP.

Figure 5.1-22: Voice Wan Information

5.1.1.1.12.2 POTS

ONU → ONU List → ONU List → ONU List → Configuration → Voice → POTS

ONU VoIP POTS account, password and other VOIP parameters of POTS can be configured on this page; the length of User account and User password and User name can't be more than 32 characters.

When the connected ONU supports VOIP, the option "POTS" can be shown on this page.

Figure 5.1-23: POTS Configuration

5.1.1.1.12.3 SIP

ONU → ONU List → ONU List → ONU List → Configuration → Voice → SIP

The ONU's VoIP/SIP parameters can be configured on this page, including the SIP server, proxy server, digit map, and more. The "SIP" option appears on this page only when the connected ONU supports VoIP.

The screenshot displays the 'SIP Parameter Configuration' page in the AirLive web interface. The left sidebar shows a navigation menu with categories like Monitor, Switch, Protocol, and ONU. The main content area is divided into two sections: 'SIP Parameter Configuration' and 'SIP Digit Map Configuration'. The 'SIP Parameter Configuration' section includes fields for 'Manage Port' (5060), 'Proxy Server URL/Port' (0.0.0.0), 'Backup Proxy Server URL/Port' (0.0.0.0), 'Register Server URL/Port' (0.0.0.0), 'Backup Register Server URL/Port' (0.0.0.0), 'Out Bound Server URL/Port' (0.0.0.0), 'Register Interval' (1800), 'Heartbeat Switch' (Disable), 'Heartbeat Cycle' (0), and 'Heartbeat Count' (0). There are also buttons for 'Submit' and 'Refresh'. The 'SIP Digit Map Configuration' section includes a field for 'SIP Digit Map Block'.

Figure 5.1-24: SIP Parameter

5.1.1.1.13 TR069

ONU → ONU List → ONU List → ONU List → Configuration → TR069

ONU TR069 is configured by private OMCI between OLT and ONU.

It supports configuring TR069 management parameters and STUN server configurations.

The screenshot displays the 'TR069 Configuration' page in the AirLive web interface. The left sidebar shows a navigation menu with categories like Monitor, Switch, Protocol, and ONU. The main content area is divided into two sections: 'TR069 Manage' and 'TR069 Stun'. The 'TR069 Manage' section includes fields for 'TR069 Manage Status' (toggle), 'ACS Server Address', 'ACS Server Username', 'ACS Server Password', 'Certificate', 'Inform', 'Inform Interval Time' (0-4294967295), 'Reverse Connection Username', 'Reverse Connection Password', and 'ID'. There are buttons for 'Submit' and 'Refresh'. The 'TR069 Stun' section includes fields for 'TR069 STUN Status' (toggle), 'Stun Server Address', 'Stun Server Port' (1-65535), 'Stun Server Username', and 'Stun Server Password'. There are buttons for 'Submit' and 'Refresh'.

Figure 5.1-25: TR069 Configuration

5.1.1.1.14 MQTT

ONU → ONU List → ONU List → ONU List → Configuration → MQTT

MQTT page support configure ONU's MQTT configuration.

Figure 5.1-26: MQTT Configuration

5.1.1.1.15 CATV

ONU → ONU List → ONU List → ONU List → Configuration → CATV

This page configures ONU CATV service by setting admin state and power enable status.

Figure 5.1-27: CATV Configuration

5.1.1.1.16 Global

ONU → ONU List → ONU List → ONU List → Configuration → Global

Misc includes other features of ONUs configured by private OMCI, such as CATV control, and so on.

Figure 5.1-28: Global Configuration

5.1.1.1.2 Activate/Deactivate

ONU → ONU List → ONU List → ONU List → Deactivate (Activate)

If you deactivate the selected ONU, it will be disabled and registration will fail. If you activate it, the ONU will register successfully.

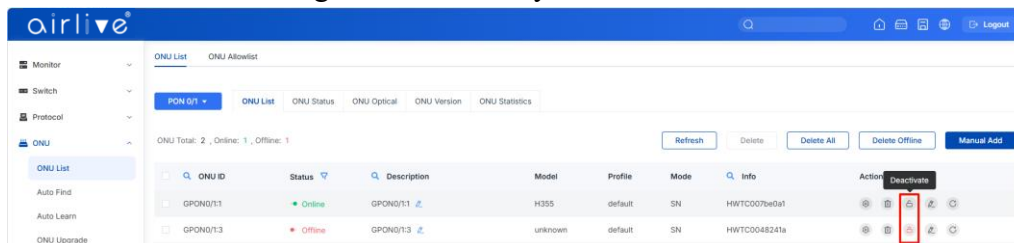


Figure 5.1-29: Deactivate/Activate ONU

5.1.1.1.3 Delete

ONU → ONU List → ONU List → ONU List → Delete

If you delete the selected ONU, it will be removed and its registration will fail. All configurations related to this ONU will also be deleted.

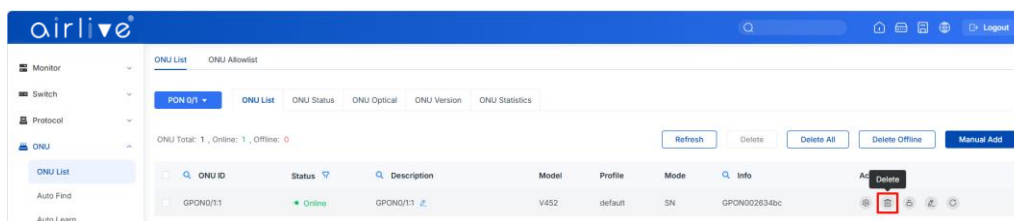


Figure 5.1-30: Delete ONU

5.1.1.1.4 Modify

ONU → ONU List → ONU List → ONU List → Modify

This is used to modify ONU Profile.

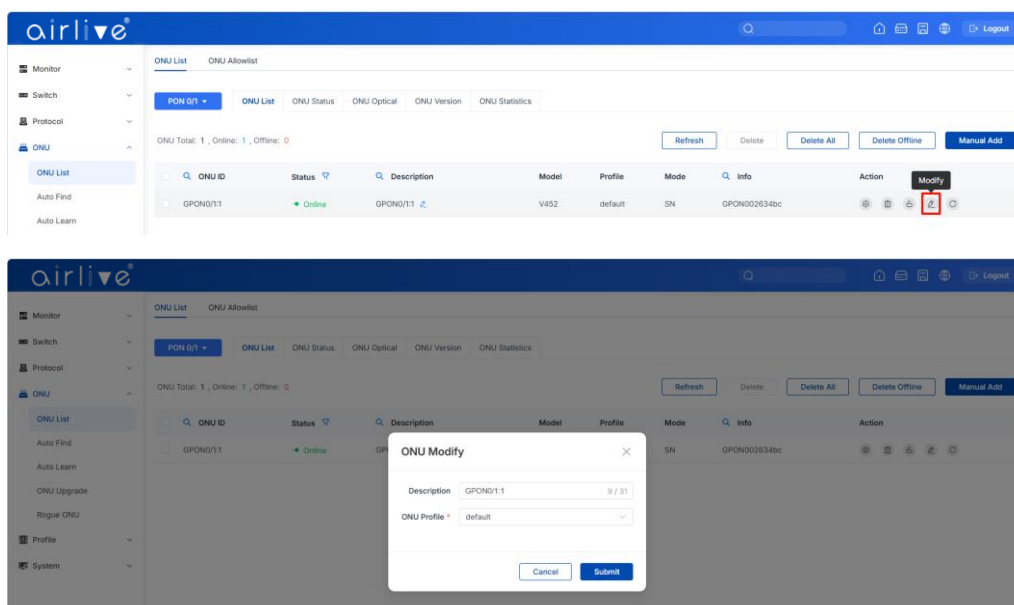


Figure 5.1-31: Modify ONU Profile

5.1.1.1.5 Reboot

ONU → ONU List → ONU List → ONU List → Reboot

Reboot the selected ONU.

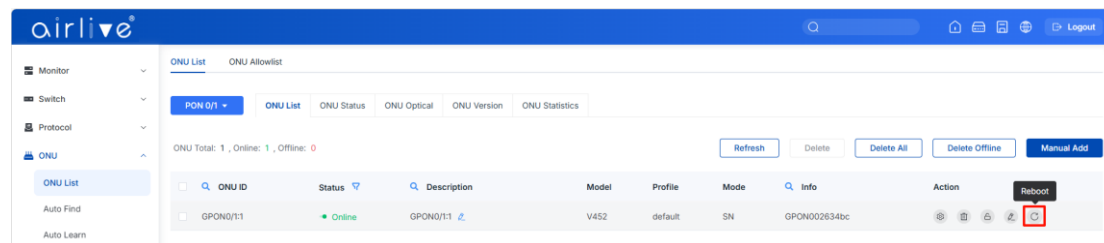


Figure 5.1-32: Reboot ONU

5.1.1.1.6 Manual Add

ONU → ONU List → ONU List → ONU List → Manual Add

You can manually add ONU to a selected PON port. ONU will appear in the ONU list after you add it.

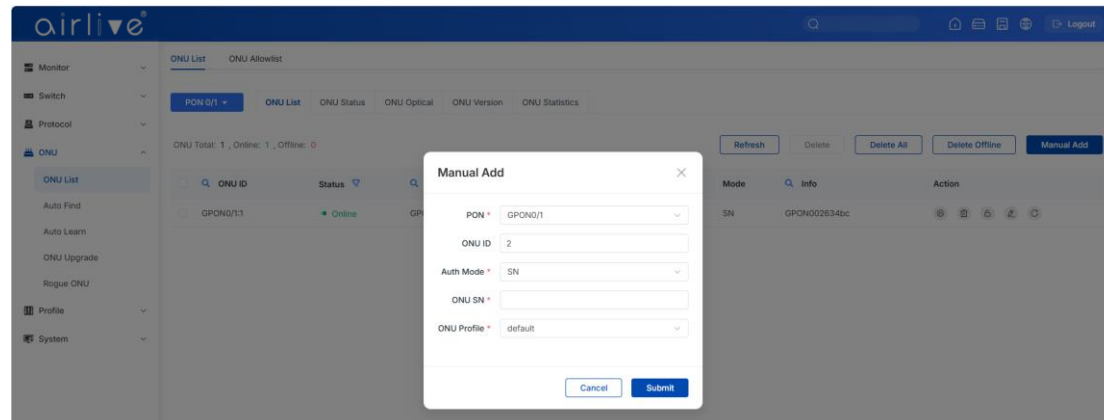
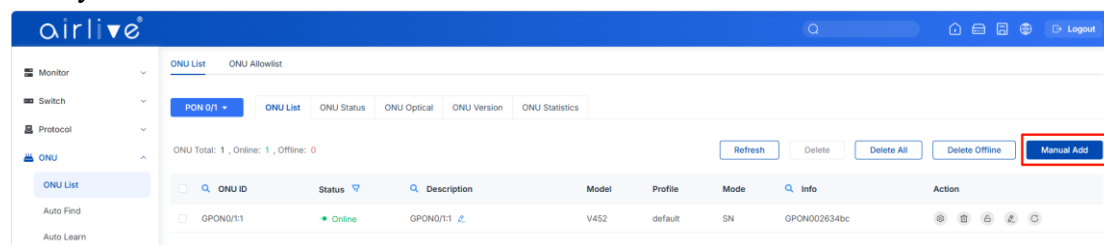


Figure 5.1-33: Add ONU Manually

5.1.1.2 ONU Status

ONU → ONU List → ONU List → ONU Status

This pages shows the ONU information of the activity. User can check "Last Register Time", "Last Deregister Reason" and "Active Time" of each ONU.

ONU ID	Admin State	OMCC State	Phase State	Description	Last Register Time	Last Deregister Time	Last Deregister Reason	Alive Time
GPON0/1/1	enable	enable	working	N/A	1970-01-01 00:00:51	N/A	N/A	2 08:57:54

Figure 5.1-34: ONU Status

5.1.1.3 ONU Optical

ONU → ONU List → ONU List → ONU Optical

This page displays ONU Rx/Tx optical power. A list of power readings for multiple ONUs is provided, allowing you to quickly check the power level when diagnosing registration issues.

ONU ID	Description	Rx Power(dBm)	Tx Power(dBm)
GPON0/1/1	N/A	-16.50	2.05

Figure 5.1-35: ONU Optical Info

5.1.1.4 ONU Version

ONU → ONU List → ONU List → ONU Version

This page displays the main and standby software versions of the ONU. You can also view the version information for multiple ONUs in the list.

ONU ID	Description	Main Software Version	Standby Software Version	Version
GPON0/1/1	N/A	V21.00	V21.00	V1.3

Figure 5.1-36: ONU Version Info

5.1.1.5 ONU Statistics

ONU → ONU List → ONU List → ONU Statistics

This page shows the received and transmitted packet statistics for ONUs.

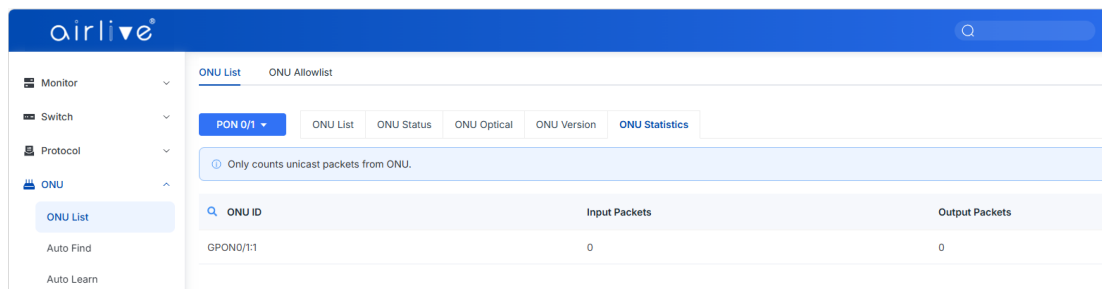


Figure 5.1-37: ONU Statistics Info

5.1.2 ONU Allowlist

ONU → ONU List → ONU Allowlist

You can configure an Allowlist on this page to restrict ONU registration by GPON SN. Only ONUs whose Serial Numbers (SN) match one or more predefined patterns are allowed to register and go online; all others are blocked.

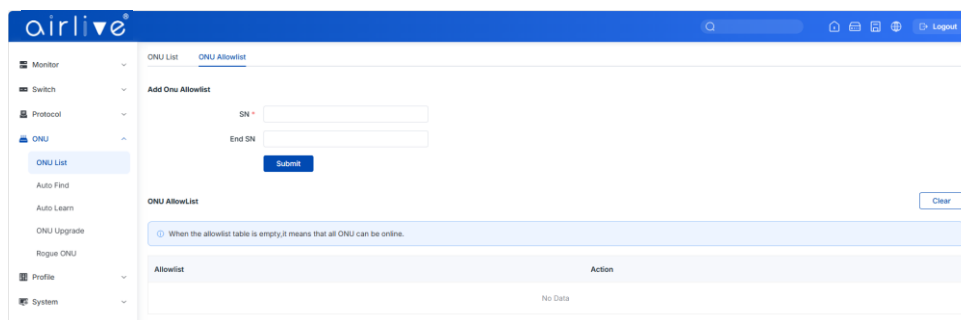


Figure 5.1-38: ONU Allowlist

5.2 Auto Find

This chapter is about the configuration and management of automatic discovery ONUs.

5.2.1 Automatic Discovery

ONU → Auto Find → Automatic Discovery

All ONUs that have failed authentication or are not authenticated will be displayed on this interface. You can check the serial numbers of these ONUs. Then click Modify to authenticate the selected ONU.

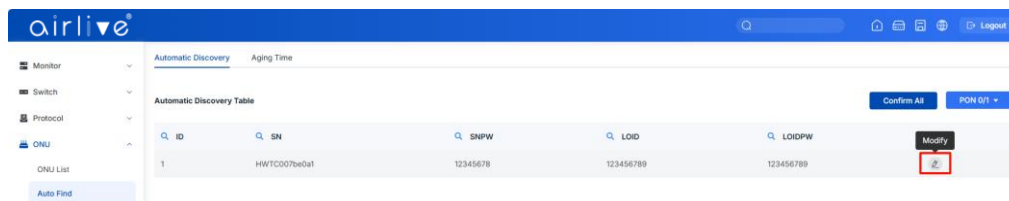


Figure 5.2-1: Automatic Discovery

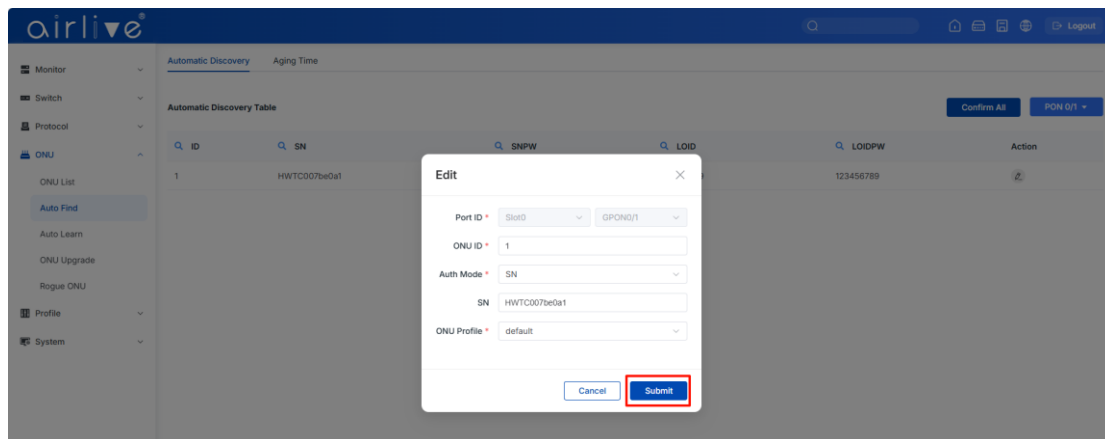


Figure 5.2-2: Add ONU

5.2.2 Aging Time

ONU → Auto Find → Aging Time

It allows you to configure the retention time of automatically discovered ONU information. The default configuration is 5 minutes.

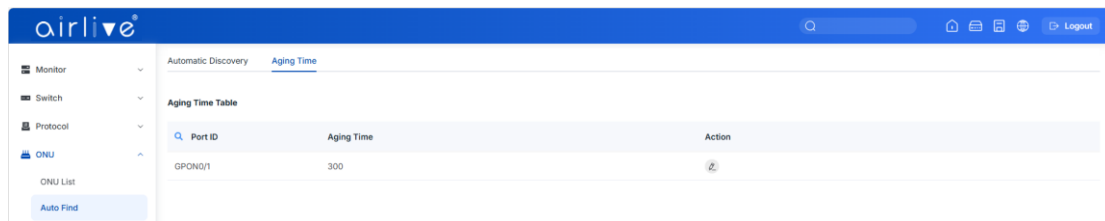


Figure 5.2-3: Aging Time

5.3 Auto Learn

5.3.1 Auto Learn

ONU → Auto Learn → Auto Learn

ONU can automatically authenticate after the PON port's auto-learning function is enabled. At the same time, the OLT supports automatic profile binding based on PON ports. This interface also provides switches for enabling or disabling plug-and-play for ONUs.

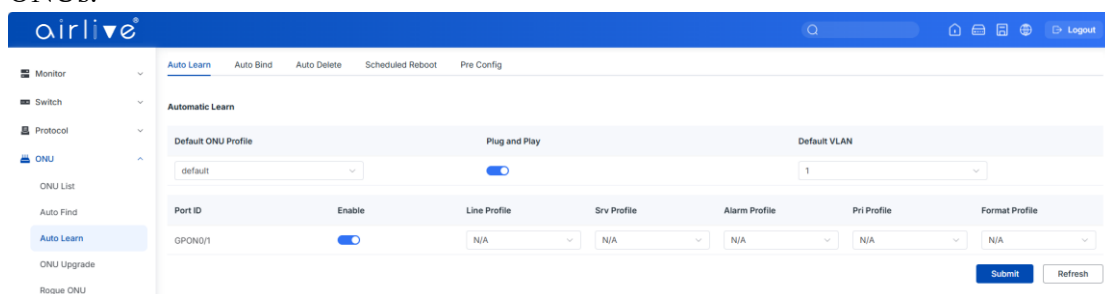


Figure 5.3-1:ONU AutoLearn

5.3.2 Auto Bind

ONU → Auto Learn → Auto Bind

Input the Equipment ID and bind the profile you need.

Note: you must create a profile first.

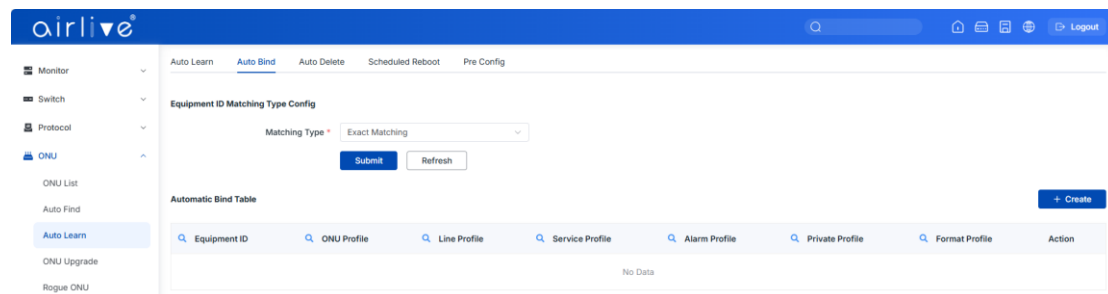


Figure 5.3-2: ONU AutoBind

5.3.3 Auto Delete

ONU → Auto Learn → Auto Delete

It supports periodic checking and deletion of offline ONUs, and this feature is disabled by default.

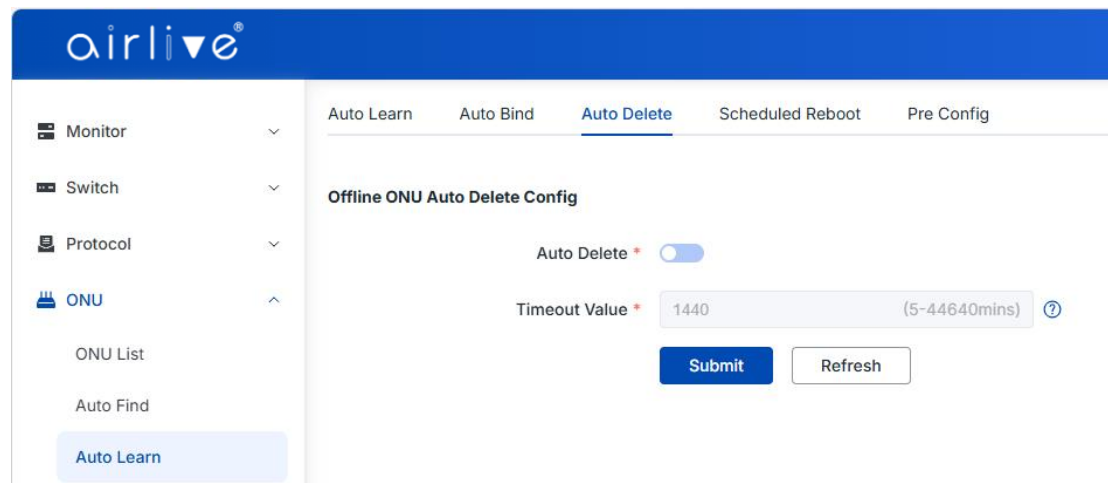


Figure 5.3-3: ONU AutoDelete

5.3.4 Scheduled Reboot

ONU → Auto Learn → Scheduled Reboot

Configure ONU to automatically restart based on time.

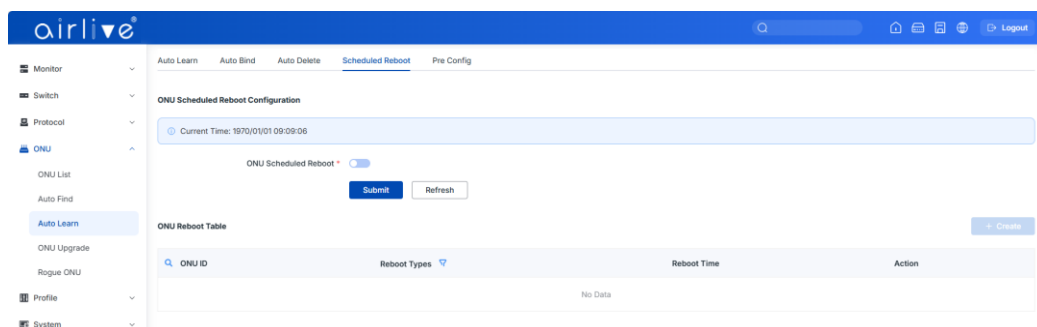


Figure 5.3-4: ONU Scheduled Reboot

5.3.5 Pre Config

ONU → Auto Learn → Pre Config

Manually add a pre-registration configuration to the ONU list in the PON. When an ONU is registered with that ID, the configuration will be automatically applied.

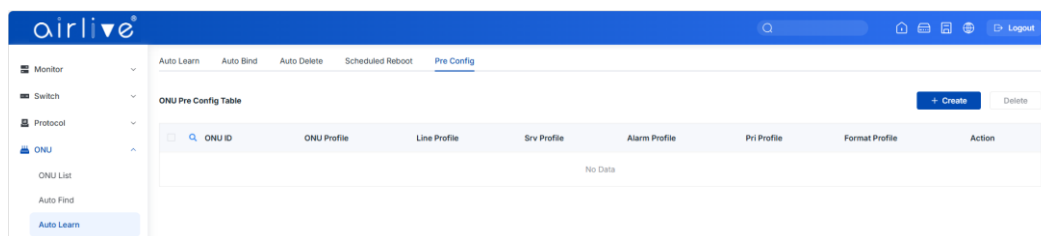


Figure 5.3-5: ONU Pre-Configure

5.4 ONU Upgrade

ONU firmware can be upgraded by OLT. OLT supports manual upgrade and automatic upgrade.

5.4.1 Upload Image

ONU → ONU Upgrade → Upload Image

Upload the required ONU firmware image to the OLT's RAM.

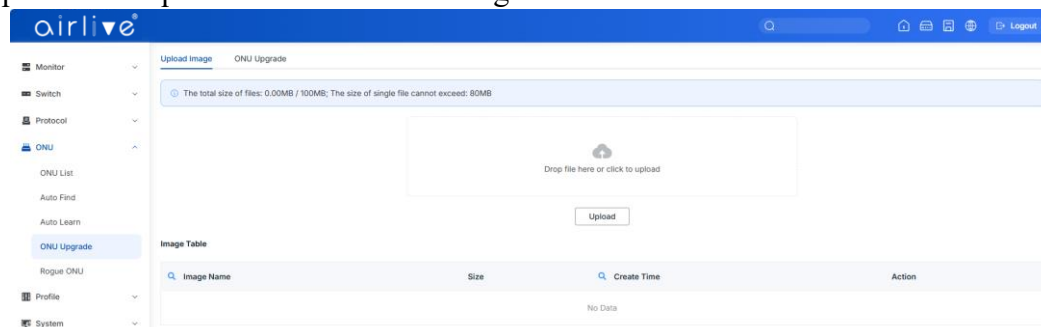


Figure 5.4-1: Upload Image

5.4.2 ONU Upgrade

5.4.2.1 Manual Upgrade

ONU → ONU Upgrade → ONU Upgrade → Create → Manual Upgrade

This is the ONU Upgrade page, which lists all firmware upgrade tasks for ONUs. Click Create button to start a new upgrade task, and choose between Manual Upgrade (step-by-step) and Auto Upgrade (batch upgrade).

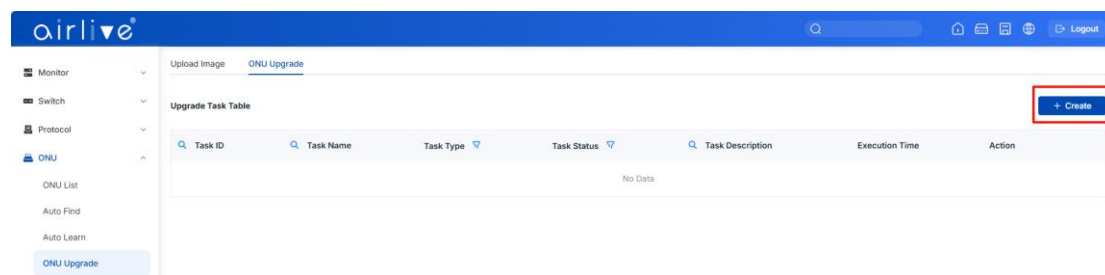


Figure 5.4-2: Create Upgrade Task

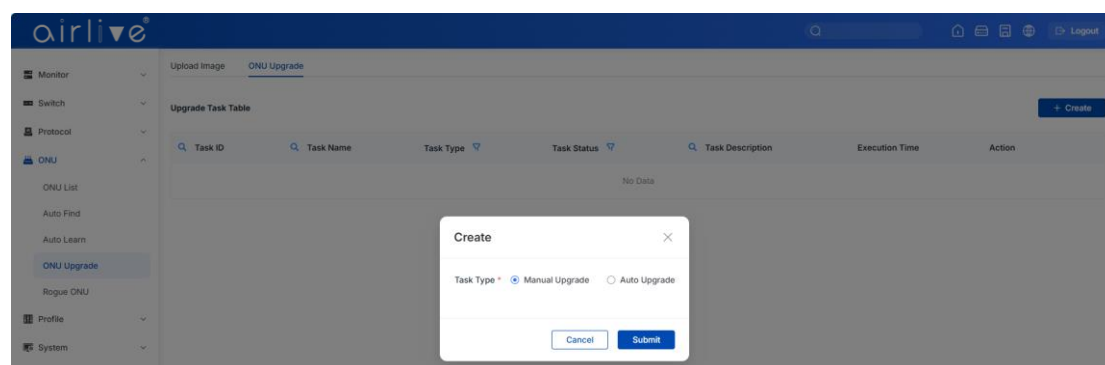


Figure 5.4-3: Select Task Type

On Basic Info interface, you can configure task details (ID, name, description), select the upgrade mode, and choose the target firmware. The Mixed mode is typically used for ONU upgrades.

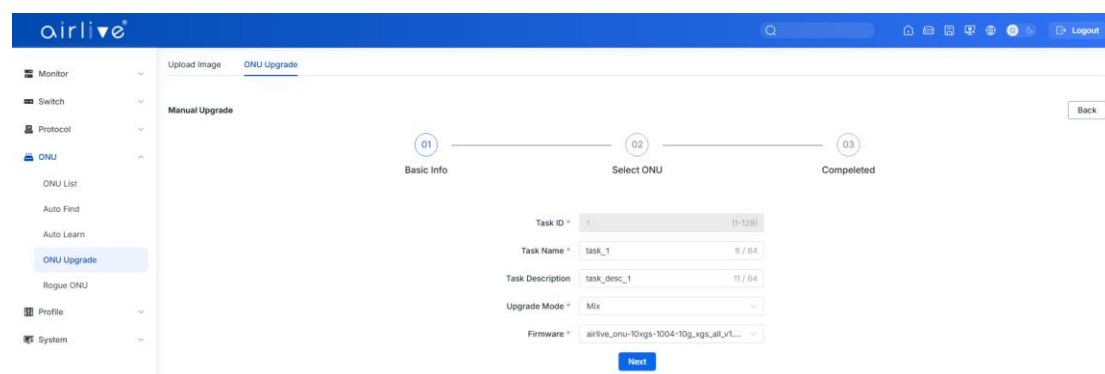


Figure 5.4-4: Manual Upgrade Basic Info

You can upgrade the same ONU model under one PON port each time.

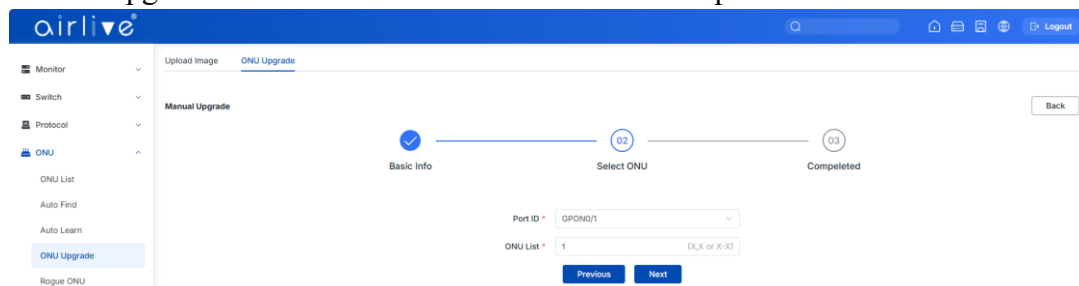


Figure 5.4-5: Select ONU

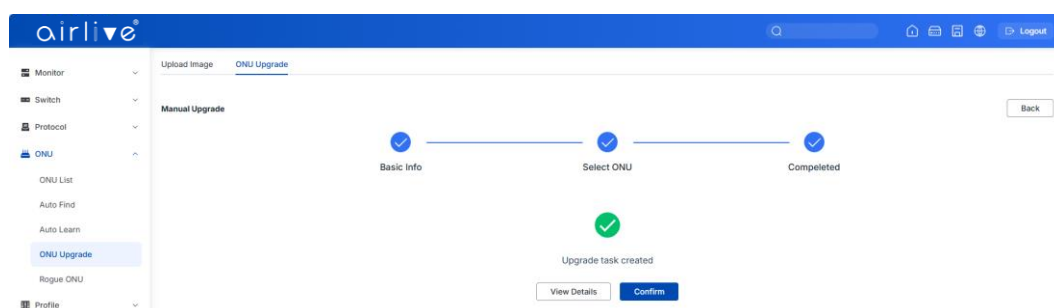


Figure 5.4-6: Upgrade task created

You can click the Detail button to check the ONU upgrade detail.

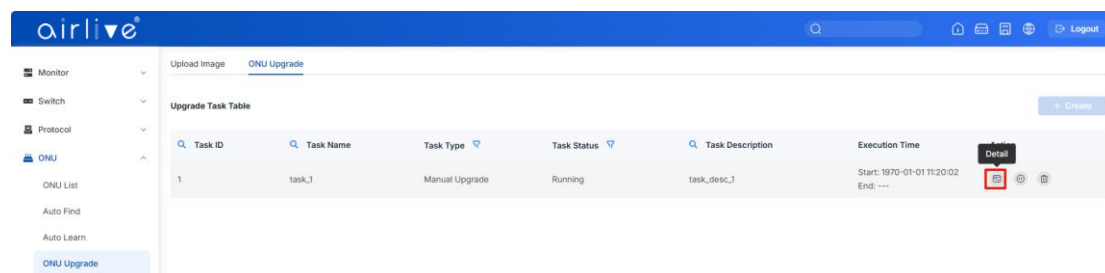


Figure 5.4-7: Check upgrade detail

The upgrading status will be shown on this page.

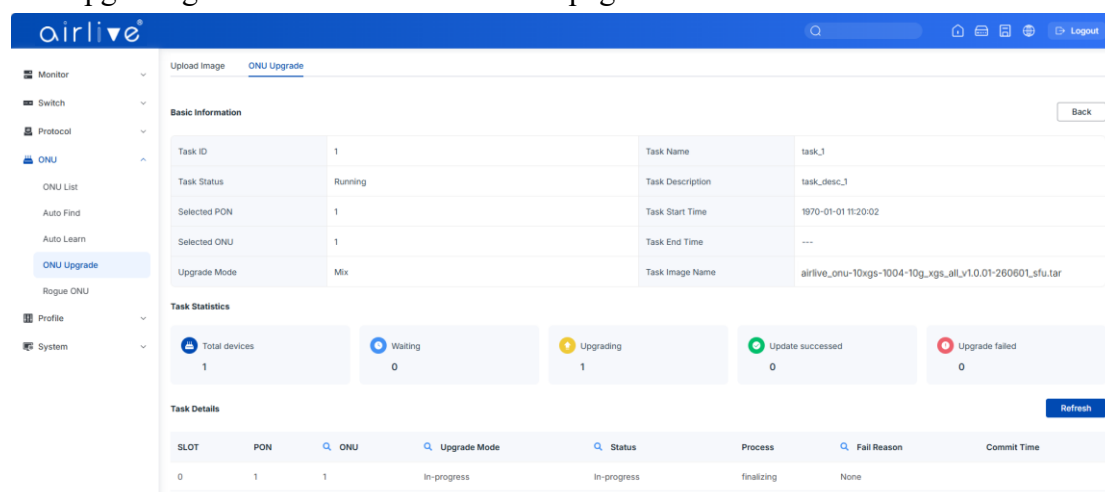


Figure 5.4-8: Upgrade Status

You can click the Stop button to halt an ongoing upgrade task,

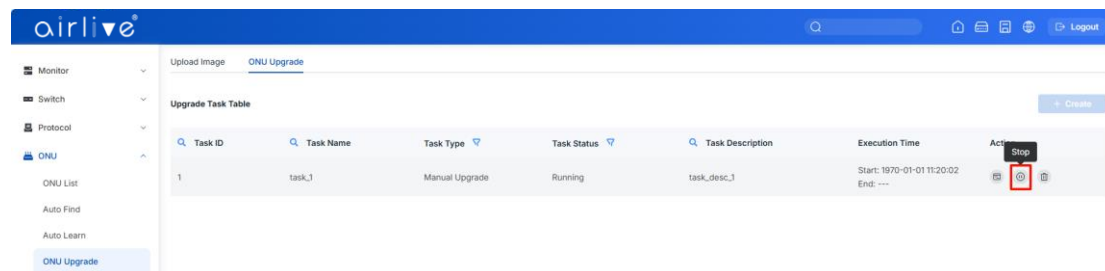


Figure 5.4-9: Stop Upgrade Task

You can click the Delete button to remove an upgrade task.

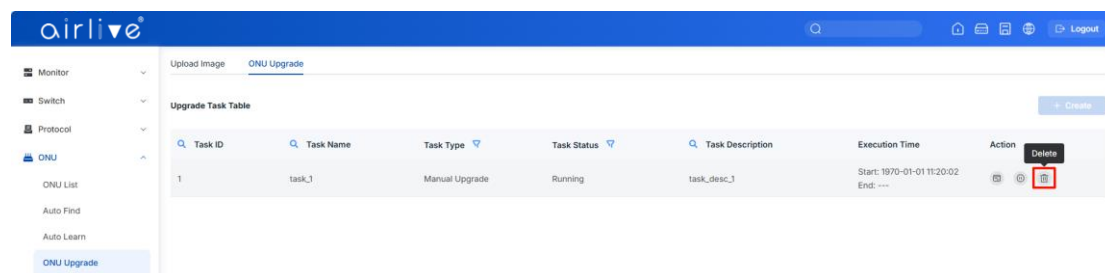


Figure 5.4-10: Delete Upgrade Task

5.4.2.2 Auto Upgrade

ONU → ONU Upgrade → ONU Upgrade → Create → Auto Upgrade

After the ONU firmware image is uploaded and automatic upgrade conditions are configured, any ONU that comes online with the same equipment ID but a different software version will be upgraded automatically.

Each ONU type has a unique equipment ID, which can be viewed in the ONU detail info.

Note: The firmware must be uploaded beforehand using the image upload interface.

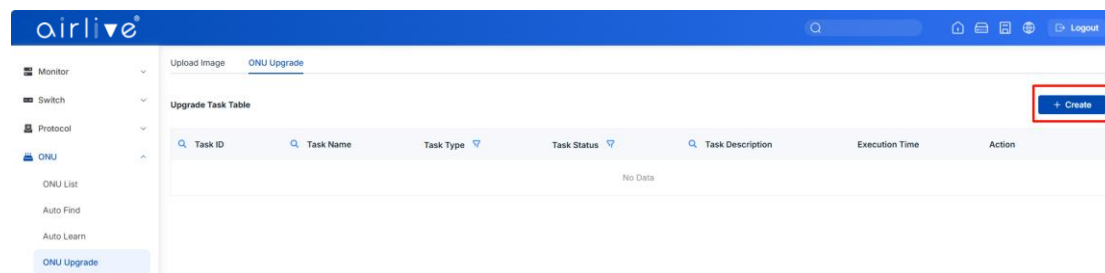


Figure 5.4-11: Create Upgrade Task

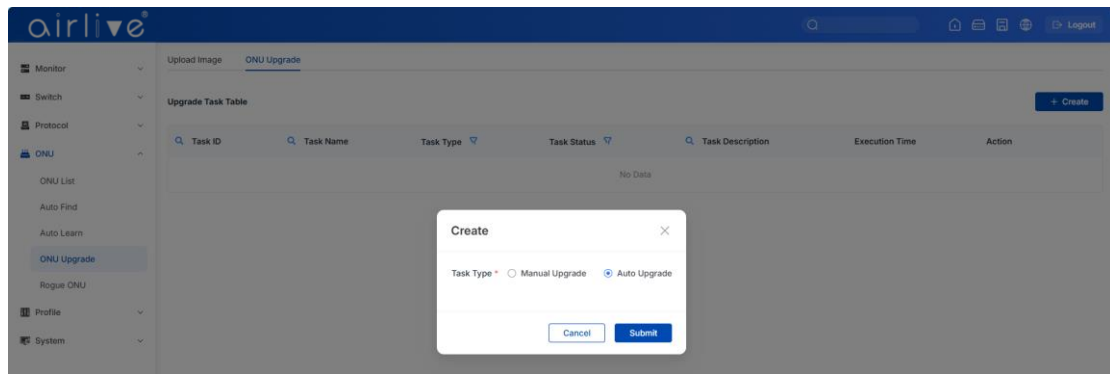


Figure 5.4-12: Select Task Type

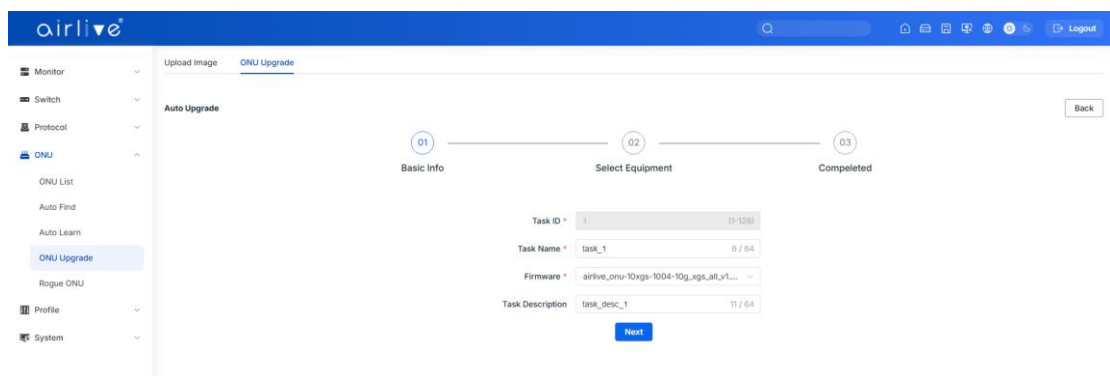


Figure 5.4-13: Auto Upgrade Basic Info

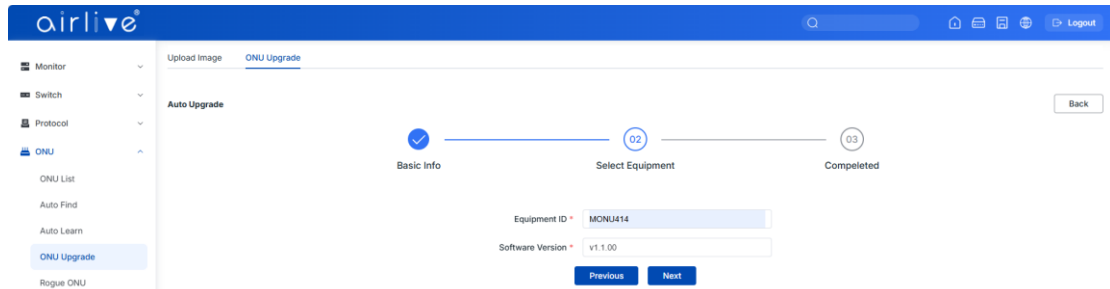


Figure 5.4-14: Select Equipment

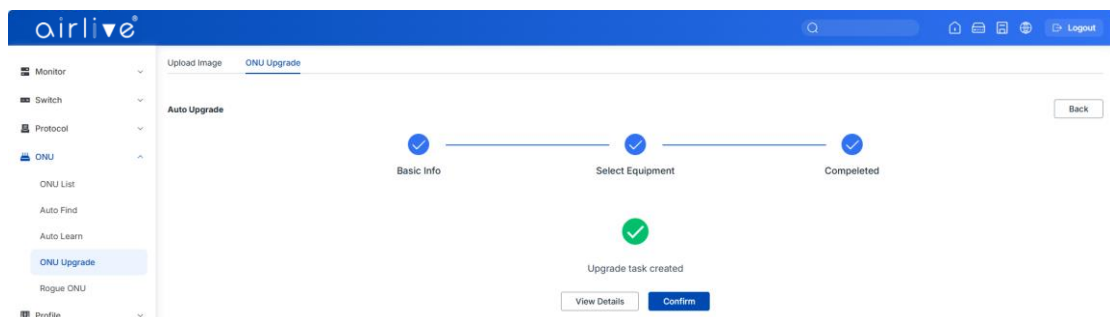


Figure 5.4-15: Upgrade task created

You can click the Detail button to check the ONU upgrade detail.

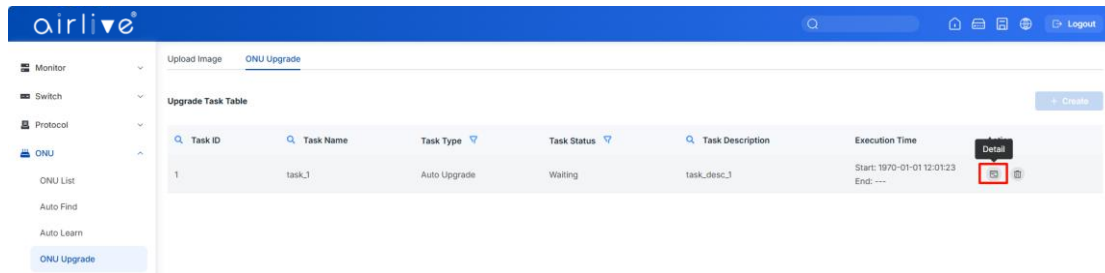


Figure 5.4-16: Check upgrade detail

The upgrading status will be shown on this page.

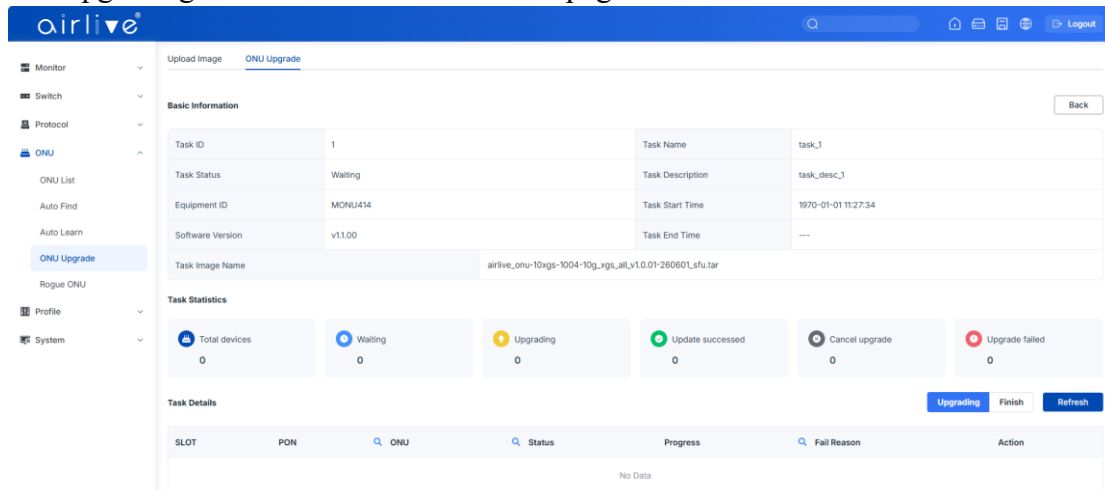


Figure 5.4-17: Upgrade Status

You can click the Delete button to remove an upgrade task.

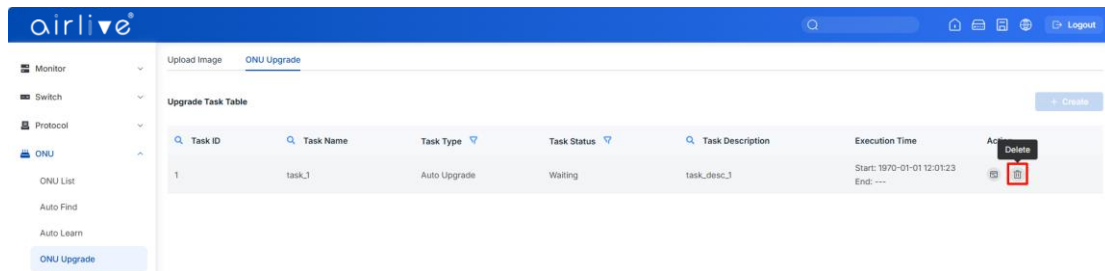


Figure 5.4-18: Delete Upgrade Task

5.5 Rogue ONU

5.5.1 Rogue ONU List

ONU → Rogue ONU → Rogue ONU List

After rogue ONU detection is enabled, any rogue ONU that tries to register will appear in the list.

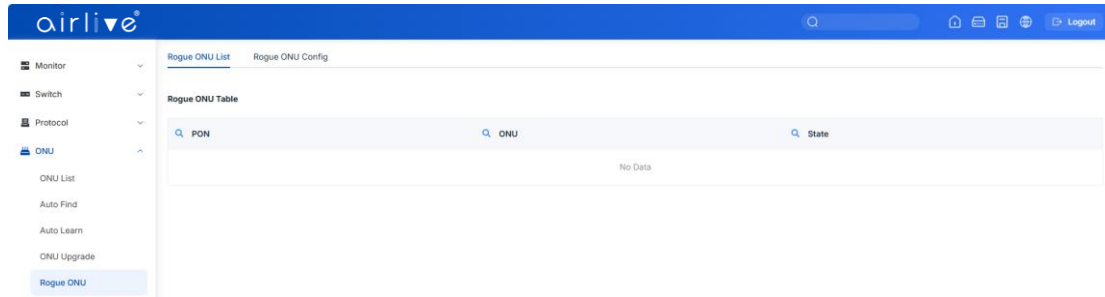


Figure 5.5-1: Rogue ONU List

5.5.2 Rogue ONU Config

ONU → Rogue ONU → Rogue ONU Config

This page is the Rogue ONU Config interface, used to configure rogue ONU detection for each PON port. You can enable/disable detection and set the auto shutdown mode to Manual or Auto to protect the PON network from interference.

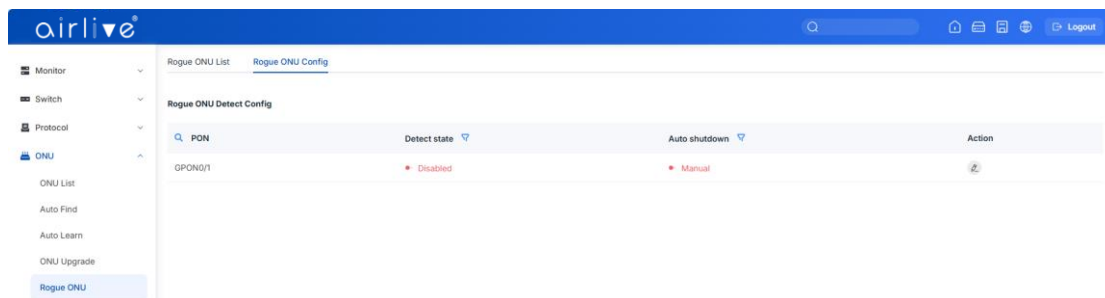


Figure 5.5-2: Rogue ONU Config

Chapter 6 Profile

This chapter is about the ONU profile configuration. It is designed for batch ONU management by OLT.

6.1 Profile

This project is used to configure all templates related to the ONU.

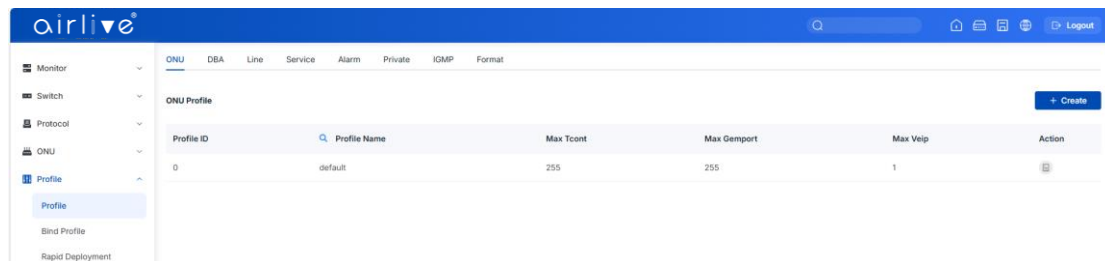
6.1.1 ONU

The ONU profile is used for ONU authorization, and each ONU type must be assigned exactly one ONU profile during authorization. The ONU profile specifies the capability of this ONU.

6.1.1.1 ONU Profile

Profile → ONU → ONU Profile

The table displays the ONU profile list. You can also perform operations such as deleting and checking details.



Profile ID	Profile Name	Max Tcont	Max Gempport	Max Veip	Action
0	default	255	255	1	

Figure 6.1-1: ONU Profile

6.1.1.2 Create

Profile → ONU → Create

Create a new ONU profile as required. Generally, an ONU has two types.

SFU type (bridge mode only):

Usually, you only need to set correct eth port and POTS port number of ONU; others can be kept as default.

The screenshot shows the 'Create' dialog for an SFU profile. The profile ID is 1, name is SFU, and description is ONU_profile_1. The Max Eth port is set to 1, Max POTS is 0, and Max Veip is 0. The dialog includes options for service ability and OMCI send mode.

Figure 6.1-2: Create SFU profile

HGU type (routing WAN mode):

For this type, set correct eth port and POTS port number, and set Veip to be 1, keep others as default.

The screenshot shows the 'Create' dialog for an HGU profile. The profile ID is 1, name is HGU, and description is ONU_profile_1. The Max Eth port is set to 1, Max POTS is 0, and Max Veip is 0. The dialog includes options for service ability and OMCI send mode.

Figure 6.1-3: Create HGU profile

6.1.2 DBA

DBA is a bandwidth allocation strategy that changes uplink bandwidth assigned to each T-CONT in real time according to the instant service status of each ONU. There are five bandwidth types supported and make sure that fixed <= assured <= max.

6.1.2.1 DBA Profiles

Profile → DBA → DBA Profiles

The table displays DBA profile list. You can also do some operations, such as delete and modify.

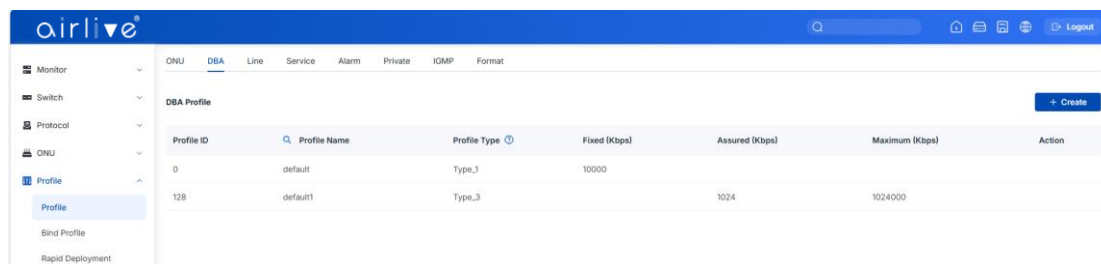


Figure 6.1-4: DBA profile

6.1.2.2 Create

Profile → DBA → Create

There are five types of DBA profile. Generally, we use type 3.

BW Type	Delay Sensitive	Applicable T-CONT Types				
		Type 1	Type 2	Type 3	Type 4	Type 5
Fixed	Yes	√				√
Assured	No		√	√		√
Maximum	No			√	√	√

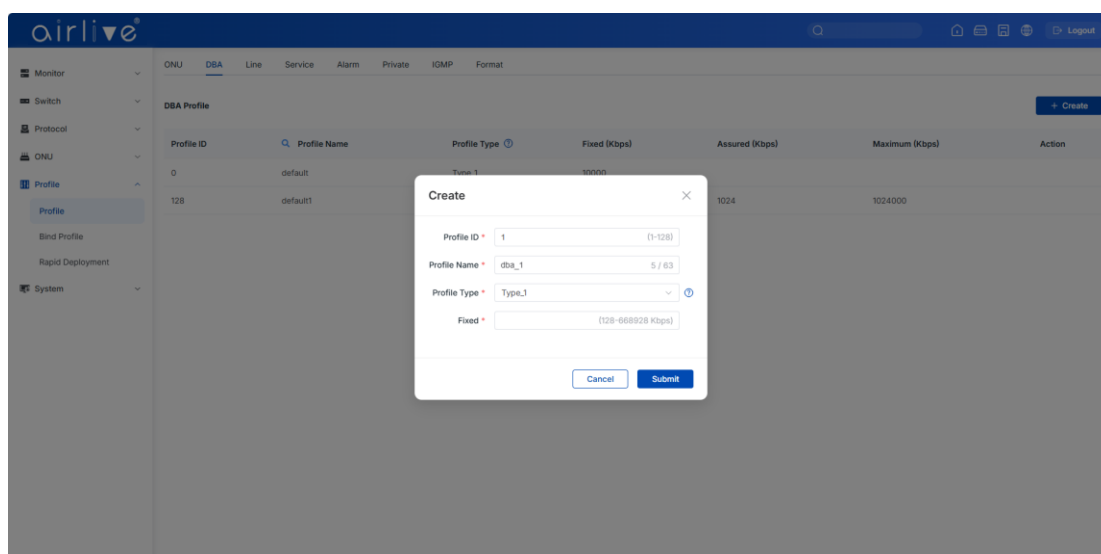


Figure 6.1-5: Create DBA Profile

6.1.3 Line

Line profile is used to configure all side services of ONU such as T-cont, Gem-port, Service-port, and so on.

6.1.3.1 Line Profile

Profile → Line → Line Profile

The table displays Line Profile list. You can also do some operations, such as delete and modify.

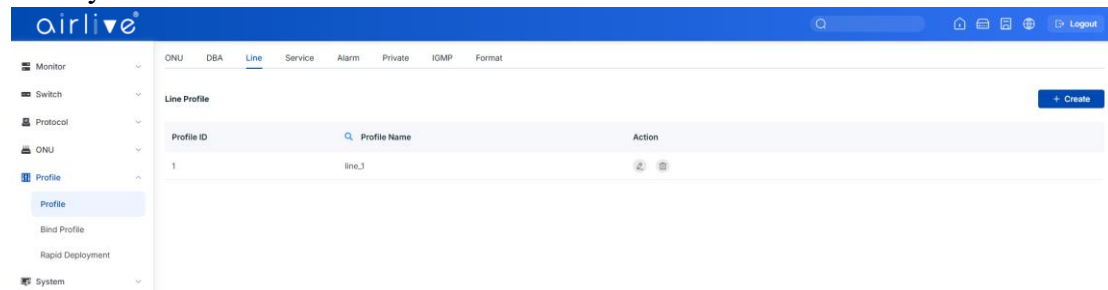


Figure 6.1-6: Line Profile

6.1.3.2 Create

Profile → Line → Create

Create a new Line Profile, set the Profile name.

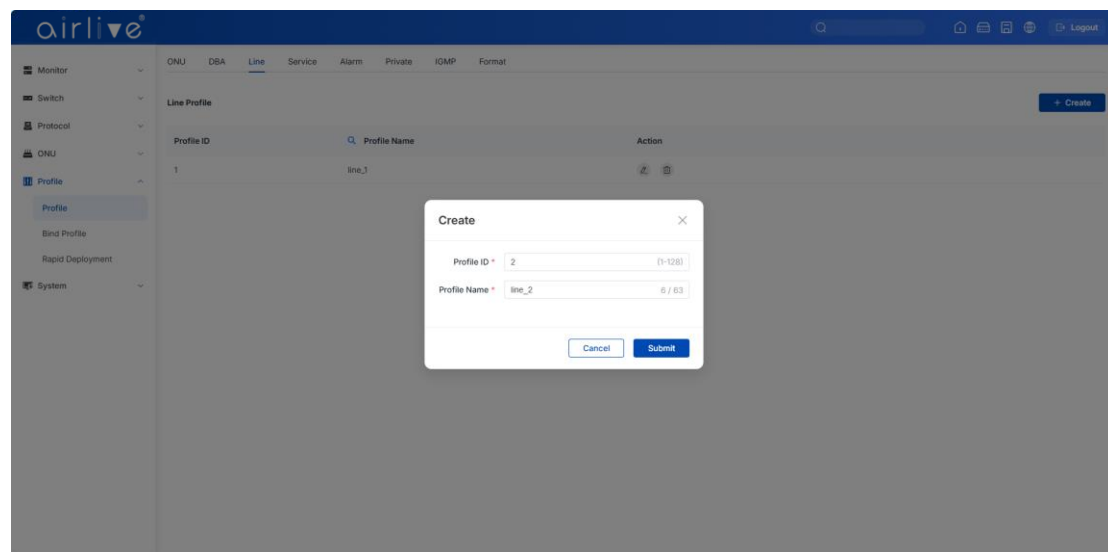


Figure 6.1-7: Create Line Profile

6.1.3.3 Modify

Profile → Line → Line Profile → Modify

In the interface of line profile list, click Modify to edit the profile.

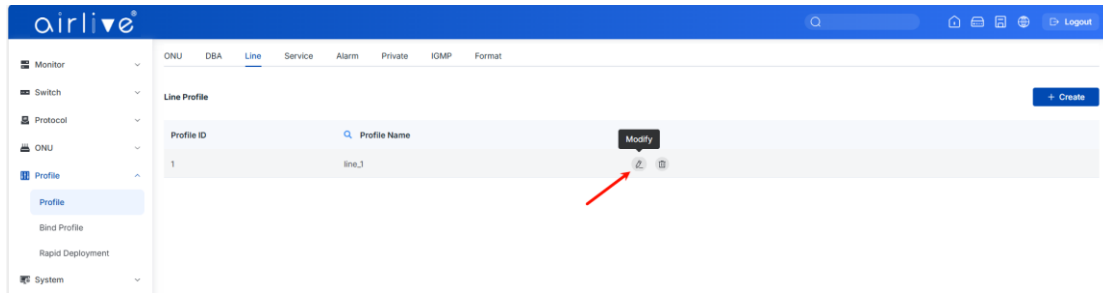


Figure 6.1-8: Modify Line Profile

6.1.3.3.1 Tcont

Profile → Line → Line Profile → Modify → Tcont

Create Tcont ID and bind DBA profile.

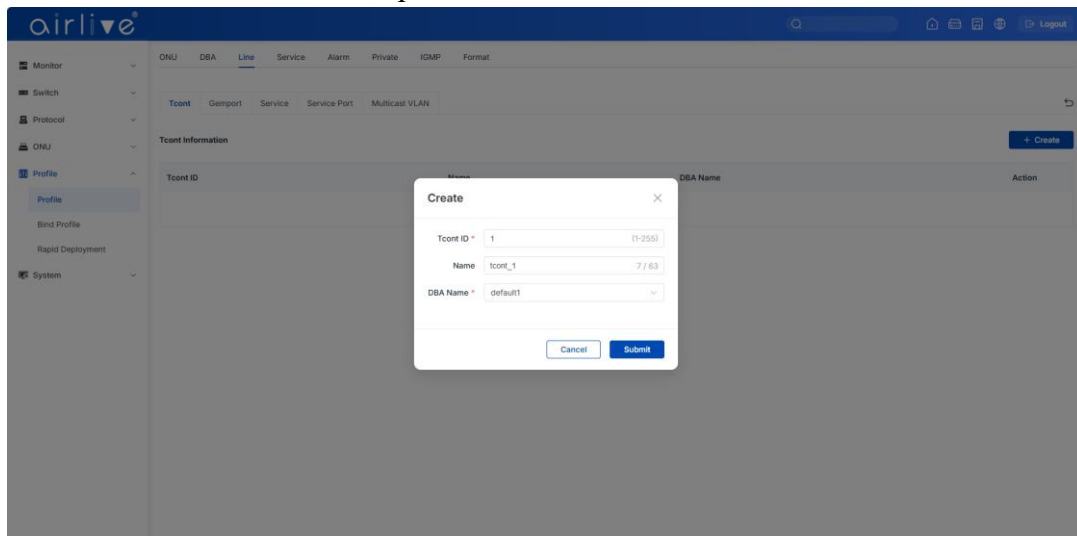


Figure 6.1-9: Create Tcont

6.1.3.3.2 Gemport

Profile → Line → Line Profile → Modify → Gemport

Create Gemport ID and bind Tcont ID.

You can also limit the forwarding speed according to the Gemport ID.

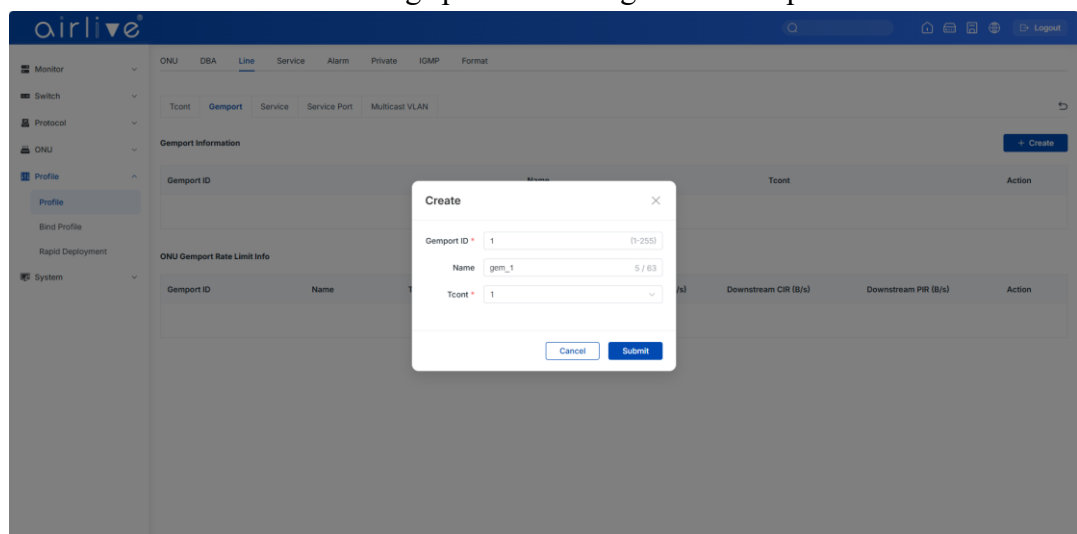


Figure 6.1-10: Create Gemport

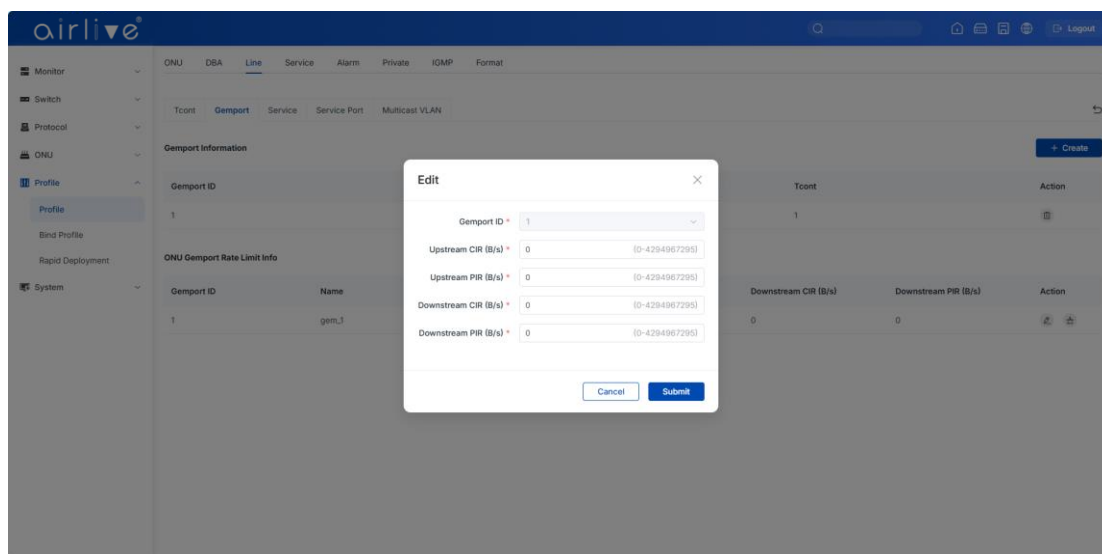


Figure 6.1-11: ONU Gemport Rate Limit Configuration

6.1.3.3.3 Service

Profile → Line → Line Profile → Modify → Service

Create Service, set the VLAN mode and VLAN ID and bind one Gemport ID.

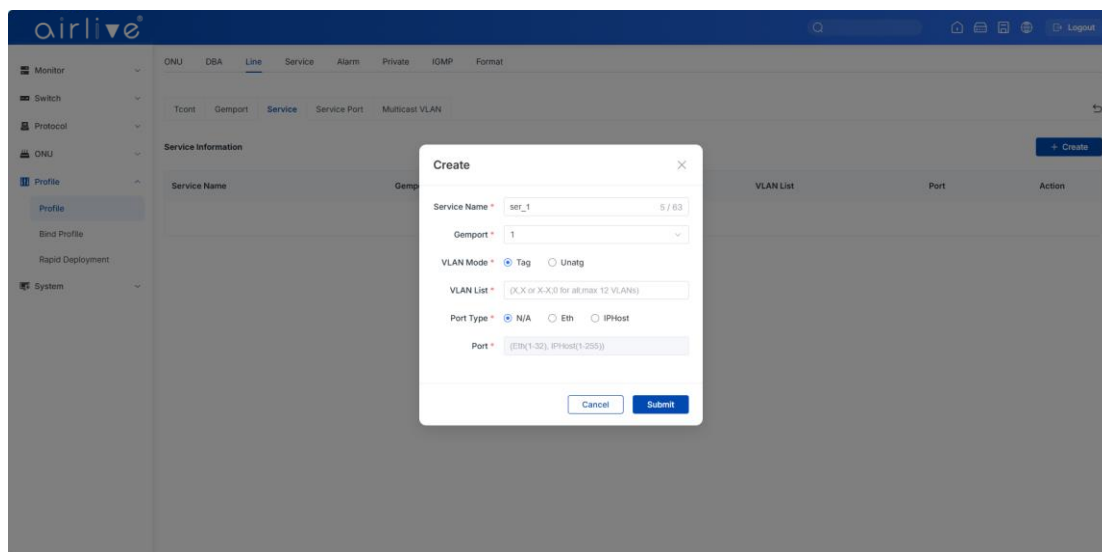


Figure 6.1-12: Create Service

6.1.3.3.4 Service Port

Profile → Line → Line Profile → Modify → Service Port

Create a Service Port, set the user VLAN and translate VLAN and bind one Gemport ID. If VLAN translation is not required, set the 'Translate VLAN' to the same value as the 'User VLAN'.

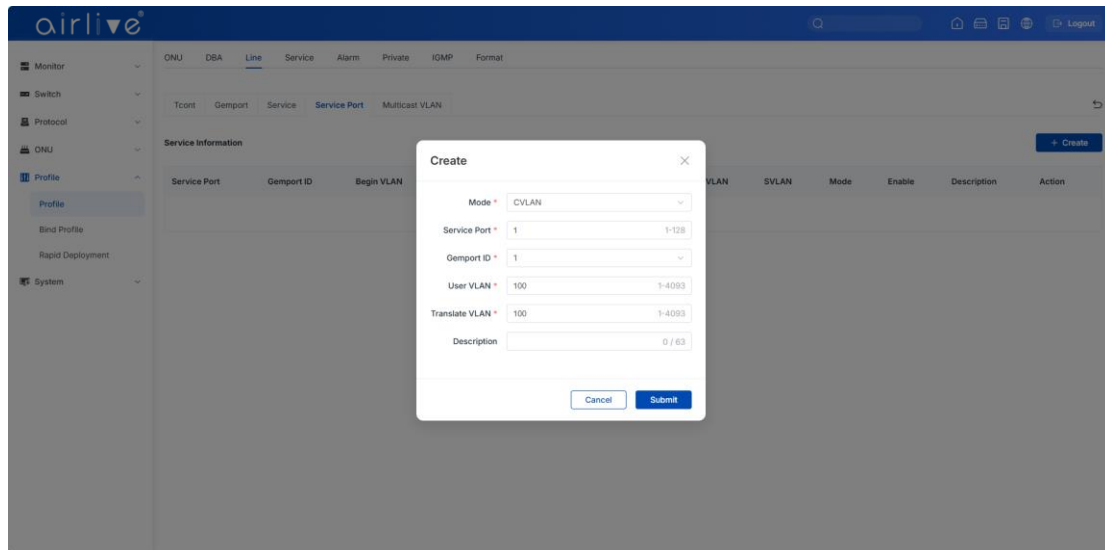


Figure 6.1-13: Create Service Port

6.1.3.3.5 Multicast VLAN

Profile Configuration → Line Profile → Line Profile → Modify → Multicast VLAN

Set the Multicast VLAN of ONU.

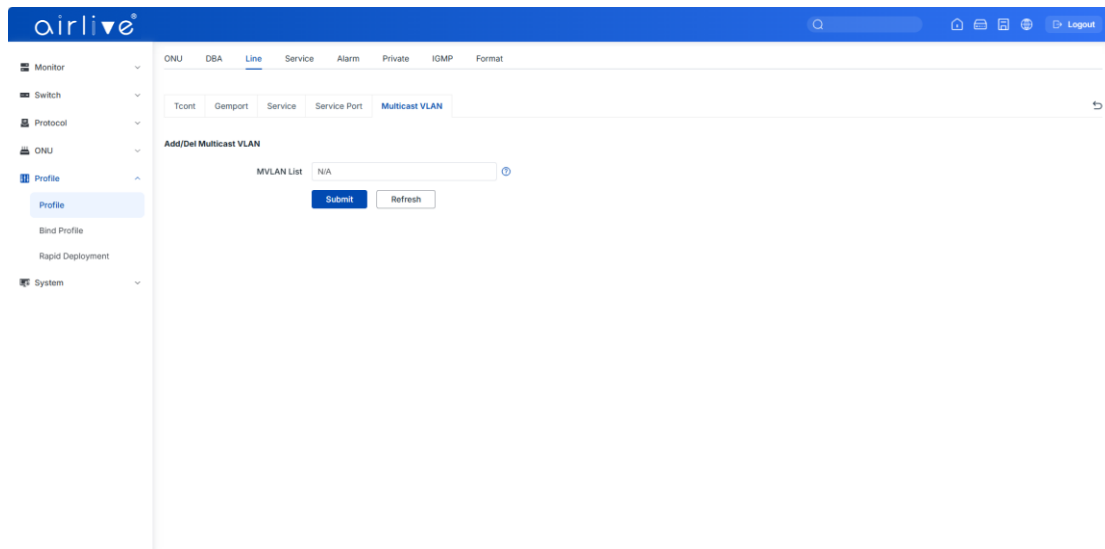


Figure 6.1-14: Configure Multicast VLAN

6.1.4 Service

The Service profile is used to configure the UNI side and multicast of the ONU.

6.1.4.1 Service Profile

Profile → Service → Service Profile

The table displays Service Profile list. You can also do some operations, such as delete and modify.

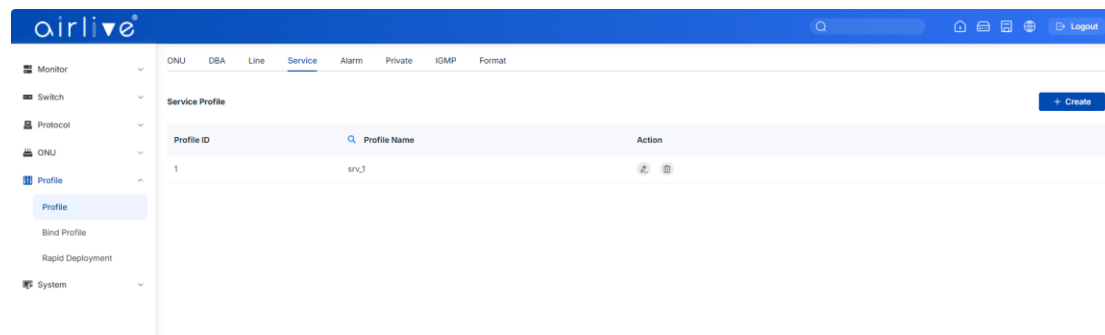


Figure 6.1-15: Service Profile

6.1.4.2 Create

Profile → Service → Create

Create a new Service Profile, set the profile name.

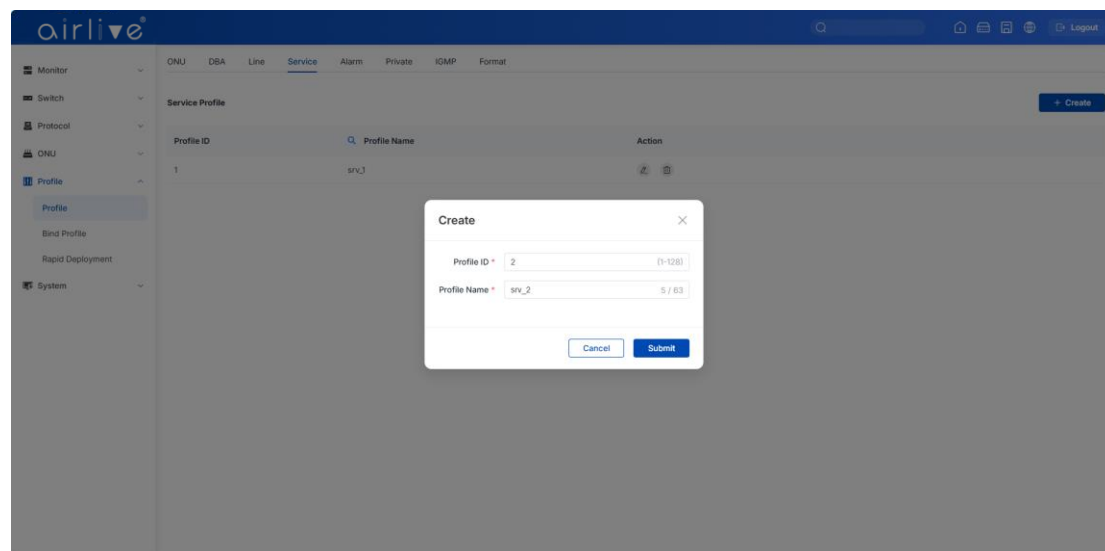


Figure 6.1-16: Create Service profile

6.1.4.3 Modify Line Profile Info

Profile → Service → Service Profile → Modify

In the interface of Service Profile list, click Details&Modify to edit the profile.

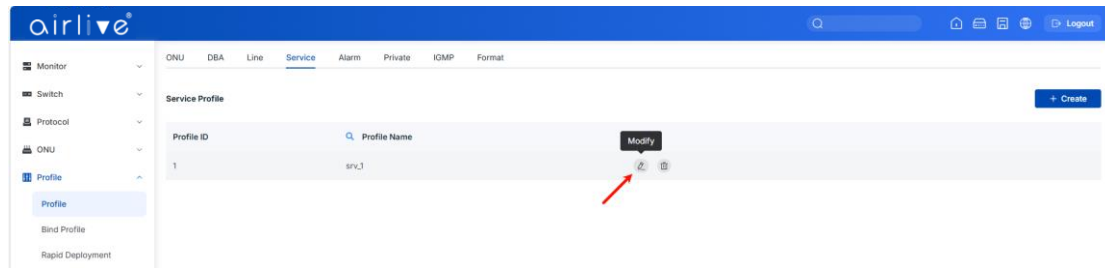


Figure 6.1-17: Modify service profile

6.1.4.3.1 Port VLAN

Profile → Service → Service Profile → Modify → Port VLAN

Set the VLAN mode of the ONU's port. For HGU, need to configure veip 1 transparent; for SFU, configure Ethernet port directly.

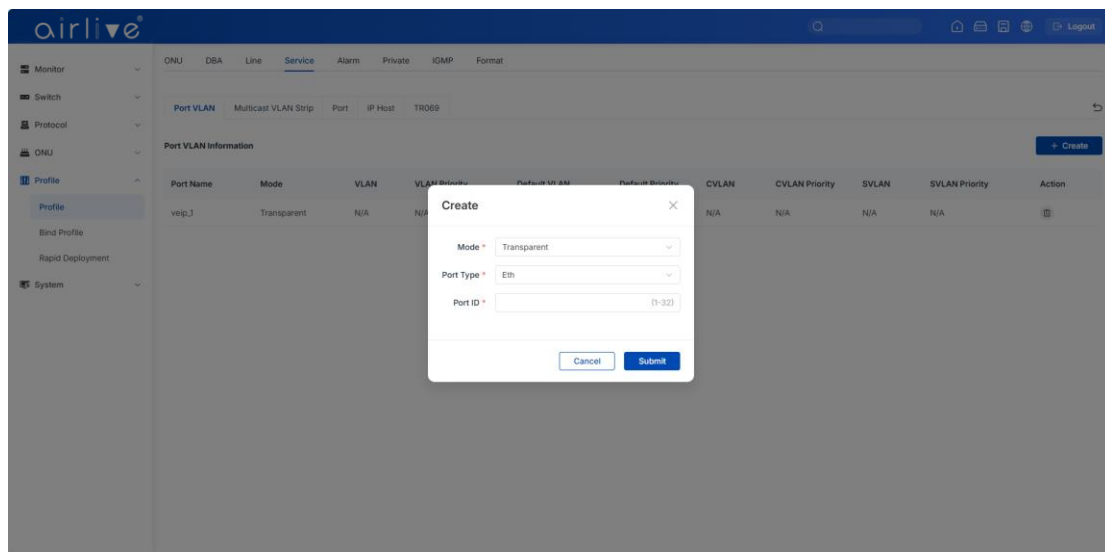


Figure 6.1-18: Port VLAN mode

6.1.4.3.2 Multicast VLAN Strip

Profile Configuration → Service Profile → Service Profile → Modify → Multicast VLAN Strip

Set the Multicast VLAN mode of ONU's port.

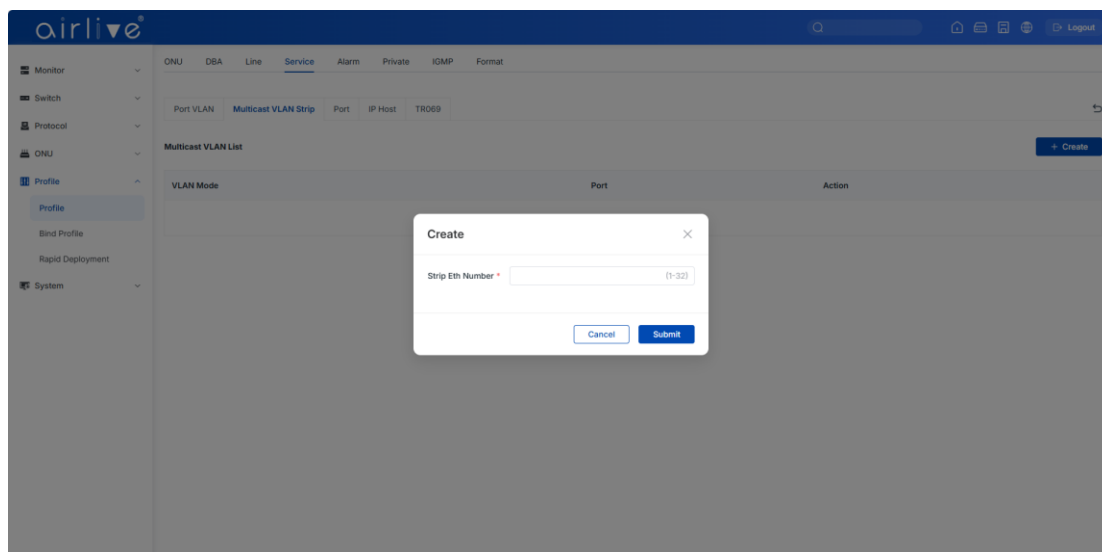


Figure 6.1-19: Port Multicast VLAN Mode

6.1.4.3.3 Port

Profile → Service → Service Profile → Modify → Port

Set the rate negotiation mode of the ONU LAN interface. You can also choose whether to enable ports or not, and even limit the rates of different LAN ports.

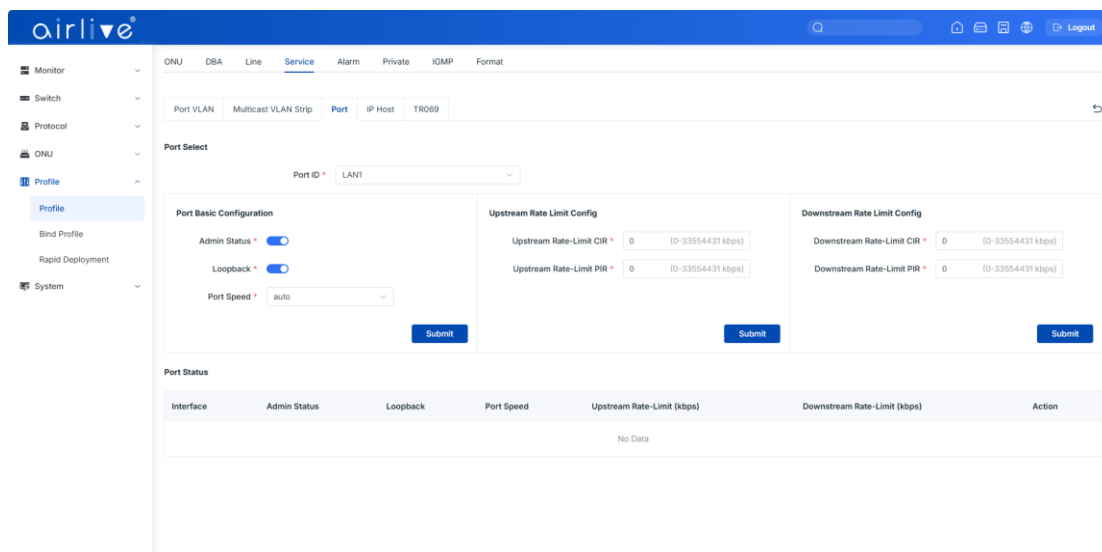


Figure 6.1-20: Port Basic Configuration

6.1.4.3.4 IPhost Config

Profile Configuration → Service Profile → Service Profile → Modify → IPhost Config

Create IPhost for ONU wan connection. IPhost is used for ONU management.

Figure 6.1-21: IPhost Config

6.1.4.3.5 TR069

Profile → Service → Service Profile → Modify → TR069

Configure the public TR069 management configuration based on the service profile.

Figure 6.1-22: TR069

6.1.5 Alarm

Alarm Profile is used to configure the parameters of ONU alarm.

6.1.5.1 Alarm Profile

Profile → Alarm → Alarm Profile

The table displays alarm Profile List.

Profile ID	Profile Name	State	Rx Power Alarm Threshold	Tx Power Alarm Threshold	Sf Threshold / Sd Threshold	Action
1	alarm_profile_1	Enabled	-27 ~ -8	1 ~ 5	5 / 9	

Figure 6.1-23: Alarm Profile List

6.1.5.2 Create

Profile → Alarm → Create

Create new Alarm Profile, set the threshold of alarm generation.

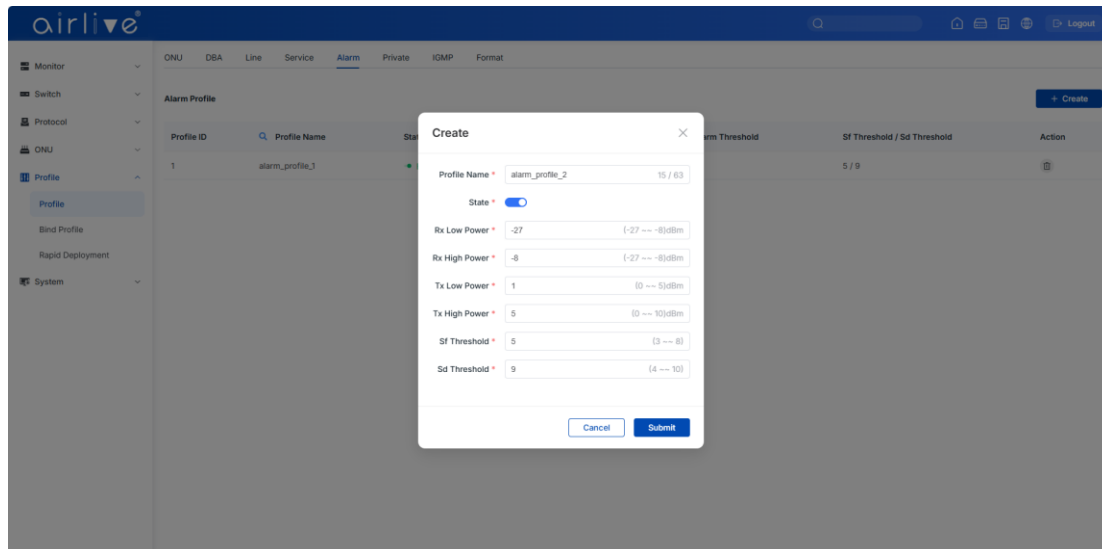


Figure 6.1-24: Create Alarm Profile

6.1.6 Private

Private Profile is the profile which the parameters are configured using private OMCI, including WAN, SIP, WIFI, CATV, DHCP Server, and so on.

6.1.6.1 Private Profile

Profile → Private → Private Profile

The table displays Private Profile list. You can also do some operations, such as delete and modify.

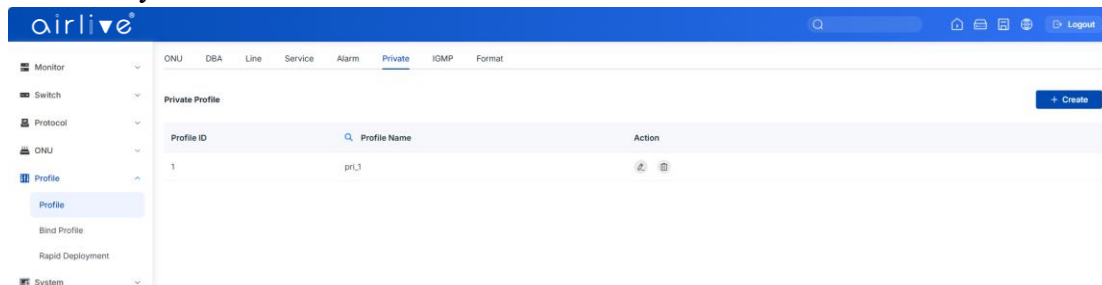


Figure 6.1-25: Private Profile

6.1.6.2 Create

Profile → Private → Create

Create a Private Profile, set the profile name.

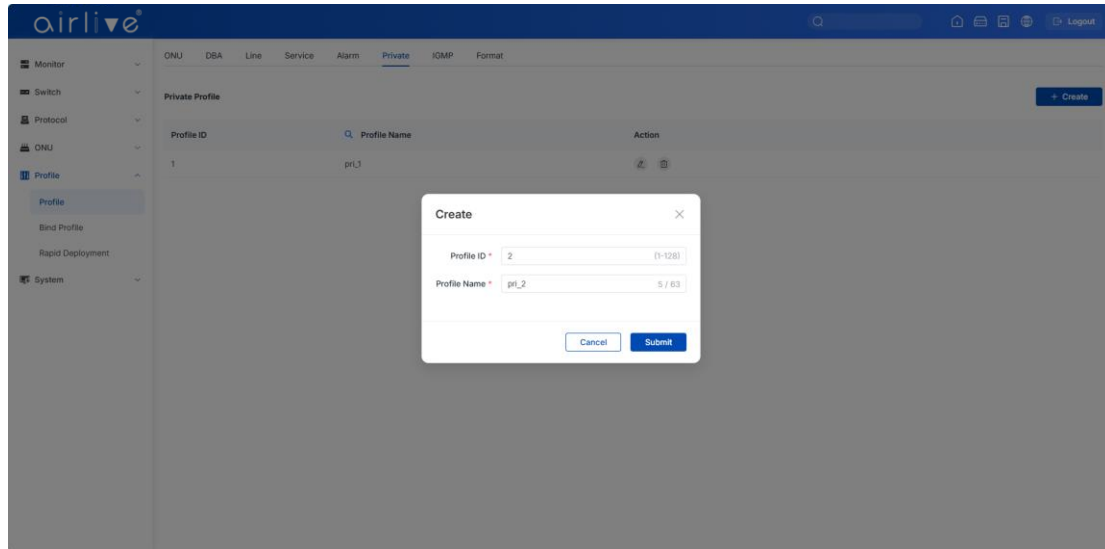


Figure 6.1-26: Create Private Profile

6.1.6.3 Modify

Profile → Private → Private Profile → Modify

In the interface of Private Profile list, click Modify to edit the profile.

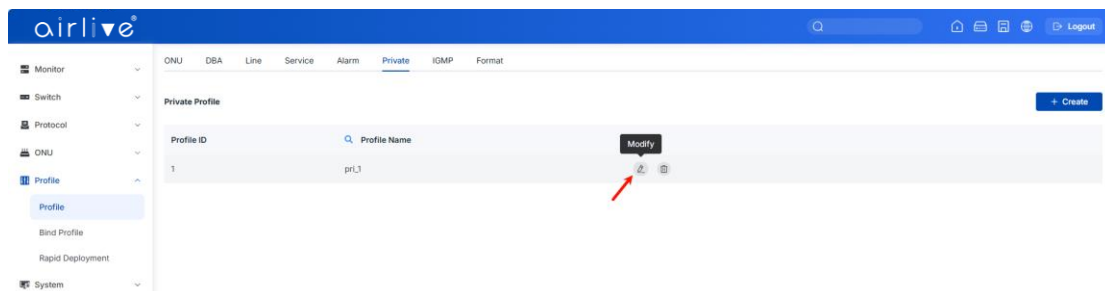


Figure 6.1-27: Modify Private Profile

6.1.6.3.1 Global

Profile → Private → Private Profile → Modify → Global

Global configurations, including CATV switches, speed limits, NAT Type, UPnP Status, and so on.

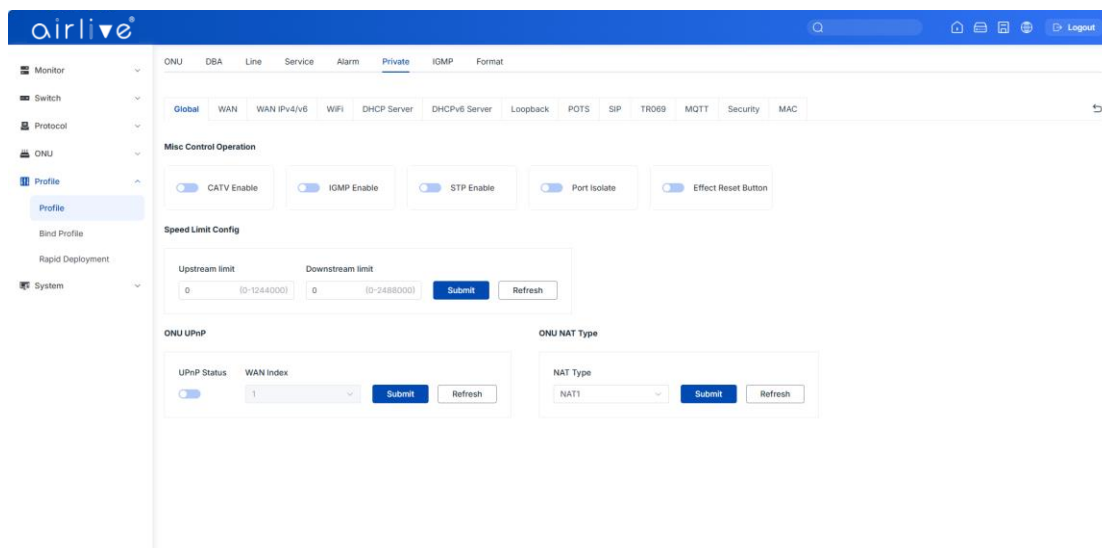


Figure 6.1-28: Misc Configuration

6.1.6.3.2 WAN

Profile → Private → Private Profile → Modify → WAN
Create IPv4 single-stack WAN connection for Private Profile.

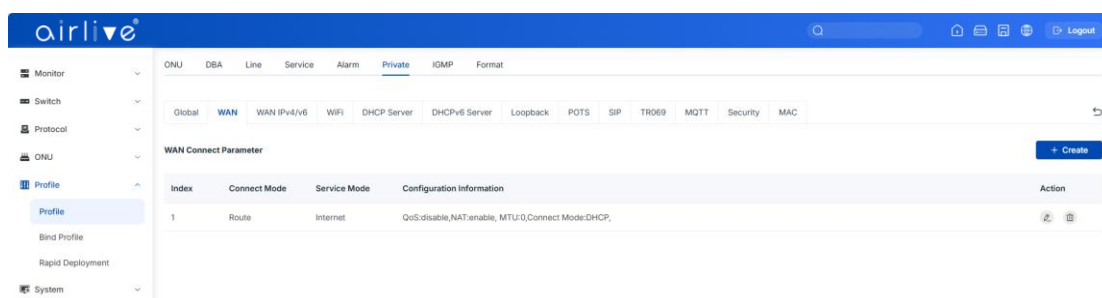


Figure 6.1-29: WAN

6.1.6.3.3 WAN IPv4/v6

Profile → Private → Private Profile → Modify → WAN IPv4/v6
Create IPv4/IPv6 dual-stack WAN connections for Private Profile.

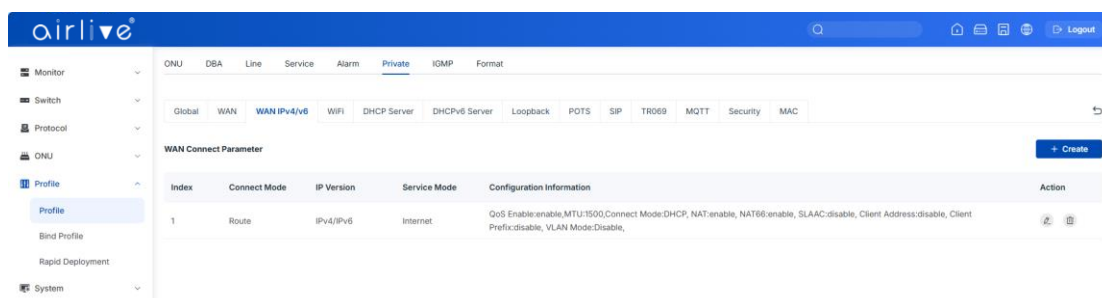


Figure 6.1-30: WAN IPv4/v6

6.1.6.3.4 WIFI

Profile → Private → Private Profile → Modify → WIFI
Configure WIFI parameters for Private Profile.

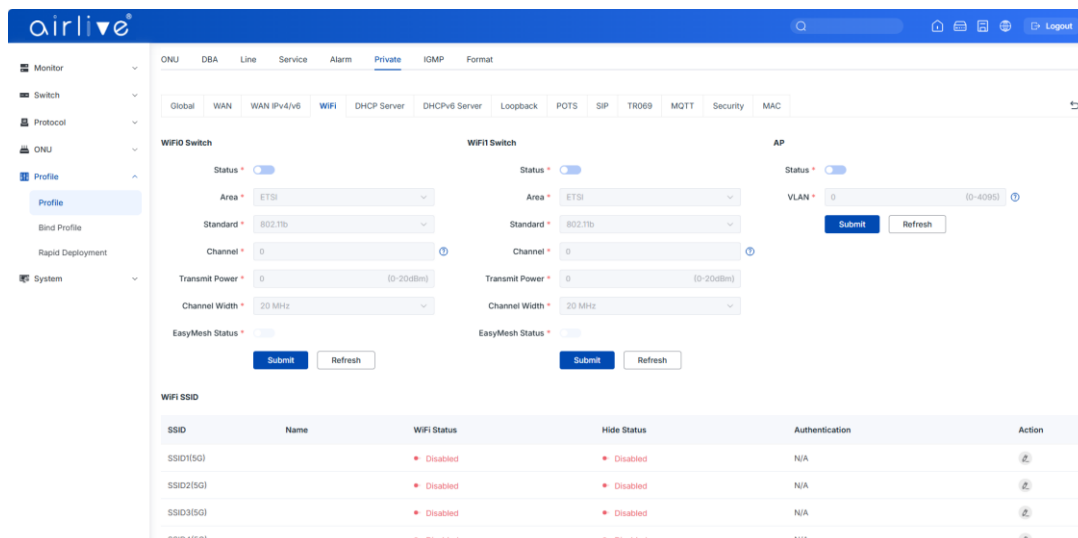


Figure 6.1-31: WIFI

6.1.6.3.5 DHCP Server

Profile → Private → Private Profile → Modify → DHCP Server

Configure IPv4 DHCP server parameters for Private Profile.

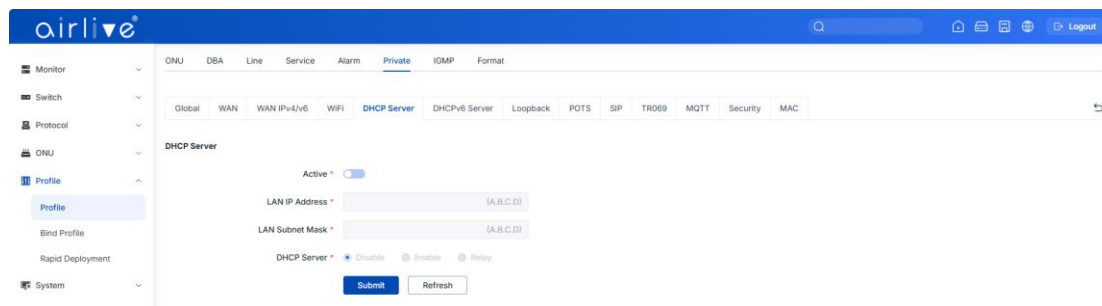


Figure 6.1-32: DHCP Server

6.1.6.3.6 DHCPv6 Server

Profile → Private → Private Profile → Modify → DHCPv6 Server

Configure IPv6 DHCP server parameters for Private Profile.

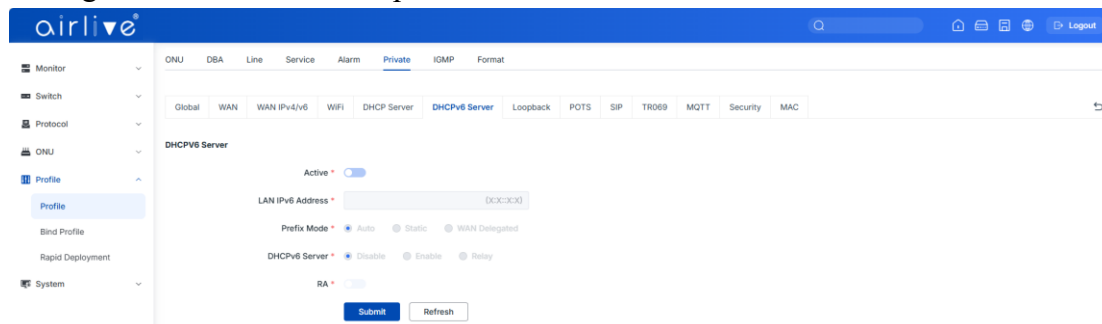


Figure 6.1-33: DHCP Server

6.1.6.3.7 Loopback

Profile → Private → Private Profile → Modify → Loopback

Configure Loopback Detection parameters for Private Profile.

The screenshot shows the 'Loopback Detection' configuration page in the AirLive web interface. The page is under the 'Private' tab, and the 'Loopback' sub-tab is selected. The configuration includes a 'Status' toggle set to 'On', 'Check Interval' of 1000ms, 'Recover Interval' of 60s, 'Ethernet Type' set to 'Ia', 'VLAN ID' set to 0, 'Destination MAC Type' set to 'Broadcast Address', 'Port Closing Time' of 60s, 'Alarm' set to 'Enable', and 'Portdislooped' set to 'Enable'. There are 'Submit' and 'Refresh' buttons at the bottom.

Figure 6.1-34: Loopback

6.1.6.3.8 POTS

Profile → Private → Private Profile → Modify → POTS

Configure POTS parameters for Private Profile.

The screenshot shows the 'POTS' configuration page in the AirLive web interface. The page is under the 'Private' tab, and the 'POTS' sub-tab is selected. The configuration includes a 'POTS Port' dropdown set to 'POTS1', 'SIP User Parameter' section with 'Account active' set to 'Disable', 'User Account' of 0/10, 'User Name' of 0/32, and 'User Password' of 0/16. The 'Advanced Parameter' section includes 'VAD' set to 'Disable', 'Echo cancel' set to 'Disable', 'Input gain(dB)' of 0, 'Output gain(dB)' of 0, and 'Dtmf mode' set to 'Transparent'. There are 'Submit' buttons at the bottom.

Figure 6.1-35: POTS

6.1.6.3.9 SIP

Profile → Private → Private Profile → Modify → SIP

Configure SIP parameters for Private Profile.

The screenshot shows the 'SIP' configuration page in the AirLive web interface. The page is under the 'Private' tab, and the 'SIP' sub-tab is selected. The configuration includes a 'SIP Parameter Configuration' section with fields for 'Manage Port' (5060), 'Proxy Server URL/Port' (0.0.0.0 / 7 / 64), 'Backup Proxy Server URL/Port' (0.0.0.0 / 7 / 64), 'Register Server URL/Port' (0.0.0.0 / 7 / 64), 'Backup Register Server URL/Port' (0.0.0.0 / 7 / 64), 'Out Bound Server URL/Port' (0.0.0.0 / 7 / 64), 'Register Interval' (3600), 'Heartbeat Switch' (Disable), 'Heartbeat Cycle' (0), and 'Heartbeat Count' (0). There are 'Submit' and 'Refresh' buttons. Below is a 'SIP Digit Map Configuration' section with a 'SIP Digit Map Block' field and 'Submit' and 'Refresh' buttons.

Figure 6.1-36: SIP

6.1.6.3.10 TR069

Profile → Private → Private Profile → Modify → TR069

Configure TR069 parameters for Private Profile.

Figure 6.1-37: TR069

6.1.6.3.11 MQTT

Profile → Private → Private Profile → Modify → MQTT

Configure MQTT parameters for Private Profile.

Figure 6.1-38: MQTT

6.1.6.3.12 Security

Profile → Private → Private Profile → Modify → Security

Configure security parameters for Private Profile.

Figure 6.1-39: Security

6.1.6.3.13 MAC

Profile → Private → Private Profile → Modify → MAC

MAC configurations, including Mac age time, PON mac limit, LAN mac limit, and so on.

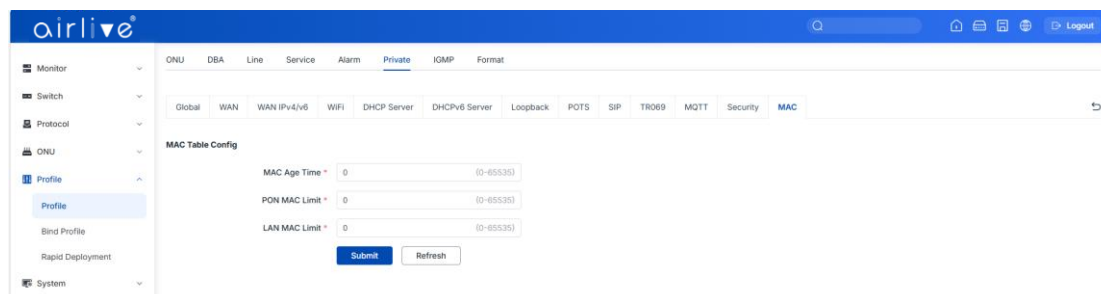


Figure 6.1-40: MAC

6.1.7 IGMP Profile

6.1.7.1 IGMP Profile

Profile → IGMP → IGMP Profile

The table displays IGMP profile list. You can also do some operations, such as delete and modify.

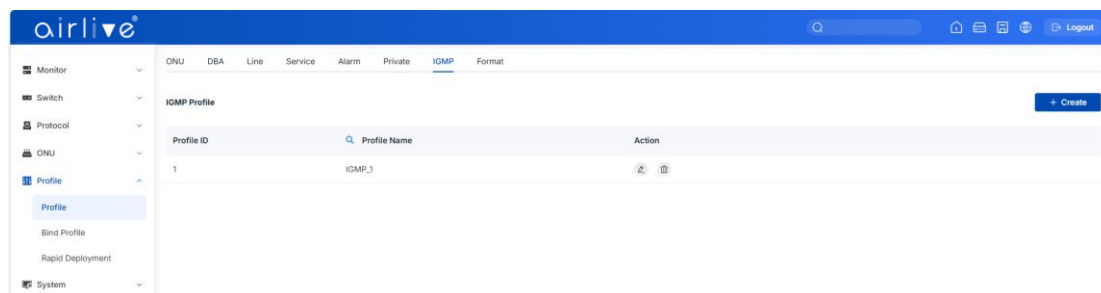


Figure 6.1-41: IGMP Profile list

6.1.7.2 Create

Profile → IGMP → Create profile

Create new IGMP profile, set the profile name.

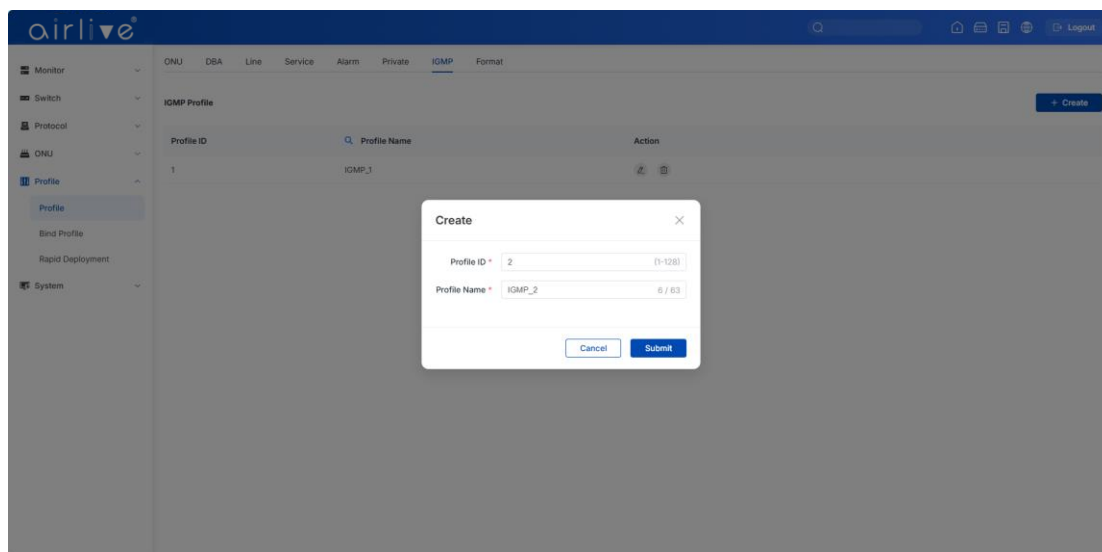


Figure 6.1-42: Create IGMP Profile

6.1.7.3 Modify

Profile → IGMP → IGMP Profile → Modify

In the interface of IGMP profile list, click Modify to edit the profile.

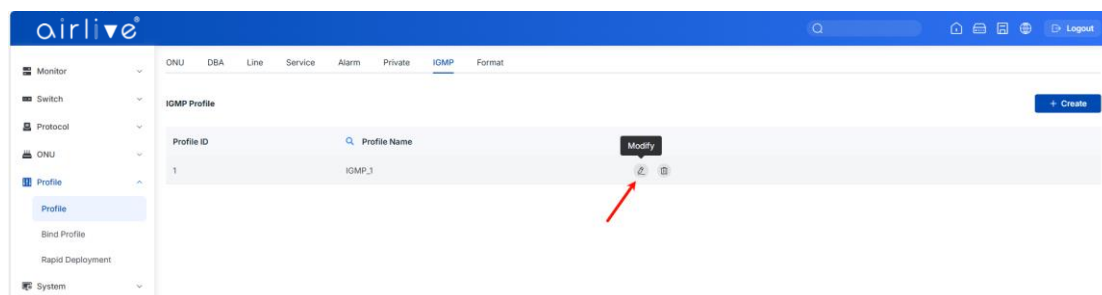


Figure 6.1-43: Modify IGMP profile

Set IGMP/MLD protocol parameters as required.

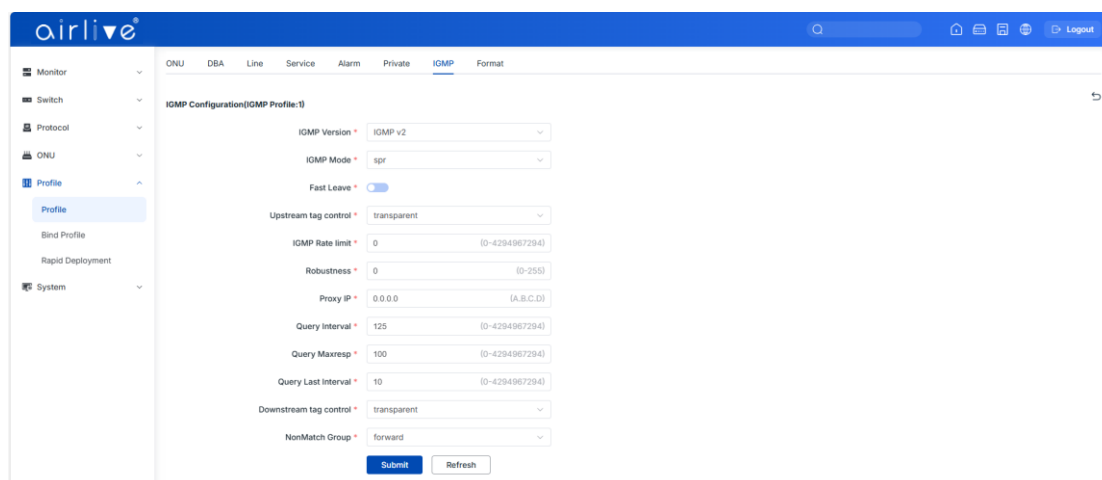


Figure 6.1-44: IGMP Configuration

6.1.8 Format Profile

Format Profile is mainly used to configure the DHCP option format of ONU.

6.1.8.1 Format Profile

Profile→ Format→ Format Profile

The table displays the Format Profile list. You can also perform operations such as deletion and modification.

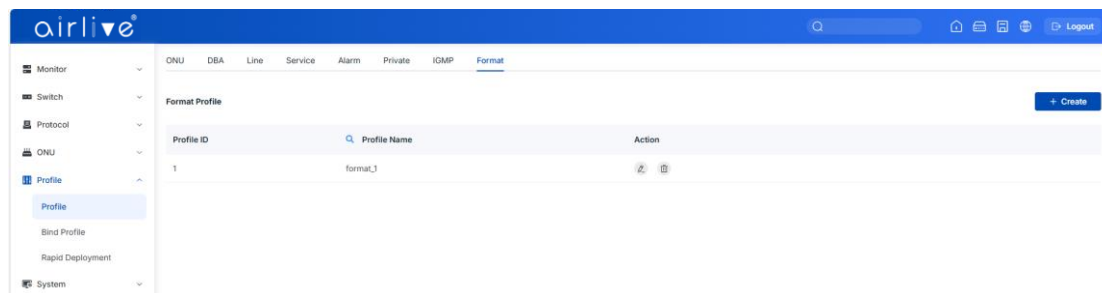


Figure 6.1-45: Format Profile list

6.1.8.2 Create

Profile→ Format→ Create

Create new Format Profile, set the profile name.

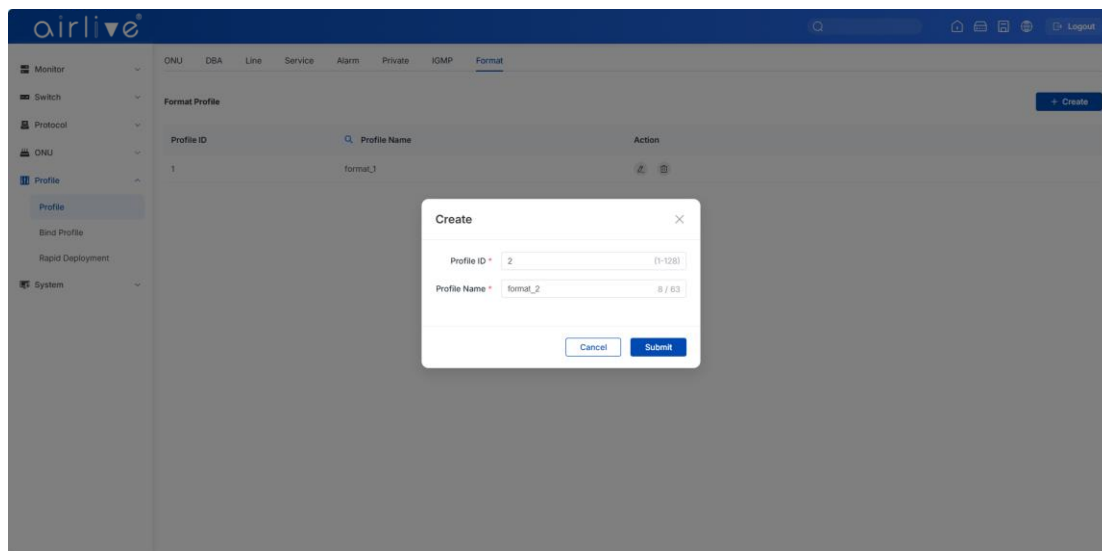


Figure 6.1-46: Create Format Profile

6.1.8.3 Modify

Profile→ Format→ Format Profile → Modify

In the interface of Format Profile list, click Modify to edit the profile.

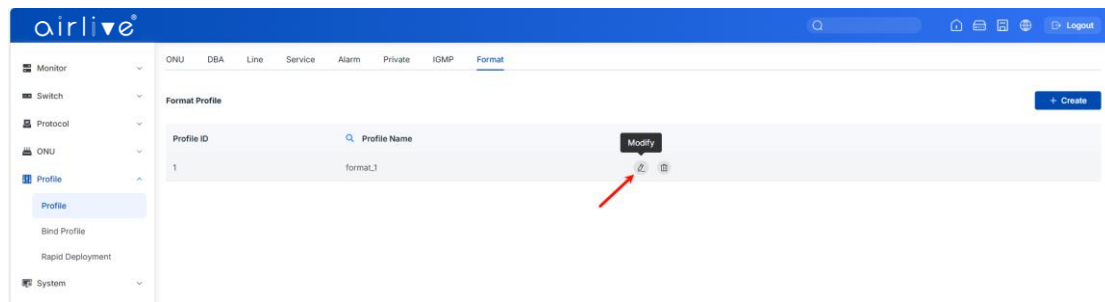


Figure 6.1-47: Modify Format Profile

Set DHCP option parameters as required.

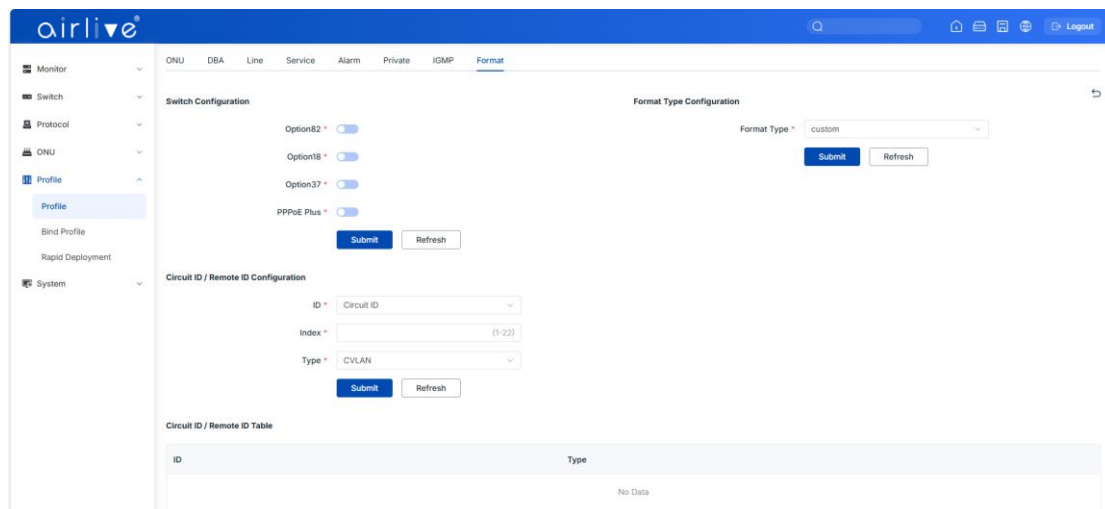


Figure 6.1-48: Format Profile Configuration

6.2 Bind Profile

Profile Configuration → Bind Profile

After Profile is configured, it is necessary to bind it to ONU.

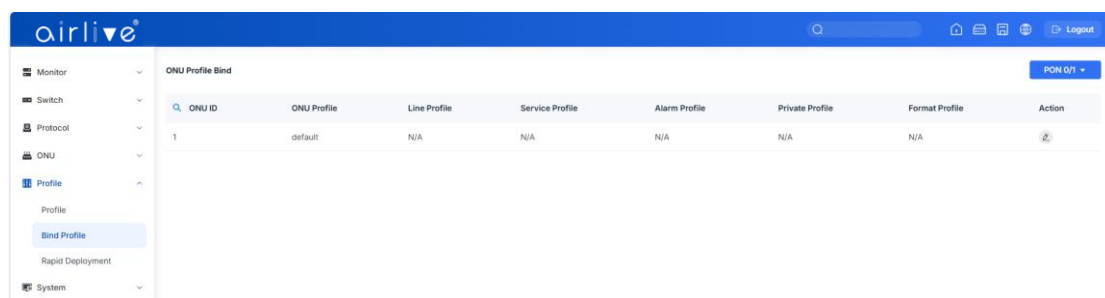


Figure 6.2-1: Bind profile

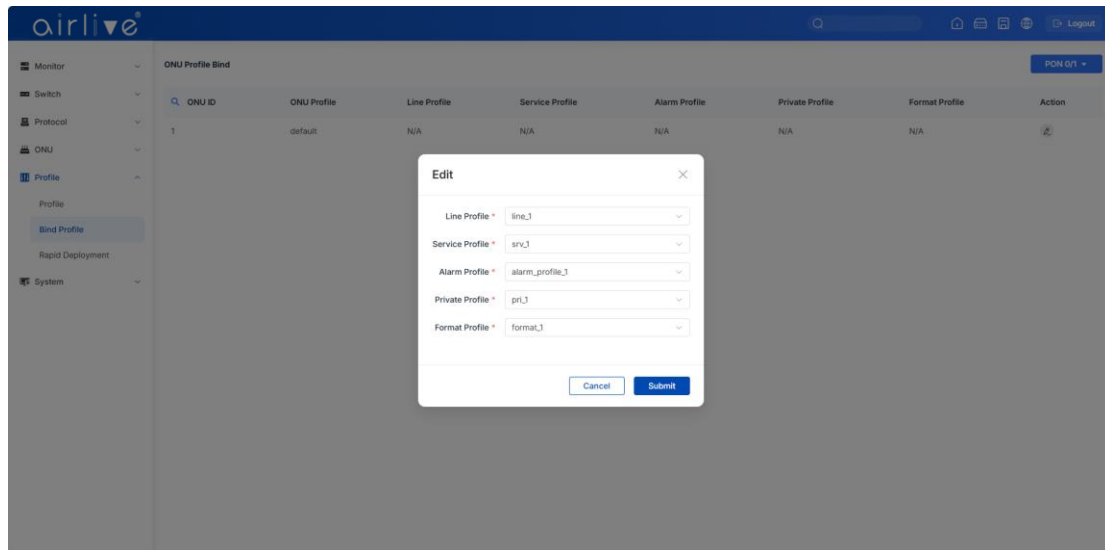


Figure 6.2-2: Modify Profile

6.3 Rapid Deployment

The ONU rapid deployment feature includes three sub-items: Pre-set Profile, Application, and Deployment Status. Once a Pre-set Profile is configured, select it from the Application menu and bind it to a PON port. ONUs connected to that port will then go online and have the configuration applied. You can verify the binding and its effectiveness in the Deployment Status.

6.3.1 Pre-set Profile

6.3.1.1 Pre-set Profile

Profile → Rapid Deployment → Pre-set Profile → Pre-set Profile

This page displays the current list of Pre-set Profiles. Users can view details or delete the created Pre-set Profiles .

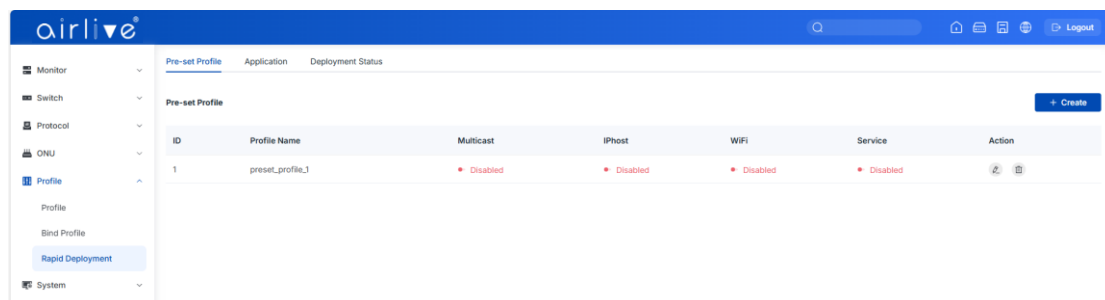


Figure 6.3-1: Pre-set Profile Information

6.3.1.2 Create

Profile → Rapid Deployment → Pre-set Profile → Create

Specify the profile ID and name. Please note that the ID and name must be unique .

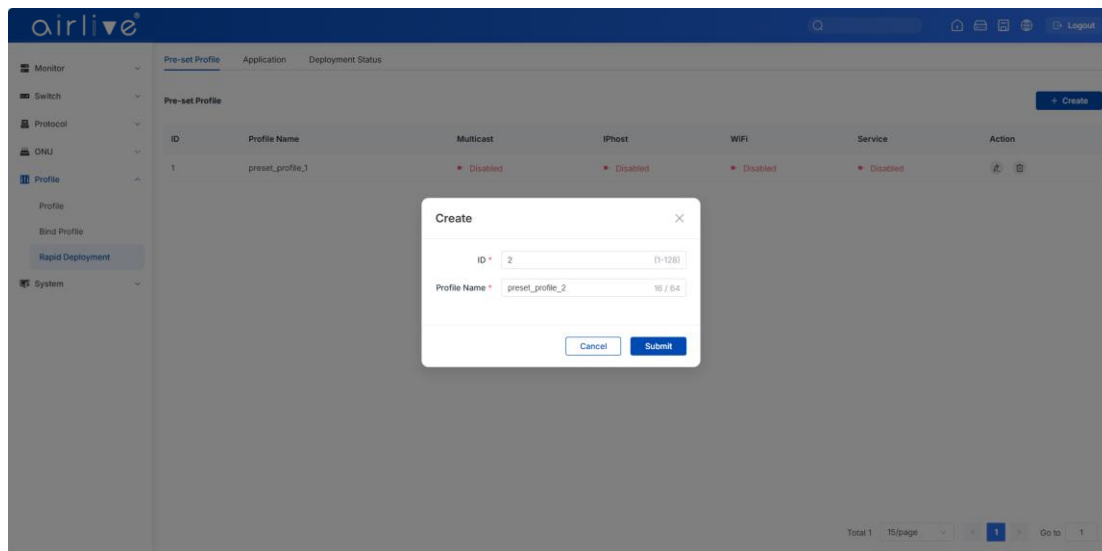


Figure 6.3-2: Create

6.3.1.3 Edit

Profile → Rapid Deployment → Pre-set Profile → Edit

In the interface of Pre-set Profile list, click Edit to edit the profile.

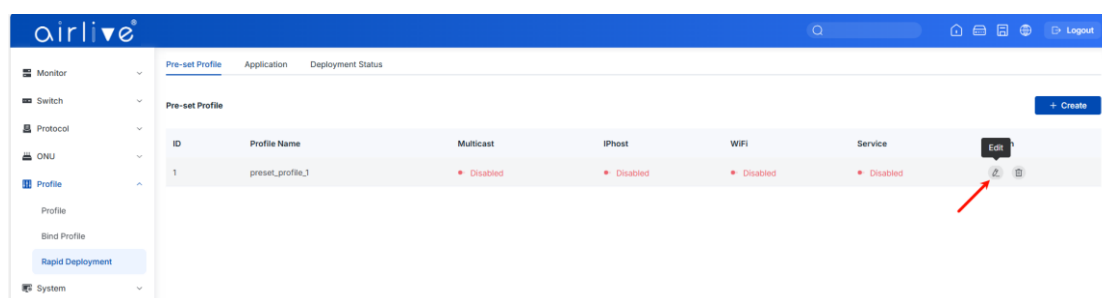


Figure 6.3-3: Edit

6.3.1.3.1 Global

Global Configuration contains the following information:

- (1) Display PVID, Tag VLAN, Untag VLAN and other information based on the port;
- (2) Modify the PVID and VLAN mode of an existing VLAN on a port;
- (3) Add a new VLAN;
- (4) Modify the VLAN IP;

The content in the global configuration step will take effect on the OLT immediately after configuration, and users can configure it according to the actual requirements.

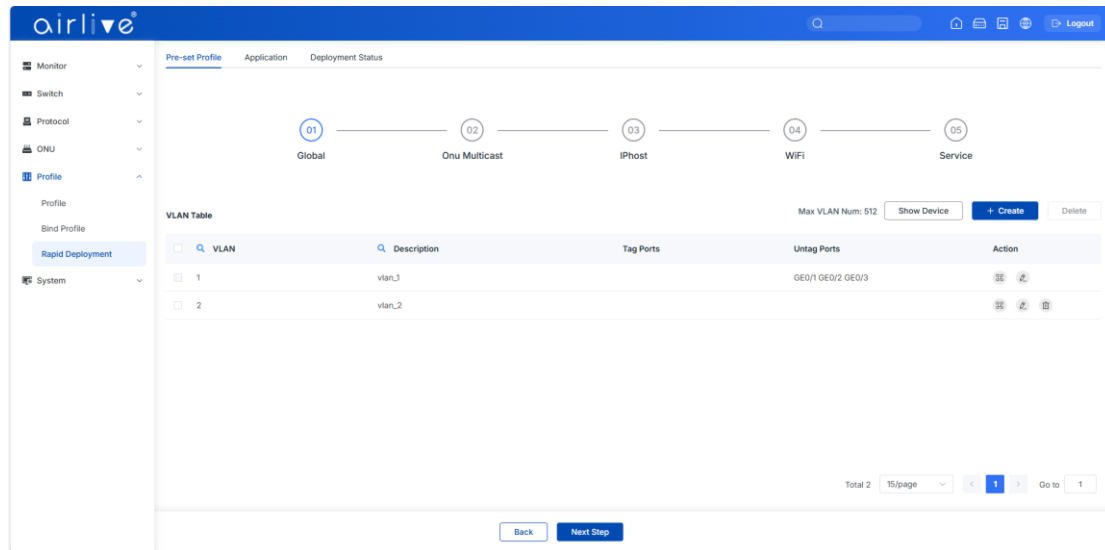


Figure 6.3-4: Global Configuration

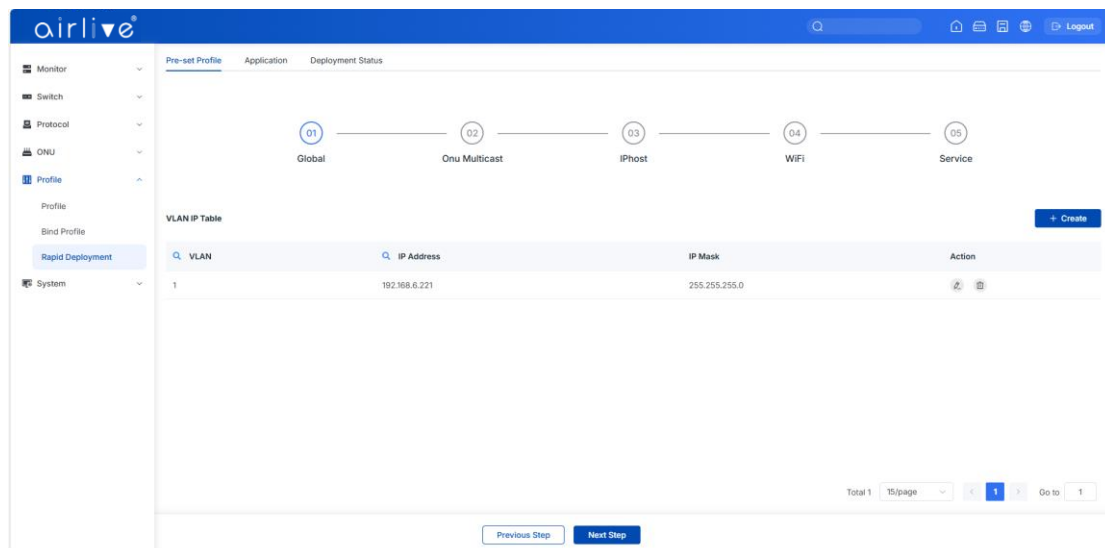


Figure 6.3-5: Global Configuration

6.3.1.3.2 ONU Multicast

By default, this is not configured. It can also be modified and adjusted according to the actual application scenarios. Users can refer to the general configuration of ONU Multicast.

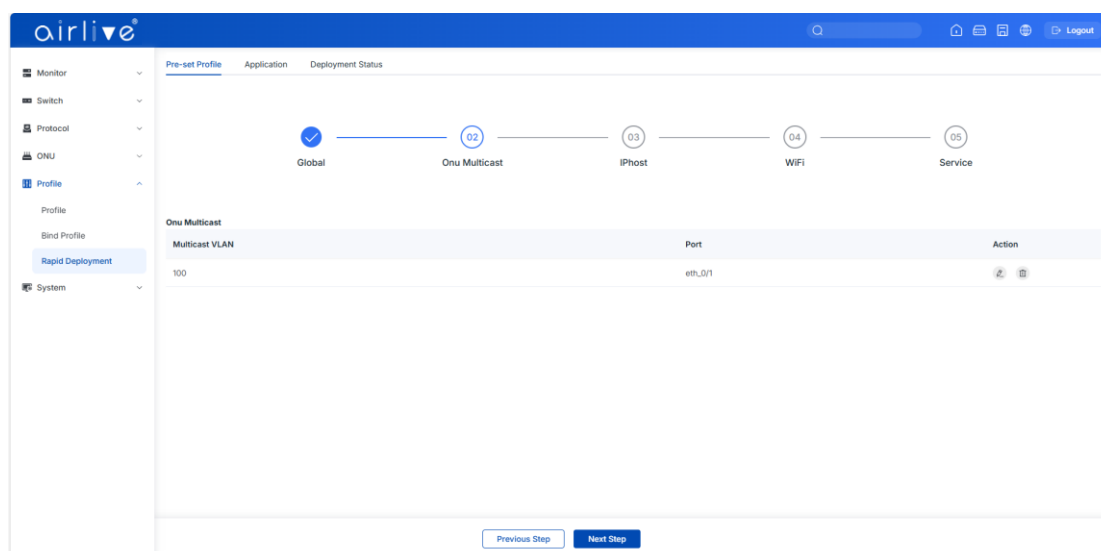


Figure 6.3-6: ONU Multicast Configuration

6.3.1.3.3 IPhost

By default, this is not configured. It can also be modified and adjusted according to the actual application scenarios. Users can refer to the general configuration of ONU IPhost. Currently, only one IPhost is supported.

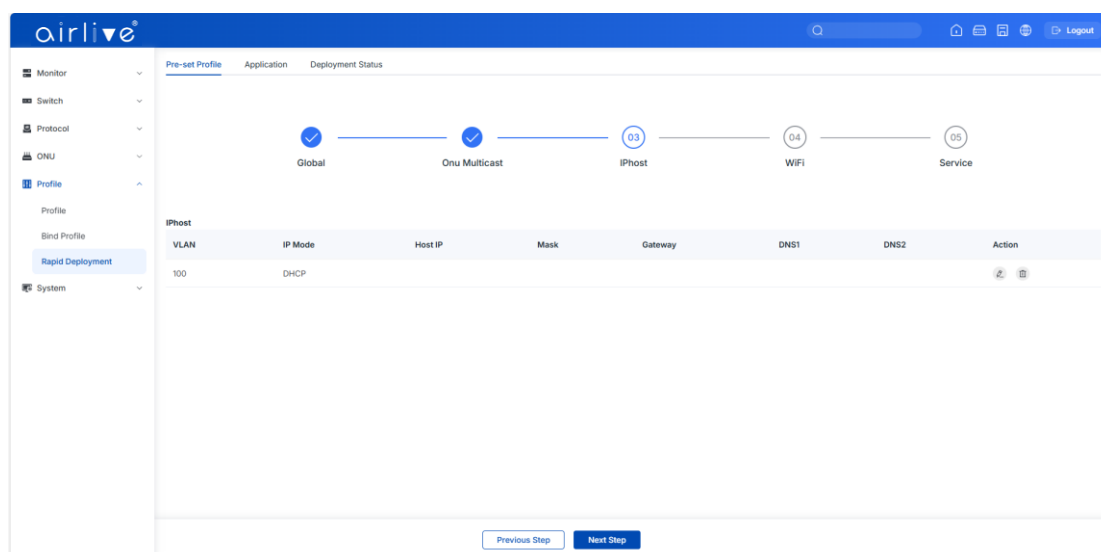


Figure 6.3-7: IPhost Configuration

6.3.1.3.4 WIFI

By default, this is not configured. It can also be modified according to actual application scenarios. Users can refer to the general Wi-Fi configuration for ONUs.

Note: You need to configure the SSID name. If you do not configure the password, the authentication mode will be set to open by default.

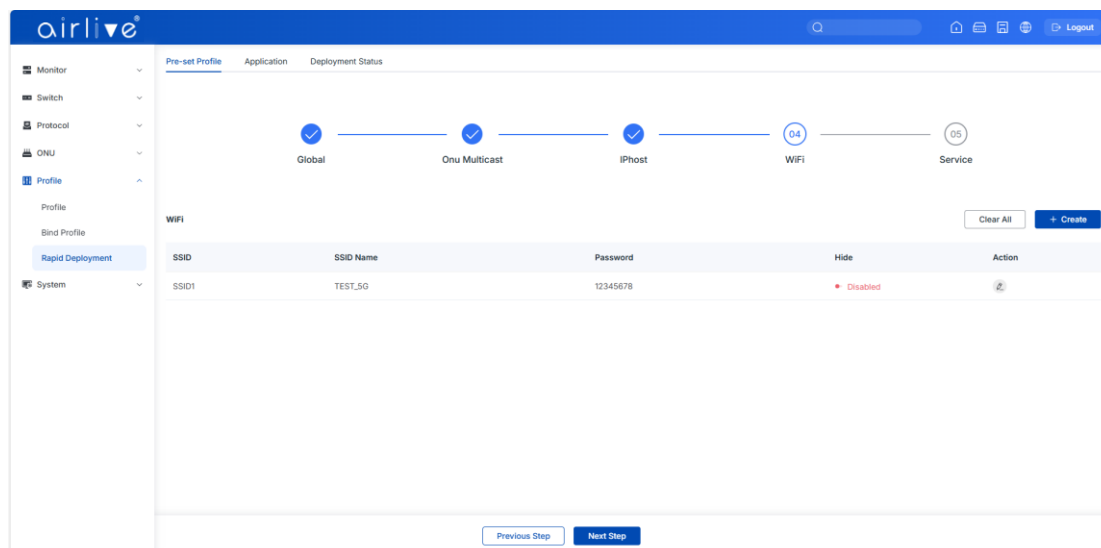


Figure 6.3-8: WIFI Configuration

6.3.1.3.5 Service

(1) You need to configure the Service Mode and VLAN ID. The Service Mode defines the service type, such as Internet, Multicast, Tr069, VoIP and Other. The VLAN ID specifies the VLAN to which the service applies. Port binding can be configured as needed.

(2) If a Service is configured, the Tcont, Gempport, Service, PortVLAN, WAN and other Services will be automatically configured when the ONU goes online. For SFU, PortVLAN is automatically configured based on the port binding information in the Service configuration and the number of ports on the SFU;

For HGU, PortVLAN is set to Transparent by default; if the ONU supports private WAN, the WAN service is automatically configured according to the settings.

Currently, a maximum of 5 services can be configured at the same time.

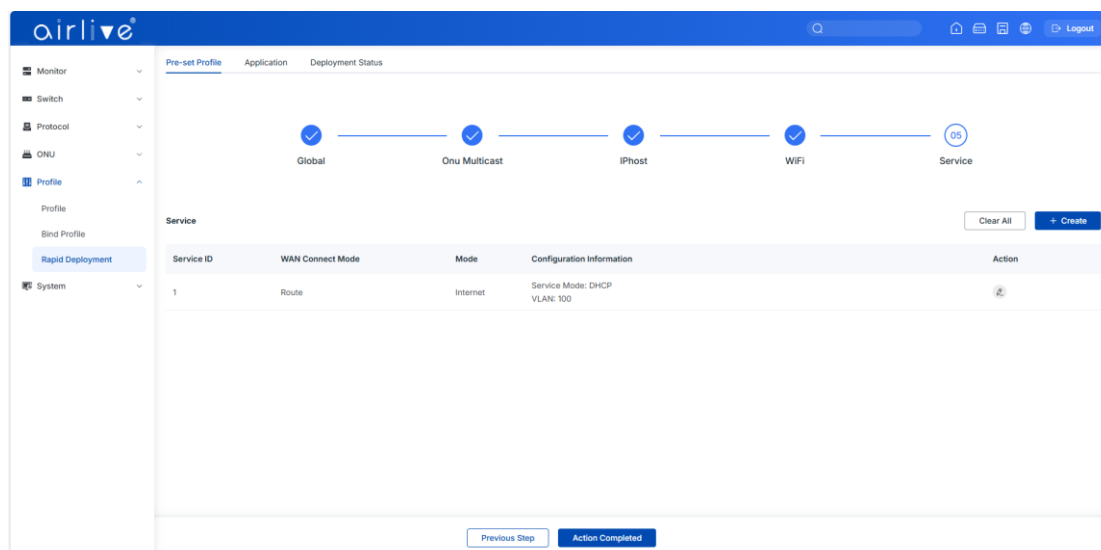


Figure 6.3-9: Service Configuration

6.3.2 Application

The function of the Application interface is to configure binding rules for Pre-set Profiles. Select the corresponding Match rule to validate the ONUs under the PON port that satisfy the matching conditions.

6.3.2.1 Information

Profile → Rapid Deployment → Application → Application

This page displays the current list of created Application, which can be Enabled or Disabled and deleted for a specific Application. The Modify function is not supported currently.

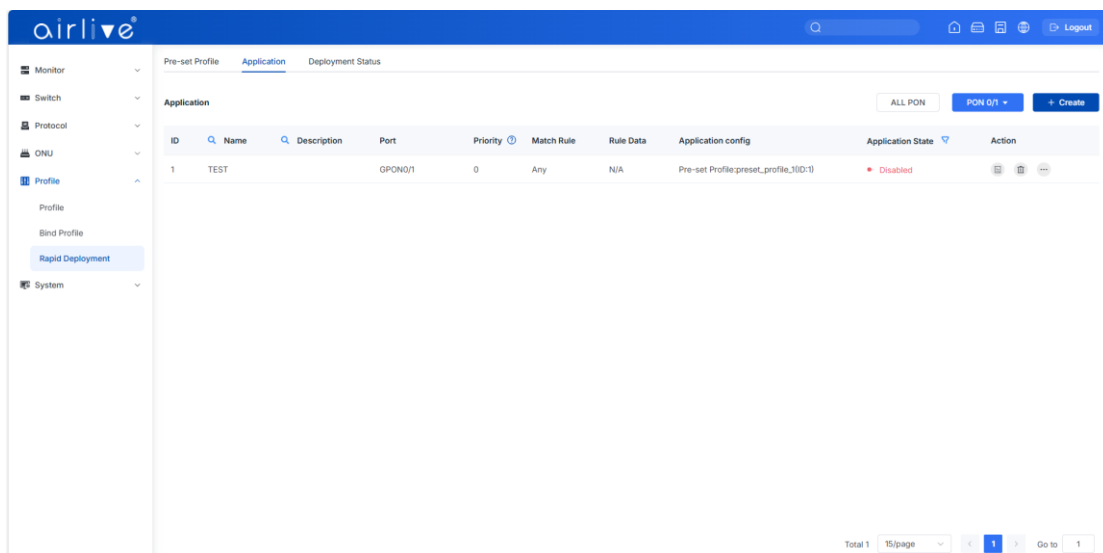


Figure 6.3-10: Application Information

6.3.2.2 Create

Profile → Rapid Deployment → Application → Create

- (1). Specify the Application ID and name. These two items must be unique.
- (2). Specify the priority of the Application rule to take effect. When more than one Application rule exists under the same PON port, the one with the highest priority (0 is the highest priority) will be matched first. Only one Application of the same priority can exist under the same PON port.
- (3) Match Rule includes Any, Fuzzy_Equid, Exact_Equid, ONU_ID, SN, Vendor_ID.
 - Any means any ONU;
 - Fuzzy_Equid means Fuzzy equipment ID of ONU;
 - Exact_Equid means Exact equipment ID of ONU;
 - ONU_ID means ONU ID list of ONU, such as 1,3,5-10,12,16, etc.
- (4). Select the corresponding Preset-Profile configuration.

(5). Select Enable or Disable for the created application; if Disabled, the Application will not be matched when ONU goes online, but will be skipped directly.

The screenshot displays the 'Create Application' modal window in the AirLive web interface. The modal has the following fields and values:

- ID: 1 (range 1-128)
- Name: TEST (range 0-64)
- Description: (range 0-64)
- Slot: SLOT 0
- Port: GPON0/1
- Priority: 0
- Match Rule: Any
- Application config Type: Preset-Profile
- Pre-set Profile: preset_profile_1
- Application State: Enabled (toggle)

The background shows the 'Application' table with one entry:

ID	Name	Description	Pre-set Profile	Application State	Action
1	TEST		GPON0/1	Enabled	

Figure 6.3-11: Create Application

6.3.3 Deployment Status

This page displays the results of the ONU Rapid Deployment configuration taken effect, and also supports users to filter the results as needed.

The screenshot displays the 'Deployment Status' page in the AirLive web interface. The table shows the following data:

ID	ONU ID	Status	Description	ONU Model	Mode	Information	Deployment Status
1	GPON0/1	Online	GPON0/1	V452	SN	GPON002634bc	N/A

Figure 6.3-12: Deployment Status

Chapter 7 System Configuration

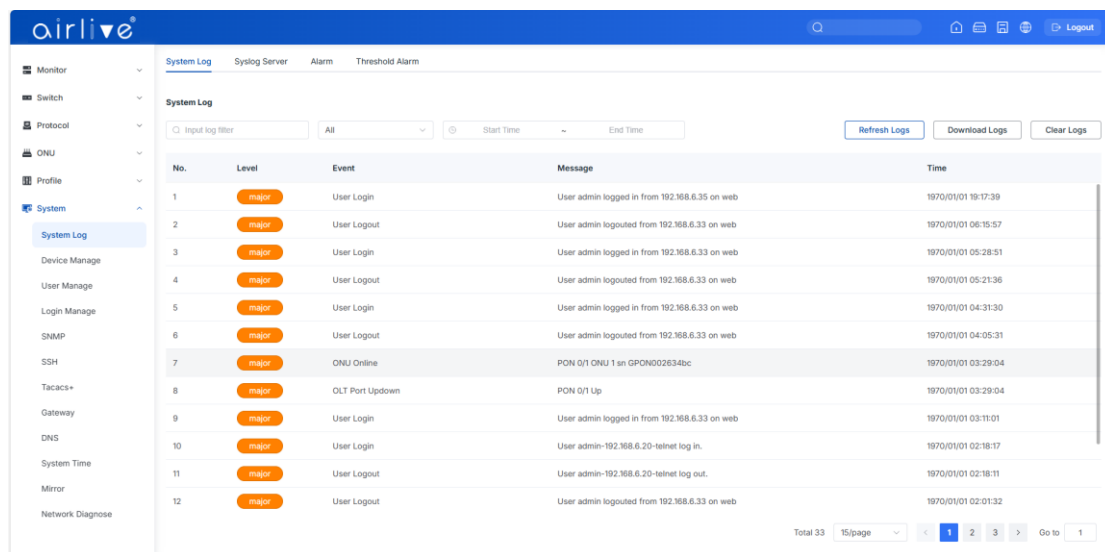
This chapter is about the global management of OLT.

7.1 System Log

7.1.1 System Log

System → System Log

This page displays OLT system alarms and events.



No.	Level	Event	Message	Time
1	major	User Login	User admin logged in from 192.168.6.35 on web	1970/01/01 19:17:39
2	major	User Logout	User admin logged out from 192.168.6.33 on web	1970/01/01 06:15:57
3	major	User Login	User admin logged in from 192.168.6.33 on web	1970/01/01 05:28:51
4	major	User Logout	User admin logged out from 192.168.6.33 on web	1970/01/01 05:21:36
5	major	User Login	User admin logged in from 192.168.6.33 on web	1970/01/01 04:31:30
6	major	User Logout	User admin logged out from 192.168.6.33 on web	1970/01/01 04:05:31
7	major	ONU Online	PON O1 ONU 1 sn GPON002634bc	1970/01/01 03:29:04
8	major	OLT Port Updown	PON O1 Up	1970/01/01 03:29:04
9	major	User Login	User admin logged in from 192.168.6.33 on web	1970/01/01 03:11:01
10	major	User Login	User admin-192.168.6.20-telnet log in.	1970/01/01 02:18:17
11	major	User Logout	User admin-192.168.6.20-telnet log out.	1970/01/01 02:18:11
12	major	User Logout	User admin logged out from 192.168.6.33 on web	1970/01/01 02:01:32

Figure 7.1-1: System Log

7.1.2 Syslog server

System → Syslog server

This page can configure the syslog server.

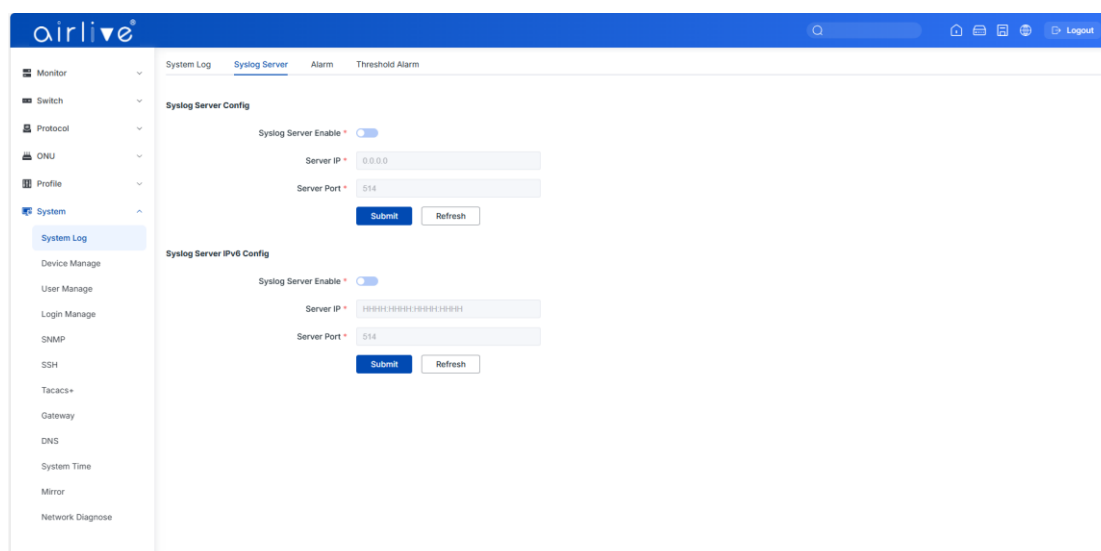


Figure 7.1-2: System Log

7.1.3 Alarm

System → System Log → Alarm

It contains all the Alarms of OLT. User can choose the different Alarms to "Print", "Record", "Trap" and "Remote".

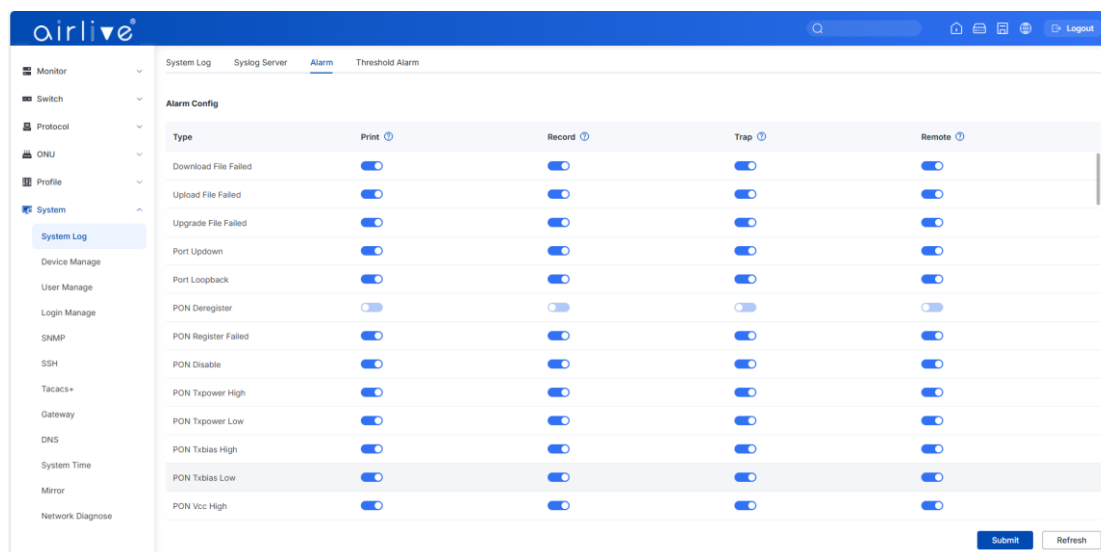


Figure 7.1-3: Alarm

Options	Illustration
Print	Alarm and event show in console and telnet, but not show in syslog, EMS and remote log server.
Record	Alarm and event show in syslog, but not show in console, telnet, EMS and remote log server.
Trap	Alarm and event show in EMS, but not show in console, telnet, syslog and

	remote log server.
Remote	Alarm and event show in remote log server, but not show in console, telnet, syslog and EMS.

7.1.4 Threshold Alarm

System → System Log → Threshold Alarm

This page is used to configure OLT temperature threshold, CPU-usage threshold and memory- usage threshold, PON optical threshold.

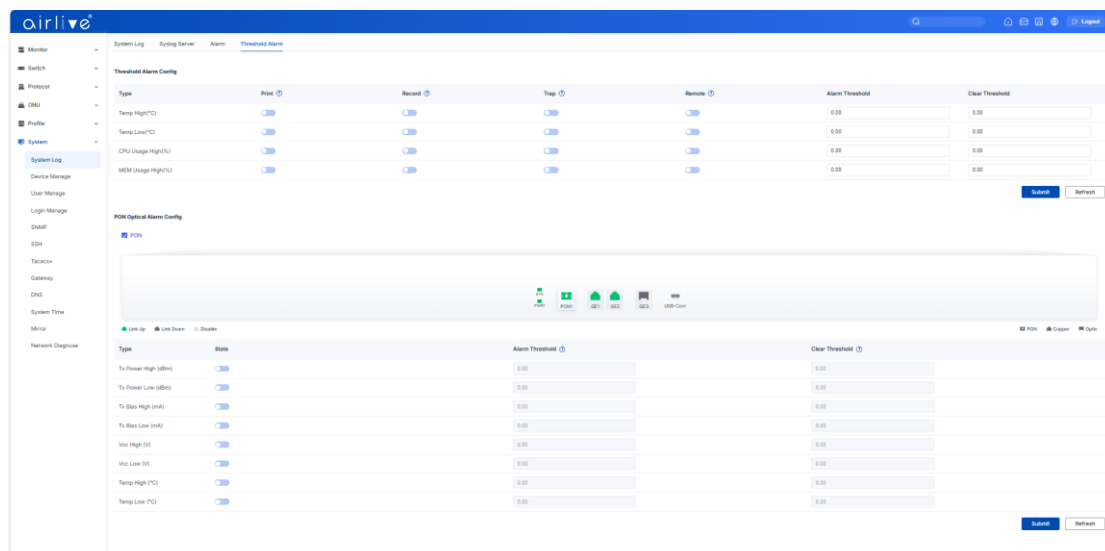


Figure 7.1-4: Threshold Alarm

7.2 Device Management

7.2.1 Firmware Upgrade

System → Device Management → Firmware Upgrade

You can upgrade the OLT firmware on this page. OLT will reboot automatically with the new firmware after upgraded when you select the option “Upgrade And Reboot”.

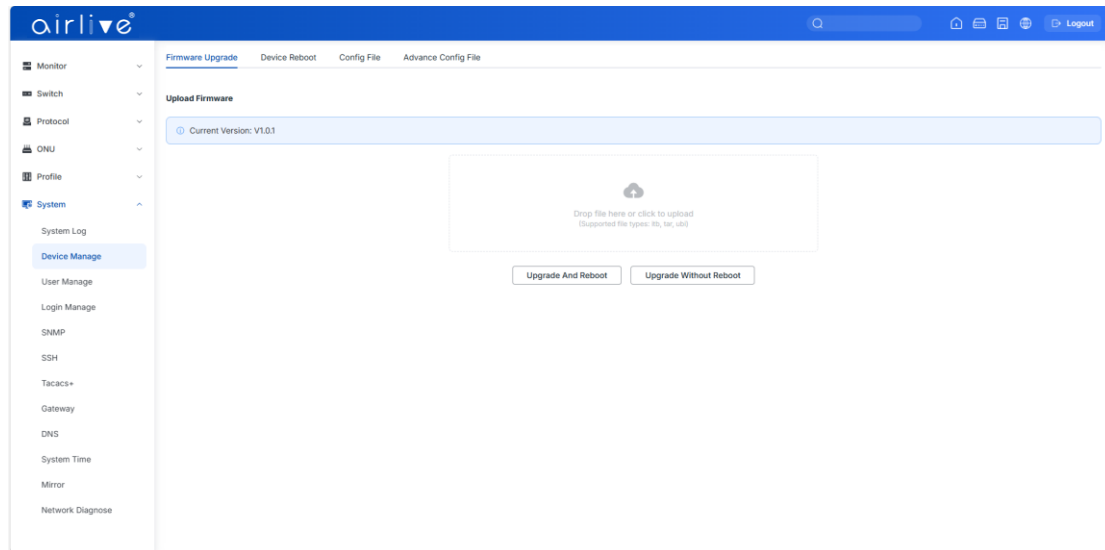


Figure 7.2-1: Firmware Upgrade

7.2.2 Device Reboot

System → Device Management → Device Reboot

You can reboot the entire system on this page. Please do save the configuration before reboot.

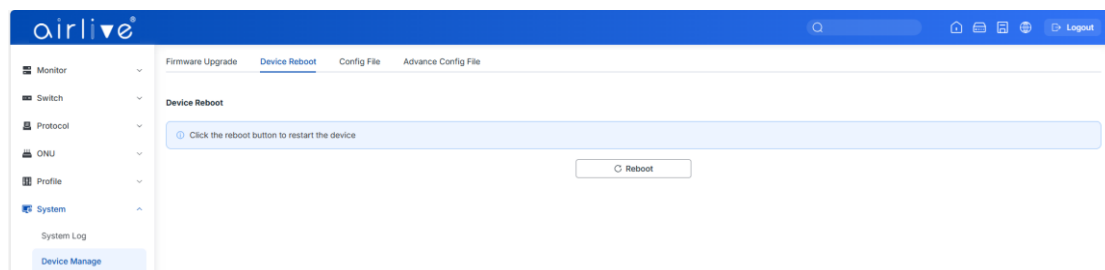


Figure 7.2-2: Device Reboot

7.2.3 Config File

System → Device Management → Config File

You can backup configuration, restore configuration, restore factory defaults and save configuration on this page.

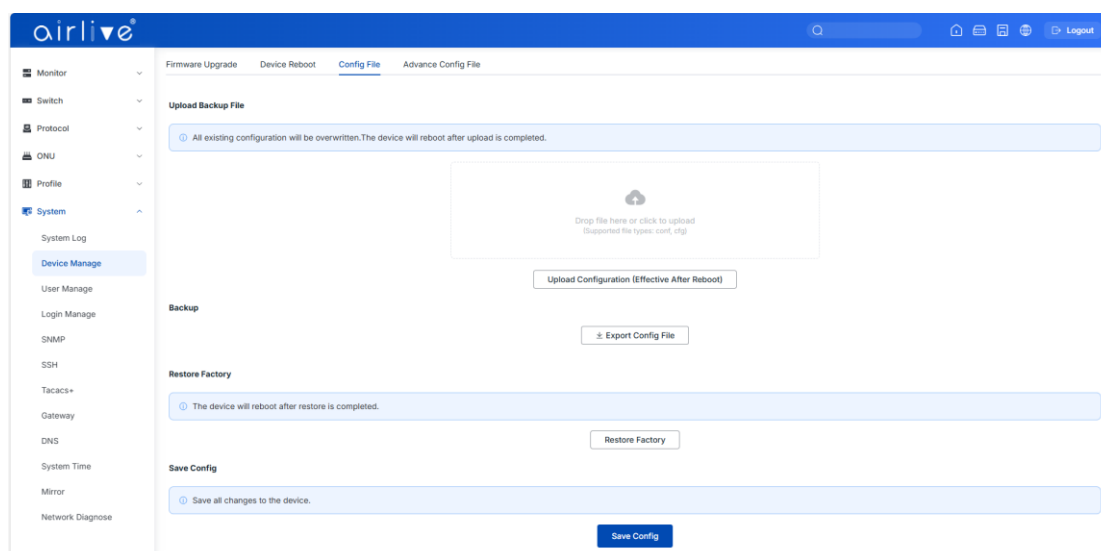


Figure 7.2-3: Config File Configuration

7.2.4 Advance Config File

System → Device Management → Advance Config File

You can automatically backup files on this page.

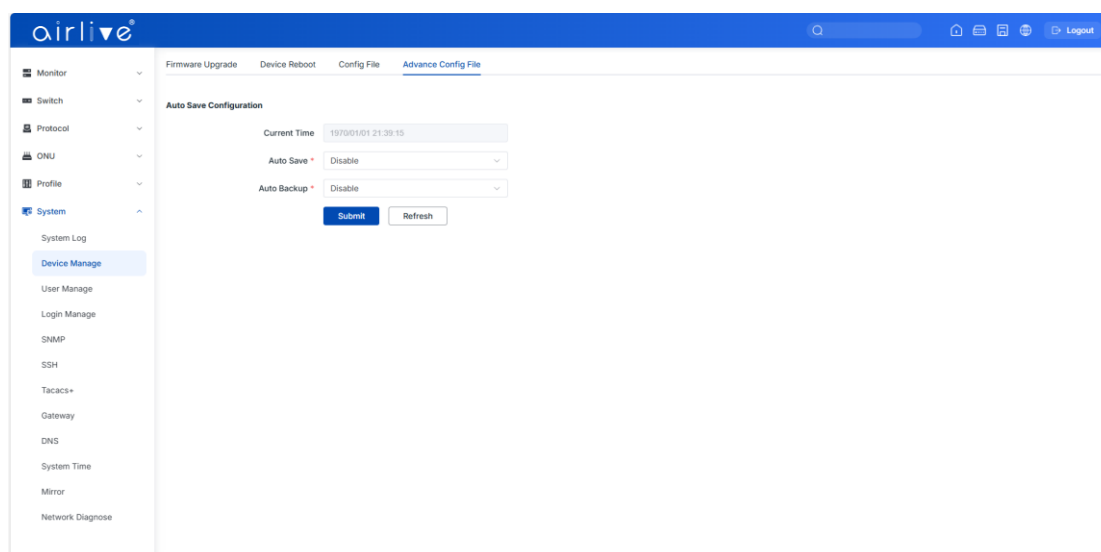


Figure 7.2-4: Advance Config File Configuration

7.3 User Management

System → User Management

Two types of user have been defined, Normal and Admin. There are limitations to normal user, and Admin user has no limits to full function of OLT. The default account member is **Admin** level.

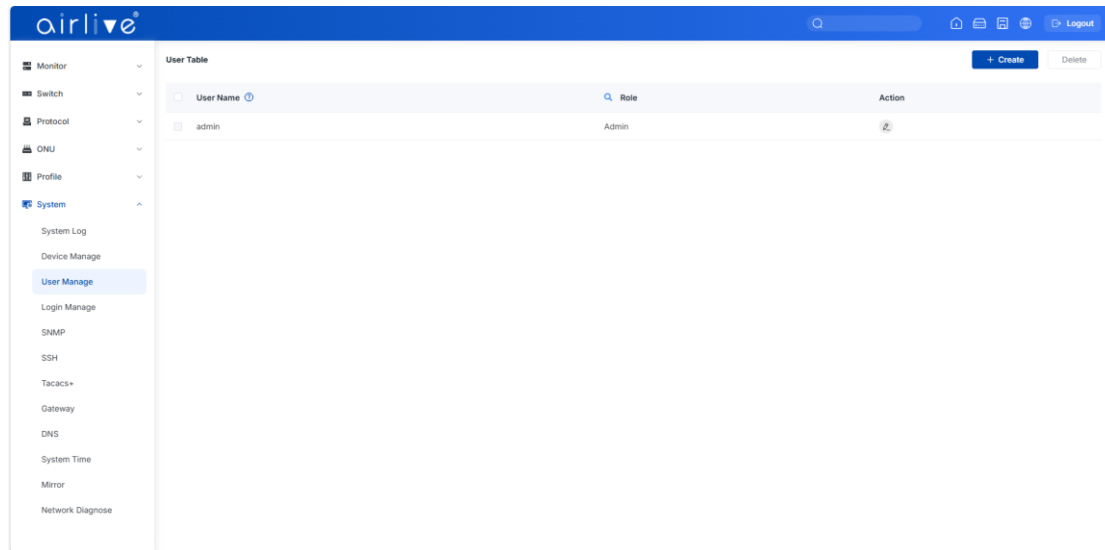


Figure 7.3-1: User Manage

7.4 Login Management

7.4.1 Login Access List

System → Login Management → Login Access List

This page is used to configure access rights for management. You can configure access rights for Telnet, Web, according to source IP address.

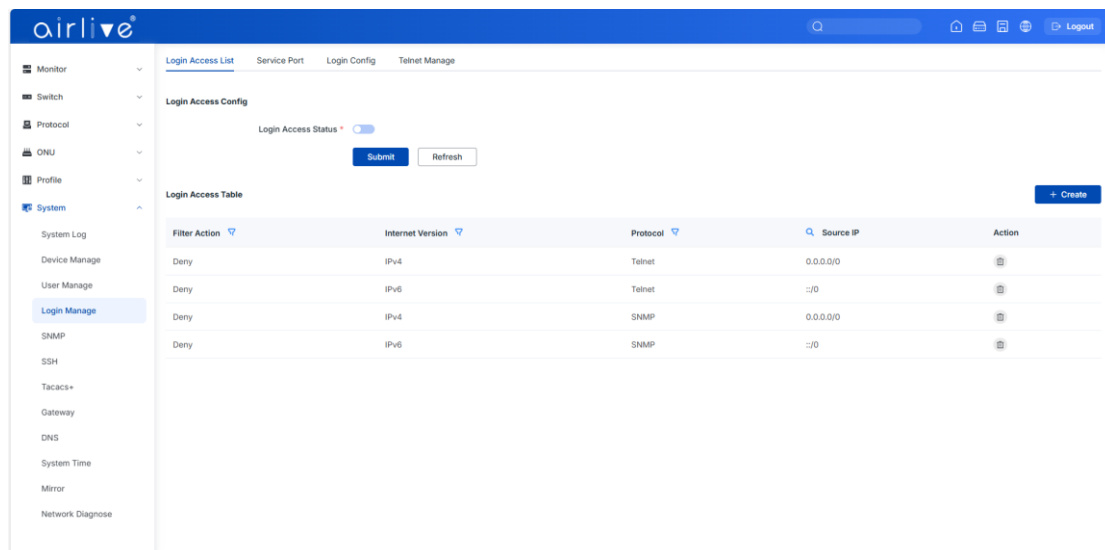


Figure 7.4-1: Login Access List Configuration

7.4.2 Service Port

System → Login Management → Service Port

This page is used to set Web, Telnet Port.

The screenshot shows the AirLive web interface. On the left is a sidebar menu with icons and labels: Monitor, Switch, Protocol, ONU, Profile, System (expanded), System Log, Device Manage, User Manage, and Login Manage (highlighted). The main content area has a blue header with the AirLive logo and a navigation bar with tabs: Login Access List, Service Port (active), Login Config, and Telnet Manage. Below the tabs is the 'Service Port Config' section. It contains four rows of configuration fields: 'Web Port *' with value 443, 'Telnet Port *' with value 23, 'SSH Port *' with value 22, and 'SNMP Port *' with value 161. At the bottom right of this section are two buttons: 'Submit' (blue) and 'Refresh' (white with blue border).

Figure 7.4-2: Service Port Configuration

7.4.3 Login Configuration

System Configuration → Login Management → Login Configuration

This page is used to set the login timeout and enable/disable the verification code.

The screenshot shows the AirLive web interface. On the left is a sidebar menu with icons and labels: Monitor, Switch, Protocol, ONU, Profile, System (expanded), System Log, Device Manage, User Manage, and Login Manage (highlighted). The main content area has a blue header with the AirLive logo and a navigation bar with tabs: Login Access List, Service Port, Login Config (active), and Telnet Manage. Below the tabs is the 'Login Security Config' section. It contains two rows of configuration fields: 'Login Timeout *' with value 30 and a 'min' unit label, and 'Verification Code *' with a toggle switch that is currently turned on. At the bottom right of this section are two buttons: 'Submit' (blue) and 'Refresh' (white with blue border).

Figure 7.4-3: Login Configuration

7.4.4 Telnet Management

System Configuration → Login Management → Telnet Management

This page displays the current telnet connection information. You can see the host IP address and user name information that are currently accessing the OLT through telnet.

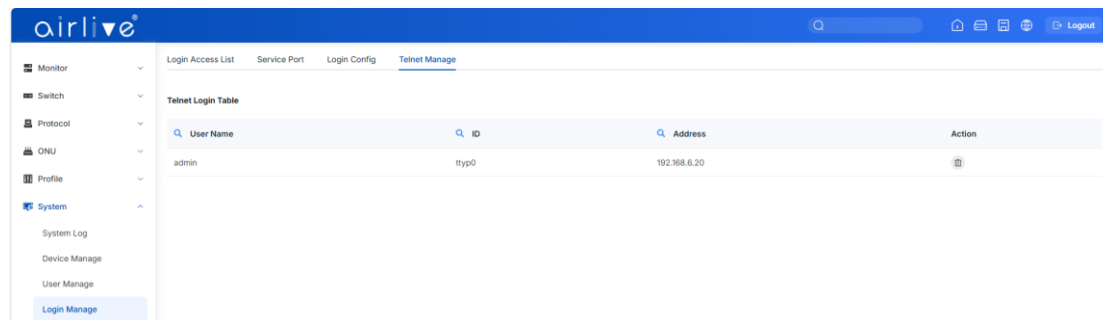


Figure 7.4-4: Telnet Management

7.5 SNMP

7.5.1 SNMPV1/V2

System → SNMP → SNMPV1/V2

This page is used to configure SNMP V1/V2 parameters for OLT management. It is not recommended to modify the default community name in the following image, as it may cause the network management system to be unable to manage and configure it.

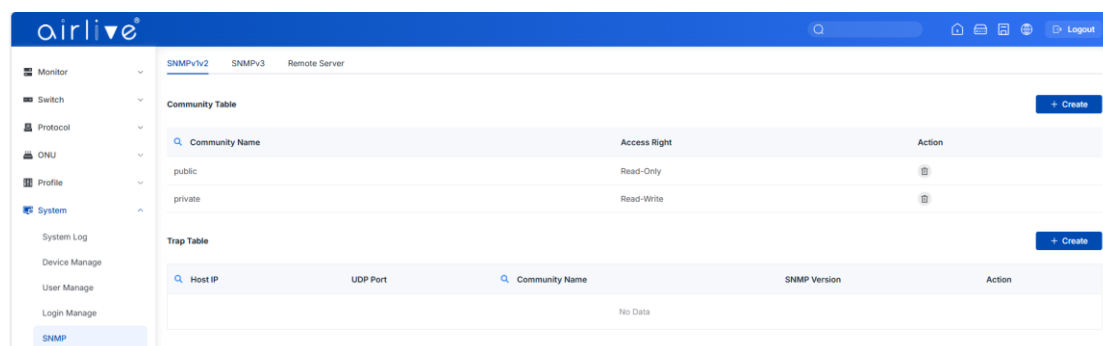


Figure 7.5-1: SNMPV1/V2

7.5.2 SNMPv3

System → SNMP → SNMPV3

This page is used to configure SNMP V3 parameters for OLT management.

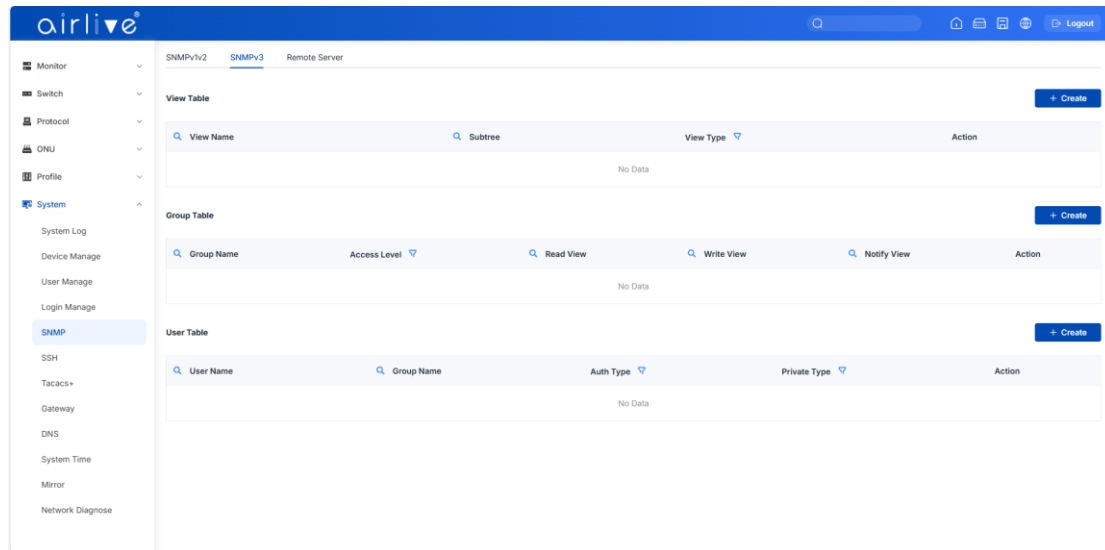


Figure 7.5-2: SNMPv3

7.5.3 Remote Server

System → SNMP → Remote Server

This page is used to configure AirCore EMS, INCE server IP.

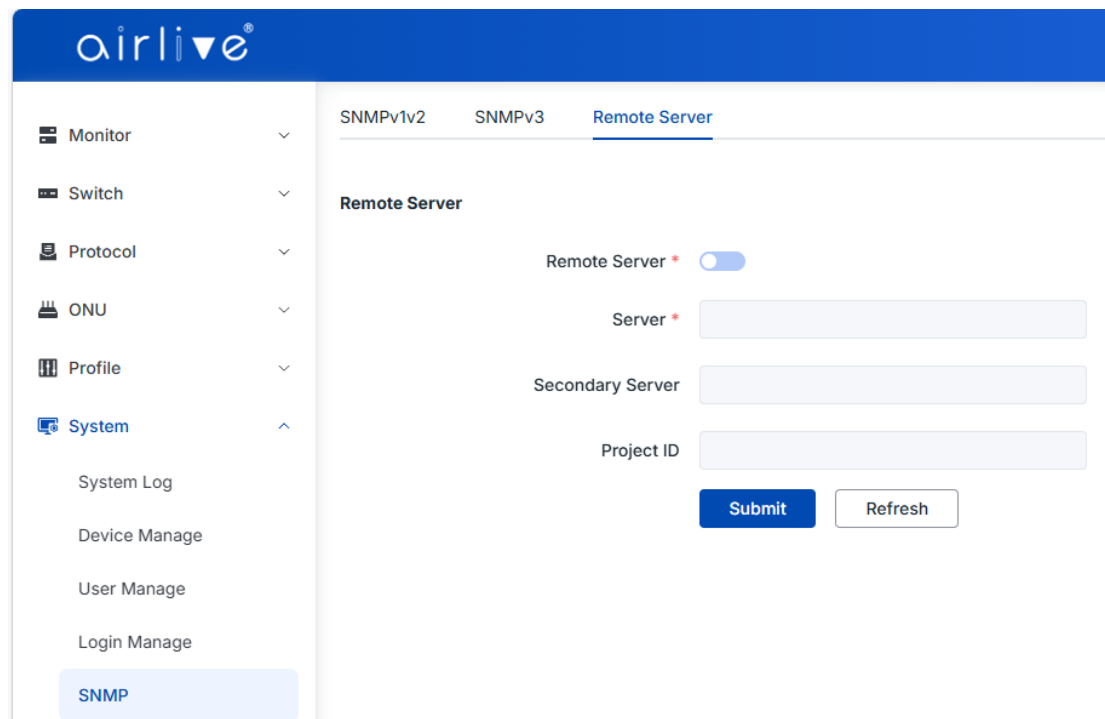


Figure 7.5-3: Remote Server

7.6 SSH

System Configuration → SSH

This page is used to configure SSH protocol related parameters.

SSH Config

SSH ☒

Version

Auth Retries

Login Grace Timeout s

Max Startups

Max Sessions

SSH Key Table

Key Type	Key Data	Encryption algorithm
No Data		

Figure 7.6-1:SSH Enable

7.7 Tacacs+

System Configuration→ Tacacs+

Tacacs+ is a protocol that provides access control for routers, network access servers, and other interconnected computing devices through one or more centralized servers. Tacacs+ provides centralized authentication, authorization, and accounting (AAA) services. This interface allows you to configure the Tacacs+ server IP address and other specific parameters.

Tacacs+ Config

Please note that default and continue-on-failed cannot be set to the same value

AAA Enable ☒

Console Enable Tacacs+ ☐

Authentication

Login Default Continue-on-failed

Enable Default Continue-on-failed

Authorization

Exec Default Continue-on-failed

Commands Default Continue-on-failed

Command Level Enable

Accounting

Exec Default Continue-on-failed

Commands Default Continue-on-failed

Enable Command Level

Tacacs+ Key

Shared Key

Tacacs+ Server Table

Tacacs+ Server	Action
No Data	

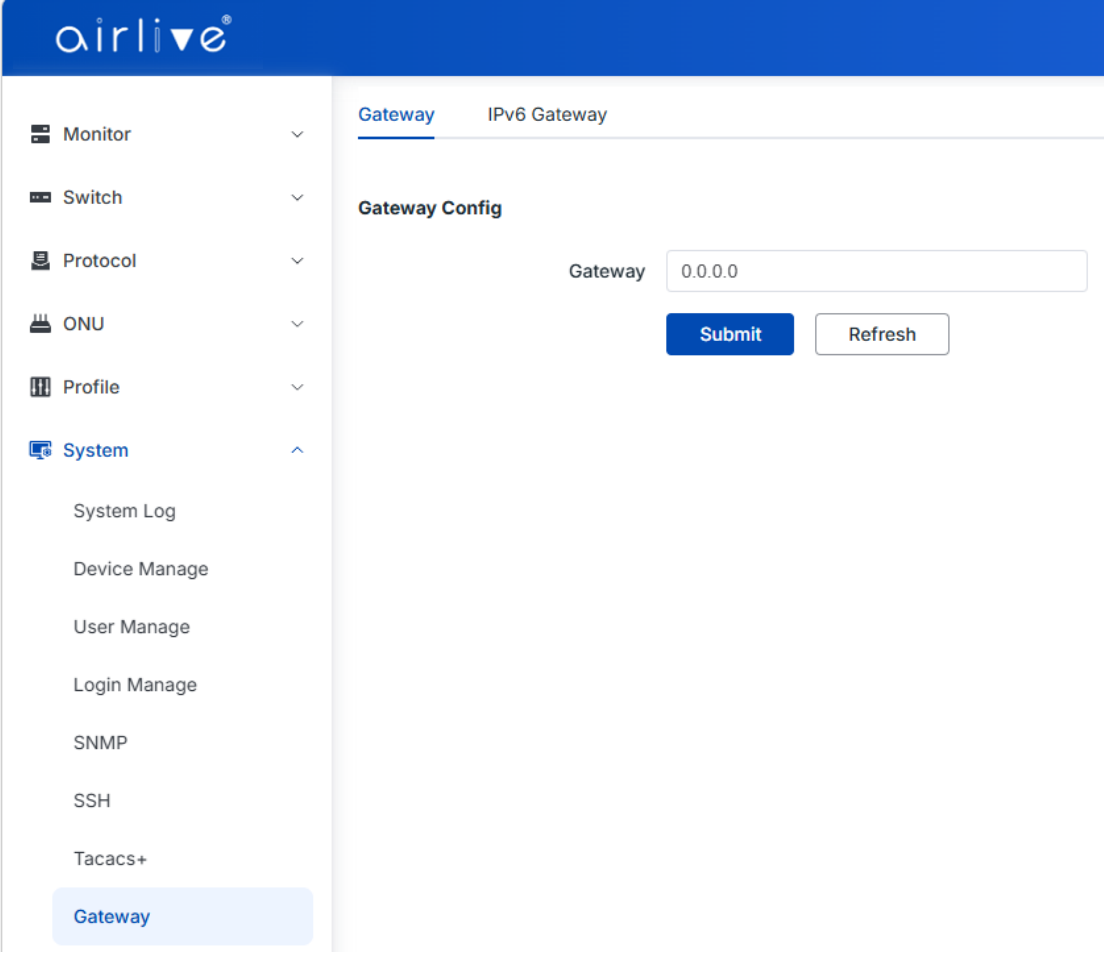
Figure 7.7-1: Tacacs+ Configuration

7.8 Gateway

7.8.1 Gateway

System → Gateway

This page is used to configure the OLT Gateway in case the OLT needs to access Internet or any Layer 3 network.



The screenshot displays the AirLive web management interface. On the left is a sidebar menu with the following items: Monitor, Switch, Protocol, ONU, Profile, System (highlighted with a blue bar and an upward arrow), System Log, Device Manage, User Manage, Login Manage, SNMP, SSH, Tacacs+, and Gateway (highlighted with a light blue bar). The main content area has a blue header with the AirLive logo. Below the header, there are two tabs: 'Gateway' (active) and 'IPv6 Gateway'. Under the 'Gateway' tab, the section is titled 'Gateway Config'. It contains a label 'Gateway' followed by a text input field containing '0.0.0.0'. Below the input field are two buttons: 'Submit' (blue) and 'Refresh' (white with a blue border).

Figure 7.8-1: Gateway

7.8.2 IPv6 Gateway

System → IPv6 Gateway

This page is used to configure the OLT Gateway in case of that the OLT needs to access Internet or any Layer 3 ipv6 network.

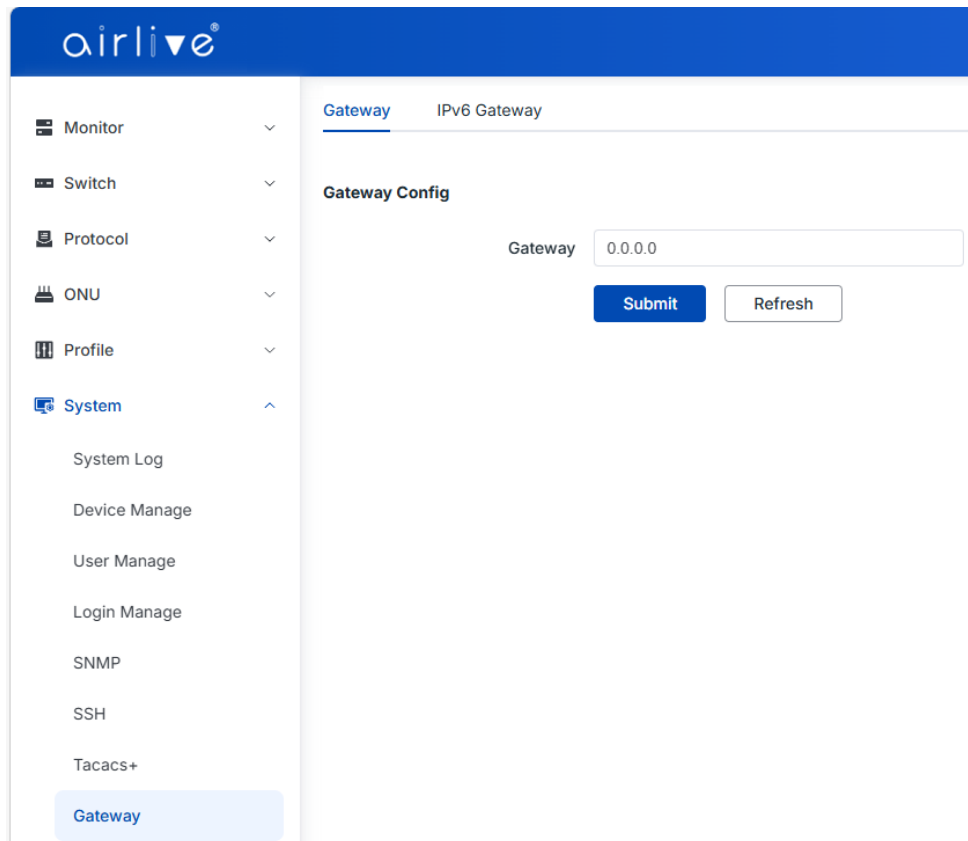


Figure 7.8-2: IPv6 Gateway

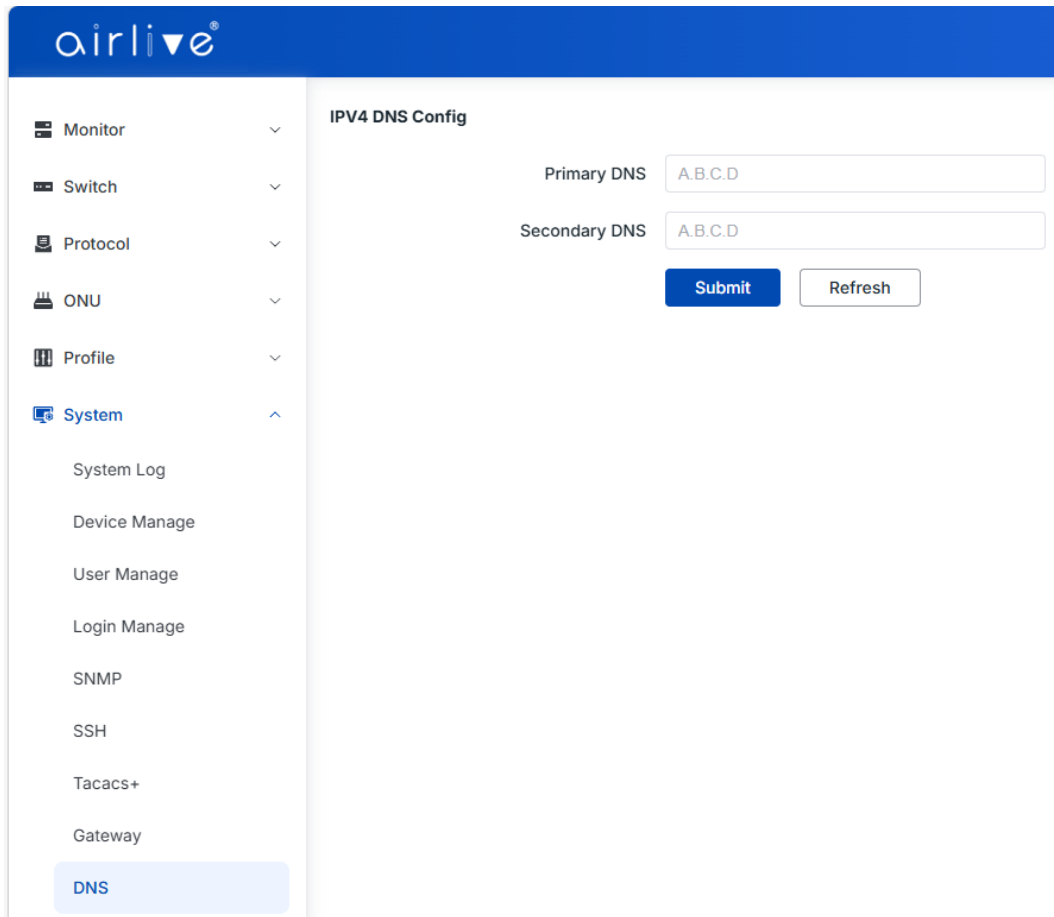
7.9 DNS

DNS is used for domain name resolution. When OLT need to visit a site or a destination by domain, take NTP server for example, DNS is required.

7.9.1 IPv4 DNS Config

System → DNS → IPv4 DNS Config

This page is used to configure IPv4 DNS.



The screenshot displays the AirLive web management interface. On the left, a sidebar menu lists various system functions. The 'System' menu item is expanded, showing sub-options like 'System Log', 'Device Manage', 'User Manage', 'Login Manage', 'SNMP', 'SSH', 'Tacacs+', 'Gateway', and 'DNS'. The 'DNS' option is highlighted. The main panel, titled 'IPv4 DNS Config', features two text input fields for 'Primary DNS' and 'Secondary DNS', each containing the placeholder 'A.B.C.D'. At the bottom of this panel are 'Submit' and 'Refresh' buttons.

Figure 7.9-1: IPv4 DNS

7.10 System Time

7.10.1 RTC

System → System Time → RTC

This page is used to set OLT system time. RTC stands for Real-Time Clock, it provides clock signal to the system.

Note: The OLT does not have a built-in battery; therefore, the system time will be lost after a power cycle.

The screenshot shows the AirLive web interface. On the left, a sidebar contains a menu with categories: Monitor, Switch, Protocol, ONU, Profile, and System. The 'System' category is expanded, showing options like System Log, Device Manage, User Manage, Login Manage, SNMP, SSH, Tacacs+, Gateway, DNS, and System Time (which is highlighted). The main area has three tabs: RTC, NTP, and Format. The 'RTC' tab is selected, showing a form with fields for Year, Month, Date, Hour, Minute, and Second, each with a range indicator. Below these fields are 'Submit' and 'Refresh' buttons.

Figure 7.10-1: RTC

7.10.2 NTP

System → System Time → NTP

This page is used to configure NTP server. OLT will synchronize time with the NTP server at a given time.

The screenshot shows the AirLive web interface with the 'NTP' tab selected. The 'NTP Config' section displays the current time and various NTP settings. The 'NTP Enable' toggle is turned on. The 'Time Zone' is set to (GMT+08:00) Taipei. The 'Daylight Saving Time Area' is set to Disable. The 'NTP Server' is tw.pool.ntp.org. The 'Backup NTP Server' field is empty. 'Submit' and 'Refresh' buttons are at the bottom.

Figure 7.10-2: NTP

7.10.3 Format

System → System Time → Format

This page is used to configure system time format.

The screenshot shows the AirLive web interface. The top header is blue with the 'airlive' logo. The left sidebar contains a list of navigation items: Monitor, Switch, Protocol, ONU, Profile, System (expanded), System Log, Device Manage, User Manage, Login Manage, SNMP, SSH, Tacacs+, Gateway, DNS, and System Time (highlighted). The main content area has tabs for RTC, NTP, and Format (selected). Under the 'Format' tab, the title is 'Set Date Time Format'. It includes a 'Date Example' field showing '2022/07/11 14:23:45'. Below this are five configuration fields, each with a red asterisk indicating it is required: 'Standard Format' (set to 'Custom Format'), 'Date Format' (set to 'yyyy-MM-dd'), 'Date Separator' (set to '/'), 'Time Format' (set to 'HH:MM:SS'), and 'Time System' (set to '24-hour'). At the bottom of the configuration area are two buttons: 'Submit' and 'Refresh'.

Figure 7.10-3: Format

7.11 FAN

System → Fan

Fan configuration is used to set the fan speed and temperature thresholds for automatic activation.

The screenshot shows the AirLive web interface. The top header is blue with the 'airlive' logo and a search bar. The left sidebar contains a list of navigation items: Monitor, Switch, Protocol, ONU, Profile, System (expanded), System Log, Device Manage, User Manage, Login Manage, SNMP, SSH, Tacacs+, Gateway, DNS, System Time, and Fan (highlighted). The main content area has a title 'Fan Config'. It includes a 'Mode' field with three radio buttons: 'Close', 'Open', and 'Auto' (selected). Below this is a 'Temperature Threshold' field with a value of '35' and a unit of '(20-80°C)'. At the bottom of the configuration area are two buttons: 'Submit' and 'Refresh'.

Figure 7.11-1: Fan Configuration

7.12 Mirror

7.12.1 Mirror Config

System → Mirror → Mirror Config

Port mirror is usually used for troubleshooting. It can forward incoming and outgoing packets from the source port to the destination port.

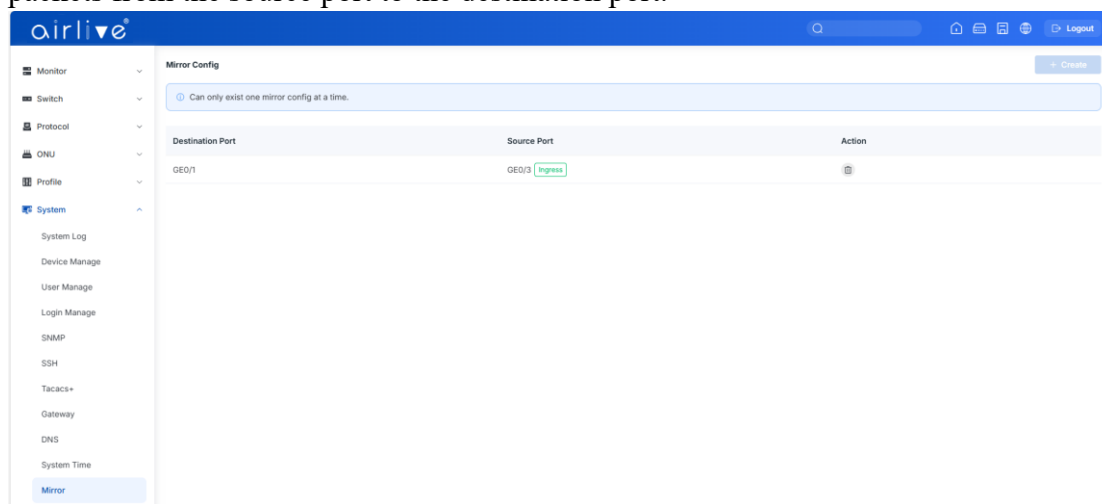


Figure 7.12-1: Mirror Configuration

7.12.2 Create

System → Mirror → Create

This page is used to create mirror rules. Destination Port is the interface where the device that captures the packet is located, Source Port is the original interface where the packet to be analyzed is located, and Direction can be set the direction of the original interface.

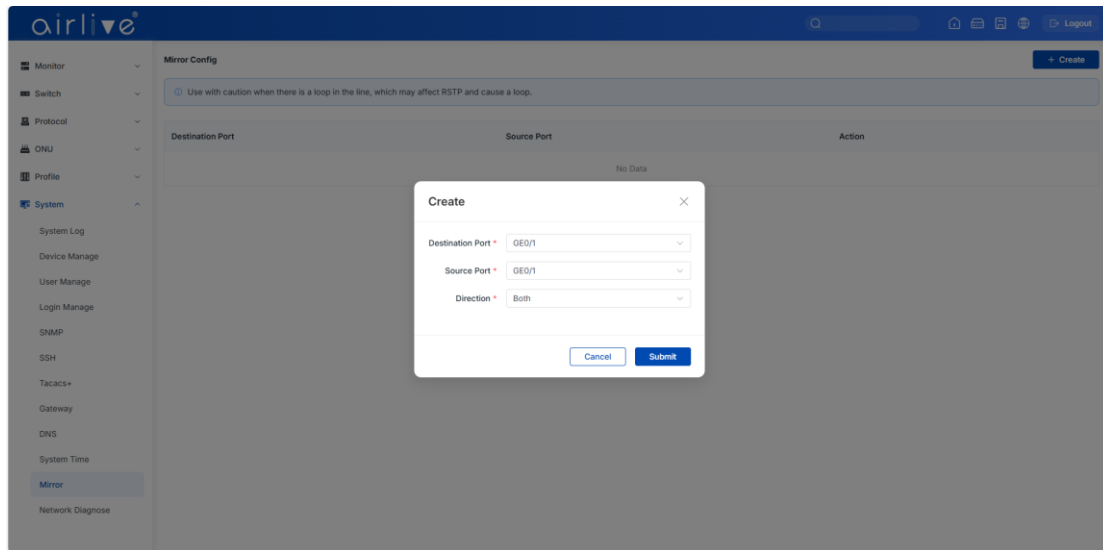


Figure 7.12-2: Create Mirror

7.13 Network Diagnose

7.13.1 PING Diagnose

System → Network Diagnose → Ping Diagnose

This page supports diagnosing network connections using the PING command. PING supports IPv4 and IPv6 address.

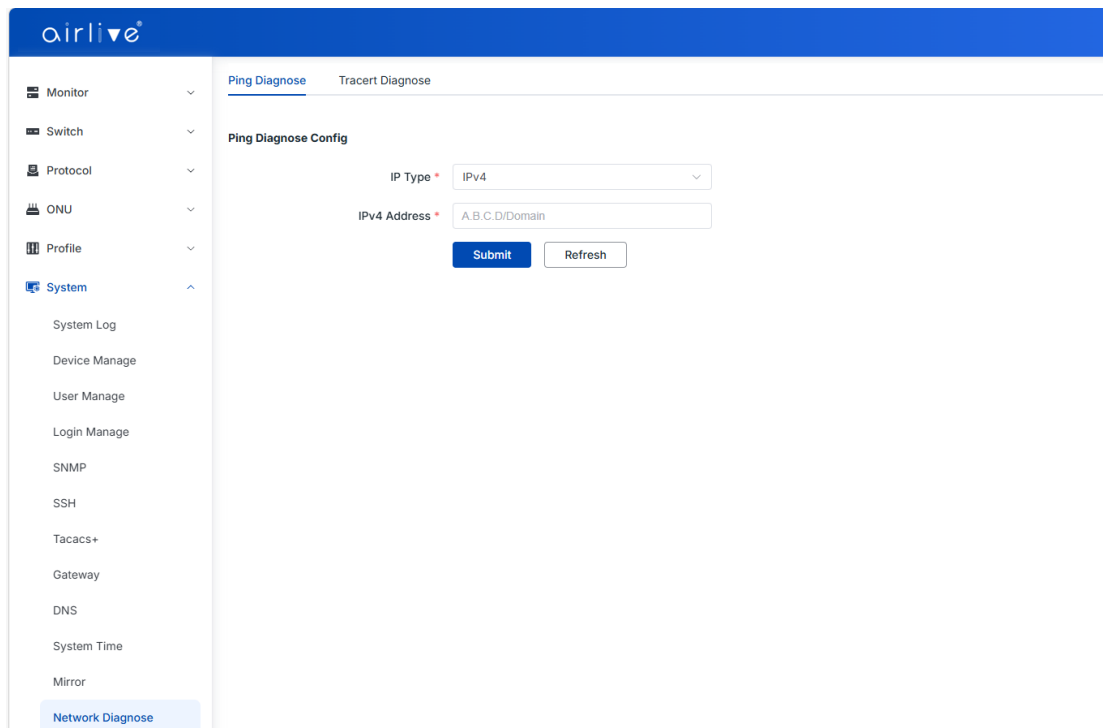


Figure 7.13-1: Ping Diagnose

7.13.2 Tracert Diagnose

System → Network Diagnose → Tracert Diagnose

This page supports using Tracert commands for route tracing to diagnose network connections.

The route tracing function supports IPv4 and IPv6 addresses.

The screenshot displays the AirLive web management interface. On the left is a sidebar menu with categories: Monitor, Switch, Protocol, ONU, Profile, and System. The 'System' category is expanded, showing options like System Log, Device Manage, User Manage, Login Manage, SNMP, SSH, Tacacs+, Gateway, DNS, System Time, Mirror, and Network Diagnose (which is highlighted). The main content area has a blue header with the 'airlive' logo and two tabs: 'Ping Diagnose' and 'Tracert Diagnose' (the active tab). Below the tabs is the 'Tracert Diagnose Config' section. It contains two fields: 'IP Type' with a dropdown menu set to 'IPv4', and 'IPv4 Address' with a text input field containing 'A.B.C.D/Domain'. At the bottom of this section are two buttons: 'Submit' and 'Refresh'.

Figure 7.13-2:Tracert Diagnose

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