

Huawei GPON OLT Configuration by Command Line

1. Environmental description
2. The document item 5, 6, 7, HG326RW as example.

OLT	<p>Out-of-band management IP (AUX Port): 192.168.3.177</p> <p>In-band management IP (VLAN IP):</p> <p>PON Port: Card 2/0 (PON0 : the first PON ports of the Second card)</p> <p>Uplink Port1: Card 19/0 (0/1/0 : the first Uplink port of the Nineteenth card), VLAN 100.</p> <p>Uplink Port2 : Card 19/1(0/1/1 : the second Uplink port of the nineteenth card), VLAN 200.</p>
ONU (HGU)	<p>Model No. : HG326RW (4LAN+2POTS)</p> <p>SN : 47504F4E00A48E20</p> <p>Internet VLAN : 100</p> <p>IPTV VLAN : 200</p> <p>VoIP VLAN : 300</p>
ONU (SFU)	<p>Model No. : 2801S (1GE)</p> <p>SN : GPON00A1C878</p> <p>Internet VLAN : 100</p> <p>IPTV VLAN : 200</p>

1.1 Enter the OLT CLI Interface:



Picture 1.1 COM Port and ETH Port

COM Port is Console Port, ETH Port is Out-of-band management port. Connect to the COM port directly, enter to the CLI interface:

```
>>User name: root
```

```
>>User password:admin
```

```
MA5680T>enable
```

```
MA5680T# config
```

```
MA5680T(config)#display current-configuration //check the Current configuration.
```

```
MA5680T(config)#save //save the configuration.
```

PC also can connect directly to the ETH Port Telnet 192.168.3.177. If the ID is not correct, through

Command MA5680T(config)#display interface meth 0 to check the out-of band management IP.

1. Management IP

2.1 Out-of-band management IP

```

/check the out-of-band management IP
MA5680T(config)#display interface meth 0
//modify the out-of-band management IP
MA5680T(config)#interface meth 0
MA5680T(config-if-meth0)#ip address 192.168.3.177/24

```

2.2 In-band management IP

Configure in-band management interface mode, Telnet mode through LAN In-band management Port to enter the login the configuration command as below:

```

MA5606T(config)#vlan 200 smart //Create a network management VLAN
MA5606T(config)#port vlan 200 0/1 0 //add the VLAN to the center Uplink 0/1/0.
MA5680T(config)#interface giu 0/19
MA5680T(config-if-giu-0/19)#native-vlan 0 vlan 200 // Uplink 0/1/0的pvid 200.
MA5606T(config)#interface vlanif 200 //enter to the L3 port.
MA5606T(config-if-vlanif333)#ip address 10.10.10.10 24 //configure In-band management IP.

```

Use cable connect to uplink port 0/1/0 and PC, PC Network card settings IP and In-band management IP are under the same network, telnet 10.10.10.10 can login to the CLI Operation.

2. Add Vlan one by one or in group.

```

MA5680T(config)#display vlan all // checkk VLAN.
MA5680T(config)#vlan 300 smart //add VLAN 300.
MA5680T(config)#vlan 10-20,100,200 smart //add VLAN in group 10-20 and VLAN100, 200.

```

3. Configure Uplink Port

```

MA5680T(config)# port vlan 100 0/19 0 //configure Uplink Port 0/1/0 to Tag mode vlan 100.

```

```
MA5680T(config)# port vlan 200 0/19 1 //configure Uplink Port 0/1/1 to Tag mode vlan200.
```

Also can configure to be untag mode:

```
MA5680T(config)# interface giu 0/19
```

```
MA5680T(config-if-giu-0/19)#native-vlan 0 vlan 100 //Uplink Port 0/1/0的pvid 100.
```

```
MA5680T(config-if-giu-0/19)#native-vlan 1 vlan 200 //Uplink Port 0/1/1的pvid 200.
```

4. ONU Template Configuration

5.1 DBA template

//check DBA template:

```
MA5680T(config)#display dba-profile all
```

//create DBA template, ID is 10, type3, make sure the bandwidth is 10M, the MAX bandwidth is 1000M.

```
MA5680T(config)# dba-profile add profile-id 10 type3 assure 10240 max 1024000
```

5.2 Line Template

```
MA5680T(config)#display ont-lineprofile gpon all //check line template.
```

```
MA5680T(config)#ont-lineprofile gpon profile-id 7 profile-name HG326RW /create line template.
```

```
MA5680T(config-gpon-lineprofile-7)#cont 1 dba-profile-id 10 //create TCONT
```

```
MA5680T(config-gpon-lineprofile-7)#gem add 1 eth tcont 1 //create gempport1
```

```
MA5680T(config-gpon-lineprofile-7)#gem add 2 eth tcont 1 //create gempport2
```

```
MA5680T(config-gpon-lineprofile-7)#gem add 3 eth tcont 1 //create gempport3
```

```
MA5680T(config-gpon-lineprofile-7)#gem mapping 1 1 vlan 100 //create gempport 1 and vlan100 mapping , mapping index is 1.
```

```
MA5680T(config-gpon-lineprofile-7)#gem mapping 2 2 vlan 200 //create gempport 2 and vlan200 mapping, mapping index is 2.
```

```
MA5680T(config-gpon-lineprofile-7)#gem mapping 3 3 vlan 300 //create gempport 3 and vlan300 mapping, mapping index is 3.
```

```
MA5680T(config-gpon-lineprofile-7)#ommit //submit.
```

```
MA5680T(config-gpon-lineprofile-7)#quit //exit.
```

5.3 Business service template

MA5680T(config)#display ont-srvprofile gpon all //check business service template.

MA5680T(config)#ont-srvprofile gpon profile-id 4 profile-name HG326RW //create business service template, ID is 4, name HG326RW.

MA5680T(config-gpon-srvprofile-4)#ont-port pots 2 eth 4 //the ONT have 4LAN port and 2POT port use at this Template.

MA5680T(config-gpon-srvprofile-4)#port vlan eth 1 transparent //configure LAN 1 as Transparent.

MA5680T(config-gpon-srvprofile-4)#port vlan eth 2 transparent //configure LAN 2 as Transparent.

MA5680T(config-gpon-srvprofile-4)#port vlan eth 3 transparent //configure LAN 3 as Transparent.

MA5680T(config-gpon-srvprofile-4)# commit //submit.

MA5680T(config-gpon-srvprofile-4)# quit //exit.

5. ONU Find、 Register、 View

MA5680T(config)#interface gpon 0/2 //Enter GPON Cards.

MA5680T(config-if-gpon-0/2)#port 0 ont-auto-find enable //open PON0 discovery automatically.

MA5680T(config-if-gpon-0/2)#display ont autofind 0 //check the ONU which is not unauthorized at the PON0.

```
MA5680T(config-if-gpon-0/2)#display ont autofind 0
-----
Number          : 1
F/S/P           : 0/2/0
Ont SN          : 47504F4E00A48E20
Password        : 0x31323334353637383930(1234567890)
Loid            :
Checkcode       :
VendorID        : MONU
Ont Version     : V1.01
Ont SoftwareVersion : V1.0.5
Ont EquipmentID : MONUH116
Ont autofind time : 2018-09-26 15:31:25+08:00
-----
```

ONT SN : 47504F4E00A48E20

MA5680T(config-if-gpon-0/2)# ont add 0 sn-auth 47504F4E00A48E20 omci ont-lineprofile-id 7

ont-srvprofile-id 4 //register ONT, Line Template ID is 7, Business service template ID is 4.

MA5680T(config-if-gpon-0/2)# display ont info 0 all //check the ONT which already are Registered at the PON0.

6. Service virtual port

MA5680T(config)#service-port vlan 100 gpon 0/2/0 ont 20 gempport 1 multi-service user-vlan 100

MA5680T(config)#service-port vlan 200 gpon 0/2/0 ont 20 gempport 2 multi-service user-vlan 200

MA5680T(config)#service-port vlan 300 gpon 0/2/0 ont 20 gempport 3 multi-service user-vlan 300

7. Multi-port service configuration

8.1 Unicast

HGU and SFU difference is: SFU need to configure the LAN Port, HGU no need . HGU configure the LAN to Transparent at the business service template.

7.1.1 HGU configuration example (HG326RW)

According to the demands, configure OLT Uplink Port to untag100, configure the HGU LAN Port to be Transparent Template, and then enter to the ONU WEB configure the WAN. The configuration already show example at point 5, 6, 7.

7.1.2 SFU configuration example (V2801S)

According to the demands, configure OLT Uplink Port VLAN to untag100, configure ONU LAN 1 Port VLAN to tag100:

MA5680T(config)#port vlan 100 0/19 0 //configure Uplink port 0/1/0 to Tag template vlan10.

MA5680T(config)#interface giu 0/19

MA5680T(config-if-giu-0/19)#native-vlan 0 vlan 100 //Uplink Port 0/1/0 pvid 100.

MA5680T(config)#display dba-profile all //check DBA template.

MA5680T(config)#dba-profile add profile-id 10 type3 assure 10240 max 1024000

MA5680T(config)#display ont-lineprofile gpon all //check Line Template.

MA5680T(config)#ont-lineprofile gpon profile-id 8 profile-name V2801S //create Line Template.

MA5680T(config-gpon-lineprofile-8)#cont 1 dba-profile-id 10 //create TCONT

MA5680T(config-gpon-lineprofile-8)#gem add 1 eth tcont 1 //create gemport1

MA5680T(config-gpon-lineprofile-8)#gem mapping 1 1 vlan 100 //create gemport 1 and vlan100 mapping, mapping index is 1.

MA5680T(config-gpon-lineprofile-8)#ommit //submit.

MA5680T(config-gpon-lineprofile-8)#quit //exit.

MA5680T(config)#display ont-srvprofile gpon all //check business service template.

MA5680T(config)# ont-srvprofile gpon profile-id 6 profile-name V2801S //create businessservice template, ID is 6, name is V2801S.

MA5680T(config-gpon-srvprofile-6)#ont-port eth 1 //The ONT have 1 LAN port, which use under the template.

MA5680T(config-gpon-srvprofile-6)#port vlan eth 1 translation 100 user-vlan 100 or port vlan eth 1 100 //LAN 1 VLAN is 100, Not stripped.

If any point said the eth already has been set up to be other template, then need to cancel the previous template, set up a new template, for example:

MA5680T(config-gpon-srvprofile-4)#port vlan eth 1 100 //report an error.

Failure: The VLAN transparent transmission function is already configured on the ONT port

MA5680T(config-gpon-srvprofile-4)#undo port vlan eth 1 transparent //release the previous template.

MA5680T(config-gpon-srvprofile-4)#port vlan eth 1 100 //add new template.

MA5680T(config)#interface gpon 0/2 //enter GPON Card.

MA5680T(config-if-gpon-0/2)#port 0 ont-auto-find enable //open PON0 find automatically.

MA5680T(config-if-gpon-0/2)#display ont autofind 0 //check PON0 ONT SN which is not be unauthorize.

MA5680T(config-if-gpon-0/2)# ont add 0 sn-auth GPON00A1C878 omci ont-lineprofile-id 8 ont-srvprofile-id 6 //write the correct S, register ON, Line Template ID is 8, and the Business Service Template ID is 6.

MA5680T(config-if-gpon-0/2)#display ont info 0 all //check the ONT which are registered underthe PON0.

MA5680T(config-if-gpon-0/2)# ont port native-vlan 0 20 eth 1 vlan 100 //configure LAN1 1 Port strip.

MA5680T(config-if-gpon-0/2)#quit //exit.

MA5680T(config)# service-port vlan 100 gpon 0/2/0 ont 20 gemport 1 multi-service user-vlan 100

//configure business Virtual port.

8.2 Multicast

HGU and SFU are same, example as below:

8.2.1 configure HG326RW as example.

MA5680T(config)#display service-port all //check the business virtual port.

```
MA5680T(config)#display service-port all
[ <cr>|sort-by<K>||<K> ]:
Command:
display service-port all
Switch-Oriented Flow List
```

INDEX	VLAN ID	VLAN ATTR	PORT TYPE	F	S	P	VPI	VCI	FLOW TYPE	FLOW PARA	RX	TX	STATE
0	3000	common	gpon	0/2	/2	3	1	1	vlan	3000	-	-	down
1	3000	common	gpon	0/2	/0	4	1	1	vlan	3000	-	-	down
2	3000	common	gpon	0/2	/0	0	1	1	vlan	3000	-	-	down
3	3000	common	gpon	0/2	/0	1	1	1	vlan	3000	-	-	down
4	11	common	gpon	0/2	/1	3	1	1	vlan	11	-	-	down
5	11	common	gpon	0/2	/1	4	1	1	vlan	11	-	-	down
6	10	common	gpon	0/2	/0	18	1	1	vlan	10	-	-	down
7	20	common	gpon	0/2	/0	18	2	2	vlan	20	-	-	down
8	20	common	gpon	0/2	/0	19	2	2	vlan	20	-	-	down
9	3000	common	gpon	0/2	/1	7	1	1	vlan	3000	-	-	down
10	3000	common	gpon	0/2	/1	0	1	1	vlan	3000	-	-	down
11	100	common	gpon	0/2	/0	2	1	1	vlan	100	-	-	down
12	100	common	gpon	0/2	/2	1	1	1	vlan	100	-	-	down
13	200	common	gpon	0/2	/2	1	2	2	vlan	200	-	-	down
14	200	common	gpon	0/2	/2	2	2	2	vlan	200	-	-	down
15	10	common	epon	0/6	/0	0	-	-	vlan	10	-	-	down
16	20	common	epon	0/14	/0	3	-	-	vlan	20	-	-	down
17	20	common	gpon	0/2	/1	8	1	1	vlan	20	-	-	down
18	20	common	epon	0/14	/0	5	-	-	vlan	20	-	-	down
19	20	common	epon	0/14	/0	8	-	-	vlan	20	-	-	down
20	100	common	gpon	0/2	/0	20	1	1	vlan	100	-	-	up
25	300	common	gpon	0/2	/0	20	3	3	vlan	300	-	-	up
26	200	common	gpon	0/2	/0	20	2	2	vlan	200	-	-	up

```
-----
Total : 23 (Up/Down : 3/20)
```

MA5680T(config)#btv

MA5680T(config-btv)# igmp user add service-port 26 no-auth //add the virtual port to the multicast.

MA5680T(config-btv)#igmp user delete service-port 23 //delete virtual port, or add virtual port.

MA5680T(config-btv)#multicast-vlan 200 //configure multicast VLAN.

MA5680T(config-mvlan200)#igmp version v2 //configure IGMP Version2, press "Y" to confirm.

MA5680T(config-mvlan200)# igmp match mode disable //(if there point out said failed, then need: igmp model off)

MA5680T(config-mvlan200)#igmp multicast-vlan member service-port 26

MA5680T(config-mvlan200)#igmp mode snooping//press "Y" to confirm.

MA5680T(config-mvlan200)#igmp uplink-port 0/19/1 //Uplink port is 0/19/1

Ts Enable query report: MA5680T(config-mvlan200)#igmp report-proxy enable
MA5680T(config-mvlan200)# igmp leave-proxy enable

8.3 Voice

Use Unicast configuration as example.

8. ONU Upgrade

MA5680T(config)# display ont version 0 2 0 20 //check the twenty ONU version under the card 0/2 PON0.

MA5680T(config)# diagnose

MA5680T(diagnose)%%ont-load info program xxxx.tar tftp x.x.x.x //use tftp to transmit file.

MA5680T(diagnose)%%ont-load select 0/2 0 20 //upgrade the twenty ONU under the card 0/2P ON0.

MA5680T(diagnose)%%ont-load start activemode immediate //start to upgrade and restart automatically.

MA5680T(diagnose)%%display ont-load select 0/2 0 20 //check the upgrade speed.

《Huawei EPON OLT configuration》

1. Register and Unicast

1) create DBA template

MA5680T(config)# dba-profile add profile-name test type2 assure 102400

2) Create Line Template.

3) MA5680T(config)# ont-lineprofile epon profile-name test_line

MA5680T(config-epon-lineprofile-7)#lid dba-profile-name test

MA5680T(config-epon-lineprofile-7)#commit

3) Create Business Service Template.

MA5680T(config)# ont-srvprofile epon profile-name test_esrv

MA5680T(config-epon-srvprofile-6)#ont-port eth 2

MA5680T(config-epon-srvprofile-6)#port vlan eth 1 transparent

MA5680T(config-epon-srvprofile-6)#port vlan eth 2 transparent

MA5680T(config-epon-srvprofile-6)#commit

4) Add ONU

MA5680T(config)# display ont autofind all

MA5680T(config)# interface epon 0/6

MA5680T(config-if-epon-0/6)# ont add 0 mac-auth 0012-3456-7890 oam ont-lineprofile-name test_line ont-srvprofile-name test_esrv

5) check if ONU are online:

MA5680T(config)# display ont info 0 6 0 all

```

-----
F/S/P  ONT   MAC      Control  Run   Config  Match  Protect
   ID      flag    state   state   state   side
-----
0/6/0  0  001D-2BF9-2170  active  offline  initial  initial  no
0/6/0  1  001D-2BF9-66B8  active  offline  initial  initial  no
0/6/0  2  0012-3456-7890  active  online   normal  match   no
0/6/0  20 001C-8200-13BB  active  offline  initial  initial  no
-----

```

6) Add business virtual port.

```
MA5680T(config)#service-port vlan 100 epon 0/6/0 ont 2 multi-service user-vlan 100
```

7) Configure Uplink Port vlan

```
MA5680T(config)#interface giu 0/19
```

```
MA5680T(config-if-giu-0/19)#native-vlan 0 vlan 100
```

2. Multicast

```
MA5680T(config)#btv
```

```
MA5680T(config-btv)#igmp user add service-port 26 no-auth
```

```
MA5680T(config-mvlan100)#multicast-vlan 4000
```

```
MA5680T(config-mvlan100)#igmp version v2
```

```
MA5680T(config-mvlan100)#igmp match mode disable
```

```
MA5680T(config-mvlan100)#igmp multicast-vlan member service-port-list 26
```

```
MA5680T(config-mvlan100)#igmp mode proxy
```

```
MA5680T(config-mvlan100)#igmp uplink-port 0/19/1
```

```
MA5680T(config-mvlan100)#igmp report-proxy enable
```

```
MA5680T(config-mvlan100)#igmp leave-proxy enable //need turn on to check the report.
```

```
MA5680T(config)#ont-srvprofile epon profile-name test_esrv
```

```
MA5680T(config-gpon-srvprofile-9)#multicast-forward untag //Multicast VLAN strip
```

3. Upgrade

Same as GPON.