GPON OLT Products User Manual

P1201-08

---Quick Configuration Guide

Version：V1.0

1910020846 REV1.0.1

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About This Manual

This manual is applicable to P1201-08 GPON OLT products quickly installation configuration guide, Is the user to quickly and easily manage GPON OLT equipment should read the information before guidelines.

The related documents for GPON OLT device are:
《P1201-08 OLT User Manual-Device Install Guide》
《P1201-08 OLT User Manual-Command Line Operation》
《P1201-08 OLT User Manual-EMS Configuration Guide》

Content

1. Instruction

Revision History

Date	Version	Description
2018-08-15	V1.0	New Version GPON OLT First Edition, Configuration Guide
2018-12-04	V1.0.1	Product image updated and some minor alterations

Proper Noun

Acronym	Full name	Instructions
GPON	Gigabit-Capable Passive Optical Network	Gigabit Capable Passive Optical Network
OLT	Optical Line Terminal	Optical Line Terminal
ONT	Optical Network Terminal	Optical Network Terminal
OMCI	ONT Management and Control Interface	GPON OLT&ONT Management and Control Interface(protocol)
OAM	Operation Administration and Maintenance	EPON OLT&ONU Operation Administration and Maintenance Protocol
DBA	Dynamic Bandwidth Allocation	Dynamic Bandwidth Allocation
VLAN	Virtual Local Area Network	Virtual Local Area Network
VoIP	Voice over IP	Voice over IP
WLAN	Wireless Local Area Networks	Wireless Local Area Networks
FTTH	Fiber To The Home	Fiber To The Home
FTTB	Fiber To The Building	Fiber To The Building

Note

- The command line described in the document is case sensitive in OLT.
- If we meet a command that cannot be inputted or is prompted for error, we can input **"?"** to see the latter command format.
- Input incomplete commands can be completed by pressing the **"Tab"** key.
- P1201-08 is Pizza-Box OLT，only have one card，so, if we want to enter PON mode, need input interface gpon 0/0

2. OLT Login Manage

2.1 OLT Login Manage Explanation

P1201-08 OLT support CLI management; CLI manage type divided into telnet remote manage and console local manage, please check #2.2 and #2.3 chapter to see concrete operations; please check EMS user manual to see EMS manage way; please check #4 to see WEB manage way.

2.2 OLT Login By Console

First, find console port on OLT front surface, which is a RJ45 port. if want to login OLT by Console port, we need do prepare as follows:

- Need RJ-45-to-DB-9 serial line
- Connect PC to OLT console port, find COM number in **"computer management"**
- Software for logging in OLT by console port(Putty, SecureCRT)
- parameter for console login software

  BaudRate:9600 **(Note：8PON Port OLT is 9600，16 PON Port OLT is 115200)**

  Parity Check: None

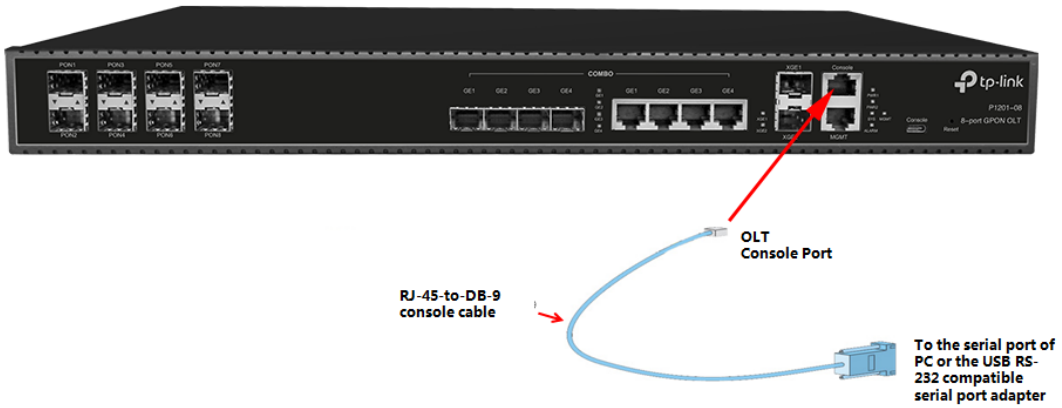
  Databit: 8

  Stopbit: 1

  Flow Control: None

  Login OLT by console login software, then input **username: root, password: admin**

[OLT console connection diagram]



[OLT console connection device]

RJ-45 to DB-9 Console Cable

USB to RS-232 compatible serial port adapter

Port on Computer	Required Cable	Port on OLT
Serial Port	RJ-45 to DB-9 Console Cable	RJ-45 Console Port
USB Type-A Port	● USB to RS-232 compatible serial port adapter (Adapter may require a software driver) ● RJ-45 to DB-9 Console Cable	

2.3 OLT Login By Telnet

There are two way to telnet, one is outband management, another is inband management.

1. Outband management (connect OLT MGMT port).

set PC ip as 192.168.1.X(except 192.168.1.100),PC connect to OLT MGMT port, login the OLT with OLT default manage IP (default IP : 192.168.1.100). then input username and password, default login username is root, password is admin.

Use command as follow can modify the outband management IP:

OLT> enable

OLT# config

OLT(config)# interface mgmt

OLT(config-interface-mgmt)# ip address 192.168.5.100 24

OLT(config-interface-mgmt)# exit

2. Inband management(connect OLT ge port)

First we login olt via console port or mgmt port, and add a vlanif for inband management, assigned an IP address to this vlan, add the ge port to the vlan, ge port vlan mode can be access or trunk, which depend on your network environment, then pc connect to OLT ge port（ge1-ge4） and telnet to the OLT.

The way to set inband mangement ip as follows：

OLT> enable

OLT# config

OLT(config)# vlan 100

OLT(config)# interface ge

OLT(interface-ge)# vlan access 1 100 **----configure ge 1 as inband management port**

OLT(interface-ge)# exit

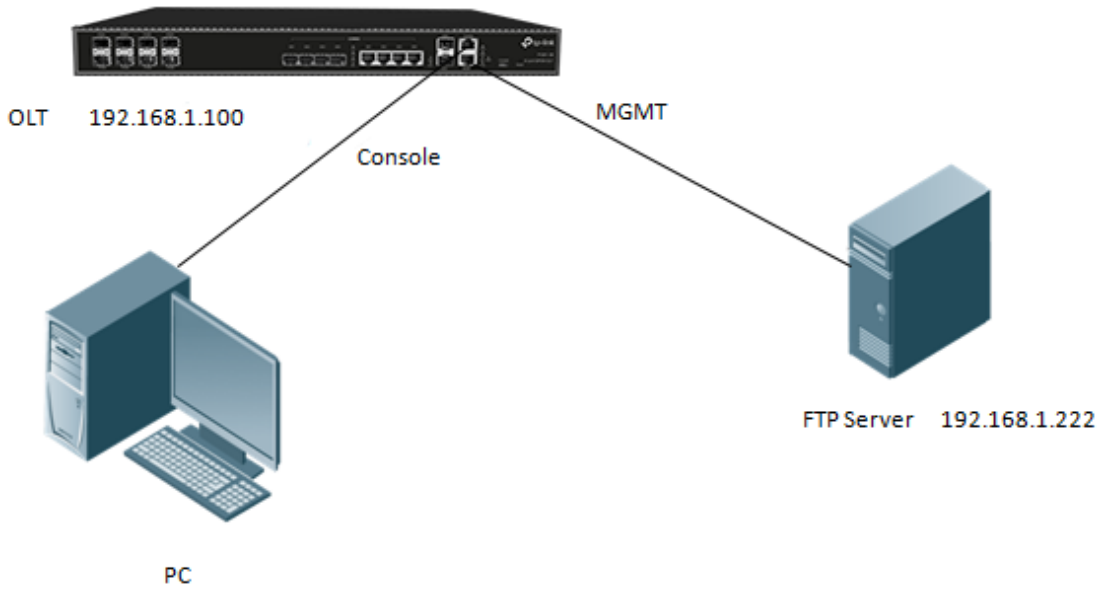
OLT(config)# interface vlanif 100

OLT(interface-vlanif-100)# ip address 192.168.2.100 255.255.255.0
OLT(interface-vlanif-100)# exit

3. OLT Upgrade

1. Set up OLT update topology:

Use a PC as FTP server (run wftpd32.exe or Wftpd.exe in this pc), and connect to OLT mgmt port or ge port to transmit firmware.



2. Test network connectivity

a) Connect PC to OLT console port, used for updating OLT in boot mode.

b) Connect pc to OLT MGMT port or ge port, configure PC ip and OLT ip(inband ip or outband ip) are in same segment.

c) PC can ping OLT manegemnet IP, if pc can ping OLT manegemnet ip, means OLT can connect to FTP server.

d) Close PC firewall, prevent firewall intercept FTP software.

3. FTP server configuration

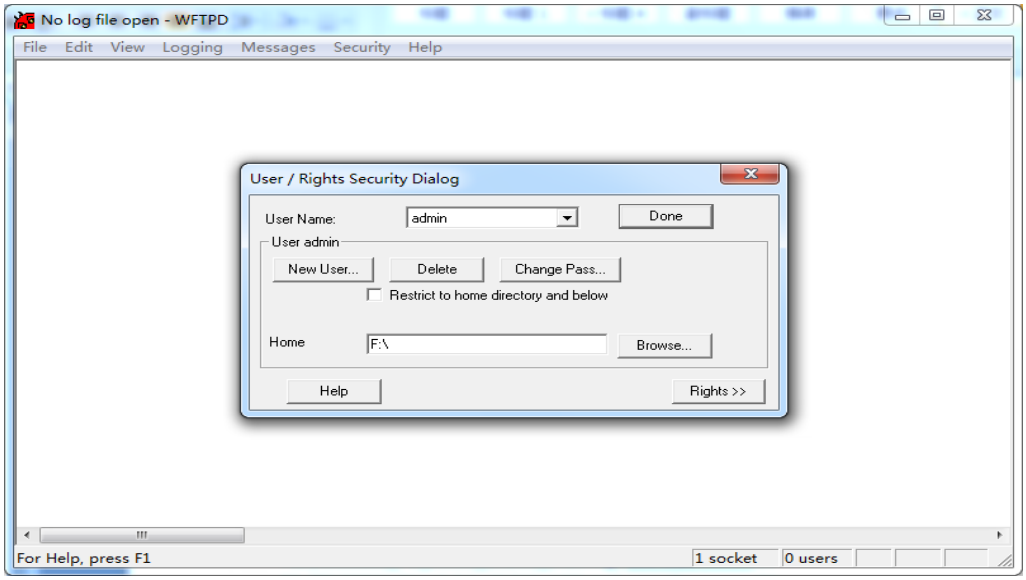
a. Open FTP software, configure FTP username and password, **such as**: admin/admin

b. Set up a directory of OLT update files for the FTP server, such as the way for setting up the wftp32. Exe software：

---Security -> User/Rights Security Dialog -> User Name —input admin

---Change Password —input admin

---Home Directory —set directory of OLT upgrade files



4. OLT update command

P1201-08 OLT only need to update a file, if the boot file is too old, we need update boot file in OLT boot mode, boot upgrade way will be provided separately. OLT the common upgrade method please see below:

a. Input command as follows to update OLT FW file(file name include FW):

OLT(config)# load packetfile ftp 192.168.1.222 admin admin New16Port_FW_V1.3.1_X000 _171114_1841.img

Broadcast message from root:
Upgrade is in process.
File [New16Port _FW_V1.3.1_X000_171114_1841.img] download ..... OK
File [New16Port _FW_V1.3.1_X000_171114_1841.img] upgrade ..... OK

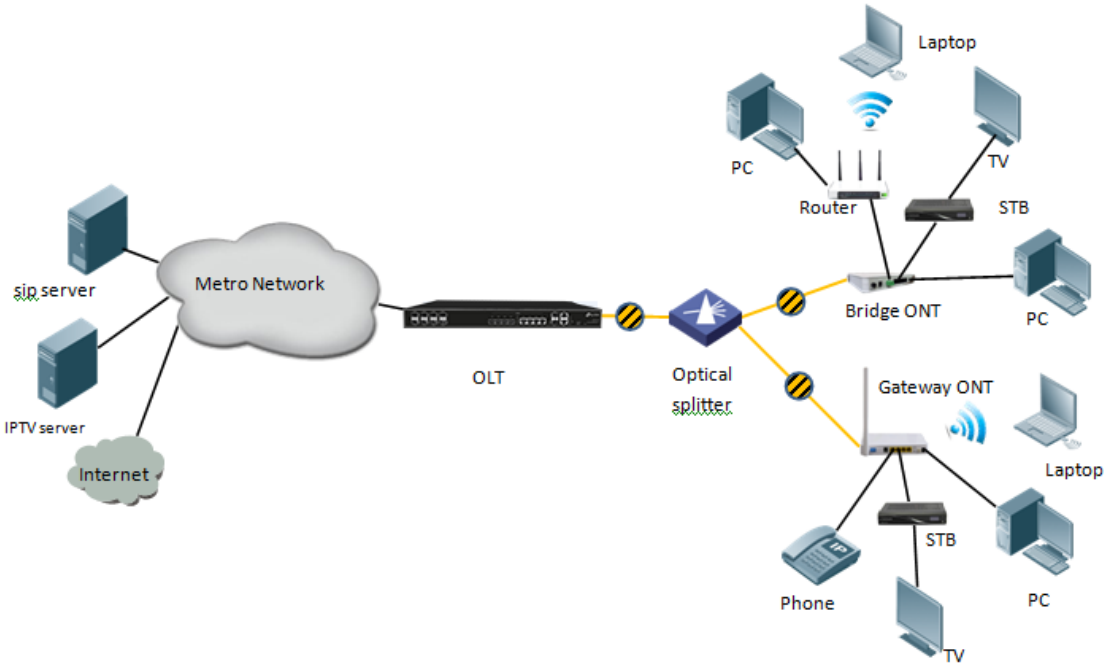
b. After update OLT, we need reboot OLT(Note: only reboot OLT,OLT can use new version)

OLT(config)# reboot
Please check whether data has saved, the unsaved data will lose if reboot system. Are you sure to reboot system? (y/n)[n]:y

4. Configure Service In OLT Discrete Mode （Non-Template）

This section mainly introduce P1201-08 OLT internet service, voice service and multicast service in discrete mode in FTTH environment. Mainly introduce the bridge ONT(SFU and Home Gateway ONT (HGU),The following will introduce the service configuration way for OLT and ONT according to two types ONT.

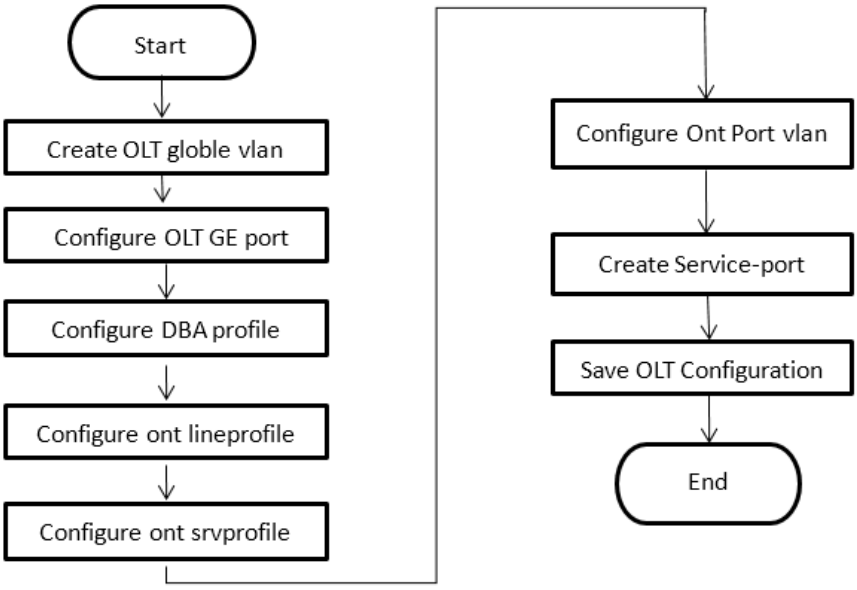
4.1 FTTH Service Topology



4.2 Data Plan

Main Data Plan List	
Configure Iteam	**Data**
OLT Port Config	**Ge1：** VLAN 100 access mode **Ge2：** VLAN 200 access mode **Ge3：** VLAN 300 access mode
DBA Profile（upload bandwidth control）	**Profile number：** 1
ONT Lineprofile	**Profile ID：**0 **T-CONT ID：**1 **Internet GEM Port ID：** 2 **Mapping Vlan：**100 **Voice GEM Port ID：** 3 **Mapping Vlan：**200 **IPTV GEM Port ID：** 4 **Mapping Vlan：**300
ONT Srvprofile	**Profile ID：**0 **ONT Port Capability：**adaptive
Bridge ONT Port Config	**LAN 1：** VLAN 100 **LAN 2：** VLAN 200 **LAN 3：** VLAN 300 ---connect to VOIP phone
Gateway ONT Port Config	**LAN1：** VLAN 100 **LAN2：** VLAN 200 **POTS1：** VLAN 300

4.3 Config Process



4.4 Configure OLT Service

4.4.1 Configure OLT Global Vlan

In **config** mode, we can use **OLT(config)# show vlan all** to show the created vlan.

If the created vlan can't meet the need, we can use command **OLT(config)# vlan** vlan-list to create new vlan, According to the data plan, we create vlan100,vlan200,vlan300 firstly:

```
OLT(config)# vlan 100
OLT(config)# vlan 200
OLT(config)# vlan 300
```

4.4.2 Configure OLT GE Port Service Vlan

We can config GE port vlan mode as access, hybrid and trunk, we can configure different mode according to our network plan, configure way of three mode as follows.

Configure GE 1,2,3 port vlan mode is access(in this document, GE port connect to PC, so we configure ge port vlan mode as access):

```
OLT(config)# interface ge 0/0
OLT(config-interface-ge-0/0)# vlan mode 1-3 access
OLT(config-interface-ge-0/0)# vlan access 1 100
OLT(config-interface-ge-0/0)# vlan access 2 200
OLT(config-interface-ge-0/0)# vlan access 3 300
OLT(config-interface-ge-0/0)# exit
```

Configure GE 1、2、3 vlan mode is trunk：

```
OLT(config)# interface ge 0/0
```

```
OLT(config-interface-ge-0/0)# vlan mode 1-3 trunk
OLT(config-interface-ge-0/0)# vlan trunk 1 100
OLT(config-interface-ge-0/0)# vlan trunk 2 200
OLT(config-interface-ge-0/0)# vlan trunk 3 300
OLT(config-interface-ge-0/0)# exit
```

Configure GE 1、2、3 vlan mode is hybrid：

```
OLT(config)# interface ge 0/0
OLT(config-interface-ge-0/0)# vlan mode 1-3 hybrid
OLT(config-interface-ge-0/0)# vlan hybrid 1 tagged 100
OLT(config-interface-ge-0/0)# vlan hybrid 2 tagged 200
OLT(config-interface-ge-0/0)# vlan hybrid 3 tagged 300
OLT(config-interface-ge-0/0)# exit
```

NOTE：

The OLT vlan handle process as follows:

Vlan mode	Direction	Message have vlan tag or not	Handling method
Access mode	In	vlan tag	Discard
		untag	Add port configured vlan in access mode for message (main parameter is VID),and forward
	Out	vlan tag	Forward message to the corresponding port according to VID and remove vlan tag;If the VLAN ID of the Tagged message is not same to the port VID, it is discard.
		untag	Discard
Trunk mode	In	vlan tag	If the VLAN in the message is permit to pass port, it will be forwarded directly; If the VLAN in the message doesn't permit to pass port, it is discarded.
		untag	Add default vlan(native-vlan) for untagged message and forward.
	Out	vlan tag	If the VLAN in the message is permit to pass port, it will be forwarded directly; If the VLAN ID of the message is the default (native- VLAN)VLAN, then the VLAN tag is discard and forward; If the VLAN in the message doesn't permit to pass port, it is discarded.

		untag	Discard
Hybrid mode	**In**	**vlan tag**	If the VLAN in the message is permit to pass port, it will be forwarded directly; If the VLAN in the message doesn't permit to pass port, it is discarded.
		untag	Add default vlan(native-vlan) for untagged message and forward.
	Out	**vlan tag**	If the VLAN in the message is permit to pass port, according vlan tag or vlan untag of message to discard or no discard vlan tag, then forward message, If the VLAN ID of the message is the default (native-VLAN) VLAN, then the VLAN tag is discard and forward; If the VLAN in the message doesn't permit to pass port, it is discarded.
		untag	Discard

4.4.3 Configure DBA Profile

In OLT discrete mode, ONT is automatically registered. When ONT online it would bind system default lineprofile 0 and srvprofile 0 automatically. And the TCONT 1 of lineprofile 0, would bind the DBA profile 1 automatically. In this user manual don't modify DBA profile 1 configuration and use it directly

4.4.4 Configure ONT Lineprofile

In OLT discrete mode, ONT is automatically registered. When ONT online it would bind system default lineprofile 0 and srvprofile 0 automatically. And the lineprofile 0 would create gem 1 to bind TCONT 1 automatically. Gem 1 can be deleted or modified manually. In this user manual don't modify gem1 and create new gem for different service as flow:

```
OLT(config)# ont-lineprofile gpon profile-id 0
OLT(config-ont-lineprofile-0)# gem add 2 tcont 1
OLT(config-ont-lineprofile-0)# gem mapping 2 1 vlan 100
OLT(config-ont-lineprofile-0)# gem add 3 tcont 1
OLT(config-ont-lineprofile-0)# gem mapping 3 1 vlan 200
OLT(config-ont-lineprofile-0)# gem add 4 tcont 1
OLT(config-ont-lineprofile-0)# gem mapping 4 1 vlan 300
OLT(config-ont-lineprofile-0)# commit
OLT(config-ont-lineprofile-0)# exit
```

4.4.5 Configure ONT Srvprofile

In OLT discrete mode, ONT is automatically registered. When ONT online it would bind system default lineprofile 0 and srvprofile 0 automatically. In this user manual don't modify ont srvprofile 0 configuration and use it directly.

4.4.6 Configure OLT Multicast vlan

```
OLT(config)# multicast-vlan 200
OLT(config-multicast-vlan-200)# igmp member port gpon 0/0/1
OLT(config-multicast-vlan-200)# exit
```

4.5 Check ONT Register Status.

In OLT discrete mode, ONT is automatically registered. after ONT is automatically registered, use command **show ont info** to query ONT online status. make sure ONT "Control flag" is "Active", "Run State" is "Online", "Config state" is "Success" and "Match state" is "Match"

```
OLT(config-interface-gpon-0/0)# show ont info 1 all
-----------------------------------------------------------------------------
  F/S P   ONT SN                  Control    Run        Config     Match
          ID                      flag       state      state      state
-----------------------------------------------------------------------------
  0/0 1   1     DB19B34F0C16      Active     online     success    match
  0/0 1   2     XPONE067B341      Active     online     success    match
-----------------------------------------------------------------------------
  Total: 2,   online 2,   deactive: 0,   failed: 0
```

4.6 Configure Bridge ONT(SFU) Service

In OLT discrete mode,we need enter OLT to config ONT one by one,config way as follows:

4.6.1 Configure Bridge ONT(SFU) Internet Service

Premise condition of ONT to open internet service:

- OLT connect to uplink device and open internet service
- OLT have created vlan for internet service
- OLT have configured GE port vlan
- ONT have registered

SFU ethernet port vlan mode have transparent, tag(access),trunk mode and so on, we can according to our network plan configure different mode. all ont vlan is configured by OLT, configure way as follows:

Configure traffic profile:

OLT(config)# **traffic-profile profile-id 1 profile-name 10M cir 10240 pir 10240 cbs 2000 pbs 2000**

Configure ONT1 eth1 vlan mode is tag(access):

OLT(config)# **interface gpon 0/0**
OLT(config-interface-gpon-0/0)# **ont port native-vlan 1 1 eth 1 vlan 100**
OLT(config-interface-gpon-0/0)# **exit**

Config service port:

OLT(config)# **service-port 3 vlan 100 gpon 0/0 port 1 ont 1 gemport 2 multi-service user-vlan 100 tag-action transparent inbound name 10M outbound name 10M**

NOTE：

In this user manual service use single vlan. SVLAN is 100, USERVLAN is 100. Tag-action is transparent. USERVLAN equal SVLAN. So the service-port transparent vlan 100. More Tag action rule as follow:

TAG ACTION	Description
DEFAULT	Add a SVLAN to packet.
ADD_DOUBLE	Add a SVLAN and a USERVLAN to packet.
TRANSPARENT	When USERVLAN equal SVLAN would transparent packet.
TRANSLATE	Translate USERVLAN to SVLAN.
TRANSLATE_AND_ADD	Add a SVLAN and translate USERVLAN to the new innervlan

4.6.2 Configure Bridge ONT (SFU) Multicast Service

Premise Condition

- OLT connect to uplink device and open service
- OLT have created vlan for multicast service
- OLT have configured GE port vlan
- ONT have registered

Configure ONT1 multicast vlan mode is igmp-snooping-proxy, and multicast-forward is untag:

OLT(config)# **ont-srvprofile gpon profile-id 0**
OLT(config-ont-srvprofile-0)# **multicast mode igmp-snooping-proxy**
OLT(config-ont-srvprofile-0)# **multicast-forward untag**
OLT(config-ont-srvprofile-0)# **exit**

Configure ONT1 eth2 vlan mode is tag (access):

OLT(config)# **interface gpon 0/0**
OLT(config-interface-gpon-0/0)# **ont port native-vlan 1 1 eth 2 vlan 200**

```
OLT(config-interface-gpon-0/0)# exit
```

Config service port:

```
OLT(config)# service-port 4 vlan 200 gpon 0/0 port 1 ont 1 gemport 3 multi-service user-vlan 200 tag-action transparent inbound name 20M outbound name 20M
```

----End

4.7 Configure Gateway ONT（HGU）Service

Gateway ONT（HGU）can provide internet, VOIP,IPTV service for FTTH, support PPPOE/DHCP dial-up, NAT, IGMP. Because HGU have route function, ONT service need to be configured with the local web or tr069,include wan and vlan configuration, don't need configure vlan in olt, only make sure ONT can register to OLT.OLT don't support configure ONT route wan, specific configure as follows:

4.7.1 Configure Gateway ONT（HGU）Internet Service--RTK Solution

Premise condition

- OLT connect to uplink device and open service
- OLT have created vlan for internet
- OLT have configured GE port vlan
- ONT have registered

1. **Config traffic profile**

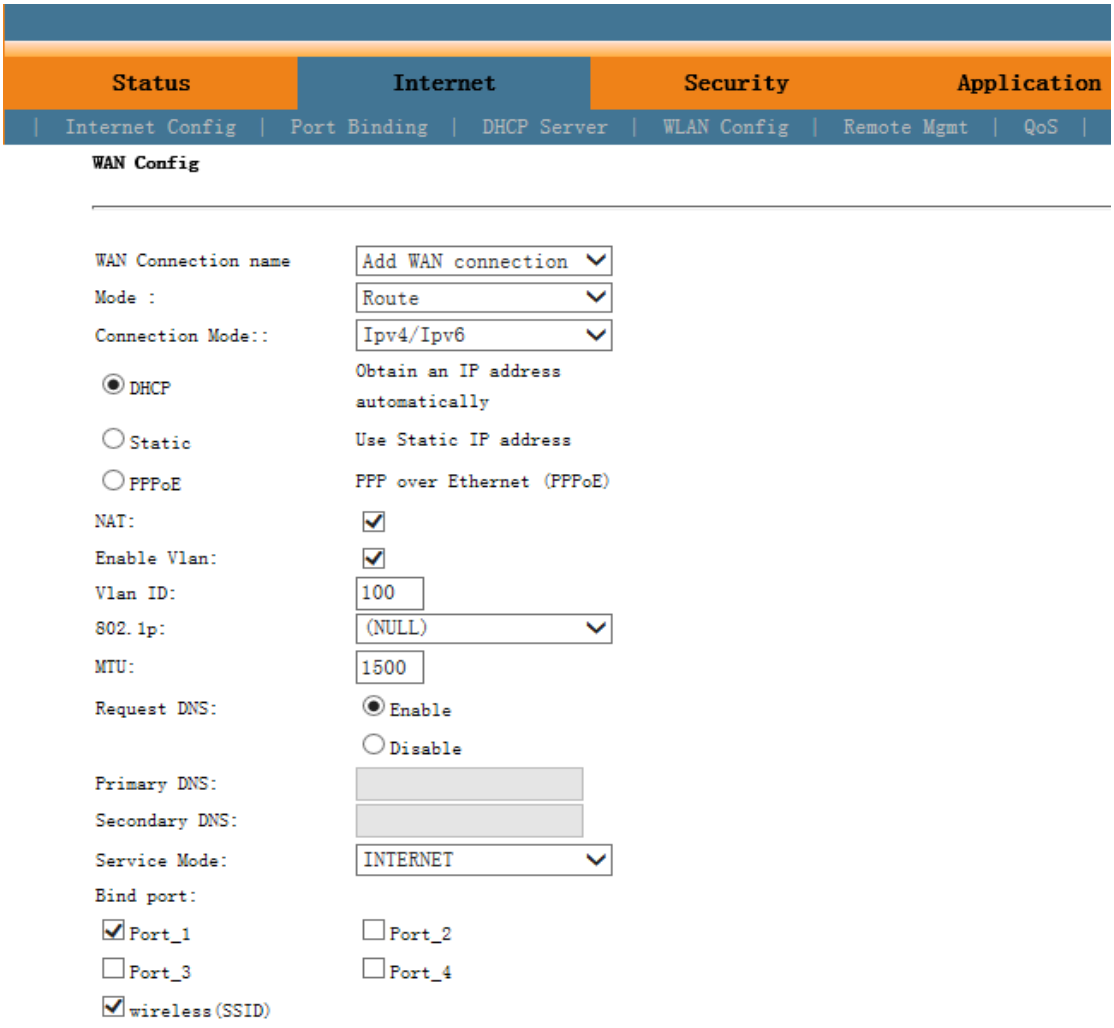
```
OLT(config)# traffic-profile profile-id 1 profile-name 10M cir 10240 pir 10240 cbs 2000 pbs 2000
```

2. **Config service port:**

```
OLT(config)# service-port 3 vlan 100 gpon 0/0 port 1 ont 1 gemport 2 multi-service user-vlan 100 tag-action transparent inbound name 10M outbound name 10M
```

3. **Create route wan and bind LAN1 in ont web**

Click Internet→Internet Config→ WAN Config



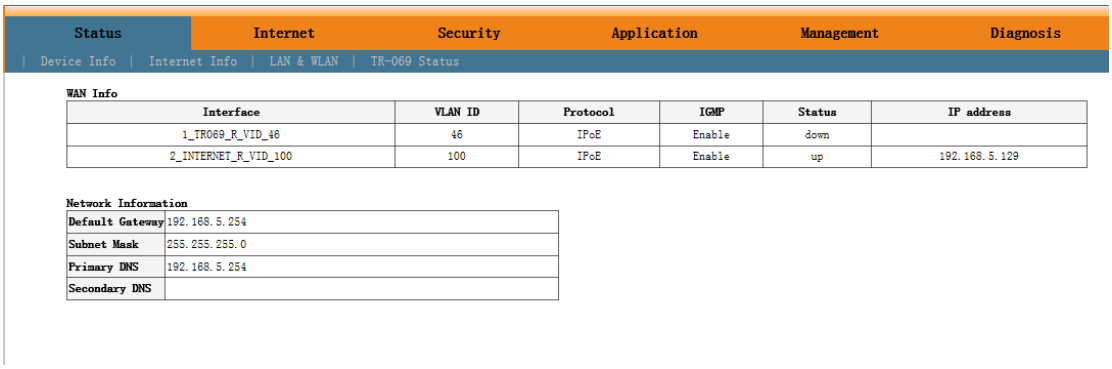
NOTE:

Mode select **Route.** Check **Enable VLAN** and Vlan ID input 100. Service Mode select **INTERNET.** Bind port check **Port_1** and **wireless (SSID).**

Internet service take DHCP mode as an example in this document. The service type please select suitable type according to the user's actual environment. ONT detail usage please refer to ONT user manual.

4. Check ONT internet wan status

Click Status→Internet Info



4.7.2 Configure Gateway ONT（HGU）Multicast Service--RTK Solution

premise condition

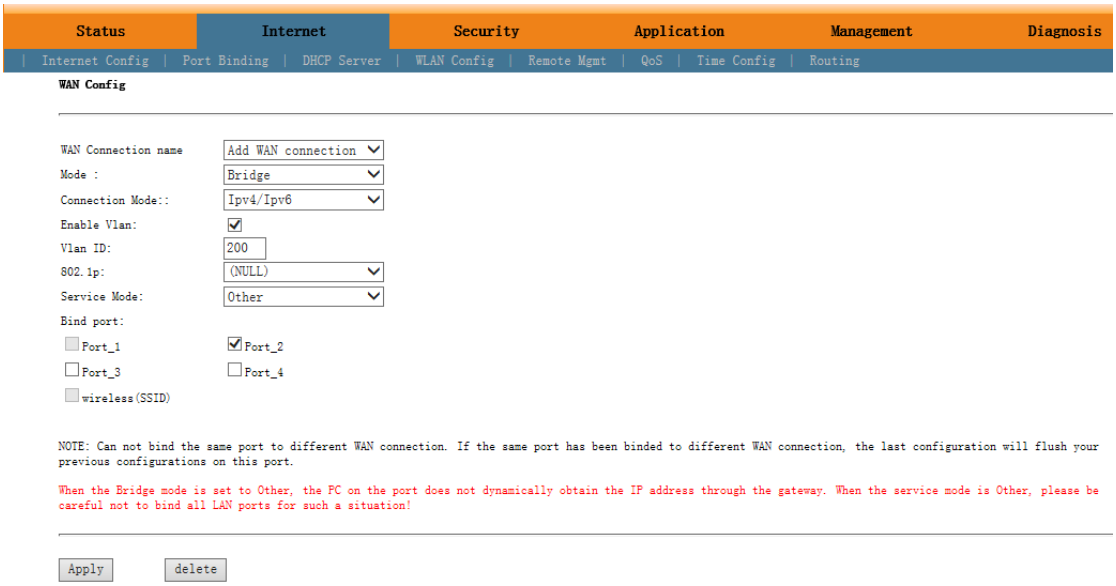
- OLT connect to uplink device and open multicast service
- OLT have created vlan for multicast
- OLT have configured GE port multicast vlan
- ONT have registered

1. **Create service port**

OLT(config)# **service-port 5 vlan 200 gpon 0/0 port 1 ont 2 gemport 3 multi-service user-vlan 200 tag-action transparent**

2. **Create bridge wan and bind LAN2 in ont web**

Click Internet→Internet Config→ WAN Config

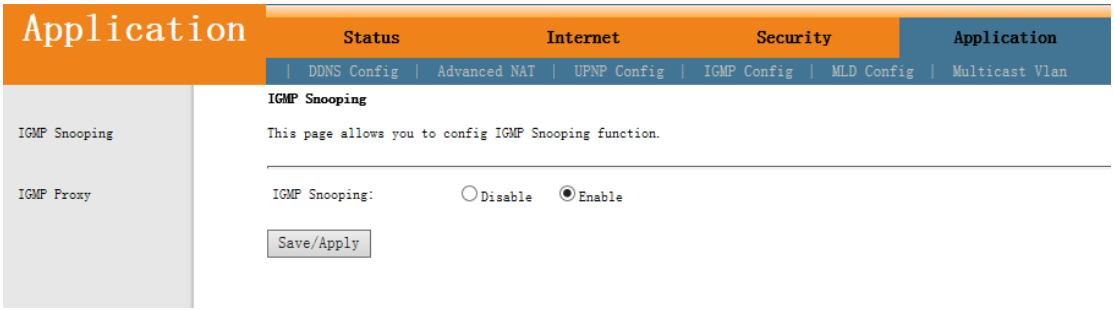


NOTE：

Mode select to **Bridge**. Check **Enable Vlan**, Vlan ID input **200**. Service Mode select **Other**. Bind port click **Port_2**.

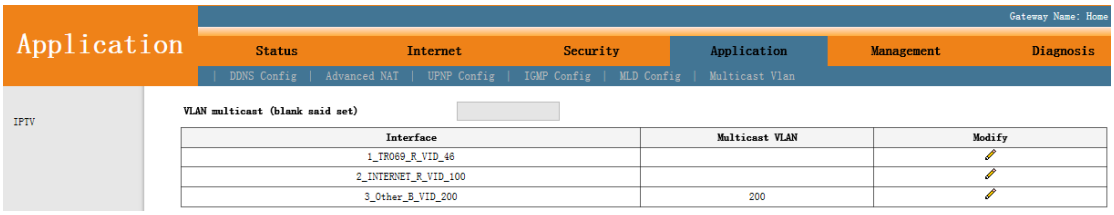
3. **Config IGMP mode in ONT web**

Click Application→ IGMP Config→ IGMP Snooping. Enable IGMP Snooping.



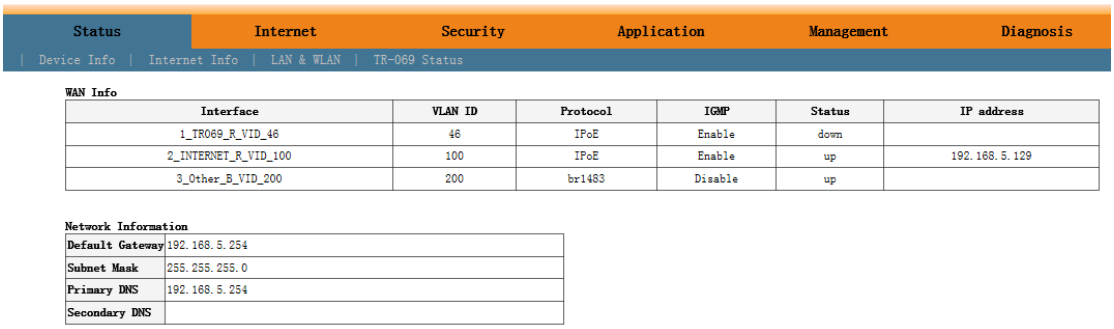
4. **Configure multicast vlan on ONT web**

Click Application→ Multicast Vlan→ 3_Other_B_VID_200→ Modify. Input 200 behind VLAN multicast (blank said set).



5. **Check ONT multicast wan status**

Click Status→Internet Info



----end

4.7.3 Configure Gateway ONT（HGU）Internet Service--ZTE Solution

premise condition

- OLT connect to uplink device and open internet service
- OLT have created vlan for internet
- OLT have configured GE port vlan
- ONT have registered

1. **Config traffic profile**

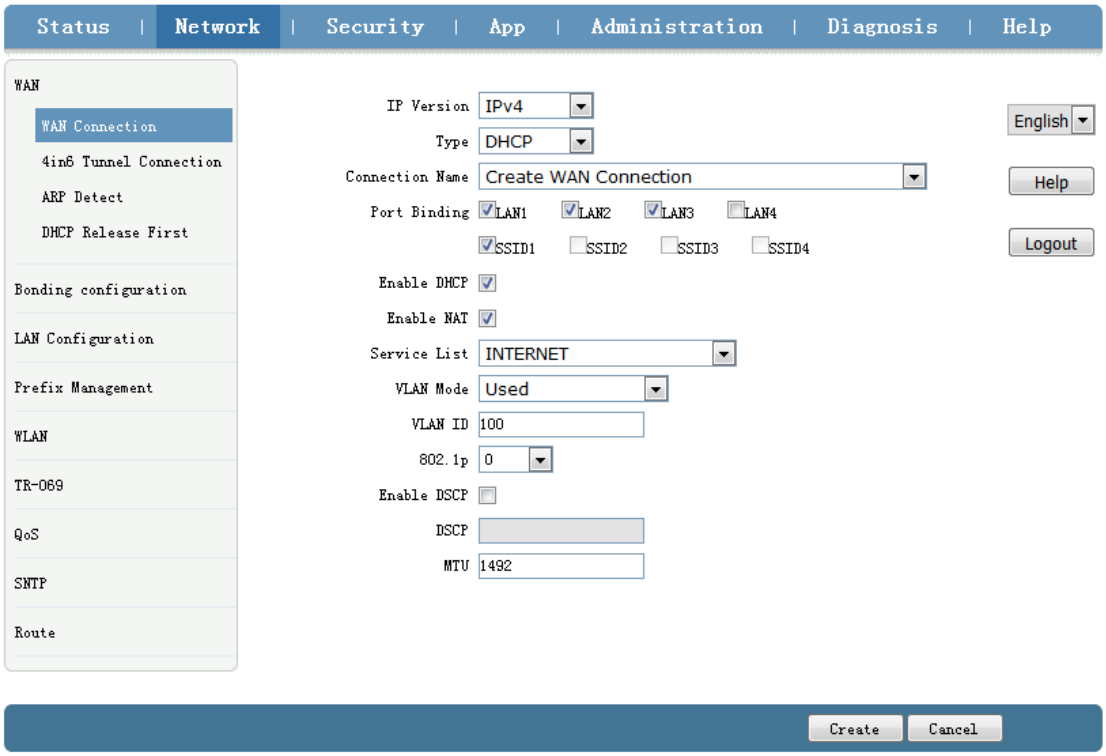
OLT(config)# **traffic-profile profile-id 1 profile-name 10M cir 10240 pir 10240 cbs 2000 pbs 2000**

2. **Config service port**

OLT(config)# **service-port 6 vlan 100 gpon 0/0 port 1 ont 3 gemport 2 multi-service user-vlan 100 tag-action transparent inbound name 10M outbound name 10M**

3. **Create route wan and bind LAN1 in ont web**

Click Network→WAN→WAN Connection. Type select to DHCP. Connection Name select to Create WAN Connection. Port Binding check LAN1, LAN2, LAN3 and SSID1. Service List select to INTERNET. VLAN Mode select to Used. VLAN ID enter 100. finaly click Create.

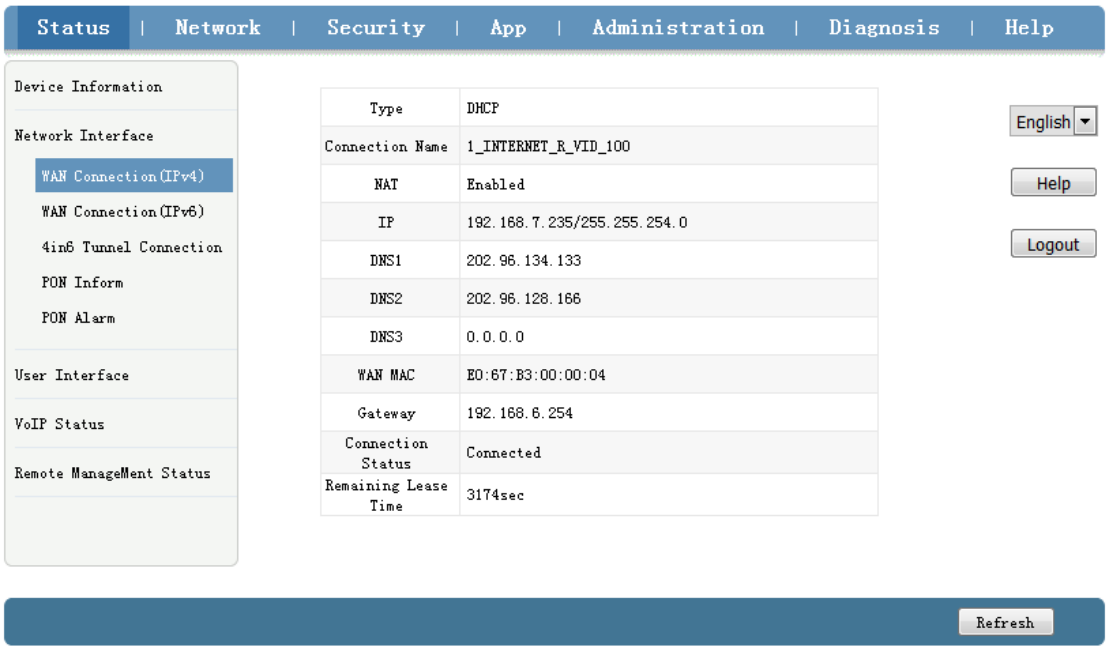


NOTE:

Type select to **DHCP**. Connection Name select to **Create WAN Connection**. Port Binding check **LAN1**, **LAN2**, **LAN3** and **SSID1**. Service List select to **INTERNET**. VLAN Mode select to **Used**. VLAN ID enter **100**. Enable DHCP and Enable NAT keep default checked status.

In this document, Internet service take DHCP mode as an example. please selected suitable service type according to the user's actual need. ONT detail use way please refer to ONT user manual.

4. Check ONT internet wan status



4.7.4 Configure Gateway ONT（HGU）Multicast Service--ZTE Solution

premise condition

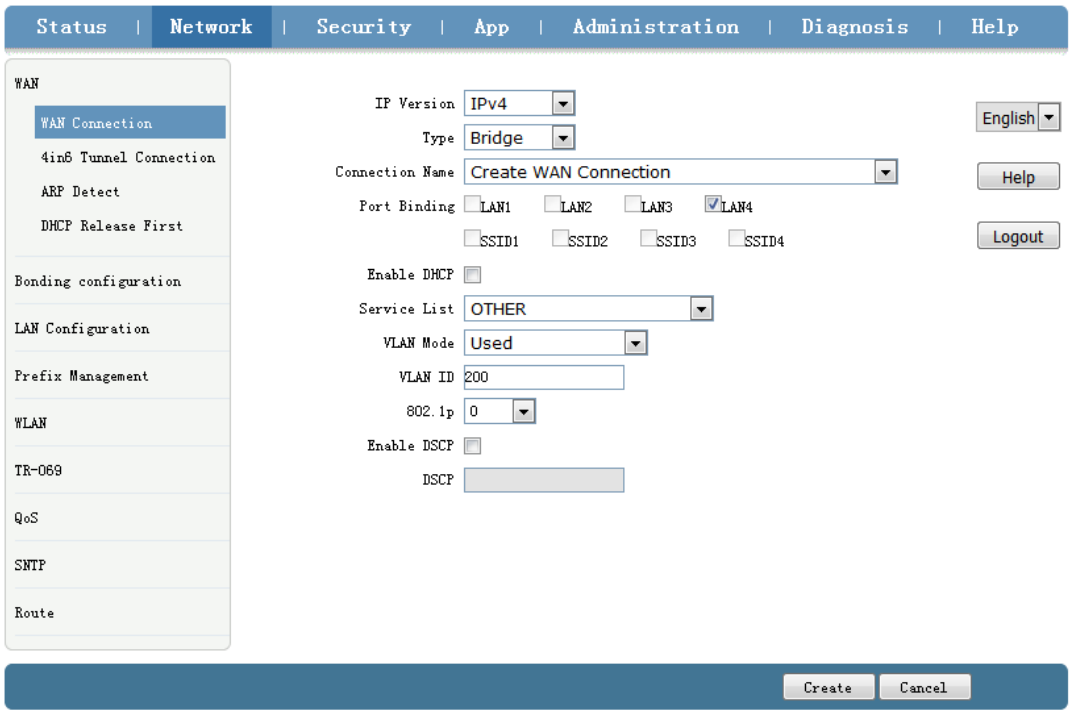
- OLT connect to uplink device and open multicast service
- OLT have created vlan for multicast
- OLT have configured GE port multicast vlan
- ONT have registered

1. **Config Config service port**

OLT(config)# **service-port 7 vlan 200 gpon 0/0 port 1 ont 3 gemport 3 multi-service user-vlan 200 tag-action transparent**

2. **Create bridge wan in ont web**

Click Network→WAN→WAN Connection. Type select to Bridge. Connection Name select to Create WAN Connection. Port Binding check LAN4. Service List select to OTHER. VLAN Mode select to Used. VLAN ID enter 200. Finally click Create.

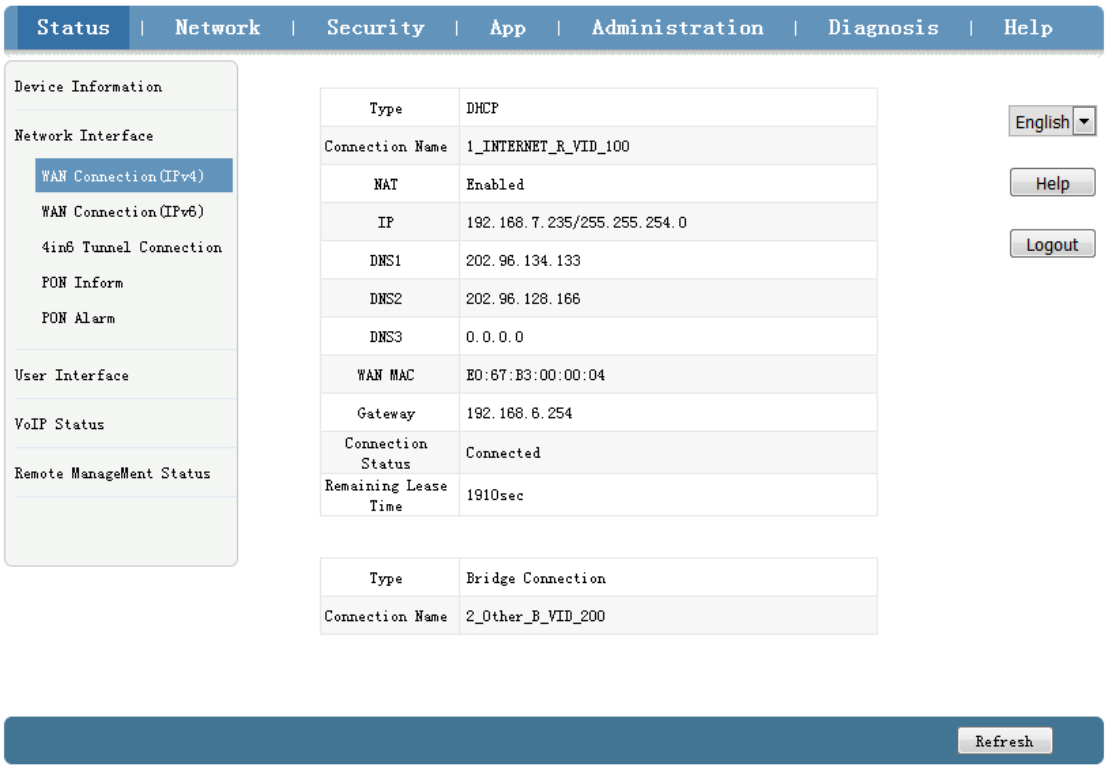


NOTE：

Type select to **Bridge**. Connection Name select to **Create WAN Connection**. Port Binding check **LAN4**. Service List select to **OTHER**. VLAN Mode select to **Used**. VLAN ID enter **200**. Enable DHCP keep default unchecked status.

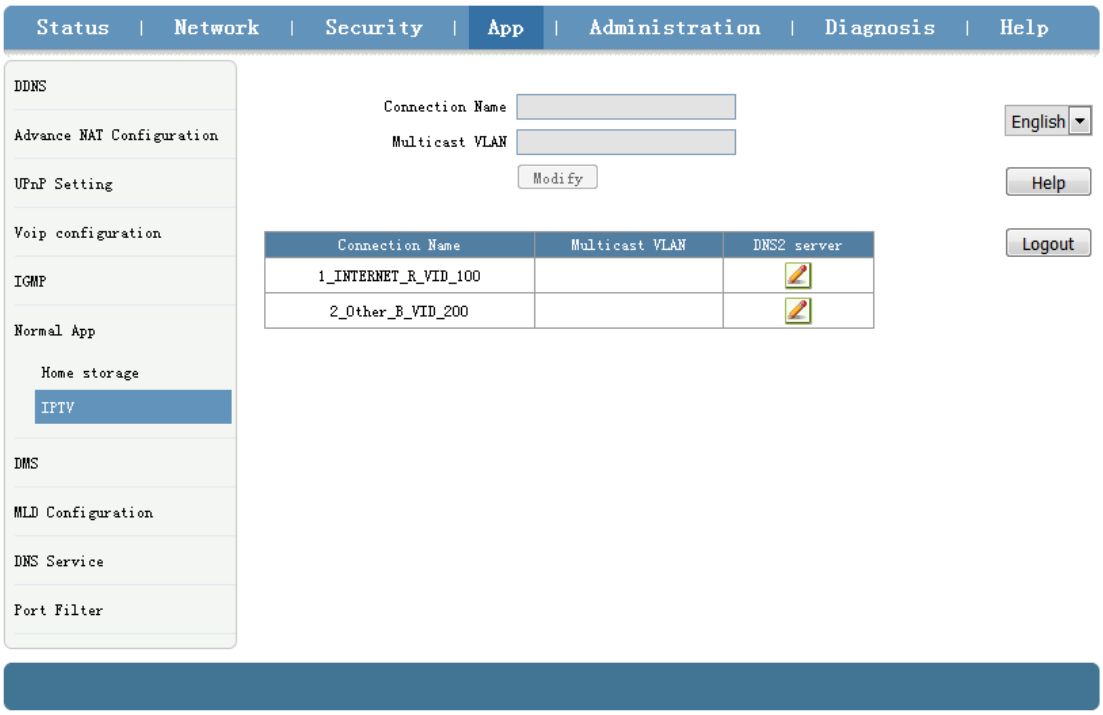
3. **Check ONT Bridge wan status**

Click Status→Network Interface→WAN Connection (IPv4).

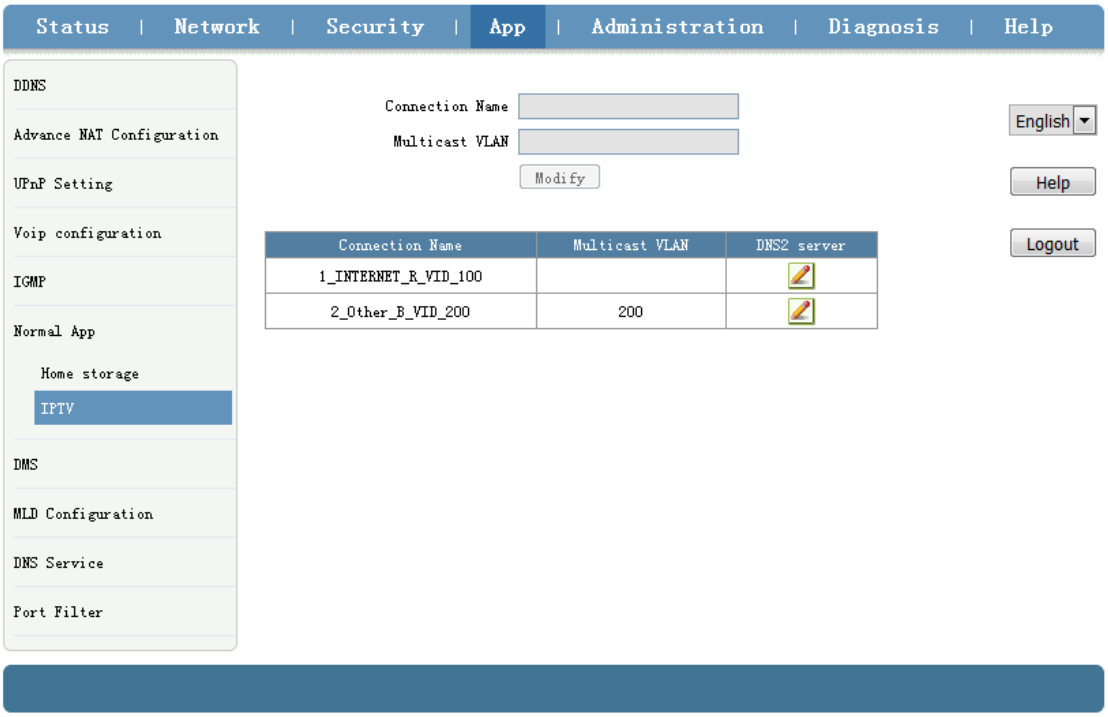


4. Configure multicast vlan on ONT web

Click App→Normal App→IPTV. Modify the Bridge WAN 2_Other_B_VID_200



Multicast VLAN enter 200. Then click Modify.



4.7.5 Configure Gateway ONT（HGU）VOIP Service--ZTE Solution

premise condition

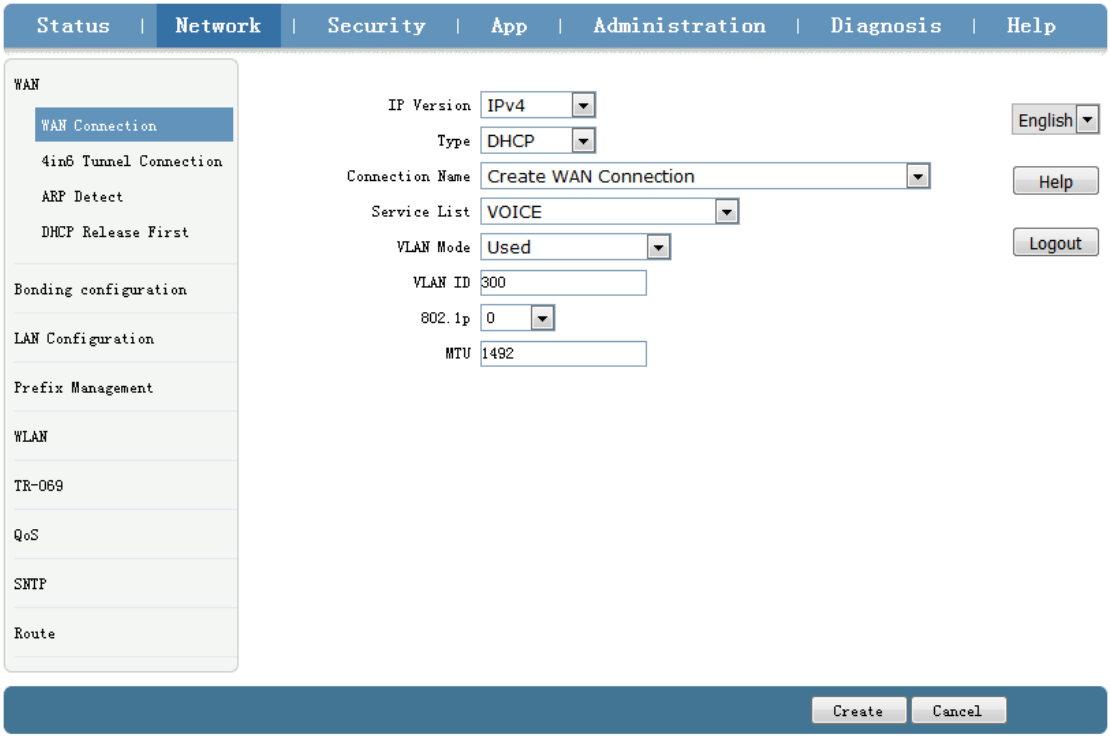
- OLT connect to uplink device and open multicast service
- OLT have created vlan for VOIP
- OLT have configured GE port VOIP vlan
- ONT have registered

1. **Config Config service port**

OLT(config)# **service-port 8 vlan 300 gpon 0/0 port 1 ont 3 gemport 4 multi-service user-vlan 300 tag-action transparent**

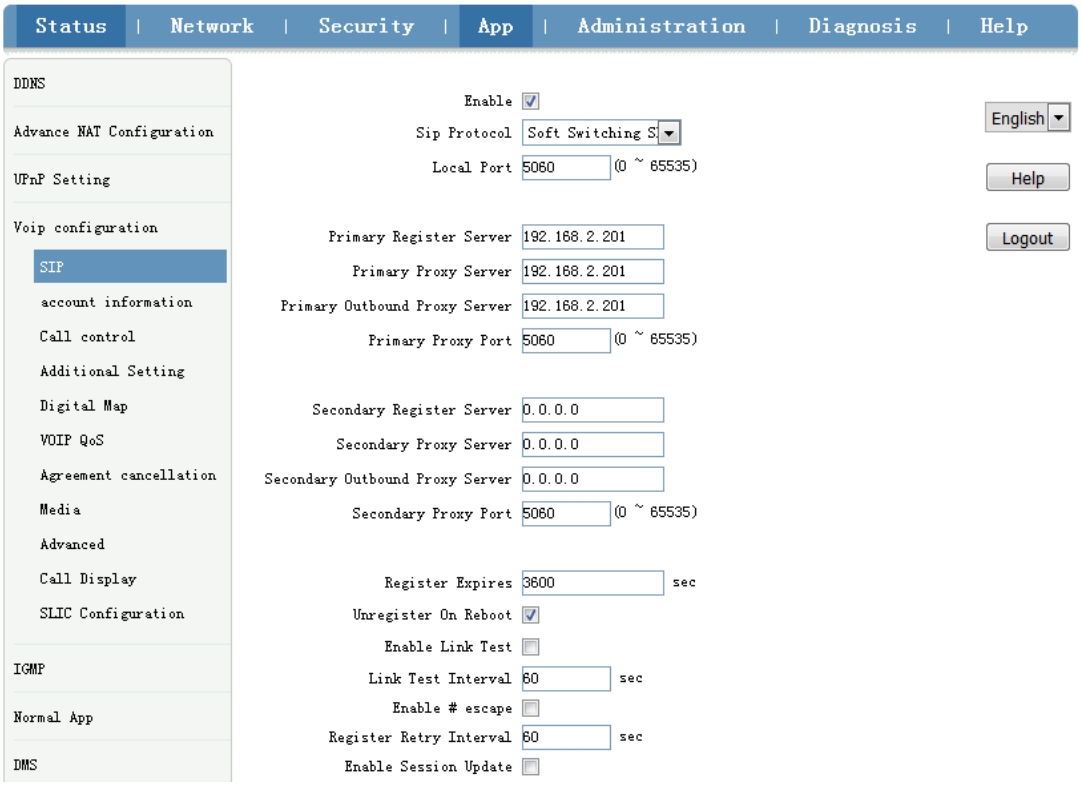
2. **Configure Voice in ONT web**

Click Network→WAN→WAN Connection. Type Select to DHCP. Connection Name Select to Create WAN Connection. Service List select to VOICE. VLAN Mode select to Used. VLAN ID enter 300. Finally click Create。



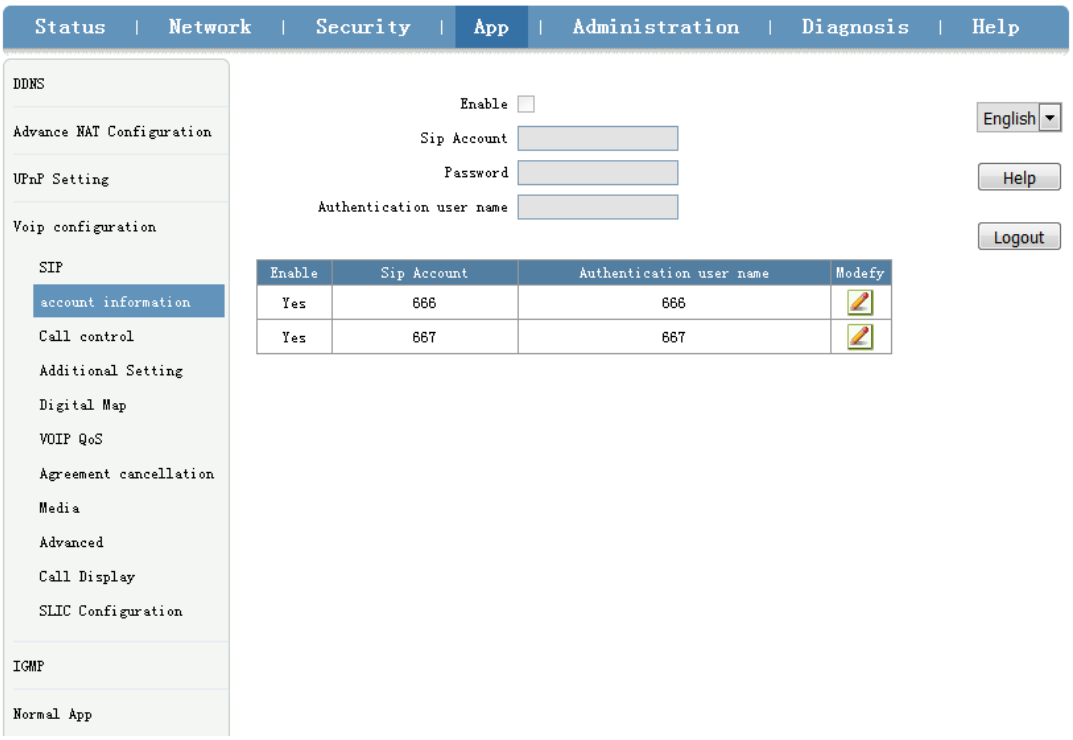
3. Configure ONT VOIP

Click App→Voip configuration→SIP. Enther Sip server ip address.



4. Configure ONT VOIP Account

Click App→Voip Configuration→account information. Enter Sip account information.

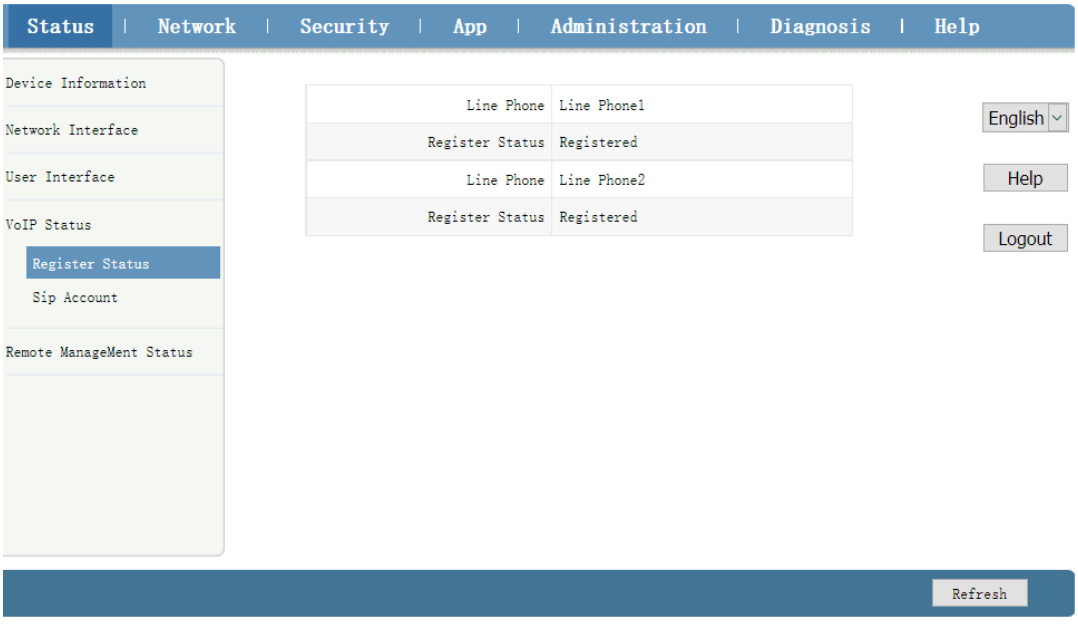


NOTE:

Sip Account, **Password**, **Authentication user name** please modify according to the user's actual need.

5. Check Sip account register status

Click Status→VoIP Status→Register Status.



NOTE：

The **Register Status** is Registered mean sip account register successfully.

----end

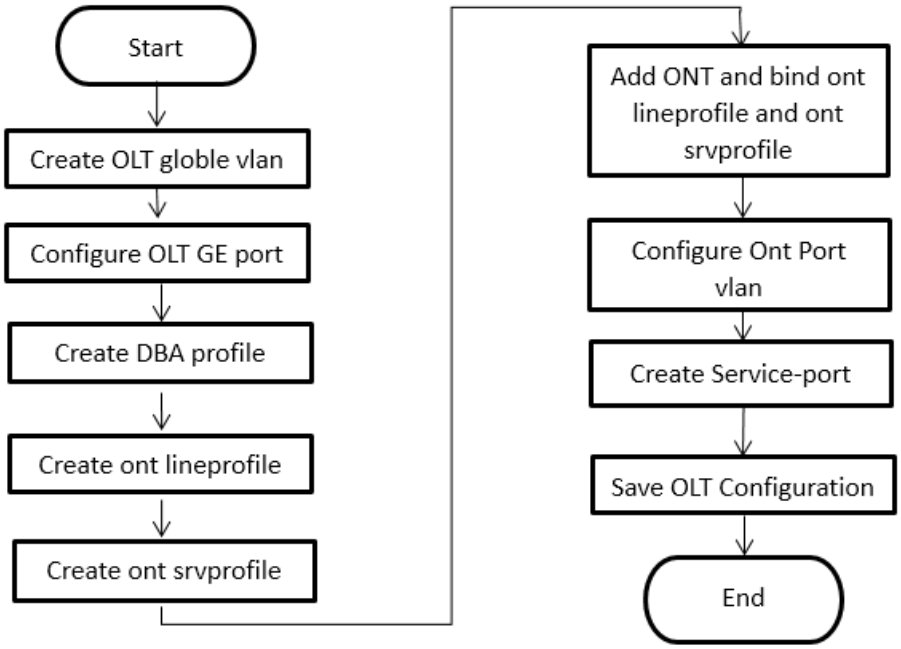
5. Configure Service In OLT Profile Mode

This section is mainly introduce P1201-08 OLT internet service, voice service and multicast service in profile mode in FTTH environment. we can configure different service profile based on different types of ONT, which can be handled flexibly. Mainly introduce the bridge ONT(SFU) and family gateway ONT (HGU),The following will introduce the service configure way for OLT and ONT according to two types ONT.

5.1 Data Plan

Main Data Plan List	
Configure Iteam	**Data**
OLT Port Config	**Ge1：** VLAN 100 access mode **Ge2：** VLAN 200 access mode **Ge3：** VLAN 300 access mode
DBA Profile（upload bandwidth control）	**Profile number：** 1
ONT Lineprofile	**Profile ID：**1 **T-CONT ID：**1 **Internet GEM Port ID：** 2 **Mapping Vlan：**100 **Voice GEM Port ID：** 3 **Mapping Vlan：**200 **IPTV GEM Port ID：** 4 **Mapping Vlan：**300
ONT Srvprofile	**Profile ID：**1 **ONT Port Capability：**adaptive
Bridge ONT Port Config	**LAN 1：** VLAN 100 **LAN 2：** VLAN 200 **LAN 3：** VLAN 300 ---connect to VOIP phone
Gateway ONT Port Config	**LAN1：** VLAN 100 **LAN2：** VLAN 200 **POTS1：** VLAN 300

5.2 Configure Process



5.3 Configure OLT Service

5.3.1 Configure OLT Globle Vlan

In **config** mode,we can use **OLT(config)# show vlan all** to show the created vlan.

If the created vlan can't meet the need, we can use command **OLT(config)# vlan** vlan-list to create new vlan,According to the data plan, we create vlan100,vlan200,vlan300 firstly:

```
OLT(config)# vlan 100
OLT(config)# vlan 200
OLT(config)# vlan 300
```

5.3.2 Configure OLT GE Port Service Vlan

We can config GE port vlan mode as access, hybrid and trunk, according to our network plan configure different mode, configure way of three mode as follows.

Configure GE 1、2、3 port vlan mode is access(in this document, GE port connect to PC, so we configure ge port vlan mode as access):

```
OLT(config)# interface ge 0/0
OLT(config-interface-ge-0/0)# vlan mode 1-3 access
OLT(config-interface-ge-0/0)# vlan access 1 100
OLT(config-interface-ge-0/0)# vlan access 2 200
OLT(config-interface-ge-0/0)# vlan access 3 300
OLT(config-interface-ge-0/0)# exit
```

Configure GE 1、2、3 port vlan mode is trunk：

```
OLT(config)# interface ge 0/0
```

```
OLT(config-interface-ge-0/0)# vlan mode 1-3 trunk
OLT(config-interface-ge-0/0)# vlan trunk 1 100
OLT(config-interface-ge-0/0)# vlan trunk 2 200
OLT(config-interface-ge-0/0)# vlan trunk 3 300
OLT(config-interface-ge-0/0)# exit
```

Configure GE 1、2、3 port vlan mode is hybrid：

```
OLT(config)# interface ge 0/0
OLT(config-interface-ge-0/0)# vlan mode 1-3 hybrid
OLT(config-interface-ge-0/0)# vlan hybrid 1 tagged 100
OLT(config-interface-ge-0/0)# vlan hybrid 2 tagged 200
OLT(config-interface-ge-0/0)# vlan hybrid 3 tagged 300
OLT(config-interface-ge-0/0)# exit
```

5.3.3 Configure OLT Multicast Service

Configure IGMP and multicast-vlan 200

```
OLT(config)# multicast-vlan 200
OLT(config-multicast-vlan-200)# igmp member port gpon 0/0/1
OLT(config-multicast-vlan-200)# exit
```

5.4 Create ONT Profile

GPON ONT profile include DBA-profile, ont-lineprofile, ont-srvprofile.

- DBA profile: The DBA profile describes the traffic parameters of the GPON, and the T-CONT dynamically allocates bandwidth by binding the DBA template to increase the upstream bandwidth utilization.
- ont-lineprofile: The ont-lineprofile describes the binding relationship between the T-CONT and the DBA template, the QoS mode of the service flow, the mapping between the GEM port and the ONT side service.
- ont-srvprofile: The ont-srvprofile provides a service configuration channel for ONTs managed by OMCI.

5.4.1 Create ONT DBA Profile

Use **show dba-profile all** command to query the existing DBA profile in the system, if the existing DBA profile can't meet the demand, we need use dba-profile to add DBA profile. Create different DBA profile for different service type.

Create dba profile number is 1,type is Type3,assure bandwidth is 8Mbit/s,max bandwidth is 20Mbit/s：

```
OLT(config)# dba-profile profile-id 1
OLT(dba-profile-1)# type3 assure 8192 max 20480
OLT(dba-profile-1)# commit
OLT(dba-profile-1)# exit
```

NOTE：

DBA based on the entire ONT schedule, we need to select the appropriate bandwidth type and bandwidth size according to the service type and ont users number. The summation of fixed bandwidth (fix) and guarantee bandwidth (assure) not surpass the total bandwidth of PON port.

5.4.2 Create ONT Lineprofile

```
OLT(config)# ont-lineprofile gpon profile-id 1
OLT(config-ont-lineprofile-1)# tcont 1 dba-profile-id 1
```

Create a different GEM Port for different business types. Among them

GEM port 1 is used to carry Internet service.

GEM port 2 is used to carry voice service.

GEM port 3 is used to carry video services.

```
OLT(config-ont-lineprofile-1)# gem add 1 tcont 1
OLT(config-ont-lineprofile-1)# gem add 2 tcont 1
OLT(config-ont-lineprofile-1)# gem add 3 tcont 1
```

Configure GEM PORT mapping-mode as VLAN.

```
OLT(config-ont-lineprofile-1)# mapping-mode vlan
```

Different GEM ports are mapped to different vlan for different service types. Among them,

Map the GEM port with index 1 to VLAN 100 to carry the Internet service.

Map the GEM port with index 2 to VLAN 200 to carry the voice service.

Map the GEM port with index 3 to VLAN 300 to carry the video service.

```
OLT(config-ont-lineprofile-1)# gem mapping 1 1 vlan 100
OLT(config-ont-lineprofile-1)# gem mapping 2 1 vlan 200
OLT(config-ont-lineprofile-1)# gem mapping 3 1 vlan 300
```

After the configurations are complete, run the commit command to apply theparameters setting.

```
OLT(config-ont-lineprofile-1)# commit
OLT(config-ont-lineprofile-1)# exit
```

5.4.3 Create ONT Srvprofile

Create GPON ONT **srvprofile,** number is 1, configure ONT ETH port number and POTS port number to adaptive:

```
OLT(config)# ont-srvprofile gpon profile-id 1
OLT(config-ont-srvprofile-1)# ont-port eth adaptive
OLT(config-ont-srvprofile-1)# ont-port pots adaptive
OLT(config-ont-srvprofile-1)# commit
OLT(config-ont-srvprofile-1)# exit
```

```
//finish config,use commit command to make parameter effect
```

5.5 Add ONT Manually

1. Modify PON port ONT authentication method to manual registered.

```
OLT(config)# interface gpon 0/0
OLT(config-interface-gpon-0/0)# ont authmode all manual
```

2. Open pon port ONT automatic find function:

```
OLT(config)# interface gpon 0/0
OLT(config-interface-gpon-0/0)#ont autofind 1 enable
OLT(config-interface-gpon-0/0)#show ont autofind 1 all
//This command show all unregistered ONT information that is connected to the GPON port by the spectrometer.
```

3. Register ONT manually and bind lineprofile and srvprofile.

```
OLT(config-interface-gpon-0/0)# ont add 1 1 sn-auth DB19B34F0C16 ont-lineprofile-id 1 ont-srvprofile-id 1
OLT(config-interface-gpon-0/0)# ont add 1 2 sn-auth XPONE067B341 ont-lineprofile-id 1 ont-srvprofile-id 1
```

4. Add all the ONT under PON port:

ont confirm command can be used to add all the ONT under PON port, and also can add ONT separately.:

```
OLT(config-interface-gpon-0/0)# ont confirm 1 all sn-auth ont-lineprofile-id 1 ont-srvprofile-id 1
```

5.6 Check ONT Registration Status

After adding ONT, use **show ont info** command to query the online status of ONT, and ensure that the "Control flag" of ont is "Active", "Run State" is "Online", "Config state" is "Success" and "Match state" is "Match".

```
OLT(config-interface-gpon-0/0)# show ont info 1 all
-----------------------------------------------------------------------------------------------
  F/S P    ONT MAC                  Control     Run          Config      Match
           ID                       flag        state        state       state
 -----------------------------------------------------------------------------------------------
  0/0 1    1     DB19B34F0C16       active      online       success     match
  0/0 1    2     XPONE067B341       active      online       success     match
-----------------------------------------------------------------------------------------------
  Total: 2,    online 2,    deactive: 0,    failed: 0
```

When the ONT configuration status is failed, ONT cannot up:

- If the "Control flag" is "deactive", we need to use ont activate command to activate ONT in GPON mode.

- If the ONT not online, the “Run state” is “offline”, it may be a physical line break, or optical module is damaged, so we need to check all device and the physical line.
- If the ONT “config state” is “failed”, it means ONT’s configuration is not applicable to some configuration of srvprofile, we need to capture packet on the ONT and analyze ont not accept which configuration.
- If the ONT “Match state” is “Mismatch”, it shows that ont srvprofile capability(port number) don't Match ONT practical capability, we can use **show ont capability** and **show ont config -capability to** contrast ONT practical ability and ont srvprofile capability.

5.7 Configure Bridge ONT（SFU）Service

5.7.1 Configure Bridge ONT (SFU) Internet Service

premise condition of ONT to open internet service:

- OLT connect to uplink device and open internet service
- OLT have created vlan for internet
- OLT have configured GE port vlan
- ONT have registered and bind to lineprofile and srvprofile

SFU ethernet port vlan mode have transparent, tag(access),trunk mode and so on, we can configure vlan in srvprofile mode or discrete mode. profile config is introduced as follows we can according to our network plan configure different vlan mode, configure way as follows:

1. **Config traffic profile**

```
OLT(config)# traffic-profile profile-id 1 profile-name 10M cir 10240 pir 10240 cbs 2000 pbs 2000
```

2. **Config ONT port to tag mode(access)**

```
OLT(config)# interface gpon 0/0
OLT(config-interface-gpon-0/0)# ont port native-vlan 1 1 eth 1 vlan 100
OLT(config-interface-gpon-0/0)# exit
```

3. **Config service port**

```
OLT(config)# service-port 3 vlan 100 gpon 0/0 port 1 ont 1 gemport 2 multi-service user-vlan 100 tag-action transparent inbound name 10M outbound name 10M
```

5.7.2 Configure Bridge ONT (SFU) IPTV Service

Premise condition of ONT to open internet service:

- OLT connect to uplink device and open internet service
- OLT have created vlan for IPTV
- OLT have configured GE port IPTV vlan
- ONT have registered and bind to lineprofile and srvprofile

we can configure SFU IPTV service in srvprofile mode or discrete mode(note：if we configure ont

iptv service in srvprofile and discrete mode,the discrete configuration priority is higher than the profile configuration, when ONT iptv service in discrete configuration is default, will apply profile configuration),#4.5 show the discrete config, profile config is introduced as follows, we can according to our network plan configure different vlan mode, configure way as follows:

1. **Configure ONT port multicast mode ,multicast vlan, process mode of multicast vlan**

```
OLT(config)# ont-srvprofile gpon profile-id 0
OLT(config-ont-srvprofile-1)# multicast mode igmp-snooping-proxy
OLT(config-ont-srvprofile-1)# multicast-forward untag
OLT(config-ont-srvprofile-1)# exit
```

2. **Configure ONT1 eth2 vlan mode is tag(access):**

```
OLT(config)# interface gpon 0/0
OLT(config-interface-gpon-0/0)# ont port native-vlan 1 1 eth 2 vlan 200
OLT(config-interface-gpon-0/0)# exit
```

3. **Configure service port**

```
OLT(config)# service-port 4 vlan 200 gpon 0/0 port 1 ont 1 gemport 3 multi-service user-vlan
200 tag-action transparent inbound name 20M outbound name 20M
```

----end

5.8 Gateway ONT（HGU）Service Configure Introduction

Gateway ONT(HGU) can provide internet, voice, iptv service for FTTH, support PPPOE dial-up, network address translation (NAT), Internet Group Management Protocol (IGMP), due to the ONT heve route function, so we need configure ont wan and lan in ont web or TR069 server, not need configure ONT port in OLT, OLT don't support configure ONT route wan, specific configure way can refer to the previous discrete configuration method and the ONT user manual.

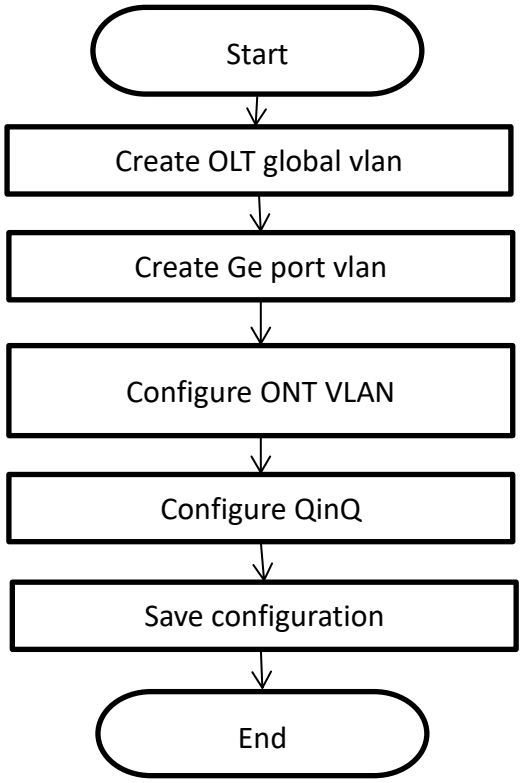
6. Configure OLT QinQ Service

6.1 Data Plan

Main Data Plan List	
Configure Iteam	**Data**
VLAN	**SVLAN 400 :** QinQ service outer vlan **CVLAN 100 :** QinQ service inner vlan
OLT Port Configure	**Ge1：** VLAN 400 Hybrid mode
Bridge ONT Port Configure	**LAN 1：** VLAN 100

Gateway ONT Port Configure	**LAN 1：** VLAN 100

6.2 Configure Processes



6.3 Configure OLT

Create outer vlan：

Oprate **show vlan all** command can query the existing vlan,If the existing vlan does not meet the need, we can use vlan command to create outer vlan.

```
OLT(config)# vlan 400
```

Configure GE port QinQ outer vlan：

```
OLT(config)# interface ge 0/0
OLT(config-interface-ge-0/0)#vlan mode 1 hybrid
OLT(config-interface-ge-0/0)# vlan hybrid 1 tagged 400
OLT(config-interface-ge-0/0)# exit
```

Configure ONT port to tag mode (access)

```
OLT(config)# interface gpon 0/0
OLT(config-interface-gpon-0/0)# ont port native-vlan 1 1 eth 1 vlan 100
OLT(config-interface-gpon-0/0)# exit
```

NOTE：

Gateway ONT(HGU) configure ONT port vlan in web.

Configure service port. Inner vlan is 100. Outer vlan is 400.

OLT(config)# **service-port 10 vlan 400 gpon 0/0 port 1 ont 1 gemport 2 multi-service user-vlan 100 tag-action default**

7. Common Command Description

Command	Description
interface gpon 0/0	Enter OLT PON board（Apply to box OLT P1201-08 OLT, all default is 0/0）
interface ge 0/0	Enter OLT uplink(ge) board（In default, box OLT all is 0/0）
show vlan all	View all vlan in OLT
show port vlan <***Port ID***>	View OLT uplink(ge) and PON port vlan(The premise is we need enter the board card mode.）
show port state <***Port ID***>	View OLT uplink port and PON port status（The premise is we need enter the board card mode.）
show version	View OLT software version
show device	View OLT mode and other information
show interface mgmt	View OLT outband Manage IP
show interface vlanif brief	View OLT inband Management IP(The premise is we need have vlanif interface)
show current-config	View OLT running configuration
show saved-config	View OLT have saved configuration
show ont info 0/0 <***Port ID***> all	View ONT register status in PON port
show ont info 0/0 <***Port ID***> <***ONT ID***>	View ONT details information
show ont autofind <***Port ID***>	View autofind but unregistered ONT in PON port(The premise is we need to enter the PON board mode)
show ont optical-info <***Port ID***> <***ONT ID***>	View ONT optical information
show ont port state <***Port ID***> <***ONT ID***> eth <***ONT Port ID***>	View ONT port status(The premise is we need to enter the PON board mode)