ASCENT
Communication Technology

AD624T XGS-PON WIFI6 ONT

User Manual

Revision B

ACT AD624T XGS-PON WIFI6 ONT User Manual

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Quick Reference Guide Revision B

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This document is produced to assist professional and properly trained personnel with installation and maintenance issues for the product. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.

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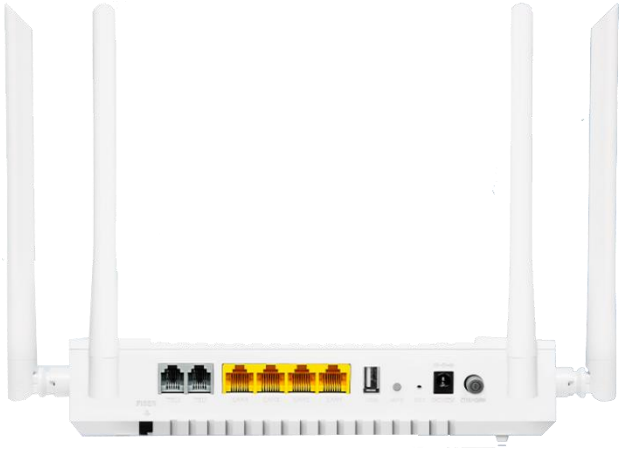

Revision History

Revision	Date	Reason for Change
A	05/28/2025	Initial release
B	07/10/2025	Update format

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1 Overview

1.1 Installation Precautions

- Do not place the equipment near flammable or conductive items, high temperatures (such as direct sunlight) or in wet conditions, or on a PC chassis, and check that the surrounding appliances are stable.
- Check the cable for aging. Check and verify that the AC or DC input voltage is within the permissible range of the device and that the polarity of the DC is correct.
- Unless the manufacturer permit, use the type of power indicated on the label and the adapter supplied with the product.
- To prevent damage to the product from lightning, make sure that the ground of the power outlet and the power adapter is securely grounded. In the thunderstorm, be sure to unplug the power and all the connections.
- Equipment input voltage fluctuation should be less than 10%, the power plug, refrigerators, hair dryer and iron should not use the same socket.
- To avoid electric shock or fire due to overload of the power outlet, damage to the cord or damage to the plug, check the power cord regularly. If damage is found, replace it immediately.
- Please place the device on a flat surface and can not place items on the device.
- Equipment is easy to produce heat when working, should maintain the appropriate cooling space to avoid damage caused by overheating products. The elongated hole on the shell is designed for heat consu. Keep the ventilation clean and avoid falling from the heat sink into the equipment. Otherwise, the equipment may be damaged or fire. Do not spill liquid onto the surface of the equipment.

1.2 Precautions for Use

- Please read the user manual carefully before using the equipment and follow all the precautions on the user manual and the product.
- Avoid eye looked at the optical interface directly, so as to avoid the laser beam emitted by the interface damage the eyes. Please try to wear safety glasses to effectively protect your eyes from damage. It is best to plug in the fiber optic interface jacket when the optical interface is not in use .
- Turn off the power when the device is not in use.
- Before plugging the power supply, make sure that the power switch is turned off to avoid surge. Be careful when unplugging the power supply and the transformer temperature may be high.
- To ensure safety, do not open the enclosure of the device, especially when the device is powered up.
- Unplug the power supply before cleaning the equipment. Use a soft dry cloth to clean the equipment to avoid the use of liquids or sprays.
- Do not connect this product to any electronic product unless it is instructed by our customer engineer or your broadband supplier, as any incorrect connection may cause power or fire hazard.

2 Brief

The AD624T is a high-performance WiFi 6 XGSPON VoIP Gateway ONT, engineered for next-generation fiber-to-the-home (FTTH) applications. It supports the IEEE 802.11a/b/g/n/ac/ax standards over both 2.4GHz and 5GHz bands, offering a combined wireless data rate of up to 3000Mbps.

Designed to meet the demands of modern networking, the AD624T is compliant with ITU-T G.9807.1 standards and delivers 10Gbps symmetrical upstream and downstream bandwidth. It features 3 Gigabit Ethernet ports, 1 adaptive 2.5G LAN port, 2 FXS voice ports, and robust Layer 2/3 networking capabilities, including VLAN tagging, rate limiting, MAC address filtering, IGMP snooping, and AES encryption. This comprehensive feature set enables reliable triple-play service delivery and seamless voice, video, and internet integration.

The AD624T excels in reliability, flexibility, and manageability, offering remote software upgrades, SNMP-based EMS management, and support for multiple authentication methods. Its low power consumption, compact form factor, and enhanced Quality of Service (QoS) capabilities make it a cost-effective and scalable solution for broadband operators. Whether deployed in new rollouts or upgrades, the AD624T empowers service providers to deliver high-speed, secure, and future-ready fiber access.

2.1 Product Features

- Single-fiber access, providing broadband Wi-Fi, Internet, POTS service access, and so on
- Comply with ITU-T G.9807.1 technical standards
- WIFI-type equipment exact match 802.11 a/b/g/n/ac/ax wireless standard protocol, support 20Mhz / 40Mhz / 80MHZ / 160MHZ
- Support PPPoE, DHCP, static IP broadband service access
- Support NAT, static routing, port forwarding
- Support data encryption, VLAN transparent transmission, vlan tag and other functions
- Support up and down bandwidth limit function
- Support upgrade through the OLT remote / local ONU WEB
- Support broadcast storm suppression
- Different data ports are isolated from each other
- Support OLT as SNMP-agent way of the unified management of the network management, easy to install and maintain
- Provide a variety of fault alarm function, easy to fault diagnosis
- Support DBA technology and priority based on the dual management model to ensure that the user's minimum specified bandwidth requirements

2.2 Product Specifications

Parameter		Description
Hardware		
User Port (LAN)		RJ-45 connector 3* 10/100/1000Mbps and 1*2.5G adaptive Ethernet port Full/Half Duplex Auto MDI/MDI-X
Indicators		PWR / PON / LOS / LAN1-4 / INT / TEL1-2 / WIFI /USB
PON Port	PON Mode	XGSPON: FSANG.9807.1standard
	Port Rate	XGSPON: 10Gbps/10Gbps downstream/upstream
	Wavelength	1270nm/1577nm
	Receiving Sensitivity	XGSPON: -28dBm
	Saturation Power	XGSPON: -9dBm
	Average Sending	XGSPON: +4 to +9dBm
Features		
WIFI		IEEE802.11b/g/n/ax(2.4G) IEEE802.11a/n/ac/ax(5G) 2.4G: 40Mhz bandwidth maximum rate 574Mbps 5G: 160Mhz bandwidth maximum rate 2402Mbps Total wireless rate is 3000Mbps 2.4G EIRP: 22dBm / 5 G EIRP:21dBm
User Port(POTS)		RJ-11 connector 2*accounts SIP protocol TDMF G711U/G711A/G729/G722 encoding and decoding
Power Supply		
Adapter		External 12VDC/1A power supply adapter
Power Consumption		<23.3W
Environment		
Working Temperature		0°C to 40°C
Operating Humidity		10 to 90% (Non-condensing)
Mechanics		
Dimensions		210mm(L) * 135mm(W) * 45mm(H)
Weight		228g

2.3 Device Connection

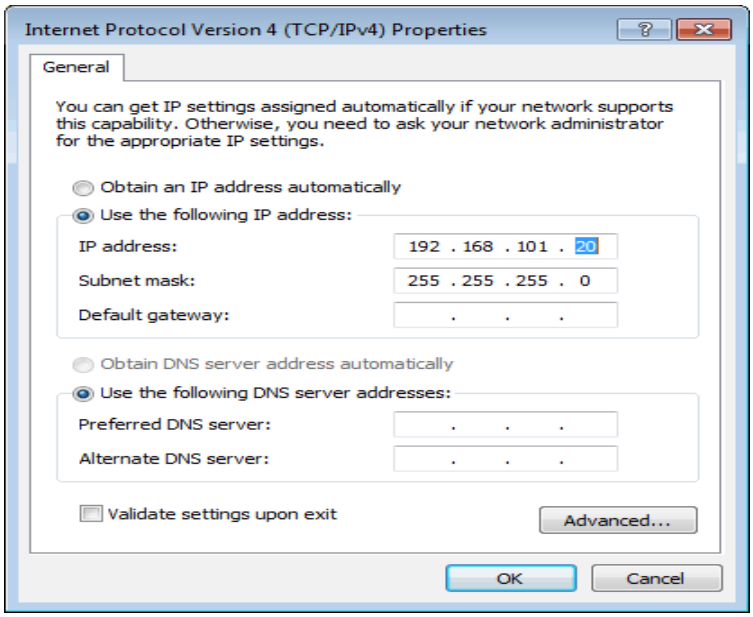
- Connect the fiber: Insert the SC fiber connector into the PON connector on the rear panel of the ONU.
- Connect the Ethernet cable: Connect the RJ-45 Ethernet cable to any LAN port and each home device.
- Connect the AC adapter: Plug the AC / DC adapter into the AC wall jack and the ONU 12V DC power jack.

3 Login Web Management Locally

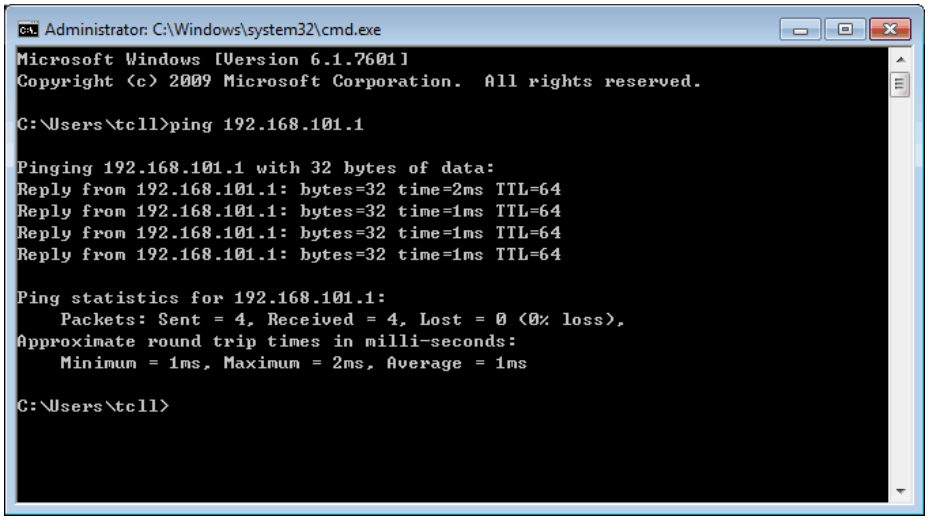
3.1 Physical Connection of ONU and PC

a) Local NIC of PC connects to LAN port or ETH port of ONU via wires.

b) Set the IP address of PC's local NIC as 192.168.101.X (X:2-254).

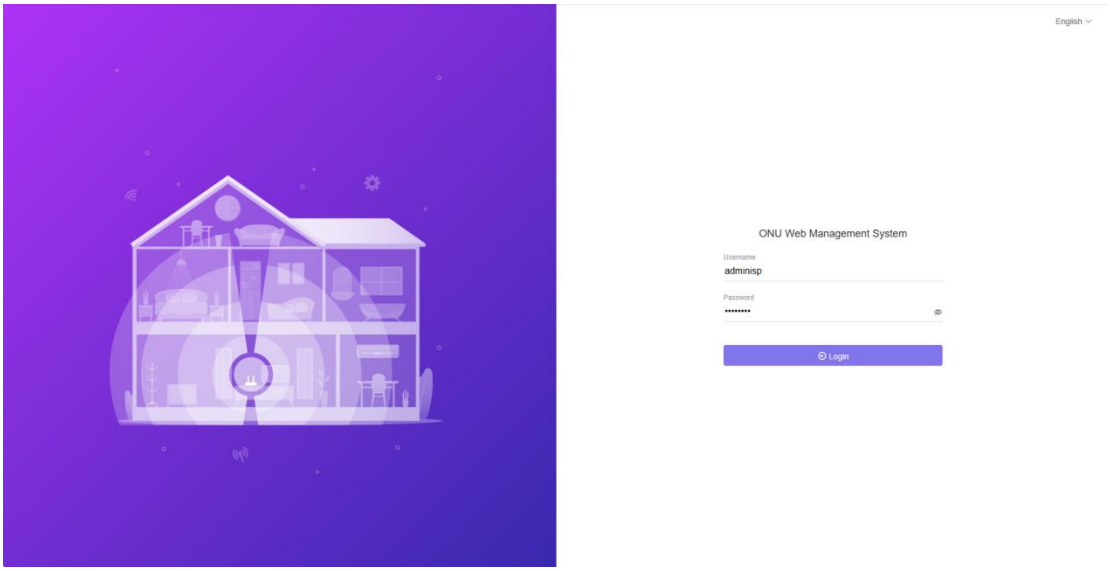


c) Open cmd windows and make sure that PC can ping the management IP (192.168.101.1) of ONU.

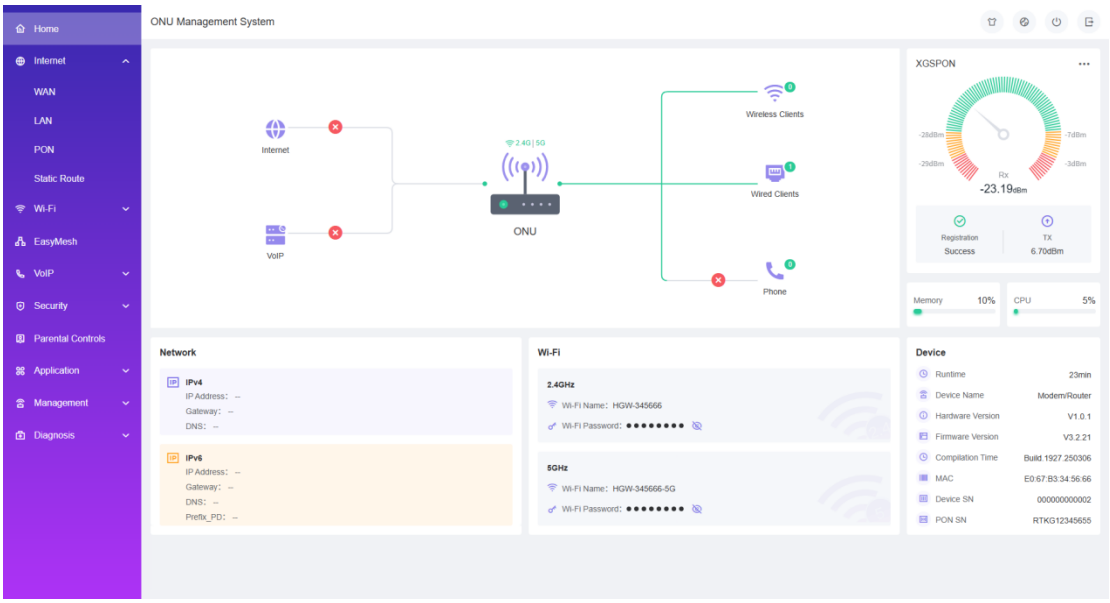


3.2 PC Access the WEB of ONU

1. Make sure you can ping the ONU like #3.1. Open the IE Web broswer (IE, Firefox, Google), copy and paste URL: http: //192.168.101.1, the following pop-up Prompt landing page:



2. Input Username: adminisp, Password: adminisp
3. Click “Login” button. The product basics page appears, as follows：

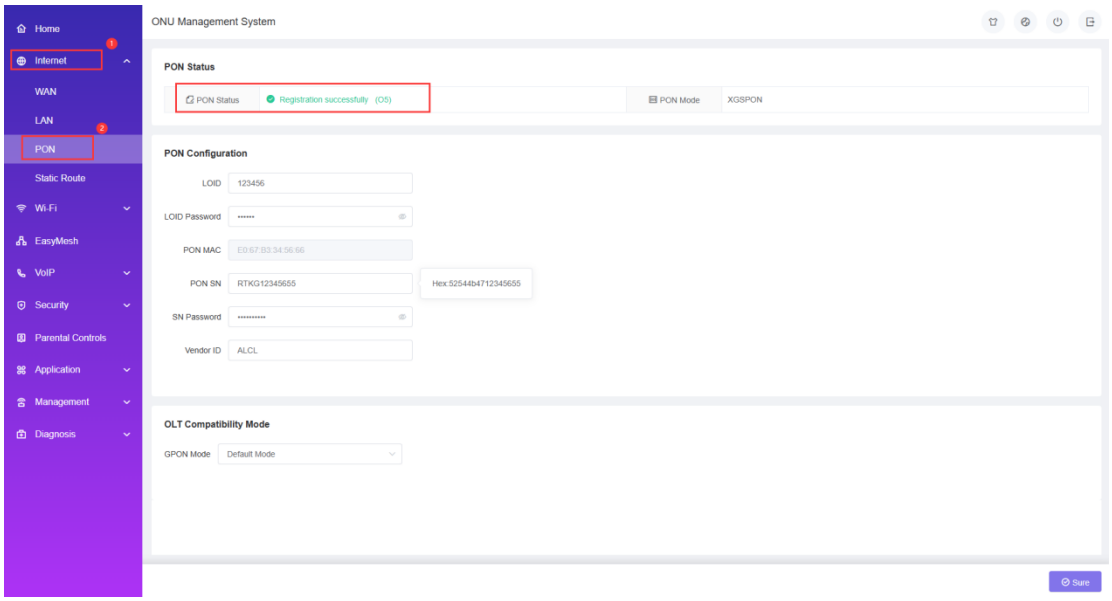


4. You can start further configuration.

4 ONU Register Information Config

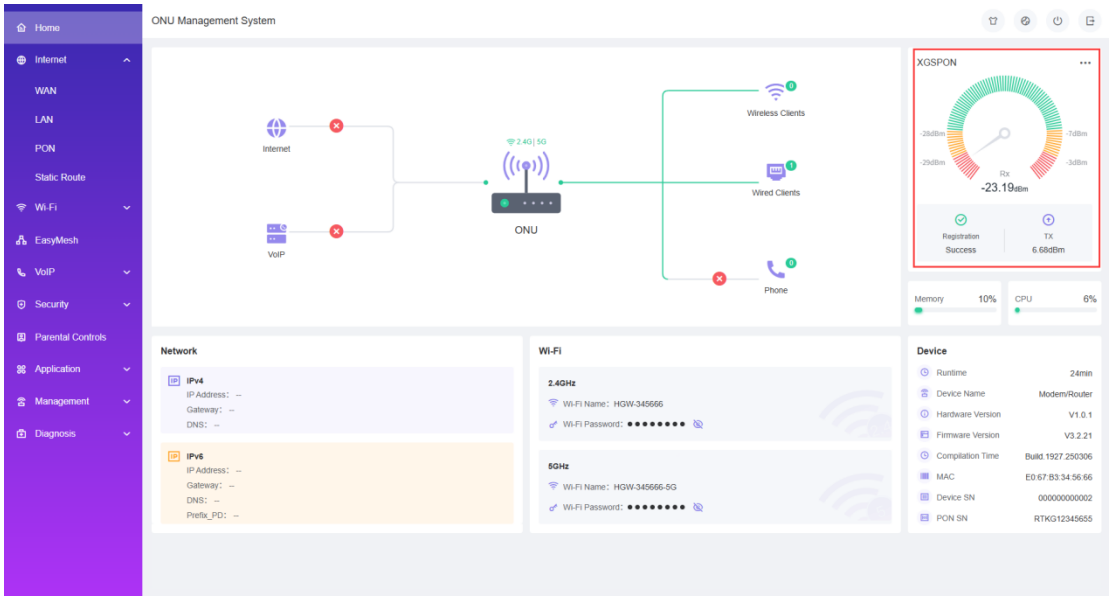
4.1 View ONU Status

1. Login ONU WEB, select **Internet ---> PON** , view the ONU PON status.



4.2 View ONU Optical Power Information

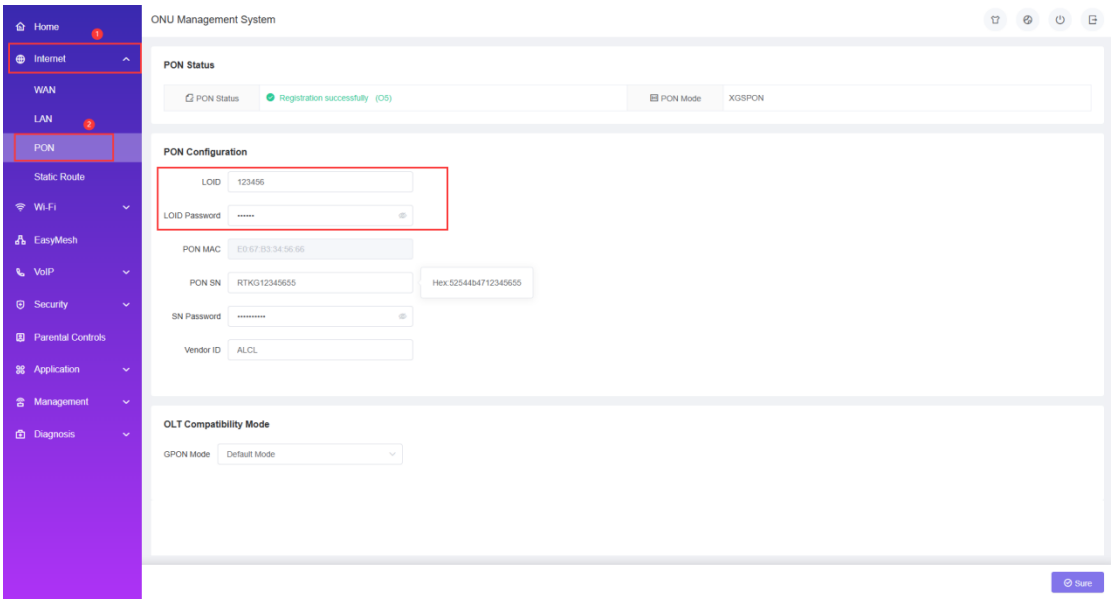
1. Login ONU WEB,view Rx power and Tx power of ONU:



4.3 LOID Authentication Config

LOID of ONU is mainly applicable of the authentication mode of LOID and LOID + Password for ONU. By default, ONU registers for the OLT by SN and rarely uses LOID for register. Normally, we needn't to configure LOID. But the configuration as follows:

1. Login ONU WEB, select **Internet ->PON** , view or configure LOID and password of ONU:



5 Basic Configuration for Internet

Home Gateway Unit (HGU) ONU supports route function, so that there are route mode and bridge mode for internet. The difference between route mode and bridge mode as follows :

Route mode： ONT as a home gateway equipment, ONT IP address can be obtained in three ways, which includes **DHCP**, **Static IP Address** and **PPPOE**. The IP address of the device on the user side is obtained through the DHCP address pool of the ONT, or by manually setting;

Bridge mode： The ONT does not obtain the IP address assigned by the upper device or can not manually set the static IP address. It is used as a relay device and does not process the data. There are three ways to obtain the IP address of the user side device, namely **DHCP**, **PPPOE**, **Static IP Address**.

5.1 Route Mode Configuration

5.1.1 Configure PPPOE WAN Connection for Internet in Route Mode

Login ONU WEB, select **Internet -> WAN->Click "Add" button**, and then there are some parameters for us to configure as follows:

【Vlan】 We can set this option according to your network plan. If there is vlan in the network for internet, we have to chick ' VLAN ' option. If not, we needn't check this option, which will be VLAN transparent mode.

【Vlan ID】Configure this option according to our network plan.

【Priority】Set the priority of vlan, The same as "Vlan", depending on the network vlan planning to configure. The default priority is 0.

【Mode】Choose PPPOE.

【Service Type】Choose Internet.

【IP Protocol】Select 'Ipv4'; If there is Ipv6 in the network, we can select ' Ipv4/Ipv6 '.

【MTU】The default is 1492; we have to change to lower MTU, **such as 1400**, if we can ping the DNS but not access the website via WEB browser.

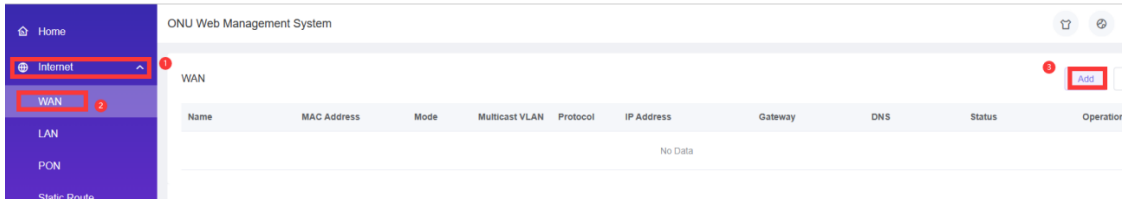
【NAT】 Check ' NAT ' feature； NAT is mainly used for address translation function of local network and external network. The default is checked enable status. If you do not check this option, maybe you can't surf the internet.

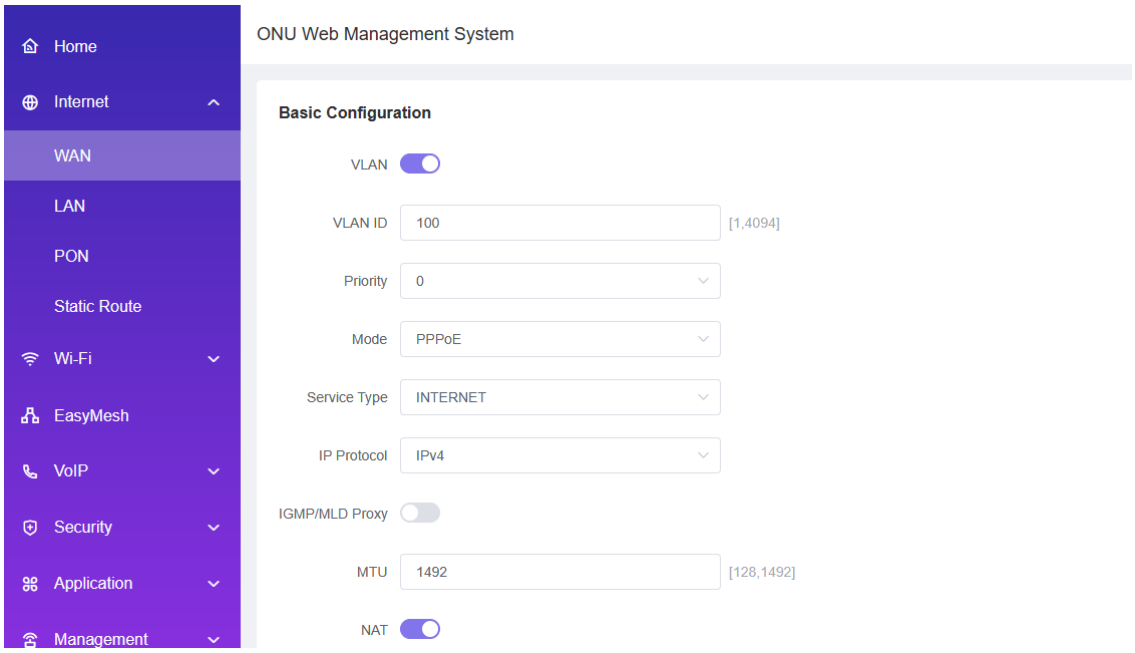
【Username】Type PPPOE account, normally offered by ISP, for Internet.

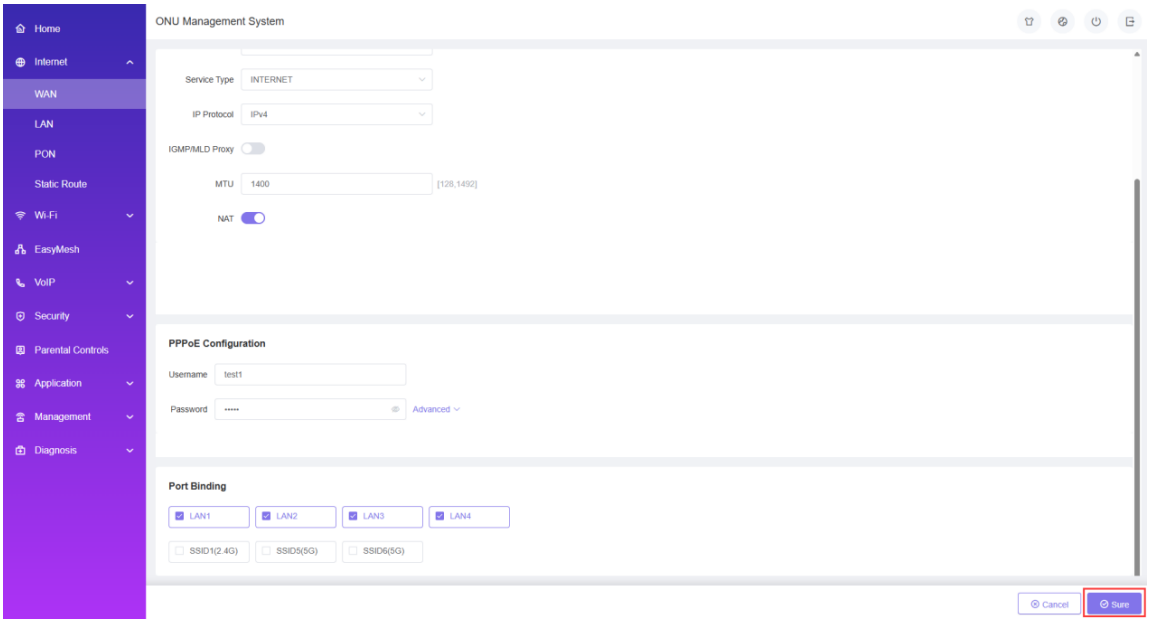
【Password】Type PPPOE password, normally offered by ISP, for Internet.

【Port Binding】Bind the physical ports (Lan port 1-4 and WIFI) with PPPOE WAN connection.

Note: By default, all LAN ports and WIFI data are not bound by this WAN connection (a LAN and WIFI SSID can only be bound to a WAN connection at the same time).







After configuring the parameters of PPPOE WAN connection as above, click '**Sure** ' to finish the setting.

5.1.2 Configure DHCP WAN Connection for Internet in Route Mode

Login ONU WEB, select Internet -> WAN->Click"Add"button, and then there are some parameters for us to configure as follows:

【Vlan】 We can set this option according to your network plan. If there is vlan in the network for internet, we have to chick ' VLAN ' option. If not, we needn't check this option, which will be VLAN transparent mode.

【Vlan ID】Configure this option according to our network plan.

【Priority】Set the priority of vlan, The same as "Vlan", depending on the network vlan planning to configure. The default priority is 0.

【Mode】Choose IPOE.

【Service Type】Choose Internet.

【IP Protocol】Select 'Ipv4'; If there is Ipv6 in the network, we can select ' Ipv4/Ipv6 '.

【MTU】The default is 1500; we have to change to lower MTU, such as 1400, if we can ping the DNS but not access the website via WEB browser.

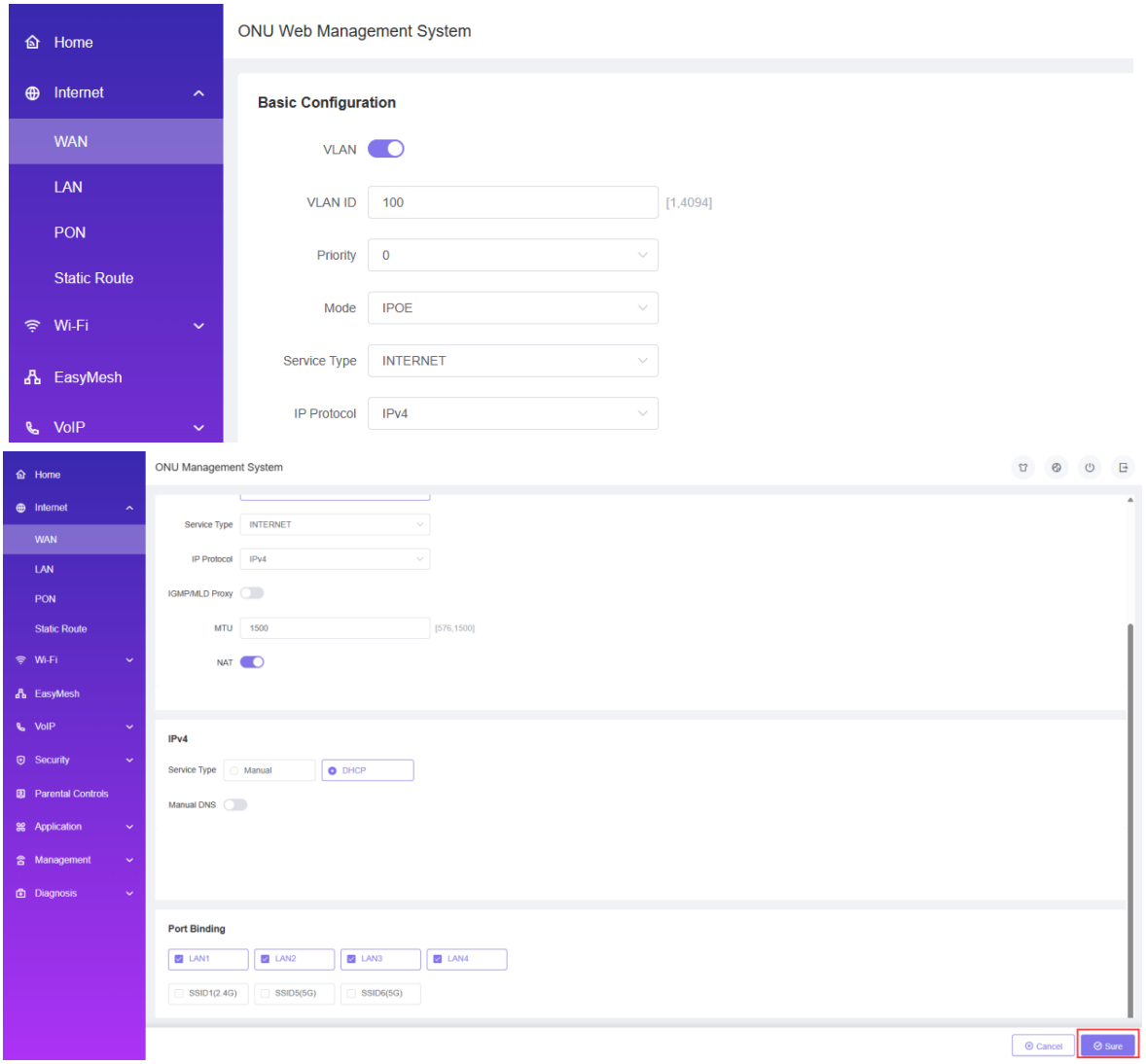
【NAT】 Check ' NAT ' feature； NAT is mainly used for address translation function of local network and external network. The default is checked enable status. If you do not check this option, maybe you can't surf the internet.

【IPv4 Mode】Choose DHCP.

【Manual DNS】Not select, the ONU will get DNS from upper DNS server automatically; Selected , we have to configure an static DNS for the ONU by manual. We can configure one of them according to network plan.

【Port Binding】Bind the physical ports (Lan port 1-4 and WIFI) with DHCP WAN connection.

Note: By default, all LAN ports and WIFI data are not bound by this WAN connection (a LAN and WIFI SSID can only be bound to a WAN connection at the same time).



After configuring the parameters of DHCP WAN connection as below, click '**Sure**' to finish the setting.

5.1.3 Configure Static IP Address WAN Connection for Internet in Route Mode

Login ONU WEB, select **Internet -> WAN->Click "Add" button**, and then there are some parameters for us to configure as follows:

【Vlan】We can set this option according to your network plan. If there is vlan in the network for internet, we have to chick ' VLAN ' option. If not, we needn't check this option, which will be VLAN transparent mode.

【Vlan ID】Configure this option according to our network plan.

【Priority】Set the priority of vlan, The same as "Vlan", depending on the network vlan planning to configure. The default priority is 0.

【Mode】Choose IPOE.

【Service Type】Choose Internet.

【IP Protocol】Select 'Ipv4'; If there is Ipv6 in the network, we can select ' Ipv4/Ipv6 '.

【MTU】The default is 1500; we have to change to lower MTU, **such as 1400**, if we can ping the DNS but not access the website via WEB browser.

【NAT】 Check ‘ NAT ’ feature： NAT is mainly used for address translation function of local network and external network. The default is checked enable status. If you do not check this option, maybe you can’t surf the internet.

IPv4:

【Mode】Select ‘ Manual’.

【IP Address】Set static IP address;

【Mask】Set the mask of static IP address;

【Gateway】Fill in the address of the gateway

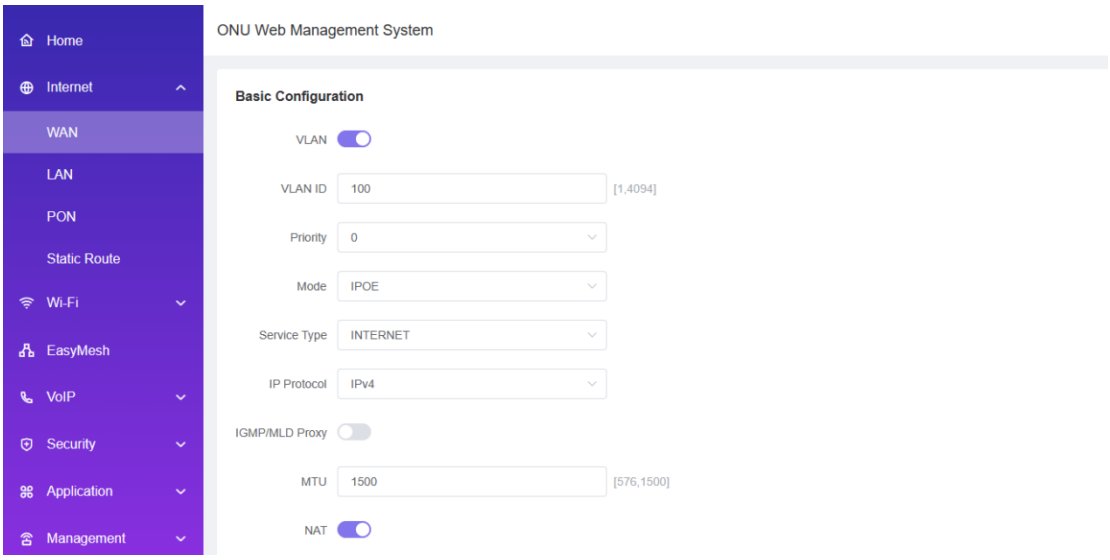
【Manual DNS】Closed for modification,need config DNS.

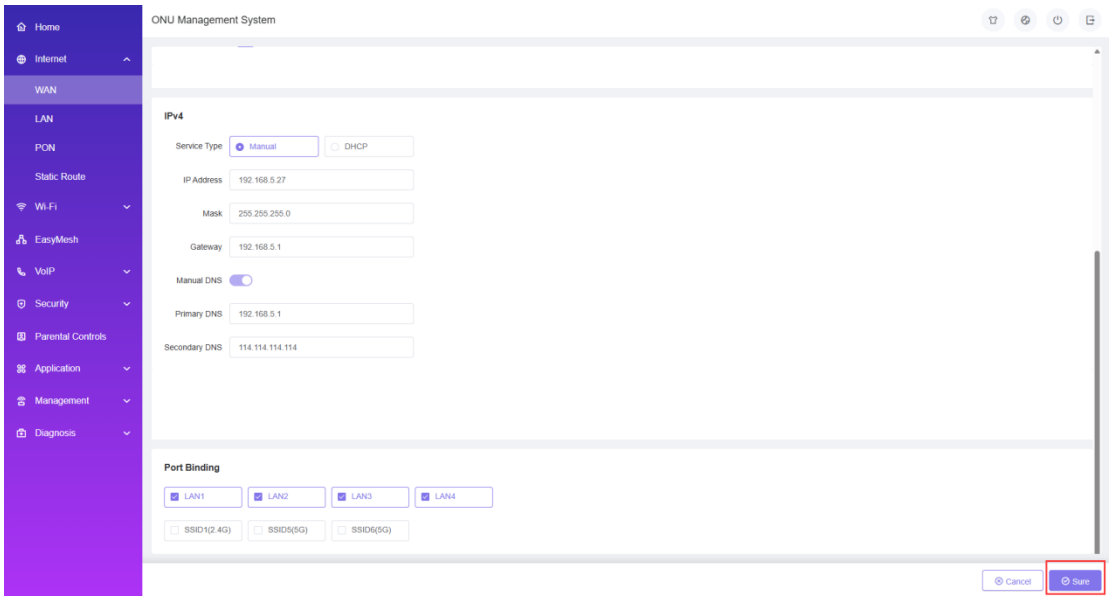
【Primary DNS】Set static primary DNS address and secondary DNS address;

【Secondary DNS】Set static second DNS address and secondary DNS address;

【Port Binding】Bind the physical ports with Static WAN connection.

Note: By default, all LAN ports and WIFI data are not bound by this WAN connection (a LAN and WIFI SSID can only be bound to a WAN connection at the same time).





After configuring the parameters of Static IP WAN connection as below, click ‘**Sure**’ to finish the setting.

5.2 Configure Bridge WAN Connection for Internet

Login ONU WEB, select **Internet -> WAN->Click “Add” button**, and then there are some parameters for us to configure as follows:

【Vlan】We can set this option according to your network plan. If there is vlan in the network for internet, we have to chick ‘ VLAN ‘ option. If not, we needn’t check this option, which will be VLAN transparent mode.

【Vlan ID】Configure this option according to our network plan.

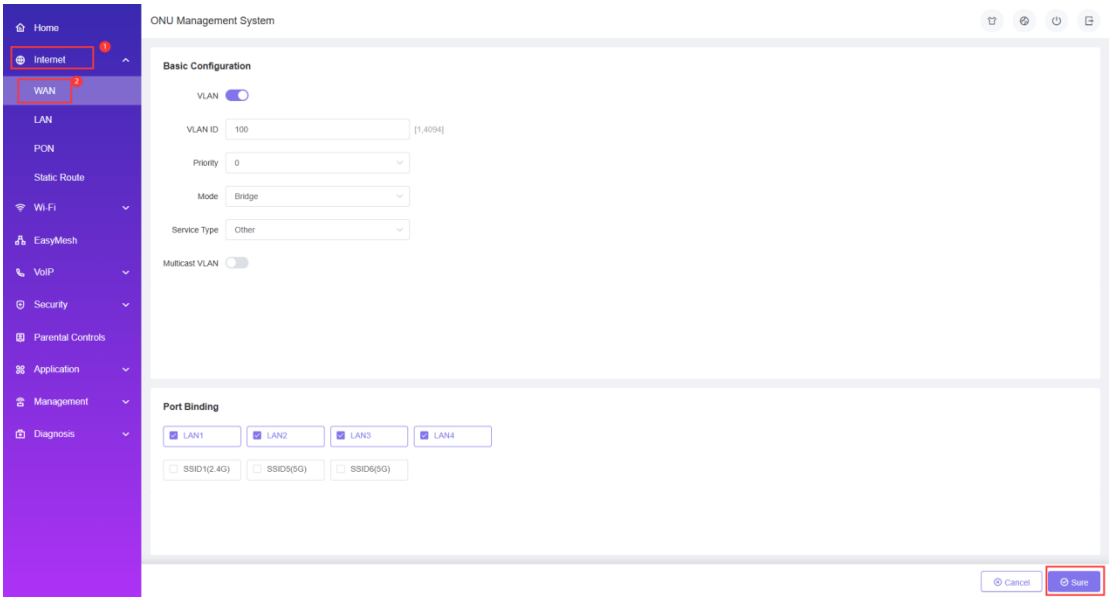
【Priority】Set the priority of vlan, The same as "Vlan", depending on the network vlan planning to configure. The default priority is 0.

【Mode】Choose Bridge.

【Service Type】Choose Internet.

【Port Binding】Bind the physical ports (Lan port 1-4 and wireless) with Bridge WAN connection.

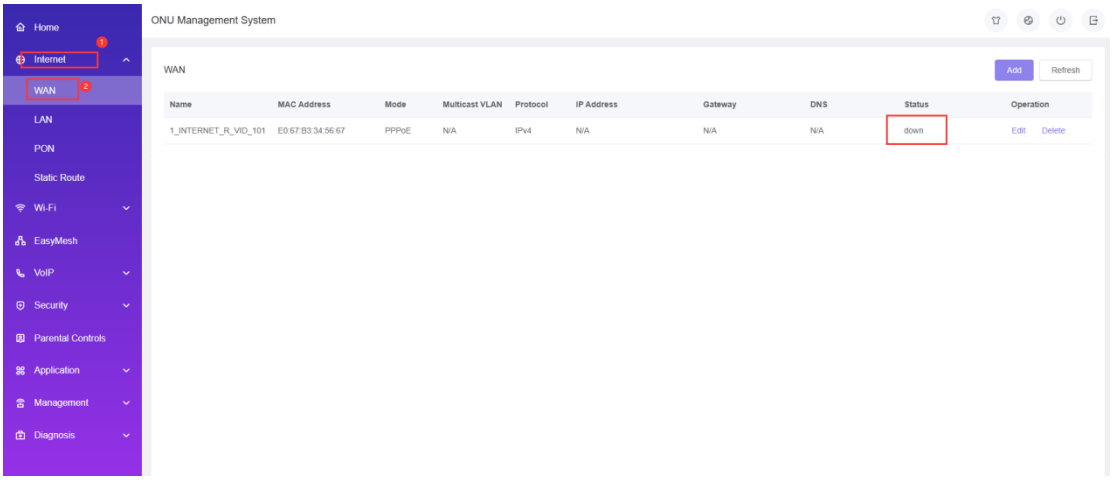
Note: By default, all LAN ports and WIFI data are not bound by this WAN connection (a LAN and WIFI SSID can only be bound to a WAN connection at the same time).



After configuring the parameter of Bridge WAN connection as above, click ‘**Sure**’ to finish the setting.

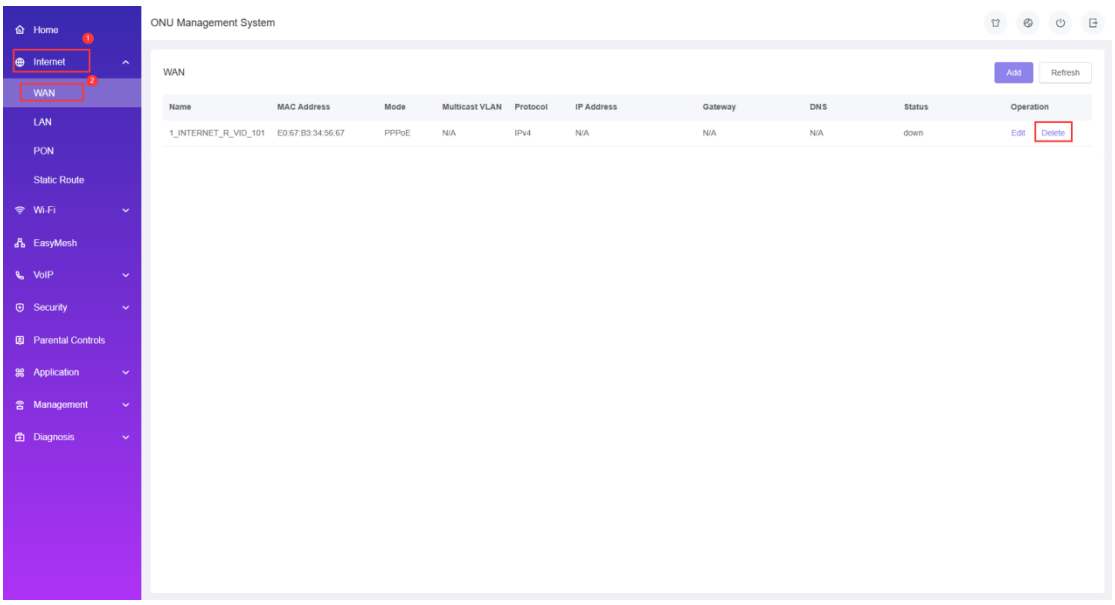
5.3 View the WAN Connection Status

Login ONU WEB, select **Internet-->WAN**. In here, we can view WAN connection status, check the route WAN connection if it gets an IP address and Bridge WAN connection , **Down or UP**. As follows:



5.4 Delete the WAN Connection

Login ONU WEB, select **Internet-->WAN->Click "Delete" button,** then brings up a pop-up window to confirm it.



6 ONU LAN Configuration

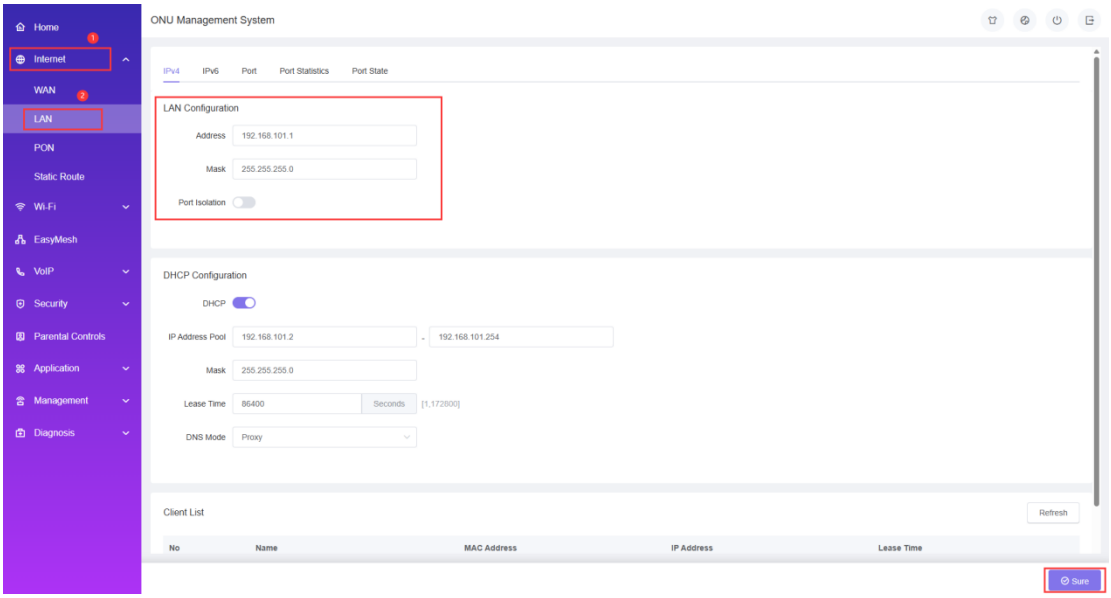
6.1 LAN IP Address Configuration

Login ONU WEB, select **Internet->LAN** and then there are some parameters for us to configure as follows:

【IP address】Set local management IP address of ONU. The default IP address is 192.168.101.1.

【Mask】Set the mask of local management IP address of ONU.

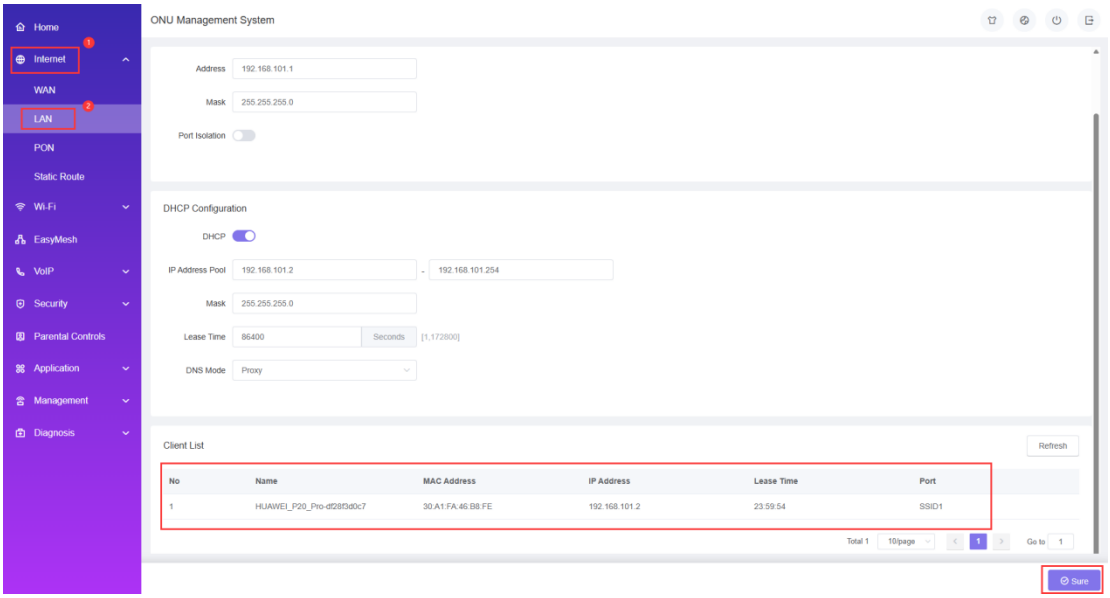
【Port Isolation 】Default is Disable.



After configuring the parameters of LAN address as above, click '**Sure**' to finish the setting.

6.2 View LAN Client

Login ONU WEB, select **Internet->LAN**. View client that access via LAN ports . As follows:



7 WLAN Configuration

7.1 Wireless 2.4G wifi configuration

7.1.1 2.4G WLAN Advance Configuration

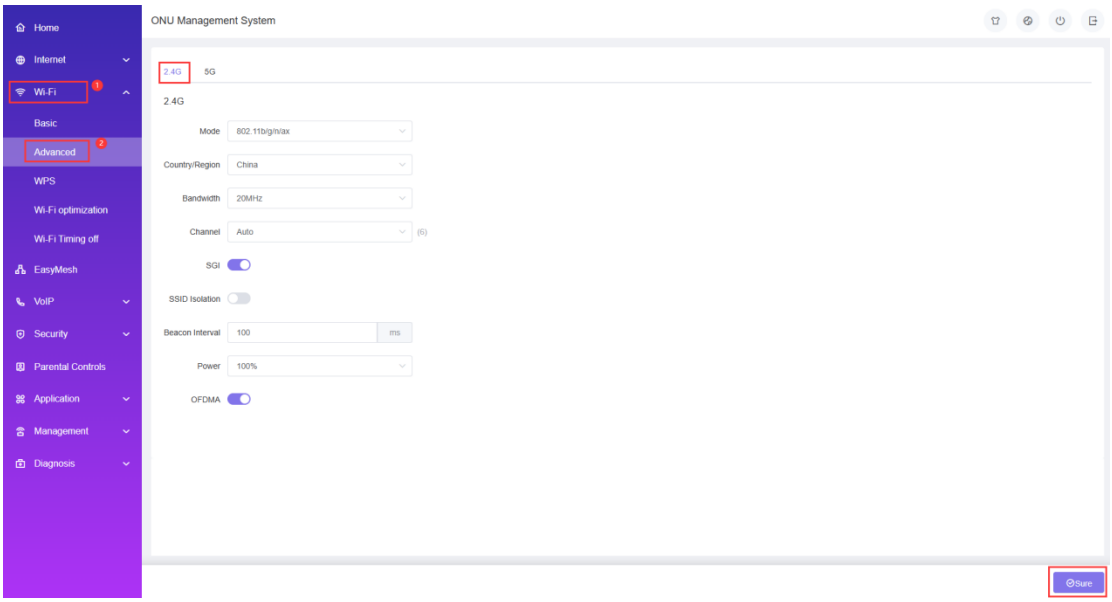
Login ONU WEB, select **Wi-Fi->Advance->2.4G**, and then there are some parameters for us to configure as follows:

【Mode】The default is 802.11 b/g/n/ax.

【Country/Region】Choose the corresponding city according to your own area.

【Bandwidth】Default is Auto.

【Channel】The default is Auto. We can select a channel without glitches by manual according to the surrounding Environment.



After setting wireless configuration, click '**Sure**' button to finish setting.

7.2 Wireless 5G wifi configuration

7.2.1 5G WLAN Advance Configuration

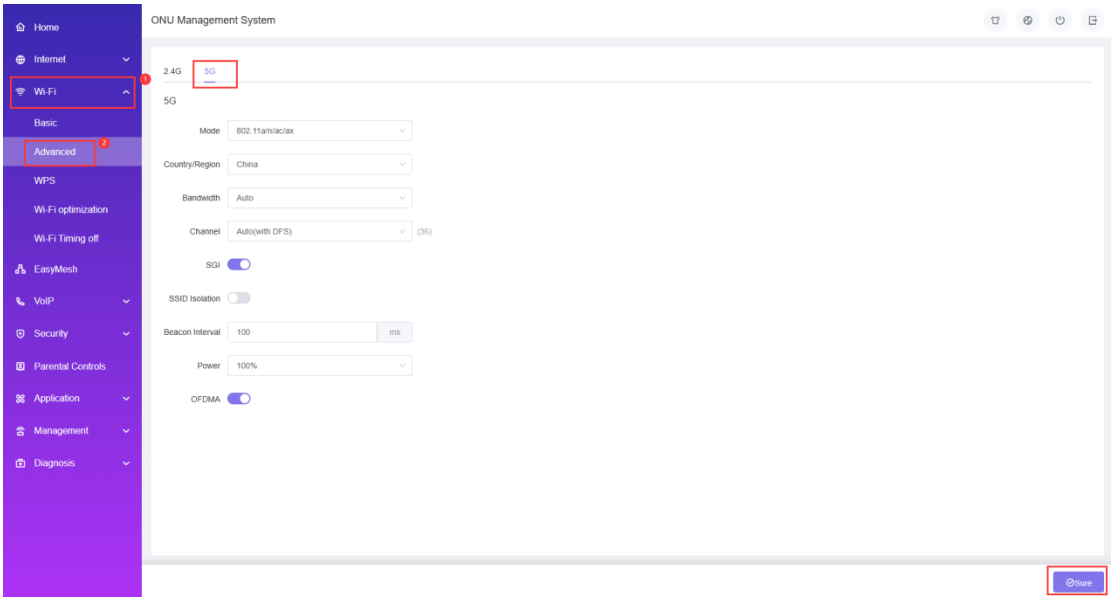
Login ONU WEB, select **Wi-Fi->Advance->5G**, and then there are some parameters for us to configure as follows:

【Mode】The default is 802.11 a/n/ac/ax.

【Country/Region】Choose the corresponding city according to your own area.

【Bandwidth】default is Auto.

【Channel】The default is Auto(DFS). We can select a channel without glitches by manual according to the surrounding environment.



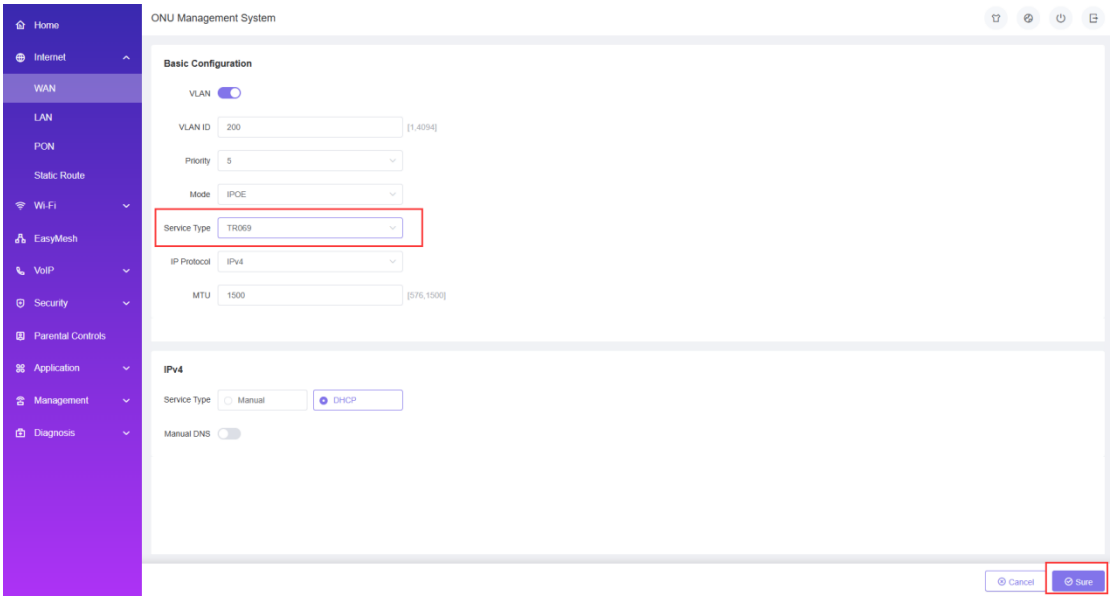
After setting wireless configuration, click '**Sure**' button to finish setting.

8 TR069 Remote Management

ONU TR069 remote management is mainly used for some network that support TR069 server centralized remote management, the current management is mainly used in many large networks, ONU as TR069 remote management of the client need to do the following settings.

8.1 Configure Channel for TR069 Remote Management

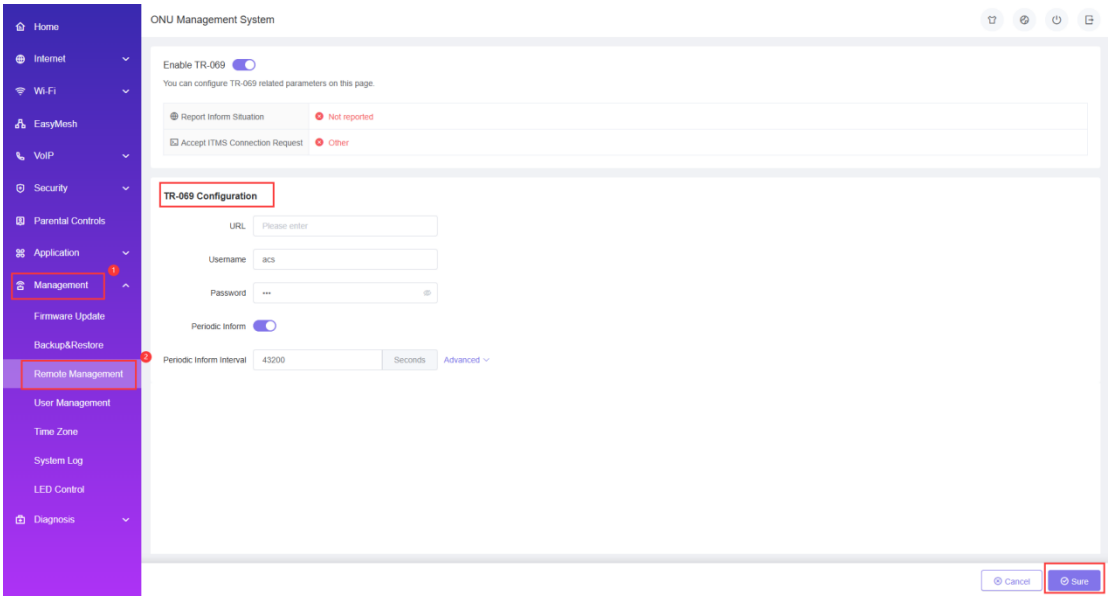
Firstly, refer to **#5.1**, set a Route WAN connection with '**Service Type** as TR069, which is used to act as a channel for TR069 server.



8.2 TR069 Client Configuration

Login ONU WEB, select **Management->Remote Management**. In this page, we can set ONU's parameter of TR069 client (Username, Password, URL).

Note: All of parameters of TR069 are offered by ISP.



After setting wireless configuration, click '**Sure**' button to finish setting.

9 The Configuration for VoIP

9.1 SIP Settings

Firstly, login onu's web and configure a WAN connection to carry Voice service according to #5.1 or 5.2 and select "VOICE" or "VOICE_INTERNET" or "VOICE_TR069" or"VOICE_INTERNET_TR069" in Service List.

Then select **Voip->Basic,** and then there are some parameters for us to configure as follows:

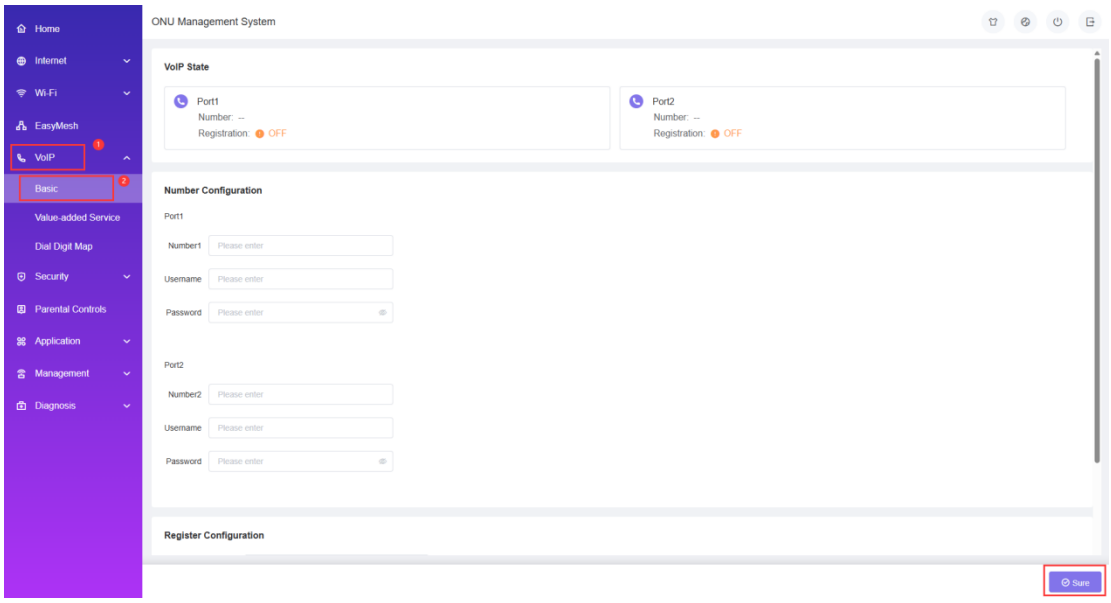
【Number1】Fill in the telephone number.

【Username】Fill in the Auth User name that can register to the voice server.

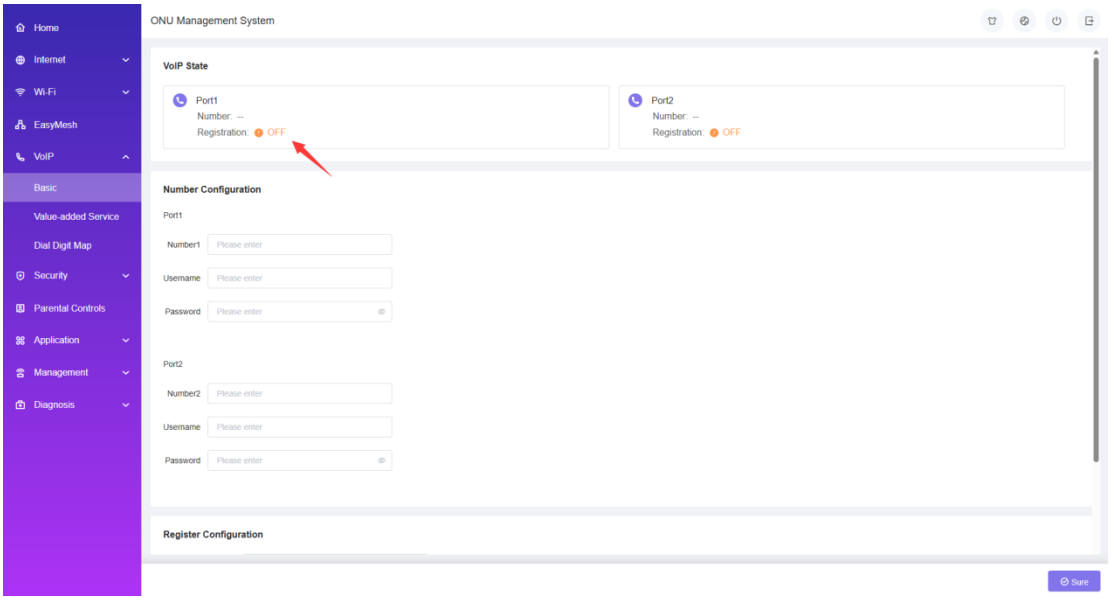
【Password】Fill in the password that can register to the voice server.

【Register Server】Fill in the Register Server's ip address.

【Proxy Server】Fill in the Proxy server IP



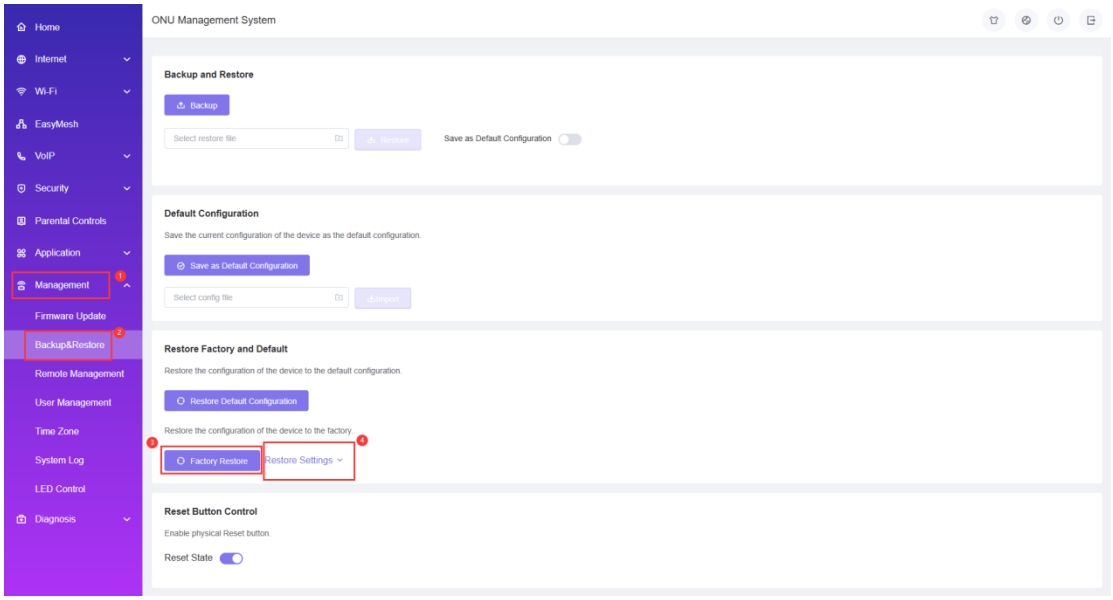
The direction of the arrow can see the status of the registration



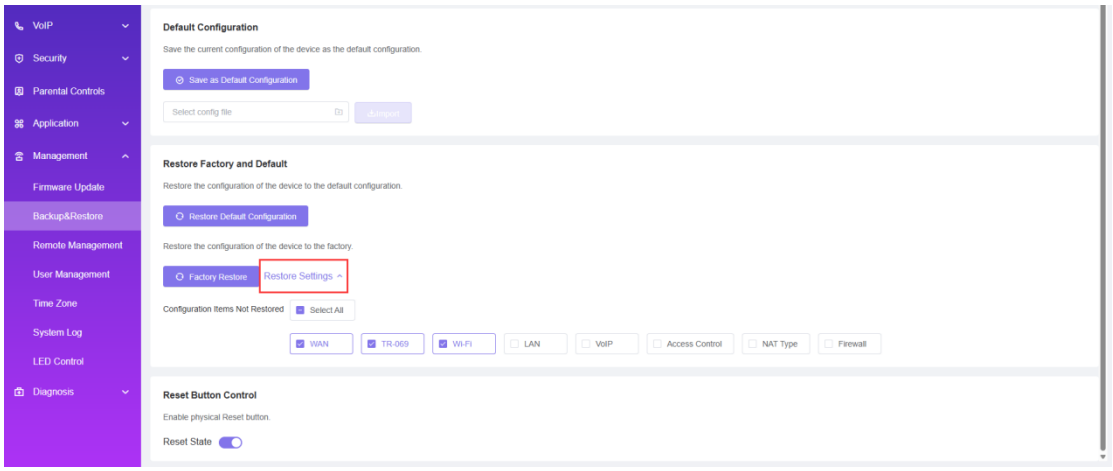
10 Device Management

10.1 Restore Default Setting

Login the ONU WEB. Select **Management --->Backup/Restore** . Click '**Factory Restore**' button. The device will restore the factory defaults after the application.



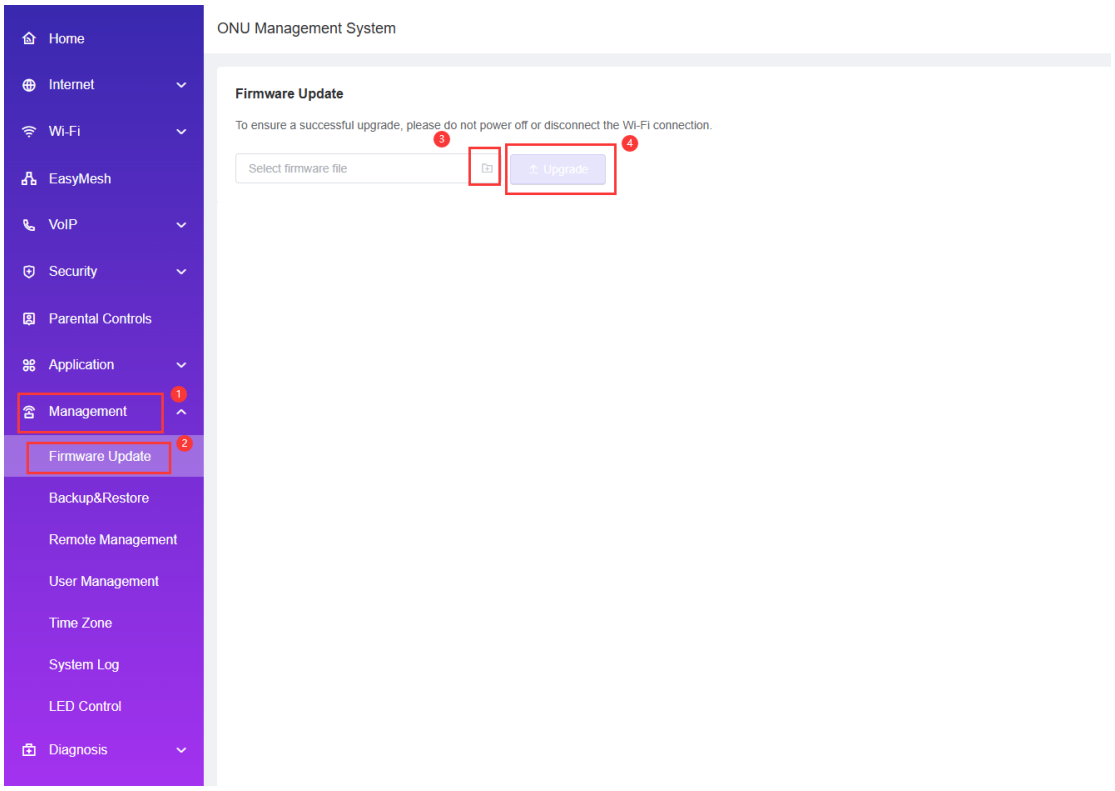
Click '**Restore Settings**' button,You can choose some configurations not to revert to factory settings



10.2 Firmware Upgrade

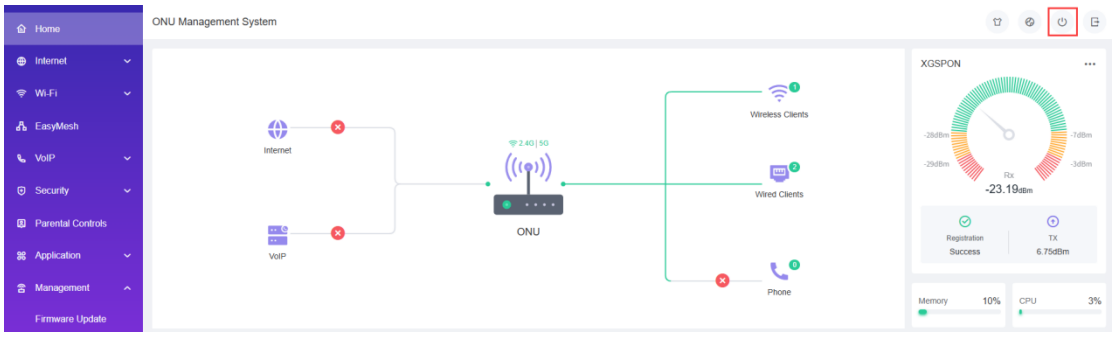
Login the ONU WEB. Select **Management->Firmware Update**. Click '+' to select firmware file, click '**Upgrade**' button to upgrade the ONU. After the application, the device is upgraded to the latest software version.

Note: We needn't extract Realtek project production's firmware, just upgrade the .tar file. It will take 4 minutes to upgrade. After upgrading, the ONU will reboot automatically. We needn't reboot it by manual.



10.3 Device Reboot

Login the ONU WEB.In the top right corner of the main menu, see the direction of the arrow. Restart the device immediately after application.



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