# **EPON OLT Configuration Guide**

Version: V1.2

# Directory

Overview	3
Command Conventions	3
Keyword Operation Conventions	3
Common command	3
Symbol Conventions	4
Terms Conventions	4
Prompt	4
1. System Access	4
1.1 Overview	4
1.2 Console Access	5
1.3Out-band interface access (From OLT MGMT/AUX port)	6
1.4 In-band Interface Access(From OLT Ge uplink port)	7
2.Upgrade OLT	8
2.1Note:	8
2.2Upgrade Tutorial	8
2.3 Web Management System Upgrade Guide	12
3. Application Example	15
3.1 Data Plan	15
3.2Configure OLT	16
3.3Configure the ONU	18
3.3.1 Configure Internet Services of Bridged ONU	18
3.3.2 Configuring IPTV Service of Bridge ONU	19
3. 3.3 Configuring Gateway ONU Internet Service – RTK chip scheme ONU	22
3. 3.4 Configuring Gateway ONU IPTV Service – RTK chip scheme ONU	24
3.3.5 Configuring Gateway ONU Internet Service – Broadcom chip scheme ONU	25
3. 3.6 Configuring Gateway ONU IPTV Service – Broadcom chip scheme ONU	29
3. 3.7 Configuring Gateway ONU VOIP Service – Broadcom chip scheme ONU	31

# **Overview**

# **Command Conventions**

The command conventions that may be found in this document are defined as follows.

Convention	Description
Boldface	The keywords of a command line are in <b>boldface</b> .
Italic	Command arguments are in italics.
[]	Items (keywords or arguments) in brackets [] are optional.
(x   y  )	Optional items are grouped in braces and separated by vertical
	bars. One item is selected.
[x   y  ]	Optional items are grouped in brackets and separated by
	vertical bars. One item is selected or no item is selected.
<x-y></x-y>	One number from x to y can be selected
\$	A line starting with the \$ sign is comments.

# **Keyword Operation Conventions**

Convention	Description
String with <>	It is key name. For example, <enter>, <tab>, <backspace>, <a>,</a></backspace></tab></enter>
	etc, it means to press the key button
<key +="" 1="" 2="" key=""></key>	It means to press the key at same time. For example <
	Ctrl+Alt+A> means to press "Ctrl", "Alt", "A" button together.
<key ,="" 1="" 2="" key=""></key>	It means to press the first button, then release, and press the
	second button. For example < Alt, F> means to press "Alt" first,
	then release "Alt" button, and then press "A" button.

# **Common command**

command	description
show vlan all	View OLT vlan summary
show system infor	View OLT information of version, MAC, sequence number, model
show igmp group all	View the list of multicast groups that the OLT joins
show running-config all	View the running configuration of the OLT

show startup config all	View the saved configuration
show startup-config all	of the OLT
show system inconfig	View the in-band,
show system ipconfig	out-of-band management IP
	address information of the
	OLT
show alt 1 and 1 at an	View the version information
show olt 1 onu 1 ctc sn	for the ONU
show alt caltide online only	View the online ONU on the
show olt <oltid> online-onu</oltid>	PON port
show alt caltide antical antica and	View all the online ONU
show olt <oltid> optical-online-onu</oltid>	information of optical
	power, voltage, current,
	temperature and so on

# **Symbol Conventions**

The symbols that may be found in this document are defined as follows.:

This warning symbol means danger. You are in a situation that could cause bodily injury or broke the equipment. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents by making quick guide based on this guide.

Indicates a hazard with a high level of risk, which if not avoided, it will result in death or serious injury on human body.

Provides additional information to emphasize or supplement important points of the main text.

# **Terms Conventions**

**OLT:** It is the Optical Line Terminal, included the switch and uplink port.

PON: It stand for PON protocol process module and PON port to connect with ONU side.

# **Prompt**

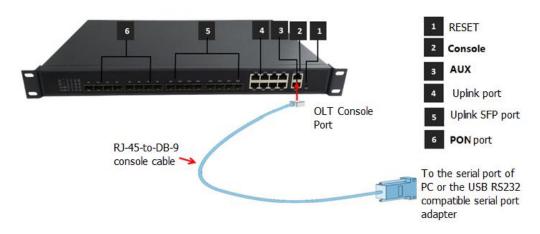
CLI is case - sensitive.

# 1. System Access

# 1.1 Overview

The CLI of OLT can be configured and managed via local terminal connection or a remote session using Telnet. The OLT supports three methods to gain access for management and configuration tasks:

- 1. Local access to the OLT through the RS232 console port on front panel, see below picture.
- 2. Dedicated local Telnet connection to the OLT by using the FE port on OLT front panel (outband interface).
- 3. Remote access over the provider's Ethernet/IP network by using Telnet. Therefore, an inband management channel.



图表 1

# **1.2 Console Access**

OLT provides console interface (marked as "CONSOLE" RJ45 type port) .

Console access requires:

- Console cable: RJ-45-to-DB-9 console cable
- Terminal emulation software: HyperTerminal

The cable is connected between the serial port of the host and the console port on the device. Most computers and notebooks no longer include built-in serial ports. If the host does not have a serial port, the USB port can be used to establish a console connection. A special USB-to-RS-232 compatible serial port adapter is required when using the USB port.

# • RJ-45-to-DB-9 Console Cable, as follows:

Port on	Cable Required	Port on OLT
Computer		
Serial Port	RJ-45 to DB-9 Console Cable	
USB Type-A Port	OSB to NS-252 compatible serial port adapter ( Adapter may require	RJ-45 Console Port





RJ-45 to DB-9 Console Cable

USB to RS-232 compatible serial port adapter

Run a VT terminal emulation software (e.g. HyperTerminal) with the attributes

Band Rate: 9600

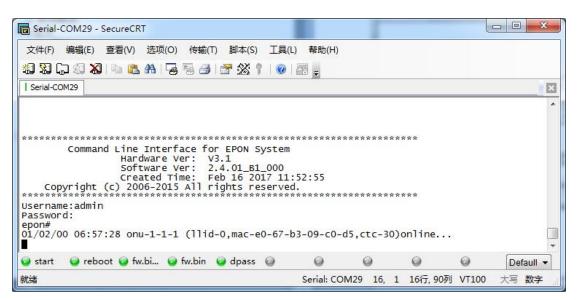
Data Bit: 8

Parity Check: NO

Stop Bit: 1

Flow Control: NO

When the serial port tool is successfully connected to the OLT, in the actual command line, username input admin, password input admin (The password will not be displayed). As follows:



# 1.3Out-band interface access (From OLT MGMT/AUX port)

You should configure your PC IP to 192.168.1.X (Except 192.168.1.100), connect to the MGMT/AUX port of OLT, login the OLT with the default OLT management IP (Default IP: 192.168.1.100). Default login ID is admin and the password is admin.As follows:

```
- - X
■ 管理员: C:\Windows\system32\cmd.exe
Microsoft Windows [版本 6.1.7601]
版权所有 (c) 2009 Microsoft Corporation。保留所有权利。
C:\Users\Administrator.PC-20131223VEFH>telnet 192.168.1.100_
                                                       _ @ X
Telnet 192.168.1.100
Command Line Interface for EPON System
             Hardware Ver: U3.1
Software Ver: 2.4.01_B1_000
Created Time: Feb 16 2017 11:52:55
   Copyright (c) 2006-2015 All rights reserved.
 Username:admin
Password:
epon#
       半:
```

# 1.4 In-band Interface Access(From OLT Ge uplink port)

You should configure your PC IP to 192.168.8.X (Except 192.168.8.100), connect to the uplink port of OLT, login the OLT with the default OLT in-band management IP (Default IP: 192.168.8.100). Default login ID is admin and the password is admin.As follows:

```
Microsoft Windows [版本 6.1.7601]
版权所有 (c) 2009 Microsoft Corporation。保留所有权利。

C: Wsers Administrator.PC-20131223VEFH>telnet 192.168.8.100

半:
```

# 2.Upgrade OLT

# 2.1Note:

The new version(OLT V2.3.X) is different from the olt version( before OLT V2.3.X). There are two management IP in the new version, such as in-band management IP and out-of-band management IP. But There is only one management IP in the old version.

So we adjust something about the in-band and out-of-band management IP. As follows:

1. Before the OLT is default ip address 192.168.1.100,after upgrade to V2.3.1 version:

```
OLT uplink port manage ip address is:192.168.8.100
OLT AUX/MGMT port manage ip address is:192.168.1.100
```

2. Before the OLT manage ip address have been change to 192.168.1.X not is 192.168.1.100, after upgrade to V2.3.1 version:

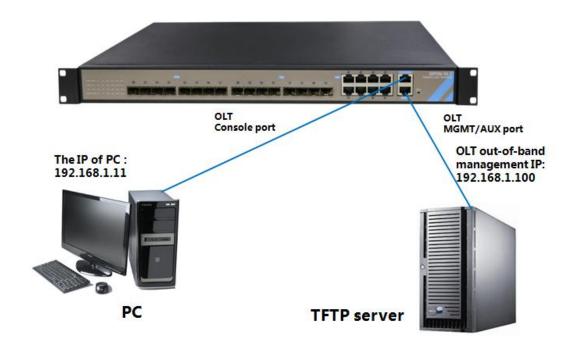
```
OLT uplink port manage ip address is:192.168.1.X OLT AUX/MGMT port manage ip address is:192.168.2.100
```

3. Before the OLT manage ip address have been change to other not is 192.168.1.X, after upgrade to V2.3.1 version:

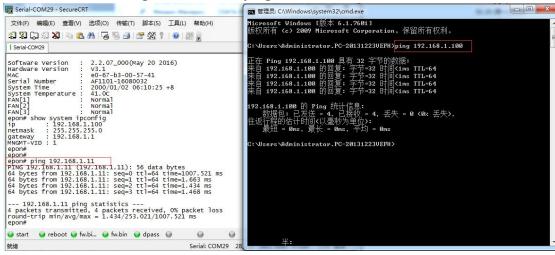
```
OLT uplink port manage ip address is:It is before you are changed ip address. OLT AUX/MGMT port manage ip address is:192.168.1.100
```

# 2.2Upgrade Tutorial

There is a topology for upgrading, As follows:

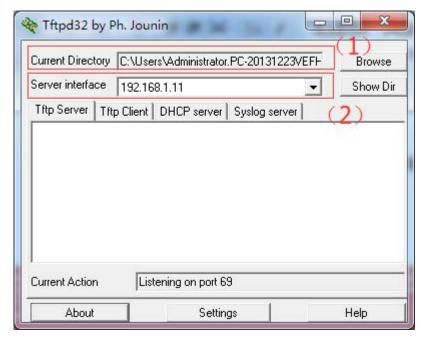


- Note: This tutorial will take the PC as a server, and the IP of PC is 192.168.1.11, management IP of the OLT is 192.168.1.100.
- 1. Make sure that the firewall on the PC is turned off;
- 2. Ensure that the IP address of the PC and the management IP of the OLT are on the same network segment and can ping each other; As follows:



图表 8

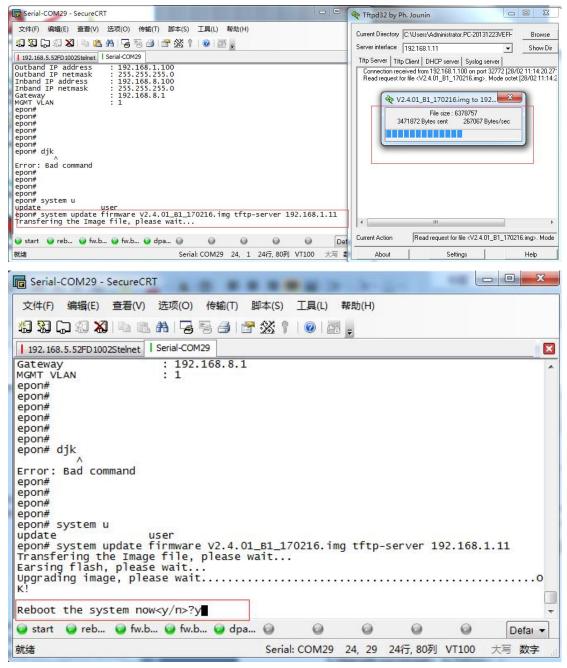
- 3. Ensure that there is TFTP program on the PC to download the firmware for the OLT. As follows:
  - (1) Specifies the path to the firmware to be upgraded;
  - (2) Specifies the IP address of the server (ie PC);



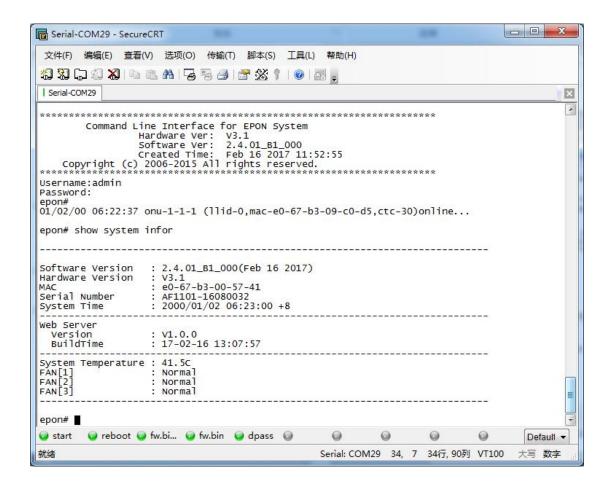
图表 9

# 4. Enter the upgrade command in the OLT epon# system update firmware < firmware name> tftp-server <tftp-ip> As follows:

- (1) < firmware name >: V2.4.01 B1 170216.img, <tftp-ip>:192.168.1.11。
- (2) Upgrade command input is completed, you can see tftp server has the process of transferring firmware.
- (3) After the upgrade, enter "y" to restart the OLT. (Note: must be restarted, OLT can apply the new version of the software)



**5.Upgrade successed**; As follows:



# 2.3 Web Management System Upgrade Guide

1. Upgrade OLT basic firmware to latest basic firmware which packaged with latest web firmware. The latest OLT basic firmware is: V2.4.02\_170421\_X000. img

### EX:

epon# system update firmware V2.4.02 170421 X000.img tftp-server 192.168.1.11

Transfering the Image file, please wait...

Earsing flash, please wait...

Upgrading image, please wait.....OK!

Reboot the system now<y/n>?y

# 2. Check whether the OLT basic firmware upgrade successfully

epon# show system infor

Software Version : 2.4.02\_000(Apr 21 2017)

Hardware Version : V3.1

MAC : e0-67-b3-00-57-41 Serial Number : AF1101-16080032

System Time : 2000/01/09 02:22:02 +08:00

\_\_\_\_\_

System Temperature : 41.5C

FAN[1] : Normal

FAN[2] : Normal

FAN[3] : Normal

-----

3. Use system update web-server command to upgrade OLT web firmware. The latest web firmware is: WEB\_V1.0.0\_170421\_1831.img

**Note:** 4pon port OLT and 8 pon port OLT use same web firmware.

### EX:

epon# system update web-server WEB\_V1.0.0\_170421\_1831.img tftp-server 192.168.1.11 Transfering the Web Server file, please wait...

Upgrading Web Server ...

Restarting Web Server ...

OK!

4. After upgrading web firmware do not need to reboot the OLT. Check whether the web firmware is correct directly.

epon# show system infor

-----

Software Version : 2.4.02\_000(Apr 21 2017)

Hardware Version : V3.1

MAC : e0-67-b3-00-57-41 Serial Number : AF1101-16080032

System Time : 2000/01/09 02:32:04 +08:00

-----

Web Server

Version : V1.0.0

BuildTime : 17-04-21 18:31:25

Administrator : admin
Password : admin

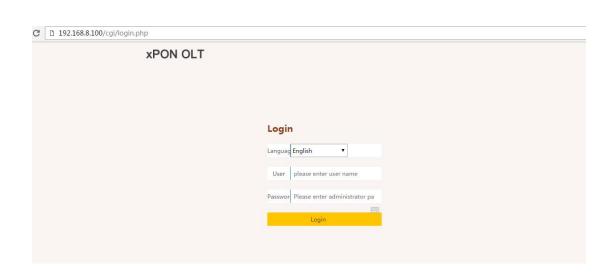
-----

System Temperature : 38.0C
FAN[1] : Normal
FAN[2] : Normal
FAN[3] : Normal

-----

5. Use Firefox browser access to OLT web via inbound ip address or outband ip address. Then you can see the OLT web login interface. Web default login username and password is: admin/admin

Note: Recommend using Firefox web browser to access OLT web interface



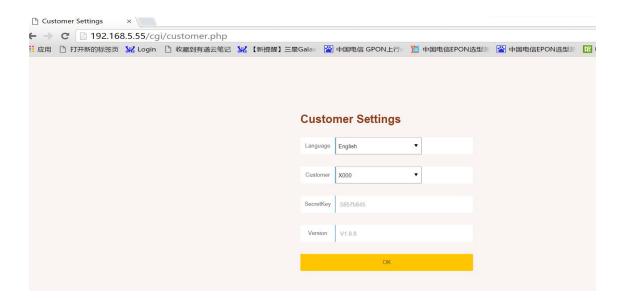
6. Customized web management information configure. PC access to OLT web via <a href="http://192.168.5.55/cgi/customer.php">http://192.168.5.55/cgi/customer.php</a> And enter parameter. Click "OK" . Restart the OLT web in browser then can view the customized informations.

Language: Support Chinese and English. The default is Chinese.

Customer: Customer ID. The default is neutral.

SecretKey: Customer ID secretkey. The default is neutral.

Version: Customized web management system version.



# 7. Other instructions

a. Web management system's username and password is independent, default is admin/admin. This username and password can modify in web interface and would not affect other access mode.

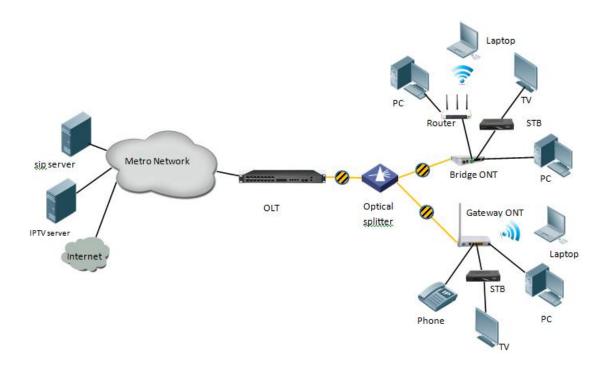
b.Web management system need to work in V2.4.02 OLT basic firmware. In old OLT basic version can't not support the web function. So if you need to use web

function. Please upgrade OLT basic firmware to V2.4.02 or newer at first.

# 3. Application Example

This section describes basic concepts related to the fiber to the home (FTTH) solution from the user side to the network side on FTTH networking using PON transmission.

We will give two example of the configuration. One is Bridge ONU configuration, another is the Gateway ONT configuration.



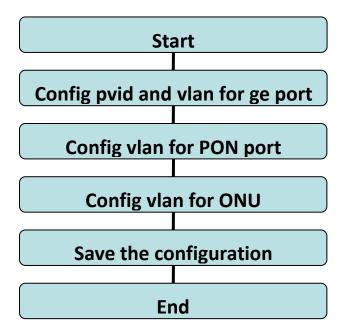
# 3.1 Data Plan

The subsequent examples are configured based on the following data plan.

Data Plan		
Service	Data	
Classification		
	VLAN 100: Internet Service	
VLAN	VLAN 200: IPTV Service	
	VLAN 300: VOIP Service	
	Ge5: Pvid is 100, VLAN 100.	
OLT Port Sotting	Ge6: Pvid is 200, VLAN 200.	
OLT Port Setting	Ge7: Pvid is 300, VLAN 300.	
	PON1: VLAN 100 tag, VLAN 200 tag, VLAN 300 tag.	
Bridge ONT Port	LAN 1: VLAN 100, tag mode	
Setting	LAN 2: VLAN 200, tag mode	
Gateway ONT Port	LAN1: VLAN 100	

Setting LAN2: VLAN 200 POTS: VLAN 300

### **Configuration Process**



# 3.2Configure OLT

The configuration of OLT include pvid and vlan of ge port, vlan of pon port.

- Enable the vlan function
- Configure pvid and vlan for GE port: vlan mode include untag and tag.
- Configure pvid and vlan for PON port: vlan mode include untag and tag. (About the 8 port OLT, ge9-ge16 means PON port 1-8 in the CLI. About the 4 port OLT, ge5-ge8 means PON port 1-4 in the CLI.)

# (1) Enable the vlan function

epon#swmode vlan enable

# (2) Configure pvid and vlan for GE port

```
epon# swport ge1  // Enter ge1 configuration view

epon(GE-1)# pvid 100  //Pvid is 100

epon(GE-1)# vlan add 100  //Add vlan100, mode is untag

epon(GE-1)# exit

epon# swport ge2  // Enter ge2 configuration view

epon(GE-2)# pvid 200  // Pvid is 200
```

```
epon(GE-2)# vlan add 200 // Add vlan200, mode is untag
epon(GE-2)# exit
epon# swport ge3 // Enter ge3 configuration view
epon(GE-3)# pvid 300 // Pvid is 300
epon(GE-3)# vlan add 300 // Add vlan300, mode is untag
epon(GE-3)# exit
```

# (3) Configure pvid and vlan for PON port

```
epon# swport ge9
epon(GE-9)# vlan add 100,200,300 tag //Add vlan100,200,300on the GE9, mode is tag
epon(GE-9)# exit

Note:
```

If the port has only one vlan untag mode and the same as the pvid, then the
port is access mode. This mode can be used when the uplink port can only
handle devices that do not carry tag packets (such as PCs) or uplink networks
without tagged packets. As follows:

```
epon# swport ge1 // Enter ge1 configuration view
epon(GE-1)# pvid 100 // Pvid is 100
epon(GE-1)#vlan add 100 // Add vlan100, mode is untag
```

2. If the port is configured with multiple vlan and tag mode, the port is in trunk mode. You can set the port to this mode when the switch is connected to a switch or other device that can process packets with tagged messages. As follows:

```
epon# swport ge4 // Enter ge4 configuration view
epon(GE-4)#pvid 10 // Pvid is 10
epon(GE-4)#vlan add 10 //Add vlan10, mode is untag
epon(GE-4)# vlan add 11 tag // Add vlan11, mode is tag
epon(GE-4)#vlan add 12 tag // Add vlan12, mode is tag
```

3. If the port is configured with multiple vlan and some of which are tagged and the others are untag mode, the port is in hybrid mode. When the uplink network can handle the device with tag packets and only devices that can not process tagged packets (such as PC), the port can be set to this mode. As follows:

```
epon# swport ge5 // Enter ge5 configuration view
epon(GE-5)#pvid 10 // Pvid is 10
epon(GE-5)#vlan add 10 // Add vlan10, mode is untag
epon(GE-5)# vlan add 11 // Add vlan11, mode is untag
epon(GE-5)#vlan add 12 tag // Add vlan12, mode is tag
```

# (4) Configure GIMP and Multicast Vlan

epon# igmp mode proxy	// IGMP is proxy mode
epon# <b>btv</b>	//Enter the btv view

```
epon(btv)# igmp user add user-index 1 pon 1 ont 1 vlan 200
                                                       // Add btv user binding specified ONU
                                                                 and vlan
epon(btv)#exit
                                                              //Exit the btv view
epon# multicast-vlan 200
                                                              //Create and entermulticast
                                                                vlan200 view
epon(multicast-vlan-200)# igmp router-port ge2
                                                              // Configure the multicast routing
                                                                 port as ge2
epon(multicast-vlan-200)# igmp member user-index 1
                                                              // Add multicast users to multicast
                                                                vlan200
OLT(config-multicast-vlan-200)# igmp match group ip 224.1.1.1 to-ip 224.5.5.5
                                       // Configure multicast vlan200 to match the multicast
address segment 224.1.1.1-224.5.5.5
OLT(config-multicast-vlan-200)# exit
                                                             //Exit the multicast vlan 200 view
```

# 3.3Configure the ONU

# 3.3.1 Configure Internet Services of Bridged ONU

Only when the ONU register to the OLT success , you can configure the service of the ONT. So make sure ONU is registered to the OLT.

OLT would register ONT automatically in default.

### **Prerequisites**

- The OLT is connected to the uplink device success
- The OLT create internet vlan
- The OLT configure GE port vlan for Internet
- The OLT configure PON port vlan for Internet
- The ONU is registered

# **Configure ONU port vlan**

# 3.3.2 Configuring IPTV Service of Bridge ONU

# **Prerequisites**

- The OLT is connected to the uplink device success
- The OLT create IPTV vlan
- The OLT configure GE port vlan for IPTV
- The OLT configure PON port vlan for IPTV
- The OLT configure IGMP and Multicast vlan
- The ONT is registered

# **Configure ONU port**

epon(olt-1/onu-1)# uni 2
epon(olt-1/onu-1/uni-2)# ctc vlan-mode tag 0x8100 0 200 // Configure the ONU port mode as tag mode (access mode)
epon(olt-1/onu-1/uni-2)# ctc igmp vlan add 200 //Configure the multicast vlan as 200



The port mode of ONU is as follows:

# 1. Transparent Mode:

Direction	Туре	Processing method
	Untag frame	Untag frame does not make any change, forwarding
<mark>Upstream</mark>	Tag frame	Tag frame does not make any changes (original VLAN
		TAG), forwarding
	Untag frame	Untag frame does not make any change, forwarding.
	Tag frame	Tag frame does not make any changes (original VLAN
		TAG), forwarding.
<mark>Downstre</mark>	Tag frame	Tag frame VLAN ID belongs to the port "allowed by
am		VLAN", forwarding; Tag frame VLAN ID belongs to the
		port "allowed by VLAN", forwarding; If the Tag frame
		VLAN does not belong to the port of the "permitted by
		VLAN," is discarded.

Command is as follow:

epon(olt-1/onu-4/uni-1)# ctc vlan-mode transparent

# 2. Tag Mode (access Mode):

Direction	Туре	Processing method
	Untag frame	Switch frames on port's default VLAN(VPID), forwarding.
Upstream Tag frame		Discard the frame
Downstre	Untag frame	Discard the frame
	Tag frame	If the Downstream Tag frame VLAN ID equal to the
am		configuration of the VID,According to VID forwarded to

	the appropriate UNI port, and stripping the tag; If the downstream Tag frame VLAN ID is not equal to the
	configuration of the VID, then the frame is discarded
Tag frame	Tag frame VLAN ID belongs to the port "allowed by
	VLAN", forwarding; Tag frame VLAN ID belongs to the port "allowed by VLAN", forwarding; If the Tag frame
	VLAN does not belong to the port of the "permitted by
	VLAN," is discarded.

# Command is as follow:

epon(olt-7/onu-1/uni-1)# ctc vlan-mode tag <tpid> <cos> <vlan>

# 3. Translation Mode:

Direction	Туре	Processing method
	Untag frame	Switch frames on port's default VLAN(VPID), forwarding.
	Tag frame	Tag frame VLAN ID in the configuration of the VID
<mark>Upstream</mark>		conversion list, forwarding; Tag frame VLAN ID is not in
		the configuration of the VID conversion list, frame
		discarding.
	Untag frame	Discard the frame
	Tag frame	Tag frame VLAN ID corresponds to the entry in the
		corresponding port of the VLAN Translation list (equal to
		the input VID configuration),According to the table to
		convert the VID to a corresponding VID (VID output),
		forwarding; If the VLAN ID in the corresponding port of
<mark>Downstre</mark>		the VLAN Translation list without a corresponding entry,
am		discarding; If the TAG frame with VLAN ID as the "default
		VLAN", after the VLAN label forwarding is stripped down;
	Tag frame	Tag frame VLAN ID belongs to the port "allowed by
		VLAN", forwarding; Tag frame VLAN ID belongs to the
		port "allowed by VLAN", forwarding; If the Tag frame
		VLAN does not belong to the port of the "permitted by
		VLAN," is discarded.

# Command is as follow:

epon(olt-7/onu-1/uni-1)# ctc vlan-mode translation <tpid> <cos> <default-vlan> translate-list

# 4. Trunk Mode:

Direction	Туре	Processing method				
	Untag frame	Switch frames on port's default VLAN(VPID), forwarding.				
Unstrann	Tag frame	Tag frame VLAN ID belongs to the port "allowed by				
Upstream		VLAN", forwarding; Tag frame VLAN ID does not belong to				
		the port of the "permitted by VLAN," is discarded				
<b>Downstre</b>	Untag frame	Discard the frame				

am	Tag frame	Tag frame VLAN ID belongs to the port "allowed by				
		VLAN", forwarding; Tag frame VLAN ID belongs to the				
		port "allowed by VLAN", forwarding; If the Tag frame				
		VLAN does not belong to the port of the "permitted by				
		VLAN," is discarded.				

# Command is as follow:

epon(olt-7/onu-1/uni-1)# ctc vlan-mode trunk <tpid> <cos> <default-vlan> vlan-list(选配)

# 5. Aggregation Mode:

Direction	Туре	Processing method
	Untag frame	Switch frames on port's default VLAN(VPID), forwarding.
	Tag frame	If the VLAN ID of the packet is equal to one of the "aggregated VLANs" in the VLAN aggregation table, the
		VID of the packet is converted to the corresponding VLAN
		to be aggr. The source of the service flow is also recorded.
		MAC address value, and forward;
<b>Upstream</b>		If the VLAN ID of the packet is not equal to any one of the
		"aggregated VLANs" in the VLAN aggregation table of the port, it is discarded.
		Currently, only the ONU is required to convert the VID.
		The conversion of other fields (such as TPID, CFI, and Pri)
		is not required. The ONU treats the TPID and Pri fields in
		the VLANConfig Parameters field of the received VLAN
		VariableContainer, After the TPID set to the default value
		(TPID = 0x8100), Pri to maintain the original value
	Untag frame	Discard the frame
	Tag frame	If the VLAN ID of the packet is equal to "VLAN to be aggr."
		In the VLAN aggregation table of the port, the VID is
		converted to the corresponding "aggregated VLAN"
		according to the MAC address value and forwarded.
		If the VID of the original tag is the default VID, the tag is
Downstre		forwarded and forwarded. If the VLAN ID is not equal to
am		"VLAN to be aggr." Or the default VLAN ID is not equal,
		the ONU is only required VID conversion, other fields
		(such as TPID, CFI and Pri) conversion is not required. The
		ONU treats the TPID and Pri fields in the VLANConfig
		Parameters parameter field in the received VLAN
		VariableContainer and sets the TPID of the converted
		VLAN tag to the default value (TPID = 0x8100). Pri
		remains the original value.

Command is as follow:

aggregation-list(选配)

----End

# 3. 3.3 Configuring Gateway ONU Internet Service – RTK chip scheme ONU

This topic describes how to configure Internet access service, voice service, BTV service and VoD service when gateway ONU is used to build an FTTH network.

The ONT integrating an IAD provides Internet, VoIP, and IPTV services to users. The Gateway ONU facilitates interconnection of home devices by providing Layer 3 services, such as Point-to-Point Protocol over Ethernet (PPPoE)/DHCP dial-up, network address translation (NAT), and Internet Group Management Protocol (IGMP) snooping. This scenario provides fine-grained management channels and service control, and mainly applies to Layer 3 networking.

# **Prerequisites**

- The OLT is connected to the uplink device success
- The OLT create internet vlan
- The OLT configure GE port vlan for Internet
- The OLT configure PON port vlan for Internet
- The ONU is registered

### 1. Create Route WAN and bind LAN 1 in ONU Web

Click Internet → Internet Config → WAN Config



# NOTE:

Mode select to **Route**. Check **Enable VLAN** and Vlan ID input **100**. Service Mode select to **INTERNET**. Bind port check **Port\_1** and **wireless(SSID)**.

Internet service document take DHCP mode as an example. The service type please selected according to the user's actual use. ONT detail usage please refer to ONT user manual.

# 2. Check ONU status Click Status → Internet Info

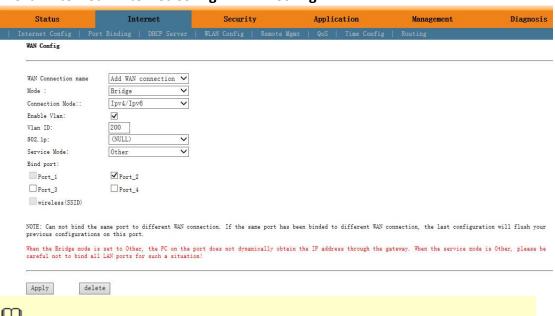


# 3. 3.4 Configuring Gateway ONU IPTV Service - RTK chip scheme ONU

### **Prerequisites**

- The OLT is connected to the uplink device success
- The OLT create IPTV vlan
- The OLT configure GE port vlan for IPTV
- The OLT configure PON port vlan for IPTV
- The OLT configure IGMP and Multicast vlan
- The ONT is registered

# Create Bridge WAN and bind LAN 2 in ONU Web Click Internet → Internet Config → WAN Config



# NOTE:

Mode select to **Bridge**. Check **Enable Vlan** and Vlan ID input **200**. Service Mode select to **Other**. Bind port check **Port\_2**.

# 2. Configure IGMP

Click Application -> IGMP Config -> IGMP Snooping. Enable IGMP Snooping.



Click Application 

Multicast Vlan 

3\_Other\_B\_VID\_200 

Modify. Input 200 in vlan multicast (blank said set).

						Gateway Name: Hom
Application	On Status	Internet	Management	Diagnosis		
	DDNS Config   Adv	anced NAT   UPNP Config	IGMP Config   MLD Con	fig   Multicast Vlan		
	VLAN multicast (blank said se	t)				
IPTV		Interface		Multicast VLAN	M	odify
		1_TR069_R_VID_46				/
		2_INTERNET_R_VID_100				0
		3_Other_B_VID_200		200		Ø.

### 3. Check ONU Status

# Click Status → Internet Info

	nternet Info   LAN & WLAN	TR-069 Status				
WAN Info						
	Interface	VLAN ID	Protocol	IGMP	Status	IP address
	1_TR069_R_VID_46	46	IPoE	Enable	down	
	2_INTERNET_R_VID_100	100	IPoE	Enable	up	192. 168. 5. 129
	3_Other_B_VID_200	200	br1483	Disable	up	
Network Inform	ation					
	y 192. 168. 5. 254					
Subnet Mask	255. 255. 255. 0					
	192, 168, 5, 254					
Primary DNS						

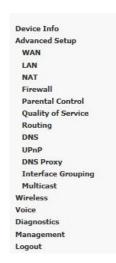
----End

# 3.3.5 Configuring Gateway ONU Internet Service - Broadcom chip scheme

### ONU

# Prerequisites

- The OLT is connected to the uplink device success
- The OLT create internet vlan
- The OLT configure GE port vlan for Internet
- The OLT configure PON port vlan for Internet
- The ONU is registered
- 1. Configuring IPoE WAN in ONU Web
  Click Advanced Setup→WAN→ Add



Wide Area Network (WAN) Service Setup

Choose Add, Remove or Edit to configure a WAN service over a selected interface.

Interface	Description Type		ption Type VLAN priority V		TPID	MTU	Multicast VLAN	IGMP Proxy	
epon0.1	1_TR069_R_50	IPoE	0	50	0x8100	1450	-1	Disable	

Add Remove

# Click Next



WAN Service Interface Configuration

Select a layer 2 interface for this service

epon0/epon0 ✓

Back Next

# Click Next



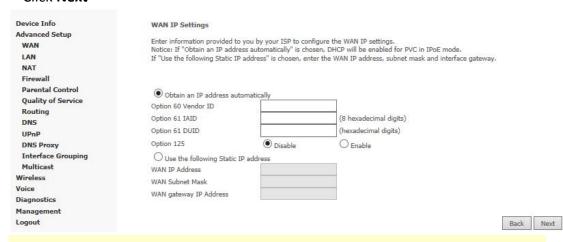
# NOTE:

WAN service type select to **IP over Ethernet(IPoE)**. Service Description select to **INTERNET.** 802.1Q VLAN ID[0-4094] input **100**.

Internet service document take DHCP mode as an example. The service type please selected

according to the user's actual use. ONT detail usage please refer to ONT user manual.

# Click Next



# NOTE:

WAN IP Settings click **Obtain an IP address automatically** if topology use DHCP. If topology use static IP. Click **Use the following Static IP address** and input the IP address, Subnet Mask and gateway IP address.

# Click Next

Device Info	Network Address Translation Settings
Advanced Setup	
WAN	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN)
LAN	
NAT	✓ Enable NAT
Firewall	
Parental Control	Enable Fullcone NAT
Quality of Service	
Routing	Enable Firewall
DNS	Service Control of the Control of
UPnP	
DNS Proxy	IGMP Multicast
Interface Grouping	
Multicast	Enable IGMP Multicast Proxy
Wireless	
Voice	Enable IGMP Multicast Source
Diagnostics	
Management	
Logout	
	The maximum allowed size of an Ethernet frame
	MTU [576-1500]: 1492
	Back Next

Click Next

Device Info Advanced Setup WAN LAN NAT Firewall Parental Control Quality of Service Routing DNS UPnP DNS Proxy Interface Grouping Multicast Wireless Voice Diagnostics Management Logout

### Routing -- Default Gateway

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to connected. Priority order can be changed by removing all and adding them back in again.

Selected Default Gateway
Interfaces

epon 0.2

->

->

Deal	Maria
Dack	Mext

### Click Next

Device Info Advanced Setup WAN LAN NAT Firewall Parental Control Quality of Service Routing DNS UPnP DNS Proxy Interface Grouping Multicast Wireless Voice Diagnostics Management Logout

### **DNS Server Configuration**

Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only **DNS Server Interfaces** can have multiple WAN interfaces served as system dns servers but only one will be used according to the pric order can be changed by removing all and adding them back in again

# Select DNS Server Interface from available WAN interfaces: Selected DNS Server Interfaces epon 0.1 epon 0.2 Use the following Static DNS IP address: Primary DNS Server Secondary DNS Server

7388377	
Rack	Next
Dark	MEYF

# Click Apply/Save

Device Info Advanced Setup WAN LAN

Firewall
Parental Control

NAT

Quality of Service Routing

DNS UPnP DNS Proxy

Interface Grouping Multicast

Wireless Voice Diagnostics Management

Logout

### WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP

Connection Type	IPoE
NAT	Enable
Enable Fullcone NAT	Disable
Firewall	Disable
IGMP Multicast Proxy	Disable
IGMP Multicast Source	Disable
MLD Multicast Proxy:	Disable
MLD Multicast Source Enabled:	Disable
Quality Of Service	Disable

Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications

127.00	
Back	Apply/Save

# 2. Check ONU Status Click Device Info→ WAN

evice Info
Summary
WAN
Statistics
Route
ARP
DHCP
Voice
Optic

Interface	Description	Туре	VLAN ID	мти	IPv6	IGMP Proxy	IGMP SRC Enable	MLD Proxy	MLD SRC Enable	NAT	Firewall	Status	IPv4 Address	IPv6 Address
epon0.1	1_TR069_R_50	IPoE	50	1450	Disable	Disable	Disable	Disable	Disable	Enable	Enable	Connecting	0.0.0.0	
epon0.2	2_INTERNET_R_100	IPoE	100	1492	Disable	Disable	Disable	Disable	Disable	Enable	Disable	Connected	192.168.5.14	

# 3. 3.6 Configuring Gateway ONU IPTV Service - Broadcom chip scheme ONU

# **Prerequisites**

- The OLT is connected to the uplink device success
- The OLT create IPTV vlan
- The OLT configure GE port vlan for IPTV
- The OLT configure PON port vlan for IPTV
- The OLT configure IGMP and Multicast vlan
- The ONU is registered

# 1. Configuring Bridge WAN in ONU Web Click Advanced Setup→WAN→ Add



Wide Area Network (WAN) Service Setup

Choose Add, Remove or Edit to configure a WAN service over a selected interface.

In	nterface	Description	Туре	VLAN priority	VLAN ID	TPID	мти	Multicast VLAN	IGMP Proxy
e	epon0.1	1_TR069_R_50	IPoE	0	50	0x8100	1450	-1	Disable
e	epon0.2	2_INTERNET_R_100	IPoE	0	100	0x8100	1492	-1	Disable

2797	C 4444
Add	Remove

# Click Next

Device Info	WAN Se
Advanced Setup	
WAN	Select a la
LAN	300000000000000000000000000000000000000
NAT	epon0
Firewall	
Parental Control	
Quality of Service	Back
Routing	
DNS	
UPnP	
DNS Proxy	
Interface Grouping	
Multicast	
Wireless	
Voice	
Diagnostics	
Management	
Logout	

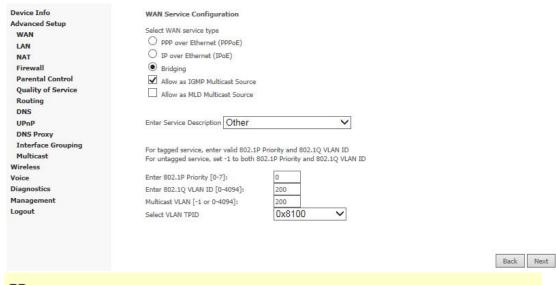
WAN Service Interface Configuration

Select a layer 2 interface for this service

epon0/epon0 ✓

Back Next

# Click Next



# NOTE:

WAN service type select to **Bridging**. Check **Allow as IGMP Multicast Source**. Service Description select to **Other**. 802.1Q VLAN ID[0-4094] input **200**. Multicast VLAN[-1 or 0-4094] input **200**.

Click Apply/Save									
Device Info Advanced Setup WAN	WAN Setup - Summary  Make sure that the settings below makes	atch the sett	ngs provid	led by you	r ISP				
LAN	Connection Type	undefined							
NAT Firewall	NAT	Enable							
Parental Control	Enable Fullcone NAT	Disable							
Quality of Service	Firewall	Disable							
Routing	IGMP Multicast Proxy	Disable							
UPnP	IGMP Multicast Source	Enable							
DNS Proxy	MLD Multicast Proxy:	Disable							
Interface Grouping	MLD Multicast Source Enabled:	Disable							
Multicast	Quality Of Service	Disable							
Vireless	()		I						
oice	Click "Apply/Save" to have this interfa	ace to be eff	ective, Clic	k "Back" t	o make any	modification	15		
liagnostics								-	
Management								Back	Apply

# Click Advanced Setup → Interface Grouping

Device Info	Interface grouping Configuration			
Advanced Setup	To create a new interface group:			
WAN		n name must be unique :	and select either 2. (dynamic) or 3. (static) belo	MT.
LAN	ar and one droup name and are group	, manne mass or amque t	and server closes as (dynamic) or si (state) serv	
NAT		clients to a WAN Interfac	ce in the new group add the DHCP vendor ID st	ring. By configuring a DHCP vendor ID string any DHCP client request with the speci
Firewall	IP address from the local DHCP server.			
Parental Control	3.Select interfaces from the available in	iterface list and add it to	the grouped interface list using the arrow butto	ins to create the required mapping of the ports. Note that these clients may obt
Quality of Service				
Routing	4. Click Apply/Save button to make the	changes effective imme	diately	
DNS				
UPnP				
DNS Proxy	IMPORTANT If a vendor ID is confi	gured for a specific d	lient device, please REBOOT the client dev	ice attached to the modem to allow it to obtain an appropriate IP address.
Interface Grouping	Group Name IPTV			
Multicast	Group Hame 1717			
Wireless	WAN Interface 3 Other B 200	0/epon() 3	7	
Voice	WAN Interface 3_Other_B_200	J/eponu.s 🗸	1	
Diagnostics				
Management				
Logout	Grouped LAN Interfaces		Available LAN Interfaces	
	eth1.0		eth0.0 eth2.0	
			eth3.0	
		->	wlan0	
			wI0_Guest80FEGU wI0.1	
			wI0_Guest80FEGU wI0.2	
		<-	wI0_Guest80FEGU wI0.3	
		10 - 30	100 miles 11	
				I .



Group Name free to enter. WAN Interface select to 3\_Other\_B\_200/epon0.3. Move eth1.0 to Grouped LAN interface. The purpose of this step is isolate LAN2 with other LAN port avoid multicast packet flood to other LAN port. If eth1.0(LAN2) move to Grouped LAN interface. LAN2 only can receive multicast traffic. Internet is not work on LAN2. This step is not necessary but recommended.

# Click **Advanced Setup**→ **Interface Grouping** to check Interface group status

Device Info Advanced Setup WAN LAN NAT		ng supports				n as an independent network. To support this feature, you must create mapping grou he default group has IP interface
Firewall Parental Control	Group Name	Remove	WAN Interface	LAN Interface	DHCP Vendor IDs	1
Quality of Service			epon0.1	eth0.0		1
Routing			epon0.2	eth2.0		1
DNS			eponois	eth3.0		•
UPnP DNS Proxy						
Interface Grouping	Default			wlan0		
Multicast				wl0_Guest80FEGU wl0.1		
Wireless				wl0_Guest80FEGU wl0.2	ĺ	1
Voice			ė.	wi0 Guest80FEGU wi0.3		1
Diagnostics	-	2_0				1
Management	IPTV		epon0.3	eth1.0		
Logout	8 8					1

Group Name	Remove	WAN Interface	LAN Interface	DHCP Vendor IDs
		epon0.1	eth0.0	
		epon0.2	eth2.0	
			eth3.0	
Default			wlan0	
			wl0_Guest80FEGU wl0.1	
			wl0_Guest80FEGU wl0.2	
	6		wl0_Guest80FEGU wl0.3	
			- Ca	

# 3. 3.7 Configuring Gateway ONU VOIP Service – Broadcom chip scheme ONU

### **Prerequisites**

- The OLT is connected to the uplink device success
- The OLT create VOIP vlan
- The OLT configure GE port vlan for VOIP
- The OLT configure PON port vlan for VOIP
- The ONU is registered
- 1. Configuring IPoE WAN in ONU Web

Click Advanced Setup→WAN→ Add

Device Info Advanced Setup WAN LAN NAT Firewall Parental Control Quality of Service Routing DNS UPnP DNS Proxy Interface Grouping Multicast Wireless Voice Diagnostics Management Logout

Wide Area Network (WAN) Service Setup

Choose Add, Remove or Edit to configure a WAN service over a selected interface.

Interface	Description	Type	VLAN priority	VLAN ID	TPID	MTU	Multicast VLAN	IGMP Proxy
epon0.1	1_TR069_R_50	IPoE	0	50	0x8100	1450	-1	Disable
epon0.2	2_INTERNET_R_100	IPoE	0	100	0x8100	1492	-1	Disable
epon0.3	3_Other_B_200	Bridge	0	200	0x8100	1492	-1	Disable

Add Remove

# Click Next

Device Info WAN LAN NAT Firewall Parental Control Quality of Service Routing DNS UPnP DNS Proxy Multicast Wireless Voice Diagnostics Management Logout

WAN Service Interface Configuration

Select a layer 2 interface for this service

epon0/epon0 ✓

Back Next

# Click Next









WAN service type select to **IP over Ethernet(IPoE)**. Service Description select to **VOICE.** 802.1Q VLAN ID[0-4094] input **300**.

### Click Next Device Info WAN IP Settings Advanced Setup Enter information provided to you by your ISP to configure the WAN IP settings. Notice: If "Obtain an IP address automatically" is chosen, DHCP will be enabled for PVC in IPoE mode. If "Use the following Static IP address" is chosen, enter the WAN IP address, subnet mask and interface gateway. WAN LAN NAT Firewall Parental Control Obtain an IP address automatically Quality of Service Option 60 Vendor ID Routing Option 61 IAID (8 hexadecimal digits) DNS Option 61 DUID (hexadecimal digits) UPnP Disable O Enable **DNS Proxy** Option 125 Use the following Static IP address Interface Grouping Multicast 192.168.0.17 WAN IP Address Wireless WAN Subnet Mask 255.255.255.0 Voice WAN gateway IP Address 192,168.0.36 Diagnostics Back Next Logout

# NOTE:

WAN IP Settings click **Usethe following Static IP address** and input the IP address, Subnet Mask and gateway IP address if topology use static ip. If topology use DHCP. Click **Obtain an IP address automatically**.

# Click Next

Device Info	Network Address Translation Settings
Advanced Setup WAN	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN)
LAN	
NAT	✓ Enable NAT
Firewall	
Parental Control	Enable Fullcone NAT
Quality of Service	
Routing	Enable Firewall
DNS	
UPnP DNS Proxy	IGMP Multicast
Interface Grouping	TOPP MUIDICAST
Multicast	Enable IGMP Multicast Proxy
Wireless	
Voice	Enable IGMP Multicast Source
Diagnostics	
Management	
Logout	
	The maximum allowed size of an Ethernet frame
	MTU [576-1500]: 1492
	Back Next

# Click Next

Device Info	Routing Default Gateway	
Advanced Setup		
WAN	Default gateway interface list can have my	litiple WAN interfaces served as system default gateways but only one will be used according to the priority
LAN	can be changed by removing all and addin	
NAT		
Firewall	Selected Default Gateway	Available Routed WAN
Parental Control	Interfaces	Interfaces
Quality of Service		
Routing	epon0.2	epon0.4
DNS		epon0.1
UPnP		
DNS Proxy	->-	
Interface Grouping		
Multicast	<-	
Wireless		
Voice		
Diagnostics		
Management		
Logout		
		Back Next

# Click Next

Device Info WAN LAN NAT Firewall Parental Control Quality of Service Routing DNS UPnP **DNS Proxy** Interface Grouping Multicast Wireless Voice Diagnostics Logout

### **DNS Server Configuration**

Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the changed by removing all and adding them back in again

Select DNS Server Interface from available WAN interfaces:

epon0.2



epon0.4 epon0.1	
epon0.1	

O Use the following Static DNS IP address

Primary DNS Server Secondary DNS Server

1113-2013/2016	

# Click Apply/Save

Device Info Advanced Setup

WAN LAN

NAT Firewall Parental Control

Quality of Service Routing DNS UPnP **DNS Proxy** Interface Grouping

Multicast Wireless Voice Diagnostics Logout

Make sure that the settings below match the settings provided by your ISP

Connection Type	IPoE		
NAT	Enable		
Enable Fullcone NAT	Disable		
Firewall	Disable		
IGMP Multicast Proxy	Disable		
IGMP Multicast Source	Disable		
MLD Multicast Proxy:	Disable		
MLD Multicast Source Enabled:	Disable		
Quality Of Service	Disable		

Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications

Bark	Annly/Save
DOLL	Whhis/ pare

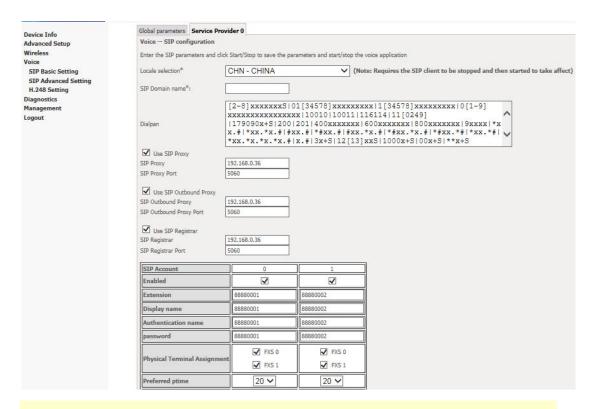
# Click Device Info→ WAN,查看 ONU 所配置的 WAN 的信息。

Device Info Summary WAN Statistics Route ARP DHCP Voice Optic Advanced Set Wireless Voice Diagnostics Management Logout

Interface	Description	Type	VLAN ID	MTU	IPv6	IGMP Proxy	IGMP SRC Enable	MLD Proxy	MLD SRC Enable	NAT	Firewall	Status	IPv4 Address	IPv6 Address
epon0.1	1_TR069_R_50	IPoE	50	1450	Disable	Disable	Disable	Disable	Disable	Enable	Enable	Connecting	0.0.0.0	
epon0.2	2_INTERNET_R_100	IPoE	100	1492	Disable	Disable	Disable	Disable	Disable	Enable	Disable	Connected	192.168.5.14	
epon0.3	3_Other_B_200	Bridge	200	1492	Disable	Disable	Enable	Disable	Disable	Disable	Disable	Connected	0.0.0.0	
anne0.4	4 VOICE P 200	TDeE	200	1400	Dienblo	Disable	Disable	Disable	Disable	Facility.	Disable	C	107 160 0 17	

# 2. Configuring Voice in ONU Web

# Click Voice → SIP Basic Setting





SIP Proxy, SIP Outbound Proxy, SIP Registrar enter SIP server IP address. Extension, Display name, Authentication name, password enter base on user actual setting.

# Click Device Info→ Voice

Device Info
Summary
WAN
Statistics
Route
ARP
DHCP
Voice
Optic
Advanced Setup
Wireless
Voice
Diagnostics
Management
Logout

Voice Info - H.248/SIP

Name	Registration Status	Call Status		
88880001	Up	Idle		
88880002	Up	Idle		

NOTE:

If Registration Status is **Up** mean voice accout register successfully.

----End