1GE DUAL MODE ONU

USER MANUAL

Version V1.0

Release Date 2020-08-24

Contents

Chapter 1 Product Introduction

1.1 Product Description

1GE Dual mode ONU meets telecom operators FTTO (office), FTTD (Desk), FTTH(Home) broadband speed, SOHO broadband access, video surveillance and other requirements and design EPON/GPON Gigabit Ethernet products. It is based on mature and stable, cost-effective EPON/GPON technology, high reliability, easy management, configuration flexibility and good quality of service (QoS) guarantees. They are fully compliant with GPON and EPON technical regulations such as ITU-T G.984.x, IEEE802.3ah and so on. Dual mode ONU can detect and exchange PON mode automatically.

Figure 1-1: 1GE Dual Mode ONU

1.2 Special features

- Integrated auto detecting, auto configuration, and auto firmware upgrade technology.
- Support OAM/OMCI remote configuration and maintenance.
- Support rich VLAN, DHCP Server and IGMP snooping multicast feature.
- Fully compatibility with OLT based on Broadcom/PMC/Cortina chipset.
- Support NAT, Firewall function.
- Support bridge and router mode.

1.3 Technical Parameter

Technical items	Descriptions
PON interface	1 G/EPON port(EPON PX20+ and GPON Class B+) Receiving sensitivity: ≤-28dBm Transmitting optical power: 0~+4dBm Transmission distance: 20KM
Wavelength	Tx1310nm,Rx 1490nm

Optical interface	SC/PC connector
Interface	1* 10/100/1000Mbps auto adaptive Ethernet interfaces. Full /Half Duplex, RJ45 connectors.
Indicator	3 indicators, SYS, LINK/ACT, REG.
Operating condition	-5℃～55℃，10%～90%（non-condenseing）
Storing condition	-30℃～60℃，10%～90%（non-condenseing）
Power supply	DC 12V, 0.5A
Power consumption	≤4W
Dimension	82mm×82mm×25mm（L×W×H）
Net weight	0.08Kg

1.4 Application chart

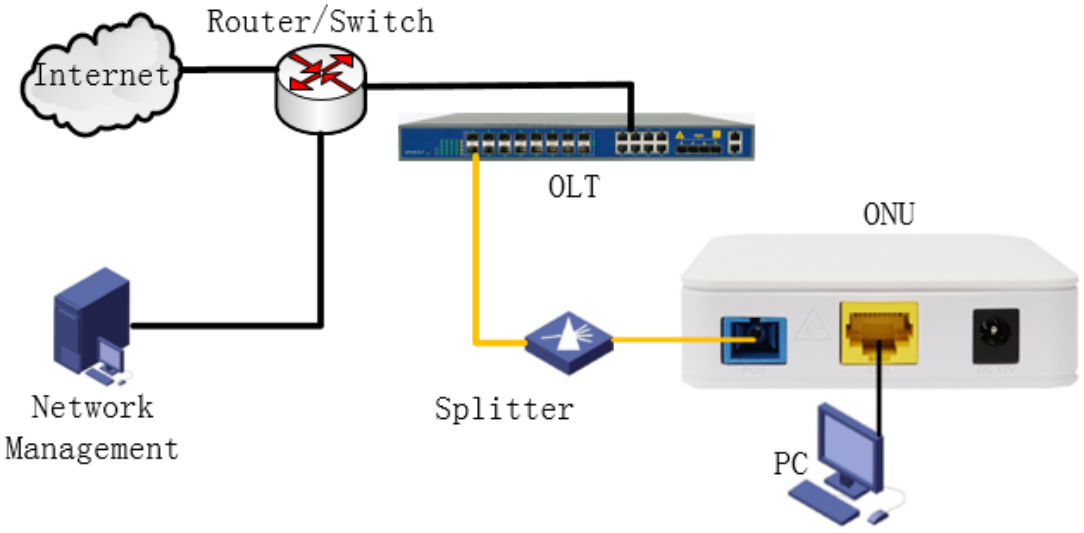

Figure 1-2: Application chart

1.5 Panel description

Interface/Button panel

Figure 1-3: Interface/Button panel

Name	Function
PON	Connect to OLT by SC type fiber connector, single mode optical fiber cable.
LAN	Connect PC or other devices with Ethernet port by Cat5 cable, RJ-45 connector.
DC 12V	Connect with power adapter. DC 12V, 0.5A.
RST	Press RST button over 10 seconds, onu restores factory default and reboot.

Indication Panel

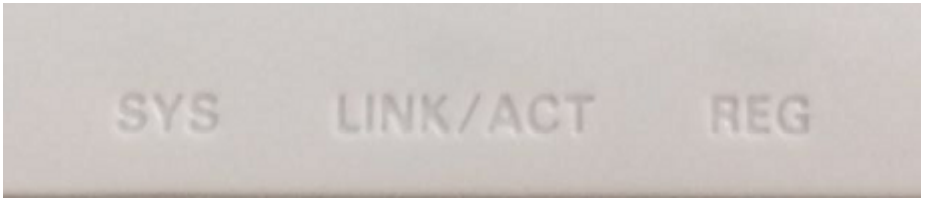

Figure 1-4: Indication panel

LED	Mark	Status	Description
Interface	LINK/ACT	ON	Port is connected properly (LINK).
		Off	Port connection exception or not connected.
		Blink	Port is sending or/and receiving data (ACT).
Registration	REG	ON	**Green**: the device is registered to PON system.
		OFF	Device has received optical signal and not registered to the PON system.
		Blink	**Red**: the Device does not receive optical signals. Green: the device registration is incorrect.
System	SYS	On / Off	System is not running or fatal error
		Blink	Normal running

Chapter 2 Quick Installation

2.1 Standard Packing Contents

When you received our product, please check carefully to make sure that our products whether have some defects or not. If something wrong with shipping, please contact carrier; other damage or lack of some parts, please contact with dealer.

Contents	Quantity
Dual Mode ONU	1 pcs
Power Adapter	1 pcs
Installation Guide	1 pcs

2.2 Quick Installation

1. Connecting the optical fiber cable to the unit.
   a) Remove the protective cap of the optical fiber.
   b) Clean the end of the optical fiber with an optical fiber end cleaner.
   c) Remove the protective cap of the ONU optical interface (PON interface). Connect the fiber to the PON port on the unit.

   Note: When measuring the optical power before connecting to the ONU, it is recommended to use a PON Inline Power Meter.

While connecting, please note:

- Keep the optical connector and the optical fiber clean.
- Make sure there are no tight bends in the fiber and that the bending diameter is greater than 6cm. Otherwise, the optical signal loss may be increased, to the extent that signal may be unavailable.
- Cover all optic ports and connectors with protective cap to guard against dust and moisture when the fiber is not used.

2. Apply power to the unit. Push the power button.
3. After the ONU is power ON, Indicators should light up as for normal operation. Check whether the PON interface status LED (PON) is on continuously. If it is, the connection is normal; otherwise there is either problem of the physical connection or the optical level at either end. This may be caused by either too much or too little attenuation over the optical fiber. Please refer to the Layout Description section of this installation manual for normal LED activity.
4. Check all signal levels and services on all the ONU communication ports.

Unit Installation Adjustment

Installing the ONU on a horizontal surface (Bench top)

Put the ONU on a clean, flat, sturdy bench top. You must keep the clearance for all sides of the unit to more than 10cm for heat dissipation.

Installing the ONU on a vertical surface (Hanging on a wall)

You can install the ONU on a vertical surface by using the mounting holes on the bottom of the ONU chassis and two flat-head wood screws.

a) Insert the screws into the wall. The screw positions must be in the same horizontal line

and the distance between them must be 145mm. Reserved at least 6mm between the screw caps and the wall.

b) Hang the ONU on the screws through the mounting holes.

Chapter 3 Configuration

After finishing the basic connection configuration, you can use its basic function. In order to satisfy individuation service requirements, this charter provides the user parameter modification and individuation configuration description.

This model of ONU is designed as SFU(single family unit, bridge mode), there is no bridge mode WAN in ONU. When it works on bridge mode, VLAN of LAN port should be configured by OLT. When it works on router mode, you may configure through its web management.

3.1 Login

The device is configured by the web interface. The following steps will enable you to login:

1. Conform “2.2 Quick Installation” to install;
2. The device default IP is 192.168.1.1;
3. Open your web browser, type the device IP in address bar;
4. Entry of the user name and password will be prompted. Enter the default login user name and password.
   By default, there are two user levels for management. Administration level user name is "admin", password is "stdONUi0i". Normal level user name is "user", password is "user".

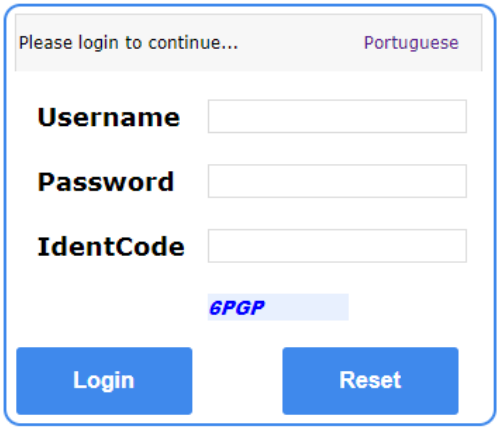

Figure 3-1: Login

For security, you will be asked to modify password after you logged in by default password. The new password must meet the requirements that display on the webpage. After submitted, it requires you to login by new password.

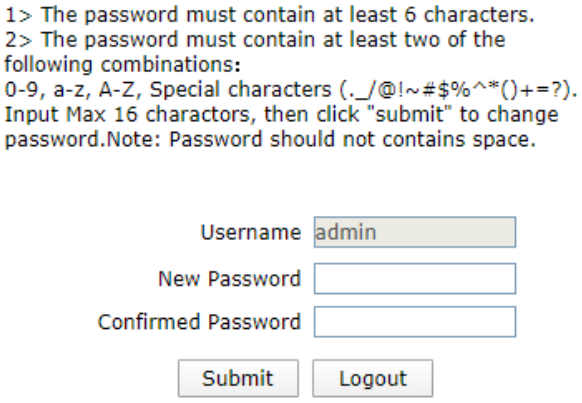

Figure 3-2: Change Password

3.2 Status

This part shows the main information of product.

3.2.1 Device Information

This page shows the device basic information, such as Device Model, Hardware Version, Software Version, PON SN, PON mode and so on.

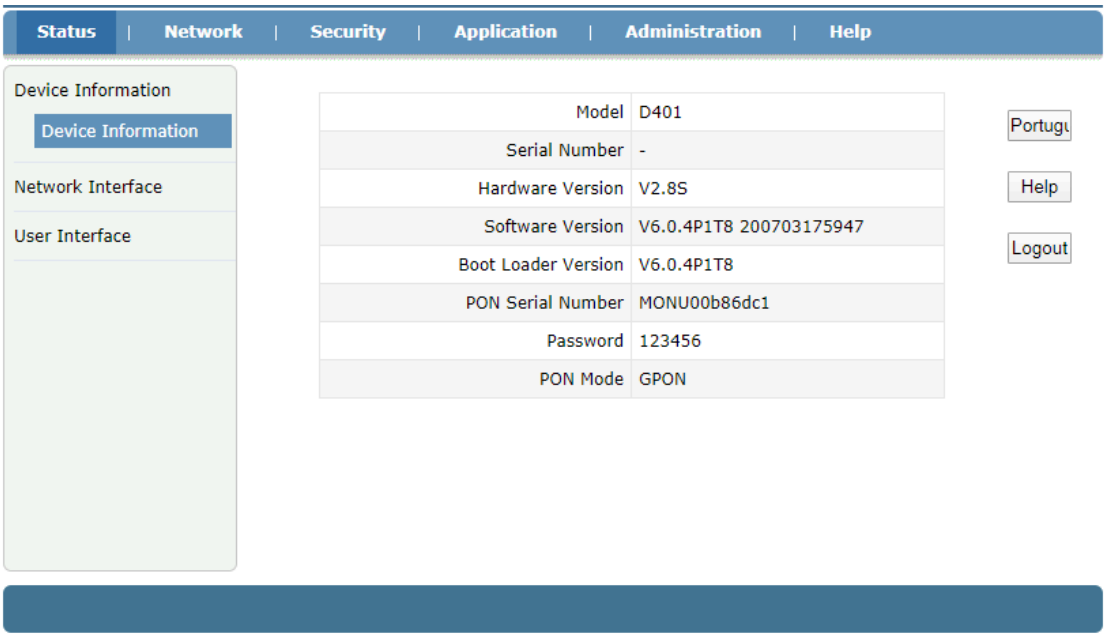

Figure 3-3: Device Information

3.2.2 Network Interface

3.2.2.1 WAN Connection

This page shows WAN connection information you have configured.

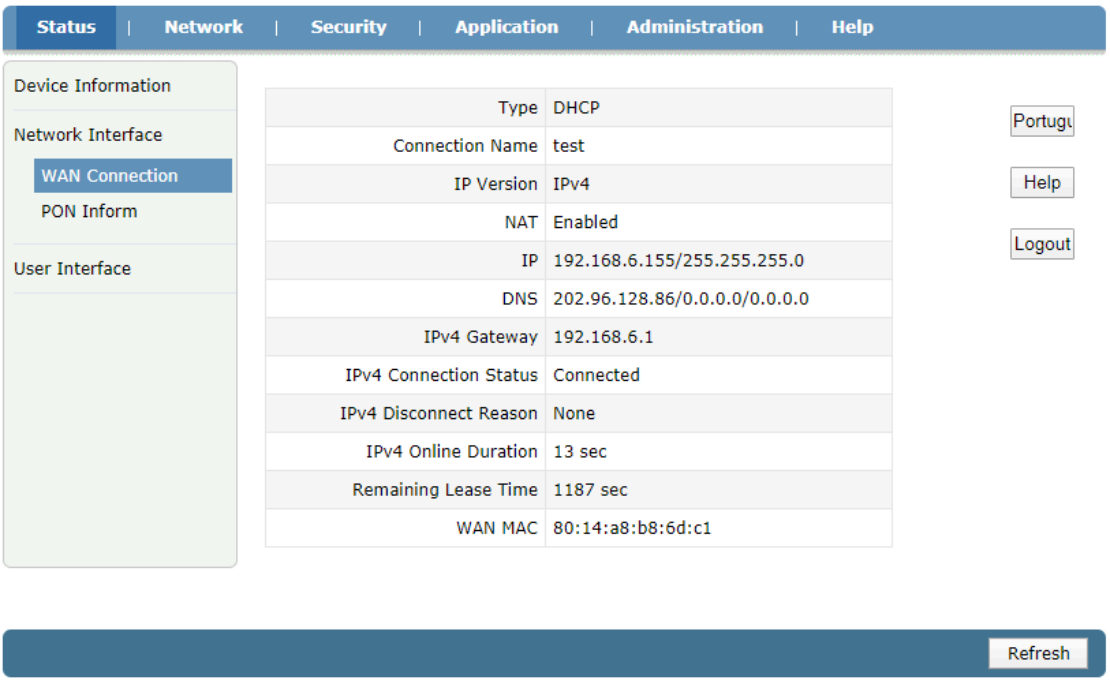

Figure 3-4: WAN Connection

3.2.2.2 PON Inform

This page shows the PON information, such as PON state, input power, output power, and optical module voltage, current, temperature.

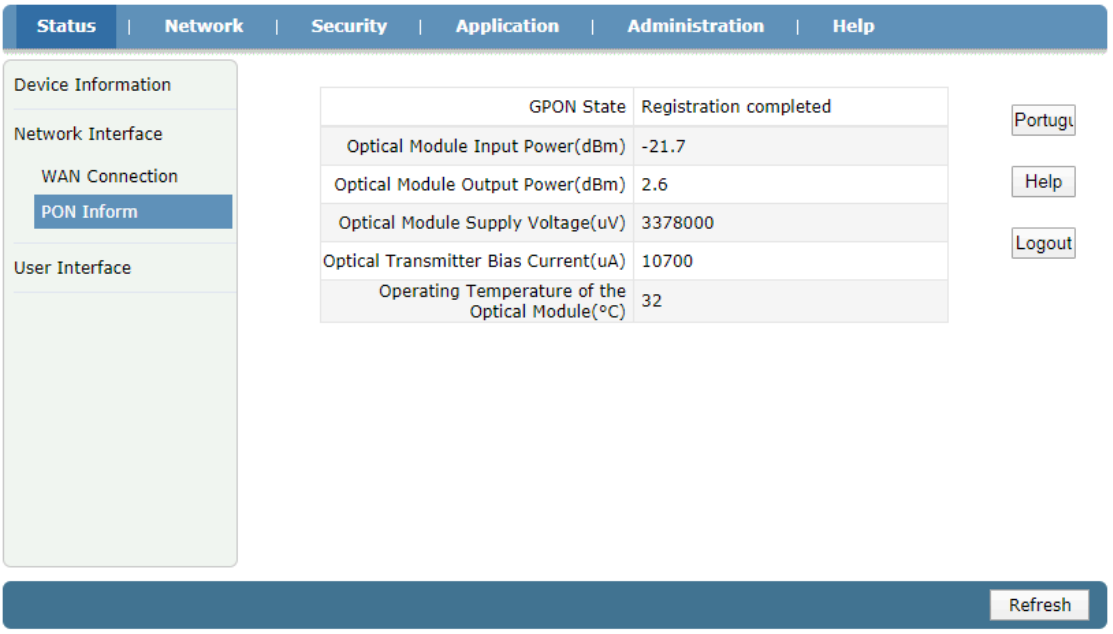

Figure 3-5: PON Information

3.2.3 User Interface

This page shows the Ethernet port information, including port status, MAC address and statistics.

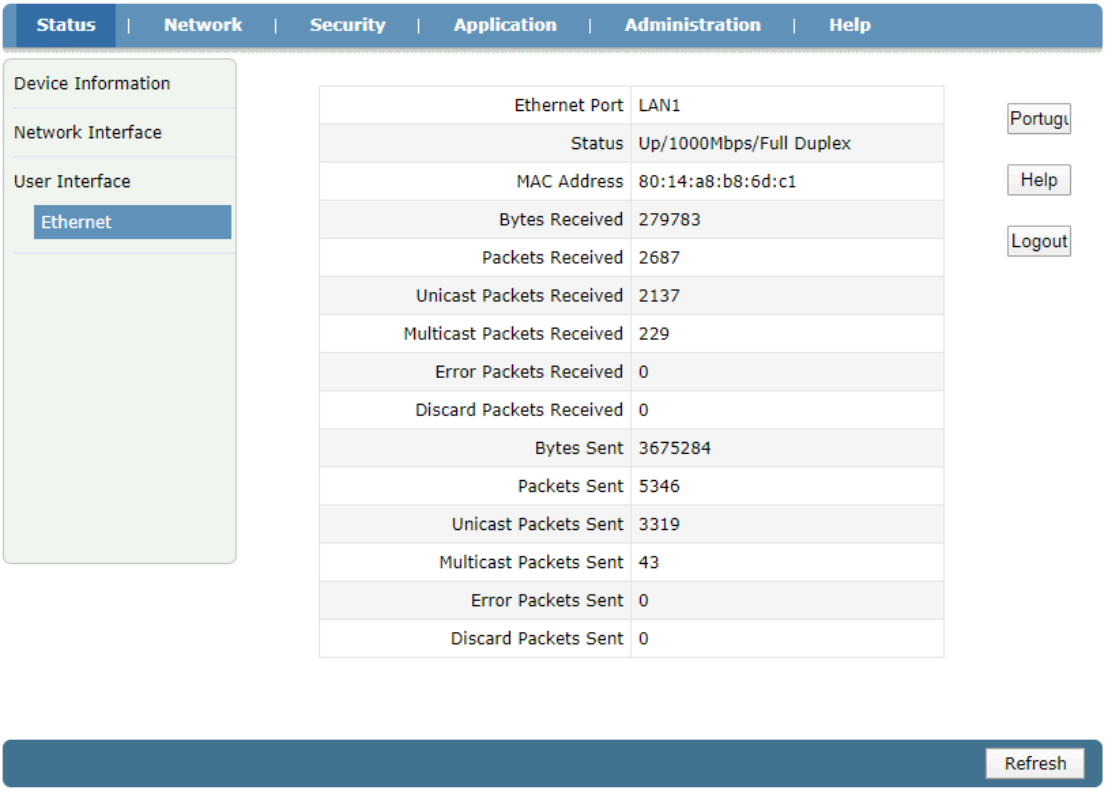

Figure 3-6: Ethernet Information

3.3 Network

3.3.1 Internet

This page allows user to configure router mode WAN connection. You can only configure route mode WAN connections here. The device default settings is bridge mode(without any WAN).

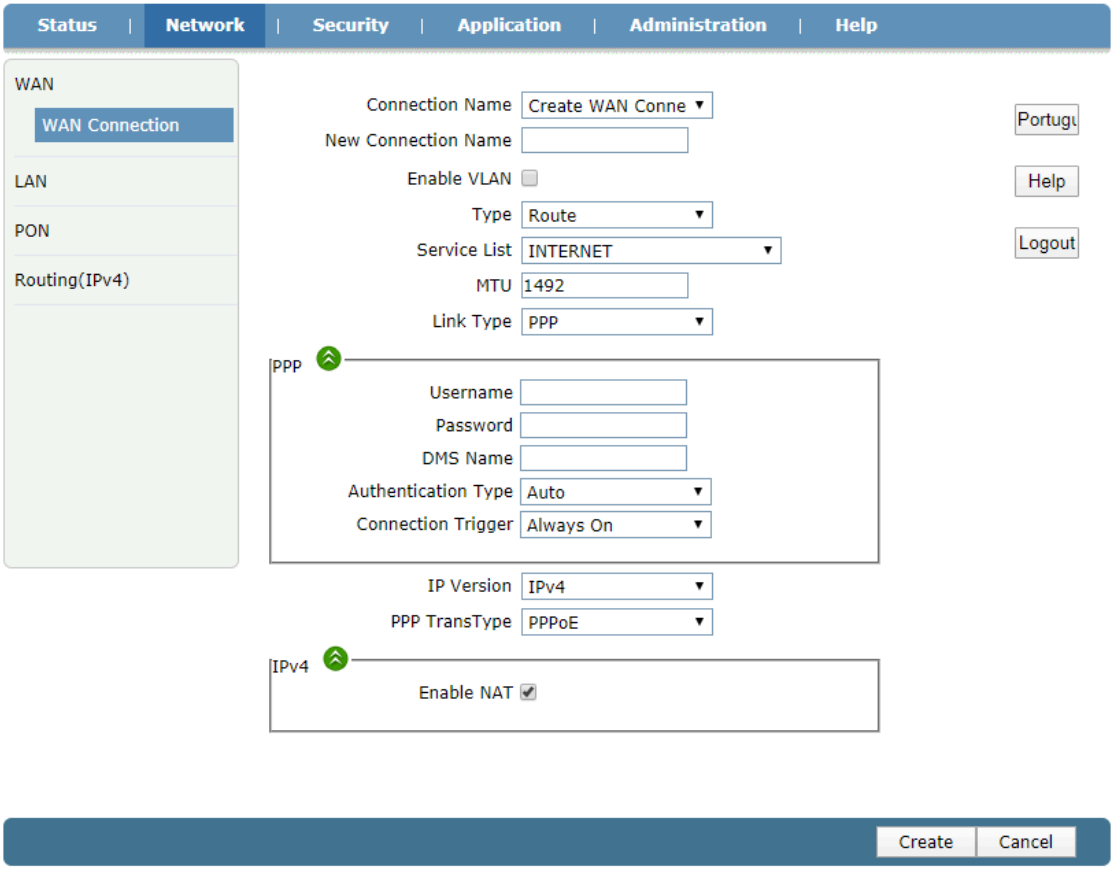

Figure 3-7: WAN Connection

Parameter		Illustration
Connection Name		The list of WAN connection name that has been created. If you want to create a new WAN connection, please select "Create WAN Connection" and input other Parameter at the same time and then click "Create" button. If you want to edit WAN connection, please select the wan connect name you want to edit and change some Parameter and then click "Modify" button. If you want to delete one connection, please select the wan connection you want to delete and then click "Delete" button.
New Connection Name		Name of new connection that you want to create.
VLAN	Enable VLAN	Checked indicates the packets are transmitted by the PON port take VLAN tag. Unchecked indicates the packets are transmitted by the PON port don't take VLAN tag.
	VLAN ID	Input the VLAN ID you want to set. Range is 0~4094. Input 0 means don't use any VLAN.
	802.1P	Select VLAN priority you want to set. Range is 0~7.
Type		Bridge/Route. There is only Route mode can be selected. The device works on route mode with this WAN connection. If you want it to work on bridge mode, don't configure any WAN connection.
Service List		Service mode indicates what the wan connection is used for. There is only INTERET can be selected.
MTU		Max transfer unit. Default Value (in Byte): 1500(static/DHCP) or 1492(PPPoE).
Link Type		PPP/IP. PPP is used for PPPoE, and IP is used for static IP or DHCP.

PPP	Username	PPPoE account.
	Password	PPPoE password.
	DMS name	Server name.
	Authentication Type	PPPoE authentication type, including Auto, PAP and CHAP.
	Connection Trigger	The trigger of PPPoE connection after disconnected. Always On: once PPPoE disconnected, ONU will connect again automatically. On Demand: ONU will connect again if there is data traffic. Manual: ONU will connect again after submitted the configurations.
IP Version		IPv4/IPv6
Enable NAT		Checked indicates NAT function is enabled. Unchecked indicates NAT function is disabled. Only IPv4 has this option.
IP Type/PPP TransType		Method of WAN connection Obtains IP address. If link type is PPP, PPP TransType will be PPPOE; if link type is IP, IP Type will be static or DHCP.
IPv6	IPv6 Info Get Mode	Method of WAN connection obtains IPv6 address, including Manual Mode and Auto Mode.
	GUA From	Method of WAN connection obtains Global Unique IPv6 Address.
	DNSv6 From	Method of WAN connection obtains DNSv6.
	Prefix Delegation From	Method of prefix delegation.

3.3.2 LAN

This page supports the management of the ONU's IP address, dynamic address management, including dynamic address distribution and relevant parameters distribution, such as lease time, address range, DHCP Proxy, etc.

3.3.2.1 DHCP Server

This page contains LAN IPv4 address and LAN DHCP server configurations.

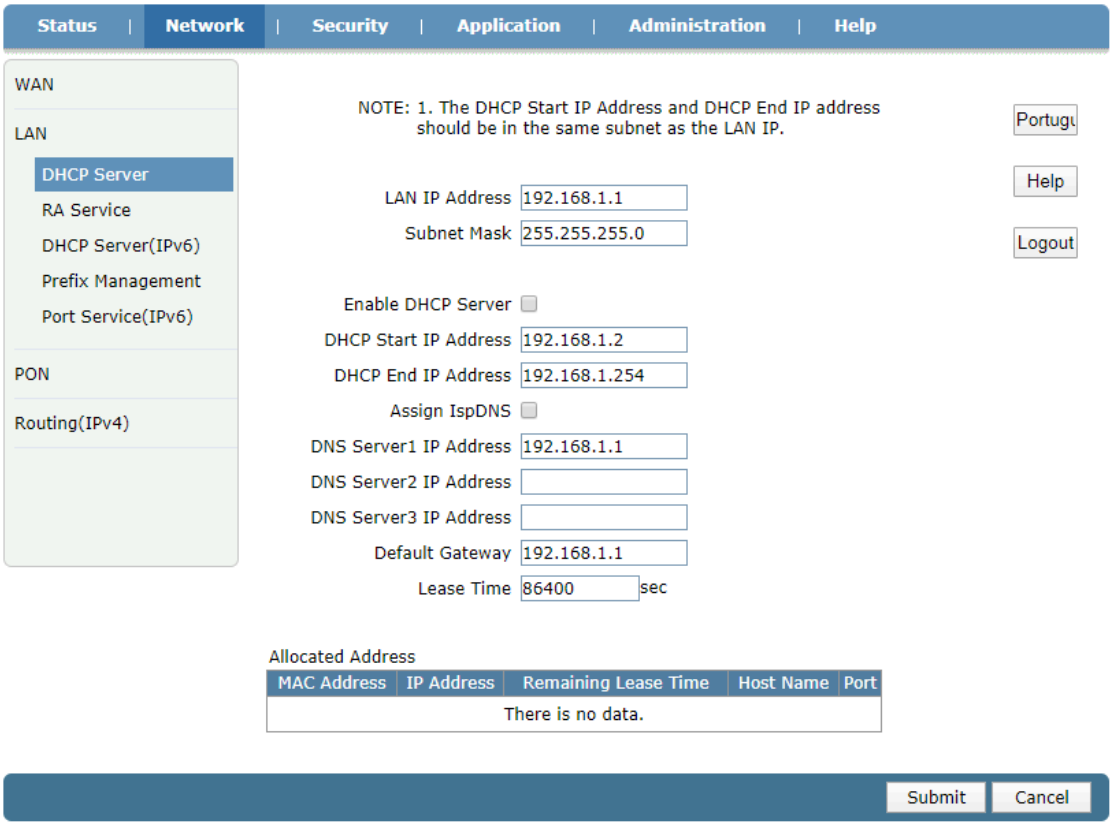

Figure 3-8: LAN IPv4 Address Settings

Parameter		Illustration
LAN IP Address		LAN IPv4 address.
Subnet Mask		LAN IPv4 mask.
Enable DHCP Server		Switch of ONU DHCP server.
Start IP Address		The start IP address of DHCP IP pool.
End IP Address		The end IP address of DHCP IP pool.
DNS	Assign ISP DNS	Checked indicates LAN DHCP will use ISP DNS. Unchecked indicates LAN DHCP use DNS that set in the textbox.
	DNS Server IP Address	DNS server addresses for LAN DHCP.
Default Gateway		Default gateway of LAN DHCP. It should be the same as LAN IPv4 IP address.
Lease Time		Lease time of the IP address.

3.3.2.2 RA Service

This page show RA configuration.

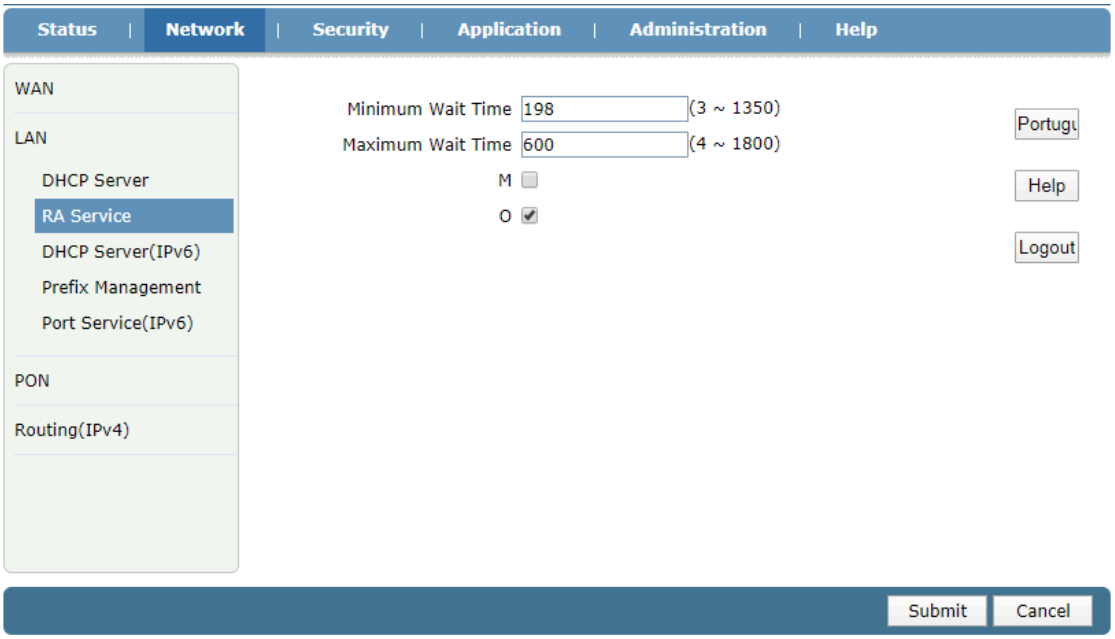

Figure 3-9: RA Configuration

3.3.2.3 DHCP Server(IPv6)

This page contains LAN IPv6 address and LAN DHCP server configurations.

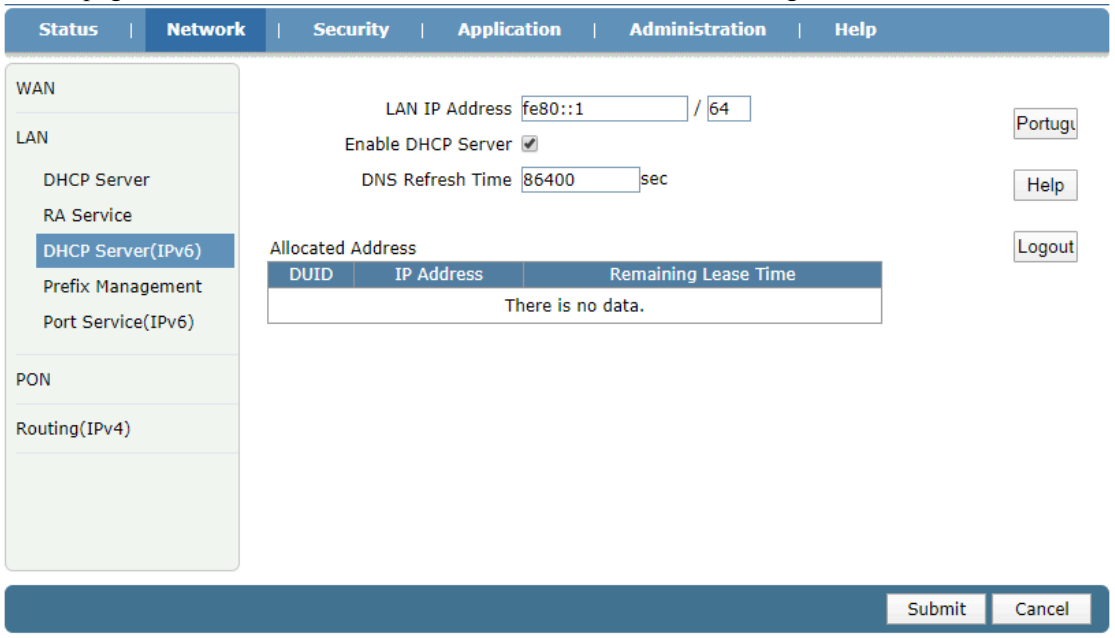

Figure 3-10: LAN IPv6 Address Settings

3.3.2.4 Prefix Management

This page is used to configure IPv6 prefix parameters.

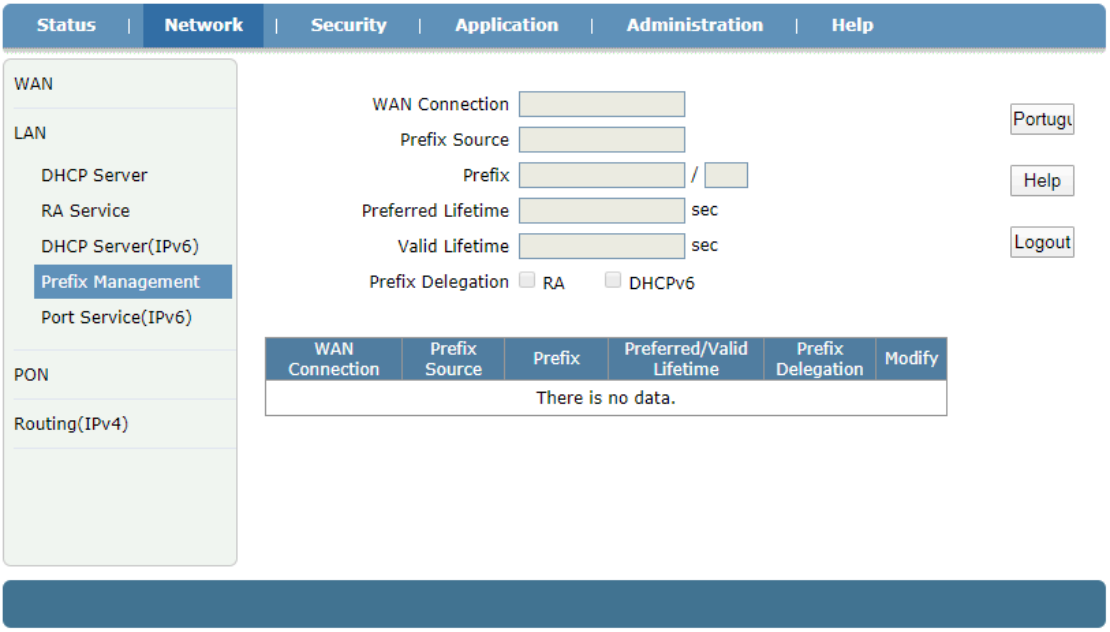

Figure 3-11: Prefix Management

3.3.2.5 Port Service(Ipv6)

This page is used to configure DHCPv6 and RA function of LAN port.

Figure 3-12: Port Service(IPv6)

3.3.3 PON Settings

3.3.3.1 LOID

This page allows user to configure LOID and password which are used for registering to OLT.

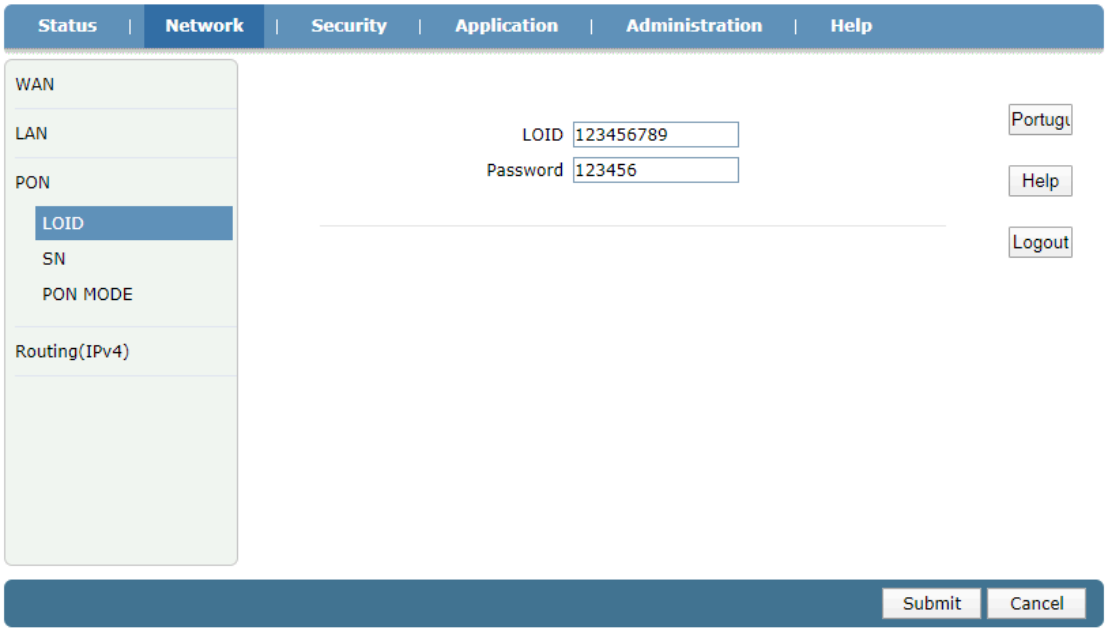

Figure 3-13: LOID settings

3.3.3.2 SN

This page allows user to configure GPON SN and password which are used for registering to OLT.

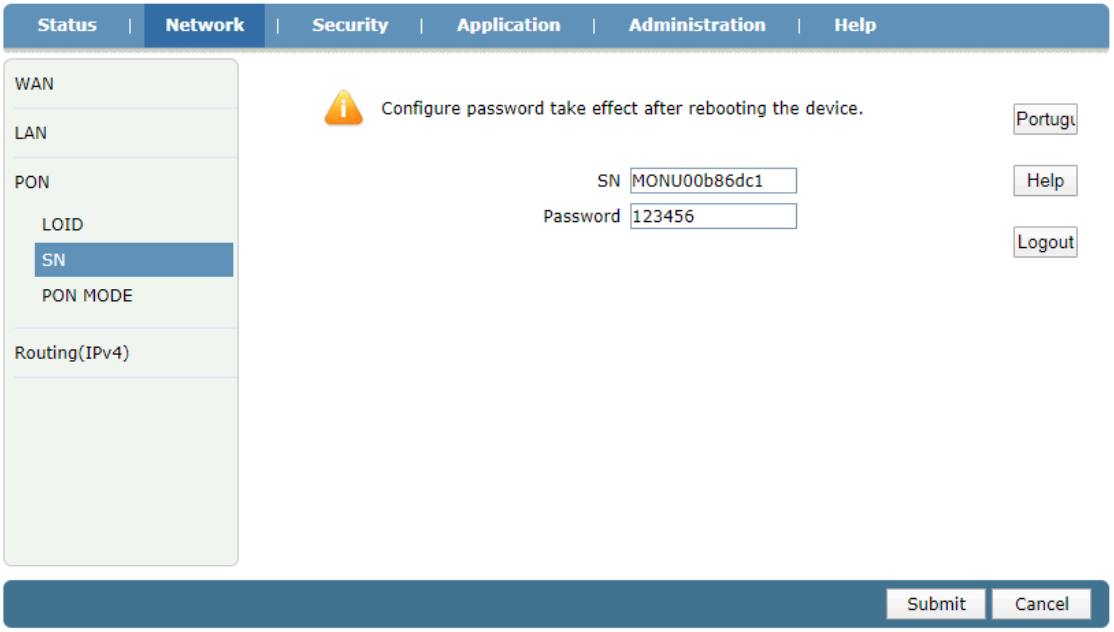

Figure 3-14: GPON SN Settings

3.3.3.3 PON Mode

This page allows user to configure PON mode when connected to corresponding system.

AUTO: ONU will detect PON mode and shift to proper PON mode.

GPON: ONU will work on GPON mode.

EPON: ONU will work on EPON mode.

Figure 3-15: PON Mode

3.3.4 Routing(Ipv4)

3.3.4.1 Default Gateway

This page allows user to configure default gateway of ONU. Just need to specify the WAN connection that connected to the gateway.

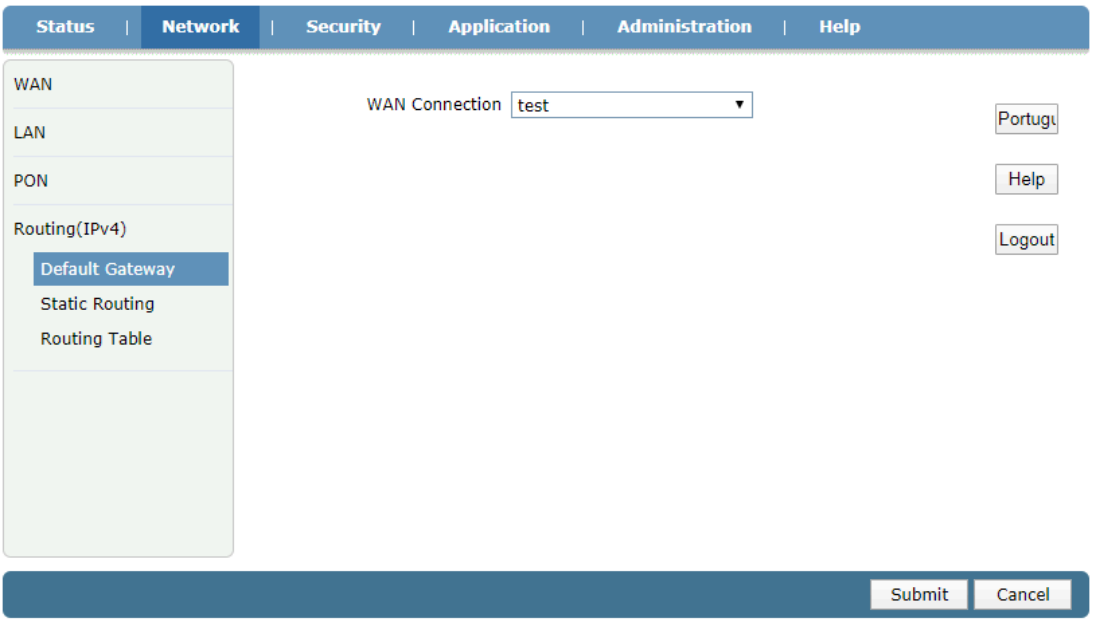

Figure 3-16: Default Gateway

3.3.4.2 Static Routing

This page allows user to specify a WAN connection as the Route Interface, and then configure destination IP, mask and gateway.

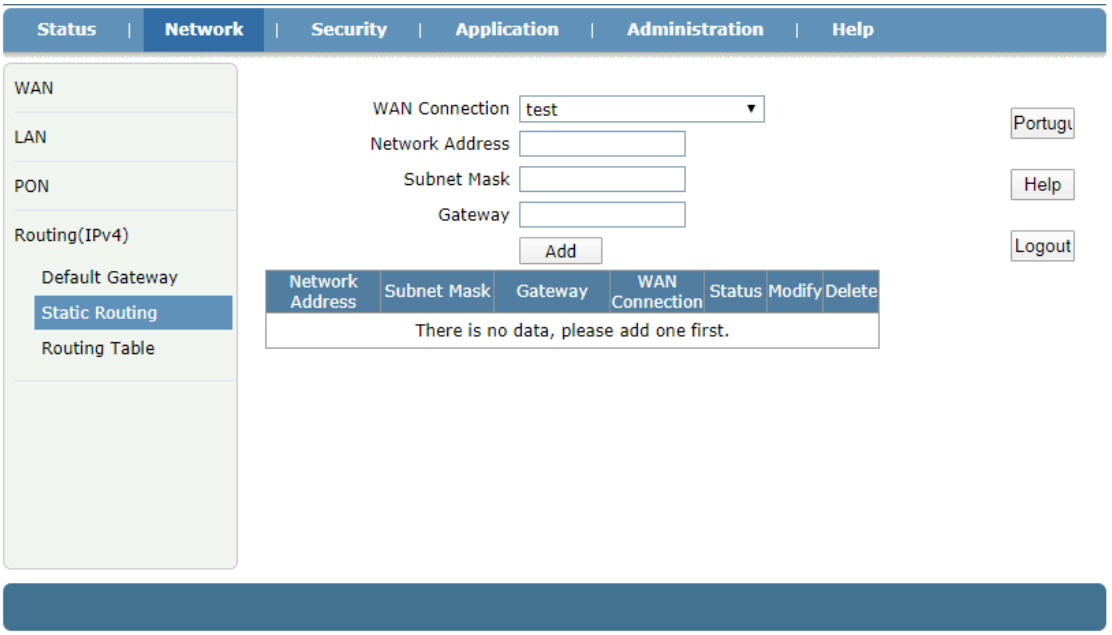

Figure 3-17: Static Routing

Parameter	Illustration
WAN Connection	Select WAN connection as static routing interface.
Network Address	Destination network address.
Subnet Mask	The Mask of destination network address.
Gateway	Gateway IP address of static routing.

3.3.4.3 Routing Table

This page displays IP routing rules.

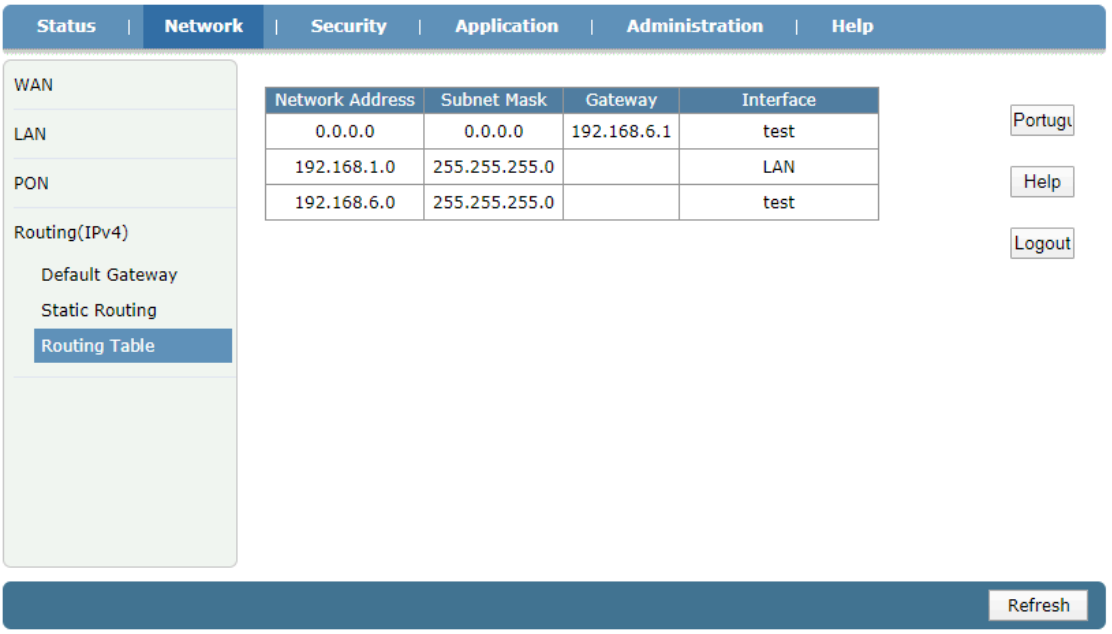

Figure 3-18: Routing Table

3.4 Security

3.4.1 Firewall

This page allows user to set anti-hacking protection and the level of the firewall (IPv4). User also can set custom firewall rules.

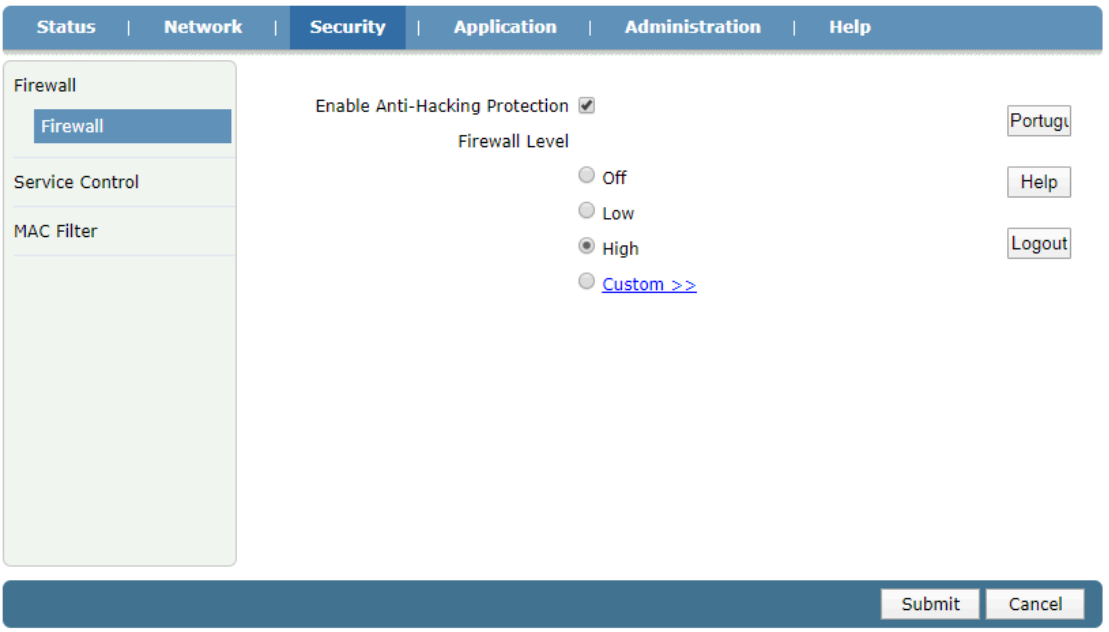

Figure 3-19: Firewall Level

Parameter	Illustration
Enable Anti-Hacking Protection	Anti-Hacking Protection switch.
Firewall Level	**Low:** Allow all inner or outer hosts to access. **Middle:** Allow inner or outer hosts which are limited by the rules that have been created to access. **High:** Forbid ICMP Input, Forbid Port Scan, Denial of Service protections.

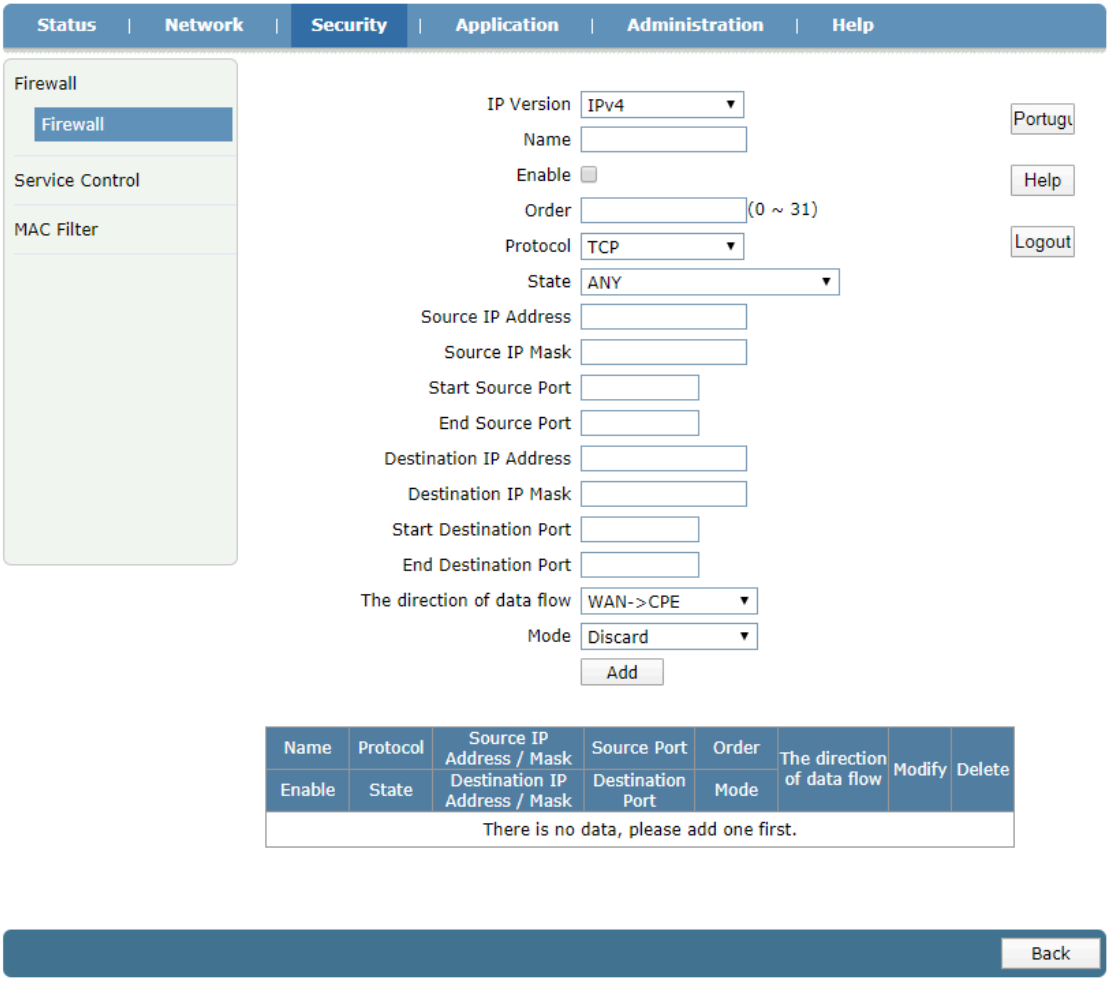

Figure 3-20: Custom Firewall Rule

Parameter	Illustration
IP Version	Select IPv4 or IPv6.
Name	Firewall rule name.
Enable	Enable or disable the rule.
Order	Order of the rule.
Protocol	Select protocol which the rule used for. There are only several protocols can be selected.
State	Select data traffic state. Suggest using ANY.
Source IP Address	Source IP address of traffic that matches the rule.
Source IP Mask	Mask of source IP address.
Start Source Port	Start source TCP or UDP port. The protocol must be TCP or UDP.
End Source Port	End source TCP or UDP port. The protocol must be TCP or UDP.
Destination IP Address	Destination IP address of traffic that matches the rule.
Destination IP Mask	Mask of destination IP address.
Start Destination Port	Start destination TCP or UDP port. The protocol must be TCP or UDP.
End Destination Port	End destination TCP or UDP port. The protocol must be TCP or UDP.
The direction of data flow	Direction of data flow that matches the rule. In the option, CPE indicates CPU of ONU.
Mode	Data forward mode of the rule, including discard and permit.

3.4.2 Service Control

This page allows user to set IP filter rules.

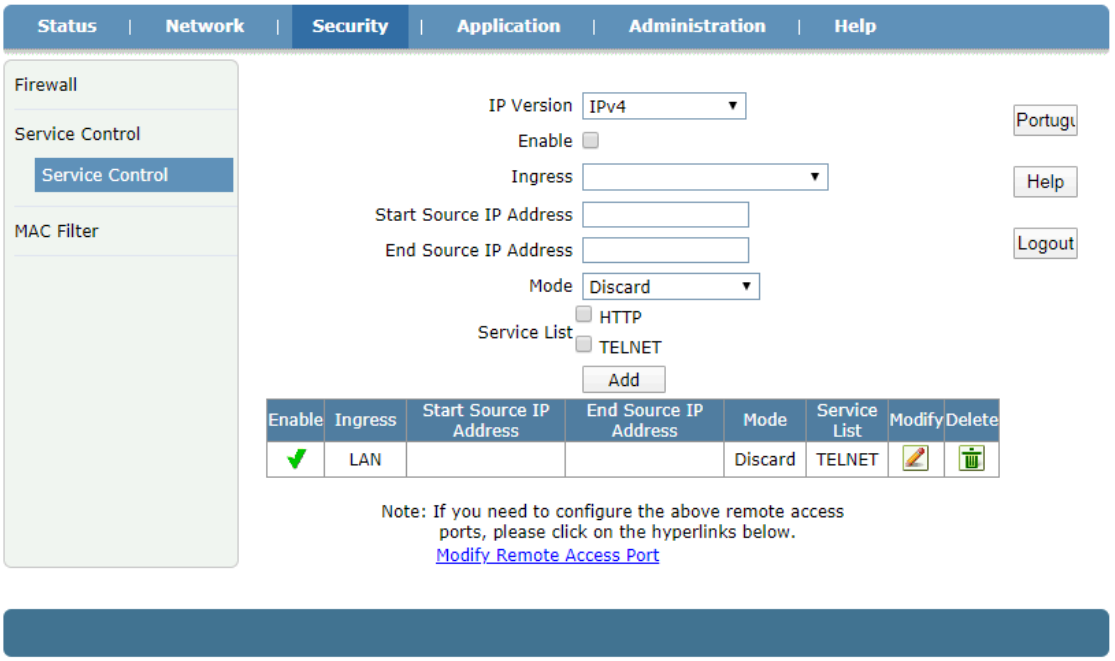

Figure 3-21: Service Control

Parameter	Illustration
IP Version	Select IPv4 or IPv6.
Enable	Enable or disable IP filter rule.
Ingress	Ingress interface of data traffic.
Start Source IP Address	Start source IP address of data traffic.
End Source IP Address	End source IP address of data traffic.
Mode	Data transfer mode, including discard or permit.
Service List	Service list for IP filter.

User also can configure remote access port for different service, such as http and telnet.

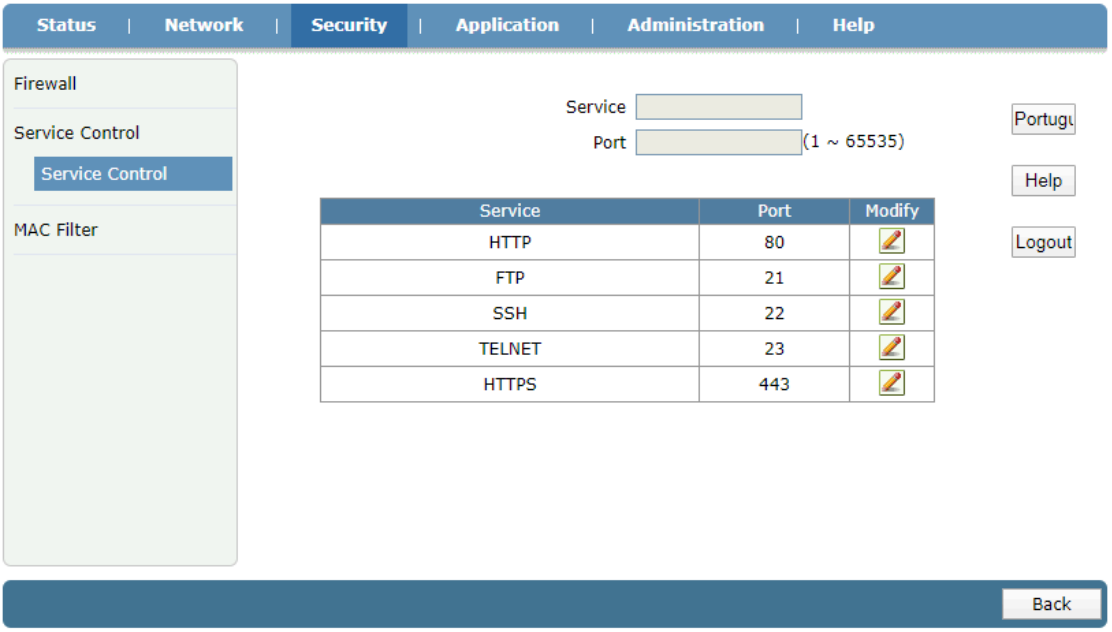

Figure 3-22: Remote Access Port

3.4.3 MAC Filter

This page allows user to set the relevant parameters of the MAC filter function. The table will display the MAC Filter rules after setting completed.

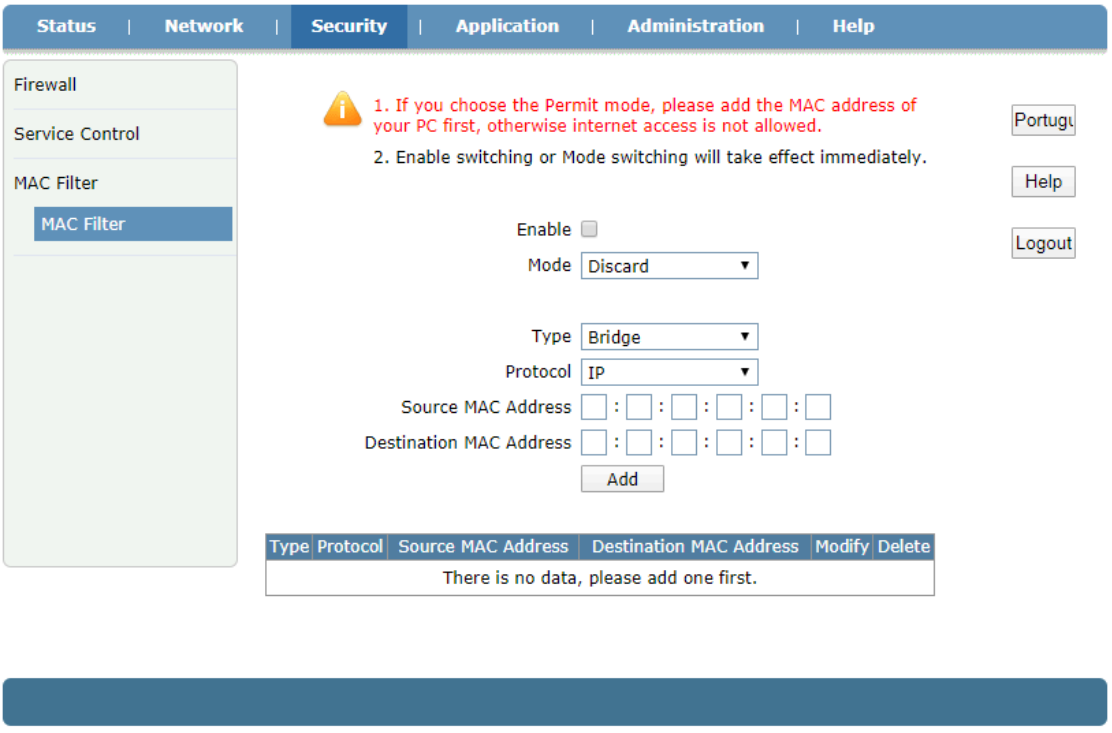

Figure 3-23: MAC Filter

Parameter	Illustration
Enable	Enable or disable the rule.
Mode	Data transfer mode, including discard or permit.
Type	Select ONU working mode that the rule takes effect.
Protocol	Select protocol of data traffic.

Source MAC Address	Source MAC address of data traffic.
Destination MAC Address	Destination MAC address of data traffic.

3.5 Application

3.5.1 Multicast

3.5.1.1 IGMP Mode

This page allows user to enable or disable IGMP snooping.

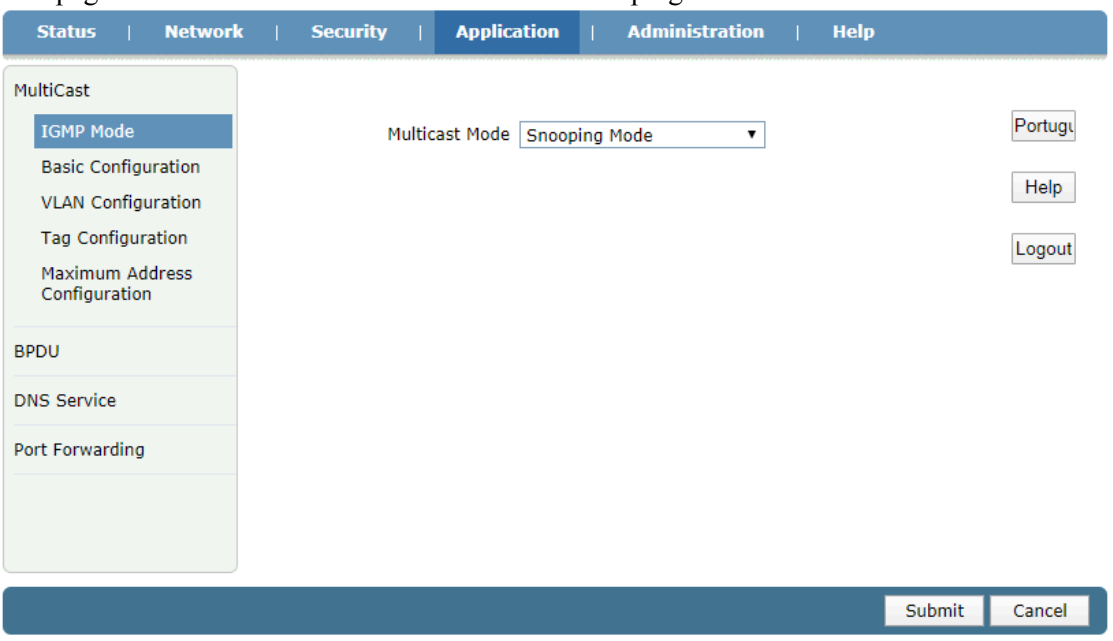

Figure 3-24: IGMP Mode

3.5.1.2 Basic Configuration

This page allows user to configure IGMP basic configuration, including multicast aging time and non-fast leave.

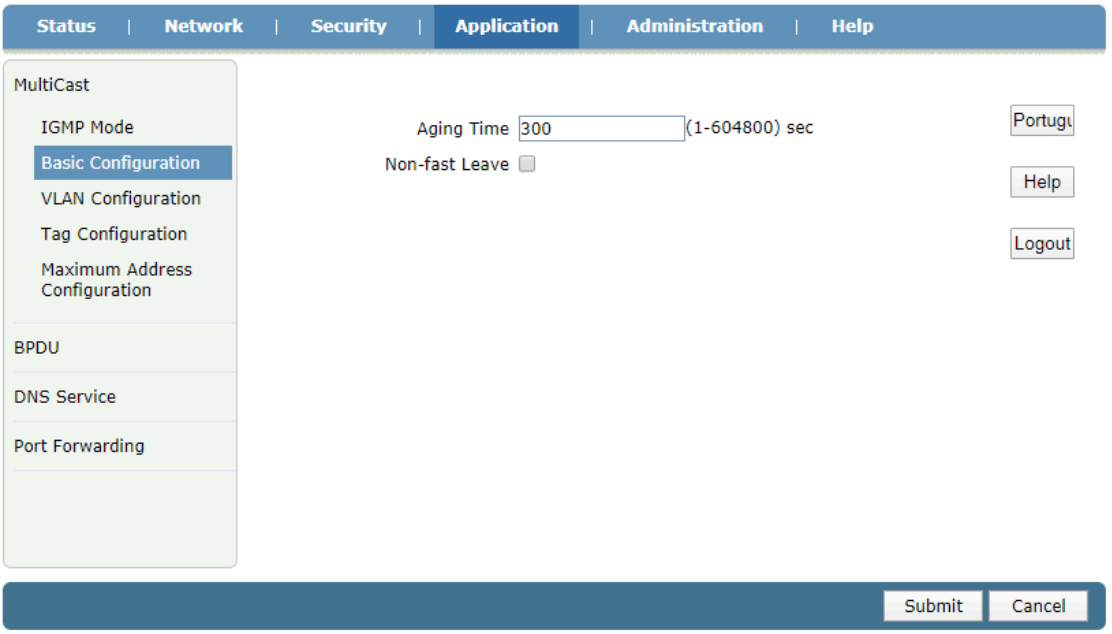

Figure 3-25: IGMP Basic Configuration

3.5.1.3 VLAN Configuration

This page allows user to configure multicast VLAN for the port. If WAN VLAN is not the same as LAN VLAN, it means multicast VLAN will be translated.

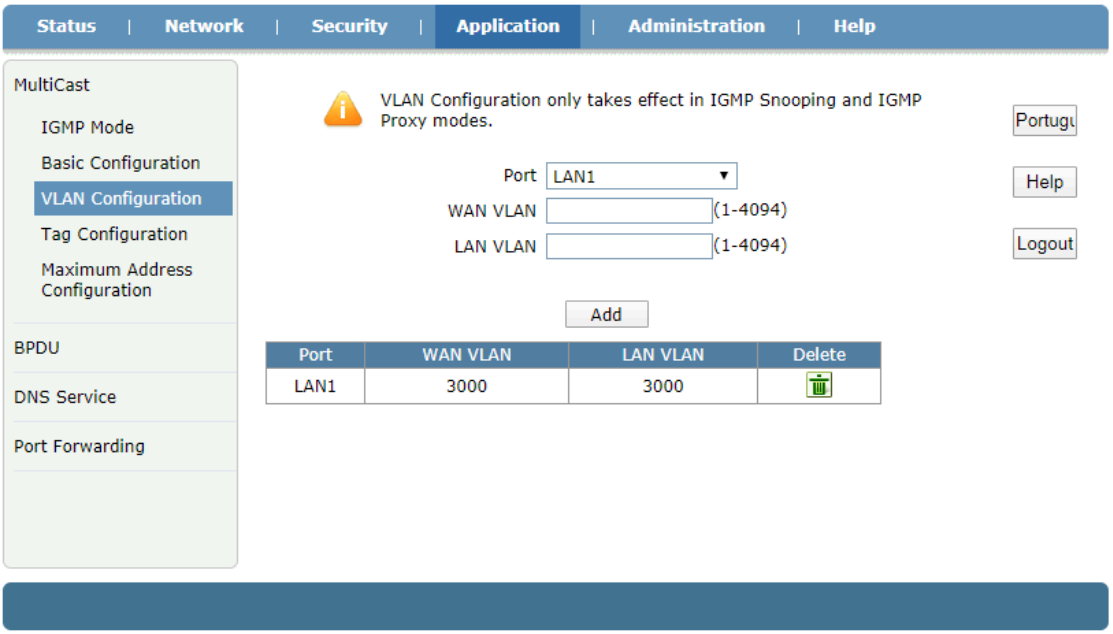

Figure 3-26: Multicast VLAN

3.5.1.4 Tag Configuration

This page allows user to configure multicast VLAN untag mode.

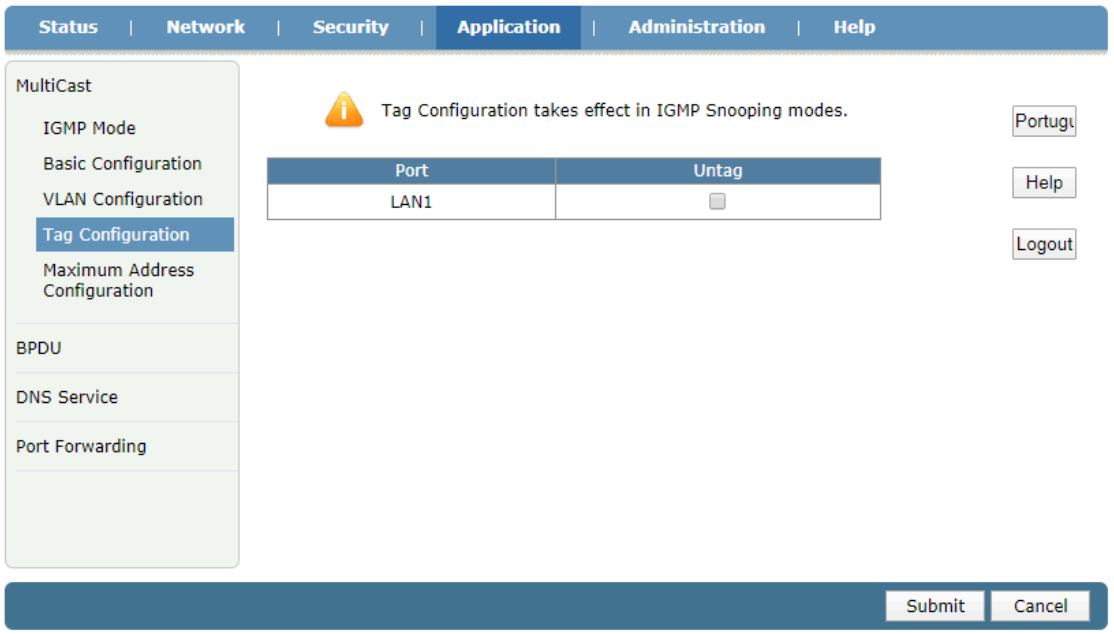

Figure 3-27: Tag Configuration

3.5.1.5 Maximum Address Configuration

This page allows user to configure maximum multicast address.

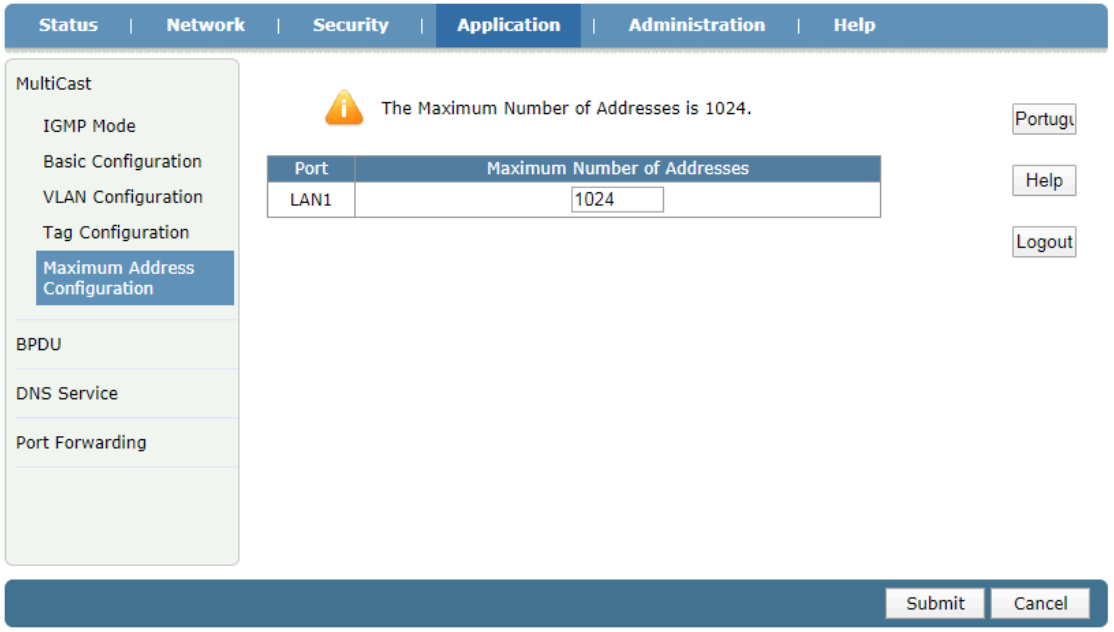

Figure 3-28: Maximum Address Configuration

3.5.2 BPDU

This page allows user to enable or disable RSTP BPDU(Bridge Protocol Data Unit) forwarding.

Figure 3-29: BPDU Forwarding

3.5.3 DNS Service

3.5.3.1 Domain Name

This page allows user to configure domain name of ONU. Users can access ONU webpage by this domain name.

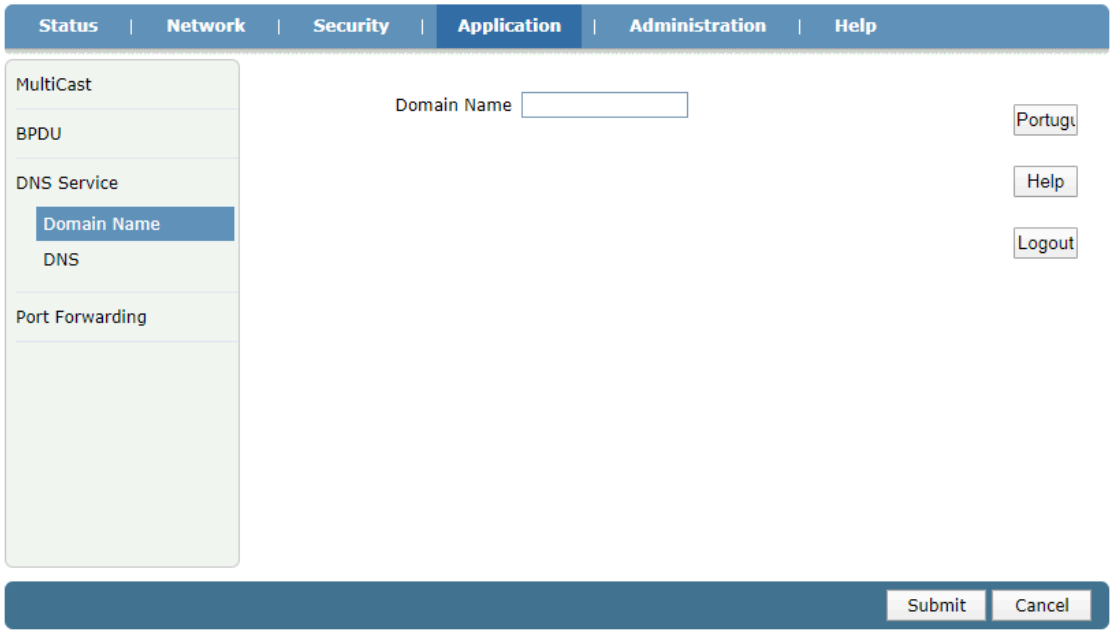

Figure 3-30: Domain Name

3.5.3.2 DNS

This page allows user to configure DNS server. DNS request will be sent to these DNS servers.

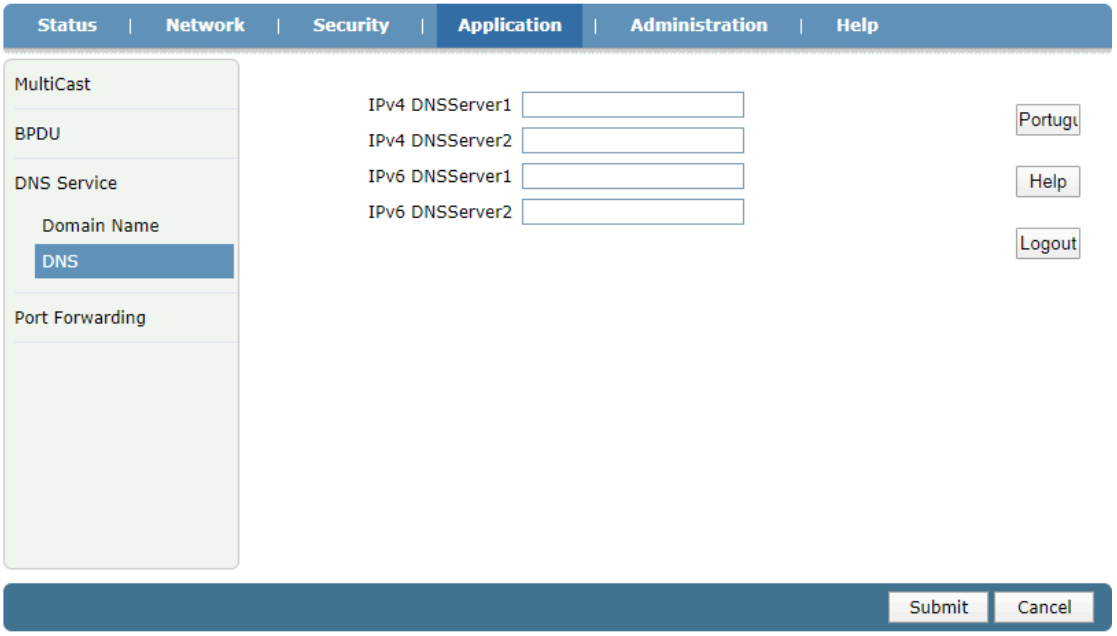

Figure 3-31: DNS

3.5.3 Port Forwarding

This page allows user to configure port forwarding.

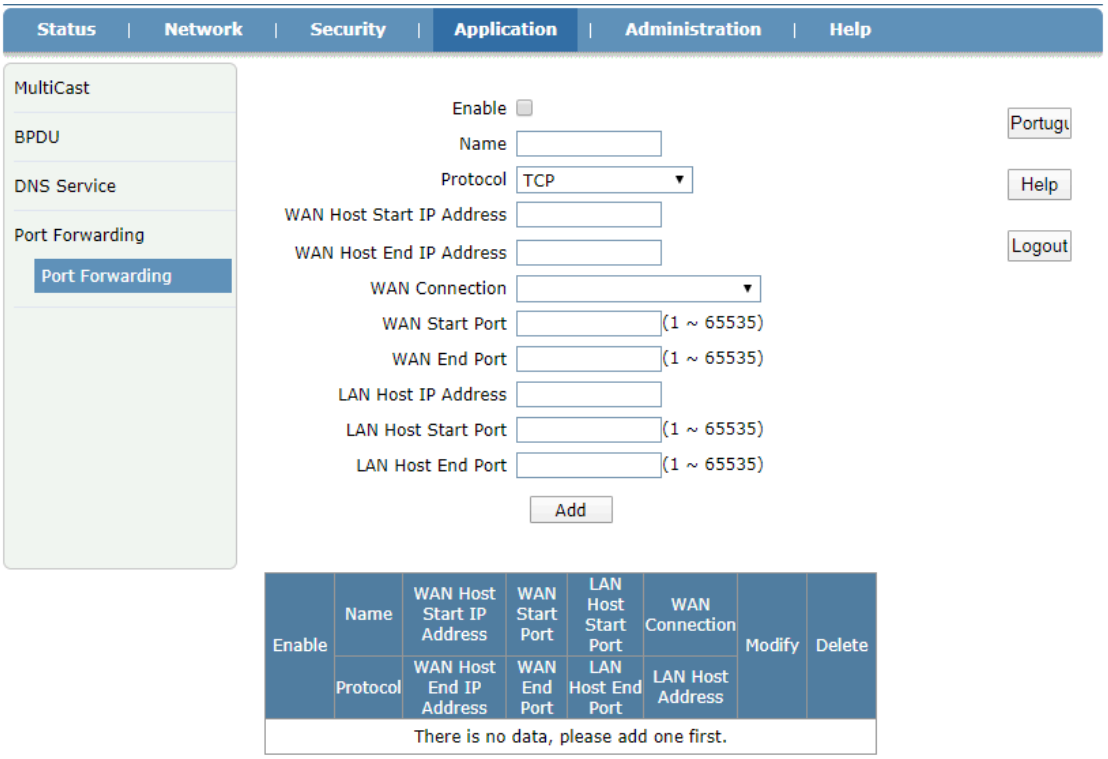

Figure 3-32: Port Forwarding

Parameter	Illustration
Enable	Enable or disable port forwarding rule.
Name	Name of the port forwarding rule.
Protocol	Protocol of the port forwarding rule, including TCP and UDP.
WAN Host Start/End IP Address	Specify WAN host IP range for the port forwarding rule. Only in the range, the host of WAN side can work with the rule.
WAN Connection	Select WAN connection.
WAN Start/End Port	TCP or UDP port range of WAN side host.
LAN Host IP Address	Specify host IP address of LAN side.
LAN Host Start/End Port	TCP or UDP port range of LAN side host.

3.6 Administration

3.6.1 User Management

This page allows user to change password of current login username.

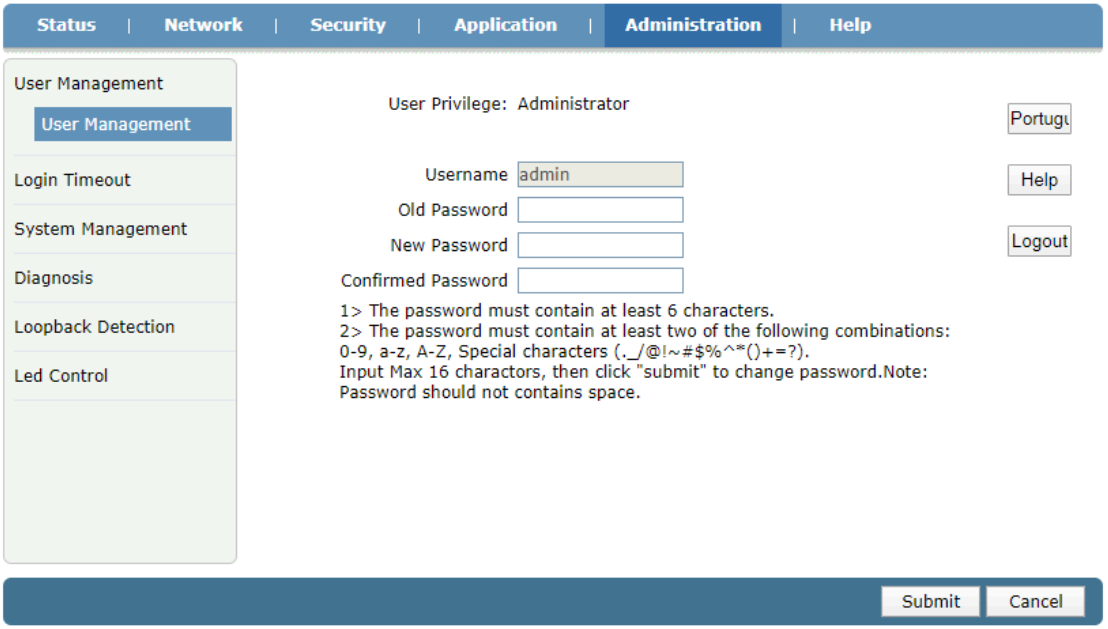

Figure 3-33: User Management

3.6.2 Login Timeout

This page allows user to set webpage login timeout. If don't operate the webpage for the time out, the account will logout automatically.

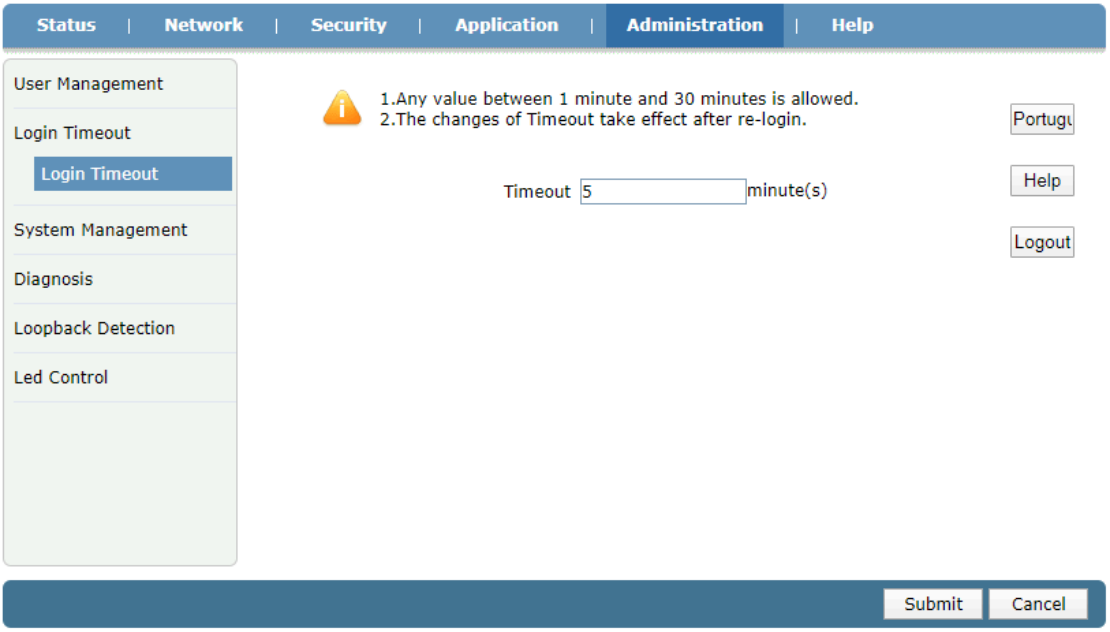

Figure 3-34: Login Timeout

3.6.3 System Management

3.6.3.1 System Management

This page allows user to reboot the device, restore factory default and restore backup configuration. The process of reboot will take several minutes.

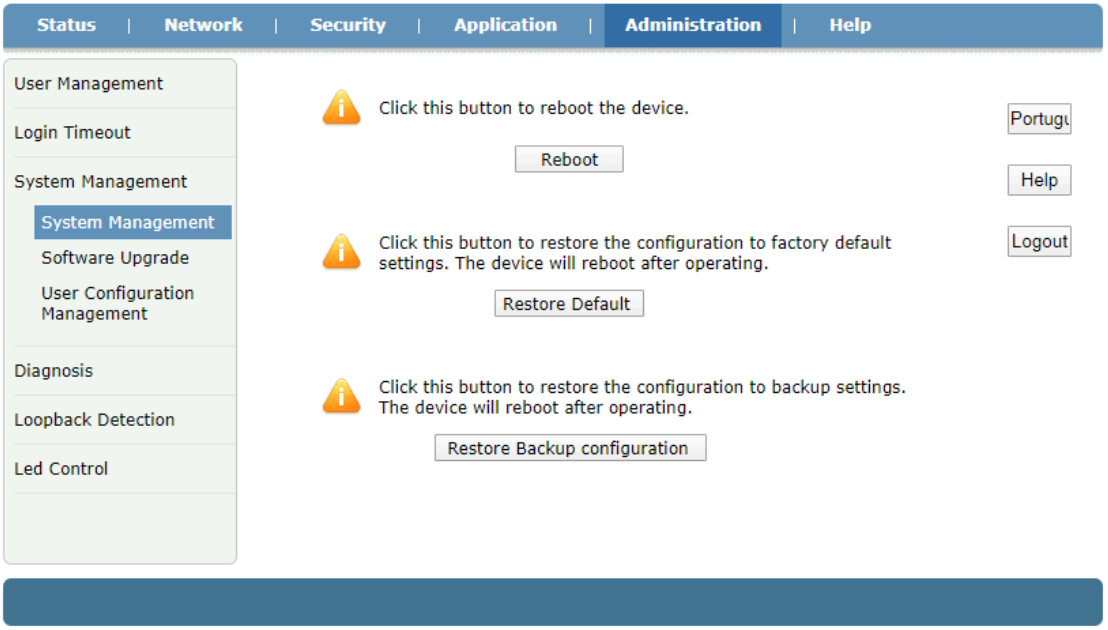

Figure 3-35: System Management

3.6.3.2 Software Upgrade

This page allows user to update software of the device. Click the "Choose File" button to select the software and then click the "Update" button to update.

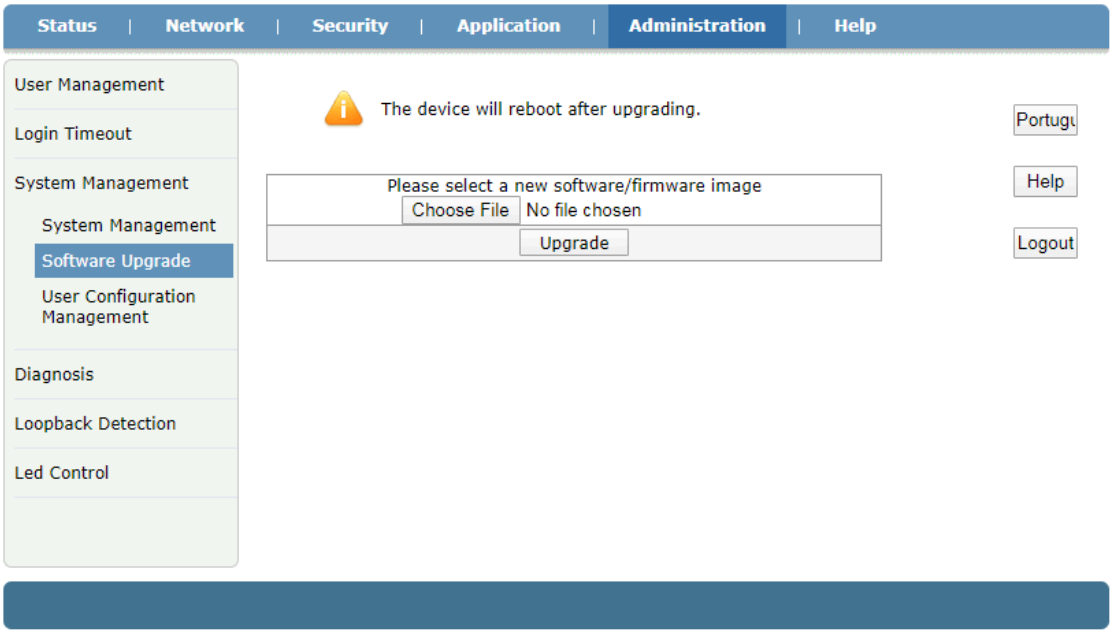

Figure 3-36: Software Upgrade

3.6.3.3 Configuration Management

This page allows user to backup and restore configuration.

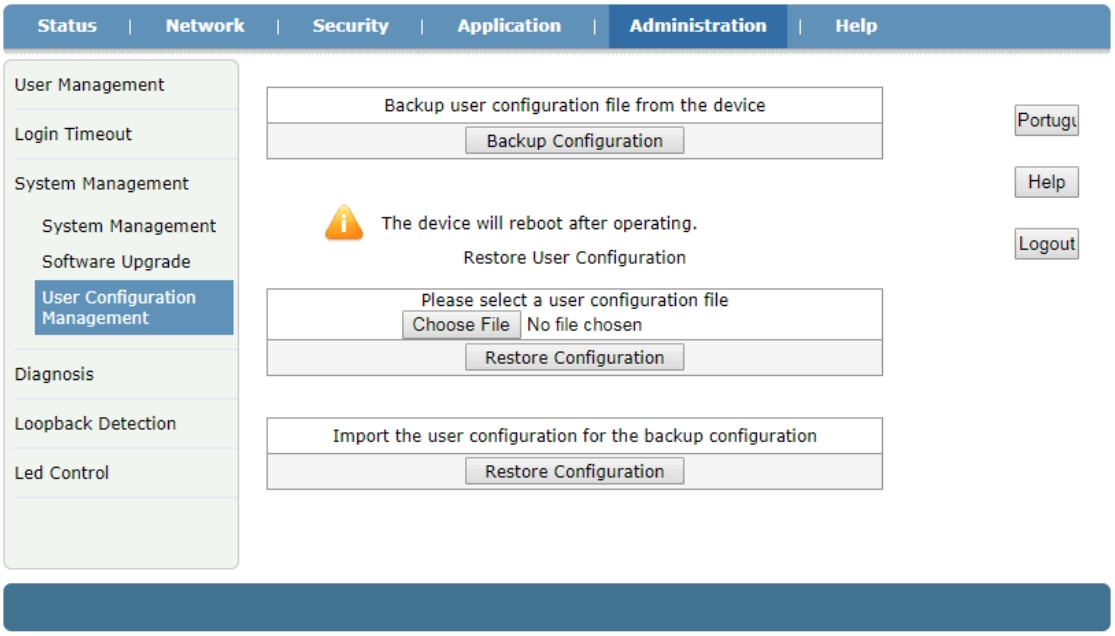

Figure 3-37: Configuration Management

3.6.4 Diagnosis

3.6.4.1 PING Diagnosis

This page shows about the ping test. You can diagnose connection status between ONU and other devices.

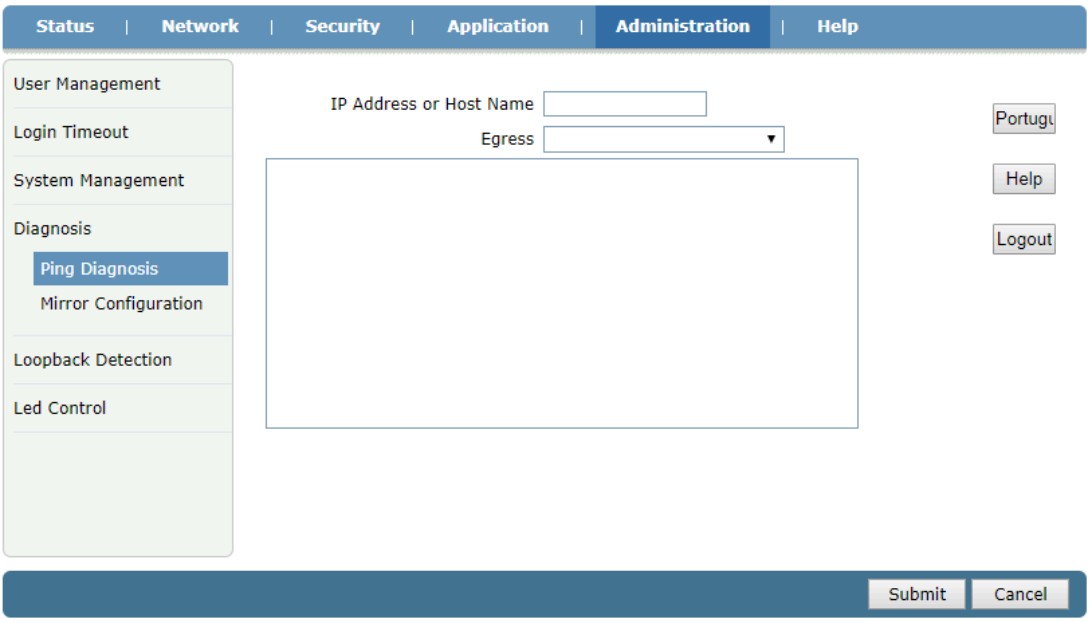

Figure 3-38: PING Diagnosis

Parameter	Illustration
IP Address or Host Name	Input the destination IP you want to ping.
Egress	Select the egress interface you want to ping.

3.6.4.2 Mirror Configuration

This page allows user to set port mirror for troubleshooting. After configured port mirror, the

traffic of WAN connection will be copied and sent to LAN port.

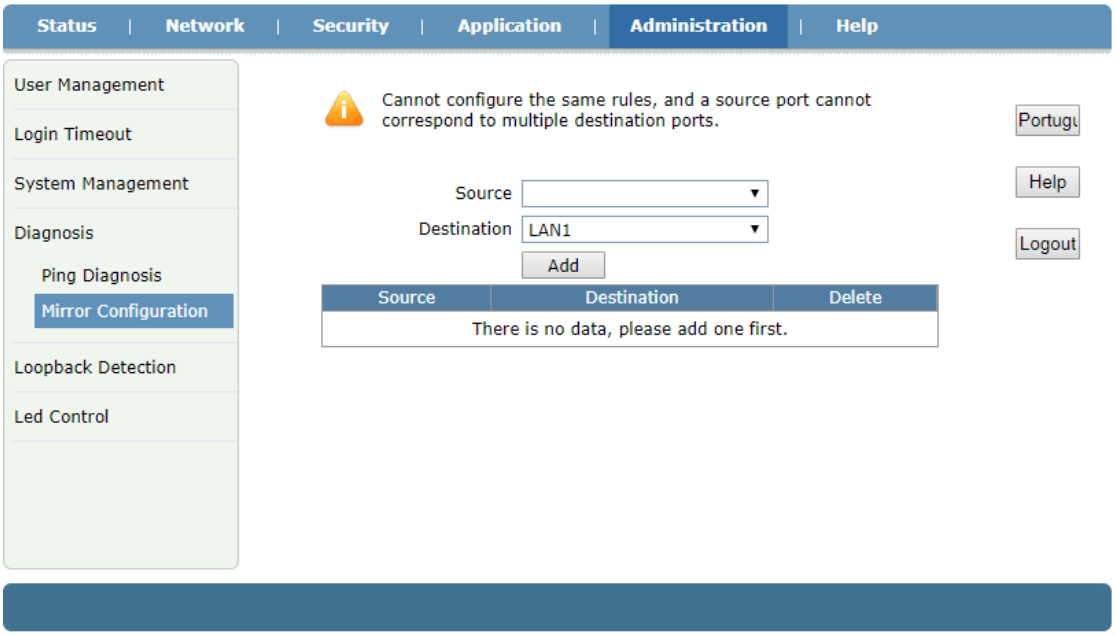

Figure 3-39: Port Mirror

Parameter	Illustration
Source	Select WAN connection as mirrored interface.
Destination	The LAN port is mirroring interface.

3.6.5 Loopback Detection

3.6.5.1 Basic Configuration

This page allows user to set basic parameters of loopback detection.

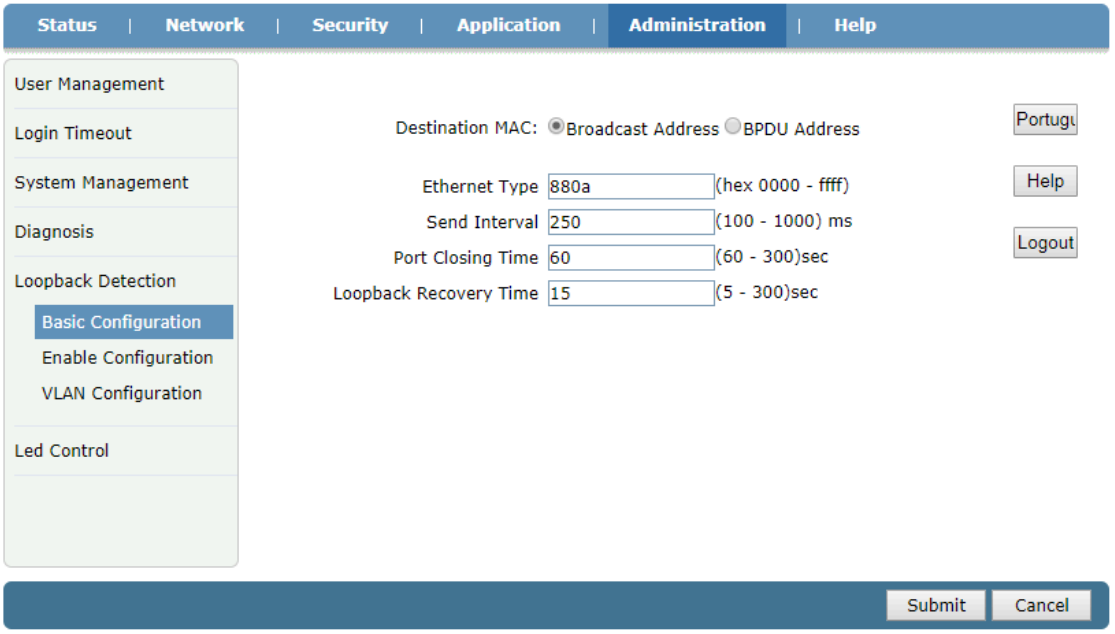

Figure 3-40: Basic Configuration

Parameter	Illustration
Destination MAC	Select the destination MAC of loopback packet.

Ethernet Type	Set the Ethernet type of loopback packet.
Send Interval	Set sending Interval time of loopback packet.
Port Closing Time	Set how much time the port will be closed once detected loopback.
Loopback Recovery Time	Set loopback recovery time.

3.6.5.2 Enable Configuration

This page allows user to enable or disable LAN port loopback feature.

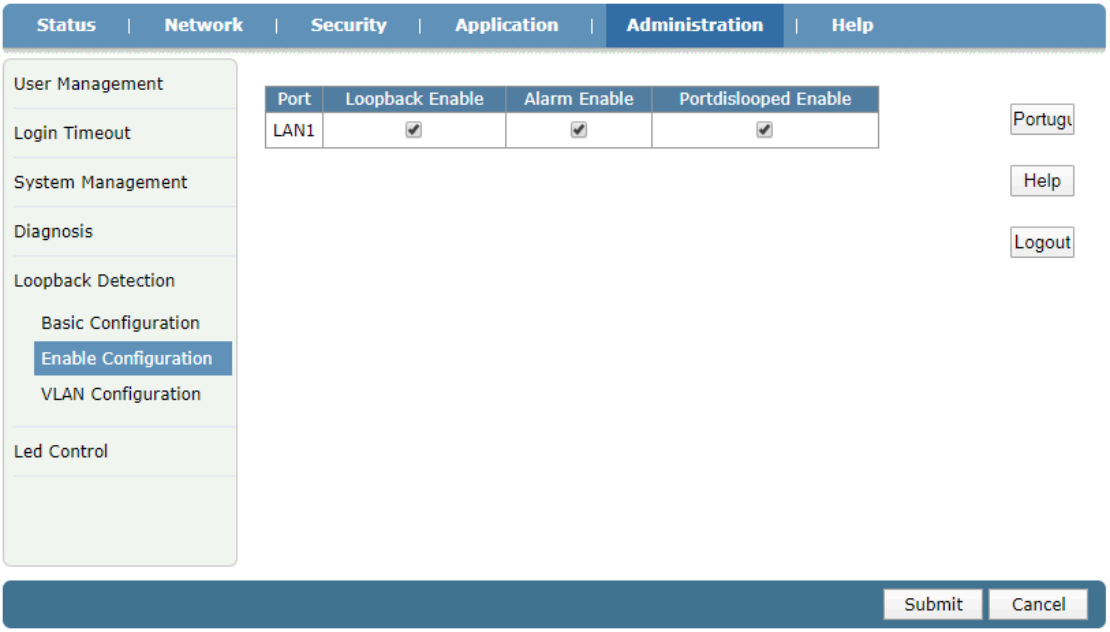

Figure 3-41: Enable Configuration

Parameter	Illustration
Loopback Enable	Enable or disable LAN port loopback detection.
Alarm Enable	Enable or disable LAN port loopback alarm.
Portdislooped Enable	Enable or disable LAN port automatic recovery.

3.6.5.3 VLAN Configuration

This page allows user to set VLAN of loopback detection packet. After added VLAN, ONU will send out loopback detection packets with the VLAN.

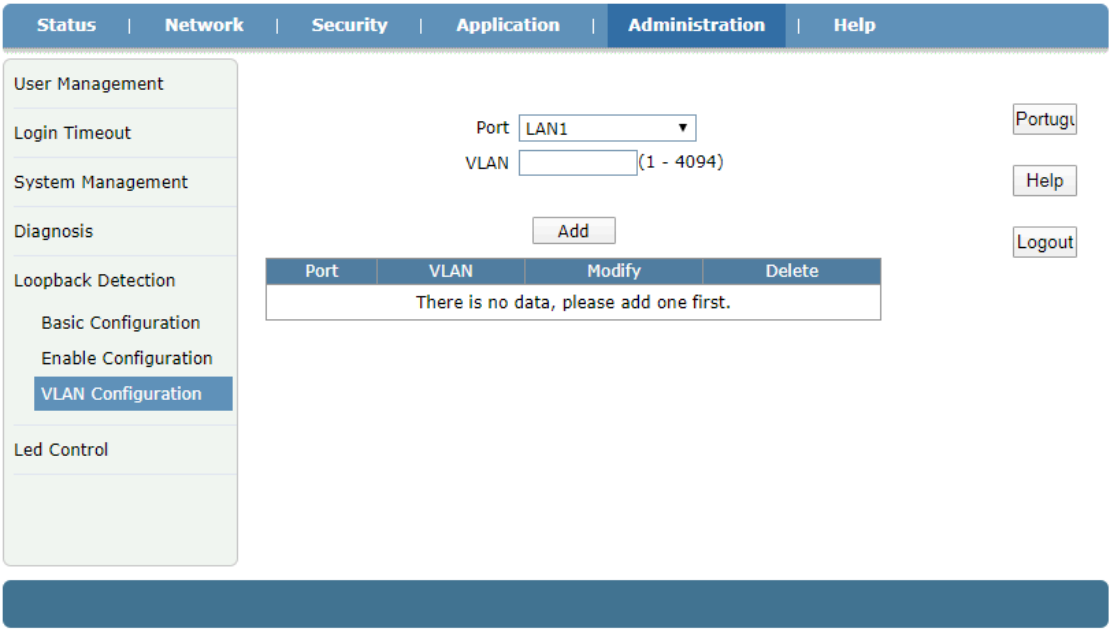

Figure 3-42: VLAN Configuration

3.6.6 LED Control

This page allows user to turn off or turn on the LED indicators.

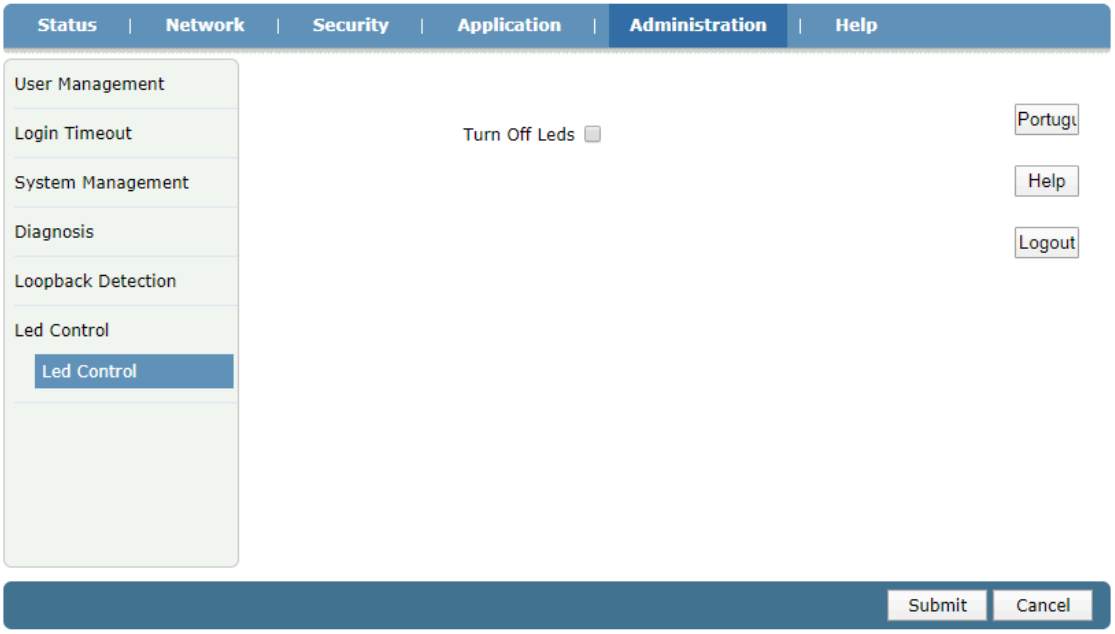

Figure 3-43: LED Control

3.8 Help

The Help information of ONU displays instruction and prompt of each web UI.

Figure 3-44: Help information

Tento manuál je dostupný rovněž online na https://docs.netvia.cz/

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