

GPON OLT Equipment

CLI User Manual

Version : V1.0

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The CLI manual conventions

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 boldface .
<i>Italic</i>	Command arguments are in <i>italics</i> .
[]	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>	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>, <?> etc, it means to press the key button
<Key 1 + Key 2>	It means to press the key at same time. For example <Ctrl+Alt+A> means to press "Ctrl", "Alt", "A" button together.
<Key 1 , Key 2>	It means to press the first button, then release, and presses the second button. For example <Alt, F> means to press "Alt" first, then release "Alt" button, and then press "A" button.

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 FD1508G 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.

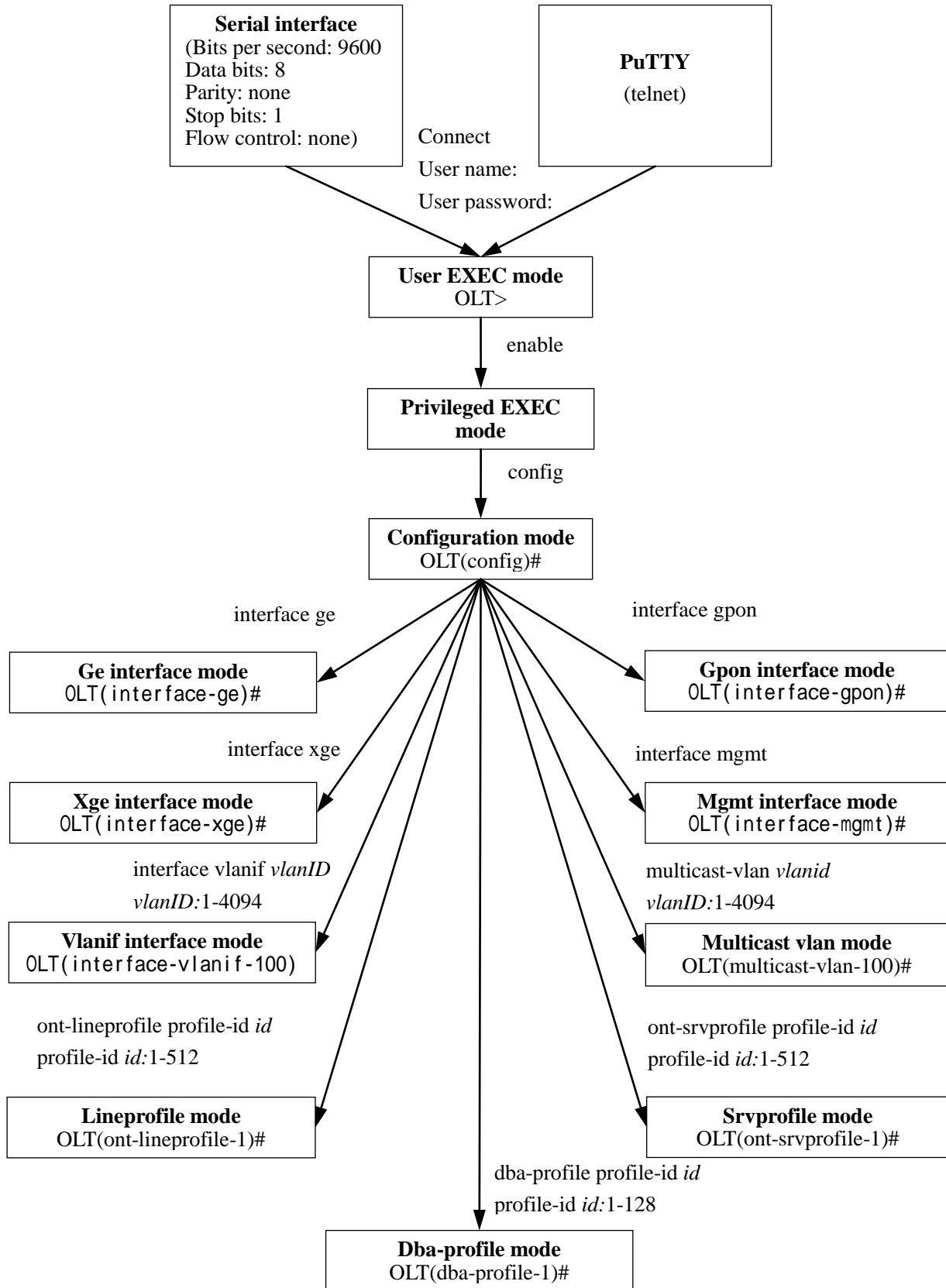
1. Configuration Mode

You can configure and manage the OLT with the CLI via a management network environment or the console.

The The The CLI provides the following command modes:

- User EXEC Mode, when you log in the OLT, the CLI will start with User ECEC Mode. There are some basic command on this EXEC mode.
The system prompt as: OLT>
 - Privileged EXEC Mode, it called Enable View Mode or Privileged EXEC Mode. You can enter into privileged EXEC Mode with the **enable** command.
The system prompt will changes from OLT> to OLT#
 - Configuration Mode, it called Configuration Mode or Global Configuration Mode. You can enter in Configuration Mode with the **conf terminal** command.
The system prompt will changes from OLT# to : OLT(config)#
 - GE interface Mode, enter the **interface ge** command, the system prompt will be changed from OLT(config)# to OLT(interface-ge)#
 - XGE interface Mode, enter the **interface xge** command, the system prompt will be changed from OLT(config)# to OLT(interface-xge)#
 - GPON interface Mode, enter the **interface gpon** command, the system prompt will be changed from OLT(config)# to OLT(interface-gpon)#
 - VLANIF interface Mode, enter the **interface vlanif *vlanID*** command, the system prompt will be changed from OLT(config)# to OLT(interface-vlanif-20)#
(VLAN 20 is an example)
 - MGMT interface Mode, enter the **interface mgmt** command, the system prompt will be changed from OLT(config)# to OLT(interface-mgmt)#
 - Dbaprofile Mode, enter the **dba-profile profile-id *id*** command, the system prompt will be changed from OLT(config)# to OLT(dba-profile-1)#
 - Lineprofile Mode, enter the **ont-lineprofile profile-id *id*** command, the system prompt will be changed from OLT(config)# to OLT(ont-lineprofile-1)#
 - Srvprofile Mode, enter the **ont-srvprofile profile-id *id*** command, the system prompt will be changed from OLT(config)# to OLT(ont-srvprofile-1)#
 - Multicast-vlan Mode, enter the **multicast-vlan *vlanid*** command, the system prompt will be changed from OLT(config)# to OLT(multicast-vlan-100)#
(VLAN 100 is an example)
-

Command Modes Overview



1.1 enable

【Command】	enable
【View Mode】	User EXEC Mode
【Parameter】	No
【Description】	From User EXEC Mode to Enable View Mode
【Example】	OLT > enable OLT #

1.2 config

【Command】	config
【View Mode】	Privileged EXEC Mode
【Parameter】	No
【Description】	From Privileged EXEC Mode to Configuration mode
【Example】	OLT # config OLT (config)#

1.3 interface

【Command】	interface ge interface xge interface gpon interface vlanif <i>vlanid</i> interface mgmt
【View Mode】	Configuration mode
【Parameter】	Vlanid: VLAN ID. <U><1~4094>
【Description】	From Configuration mode to Interface Mode (Included XGE, GE, GPON, VLAN If, Mgmt)
【Example】	OLT(config)# interface ge OLT(interface-ge)# OLT(config)# interface xge OLT(interface-xge)# OLT(config)# interface gpon OLT(interface-gpon)# OLT(config)# interface vlanif 100 OLT(interface-vlanif-100)# OLT(config)# interface mgmt OLT(interface-mgmt)#

1.4 dba-profile

【Command】	dba-profile profile-id id
【View Mode】	Configuration mode
【Parameter】	Id: Profile ID. <U><1~128>
【Description】	From Configuration mode to DBA Mode
【Example】	OLT(config)# dba-profile profile-id 1 OLT(dba-profile-1)#

1.5 ont-lineprofile

【Command】	ont-lineprofile profile-id id
【View Mode】	Configuration mode
【Parameter】	Id: Profile ID. <U><1~128>
【Description】	From Configuration mode to Ont-lineprofile Mode
【Example】	OLT(config)# ont-lineprofile profile-id 1 OLT(ont-lineprofile-1)#

1.6 ont-srvprofile

【Command】	ont-srvprofile profile-id id
【View Mode】	Configuration mode
【Parameter】	Id: Profile ID. <U><1~128>
【Description】	From Configuration mode to Ont-srvprofile Mode
【Example】	OLT(config)# ont-srvprofile profile-id 1 OLT(ont-srvprofile-1)#

1.7 multicast-vlan

【Command】	multicast-vlan vlanid
【View Mode】	Configuration mode
【Parameter】	vlanID: <U><1~4094>
【Description】	From Configuration mode to multicast-vlan Mode
【Example】	OLT(config)# multicast-vlan 100 OLT(multicast-vlan-100)#

1.8 exit

【Command】	exit
【View Mode】	Any Mode
【Parameter】	None
【Description】	Exit from current mode, return to up level mode
【Example】	OLT(multicast-vlan-100)# exit OLT(config)#

2. Equipment upgrade

For the system enhancement and stability, new software may be released. Using this software, OLT can be upgraded without any hardware change. You can simply upgrade your system software with the provided functionality via CLI.

2.1 load

【Command】	load packetfile ftp server-ip-address user-name user-password filename
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>server-ip-address</i> : ip address of the ftp Server <i>user-name</i> : User Name of login ftp <i>user-password</i> : Password of login ftp <i>filename</i> : The filename to use for OLT upgrade
【Description】	The command is used for upgrade the OLT to new version, root account is necessary.
【Example】	<p>OLT Application Software Upgrade:</p> <p>File name is FD1508GS_FW_V1.0.2_150914_1603.img, ftp Server IP Address is 192.168.1.16, ftp user name is amdin, password is admin. Reboot the OLT after the OLT display 'upgrade OK'.</p> <pre>OLT(config)# load packetfile ftp 192.168.1.16 admin admin FD1508GS_FW_V1.0.2_150914_1603.img Broadcast message from root: Upgrade is in process. File [FD1508GS_FW_V1.0.2_150914_1603.img] download OK File [FD1508GS_FW_V1.0.2_150914_1603.img] upgrade OK</pre> <p>OLT Kernel Software Upgrade:</p> <p>Filename is FD1508GS_Kernel_150914_1605.img, ftp Server IP Address is 192.168.1.16, ftp</p>

```
User Name is amdin, password is admin. Reboot the OLT after the OLT display 'upgrade OK'.
OLT(config)# load packetfile ftp 192.168.1.16 admin admin FD1508GS_Kernel_150914
_1605.img
Broadcast message from root:
Upgrade is in process.
File [FD1508GS_Kernel_150914_1605.img] download ..... OK
File [FD1508GS_Kernel_150914_1605.img] upgrade ..... OK
```

2.2 show version

【Command】	show version
【View Mode】	Configuration mode
【Parameter】	None
【Description】	The command is used for check information of the OLT hardware, software and kernel.
【Example】	<pre>Show information of OLT OLT(config)# show version ----- Local Configuration Command ----- <cr> - Please press ENTER to execute command OLT(config)# show version Hardware version : V1.1 Firmware version : V1.0.2 (Oct 8 2015 13:35:52) Kernel version : V539 (Mon Sep 14 16:05:47 CST 2015)</pre>

2.3 show progress

【Command】	show progress load
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	None
【Description】	The command is used check the process of the OLT load, copy, and backup.
【Example】	<pre>OLT(config)# show progress load</pre>

```

-----
Transmit Protocol   : FTP
FTP Server         : 192.168.1.16
FTP User Name      : admin
FTP Password       : admin
Transmit FileName  : config
Transmit Action     : Put
Transmit Status    : Success
Transmit Progress  : 100%
-----

```

```

-----
Load Operation     : Null
Load FileName      : config
-----

```

3. Equipment management

3.1 reboot

【Command】	reboot
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	None
【Description】	To reboot the OLT, need root account for this operation.
【Example】	
Reboot OLT OLT# 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	

3.2 ip address

【Command】	ip address <i>ip-addr ip-mask</i> no ip address
【View Mode】	Vlanif Mode, MGMT Mode
【Parameter】	<i>ip-addr</i> : IP Address <i>ip-mask</i> : subnet mask
【Description】	ip address is used to configure the IP address and subnet mask of VLAN interface, to let the release the layer3 message transfer.
【Example】	

To configure an IP address 192.168.100.123 for VLAN 100 interface, subnet mask is 255.255.255.0。

```
OLT(interface-vlanif-100)# ip address 192.168.100.123 255.255.255.0
```

To configure an IP address 192.1.105.123 for outband management interface, subnet mask is 255.255.255.0。

```
OLT(interface-mgmt)# ip address 192.168.1.105 255.255.255.0
```

3.3 show interface mgmt

【Command】	show interface mgmt
【View Mode】	Configuration mode
【Parameter】	<i>None</i>
【Description】	It is used to check the outband management IP, MTU and MAC address.
【Example】	
<pre>OLT(config)# show interface mgmt Description : mgmt interface The Maximum Transmit Unit is 1500 bytes Internet Address is 192.168.1.105, netmask 255.255.255.0 Hardware address is E0:67:B3:00:00:01 Recive 4340 packets, 4479715 bytes Transmit 1539 packets, 101742 bytes</pre>	

3.4 show interface vlanif

【Command】	show interface vlanif (<i>all</i> <i>vlan-id</i> <i>vlan-id</i>)
【View Mode】	Configuration mode
【Parameter】	<i>all</i> : Show all VLAN interface informaion <i>vlan-id</i> : Show the information of that VALN iD , from 1~4094
【Description】	It is used to check the VLAN interface information.
【Example】	
<pre>Show vlanif 10 information OLT(config)# show interface vlanif vlan-id 100 Description : vlan[100] management interface The Maximum Transmit Unit is 1500 bytes Internet Address is 192.168.100.123, netmask 255.255.255.0 Hardware address is E0:67:B3:00:00:02 Recive 105 packets, 5292 bytes</pre>	

Transmit 35 packets, 1866 bytes

Show all vlanif interface information
OLT(config)# show interface vlanif all

Interface	IP Address	Netmask
vlanif[100]	192.168.100.123	255.255.255.0
vlanif[200]	192.168.101.123	255.255.255.0

3.5 show device info

【Command】	show device info
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>
【Description】	Check the information of the OLT Device model Device MAC address Device serial-number Device vendor name
【Example】	<pre>OLT(config)# show device info ----- Device model : FD1508GS Device MAC address : E0:67:B3:00:00:01 Device serial-number : Device vendor name : -----</pre>

4. Operation Status Monitor

4.1 show fan

【Command】	show fan
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>
【Description】	To show the status of the fan

【Example】	
<pre> OLT# show fan ----- FAN[1] status: Normal (7207RPM) FAN[2] status: Normal (7060RPM) FAN[3] status: Normal (7265RPM) FAN[4] status: Normal (7207RPM) ----- </pre>	

4.2 show temperature

【Command】	show temperature
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>
【Description】	To display the temperature of device
【Example】	
<pre> OLT(config)# show temperature The temperature of the board: 36.5(C) </pre>	

4.3 show memory

【Command】	show memory
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>
【Description】	To show the CPU load
【Example】	
<pre> OLT# show memory ----- Total memory : 502MB Free memory : 435MB Used percent : 5% ----- </pre>	

4.4 show version

【Command】	show version
【View Mode】	Privileged EXEC Mode, Configuration mode

【Parameter】	<i>None</i>
【Description】	To show the version of hardware and software
【Example】	
OLT(config)# show version Hardware version : V1.1 Firmware version : V1.0.2 (Oct 8 2015 13:35:52) Kernel version : V539 (Mon Sep 14 16:05:47 CST 2015)	

4.5 time

【Command】	time time
【View Mode】	Configuration mode
【Parameter】	<i>time</i> : System time, format: YYYY/MM/DD-HH:MM:SS
【Description】	To set system time and date.
【Example】	
OLT(config)# time 2015/10/10-17:12:00	

4.6 show time

【Command】	show time
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>
【Description】	To show system time and date.
【Example】	
OLT(config)# show time Sat Jan 1 08:28:31 2000	

4.7 show uptime

【Command】	show uptime
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>

【Description】	To show system boot time and how long it have run
【Example】	
<pre>OLT(config)# show uptime System up time : 0 day 0 hour 55 minute 14 second System boot time : Fri Oct 9 23:13:07 2015</pre>	

5. Configuration Management

5.1 backup

【Command】	backup configuration ftp <i>server-ip-address user-name user-password filename</i>
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>server-ip-address</i> : ip address of ftp server <i>user-name</i> : ftp user name <i>user-password</i> : ftp password <i>filename</i> : A name for your backup file
【Description】	To back up the OLT configuration in a file
【Example】	
<pre>File name is config, ftp Server IP is 192.168.1.16, ftp username is amdin, password is admin。 OLT(config)# backup configuration ftp 192.168.1.16 admin admin config Start backup configuration files The backup is successful</pre>	

5.2 load configuration

【Command】	load configuration ftp <i>server-ip-address user-name user-password filename</i>
【View Mode】	Configuration mode
【Parameter】	<i>server-ip-address</i> : ip address of ftp server <i>user-name</i> : ftp user name <i>user-password</i> : ftp password <i>filename</i> : The file name of the configuration you want load to the OLT
【Description】	To load the configuration file to the OLT
【Example】	
<pre>Configuration file name is 'config', ftp Server IP is 192.168.1.16, ftp username is amdin, password is admin。</pre>	

```
OLT(config)# load configuration ftp 192.168.1.16 admin admin config
```

```
The new configuration file will overwrite the old one
```

```
Are you sure to load new
```

```
configuration file? (y/n)[n]:y
```

```
Broadcast message from root:
```

```
Start loading configuration
```

```
The loading is successful
```

```
Note: The configuration file will take effect after reboot
```

5.3 show current-config

【Command】	show current-config
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>
【Description】	To check the running configuration. When you do some configuration, you can use this command to check if the command have come into operation.
【Example】	

5.4 save

【Command】	save
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>
【Description】	To save the current configuration.
【Example】	

```
OLT(config)# save
Save configuration starting ...
The percentage of saved data is: 0%
The percentage of saved data is: 14%
The percentage of saved data is: 28%
The percentage of saved data is: 42%
The percentage of saved data is: 57%
The percentage of saved data is: 71%
The percentage of saved data is: 85%
The percentage of saved data is: 100%
Save configuration completed!
```

5.5 erase saved-config

【Command】	erase saved-config
【View Mode】	Privileged EXEC Mode, Configuration mode
【Parameter】	<i>None</i>
【Description】	To erase the configuration file, the OLT will beboot after the configuration be delete.
【Example】	<pre> OLT# erase saved-config This command will clear the active board data that has been saved Please rememb er to backup the system configuration data Are you sure to continue? (y/n)[n]: y Successfully restored factory configuration! </pre>

5.6 show saved-config

【Command】	show saved-config
【View Mode】	Configuration mode
【Parameter】	<i>None</i>
【Description】	To check the saved configuration.
【Example】	<pre> OLT(config)# show saved-config #Saving user: root #Saving time: 2000-01-01 05:33:19+0000 # No DBA profile configurations # No line profile configurations # No service profile configurations # No ONT authenticated interface mgmt ip address 192.168.1.105 255.255.255.0 exit </pre>

6.Account Management

6.1 user add

【Command】	user add <i>name group</i>
【View Mode】	Configuration mode
【Parameter】	<i>name</i> : User name for a new user <i>group</i> : The group of the new user, there are root、 admin and guest for choice.
【Description】	The command is used to creates a system account. There are root、 admin and guest level for choice. Root: Full right. Admin: Right except reboot and upgrade. Guest: Only check the configuration and do configuration back up.
【Example】	
Creat a new guest account, user name is C-DATA, password is C-DATA OLT(config)# user add C-DATA guest Enter new password for user C-DATA: Confirm new password for user C-DATA:	

6.2 user delete

【Command】	user delete <i>name</i>
【View Mode】	Configuration mode
【Parameter】	<i>name</i> : User name will be delete
【Description】	The command is used to delete a system account. The root account can't be deleted.
【Example】	
To delete an exist accout named C-DATA. OLT(config)# user delete C-DATA	

6.3 user group

【Command】	user group <i>name group</i>
【View Mode】	Configuration mode
【Parameter】	<i>Name</i> : The accountat need to change group.

	<i>group</i> : The group for that account
【Description】	The command is used to change the account to another group.
【Example】	
Change C-DATA account to admin group. OLT(config)# user group C-DATA admin	

6.4 user password

【Command】	user password <i>name</i>
【View Mode】	Configuration mode
【Parameter】	<i>Name</i> : The account need to change password.
【Description】	The command is used to change the account password
【Example】	
Change account C-DATA password to admin OLT(config)# user password C-DATA Enter new password for user C-DATA: Confirm new password for user C-DATA:	

6.5 show user

【Command】	show user
【View Mode】	Configuration mode
【Parameter】	<i>None</i>
【Description】	The command is used to show all account
【Example】	
OLT(config)# show user ----- User Group ----- root root admin admin C-DATA admin -----	

7. Port Configuration

7.1 shutdown

【Command】	shutdown <i>port-list</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : The port number that you want to configure.
【Description】	The command is used to shut down the specified port
【Example】	
Shut down the ge1 port OLT(interface-ge)# shutdown 1	

7.2 no shutdown

【Command】	no shutdown <i>port-list</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : The port number that you want to configure.
【Description】	The command is used to show all account
【Example】	
Enable the ge1 port OLT(interface-ge)# no shutdown 1	

7.3 show port state

【Command】	show port state all show port state <i>port-id</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-id</i> : Specified port number
【Description】	The command is used to show port information of the specified port.
【Example】	
Check the information of the OLT ge1 OLT(interface-ge)# show port state 1 ge1 information summary : current port state : enable current link state : DOWN The Maximum Transmit Unit is 1500 Link speed is autonegotiation(1000 MBps) link duplex is autonegotiation(FULL) Flow-control is supported broadcasts stormcontrol 0(pps)	


```

multicasts stormcontrol 0(pps)
unicasts stormcontrol 0(pps)
native-vlan is 300
Port link-type: Access
Tagged VLAN ID : none
Untagged VLAN ID :
  300,
statistics from last clean(maybe the statistics would overflow):
Input(total):0 bytes
Input:unicast 0, broadcasts 0, multicasts 0, errors 0
Output(total):0 bytes
Output:unicast 0, broadcasts 0, multicasts 0, errors 0

```

Check the all GE port

OLT(interface-ge)# show port state all

```

-----

```

Port	Optic	Pvid	Auto	Speed	Dup	Flow	Learn	Enable	Link	Mtu
	Status		Nego	/Mbps	lex	Ctrl				
ge1	normal	100	enable	1000	full	off	enable	enable	on	1500
ge2	normal	1	enable	1000	full	on	enable	enable	off	1500
ge3	normal	1	enable	1000	full	off	enable	enable	on	1500
ge4	absence	1	enable	1000	full	on	enable	enable	off	1500
ge5	absence	1	enable	1000	full	on	enable	enable	off	1500
ge6	absence	1	enable	1000	full	on	enable	enable	off	1500
ge7	absence	1	enable	1000	full	on	enable	enable	off	1500
ge8	absence	1	enable	1000	full	on	enable	enable	off	1500
ge9	-	1	enable	1000	full	on	enable	enable	off	1500
ge10	-	1	enable	1000	full	on	enable	enable	off	1500
ge11	-	1	enable	1000	full	on	enable	enable	off	1500
ge12	-	1	enable	1000	full	on	enable	enable	off	1500
ge13	-	1	enable	1000	full	on	enable	enable	off	1500
ge14	-	1	enable	1000	full	on	enable	enable	off	1500
ge15	-	1	enable	1000	full	on	enable	enable	off	1500
ge16	-	1	enable	1000	full	on	enable	enable	off	1500

```

-----

```

7.4 show port ddm-info

【Command】	show port ddm-info <i>port-id</i>
【View Mode】	GPON Mode
【Parameter】	<i>port-id</i> : Specified port number
【Description】	The command is used to show Digital Diagnostic Monitoring of specified PON port. You can use the command to get the PON module information of temperature, voltage, bias-current, Tx power, Rx power.
【Example】	
<p>Check the information of PON1</p> <pre>OLT(interface-gpon)# show port ddm-info 1 Temperature(C) : 44.6 Supply Voltage(V) : 3.36 TX Bias current(mA) : 13 TX power(dBm) : 5.29 RX power(dBm) : -40.00</pre>	

7.5 show port vlan

【Command】	show port vlan <i>port-id</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-id</i> : Specified port number
【Description】	The command is used to show VLAN information.
【Example】	
<p>Check VLAN configuration of ge1</p> <pre>OLT(interface-ge)# show port vlan 1 ----- Port: ge1 Native-Vlan: 1 Mode: Access ----- Tagged-Vlan: - ----- Untagged-Vlan: 1 -----</pre>	

7.6 auto-neg

【Command】	auto-neg <i>port-list switch</i>
【View Mode】	GE Mode
【Parameter】	<i>port-list</i> : The port list that want to configure <i>switch</i> : To enable or disable the port status of Auto-Negotiation
【Description】	To enable or disable the port status of Auto-Negotiation.
【Example】	
OLT(interface-ge)# auto-neg 1 enable	

7.7 duplex

【Command】	duplex <i>port-list duplex</i>
【View Mode】	GE Mode, XGE Mode
【Parameter】	<i>port-list</i> : The port list that want to configure <i>duplex</i> : Half-duplex or full-duplex
【Description】	To enable or disable the port halfEthernet operates in either half-duplex or full mode
【Example】	
OLT(interface-ge)# duplex 1 full	

7.8 speed

【Command】	speed <i>port-list speed</i>
【View Mode】	GE Mode
【Parameter】	<i>port-list</i> : The port list that want to configure <i>speed</i> : Sets the transmit rate, 10/100/1000 Mbps.
【Description】	To set the transmit rate of an Ethernet port
【Example】	
Set ge1 port transmit rate to 100Mbit/s OLT(interface-ge)# speed 1 100	

7.9 flow-control

【Command】	flow-control <i>port-list</i> no flow-control <i>port-list</i>
-----------	---

【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : The port list that want to configure
【Description】	To enable or disable flow control on specified port
【Example】	
OLT(interface-gpon)# flow-control 1	

7.10 mirror

【Command】	mirror src-port <i>src-port</i> dst-port (ge xge) port-id direction no mirror src-port <i>src-port</i> direction
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>src-port</i> : Here is the designates mirrored port, it is source port number <i>port-id</i> : port-id here is the monitor port number <i>direction</i> : ingress/ egress / all , it is to configure what direction traffic need to monitor. Ingress: Copy the ingress traffic of src-port to the dst-port . Egress: Copy the egress traffic of src-port to the dst-port . All: Copy the ingress traffic of src-port to the dst-port .
【Description】	Port mirroring is the function of monitoring a designated port. Here, one port to monitor is called mirrored (src-port). Traffic transmitted from mirrored port are copied and sent to monitor port (dst-port) so that user can monitor network traffic.
【Example】	
Copy the ingress traffic of ge1 to the ge2 OLT(interface-ge)# mirror src-port 1 dst-port ge 2 ingress	

7.11 show mirror

【Command】	show mirror
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	None
【Description】	Shows a configured port mirroring
【Example】	
To display a configured port mirroring on GE Mode OLT(interface-ge)# show mirror ----- Admin : Enable	

Destination Port	: ge2
Source Ingress Ports	: ge1
Source Egress Ports	: ge5

7.12 mtu

【Command】	mtu <i>port-list mtu-value</i> no mtu <i>port-list</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : To configure mtu on specified port <i>mtu-value</i> : mtu value is 328~16356
【Description】	MTU is the largest packet size that can be sent over a network. Command mtu is to set the MTU size, the default is 1500. Command no mtu is to set the MTU size to default size.
【Example】	
Set ge1 port mtu size to 2000 OLT(interface-ge)# mtu 1 2000	

7.13 reset port statistic

【Command】	reset port statistic <i>port-id</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-id</i> : The specified port you want to clean the history statistic information
【Description】	The command is used to <i>clean the history statistic information</i>
【Example】	
Clean the history statistic information of ge1 OLT(interface-ge)# reset port statistic 1	

7.14 show port statistics

【Command】	show port statistics <i>port-id</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode

【Parameter】	<i>port-id</i> : The specified port you want to check statistic information																								
【Description】	It is to show traffic statistics of the port. It is useful for the troubleshooting. Total(bytes) is the total traffic , Uncast(pkts) is unicast traffic, Bcast(pkts) is the brocast traffic, Mcast(pkts) is multicast traffic, Err(pkts) is the error traffic.																								
【Example】	<p>Check the statics information of port ge9</p> <pre>OLT(interface-ge)# show port statistics 9</pre> <pre>-----</pre> <table border="1"> <thead> <tr> <th>Direction</th> <th>Total</th> <th>Uncast</th> <th>Bcast</th> <th>Mcast</th> <th>Err</th> </tr> <tr> <th></th> <th>(bytes)</th> <th>(pkts)</th> <th>(pkts)</th> <th>(pkts)</th> <th>(pkts)</th> </tr> </thead> <tbody> <tr> <td>RX</td> <td>320734</td> <td>454</td> <td>2215</td> <td>1212</td> <td>0</td> </tr> <tr> <td>TX</td> <td>35232</td> <td>456</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <pre>-----</pre>	Direction	Total	Uncast	Bcast	Mcast	Err		(bytes)	(pkts)	(pkts)	(pkts)	(pkts)	RX	320734	454	2215	1212	0	TX	35232	456	0	0	0
Direction	Total	Uncast	Bcast	Mcast	Err																				
	(bytes)	(pkts)	(pkts)	(pkts)	(pkts)																				
RX	320734	454	2215	1212	0																				
TX	35232	456	0	0	0																				

7.15 show mac-address

【Commond】	show mac-address all show mac-address black-hole show mac-address dynamic show mac-address port ge port-id show mac-address port xge port-id show mac-address port gpon port-id show mac-address static show mac-address timer show mac-address vlan vlan-id
【View Mode】	Configuration mode
【Parameter】	all : To check all the MAC information in the MAC table black-hole : To check the black-hole MAC information in the MAC table dynamic : To check the dymamic MAC information in the MAC table port port-id : To check the MAC information at specified port in the MAC table static : To check the static MAC information in the MAC table timer : To check ageing time of the MAC vlan vlan-id : To check the MAC information of specified vlan id.
【Description】	To show the MAC table
【Example】	<p>To check the MAC information at ge1 port</p> <pre>OLT(config)# show mac-address port ge 1</pre>

```

-----
Total: 1
-----
MAC                VLAN  Port  MAC-Type
-----
E0:67:B3:00:1B:24  1     ge1   static
-----

```

To check the static MAC information in the MAC table

```

OLT(config)# show mac-address static
-----
Total: 2
-----
MAC                VLAN  Port  MAC-Type
-----
E0:67:B3:00:E2:3B  100   ge1   static
E0:67:B3:48:97:0A  100   ge1   static
-----

```

7.16 show location

【Command】	show location mac-address
【View Mode】	Configuration mode
【Parameter】	<i>mac-address</i> : MAC address
【Description】	To locate the port of the specified MAC
【Example】	

To display the port information of the MAC 3C:97:0E:FD:0C:69

```

OLT(config)# show location 3C:97:0E:FD:0C:69
-----
MAC                VLAN  Port  MAC-Type
-----
3C:97:0E:FD:0C:69  100   ge9   dynamic
-----

```

7.17 mac-address limit port

【Command】	mac-address limit port ge <i>port-list count</i> mac-address limit port gpon <i>port-list count</i> mac-address limit port xge <i>port-list count</i>
【View Mode】	Configuration mode
【Parameter】	<i>port-list</i> : The port you want to set <i>count</i> : The number of MAC
【Description】	Limits the number of MAC address, if the MAC address over the limit then discard it.
【Example】	Limits the max MAC on the ge1 port to the 100 OLT(config)# mac-address limit port ge 1 100

7.18 mac-address static

【Command】	mac-address static port (<i>ge gpon xge</i>) <i>port-id vlan vlanid mac-address</i> no mac-address static port (<i>ge gpon xge</i>) <i>port-id vlan vlanid mac-address</i>
【View Mode】	Configuration mode
【Parameter】	<i>port-list</i> : The port you want to set. <i>vlan-id</i> : The corresponding vlan id of the static MAC <i>mac-address</i> : static MAC address
【Description】	To set a static address to the specified port and VLAN
【Example】	Set e0:67:b3:00:12:9c at OLT ge1 port, vlan 100 OLT(config)# mac-address static port ge 1 vlan 100 e0:67:b3:00:12:9c

7.19 mac-address timer

【Command】	mac-address timer <i>aging-time</i> mac-address timer no-aging
【View Mode】	Configuration mode
【Parameter】	<i>aging-time</i> : Specifies MAC aging time, the range is from 10 to 1000000S
【Description】	It is used to manage the aging time of the MAC table. The aging timer is used by the OLT to delete inactive dynamic MAC addresses from the

	<p>MAC address table, to prevent the table from becoming full of inactive addresses. An address is considered inactive if no packets are sent to or received from the corresponding node for the duration of the timer.</p> <p>no-aging: Set to no aging time Setting the aging timer to none disables the timer. No dynamic MAC addresses are aged out, and the table stops learning new addresses after reaching its maximum capacity.</p>
【Example】	
<p>This example shows how to set the aging time for entries in the MAC address table to 60 seconds</p> <pre>OLT(config)# mac-address timer 60</pre>	

7.20 mac-address learning

【Command】	<p>mac-address learning port ge <i>port-list switch</i></p> <p>mac-address learning port gpon <i>port-list switch</i></p> <p>mac-address learning port xge <i>port-list switch</i></p>
【View Mode】	Configuration mode
【Parameter】	<p><i>port-list</i>: Interface to set mac-address learning</p> <p><i>switch</i>: enable or disable MAC address learning</p>
【Description】	To enable or disable MAC address learning on an interface.
【Example】	
<p>This example shows how to enable MAC address learning on OLT ge1</p> <pre>OLT(config)# mac-address learning port ge 1 enable</pre>	

7.21 mac-address black-hole

【Command】	<p>mac-address black-hole <i>vlan-id mac-address</i></p> <p>no mac-address black-hole <i>vlan-id mac-address</i></p>
【View Mode】	Configuration mode
【Parameter】	<p><i>vlan-id</i>: The vlan id of the black-hole MAC</p> <p><i>mac-address</i>: Black-hole MAC address</p>
【Description】	To set a black-hole MAC address table, if the source MAC or destination MAC address of packet matched with the black-hole MAC address, the

	OLT will discard the packet.
【Example】	
Add a black-hole MAC address item, black-hole MAC is e0:67:b3:a5:39:a2, the VLAN is 50 OLT(config)# mac-address black-hole 50 e0:67:b3:a5:39:a2	

7.22 mac-address flush

【Command】	mac-address flush all mac-address flush black-hole mac-address flush dynamic mac-address flush port ge <i>port-id type</i> mac-address flush port gpon <i>port-id type</i> mac-address flush port xge <i>port-id type</i> mac-address flush static mac-address flush vlan <i>vlan-id type</i>
【View Mode】	Configuration mode
【Parameter】	<i>port-id</i> : To set the specified port of MAC flush <i>type</i> : MAC address type <i>vlan-id</i> : To clean the MAC address of the specified vlan id
【Description】	It is used to clean the all mac address or specified type mac address
【Example】	
To clean all dynamic MAC address at ge1 port OLT(config)# mac-address flush port ge 1 dynamic	

7.23 traffic-suppress

【Command】	traffic-suppress <i>port-id broadcast (kbps pps) value</i> traffic-suppress <i>port-id multicast (kbps pps) value</i> traffic-suppress <i>port-id unicast (kbps pps) value</i> no traffic-suppress <i>port-id (unicast multicast broadcast) (kbps pps) value</i>
【View Mode】	GE Mode, GPON Mode, Xge Mode
【Parameter】	<i>port-id</i> : Specified port to enable traffic suppress 。 broadcast : To control the broadcast traffic multicast : To control the multicast traffic

	<p>unicast: To control the unicast traffic</p> <p>kbps value: Specifies the maximum number of ingress packets per second of the designated type the port will forward. The range is 1 to 1000000, unit is kbps.</p> <p>pps value: Specifies the maximum number of ingress packets per second of the designated type the port will forward. The range is 1 to 1488100, unit is pps.</p>
【Description】	<p>Allows you to monitor the levels of the incoming broadcast, multicast, and unicast traffic. The traffic storm control circuitry monitors packets that pass from a Layer 2 interface. The circuitry determines if the packet is unicast or broadcast, tracks the current count of packets within the 1-second interval, and filters out subsequent packets when a threshold is reached to avoid the network blocking.</p> <p>no traffic-suppress is used to shut down this function.</p>
【Example】	<p>To set the ge1 port broadcast threshold to 1024kbps OLT(interface-ge)# traffic-suppress 1 broadcast kbps 1024</p> <p>To control the ge1 multicast traffic to 2048bps OLT(interface-ge)# traffic-suppress 1 multicast kbps 2048</p> <p>To control the ge1 unknown unicast traffic to 10240kbps OLT(interface-ge)# traffic-suppress 1 unicast kbps 10240</p>

8. VLAN

8.1 vlan

【Command】	<p>vlan <i>vlan-list</i></p> <p>no vlan <i>vlan-list</i></p>
【View Mode】	Configuration mode
【Parameter】	<i>vlan-list</i> : Create VLAN, specify a VID number, which has a range of 1 to 4094.
【Description】	vlan command is used to create one new VLAN or a group of VLAN
【Example】	Creates vlan 100

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

Creates vlan 200-220

```
OLT(config)# vlan 200-220
```

8.2 show vlan

【Command】	show vlan all show vlan <i>vlan-id</i>															
【View Mode】	Configuration mode															
【Parameter】	all : Specifies all the VLANs on the OLT to display <i>vlan-id</i> : Specifies the VID of the VLAN you want to display															
【Description】	To display all exist VLAN or one specified VLAN information, such as port and tagged/untagged															
【Example】																
Displays vlan 100 information OLT(config)# show vlan 100																

<table border="0" style="width: 100%;"> <tr> <td style="width: 10%;"></td> <td style="width: 40%;">VLAN</td> <td style="width: 30%;">Tagged-Ports</td> <td style="width: 20%;"></td> <td style="width: 10%;">Untagged-Ports</td> </tr> <tr> <td></td> <td>-----</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>100</td> <td>p1-p8</td> <td></td> <td>xge1</td> </tr> </table>			VLAN	Tagged-Ports		Untagged-Ports		-----					100	p1-p8		xge1
	VLAN	Tagged-Ports		Untagged-Ports												

	100	p1-p8		xge1												

8.3 vlan mode

【Command】	vlan mode <i>port-list mode</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : Specifies port to set VLAN mode <i>mode</i> : vlan mod, there are access、 hybrid、 trunk model.
【Description】	<p>access mode: Only untagged traffic will enter the port and be added the native vlan, other traffic will discard. Remove any VLAN information from the frame before it is sent out.</p> <p>Trunk mode: Trunk port receive packet and judge whether there is VLAN information belong the VLAN table of the port, if it is forward, if not belong to discard it. The trunk port to send packet, it comparison of VLAN information with VLAN table, if it is directly transmit, if not equal to discard it.</p> <p>Hybrid Mode: receive packet and judge whether there is VLAN information belong the VLAN table of the port, if it is forward, if not</p>

	belong to discard it. The hybrid port to send packet, it can set tagged or untagged. if untag is the stripping VLAN information, send, if tag is directly send.
【Example】	
Set the OLT ge1 to trunk mode OLT(interface-ge)# vlan mode 1 trunk	

8.4 vlan access

【Command】	vlan access <i>port-list</i> <i>vlan-id</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : Specifies port to set VLAN <i>vlan-id</i> : Specifies VLAN ID
【Description】	To add access vlan at specified port, the vlan should have created before, and the poer is on access mode.
【Example】	
To add VLAN 100 at ge1 port OLT(interface-ge)# vlan access 1 100	

8.5 vlan trunk

【Command】	vlan trunk <i>port-list</i> allowed <i>vlan-list</i> no vlan trunk <i>port-list</i> allowed <i>vlan-list</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : Specifies port to set VLAN <i>vlan-id</i> : Specifies VLAN ID
【Description】	To add trunk vlan at specified port, the vlan should have created before, and the port is on trunk mode.
【Example】	
Add trunk vlan 100, 200,300 to ge1 OLT(interface-ge)# vlan trunk 1 allowed 100,200,300 ge1 : trunk allowed vlan: Fail: 0, Success: 3	

8.6 vlan hybrid

【Command】	vlan hybrid <i>port-list</i> (tagged untagged) <i>vlan-list</i> no vlan hybrid <i>port-list</i> (tagged untagged) <i>vlan-list</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : Specifies port to set VLAN <i>vlan-list</i> : Specifies VLAN ID list tagged untagged –To set the port send packet with tag or without tag.
【Description】	To add hybrid vlan at specified port, the vlan should have created before, and the port is on hybrid mode.
【Example】	To add ge1 hybrid vlan 100 in tagged and vlan1000 in untagged at ge1 port. OLT(interface-ge)# vlan hybrid 1 tagged 100 ge1 : hybrid add tag vlan: Fail: 0, Success: 1 OLT(interface-ge)# vlan hybrid 1 untagged 1000 ge1 : hybrid add untag vlan: Fail: 0, Success: 1

8.7 vlan native-vlan

【Command】	vlan native-vlan <i>port-list</i> <i>vlan-id</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-list</i> : Specifies port to set VLAN <i>vlan-id</i> : Specifies VLAN ID
【Description】	To add native vlan at specified port, the packet ingress will add the native vlan, the express packed if the vlan information equal the native vlan id it will strip the tag, if not the packet will discard.
【Example】	To set the ge1 port in native vlan 100 OLT(interface-ge)# vlan native-vlan 1 100

8.8 show port vlan

【Command】	show port vlan <i>port-id</i>
【View Mode】	GE Mode, GPON Mode, XGE Mode
【Parameter】	<i>port-id</i> : Specifies port to set VLAN

【Description】	To show the port vlan information
【Example】	
<pre>OLT(interface-ge)# show port vlan 1 ----- Port: ge1 Native-Vlan: 100 Mode: Hybrid ----- Tagged-Vlan: - ----- Untagged-Vlan: 1,100,1000 -----</pre>	

8.9 interface vlanif

【Command】	interface vlanif <i>vlan-id</i>
【View Mode】	Configuration mode
【Parameter】	<i>vlan-id</i> : VLAN ID, <i>specifies a VLAN</i>
【Description】	To creat VLANIF interface and enter the VLANIF Mode. You can set the IP address to this virtual level 3 interface.
【Example】	
<p>When you have created a VLAN 100, you can creat a VLANIF interface for vlan 100, and enter the interface to configure it.</p> <pre>OLT(config)# interface vlanif 100 OLT(interface-vlanif-100)#</pre>	

8.10 show interface vlanif

【Command】	show interface vlanif (all vlan-id <i>vlan-id</i>)
【View Mode】	Configuration mode
【Parameter】	<i>vlan-id</i> : VLAN ID, <i>specifies a VLAN</i>
【Description】	To check VLANIF interfaion.
【Example】	
<p>Displays vlanif interface information of vlan 100</p> <pre>OLT(config)# show interface vlanif vlan-id 100 Description : vlan[100] management interface The Maximum Transmit Unit is 1500 bytes</pre>	

Internet Address is 192.168.100.123, netmask 255.255.255.0

Hardware address is E0:67:B3:00:00:02

Recive 105 packets, 5292 bytes

Transmit 35 packets, 1866 bytes

Display all information of the vlanif

OLT(config)# show interface vlanif all

Interface	IP Address	Netmask
vlanif[100]	192.168.100.123	255.255.255.0
vlanif[200]	192.168.101.123	255.255.255.0

9. Multicast Module

9.1 igmp-snooping

【Command】	igmp-snooping enable igmp-snooping disable
【View Mode】	Configuration mode
【Parameter】	enable : To enable the OLT's igmp-snooping function disable : To disable the OLT's igmp-snooping function
【Description】	IGMP Snooping (Internet Group Management Protocol Snooping. IGMP snooping allows the OLT to control the flow of multicast packets from its ports. It enables the OLT to forward packets of multicast groups to only ports that have host nodes that want to join the multicast groups.
【Example】	
Enables igmp-snooping OLT(config)# igmp-snooping enable	

9.2 igmp-snooping fast-leave

【Command】	igmp-snooping fast-leave switch
【View Mode】	Configuration mode
【Parameter】	switch : igmp-snooping fast leave function on or off, on means enable, off means disable.
【Description】	on : To enable igmp-snooping fast leave function. When ONT received a

	<p>IGMP leave message, it will update the multicast forwarding entry table immediately. It do not have query processdure. If you want set a leave latency as 0, you can enable it.</p> <p>off: To disable igmp-snooping fast leave function. ONT will sent group-specific query message upon receipt message from a host. If ONT do not receive the report from host, ONT judge the host offline and update the multicst forwarding table.</p>
【Example】	
<p>To enable OLTigmp-snooping fast-leave OLT(config)# igmp-snooping fast-leave on</p>	

9.3 igmp-snooping host-aging-time

【Commond】	igmp-snooping host-aging-time <i>time</i>
【View Mode】	Configuration mode
【Parameter】	<i>time</i> : To specify the aging time for multicast group member
【Description】	<p>Use the igmp-snooping host-aging-time command to configure the port aging time of the multicast group members.</p> <p>This command is used to set the aging time of the multicast group member so that the refresh frequency can be controlled. When the group members change frequently, the aging time should be comparatively short, and vice versa.</p>
【Example】	
<p>Set the aging time to 300 seconds. OLT(config)# igmp-snooping host-aging-time 300</p>	

9.4 igmp-snooping router-aging-time

【Commond】	igmp-snooping router-aging-time <i>time</i>
【View Mode】	Configuration mode
【Parameter】	<i>time</i> : To specify the aging time for multicast router port
【Description】	<p>Use the igmp-snooping router-aging-time command to configure the port aging time of the multicast group router.</p> <p>This command is used to set the aging time of the multicast group router. When the OLT do not receiver IGMP General Query packet or PIM Hello packet of some port, the port will delet them form the table.</p>

【Example】	
Set the multicast router port aging time to 300 seconds. OLT(config)# igmp-snooping router-aging-time 300	

9.5 igmp-snooping querier

【Command】	igmp-snooping querier enable igmp-snooping querier disable
【View Mode】	Configuration mode
【Parameter】	enable: To active igmp snooping querier disable: To deactivate igmp snooping querier
【Description】	Multicast routers are an essential part of IP multicasting. They send out queries to the network nodes to determine group memberships, route the multicast packets across networks, and maintain lists of the multicast groups and the ports where group members are located. IGMP snooping querier can be used in place of multicast routers in situations where IP multicasting is restricted to a single LAN, without the need for routing. This feature enables the OLT to mimic a multicast router by sending out general IGMP queries to the host nodes.
【Example】	
OLT(config)# igmp-snooping querier enable	

9.6 igmp-snooping querier interval

【Command】	igmp-snooping querier interval <i>time</i>
【View Mode】	Configuration mode
【Parameter】	interval <i>time</i>: Specifies an IGMP snooping query interval in the unit of second
【Description】	The IGMP snooping querier periodically sends General Query messages to trigger membership report messages from a host that wants to receiver IP multicast traffic.
【Example】	
Set the igmp snooping query interval time to 60 second OLT(config)# igmp-snooping querier interval 60	

9.7 igmp-snooping querier max-response-time

【Command】	igmp-snooping querier max-response-time <i>time</i>
【View Mode】	Configuration mode
【Parameter】	max-response-time <i>time</i> : Specifies a maximum response time
【Description】	Membership query messages include the maximum response time field. This field specifies the maximum time allowed before sending a responding report. The maximum query response time allows a router to quickly detect that there are no more hosts interested in receiving multicast traffic. To get the network to converge faster, use the command and set a low response time value, so that the clients will respond immediately with a report as a response to the IGMP Querier.
【Example】	
Set the igmp snooping query response time to 10 second OLT(config)# igmp-snooping querier max-response-time 10	

9.8 igmp-snooping querier source-ip

【Command】	igmp-snooping querier source-ip <i>source_ip</i>
【View Mode】	Configuration mode
【Parameter】	source_ip : Specified an IP address as the source IP address to be carried in the IGMP queries sent by the device
【Description】	Use the igmp-snooping general-query source-ip ip-address command to specify an IP address as the source IP address of IGMP queries. When a level 2 device received the IGMP Query message from source ip 0.0.0.0 , it will not set it to a dynamic router port, that will influence the creating multicast forwarding table and cause the traffic blocking. If an IP address is assigned to a VLAN, which has IGMP querier enabled on it, then the IGMP Snooping querier uses the VLAN's IP address as the Source IP Address in IGMP queries, it will avoid the 0.0.0.0 issue.
【Example】	
To configure the igmp snooping querier ip to 192.168.1.1 OLT(config)# igmp-snooping querier source-ip 192.168.1.1	

9.9 show igmp-snooping config

【Command】	show igmp-snooping config
【View Mode】	Configuration mode

【Parameter】	None
【Description】	To display the igmp snooping information, include igmp snooping status, fast leave status, aging time, igmp snooping querier status, response time, interval time and source ip
【Example】	<p>Check the igmp snooping configuration.</p> <pre>OLT(config)# show igmp-snooping config ----- Snooping switch : Disable Fast leave : Off Host aging time(s) : 260 Router aging time(s) : 130 ----- Query switch : Enable Max response time(s) : 10 Query interval(s) : 60 Source ip of the query : 192.168.1.1 -----</pre>

9.10 show igmp-snooping group

【Command】	show igmp-snooping group (all ip-address <i>ip-address</i> static vlan <i>vlan-id</i>)
【View Mode】	Configuration mode
【Parameter】	<p>all : all multicast group information</p> <p>ip-address <i>ip-address</i>: Specifies a multicast source by its IP address.</p> <p>static:</p> <p>vlan <i>vlan-id</i>: Specifies a multicast VLAN</p>
【Description】	To display the multicast group information
【Example】	<p>Check OLT multicast group information</p> <pre>OLT(config)# show igmp-snooping group all Total Groups:2 ----- Index:1 IP address:224.2.2.2 Mac address:01:00:5e:02:02:02 vlan :100 RouterPort: NONE MemberPort: ge13</pre>

Index:2

IP address:239.255.255.250

Mac address:01:00:5e:7f:ff:fa

vlan :100

RouterPort: NONE

MemberPort: ge13

9.11 multicast-vlan

【Command】	multicast-vlan <i>vlan-id</i> no multicast-vlan <i>vlan-id</i>
【View Mode】	Configuration mode
【Parameter】	vlan <i>vlan-id</i> : Specifies a multicast VLAN, before you use a VLAN ID for multicast vlan you should creat that VLAN first.
【Description】	Use multicast-vlan to configure a multicast VLAN and enter multicast VLAN view mode. The multicast Vlan is one of the application of VLAN, you can configure the multicast parameter under this mode.
【Example】	Configures VLAN 100 as a multicast VLAN and enter its view OLT(config)# multicast-vlan 100 OLT(multicast-vlan-100)#

9.12 show multicast-vlan

【Command】	show multicast-vlan (all vlan-id <i>vlan-id</i>)
【View Mode】	Configuration mode
【Parameter】	vlan <i>vlan-id</i> : Specifies a multicast VLAN all : To show information of all multcast VLAN
【Description】	Use the command to display information about multicast VLANs.
【Example】	

9.13 port

【Command】	port (ge gpon xge) port-id no port (ge gpon xge) port-id
【View Mode】	Multicast-vlan Mode
【Parameter】	port-id: Specified port to be added to the multicast VLAN
【Description】	Uses the command to add the OLT port to the specified multicast VLAN. no port is used for delete port from multicast vlan
【Example】	
Adds ge1 port to multicast vlan100 OLT(multicast-vlan-100)# port ge 1	

9.14 multicast-unknown

【Command】	multicast-unknown policy (discard transparent)
【View Mode】	Configuration mode
【Parameter】	discard : dropping unknown multicast data transparent : transparent unknown multicast data。
【Description】	Uses the command to control unknown , if the multicast data is useful unknown traffic then set transparent, if not set discard.
【Example】	
Configure the unknown multicast data transparent OLT(config)# multicast-unknown policy transparent	

10.RSTP

10.1 spanning-tree

【Command】	spanning-tree (enable disable)
【View Mode】	Configuration mode
【Parameter】	enable : Active the STP protocol disable : Deactive the STP protocol

【Description】	The command is used to active/deactive global STP, only when STP have enabled you can configure the corresponde stp function
【Example】	
Active the STP function OLT(config)# spanning-tree enable	

10.2 spanning-tree priority

【Command】	spanning-tree priority <i>priority</i>
【View Mode】	Configuration mode
【Parameter】	<i>Priority</i> : Specifies a priority number for the switch. The range is 0 to 61440, in increments of 4096, more small number gets moer higer priority.
【Description】	Use this command to assign the switch a priority number. The device that has the lowest priority number in the spanning tree dom in becomes the root bridge. If two or more devices have the same priority value, the device with the numerically lowest MAC address becomes the root bridge. The range is 0 to 61,440, in increments of 4,096. The priority value can be set only in increments of 4,096.
【Example】	
This example sets the priority value of the OLT to 4096 OLT(config)# spanning-tree priority 4096	

10.3 spanning-tree timer forward-delay

【Command】	spanning-tree timer forward-delay <i>time</i>
【View Mode】	Configuration mode
【Parameter】	<i>time</i> : orward Delay in second, <4~30>
【Description】	Use this command to set the forward delay value. The forward delay sets the time (in seconds) to control how fast a port changes its spanning tree state when moving towards the forwarding state. This value determines the maximum time taken to transition from discarding to learning and from learning to forwarding. The range is 4 to 30 second.
【Example】	
Sets OLT forward-delay time to 20 second OLT(config)# spanning-tree timer forward-delay 20	

10.4 spanning-tree timer hello

【Command】	spanning-tree timer hello <i>time</i>
【View Mode】	Configuration mode
【Parameter】	<i>time</i> : hello time interval in second, range 1 to 2 second
【Description】	Use this command to set the hello-time. This sets the time in seconds between the transmission of switch spanning tree configuration information.
【Example】	
Sets OLT hello time to 1 second OLT(config)# spanning-tree timer hello 1	

10.5 spanning-tree timer max-age

【Command】	spanning-tree timer max-age <i>time</i>
【View Mode】	Configuration mode
【Parameter】	<i>time</i> : <6-40> The maximum time, in seconds.
【Description】	Use this command to set the max-age. This sets the maximum age, in seconds, that dynamic spanning tree configuration information is stored in the switch before it is discarded. Range is 6 to 40 second.
【Example】	
<p>Max-age is the maximum time in seconds for which a message is considered valid. Configure this value sufficiently high, so that a frame generated by the root bridge can be propagated to the leaf nodes without exceeding the max-age. Sets OLT hello time to 1 秒</p> <p>The forward delay, max-age, and hello time parameters should be set according to the following formulae, as specified in IEEE Standard 802.1d:</p> $2 \times (\text{forward delay} - 1.0 \text{ seconds}) \geq \text{max-age}$ $\text{max-age} \geq 2 \times (\text{hello time} + 1.0 \text{ seconds})$ <p>Example is to set the max-age to 6 second.</p> <p>OLT(config)# spanning-tree timer max-age 6</p>	

10.6 spanning-tree edged-port

【Command】	spanning-tree edged-port <i>port-id switch</i>
【View Mode】	GE Mode, XGE Mode
【Parameter】	<i>port-id</i> : Specifies the port id <i>switch</i> : To configure the port as a edged-port or not. Value: enable、disable。
【Description】	Use this command to set a port as an edge-port. Use this command on a switch port connected to a LAN that has no other bridges attached. If a BPDU is received on the port that indicates that another bridge is connected to the LAN, then the port is no longer treated as an edge port.
【Example】	
Sets ge 1 as a edged-port OLT(interface-ge)# spanning-tree edged-port 1 enable	

10.7 spanning-tree cost

【Command】	spanning-tree cost <i>port-id cost</i>
【View Mode】	GE Mode, XGE Mode
【Parameter】	<i>port-id</i> : Specifies the port id <i>cost</i> : More lower the path cost valu, more goed of the network connection. Range is 1 to 200000000。
【Description】	Use this command to set the cost of a path for the specified port. This value then combines with others along the path to the root bridge in order to determine the total cost path value from the particular port, to the root bridge. The lower the numeric value, the higher the priority of the path. This applies when the port is the root port.
【Example】	
Sets ge 1 port path-cost to 500 OLT(interface-ge)# spanning-tree cost 1 500	

10.8 spanning-tree mcheck

【Command】	spanning-tree mcheck <i>port-id switch</i>
【View Mode】	GE Mode, XGE Mode

【Parameter】	<i>port-id</i> : Specifies the port id <i>switch</i> : value is enable、disable, to active or deactivate the mcheck
【Description】	Use this command to set the port to run mcheck operation. If the port connect with the STP device, the port will move to STP compatible mode.
【Example】	
To active the mcheck mode of the ge1 port OLT(interface-ge)# spanning-tree mcheck 1 enable	

10.9 spanning-tree point-to-point

【Command】	spanning-tree point-to-point <i>port-id mode</i>
【View Mode】	GE Mode, XGE Mode
【Parameter】	<i>port-id</i> : Specifies the port id <i>mode</i> : Sets the mode of RSTP, value is true, false, auto
【Description】	Use this command to set the specified port is a point to point link or not.
【Example】	
Set1 ge 1 port poin-to-point to true OLT(interface-ge)# spanning-tree point-to-point 1 true	

10.10 spanning-tree priority

【Command】	spanning-tree priority <i>port-id priority</i>
【View Mode】	GE Mode, XGE Mode
【Parameter】	<i>port-id</i> : Specifies the port id <i>priority</i> : <0-240>, in increments of 16. The port priority, which will be rounded down to a multiple of 16.
【Description】	Use this command to set the port priority for specified port. A lower priority value indicates a greater likelihood of the port becoming part of the active topology.
【Example】	
Configure ge1 port the port priority to 16 OLT(interface-ge)# spanning-tree priority 1 16	

11.DBA Profile Configuration

11.1 dba-profile

【Command】	dba-profile (profile-id <i>profile-id</i> profile-name <i>profile-name</i>) no dba-profile (profile-id <i>profile-id</i> profile-name <i>profile-name</i>)
【View Mode】	Configuration mode
【Parameter】	profile-id <i>profile-id</i> : Id for the DBA profile, the system will automatically assigned a id to the profile with name “dba-profile_x” if you do not give a id, “x” is the sequence number as id.
【Description】	Use this command to creat DBA (Dynamic Bandwidth Assignment) profile. OLT uses the DBA for the upstream bandwidth allocation. There are some default profiles. If the default profile can not meet business requirement, you can creat a DBA profile based on your business. If you need to delete a DBA profile , use no dba-profile command.
【Example】	
To creat a DBA profile with ID 10 at default name rule OLT(config)# dba-profile profile-id 10	

11.2 type

【Command】	type1 fix <i>fix</i> type2 assure <i>assure</i> type3 assure <i>assure</i> max <i>max</i> type4 max <i>max</i> type5 fix <i>fix</i> assure <i>assure</i> max <i>max</i>
【View Mode】	dba-profile Mode
【Parameter】	The system supports five DBA profile types, namely, type1 (fixed bandwidth), type2 (assured bandwidth), type3 (assured bandwidth+maximum bandwidth), type4 (maximum bandwidth), and type5 (fixed bandwidth+assured bandwidth+maximum bandwidth). type1 This fixed bandwidth is provisioned for the specified ONU or business, the bandwidth is occupied fully even no business in use, the bandwidth can not use by other ONU. It suit for hige priority and services sensitive to delay business, such as TDM and VOIP. 。 type2 This assured bandwidth is guaranteed bandwidth type to assure the ONU can get bandwidth it need. When the ONU do not need using such more bandwidth it will release and use by other ONU business. It is dynamic allocatoion. It mainly used for video services and data serves

	<p>of higher priorities.</p> <p>type3 This is combination of assured bandwidth and maximum bandwidth. Users are allowed to preempt the bandwidth on condition that the users' assured bandwidth is guaranteed. However, the total bandwidth cannot exceed the maximum bandwidth. It mainly used for Voip and IPTV business.</p> <p>type4 This is maximum bandwidth type and mainly used for data service, such as Internet and service of low priority. It have not bandwidth guarantee but it has eligibility in best effort bandwidth sharing.</p> <p>type5 This is mixed type. It reserved fix bandwidth to monopolize it. It also assured bandwidth and maximum bandwidth.</p> <p>fix fix It is the fix bandwidth. It is provisioned for user. Other user can not use them.</p> <p>assure assure <i>It is guranted bandwidth.</i></p> <p>max max <i>It is maximum bandwidth</i></p> <p>The maximum bandwidth value should be same or more than the sum of a fixed bandwidth and assured bandwidth value.</p> <p>Maximumu BW>= fixed B/W + assured B/W</p>
【Description】	<p>Use the command to creat a DBA profile. The OLT dynamically allocates bandwidth to uplink interfaces of ONUs according to the parameters in the DBA profile. By configuring a DBA profile, you can set the bandwidth allocation mode and bandwidth parameters uniformly. The ONT reports the status of the queues associated with the service scheduler to the OLT. Based on the bandwidth demand, the OLT Dynamic Bandwidth Allocation (DBA) engine allocates upstream transmit opportunities to the service scheduler, resulting in one or more ONT upstream queues with the opportunity to send data up the PON.</p>
【Example】	<p>To set dba profile 10 as the type 5 , fixed bandwidth 5Mbit/s, assured bandwidth 10Mbit/s, manimum bandwidth 30Mbit/s</p> <pre>OLT(dba-profile-10)# type5 fix 5120 assure 10240 max 30720</pre>

11.3 show dba-profile

【Command】	show dba-profile (all profile-id <i>profile-id</i> profile-name <i>profile-name</i>)
【View Mode】	Configuration mode
【Parameter】	<p>all: Displays all the DBA profile information</p> <p>profile-id <i>profile-id</i>: To display the DBA profile of specified ID</p>

	profile-name <i>profile-name</i> : To display the specified DBA profile
【Description】	Uses the command to check the DBA profile information
【Example】	
Displays all DBA profile	
OLT(config)# show dba-profile all	

Profile ID	Profile Name
Type	Fix (kbps)
Assure (kbps)	Max (kbps)
Bind times	

10	dba-profile_10
5	2048
2048	10240
0	
20	dba-profile_20
2	0
0	0

Total: 2	
Displays DBA profile of ID 10	
OLT(config)# show dba-profile profile-id 10	

Profile ID	: 10
Profile Name	: dba-profile_10
Type	: 5
Fix(kbps)	: 2048
Assure(kbps)	: 2048
Max(kbps)	: 10240
Bind Times	: 0

11.4 commit

【Command】	show dba-profile (all profile-id <i>profile-id</i> profile-name <i>profile-name</i>)
【View Mode】	dba-profile Mode
【Parameter】	None
【Description】	Uses the command to apply the DBA profile
【Example】	
To apply the current DBA profile	
OLT(dba-profile-10)# commit	

12. ONT Lineprofilel Configuration

12.1 ont-lineprofile

【Command】	ont-lineprofile (profile-id profile-id profile-name profile-name) no ont-lineprofile (profile-id profile-id profile-name profile-name)
【View Mode】	Configuration mode
【Parameter】	<i>profile-id</i> : Creates or enter for a specified GPON ONT line profile, ID is the unique identify number of the line profile. If no assigned the ID ,the system will automatically assigned an id to the profile <i>profile-name</i> : A name for the GPON ONT line profile.
【Description】	A line profile describes binding between the T-CONT and the DBA profile, the QoS mode of the service flow, and mapping between the GEM port and the ONU-side service. This command is to create the ONT line profile.
【Example】	To creat the GPON ONT line profile with ID 10. OLT(config)# ont-lineprofile profile-id 10 _____ OLT(ont-lineprofile-10)#

12.2 tcont

【Command】	tcont tcont-list (dba-profile-id dba-profile-id dba-profile-name dba-profile-name) no tcont tcont-list
【View Mode】	lineprofile Mode
【Parameter】	<i>tcont-list</i> : T-CONT list, support “,” and “-” <i>dba-profile-id</i> : DBA profile ID. <i>dba-profile-name</i> : DBA profile name
【Description】	In the line profile mode, bind T-CONT 4 to DBA profile. A T-CONT is bound to a DBA profile for dynamic bandwidth allocation, improving upstream bandwidth utilization. undo tcont command is used to delete the T-CONT
【Example】	Creates tcont1 under line profile 10 and bind with DBA profile 10 OLT(ont-lineprofile-10)# tcont 1 dba-profile-id 10

12.3 gem add

【Command】	gem add <i>gem-id</i> tcont <i>tcont-id</i>
【View Mode】	lineprofile Mode
【Parameter】	<i>gem-id</i> : GEM ID <i>tcont-id</i> : tcont ID
【Description】	Use the command to configure the GEM port and TCONT bound, creat GEM port.
【Example】	
To creat the gem 1 in line profile 10 and bind with tcont 1 OLT(ont-lineprofile-10)# gem add 1 tcont 1	

12.4 gem delete

【Command】	gem add <i>gem-id</i> tcont <i>tcont-id</i>
【View Mode】	lineprofile Mode
【Parameter】	<i>gem-id</i> : GEM ID
【Description】	Use the command to delete the GEM
【Example】	
To delete GEM 1 of line profile 10 OLT(ont-lineprofile-10)# gem delete 1	

12.5 mapping-mode

【Command】	mapping-mode (priority vlan vlan-priority)
【View Mode】	lineprofile Mode
【Parameter】	priority : To use 802.1p priority mapping mode vlan : To use VLAN mapping mode vlan-priority : To use vlan+802.1p maping mode
【Description】	Uses the command to configure the mapping mode of the ONT line profile. It configure the mapping mode from the GEM port to ONU-side service. VLAN is default mapping mode.
【Example】	
To configure line profile 10 with vlan mapping mode	

```
OLT(ont-lineprofile-10)# mapping-mode vlan
```

12.6 gem mapping

【Command】	gem mapping gem-id mapping-id [vlan-id vlan-id priority priority] no gem mapping gem-id mapping-id
【View Mode】	lineprofile Mode
【Parameter】	<i>gem-id</i> : GEM ID <i>mapping-id</i> : mapping ID <i>vlan-id</i> : vlan ID <i>priority</i> : To configure a priority with the gem-id
【Description】	The command is used to map the GEM port and ont side service. The service flow of user VLAN will map to GEM port in the ONT line profile
【Example】	To configure the gem 1、 mapping 1、 vlan 100 mapping OLT(ont-lineprofile-10)# gem mapping 1 1 vlan-id 100

12.7 show ont-lineprofile

【Command】	show ont-lineprofile (all profile-id profile-id profile-name profile-name)
【View Mode】	Configuration mode
【Parameter】	all : Displays all the line profile information profile-id profile-id : To display the line profile of specified ID profile-name profile-name : To display the specified line profile
【Description】	The command is used to display the line profile information.
【Example】	Displays the all line profile OLT(config)# show ont-lineprofile all ----- Profile-ID Profile-name Binding times ----- 10 dba-profile_10 0 100 dba-profile_100 0 ----- Total: 2

12.8 show ont-lineprofile current

【Command】	show ont-lineprofile current
【View Mode】	lineprofile Mode
【Parameter】	
【Description】	Show not issued by the line template information
【Example】	<p>Show not issued by the line template 10 configuration information</p> <p>OLT(ont-lineprofile-10)# show ont-lineprofile current</p> <pre> ----- Profile-ID : 10 Profile-name : dba-profile_10 Binding times : 0 ----- Mapping mode : VLAN ----- <T-CONT 1> DBA-Profile ID : 10 <Gem ID 1> Mapping-ID VLAN Priority 1 100 - ----- </pre>

13.ONT-srvprofile configuration

13.1 ont-srvprofile

【Command】	ont-srvprofile (profile-id profile-id profile-name profile-name) no ont-srvprofile (profile-id profile-id profile-name profile-name)
【View Mode】	Configuration mode
【Parameter】	profile-id profile-id : Id for the service profile, the system will automatically assigned a id to the profile with name "srv-profile_x" if you do not give a id, "x" is the sequence number as id.
【Description】	Use this command to creat service profile. A service profile provides the service configuration channel for the ONT that is managed by using

	optical network terminal management and control interface (OMCI). You can configure the capability set of ONT port to adaptive. Then the system automatically adapts to the ONT according to the actual capability of the online ONT.
【Example】	
<p>Creates the service profile 10 for the ONT</p> <pre>OLT(config)# ont-srvprofile profile-id 10 OLT(ont-srvprofile-10)#</pre>	

13.2 ont-port

【Command】	ont-port (eth <i>eth</i> pots <i>pots</i>)
【View Mode】	srvprofile Mode
【Parameter】	eth <i>eth</i> : The number of the Ethernet port on ONT pots <i>pots</i> : The number of the voice port on ONT
【Description】	Uses the command to configure the capacity of the ONT.
【Example】	
<p>To configure the ONT service profile 10, the ONT have 4 eth ports and 1 telephone POTS</p> <pre>OLT(ont-srvprofile-10)# ont-port eth 4 pots 1</pre>	

13.3 port vlan

【Command】	<p>port vlan eth <i>port-list</i> native-vlan <i>vlan-id</i></p> <p>port vlan eth <i>port-list</i> q-in-q <i>vlan-id</i> user-vlan <i>vlan-id</i></p> <p>port vlan eth <i>port-list</i> translation <i>vlan-id</i> user-vlan <i>vlan-id</i></p> <p>port vlan eth <i>port-list</i> transparent</p> <p>port vlan eth <i>port-list</i> vlan <i>vlan-id</i></p> <p>no port vlan eth <i>port-list</i> vlan <i>vlan-id</i></p>
【View Mode】	srvprofile Mode
【Parameter】	<p>eth <i>port-list</i>: The list of ONT port that need to configure a VLAN. It is useful for batch configuration.</p> <p>native-vlan <i>vlan-id</i>: native vlan of the ONT port.</p> <p>q-in-q <i>vlan-id</i> user-vlan <i>vlan-id</i>: q-in-q <i>vlan-id</i> is the outer vlan, user-vlan <i>vlan-id</i> is the inner vlan.</p> <p>translation <i>vlan-id</i> user-vlan <i>vlan-id</i>: user-vlan <i>vlan-id</i> is user side vlan</p> <p>vlan <i>vlan-id</i>: To add the ONT port to specified VLAN</p>

【Description】	Uses the port vlan command to configure the port vlan of the ONT uni port in GPON ONT service profile, assigned the port to specified VLAN. The no port vlan command is used to delete the port vlan of the ONT service profile.
【Example】	<p>Adds eth1 to vlan 10 in ONT srvprofile 10</p> <pre>OLT(ont-srvprofile-10)# port vlan eth 1 vlan 10</pre> <p>In ONT srvprofile 10, to set ONT uni port 2 to QinQ vlan 100, the user vlan is 10</p> <pre>OLT(ont-srvprofile-10)# port vlan eth 2 q-in-q 100 user-vlan 10</pre> <p>In ONT srvprofile 10, to set ONT uni port 2 working as transparent</p> <pre>OLT(ont-srvprofile-10)# port vlan eth 2 transparent</pre> <p>In ONT srvprofile 10, to set ONT uni port 1 working as VLAN translation , the vlan 100 will translate to user vlan 200</p> <pre>OLT(ont-srvprofile-10)# port vlan eth 1 translation 100 user-vlan 200</pre>

13.4 show ont-srvprofile

【Command】	show ont-srvprofile (all <i>profile-id profile-id</i> profile-name profile-name)						
【View Mode】	Configuration mode						
【Parameter】	<p>all: To display all GPON ONT srv-profile information, include profile ID, name, and number of bound times.</p> <p>profile-id profile-id: To display the specified ID srv-profile</p> <p>profile-name profile-name: To display the specified name srv-profile</p>						
【Description】	To check the ONT srv-profile information						
【Example】	<p>Displays all ONT srv-profile</p> <pre>OLT(config)# show ont-srvprofile all</pre> <pre>-----</pre> <table border="1"> <thead> <tr> <th>Profile-ID</th> <th>Profile-name</th> <th>Binding times</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>srvprofile_10</td> <td>0</td> </tr> </tbody> </table> <pre>-----</pre> <p>Total: 1</p> <p>Display srv-profile of ID 10</p>	Profile-ID	Profile-name	Binding times	10	srvprofile_10	0
Profile-ID	Profile-name	Binding times					
10	srvprofile_10	0					

```

OLT(config)# show ont-srvprofile profile-id 10
-----
Profile-ID      : 10
Profile-name    : srvprofile_10
Binding times   : 0
-----
Port-type      Port-number
-----
ETH            4
POTS           0
-----
MAC learning switch : Enable
MAC aging time(s)   : 300
-----
Port  Port Service-type Index Native S-VLAN S-PRI C-VLAN C-PRI ENCAP S-PRI
type  ID
-----
POLICY
-----
ETH  1  Translation  1    1    100  -    200  -    -    -
ETH  2  Transparent  -    -    -    -    -    -    -    -
ETH  3  Transparent  -    -    -    -    -    -    -    -
ETH  4  Transparent  -    -    -    -    -    -    -    -
-----

```

13.5 show ont-srvprofile current

【Command】	show ont-srvprofile current
【View Mode】	Srvprofile Mode
【Parameter】	
【Description】	To check the ont srv-profile that not applied
【Example】	
<pre> OLT(ont-srvprofile-10)# show ont-srvprofile current ----- Profile-ID : 10 Profile-name : srvprofile_10 Binding times : 0 ----- Port-type Port-number ----- </pre>	

```

-----
ETH          4
POTS         0
-----

MAC learning switch : Enable
MAC aging time(s)   : 300
-----

Port  Port Service-type Index Native S-VLAN S-PRI C-VLAN C-PRI ENCAP S-PRI
type  ID
POLICY
-----
ETH  1  Translation  1    1    100  -    200  -    -    -
ETH  2  Transparent -    -    -    -    -    -    -    -
ETH  3  Transparent -    -    -    -    -    -    -    -
ETH  4  Transparent -    -    -    -    -    -    -    -
-----

```

13.6 mac-learning

【Command】	mac-learning switch
【View Mode】	Srvprofile Mode
【Parameter】	
【Description】	<p>mac-learning switch</p> <p>MAC Address learning active or deactive.</p> <p>MAC addresses learning let the ONT automatically add the MAC of client device to the MAC table and dropped from it when they are not in use. If address was not accessed during a specified interval called “MAC aging-time”, its registered MAC address will be deleted from the table.</p> <p>If you deactive MAC address learning, the ONT will not learning the MAC address dynamic.</p>
【Example】	Uses the command to active or deactive the MAC address learning.
<p>To active the MAC address learning in srvprofile 10.</p> <p>OLT(ont-srvprofile-10)# mac-learning enable</p>	

13.7 mac-aging

【Command】	mac-aging (aging-time no-aging)
【View Mode】	Srvprofile Mode

【Parameter】	mac-aging aging-time : aging time in seconds (default value is 300 s), range is from 10 to 1000000s mac-aging no-aging : No limit of aging time
【Description】	Sets the maximum amount of time a dynamically "learned" MAC address remains in the MAC table.
【Example】	Sets the maximum amount of time to 200 second OLT(ont-srvprofile-10)# mac-aging 200

13.8 commit

【Command】	commit
【View Mode】	Srvprofile Mode
【Parameter】	
【Description】	Uses the command to submit the configuration of the srvprofile. The configuration will come into operation after this command.
【Example】	OLT(ont-srvprofile-10)# commit

14.ONT Management

14.1 ont add

【Command】	ont add port-id ont-id sn-auth sn-value ont-lineprofile-id ont-lineprofile-id ont-srvprofile-id ont-srvprofile-id
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : To add the ONT on the specified GPON Port. <i>ont-id</i> : To specified an identify number to ONT sn-auth sn-value : To assign SN as an authentication security method of ONT ont-lineprofile-id ont-lineprofile-id : To assign the ONT line profile ont-srvprofile-id ont-srvprofile-id : To assign the ONT srv profil

【Description】	Uses the command to add ONT and configure it. It mainly used for offline ONT, the configuration is saved in the srv-profiel, when the ONT online, the configuration will assign to the ONT.
【Example】	
<p>To add an ONT under GPON OLT PON port 1, ONT ID is 2, use SN for authorization, SN is DB25B34BB8D5, binding with line profile 10 and srv-profile 10</p> <pre>OLT(interface-gpon)# ont add 1 2 sn-auth DB25B34BB8D5 ont-lineprofile-id 10 ont-srvprofile-id 10</pre>	

14.2 ont confirm

【Commond】	<p>ont confirm <i>port-id</i> sn-auth <i>sn-value</i> ont-lineprofile-id <i>ont-lineprofile-id</i> ont-srvprofile-id <i>ont-srvprofile-id</i></p> <p>ont confirm <i>port-id</i> all sn-auth ont-lineprofile-id <i>ont-lineprofile-id</i> ont-srvprofile-id <i>ont-srvprofile-id</i></p>
【View Mode】	Gpon Mode
【Parameter】	<p><i>port-id</i>: The PON port number of the ONT that you want to confirm</p> <p>all: To confirm the all ONT that be found automtically under specified PON port in batch</p> <p>sn-auth <i>sn-value</i>: To use SN as authorization key</p> <p>ont-lineprofile-id <i>ont-lineprofile-id</i>: To assign the ONT line profile ID</p> <p>ont-srvprofile-id <i>ont-srvprofile-id</i>: To assign the ONT srvprofile ID</p>
【Description】	Whe the OLT enable the auto discovery function of the ONT, the OLT can get the information of the ONT. Use the ont confirm command to confirm the auto-discovered ONT.
【Example】	
<p>To confirm all the auto discovered ONT of OLT PON 1, and bind the line profile 10 and srvprofile 10</p> <pre>OLT(interface-gpon)# ont confirm 1 all sn-auth ont-lineprofile-id 10 ont-srvprofile-id 10</pre> <p>Number of ONTs that can be added: 2, success: 2</p>	

14.3 ont cancel

【Commond】	ont cancel <i>port-id</i> (all sn <i>sn-value</i>)
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number of the ONT that you want to cancel

	<p>all: To cancel all ONT that be found automtically under specified PON port in batch</p> <p>sn sn-value: The SN of the ONT that you want to cancel</p>
【Description】	Use the ont confirm command to cancel the auto-discovered ONT.
【Example】	
<p>To cancel the auto-discover ONT of PON port 1</p> <pre>OLT(interface-gpon)# ont cancel 1 all</pre>	

14.4 ont delete

【Commond】	ont delete <i>port-id</i> (all <i>ont-id</i>)
【View Mode】	Gpon Mode
【Parameter】	<p><i>port-id:</i> The PON port number of the ONT that you want to delete</p> <p>all: To deletel all ONT that be found automtically under specified PON port in batch</p> <p>sn sn-value: The SN of the ONT that you want to delete</p>
【Description】	Use the ont confirm command to delete the auto-discovered ONT.
【Example】	
<p>To delete the ONT with ID 2 of PON port 1</p> <pre>OLT(interface-gpon)# ont delete 1 2</pre> <p>To delete all ONT under PON port 1</p> <pre>OLT(interface-gpon)# ont delete 1 all</pre> <p>This command will delete all the ONTs in port. Are you sure to execute this command? (y/n)[n]:y</p> <p>Number of ONTs that can be delete: 1, success: 1</p>	

14.5 ont description

【Commond】	ont description <i>port-id ont-id describe-value</i>
【View Mode】	Gpon Mode
【Parameter】	<p><i>port-id:</i> The PON port number of the ONT that you want to add description.</p> <p><i>ont-id:</i> The identify number of the ONT you want to add description.</p> <p><i>describe-value:</i> ONT describe information</p>
【Description】	Use the command to add description of ONT, it is useful for ONT management.

【Example】	
To add description “C-DATA” to the ONT ID 1 under PON Port 1 OLT(interface-gpon)# ont description 1 1 C-DATA	

14.6 ont autofind

【Command】	ont autofind port-id switch
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number of the ONT that you want to active auto discover ONT function. <i>switch</i> : ONT auto-discover enable or disable
【Description】	Use the command to enable/disable the auto-discover ONT function.
【Example】	
To enable auto-discover ONT function on PON port 1 OLT(interface-gpon)# ont autofind 1 enable	

14.7 ont active

【Command】	ont active port-id (all ont-id)
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number of the ONT that you want to active. all : To active all the ONT of specified PON port <i>ont-id</i> : To active the specified ONT
【Description】	Use the command to active the ONT.
【Example】	
To active ONT 1 under PON port 1 OLT(interface-gpon)# ont activate 1 1	
To active all ONT of PON port 1. OLT(interface-gpon)# ont activate 1 all Number of ONTs that can be activated: 1, success: 1	

14.8 ont deactivate

【Command】	ont deactivate port-id (all ont-id)
------------------	--

【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number of the ONT that you want to deactivate. all : To deactivate all the ONT of specified PON port <i>ont-id</i> : To deactivate the specified ONT
【Description】	Use the command to deactivate the ONT.
【Example】	
<p>To deactivate ONT 1 under PON port 1</p> <pre>OLT(interface-gpon)# ont deactivate 1 1</pre> <p>To deactivate all ONT of PON port 1.</p> <pre>OLT(interface-gpon)# ont deactivate 1 all</pre> <p>Number of ONTs that can be deactivated: 1, success: 1</p>	

14.9 ont modify

【Command】	ont modify <i>port-id ont-id ont-lineprofile-id ont-lineprofile-id ont-srvprofile-id ont-srvprofile-id</i>
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number of the ONT that you want to modify. <i>ont-id</i> : To modify the specified ONT <i>ont-lineprofile-id</i> : The line profile you want to used on this ONT <i>ont-srvprofile-id</i> : The srv profile you want to used on this ONT
【Description】	Use the command to bind with new line profile and srv profile on ONT.
【Example】	
<p>To change the ONT 1 under PON port 2 srv-profile to srv profile 200</p> <pre>OLT(interface-gpon)# ont modify 2 1 ont-srvprofile-id 200</pre>	

14.10 ont reboot

【Command】	ont reboot <i>port-id (all ont-id)</i>
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number of the ONT that you want to reboot. all : to reboot all the ont of specified PON port <i>ont-id</i> : To reboot the specified ONT
【Description】	Use the command to reboot ONT.
【Example】	

To reboot the ONT 1 under PON port 2.

```
OLT(interface-gpon)# ont reboot 2 1
```

14.11 show ont info

【Command】	show ont info <i>port-id (ont-id all)</i>																		
【View Mode】	Gpon Mode																		
【Parameter】	<p><i>port-id</i>: The PON port number of the ONT that you want to display.</p> <p>all: to display all the ont of specified PON port</p> <p><i>ont-id</i>: To display the specified ONT</p>																		
【Description】	<p>Use the command to display the ONT information below:</p> <p>Port: The PON port that the ONT connected</p> <p>ONT ID: The unique ID of the ONT</p> <p>SN: SN of the ONT</p> <p>Control flag: (active or deactive)</p> <p> active: ONT is in active status, the ONT can permit online or offline after active.</p> <p> deactive: ONT is in deactive status, use active command to activate the ONT.</p> <p>Run state: ONT operation status, "online" or "offline" status.</p> <p>Config state: Configuration status, it shows if the configuration download to ONT success, "initial"、"failed"、"Success".</p> <p> initial: The configuration in download processing</p> <p> failed: Failed of download configuration</p> <p> Success: Succeeded getting configuration.</p>																		
【Example】	<p>To display all ont information of PON port 1</p> <pre>OLT(interface-gpon)# show ont info 2 all</pre> <pre>-----</pre> <table border="1"> <thead> <tr> <th>Port</th> <th>ONT ID</th> <th>SN</th> <th>Control flag</th> <th>Run state</th> <th>Config state</th> <th>Match state</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>1</td> <td>HWTC568DA228</td> <td>Active</td> <td>Online</td> <td>Success</td> <td>Match</td> </tr> </tbody> </table> <pre>-----</pre> <p>Total: 1, online 1</p> <p>To display information of ONT 1 under PON port 1</p> <pre>OLT(interface-gpon)# show ont info 1 1</pre> <pre>-----</pre> <table border="1"> <tbody> <tr> <td>PORT-ID</td> <td>: 1</td> </tr> <tr> <td>ONT-ID</td> <td>: 1</td> </tr> </tbody> </table>	Port	ONT ID	SN	Control flag	Run state	Config state	Match state	2	1	HWTC568DA228	Active	Online	Success	Match	PORT-ID	: 1	ONT-ID	: 1
Port	ONT ID	SN	Control flag	Run state	Config state	Match state													
2	1	HWTC568DA228	Active	Online	Success	Match													
PORT-ID	: 1																		
ONT-ID	: 1																		

```
Control flag      : Active
Run state        : Online
Config state     : Success
Match state      : Mismatch
ONT distance(m)  : 271331472
SN               : HWTC56A96228 (4857544356A96228)
Description      :
-----
Line profile ID : 20
-----
Profile-ID      : 20
Profile-name    : dba-profile_20
Binding times   : 1
-----
Mapping mode    : VLAN
-----
Service profile ID : 10
-----
Profile-ID      : 10
Profile-name    : srvprofile_10
Binding times   : 1
Press any key to continue (Q to quit)
-----
[01/01/00 01:01:01]: Pon 1 onu C000 is not regist.
-----
Port-type      Port-number
-----
ETH            0
POTS           0
-----
MAC learning switch : Enable
MAC aging time(s)  : 300
-----
```

14.12 show ont autofind

【Command】	show ont autofind <i>port-id</i> (all sn sn-value)																
【View Mode】	Gpon Mode																
【Parameter】	<i>port-id</i> : The PON port number you want to check ONT <i>sn sn-value</i> : To check ONT by specified SN all : To check all auto-discover ONT at specified PON port																
【Description】	To check information of auto-discover ONT. You can use the command to check the ONT SN, password when you add ONT on OLT.																
【Example】	<p>To display all information of auto-discover ONT on PON1 port</p> <pre>OLT(interface-gpon)# show ont autofind 1 all</pre> <pre>-----</pre> <table border="1"> <thead> <tr> <th>Index</th> <th>SN</th> <th>Password</th> <th>Autofind-Time</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>HWTC17D81536</td> <td>-</td> <td>2000-01-01 02:44:58</td> </tr> <tr> <td>3</td> <td>DB25B34BB8D5</td> <td>1234567890</td> <td>2000-01-01 02:44:58</td> </tr> <tr> <td>4</td> <td>HWTC56A8E428</td> <td>-</td> <td>2000-01-01 02:43:28</td> </tr> </tbody> </table> <pre>-----</pre> <p>Total: 3</p>	Index	SN	Password	Autofind-Time	2	HWTC17D81536	-	2000-01-01 02:44:58	3	DB25B34BB8D5	1234567890	2000-01-01 02:44:58	4	HWTC56A8E428	-	2000-01-01 02:43:28
Index	SN	Password	Autofind-Time														
2	HWTC17D81536	-	2000-01-01 02:44:58														
3	DB25B34BB8D5	1234567890	2000-01-01 02:44:58														
4	HWTC56A8E428	-	2000-01-01 02:43:28														

14.13 show ont capability

【Command】	show ont capability <i>port-id ont-id</i>												
【View Mode】	Gpon Mode												
【Parameter】	<i>port-id</i> : The PON port number you want to check ONT capacity <i>ont-id</i> : The ID of ONT you want to check capacity												
【Description】	To check capacity information of ONT, such as UNI port type and quantity.												
【Example】	<p>To check capacity of ONT 1 on PON port 1</p> <pre>OLT(interface-gpon)# show ont capability 1 1</pre> <pre>-----</pre> <table border="1"> <tbody> <tr> <td>ONT-ID</td> <td>: 1</td> </tr> <tr> <td>Equipment ID</td> <td>: MA5671</td> </tr> <tr> <td>Number of uplink PON ports</td> <td>: 1</td> </tr> <tr> <td>Number of POTS ports</td> <td>: 0</td> </tr> <tr> <td>Number of ETH ports</td> <td>: 4 (GE:4, FE:0)</td> </tr> <tr> <td>Number of GEM ports</td> <td>: 32</td> </tr> </tbody> </table>	ONT-ID	: 1	Equipment ID	: MA5671	Number of uplink PON ports	: 1	Number of POTS ports	: 0	Number of ETH ports	: 4 (GE:4, FE:0)	Number of GEM ports	: 32
ONT-ID	: 1												
Equipment ID	: MA5671												
Number of uplink PON ports	: 1												
Number of POTS ports	: 0												
Number of ETH ports	: 4 (GE:4, FE:0)												
Number of GEM ports	: 32												

Number of Traffic Schedulers	: 32
Number of T-CONTs	: 8

14.14 show ont config-capability

【Command】	show ont config-capability port-id ont-id
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number you want to check ONT capacity <i>ont-id</i> : The ID of ONT you want to check capacity
【Description】	To check user configure capacity information of ONT, such as UNI port type and quantity.
【Example】	
To check user configure capacity of ONT 1 on PON port 1	
OLT(interface-gpon)# show ont config-capability 1 1	

ONT-ID	: 1
Equipment ID	: MA5671
Number of uplink PON ports	: 1
Number of POTS ports	: 0
Number of ETH ports	: 4
Number of GEM ports	: 1
Number of Traffic Schedulers	: 1
Number of T-CONTs	: 1

14.15 show ont optical-info

【Command】	show ont optical-info port-id ont-id
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number you want to check ONT optical information <i>ont-id</i> : The ID of ONT you want to check optical information
【Description】	To check optical information of ONT
【Example】	

To check optical informaion of ONT 1 on PON port 1

OLT(interface-gpon)# show ont optical-info 1 1

```

-----
Voltage(V)                : 3.26
Tx optical power(dBm)     : 2.1400
Rx optical power(dBm)     : -9.7280
Laser bias current(uA)    : 25000.00
Temperature(C)            : 39.00
-----

```

14.16 show ont version

【Command】	show ont version <i>port-id ont-id</i>
【View Mode】	Gpon Mode
【Parameter】	<i>port-id</i> : The PON port number you want to check ONT version <i>ont-id</i> : The ID of ONT you want to check version
【Description】	To check version of ONT
【Example】	
<p>To check version of ONT 1 on PON port 1</p> <p>OLT(interface-gpon)# show ont version 1 1</p> <pre> ----- Port : 1 ONT-ID : 1 Vendor-ID : HWTC ONT Version : CE4.A Product-ID : 206 Equipment-ID : MA5671 Main Software Version : V8R313C00S102 Standby Software Version : V8R313C00S102 ----- </pre>	

15. log management

15.1 loghost add

【Command】	loghost add <i>ip-addr host-name</i>
【View Mode】	Configuration mode
【Parameter】	<i>ip-addr</i> : IP address of syslog server <i>host-name</i> : Hostname of syslog server
【Description】	Syslog is a logging feature that gives administrators a way to centrally log and analyze configuration events and system error messages. Uses the command to add a syslog server to save a wealth of log information.
【Example】	Add syslog server, IP address is 192.168.1.223, named log. OLT(config)# loghost add 192.168.1.223 log Successfully add syslog host!

15.2 loghost delete

【Command】	loghost delete (<i>ip-addr ip-addr host-name host-name</i>)
【View Mode】	Configuration mode
【Parameter】	<i>ip-addr</i> : IP address of syslog server <i>host-name</i> : Hostname of syslog server
【Description】	To delete a syslog server
【Example】	To delete a syslog server OLT(config)# loghost delete ip-addr 192.168.1.223 Successfully delete syslog host!

15.3 loghost activate

【Command】	loghost activate (<i>ip-addr ip-addr host-name host-name</i>)
【View Mode】	Configuration mode
【Parameter】	<i>ip-addr</i> : IP address of syslog server <i>host-name</i> : Hostname of syslog server
【Description】	To activate a syslog server
【Example】	To activate syslog server 192.168.1.223 OLT(config)# loghost activate ip-addr 192.168.1.223 Successfully activate syslog host!

15.4 loghost deactivate

【Command】	loghost activate (<i>ip-addr ip-addr host-name host-name</i>)
【View Mode】	Configuration mode
【Parameter】	<i>ip-addr</i> : IP address of syslog server <i>host-name</i> : Hostname of syslog server
【Description】	To deactivate a syslog server
【Example】	
<p>To deactivate syslog server 192.168.1.223</p> <pre>OLT(config)# loghost activate ip-addr 192.168.1.223 Successfully deactivate syslog host!</pre>	

15.5 show loghost list

【Command】	show loghost list						
【View Mode】	Configuration mode						
【Parameter】	No						
【Description】	To check syslog server configuration information						
【Example】							
<p>To check all syslog server information</p> <pre>OLT(config)# show loghost list</pre> <pre>-----</pre> <table border="1"> <thead> <tr> <th>IP address</th> <th>Host name</th> <th>Terminal state</th> </tr> </thead> <tbody> <tr> <td>192.168.1.223</td> <td>log</td> <td>inactive</td> </tr> </tbody> </table> <pre>-----</pre>		IP address	Host name	Terminal state	192.168.1.223	log	inactive
IP address	Host name	Terminal state					
192.168.1.223	log	inactive					

15.6 syslog priority

【Command】	syslog priority <i>severity</i>
【View Mode】	Configuration mode
【Parameter】	<i>severity</i> : Level of syslog output

	Level 5: critical informaion Level 4: error information or more serious Level 3: arning information or more serious Level 2: notice information or more serious Level 1: debug information or more serious
【Description】	To configure syslog messages depending on severity level. The output takes place regardless of a priority which part of system has generated the message
【Example】	
To configure the syslog priority serverity to notice. OLT(config)# syslog priority notice	

15.7 show syslog priority severity

【Command】	show syslog priority severity
【View Mode】	Configuration mode
【Parameter】	
【Description】	To check the syslog output level
【Example】	
To check the syslog level OLT(config)# show syslog priority severity Syslog priority severity: notice	

15.8 backup log

【Command】	backup log ftp server-ip-address user-name user-password filename
【View Mode】	Configuration mode
【Parameter】	<i>server-ip-address</i> : IP address of ftp server <i>user-name</i> : ftp user name <i>user-password</i> : ftp password <i>filename</i> : File to save the log
【Description】	Uses the command to save the log in the ftp server
【Example】	
To save log in ftp server, ftp server ip is 192.168.1.223, user name: admin, password: admin, the name of file is log	

```
OLT(config)# backup log ftp 192.168.1.223 admin admin logback
Start backup log files
The backup is successful
```

15.9 terminal alarm-event severity

【Command】	terminal alarm-event severity <i>severity</i>
【View Mode】	Configuration mode
【Parameter】	<i>severity</i> : Level of syslog output Level 5: critical information Level 4: error information or more serious Level 3: warning information or more serious Level 2: notice information or more serious Level 1: debug information or more serious
【Description】	Uses the command to set the display level of syslog, only the specified level or more serious level will display on terminal.
【Example】	To set syslog terminal display level to notice <pre>OLT(config)# terminal alarm-event severity notice</pre>

15.10 show terminal alarm-event severity

【Command】	show terminal alarm-event severity
【View Mode】	Configuration mode
【Parameter】	
【Description】	Uses the command to check the terminal display level of syslog
【Example】	To check the terminal display level of syslog <pre>OLT(config)# show terminal alarm-event severity</pre> Terminal alarm-event priority severity: notice

15.11 terminal debugging

【Command】	terminal debugging no terminal debugging
------------------	---

【View Mode】	Configuration mode
【Parameter】	
【Description】	Uses the command to output the debugging information on terminal. It is useful for troubleshooting.
【Example】	
To enable displaying the debug message on terminal. OLT(config)# terminal debugging Current terminal debugging is on	

15.12 show terminal debugging

【Command】	show terminal debugging
【View Mode】	Configuration mode
【Parameter】	
【Description】	Uses the command to check the terminal debugging status on or off.
【Example】	
To check the terminal debugging status OLT(config)# show terminal debugging Current terminal debugging is ON.	

Including Remarks

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