QTECH
МИР ДОСТУПНЕЕ

USER MANUAL

Руководство по конфигурированию

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Оглавление

1. CONFIGURATION PREPARATION

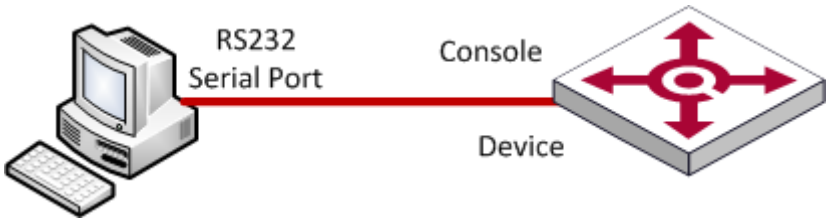
1.1. CONSOLE Port Connection

Login via the console port is the most basic way to login to the device.

By default, the user can login to the device directly via the serial port. The baud rate of the OLT is 9600 bit/s.

Refer to the following for specific:

(1) As shown below, use a dedicated serial cable (usually the product comes with a serial cable), insert the DB-9 connector of the serial cable into the 9-pin serial port of the PC, and then insert the RJ-45 connector into the console port of the device.



Connect the PC with the DUT via the serial cable

(2) Run the terminal software which supports serial transmission, such as HyperTerminal.

Parameter requirements: baud rate is "9600", the data bit is "**8**", parity is "**no**", stop bit is "**1**", the data flow control is "**no**", terminal emulation is "**automatic detection**".

(3) Follow the prompts to key in the user name and password and then enter the OLT. The default user name is **admin**, and the default password is **admin**. It is recommended that you modify the initial password after you login to the device and remember the modified password (refer to User Management for how to modify the password).

1.2. Network Connecting of Remote Manipulation

OLT support the management of in-band (by connecting port ge1~ge8) and out-of-band (by connecting port Management), OLT devices are managed at the CLI configuration interface connected by port telnet.

It’s necessary to pay attention to that the new version and the previous version of OLT V2.3.X are different:

New version: There are two IP addresses of management that respectively are in-band and out-of-band IP address of management.

Previous version: There is only one IP address of management.

Therefore there are some adjustments for the IP of in-band and out-of-band management such as:

1. The versions before V2.3.X (like V2.2.X) use the default management IP of 192.168.1.100 if there is no changes in management IP.

After updating to the version of V2.3.1. In-band management IP is: 192.168.8.100

Out-of-band management IP is: 192.168.1.100

2. The versions before V2.3.X (like V2.2.X) use the management IP in the network segment of 192.168.1.X if the management IP is changed.

After updating to the version of V2.3.1. In-band management IP is: 192.168.1.X

Out-of-band management IP is: 192.168.1.100

3. The versions before V2.3.X (like V2.2.X) don’t use the management IP in the network segment of 192.168.1.X if the management IP is changed.

After updating to the version of V2.3.1.

In-band management IP is: The previous IP not in the network segment of 192.168.1.X.

Out-of-band management IP is: 192.168.1.100

1.3. User Login

After connecting GEPON devices by serial port or telnet port, users firstly need to log in. The system provides two default login accounts:

User name	code
admin	admin
guest	null

Here is the login interface after connected successfully.

```
Log in as admin
Username:admin
Password:*****


Entry level 2(manager) successfully!

epon#


Log in as guest
Username:guest


Entry level 1(visitor)
```

It will show the following prompt after inputting the user name and code. epon> or epon#

Then the configuration information of devices can be checked or set up by inputting the configuration commands.

2. SPECIFICATION OF COMMAND FORMAT

2.1. Command Format

The command line commands of GEPON CLI consist of “command name” and “command parameter, command name must be unique, the number of command parameter could be zero to many depending on specific commands with no limit but the redundant parameters would be invalid. Command name and command parameter, or several command parameters can be separated by one or multiple spaces.

Command name can be the combinations of several words. All of commands showed by inputting command “?” is command name.

The commands are case-sensitive, all the command names must be lower-case, the command parameters can be uppercase letters, lowercase letters or the compound of uppercase letters and lowercase letters, but the parameters with the same letters but in different case are regarded as different parameters. For example: “hello” and “Hello” are different parameters.

Command line supports online editing, which can move the cursor position by “to the left” button and “to the right” button, and change into insert mode or overwrite mode by “insert”

button. In insert mode, the newly input character will be added the position pointed by cursor. In overwrite mode, the newly input character will replace the character pointed by cursor. “Delete” button can delete the character pointed by cursor, “backspace” button can delete the character before the character pointed by cursor.

Command line supports automatic command completion. When inputting part of the command name, press “tab” button to match and complete the command. If there is only one command that matches the partly inputted character, then the inputted character will be completed into command line based on the matched command automatically. If there are several commands that match the partly inputted character, then all the matched commands will be displayed on the screen and a new command line with the inputted command character will be suggested.

Input “exit” command to exit the current mode in any mode.

2.2. Command Specification Format

The following will introduce all commands supported by GEPON CLI in fixed format one by one. Command specification includes the complete syntax of the command, function description of the command and specification of each parameter (including type, meaning and range of parameter). Some commands will be demonstrated in allocation cases depending on its complexity. Some special circumstances will be labeled as points for attention. The specification format of command unifiedly adopting the prescribed format in the following form.

Command Syntax	**vlan *<vlanid>* member add *<portlist>* taged**
Function Description	Adding member ports in tag mode for appointed VLAN, if VLAN doesn’t exist, then create VLAN. When messages in the VLAN are transmitting out through these member ports, the head of the message should have the tag mark of VLAN.
<vlanid>	Specify the VLAN ID needs to be edited or created as integer value in the valid scope of 1~4094.
<portlist>	Specify port list, which can be arbitrary combination between ge1~ge16, the representation method please refer to the introduction of 2.3 Typical Parameter Types.

[Configuration cases]

Case 1: The following configuration command deploys the ports of ge1, ge2, ge3 and ge4 as tag members of VLAN 10, and will also create VLAN 10 if it is the first time to set up VLAN 10.

vlan 10 member add ge1-ge4 tag

[Points for attention]

ge9~ge16 are invisible ports, which connect eight PON ports in order. It can be considered that the configuration is valid for the ports of PON1~PON8.

In the above form, the complete syntax of commands is put in the column of “command syntax” in the font of 5 size and Times New Roman type, (commands are all in English) in part of the parameters, different parameters will be enclosed in angle brackets with italic format to differ from others. The function explanation is put in the column of “Function Specification”, which describes the functions of commands in simple and clear statement. “Command Syntax” and “Function Specification” is part of the specification of every command. In the next, every parameter will be illustrated in one column according to the number of parameters of the specific command, the left cell indicates the corresponding parameters, the right cell illustrates the meaning, data type and legal value range of the parameter.

For the commands with many parameters or flexible configuration mode some others that is not easily understandable, there will be “Configuration cases” in the next of the command specification form to explain in real cases, there can be several cases that will be named like “case1”, “case2” and so on. “Configuration cases” takes [Configuration Case] as well-marked prompt.

There is column of “points for attention” to explain the commands with points for attention about where requires attentions in simple and natural statement. “Points for attention” takes [Points for Attention] as well-marked prompt.

For functional theories, application background and so on that is necessary to be explained can be mainly introduced in a separate section before the command specification of the module, or make an extensive explanation for the effects caused by the command after the specification of the command.

2.3. Typical Parameter Type

When setting up the system by CLI commands, some frequently used data type in fixed format will be seen, which define the meaning, representing method and value range of parameters. In order to avoid the repetitive specification of data type on each command specification, now here makes an unified statement, other types not included here will be illustrated in specific commands.

vlanid	Indicate the index, integer type and legal value of 1~4094 of VLAN
port	Indicate single port number and string type, there are two kinds of name for it includes full name and abbreviation, the full name is the combination of “gigabitethernet” and the number of 1~16, like “gigabitethernet1” indicates the first gigabit ethernet port. The abbreviation kind replace gigabitethernet with “ge”, then still combines the number of 1~16 for ports. Like “ge3” indicates the third gigabit port. It is noteworthy that gigabit port number 9~16 are invisible,

	which connect eight PON ports one to one inside the device, so it can be considered that the configuration for ge9~ge16 is the configuration for PON1~PON8.
portlist	Indicate port list, which can be one port or combination of several ports. By use of comma symbol “,” and hyphen “-” to combine single ports without any space, in which the comma symbol is used to combine two single ports, the number for the ports can be continuous or discontinuous, hyphen is used to combine a group of ports with continuous numbers. For instance, “ge1,ge5” means two ports, “ge1-ge5” means five ports from ge1 to ge5 continuously.
ip-addr	Indicate IP address presented in the standard string type consist of 4 decimal numbers. Like 192.168.1.1 and so on.
ip-mask	Indicate netmask of IP address presented in the standard string type consist of 4 decimal numbers. Like 255.255.255.0 and so on.
mac	Indicate MAC address that is separated by colons. Like 00:01:02:02:04:05

3. COMMAND OPERATION SPECIFICATION

3.1. Global Command

Global Command can be used in any configuration mode.

3.1.1. "exit" Exit Current Configuration mode

Command Syntax	**exit**
Function Description	Exit current configuration mode, back to the previous level of configuration mode.

[Configuration Case]

Case1: Exit ONU configuration mode back to PON configuration, then back to global configuration mode from PON configuration mode.

```
epon(olt-1/onu-5)# exit
epon(olt-1)# exit
epon#
```

3.1.2. "?" Help

Command Syntax	epon#**?**
Function Description	Show all helping command lines in current configuration mode, or show helping command parameters that match incomplete commands.

[Configuration Case]

Case1: Show all helping command lines in global configuration mode:

```
epon#
--------------------------------------------------
 Local Configuration Command
--------------------------------------------------
 acl    - Create ACL(s)
 acl-del    - Delete ACL(s)
 auth    - configure authentication mode for Olt
 btv    - btv
```

```
dhcp-snooping  - configure DHCP Snooping
exec-timeout   - set a timeout value
igmp     - configure IGMP Snooping
mac-address   - ctrl-card dynamic mac address table management
mirror    - configure switch mirror
multicast-vlan  - multicast-vlan <mvlan>
no     - no
olt     - configure OLT
reset    - reset the values
rmon     - configure RMON
rstp     - rapid spanning tree protocol configuration
swmode    - set basic switch mode
swport    - enter switch port config mode
system    - configure systerm
trunk    - enter trunk config mode
vlan     - enter vlan config mode


-------------------------------------------------
 Global Command
-------------------------------------------------
 broadcast   - Write message to all users logged in
 clear    - Clear the screen
 history    - Show command history
 logout    - Log off this system
 ping     - Ping a network hosts
 show     - show system configuration
 tracert    - trace the route to host
 tree     - Show command tree
 who     - Display users currently logged in
```

Case2: Show helping command parameters that match incomplete commands:

```
epon# show
-------------------------------------------------
 Local Configuration Command
-------------------------------------------------
 acl     - Show ACL(s)
```

```
auth    - show olt auth mode
dhcp-snooping  - show dhcp snooping configurations
exec-timeout   - show cli console timeout
igmp    - show igmp snooping configurations
mac-address   - mac-address
mac-address-table - show current port's mac address
mirror    - show switch mirror configurations
olt    - show olt's configuration
onu-position   - show the position of onu by mac
qinq    - show QinQ configuration
rmon    - show RMON
rstp    - Display RSTP information
running-config  - show current running-configuration
startup-config  - show current startup-configuration
swmode    - show swmode
swport    - display port attribute information
system    - show system configuration
trunk    - show trunk configuration
vlan    - show vlan configuration
epon# show
```

3.1.3. “broadcast” Information Interaction among Online Users

Command Syntax	epon#**broadcast <message>**
Function Description	Send messages to all online users, enable all online users can communicate with each other
<message>	Input message that will be send to all online users with the length of 1 - 245(it can be Chinese, English, punctuation mark and so on.

[Configuration Case]

Case1: Send the message of “hello” to all online users.

```
Admin account send the message of “hello” to all login users
**********************************************************************
 Command Line Interface for EPON System
   Hardware Ver: V1.0
```

```
    Software Ver: 2.3.01_000
    Created Time: Dec 5 2016 19:00:15
 Copyright (c) 2006-2015 All rights reserved.
************************************************************
Username:admin
Password:
epon# broadcast hello
Broadcast message from admin:
hello


guest account receive the epon# message of “hello” from admin account
************************************************************
******
  Command Line Interface for EPON System
    Hardware Ver: V1.0
    Software Ver: 2.3.01_000
    Created Time: Dec 5 2016 19:00:15
 Copyright (c) 2006-2015 All rights reserved.
************************************************************
******
Username:guest
Password:
epon#
Broadcast message from admin:
hello
```

3.1.4. “clear” Clear the Screen(CLS)

Command Syntax	epon#**clear**
Function Description	Clear the command line history inputted in command line window before

[Configuration Case]

Case1: Clear current screen:

```
epon# clear
```

3.1.5. “histohry” View Command Line History

Command Syntax	epon#**history**
Function Description	Show inputted command line history so far

[Configuration Case]

Case1: Show inputted command line history so far:

```
epon# history
 1 clear
 2 ]
 3 \
 4 olt 1
 5 exit
 6 history
 7 history 1
 8 history
epon#
```

3.1.6. “logout” Log Out

Command Syntax	epon#**logout**
Function Description	Disconnect devices

[Configuration Case]

Case1: Log out

```
epon# logout
epon#
```

```
**************************************************************
******
 Command Line Interface for EPON System
    Hardware Ver: V1.0
    Software Ver: 2.3.01_000
    Created Time: Dec 5 2016 19:00:15
 Copyright (c) 2006-2015 All rights reserved.
**************************************************************
******
Username:
Console exit, please retry to log on!
```

3.1.7. "ping" Check the Connectivity among Devices

Command Syntax	epon#**ping <ip>**
Function Description	ping commands send ICMP Echo message. If terminal receives an echo message of ICMP Echo, then it will send an ICMP Echo Reply to respond the origin of the echo message. Therefore, ping commands can be used to diagnose the connectivity of network
<ip>	This item gives IP address to the devices that want to communicate

[Configuration Case]

Case1: Check the connectivity of the device with IP address 192.168.5.52:

```
epon# ping
 <ip>    - Host's ip address
epon# ping 192.168.5.52
-------------------------------------------------
 Local Configuration Command
-------------------------------------------------
 <cr>    - Please press ENTER to execute command
epon# ping 192.168.5.52
PING 192.168.5.52 (192.168.5.52): 56 data bytes
```

```
64 bytes from 192.168.5.52: seq=0 ttl=64 time=6.775 ms
64 bytes from 192.168.5.52: seq=1 ttl=64 time=1.875 ms
64 bytes from 192.168.5.52: seq=2 ttl=64 time=1.688 ms
64 bytes from 192.168.5.52: seq=3 ttl=64 time=1.638 ms

--- 192.168.5.52 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 1.638/2.994/6.775 ms
epon#
```

3.1.8. "show" View Commands

Command Syntax	epon#**show**
Function Description	View related configuration in current system

[Configuration Case]

Case1: Open running-config file to display all current configuration:

```
epon# show running-config all

swport ge5
vlan add 99-100 tag
swport ge1
pvid 99
vlan add 99-100
swmode vlan enable
system ipconfig outband 192.168.5.54 255.255.255.0

olt 1
p2p enable


slot-1 olt-1 onu-5 configuration:
olt 1
onu 5
uni 1
```

```
ctc vlan-mode trunk 0x8100 0 1 vlan-list 99-100


epon#
```

3.1.9. “tracert” Trace Route

Command Syntax	epon#**tracert <host>**
Function Description	Tracert is an utility software of traceroute for confirming the route taken when the IP data package access the target. Tracert verifies the route from one mainframe to other mainframes of the network by using the fields of IP Time To Live(TTL) and ICMP error message.
<host>	This item is the IP address of target mainframe.

[Configuration Case]

Case1: Trace the route of mainframe 192.68.2.253:

```
epon# tracert 192.168.2.253
traceroute to 192.168.2.253 (192.168.2.253), 10 hops max, 38 byte packets
 1 192.168.8.100 (192.168.8.100) 3002.183 ms !H 3002.262 ms !H 3003.913 ms !
H
epon#
```

3.1.10. “tree” Viewing Command Tree

Command Syntax	epon# **tree <syntax>**
Function Description	All commands in OLT present in tree structure for the convenience for users to look over configuration commands
< syntax >	Corresponding command syntax is inputted in this item

[Configuration Case]

Case1: View the command tree of uplink port:

```
epon# tree swport ge1
swport <ge1 | ge2 | ge3 | ge4 | ge5 | ge6 | ge7 | ge8>
|-- admin <disable | enable>
```

```
|-- admit-frame <all | tagged | untagged>
|-- auto-nego
|-- def-pri <priority>
|-- exit
|-- flow-ctrl <disable | enable>
|-- learning <disable | enable>
|-- outer-tpid <tpid>
|-- packet-filter
| |-- install <start-id> [<end-id>]
| |-- uninstall <id>
|-- pvid <pvid>
|-- rate-ctrl
| |-- egress <rate>
| |-- ingress <rate>
|-- speed
| |-- duplex <half | full>
|-- statistics-clear
|-- storm-ctrl <broadcast | multicast | unknown-uc> [<enable | disable>] [<rate>
  ]
|-- vlan
 |-- add <vidlist>
 | |-- tag
 |-- del <vidlist>
epon#
```

3.1.11. “who” View Relevant Information of Current Login Users

Command Syntax	epon#**who**
Function Description	View the login method, user name, user’s IP and total login time of the login users in the device

[Configuration Case]

Case1: View relevant information of current login users:

```
epon# who
Access-Type User-Name   Ip-Address  Login-Time
--------------------------------------------------------------------------
```

```
Console  admin   --   00:24:07
Telnet  admin   192.168.5.122  00:00:26
epon#
```

4. SYSTEM MANAGING AND VIEWING

4.1. Adding and Deleting of System User names, Changing of User Rights and Codes

Change user rights

Command Syntax	epon#**system user *access <username> <access>***
Function Description	Change user rights
<username>	The user name of the users that need to modify rights
<access>	There are three kinds of rights corresponding to <0-2> such as 0-guest(common user access), 1-admin(administrator access), 2-super(super administrator access)

[Configuration Case]

Case1: Modify the right of guest user into super administrator access:

```
epon# show system user
User    Access
------------------------------------------------------------------------------
admin    2
guest    0
epon# system user access guest 2
epon# show system user
User    Access
------------------------------------------------------------------------------
admin    2
guest    2
epon#
```

Add users

Command Syntax	epon#**system user *add <username> <access>***
Function Description	Modify user rights

<username>	The user name of the new added user with the limit of 15 characters
<access>	Rights configuration including three kinds corresponding to <0-2> that respectively represents 0-guest(common user access), 1-admin(administrator access), 2-super(super administrator access)

[Configuration Case]

Case1: Add a user with the user name of admin2 and the access of super administrator:

```
epon# system user add admin2 2
Enter new password:
Confirm new password:
epon#logout


**************************************************************
******
 Command Line Interface for EPON System
   Hardware Ver: V1.0
   Software Ver: 2.3.01_000
   Created Time: Dec 5 2016 19:00:15
 Copyright (c) 2006-2015 All rights reserved.
**************************************************************
******
Username:admin2
Password:
epon# show system user
User    Access
------------------------------------------------------------------------
admin    1
guest    0
admin2    2
epon#
```

Delete users

Command Syntax	epon#**system user *delete <username>***
Function Description	Delete users
<username>	The user name of the deleted users with the limit of 15 characters

[Configuration Case]

Case1: Delete a user with the user name of admin2:

```
epon# show system user
User    Access
------------------------------------------------------------------------------
admin    1
guest    0
admin2    2
epon# system user delete admin2
epon# show system user
User    Access
------------------------------------------------------------------------------
admin    1
guest    0
epon#
```

Change user codes

Command Syntax	epon#**system user *passwd <username>***
Function Description	Change user codes
<username>	The user name of the user who wants to change user code with the limit of 15 characters

[Configuration Case]

Case1: Change the user code of guest user into 123:

```
epon# system user passwd guest
Enter new password:
Confirm new password:
epon#logout



**************************************************************
******
 Command Line Interface for EPON System
   Hardware Ver: V1.0
   Software Ver: 2.3.01_000
   Created Time: Dec 5 2016 19:00:15
Copyright (c) 2006-2015 All rights reserved.
**************************************************************
******
Username:guest
Password:
epon#
```

4.2. View All Users and User Rights

Command Syntax	epon# **show system user**
Function Description	View all users and user rights

[Configuration Case]

Case1: View all users and user rights:

```
epon# show system user
User    Access
------------------------------------------------------------------------
admin    1
guest    0
```

```
epon#
```

4.3. Set Up the Name of Mainframe

Command Syntax	epon# **system hostname <*hostname*>**
Function Description	Set up the name of mainframe
<hostname>	The name of mainframe with the limit of 31 characters

[Configuration Case]

Case1: Set up the name of the mainframe as QSW-9011:

```
epon# system hostname QSW-9011
QSW-9011#
```

4.4. Set Up the Status of Out-of-band Port (AUX/MGMT)

Command Syntax	epon# **system aux-port-admin <*admin*>**
Function Description	Set up the status of out-of-band port(AUX/MGMT): Enable/Disable The status of enable allows users to access OLT through AUX managing port The status of disable does not allow users to access OLT through AUX managing port
<admin>	There are two options such as enable and disable

[Configuration Case]

Case1: Set the status of AUX managing port as disable or enable:

```
epon# system aux-port-admin disable
 Configuration AUX port success.
epon# system aux-port-admin enable
 Configuration AUX port success.
epon#
```

4.5. View the Status of Out-of-band managing port (AUX/MGMT)

Command Syntax	epon# **show system aux-port-admin**
Function Description	View the Status of out-of-band managing port (AUX/MGMT)

[Configuration Case]

Case1: View the status of out-of-band managing port:

```
epon# show system aux-port-admin
 AUX port admin : enable
epon#
```

4.6. System Configuration File

4.6.1. Backup OLT and ONU configuration file

Command Syntax	epon# **system configurations backup all *<tftp-server>***
Function Description	Backup the configuration file of OLT and ONU into the PC with running tftp server
<tftp-server>	Set up the IP address of tftp server

[Configuration Case]

Case1: Backup the configuration file of OLT and ONU into PC :

```
epon# system configurations backup all 192.168.5.122
Backup olt configurations file to host 192.168.5.122.
Remote filename: olt_cfg_bak_epon_5.54_20000102.tar.gz.

Backup onu configurations file to host 192.168.5.122.
Remote filename: onu_cfg_bak_epon_5.54_20000102.tar.gz.

epon#
```

4.6.2. Backup OLT Configuration File

Command Syntax	epon# **system configurations backup olt *<tftp-server>***
Function Description	Backup the configuration file of OLT into the PC with running tftp server
<tftp-server>	Set up the IP address of tftp server

[Configuration Case]

Case1: Backup OLT configuration File into PC :

```
epon# system configurations backup olt 192.168.2.133
Backup olt configurations file to host 192.168.2.133.
Remote filename: olt_cfg_backup_20000101055726.tar.gz.

epon#
```

4.6.3. Download OLT Configuration File

Command Syntax	epon# **system configurations download olt *<tftp-server>* *<filename>***
Function Description	Download OLT configuration file form the PC with running tftp server that has set up the directory of configuration file
<tftp-server>	The IP address of tftp server
<filename>	The name of OLT configuration file. Like: olt_cfg_backup_20000101063321.tar.gz

[Configuration Case]

Case1: Download OLT configuration file from PC :

```
epon#system configurations download olt 192.168.2.130
olt_cfg_backup_20000101063321.tar.gz
Download olt configurations file from host 192.168.2.130.

epon#
```

4.6.4. Backup ONU Configuration File

Command Syntax	epon#**system configurations backup onu *<tftp-server>***
Function Description	Backup the configuration file of ONU into the PC with running tftp server
<tftp-server>	The IP address of tftp server

[Configuration Case]

Case1: Backup ONU configuration file into PC :

```
epon# system configurations backup onu 192.168.2.130
Backup onu configurations file to host 192.168.2.130.
Remote filename: onu_cfg_backup_20000101060207.tar.gz.

epon#
```

4.6.5. Download ONU Configuration File

Command Syntax	epon#**system configurations download onu *<tftp-server>* *<filename>***
Function Description	Download ONU configuration file form the PC with running tftp server that has set up the directory of configuration file
<tftp-server>	The IP address of tftp server
<filename>	The name of OLT configuration file. Like: onu_cfg_backup_20000101060207.tar.gz

[Configuration Case]

Case1: Download ONU configuration file:

```
epon# system configurations download onu 192.168.2.130
onu_cfg_backup_20000101060207.tar.gz
Download onu configurations file from host 192.168.2.130.

epon#
```

4.6.6. Automatic Backup of Configuration File

Command Syntax	epon# **system configurations auto-backup admin *<admin>*** epon# **system configurations auto-backup backup-type *<type>*** epon# **system configurations auto-backup interval *<interval>*** epon# **system configurations auto-backup server *<ip>***
Function Description	Automatically backup OLT, ONU and its configuration file into the PC with running tftp server
<admin>	Disable: Turn off the function of automatic backup for configuration file Enable: Turn on the function of automatic backup for configuration file
<type>	<olt | onu | all >Choose the objects for automatic backup of configuration file
<interval>	<1-365>Time interval of automatic backup for configuration file with the unit of “day”
<ip>	The IP address of tftp server

[Configuration Case]

Case1:

Turn on the function of automatic backup for configuration file

Set up the backup type as OLT and ONU

Set the time interval of automatic backup for configuration file as one day

Backup the configuration file into the tftp server with the IP address 192.168.5.122

```
epon# system configurations auto-backup admin enable
epon# system configurations auto-backup backup-type all
epon# system configurations auto-backup interval 1
epon# system configurations auto-backup server 192.168.5.122
```

4.7. Configuration Managing and Viewing

4.7.1. Reset to Factory Default Configuration

Command Syntax	epon# **system default *<all> ,<auth>, <olt>,<onu> or <swith>***
Function Description	Reset devices to factory default configuration Attention: Devices will restart after performing the operation
<all>	Reset the entire device to factory default configuration
<auth>	Reset certified configurations to factory default
<olt>	Reset OLT module to factory default configuration
<onu>	Reset ONU to factory default configuration
<swith>	Reset swith module to factory default configuration。

[Configuration Case]

Case1: Reset the entire device to factory default configuration:

```
epon# system default all

Reboot the system now<y/n>?y

01/02/00 06:35:39 System restart by user(admin)!
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
Restarting system.
system is going to reboot...
PIOK FF410040=87400000 FF410048=071040FC HELO DRAM COPY RELO ZBSS L12F MAIN

CFE-NTSW-5.1.2 for BCM953314R24GS (32bit,SP,BE,MIPS)
Build Date: Fri Nov 13 14:31:19 CST 2015 (root@ubuntu)
.....
```

4.7.2. Save Current Configuration

Command Syntax	epon# **system save *<all> or <olt>***
Function Description	Save current configuration of device
<all>	Save current configuration of all devices including OLT and ONU
<olt>	Save current configuration of OLT

[Configuration Case]

Case1: Save all current configuration

```
epon# system save all
Saving configurations, please wait..... Done
epon#
```

4.7.3. View Current Configuration

Command Syntax	epon#**show running-config *<all> ,<auth>, <olt>,<onu> or <swith>***
Function Description	View current configuration
<all>	View current configuration of all running devices including OLT and ONU
<auth>	View current configuration of certified configuration
<olt>	View current configuration of OLT
<onu>	View current configuration of ONU
<swith>	View current configuration of swith

[Configuration Case]

Case1: View all current configuration:

```
epon# show running-config all

igmp snooping admin enable
swport ge5
vlan add 100 tag
swport ge1
pvid 100
vlan add 100
system ipconfig outband 192.168.5.54 255.255.255.0



slot-1 olt-1 onu-5 configuration:
olt 1
onu 5
uni 1
ctc vlan-mode tag 0x8100 0 100

epon#
```

4.7.4. View Configuration File of Start-up File

Command Syntax	epon#**show startup-config *<all> ,<auth>, <olt>,<onu> or <swith>***
Function Description	View start-up configuration file of device
<all>	View all start-up configuration of device
<auth>	View start-up configuration of certified configuration
<olt>	View start-up configuration of OLT
<onu>	View start-up configuration of ONU
<swith>	View start-up configuration of swith

[Configuration Case]

Case1: View all configuration of start-up file:

```
epon# show startup-config all

igmp snooping admin enable
swport ge5
vlan add 100 tag
swport ge1
pvid 100
vlan add 100
system ipconfig outband 192.168.5.54 255.255.255.0



slot-1 olt-1 onu-5 configuration:
olt 1
onu 5
uni 1
ctc vlan-mode transparent

epon#
```

4.7.5. Restart

Command Syntax	epon# **system reboot**
Function Description	Restart OLT device

[Configuration Case]

Case1: Restart OLT:

```
epon# system reboot
System will be restarted.
Continue <y/n>?y

01/02/00 07:13:59 System restart by user(admin)!
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
```

```
Restarting system.
system is going to reboot...
PIOK FF410040=87400000 FF410048=071040FC HELO DRAM COPY RELO ZBSS L12F MAIN
……
```

4.8. Software updating

4.8.1. Update OLT Firmware

TFTPCommand Syntax	epon# **system update firmware *<firmware>* tftp-server *<ip>***
Function Description	Download and update OLT firmware via TFTP, deploy PC in TFTP server before updating such as directory of firmware
<firmware>	Firmware name of software Like:QENT-9-1G_V2.3.01_161205_X000.img
<ip>	IP address of TFTP server

[Configuration Case]

Case1: Deploy PC in TFTP server, download and upgrade OLT firmware via TFTP:

```
epon# system update firmware QENT-9-1G_V2.3.01_161205_X000.img tftp-server 192.168
.5.122
Transfering the Image file, please wait...
Earsing flash, please wait...
Upgrading image, please wait.....OK
!
……
Reboot the system now<y/n>?y

01/02/00 07:35:37 System restart by user(admin)!
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
Restarting system.
system is going to reboot...
```

```
PIOK FF410040=87400000 FF410048=071040FC HELO DRAM COPY RELO ZBSS L12F MAIN
……
```

4.8.2. Update ONU Firmware

Command Syntax	epon# **system update onu *<tftp-server> <file> <onu type>***
Function Description	Download ONU firmware and batch upgrade ONU via TFTP, deploy PC in TFTP server before updating such as directory of firmware
<tftp-server>	The format of IP address of TFTP server is: X.X.X.X
<file>	ONU firmware name that needs update
<onu type>	Device type, can be seen via commands of 7.1.1

[Configuration Case]

Case1: Batch update ONU software version:

```
epon# system update onu 192.168.101.11 “fw-name”ONU4FE1TVC

 upgrading onu(1-5-7)...100%.OK
 Please wait a minute to finish the work...
01/01/00 05:40:22 onu-1-5-7 (ctc-30) offline...

01/01/00 05:40:54 onu-1-5-7 (llid-0,mac- 08-c6-b3-26-a1-06,ctc-30)online...

All done.
epon#
```

4.9. Snmp Configuration Managing and Viewing

4.9.1. Configurate Snmp Community of Reading and Writing of OLT

Command Syntax	epon# **system snmp community read-only <*community*>** epon# **system snmp community read-write <*community*>**
Function Description	Configurate snmp community of reading and writing of OLT for the convenience of EMS network management system.
< community >	Mode of Community of reading and writing of string type with the length limit of 26 characters. Like: private/public

[Configuration Case]

Case1: Set reading community mode as public and set writing community mode as private:

```
epon# system snmp community read-only public
epon#
epon# system snmp community read-write private
epon#
```

4.9.2. Configurate Warning Receive Address

Command Syntax	epon#**system snmp trap-ip *<index>* *<ip-addr>***
Function Description	Set IP address for EPON warning receiving mainframe with number limit of 4, so that the warnings reported by OLT can be seen in the receive mainframe
<index>	Index of warning receiving address with the valid value range 1-4 of integer.
<ip-addr>	IP address of warning receiving mainframe. Like: 192.168.0.1

[Configuration Case]

Case1: Set the first trap IP as为192.168.5.122:

```
epon# system snmp trap-ip 1 192.168.5.122
epon#
```


4.9.3. View SNMP Information

Command Syntax	epon#**show system snmp**
Function Description	View the information of community of reading and writing and trap IP and so on

[Configuration Case]

Case1: View the information of SNMP community of reading and writing and trap IP:

```
epon# show system snmp
 Read-only community : public
 Read-write community : private
 Trap IP 1   : 192.168.5.122
 Trap IP 2   : 192.168.5.122
epon#
```

4.10. Log Managing and Viewing

4.10.1. Turn-on and Turn-off of Log Function

Command Syntax	epon# **system log admin *<module>* *<admin>***
Function Description	Enable / disable log function to / not to have OLT record user's operating process and appeared errors in OLT for administrator to figure out the problem
<module>	all : All relevant logs onu-on-off-line: Up-links and down-links records of ONU onu-dyinggasp-alarm : ONU exception warning onu-uni-loopback-alarm : ONU port loop warning
<admin>	Enable : Function enabled Disable : Function disabled

[Configuration Case]

Case1: Enable all log functions:

```
epon# system log admin all enable
 set module log admin succeed.
epon#
```

4.10.2. Backup Log

Command Syntax	epon# **system log backup** ***<server-ip>***
Function Description	Backup system logs into the PC with running TFTP server
<tftp-server>	IP address of TFTP server with the format of X.X.X.X

[Configuration Case]

Case1: Backup system logs into PC:

```
epon# system log backup 192.168.2.130
Backup local log file to host 192.168.2.130 successfully, remote filename: log_backup_20000101002224.txt!
```

4.10.3. View Log

4.10.3.1. View the Status of Current Log Function

Command Syntax	epon#**show system log admin**
Function Description	View the status of current log function

[Configuration Case]

Case1: View all current logs in system:

```
epon# show system log admin
 module    admin
 onu-on-off-line    enable
 onu-dyinggasp-alarm    enable
 onu-uni-loopback-alarm  enable
```

```
epon#
```

4.10.3.2. *View All Current Log Records*

Command Syntax	epon#**show system log all**
Function Description	View all current log records

[Configuration Case]

Case1: View all current log records in system:

```
epon# show system log all
epon# show system log all
01/01/00 00:00:24 (cdtDhcpTableDataRestore:1486) Can not open dhcp_snooping.db!
01/01/00 00:00:24 (cdtDhcpTableDataRestore:1486) Can not open dhcp_snooping.db!
01/01/00 00:00:27 Slot 1 olt 1~4 deregistered.
……
```

4.10.3.3. *View the Last 64 Lines of ALL Logs*

Command Syntax	epon#**show system log tail <line>**
Function Description	View the last 64 lines of all logs
<line>	The last <line> line(s) that is required to be viewed with the range of 1-64

[Configuration Case]

Case1: View the last 5 lines of all current logs:

```
epon# show system log tail 5
01/01/00 00:01:16 Slot 1 olt 1~4 registered.
01/01/00 00:01:27 onu-1-1-5 (llid-0,mac- 08-c6-b3-26-a1-0c,ctc-30)online...
01/01/00 00:01:35 onu-1-1-9 (llid-1,mac- 08-c6-b3-26-a1-0a,ctc-30)online...
01/01/00 01:05:29 onu-1-1-9 (ctc-30) offline...
```

```
01/01/00 01:05:35 onu-1-1-5 (ctc-30) offline...
epon#
```

4.10.3.4. *View Log According to Log Type*

Command Syntax	epon#**show system log type <type>**
Function Description	View Log According to Log Type
<type>	system : All system logs onu-on-off-line: Up-links and down-links records of ONU onu-dyinggasp-alarm : ONU exception warning onu-uni-loopback-alarm : ONU port loop warning

[Configuration Case]

Case1: View logs of ONU port loop warning:

```
epon# show system log type onu-uni-loopback-alarm
01/01/00 08:13:54 EVT_OAM_ALERT: onu-1-1-4 (uni-1) EthPortLoopback Alarm raised
01/01/00 08:15:38 EVT_OAM_ALERT: onu-1-1-4 (uni-1) EthPortLoopback Alarm raised
01/01/00 08:22:55 EVT_OAM_ALERT: onu-1-1-4 (uni-1) EthPortLoopback Alarm raised
01/01/00 08:29:53 EVT_OAM_ALERT: onu-1-1-4 (uni-1) EthPortLoopback Alarm raised
01/01/00 08:31:01 EVT_OAM_ALERT: onu-1-1-4 (uni-1) EthPortLoopback Alarm raised
epon#
```

4.10.4. **Clear Log**

Command Syntax	epon#**system log flush**
Function Description	Clear all logs

[Configuration Case]

Case1: Clear all current logs in system:

```
epon# system log flush
Flush log file successfully!
```

```
epon#
```

4.11. Network Parameter Configuring and Viewing

4.11.1. Configurate IP Gateway of Management Port

Command Syntax	epon#**system ipconfig gateway <*gateway*>**
Function Description	Set up IP gateway of in-band port and out-of-band port
< gateway >	Specify the configuring gateway IP address presented in the standard string type consist of 4 decimal numbers. Like: 192.168.1.254

[Configuration Case]

Case1: Set up IP gateway of in-band port and out-of-band port as 192.168.1.254:

```
epon# system ipconfig gateway 192.168.1.254
epon#
```

4.11.2. Configurate IP Address and Mask of In-Band Management Port

Command Syntax	epon#**system ipconfig inband <*ip*> <*netmask*>**
Function Description	Configurate IP address and mask of in-band management port (ge port of OLT) to easily access and manage OLT through uplink port.
< ip>	Specify the configuring IP address presented in the standard string type consist of 4 decimal numbers. Like: 192.168.1.100
<netmask>	Specify the configuring IP network mask presented in the standard string type consist of 4 decimal numbers. Like: 255.255.255.0

[Configuration Case]

Case1: Set in-band management port's IP as 192.168.7.100 and mask as 255.255.255.0:

```
epon# system ipconfig inband 192.168.7.100 255.255.255.0
epon#
```

4.11.3. Configurate IP Address and Mask of Out-of-Band Management Port

Command Syntax	epon#**system ipconfig outband <*ip*> <*netmask*>**
Function Description	Configurate IP address and mask of out-of-band management port (AUX/MGMT port of OLT) to easily access and manage OLT
< ip>	Specify the configuring IP address presented in the standard string type consist of 4 decimal numbers. Like: 192.168.1.100
<netmask>	Specify the configuring IP network mask presented in the standard string type consist of 4 decimal numbers. Like: 255.255.255.0

[Configuration Case]

Case1: Set out-of-band management port's IP as 192.168.7.100 and mask as 255.255.255.0:

```
epon# system ipconfig 192.168.6.100 255.255.255.0
```

4.11.4. Configurate and Manage VLAN

Command Syntax	epon# **system mgmt-vlan < *vid*>**
Function Description	Configurate and manage VLAN ID of OLT in-band management port, the devices under the VLAN are enabled to access and manage the OLT
< vid>	Specify the managing VLAN ID in integer value range of 1~4094

[Configuration Case]

Case1: Set VLAN ID as 100:

```
epon# system mgmt-vlan 100
epon#
```

4.11.5. View IP, Subnet Mask and Gateway of In-Band and Out-of-Band Management and Manage VLAN Information

Command Syntax	epon# **show system ipconfig**
Function Description	View IP, subnet mask and gateway of in-band and out-of-band management and manage VLAN information

[Configuration Case]

Case1: View IP, subnet mask and gateway of in-band and out-of-band management and manage VLAN information

```
epon# show system ipconfig
Outband IP address : 192.168.5.54
Outband IP netmask : 255.255.255.0
Inband IP address  : 192.168.7.100
Inband IP netmask  : 255.255.255.0
Gateway    : 192.168.5.254
MGMT VLAN    : 1
epon#
```

4.11.6. Configurate Specific IP Remote Managing Device

4.11.6.1. Configurate the Status of Specific IP Remote Management

Command Syntax	epon# **system mgmt-ip access-control *<admin>***
Function Description	Enable or disable specific IP remote managing function
< admin>	Enable: Enable specific IP remote managing function, only specific IP can manage the OLT Disable: Disable specific IP remote managing function, any IP can manage the OLT

[Configuration Case]

Case1: Enable specific IP remote managing function:

```
epon# system mgmt-ip access-control enable
 Enable system access control success.
```

```
epon#
```

4.11.6.2. *Add Accessible IP Address to the OLT*

Command Syntax	epon# **system mgmt-ip access-ip-add <ip-addr> <mask>**
Function Description	Add accessible IP address to the device, only the devices that has the same IP can access the OLT
<ip-addr>	Specify the configuring IP address presented in the standard string type consist of 4 decimal numbers. Like: 192.168.1.100
<mask>	Specify the configuring IP network mask presented in the standard string type consist of 4 decimal numbers. Like: 255.255.255.0

[Configuration Case]

Case1: Enable the device with IP address of 192.168.6.66 and subnet mask of 255.255.255.0 to access the OLT.

```
epon# system mgmt-ip access-ip-add 192.168.6.66 255.255.255.0
 Add system access ip 192.168.6.66 success.
epon#
```

4.11.6.3. *Delete Accessible IP Address to the OLT*

Command Syntax	epon# **system mgmt-ip access-ip-add <ip-addr> <mask>**
Function Description	Delete accessible IP address to the device
<ip-addr>	Specify the configuring IP address presented in the standard string type consist of 4 decimal numbers. Like: 192.168.1.100
<mask>	Specify the configuring IP network mask presented in the standard string type consist of 4 decimal numbers. Like: 255.255.255.0

[Configuration Case]

Case1: Disable the device with IP address of 192.168.6.66 to access the OLT

```
epon# system mgmt-ip access-ip-del 192.168.6.66
 Delete system access ip 192.168.6.66 success.
epon#
```

4.11.7. View Information of Specific IP Remote Management

Command Syntax	epon# **show system mgmt-ip**
Function Description	View information of specific IP remote management

[Configuration Case]

Case1: View information of specific IP remote management:

```
epon# show system mgmt-ip
 Access control admin : enable
 Access IP : 192.168.6.55, MASK : 255.255.255.0
epon#
```

4.11.8. Configurate system MTU

Command Syntax	epon# **system mtu *<mtu>***
Function Description	Configurate system maximum transmission unit
<mtu>	Maximum transmission unit, range:<1518-2047>

[Configuration Case]

Case1: Set the maximum transmission unit of OLT system as 1518 characters:

```
epon# system mtu 1518
```

4.11.9. View system MTU

Command Syntax	epon# **show system mtu**
Function Description	View system maximum transmission unit

[Configuration Case]

Case1: View system maximum transmission unit:

```
epon# show system mtu
 MTU : 1518
epon#
```

4.12. Boot Times Configuration

4.12.1. Auto-Adaptive to Net Time

4.12.1.1. Configurate Auto- Adaptive to Net Time Function

Command Syntax	epon# **system date ntp *admin <admin>***
Function Description	Enable or disable auto-adaptive to net time function
<admin>	Disable: Disable auto-adaptive to net time function Enable: Enable auto-adaptive to net time function

[Configuration Case]

Case1: Enable auto-adaptive to net time function:

```
epon# system date ntp admin enable
epon#
```

4.12.1.2. Configurate Interval of Synchronization with Net Time

Command Syntax	epon# **system date ntp interval *<interval>***
Function Description	Configurate interval of synchronization with net time, after each interval system time will update automatically
<interval>	Interval of system time synchronization, range: 300-2592000(s)

[Configuration Case]

Case1: Set the interval of synchronization with net time as 300 seconds:

```
epon# system date ntp interval 300
epon#
```

4.12.1.3. Configurate IP Address of Net Time Server

Command Syntax	epon# **system date ntp server <ip>**
Function Description	Configurate IP address of auto-adaptive to net time server
<ip>	IP address of server

[Configuration Case]

Case1: Set the server of net time synchronization as 192.168.5.254:

```
epon#system date ntp server 192.168.5.254
epon#
```

4.12.1.4. Configurate Time Zone of Net Time and Standard Time

Command Syntax	epon# **system date ntp timezone <mask> <hours>**
Function Description	Configurate time zone of net time and standard time
<mask>	<+ | - > east time zone or west time zone
<hours>	< 0 - 12 > Time interval with world standard time/Greenwich standard time

[Configuration Case]

Case1: Set the interval of net time synchronization as 12 hours in eastern time:

```
epon# system date ntp timezone + 12
epon#
```

4.12.2. **Configurate User Defined Net Time**

Command Syntax	epon# **system date manual <*time*>**

Function Description	User defined net time configuration function module
<time>	Time parameter, format: YYYY.MM.DD-hh:mm:ss

[Configuration Case]

Case1: Manually set system time as year 2005 month 12 day 12 hour 10 minute 10 second 10:

```
epon# system date manual 2015.12.12-10:10:10
epon#
```

4.13. System Default ONU Template Configuration

4.13.1. Configurate CATV Function of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system catv <*admin*>**
Function Description	Enable or disable CATV function of system default ONU template
<admin>	Disable: CATV function disabled Enable: CATV function enabled

[Configuration Case]

Case1: Enable CATV function of system template

```
epon# system onu-template-config-system catv enable
epon#
```

4.13.2. Configurate FEC Fnction of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system ctc fec <*admin*>**
Function Description	Enable or disable FEC function of system default ONU template
<admin>	Disable: FEC function disabled

	Enable: FEC function enabled

[Configuration Case]

Case1: Enable FEC function of system default ONU template:

```
epon# system onu-template-config-system ctc fec enable
epon#
```

4.13.3. Configurate Igmp fast-leave Function of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system ctc igmp fast-leave *<state>***
Function Description	Enable or disable Igmp fast-leave function of system default ONU template
<state>	Disable: Igmp fast-leave function disabled Enable: Igmp fast-leave function enabled

[Configuration Case]

Case1: Enable Igmp fast-leave function of system default ONU template

```
epon# system onu-template-config-system ctc igmp fast-leave enable
epon#
```

4.13.4. Configurate Igmp Managing Mode of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system ctc igmp mode *<mode>***
Function Description	Configurate igmp managing mode of system default ONU template
<mode>	igmp-mld-snooping: IPv6 IGMP snooping controllable-igmp-mld: IPv6 controllable multicast mode controllable-igmp: Controllable multicast mode igmp-snooping-only: Only support IPv4 multicast mode pass-through: Pass-through multicast data flow mode

[Configuration Case]

Case1: Set the igmp mode of system default ONU template as igmp-mld-snooping:

```
epon# system onu-template-config-system ctc igmp mode igmp-mld-snooping
epon#
```

4.13.5. Configurate VOIP Port Function of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system pots ctc admin *<admin>***
Function Description	Enable or disable VOIP port of system default ONU template
<admin>	Disable: VOIP port disabled Enable: VOIP port enabled

[Configuration Case]

Case1: Enable VOIP function of system default ONU template

```
epon# system onu-template-config-system pots ctc admin enable
epon#
```

4.13.6. Configurate Ethernet Port of System Default ONU Template

4.13.6.1. Configurate the Status of Ethernet Port of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system uni ctc admin *<admin>***
Function Description	Enable or disable ethernet port of system default ONU template
<admin>	Disable: Ethernet port disabled Enable: Ethernet port enabled

[Configuration Case]

Case1: Enable ethernet port of system default ONU template

```
epon# system onu-template-config-system uni ctc admin enable
epon#
```

4.13.6.2. Configurate Auto-negotiation Function of Ethernet Port of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system uni ctc auto-nego <*admin*>**
Function Description	Enable or disable auto-negotiation function of ethernet port of system default ONU template
<admin>	Disable: Ethernet port disabled Enable: Ethernet port enabled

[Configuration Case]

Case1: Enable auto-negotiation function of ethernet port of system default ONU template

```
epon# system onu-template-config-system uni ctc admin enable
epon#
```

4.13.6.3. Configurate Downstream Limit Speed of Ethernet Port of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system uni ctc egress-policing <*max-rate*>**
Function Description	Configurate downstream limit speed of ethernet port of system default ONU template
<max-rate>	Value range in 0~1000000 with unit of Kbps, value 0 means no speed limit

[Configuration Case]

Case1: Set downstream limit speed of ethernet port of system default ONU template as 5000 kbps:

```
epon# system onu-template-config-system uni ctc egress-policing 5000
epon#
```

4.13.6.4. Configurate Upstream Limit Speed of Ethernet Port of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system uni ctc ingress-policing <*max-rate*>**

Function Description	Configurate upstream limit speed of ethernet port of system default ONU template
<max-rate>	Value range in 0~1000000 with unit of Kbps, value 0 means no speed limit

[Configuration Case]

Case1: Set upstream limit speed of ethernet port of system default ONU template as 5000 kbps:

```
epon# system onu-template-config-system uni ctc egress-policing 5000
epon#
```

4.13.6.5. *Configurate Flow-Control Function of Ethernet Port of System Default ONU Template*

Command Syntax	epon# **system onu-template-config-system uni ctc flow-ctrl <admin>**
Function Description	Configurate flow-control function of ethernet port of system default ONU template
<admin>	Disable: Disable flow-control function Enable: Enable flow-control function

[Configuration Case]

Case1: Enable flow-control function of ethernet port of system default ONU template:

```
epon# system onu-template-config-system uni ctc flow-ctrl enable
epon#
```

4.13.6.6. *Configurate Multicast Function of Ethernet Port of System Default ONU Template*

Configurate Multicast Group Quantity of Ethernet Port of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system uni ctc igmp max-group <groups>**
Function Description	Configurate multicast group quantity of ethernet port of system default ONU template
<groups>	Value range in 0~25 (integer)

[Configuration Case]

Case1: Set multicast group quantity of ethernet port of system default ONU template as 32:

```
epon# system onu-template-config-system uni ctc igmp max-group 32
epon#
```

Configurate Ethernet Port of System Default ONU Template as VLAN Tag Mode of Not-Strip Multicast Data Flow

Command Syntax	epon# **system onu-template-config-system uni ctc igmp tag-handle not-strip-vlan-tag**
Function Description	Not-strip VLAN tag of received corresponding VLAN multicast data flow

[Configuration Case]

Case1: Set ethernet port of system default ONU template as VLAN tag mode of Not-strip multicast data flow:

```
epon# system onu-template-config-system uni ctc igmp tag-handle not-strip-vlan-tag
epon#
```

Configurate Ethernet Port of System Default ONU Template as VLAN Tag Mode of Strip Multicast Data Flow

Command Syntax	epon# **system onu-template-config-system uni ctc igmp tag-handle strip-vlan-tag**
Function Description	Strip VLAN tag of received corresponding VLAN multicast data flow

[Configuration Case]

Case1: Set ethernet port of system default ONU template as VLAN tag mode of strip multicast data flow:

```
epon# system onu-template-config-system uni ctc igmp tag-handle strip-vlan-tag
epon#
```

Configurate Ethernet Port of System Default ONU Template as VLAN Tag Mode of Switch Multicast Data Flow

Command Syntax	epon# **system onu-template-config-system uni ctc igmp tag-handle switch rule1 <tag> <tag-down>**

Function Description	Switch VLAN tag of received corresponding multicast data flow into another VLAN tag of multicast data flow
<tag>	Multicast VLAN of network multicast traffic, value in <1~4094>
<tag-down>	Multicast VLAN of user multicast traffic, value in <1~4094>

[Configuration Case]

Case1: Switch multicast VLAN 100 of network multicast traffic into VLAN 101 of user multicast traffic of ethernet port of system default ONU template

```
epon# system onu-template-config-system uni ctc igmp tag-handle switch rule1 0 100 rule2 0 101
epon#
```

Configurate Multicast VLAN of Ethernet Port of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system uni ctc igmp vlan-list <vlantaglist>**
Function Description	Configurate multicast VLAN of ethernet port of system default ONU template
<vlantaglist>	Multicast VLAN of network multicast traffic, value in <1~4094 or null>

[Configuration Case]

Case1: Set multicast VLAN of ethernet port of system default ONU template as 100:

```
epon# system onu-template-config-system uni ctc igmp vlan-list 100
epon#
```

*4.13.6.7. **Configurate Loop Detection Function of Ethernet Port of System Default ONU Template***

Command Syntax	epon# **system onu-template-config-system uni ctc loop-detect <admin>**
Function Description	Enable or disable loop detection function of ethernet port of system default ONU template

<admin>	Disable: Disable loop detection function of ethernet port Enable: Enable loop detection function of ethernet port

[Configuration Case]

Case1: Enable loop detection function of ethernet port of system default ONU template:

```
epon# system onu-template-config-system uni ctc loop-detect enable
epon#
```

4.13.6.8. Configurate the Status of Ethernet Port of System Default ONU Template with Loop Exists

Command Syntax	epon# **system onu-template-config-system uni ctc loop-detect <admin>**
Function Description	Enable or disable ethernet port of system default ONU template when there is loop in the network
<admin>	Disable: Disable ethernet port, any data can not go through Enable: Enable ethernet port, data can go through

[Configuration Case]

Case1: Disable ethernet port of system default ONU template when there is loop in the network:

```
epon# system onu-template-config-system uni ctc looped disable
epon#
```

4.13.6.9. Congigure Aging Time of Mac Address of Ethernet Port of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system uni ctc mac-aging-time <timer>**
Function Description	The mac addresses restored before the set time will be removed from the mac address list
<timer>	Value in 0-44294967295 with the unit of second

[Configuration Case]

Case1: Set the aging time of mac address of ethernet port of system default ONU template as 300 seconds:

```
epon# system onu-template-config-system uni ctc mac-aging-time 300
epon#
```

4.13.6.10. Configurate Data Statistics Function of Ethernet Port of System Default ONU Template

Command Syntax	epon# **system onu-template-config-system uni ctc statistics < monitoring-statusr> < monitoring-period>**
Function Description	Enable or disable data statistics function and set the statistics cycle. When the last cycle ends and the next cycle starts, the original statistic data of history will be discarded, the data of the last statistic cycle will be statistic data of history
< monitoring-statusr >	Status of performance statistics, value as <enable | disable> Disable: Disable data statistics function of Ethernet port Enable: Enable data statistics function of Ethernet port
< monitoring-period>	Set the cycle of performance statistics, valid value in 1-44294967295 with the unit of second

[Configuration Case]

Case1: Enable data statistics function of ethernet port of system default ONU template and set the cycle as 300 seconds:

```
epon# system onu-template-config-system uni ctc statistics enable 300
epon#
```

4.13.6.11. Configurate VLAN Mode of Ethernet Port of System Default ONU Template

Aggregation Mode

Command Syntax	epon# **system onu-template-config-system uni ctc vlan-mode aggregation <tpid> <cos> <default-vlan> aggregate-list <aggregated-list>** Specific retransmission process mode please refer to Appendix A

Function Description	Configurate SVLAN and CVLAN of system default ONU template
< tpid>	**TPID**(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol
<cos>	Set priority in value range of 0-7, 0 represents the lowest priority, 7 represents the highest
<default-vlan>	Set default VLAN ID in <1-4094>, data frames without VLAN label will be marked with VLAN label in the upstream
<aggregated-list>	Like: 5:12-16, 5 represents SVLAN, 12-16 represents CVLAN, with 4 lists limit

[Configuration Case]

Case1: Set the port mode as aggregation, TPID as 0x8100, priority as 0, default VLAN as 100, SVLAN as VLAN5 and CVLAN as 7-9 of ethernet port of system default ONU template

```
epon# system onu-template-config-system uni ctc vlan-mode aggregation 0x8100 0 1
00 aggregate-list 5:7-9
epon#
```

Tag Mode

Command Syntax	epon# **system onu-template-config-system uni ctc vlan-mode tag < tpid> <cos> <vlan>**
Function Description	Set ethernet port of system default ONU template as tag mode, under this mode, only the datas corresponding to the vlan port and get through in the downstream, only the datas without tag label can get through and will be marked with vlan label Specific retransmission process mode please refer to Appendix A
< tpid>	**TPID**(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol
<cos>	Set priority in value range of 0-7, 0 represents the lowest priority, 7 represents the highest

<vlan>	Set VLAN ID in the value range <1-4094>

[Configuration Case]

Case1: Set the port mode as tag, TPID as 0x8100, priority as 0, VLAN as 100 of ethernet port of system default ONU template:

```
epon# system onu-template-config-system uni ctc vlan-mode tag 0x8100 0 100
epon#
```

Translation Mode

Command Syntax	epon# **system onu-template-config-system uni ctc vlan-mode translation <tpid> <cos> <default-vlan> vlan-list < vlan-exchange-list>**
Function Description	Set ethernet port of system default ONU template as translation mode, which will convert the vlan data of network side into user side in the downstream, upstream is the opposite Specific retransmission process mode please refer to Appendix A
< tpid>	**TPID**(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol
<cos>	Set priority in value range of 0-7, 0 represents the lowest priority, 7 represents the highest
<default-vlan>	Set default VLAN ID in <1-4094>, data frames in the upstream without VLAN label will be marked with VLAN label
< vlan-exchange-list>	Like 10-20, will convert the data of vlan20 into the data of vlan10 in the dowmstream, upstream is the opposite, with the limit of 8 conversion lists

[Configuration Case]

Case1: Set the ethernet port of system default ONU template as follows: Translation mode, TPID as 0x8100, priority as 0, default VLAN as 100 and the VLAN conversion of VLAN10 to VLAN20:

```
epon# system onu-template-config-system uni ctc vlan-mode translation 0x8100 0 0
```

```
2 translate-list 10-20
epon#
```

Transparent Mode

Command Syntax	epon#**system onu-template-config-system uni ctc vlan-mode transparent**
Function Description	Set ethernet port of system default ONU template as transparent mode, all datas can go through in the upstream and dowmstream without any restrictions Specific retransmission process mode please refer to Appendix A

[Configuration Case]

Case1: Set ethernet port of system default ONU template as transparent mode:

```
epon# system onu-template-config-system uni ctc vlan-mode transparent
epon#
```

Trunk Mode

Command Syntax	epon# **system onu-template-config-system uni ctc vlan-mode trunk <tpid> <cos> <default-vlan> vlan-list < vlanLlist>**
Function Description	Set ethernet port of system default ONU template as trunk mode, Downstream: Only the configured tag packages can go through, untag packages will be discarded Upstream: Only the configured tag packages can go through, untag packages will be forwarded with default VLAN ID label Specific retransmission process mode please refer to Appendix A
< tpid>	**TPID**(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol
<cos>	Set priority in value range of 0-7, 0 represents the lowest priority, 7 represents the highest
<default-vlan>	Set default VLAN ID in <1-4094>, data frames in the upstream without VLAN label will be marked with VLAN label

< vlanLlist>	Like 10-20, which means the data frames that belongs to list VLAN10-20 can be forwarded in upstream and downstream, the data frames that does not belong to list VLAN10-20 will be discarded

[Configuration Case]

Case1: Set the ethernet port of system default ONU template as follows: Trunk mode, TPID as 0x8100, priority as 0, default VLAN as 100 and the VLAN list as VLAN10-20:

```
epon# system onu-template-config-system uni ctc vlan-mode trunk 0x8100 0 100
 vlan-list 10-20
epon#
```

4.14. Configurate User Defined ONU Template

User defined template: user can define one specific ONU template then apply it in online ONU.

4.14.1. Enter Configuration Interface of User ONU Template

Command Syntax	epon# **system onu-template-config-user *<templateID>***
Function Description	Enter configuration interface of user ONU template
<templateID>	User ONU template ID that needs to be created, range in 1-255

[Configuration Case]

Case1: Create and enter the user ONU template configuration interface with ID of 1:

```
epon# system onu-template-config-user 1
epon(onu_template-1)#
```

4.14.2. Delete User ONU Template

Command Syntax	epon(onu-template-2)# ***delete <templateID>***
Function Description	Delete user ONU template when the template is not being used or else the using for the template should be relieved first

<templateID>	ser ONU template ID that needs to be created, range in 1-255

[Configuration Case]

Case1: Delete user ONU template:

```
epon(onu-template-2)# delete 2
epon(onu-template-2)#
```

4.14.3. Configurate Capability Set of User ONU Template

Command Syntax	epon(onu_template-1)# **config capacity *<catvNum> <portNum> <potsNum> <templateName>***
Function Description	Configurate Capability Set of User ONU Template
<catvNum>	Quantity of CATV port, range: <0-1>
<portNum>	Quantity of Ethernet port including FE port and GE port, range: <1-24>
<potsNum>	Quantity of voice port, range: <0-2>
<templateName>	Template name

[Configuration Case]

Case1: Set the user ONU template capability set with ID 1 as follows: 1 CATV port, 4 Ethernet port, 1 voice port and template name as template1:

```
epon(onu_template-1)# config capacity 1 4 1 template1
epon(onu-template-1)#
```

4.14.4. Configurate CATV Function of User ONU Template

Command Syntax	epon(onu-template-1)# ***config catv <admin>***
Function Description	Configurate CATV function of user ONU template

<admin>	Disable: Disable CATV function Enable: Enable CATV function

[Configuration Case]

Case1: Enable CATV function of system template:

```
epon(onu-template-1)# config catv enable
epon(onu-template-1)#
```

4.14.5. Configurate VOIP Function of User ONU Template

Command Syntax	epon(onu-template-1)# **config pots <potsId> ctc admin <admin>**
Function Description	Enable or disable VOIP port of system ONU template
<potsId>	Set the voice port quantity of user ONU template depending on capability sets, value range in <1-2>
<admin>	Disable: Disable VOIP port Enable: Enable VOIP port

[Configuration Case]

Case1: Enable VOIP function of system ONU template

```
epon(onu-template-1)# config pots 1 ctc admin enable
epon(onu-template-1)#
```

4.14.6. Configurate FEC Function of User ONU Template

Command Syntax	epon(onu-template-1)# **config ctc fec <admin>**
Function Description	Enable or disable FEC function of system ONU template
<admin>	Disable: Disable FEC function Enable: Enable FEC function

[Configuration Case]

Case1: Enable FEC function of system ONU template:

```
epon(onu-template-1)# config ctc fec enable
epon(onu-template-1)#
```

4.14.7. Configurate igmp fast-leave function of User ONU Template

Command Syntax	epon(onu-template-1)# ***config ctc igmp fast-leave <state>***
Function Description	Enable or disable igmp fast-leave function of system ONU template
<state>	Disable: Disable igmp fast-leave function Enable: Enable igmp fast-leave function

[Configuration Case]

Case1: Enable igmp fast-leave function of system ONU template

```
epon(onu-template-1)# config ctc igmp fast-leave enable
epon(onu-template-1)#
```

4.14.8. Configurate Igmp Management Mode of User ONU Template

Command Syntax	epon(onu-template-1)# ***config ctc igmp mode <mode>***
Function Description	Configurate igmp management mode of user ONU template
<mode>	igmp-mld-snooping: IPv6 IGMP snooping controllable-igmp-mld: IPv6 controllable multicast mode controllable-igmp: Controllable multicast mode igmp-snooping-only: Only support IPv4 multicast mode pass-through: Transparent multicast data flow mode

[Configuration Case]

Case1: Set igmp mode of user ONU template as igmp-mld-snooping:

```
epon(onu-template-1)# config ctc igmp mode igmp-mld-snooping
epon(onu-template-1)#
```

4.14.9. Configurate Ethernet Port Status of User ONU Template

Command Syntax	epon(onu_template-1)# **config uni *<unild>* ctc admin *<admin>***
Function Description	Enable or disable Ethernet port of user ONU template
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<admin>	Disable: Disable Ethernet port of user ONU template Enable: Enable Ethernet port of user ONU template

[Configuration Case]

Case1: Enable Ethernet 1 of user ONU template with ID 1:

```
epon(onu_template-1)# config uni 1 ctc admin enable
```

4.14.10. Configurate Downstream Speed of Ethernet Port of User ONU Template

Command Syntax	epon(onu_template-1)# **config uni *<unild>* ctc egress-policing *<max-rate>***
Function Description	Configurate downstream speed of user port of user ONU template
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<max-rate>	Maximum downstream speed with the unit of kBps, valid value in <0~100000>kbps, value 0 means no speed restriction

[Configuration Case]

Case1: Set downstream speed of Ethernet port 1 of user ONU template as 5000 kbps:

```
epon(onu-template-1)# config uni 1 ctc egress-policing 5000
epon(onu-template-1)#
```

4.14.11. Configurate Upstream Speed of Ethernet Port of User ONU Template

Command Syntax	epon(onu_template-1)# **config uni *<unild>* ctc ingress-policing *<max-rate>***
Function Description	Configurate upstream speed of user port of user ONU template
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<max-rate>	Maximum upstream speed with the unit of kBps, valid value in <0~100000>kbps, value 0 means no speed restriction

[Configuration Case]

Case1: Set upstream speed of Ethernet port 1 of user ONU template as 5000 kbps:

```
epon(onu-template-1)# config uni 1 ctc ingress-policing 5000
epon(onu-template-1)#
```

4.14.12. Configurate Auto-Negotiating Function of Ethernet Port of User ONU Template

Command Syntax	epon(onu_template-1)#**config uni *<unild>* ctc auto-nego *<admin>***
Function Description	Enable or disable auto-negotiating function of user ONU template
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<admin>	Disable: Disable auto-negotiating function of user ONU template Enable: Enable auto-negotiating function of user ONU template

[Configuration Case]

Case1: Enable auto-negotiating function of Ethernet port 1 of user ONU template:

```
epon(onu-template-1)# config uni 1 ctc auto-nego enable
epon(onu-template-1)#
```

4.14.13. Configurate Flow Control Function of Ethernet Port of User ONU Template

Command Syntax	epon(onu_template-1)#**config uni *<unild>* ctc flow-ctrl *<admin>***
Function Description	Enable or disable flow control function of user ONU template
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<admin>	Disable: Disable flow control function of user ONU template Enable: Enable flow control function of user ONU template

[Configuration Case]

Case1: Enable flow control function of Ethernet port 1 of user ONU template:

```
epon(onu-template-1)# config uni 1 ctc flow-ctrl enable
epon(onu-template-1)#
```

4.14.14. Configurate Multicast Function of Ethernet Port of User ONU Template

4.14.14.1. Configurate Maximal Quantity of Multicast Group of Ethernert Port of User ONU Template

Command Syntax	epon(onu-template-1)# ***config uni <unild> ctc igmp max-group <max-groups>***
Function Description	Configurate the containable maximal quantity of multicast group of Ethernet port of user ONU template
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<groups>	Value range in 0~255 (integer)

[Configuration Case]

Case1: Configurate the containable maximal quantity of multicast group of Ethernet port 1 of user ONU template as 32:

```
epon(onu-template-1)# config uni 1 ctc igmp max-group 32
epon(onu-template-1)#
```

4.14.14.2. Configurate Ethernet Port of User ONU Template as VLAN Tag Mode of Not-Strip Multicast Data Flow

Command Syntax	epon(onu-template-1)# ***config uni <uniId> ctc igmp*** **tag-handle not-strip-vlan-tag**
Function Description	Not-strip VLAN label of the received corresponding VLAN multicast data flow
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets

[Configuration Case]

Case1: Set ethernet port 1 of user ONU template as VLAN tag mode of not-strip multicast data flow:

```
epon(onu-template-1)# config uni 1 ctc igmp tag-handle not-strip-vlan-tag
epon(onu-template-1)#
```

4.14.14.3. Configurate Ethernet Port of User ONU Template as VLAN Tag Mode of Strip Multicast Data Flow

Command Syntax	epon(onu-template-1)# ***config uni <uniId> ctc igmp*** **tag-handle strip-vlan-tag**
Function Description	Strip VLAN label of the received corresponding VLAN multicast data flow
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets

[Configuration Case]

Case1: Set ethernet port 1 of user ONU template as VLAN tag mode of strip multicast data flow:

```
epon(onu-template-1)# system onu-template-config-system uni ctc igmp tag-handle strip-vlan-tag
epon(onu-template-1)#
```

4.14.14.4. Configurate Ethernet Port of User ONU Template as VLAN Label Mode of Switch Multicast Data Flow

Command Syntax	epon(onu-template-1)#***config uni <uniId> ctc igmp tag-handle switch rule1 <tag> <tag-down>***
Function Description	Switch VLAN tag of received corresponding multicast data flow into another VLAN tag of multicast data flow
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<tag>	Multicast VLAN of network multicast traffic, value in <1~4094>
<tag-down>	Multicast VLAN of user multicast traffic, value in <1~4094>

[Configuration Case]

Case1: Switch multicast VLAN 100 of network multicast traffic into VLAN 101 of user multicast traffic of ethernet port of user ONU template:

```
epon(onu-template-1)# config uni <uniId> ctc igmp tag-handle switch switch rule1 0 100 rule2 0 101
epon(onu-template-1)#
```

4.14.14.5. Configurate Multicast VLAN of Ethernet Port of User ONU Template

Command Syntax	epon(onu-template-1)#**config uni *<uniId>* ctc igmp vlan-list *<vlantaglist>***
Function Description	Configurate multicast VLAN ofethernet port of user ONU template
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<vlantaglist>	Multicast VLAN of network multicast traffic, value in <1~4094 or null>

[Configuration Case]

Case1: Set the multicast VLAN of Ethernet 1 of user ONU Template as 100:

```
epon(onu-template-1)# config uni 1 ctc igmp vlan-list 100
epon(onu-template-1)#
```

4.14.15. Configurate Loop Detection Function of Ethernet Port of User ONU Template

Command Syntax	epon(onu_template-1)#**config uni *<uniId>* ctc loop-detect *<admin>***
Function Description	Enable or disable loop detection function of ethernet port of user ONU template
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<admin>	Disable: Disable loop detection function of user ONU template Enable: Enable loop detection function of user ONU template

[Configuration Case]

Case1: Enable loop detection function of ethernet port of user ONU template:

```
on(onu-template-1)# config uni 1 ctc loop-detect enable
epon(onu-template-1)#
```

4.14.16. Configurate the Function of Ethernet Port of System Default ONU Template with Loop Exists

Command Syntax	epon(onu_template-1)# **config uni *<uniId>* ctc looped *<admin>***
Function Description	Enable or disable loop detection function of ethernet port of user ONU template
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<admin>	Disable: Disable loop detection function of ethernet port of user ONU template when loop exists Enable: Enable loop detection function of ethernet port of user ONU template when loop exists

[Configuration Case]

Case1: Enable ethernet port 1 of user ONU template when there is loop:

```
on(onu-template-1)# config uni 1 ctc loop-detect enable
epon(onu-template-1)#
```

4.14.17. Congigure Aging Time of Mac Address of Ethernet Port of User ONU Template

Command Syntax	epon(onu_template-1)#**config uni *<unild>* ctc mac-aging-time *<timer>***
Function Description	Set the aging time of mac address of ethernet port of user ONU template
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<timer>	MAC address aging time range: 0-4294967295

[Configuration Case]

Case1: Set the aging time of mac address of ethernet port 1 of user ONU template as 300 seconds:

```
epon(onu-template-1)# config uni 1 ctc mac-aging-time 300
epon(onu-template-1)#
```

4.14.18. Configurate Data Statistics Function of Ethernet Port of User ONU Template

Command Syntax	epon(onu_template-1)#**config uni *<unild>* ctc statistics *<monitoring-status>* *<monitoring-period>***
Function Description	Enable or disable data statistics function and set the statistics cycle. When the last cycle ends and the next cycle starts, the original statistic data of history will be discarded, the data of the last statistic cycle will be statistic data of history
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<monitoring-status>	Status of performance statistics, value as <enable | disable> Disable: Disable data statistics function Enable: Enable data statistics function

<monitoring-period>	Set the cycle of performance statistics, valid value in 1-44294967295 with the unit of second

[Configuration Case]

Case1: Enable data statistics function of ethernet port of user ONU template and set the cycle as 300 seconds:

```
epon(onu-template-1)# config uni 1 ctc statistics enable 300
epon(onu-template-1)#
```

4.14.19. Configurate VLAN Mode of Ethernet Port of User ONU Template

4.14.19.1. Aggregation Mode

Command Syntax	epon(onu-template-1)# **config uni *<uniId>* ctc vlan-mode aggregation <tpid> <cos> <default-vlan> aggregate-list <aggregated-list>**
Function Description	Set Ethernet port mode of user ONU template as aggregation Specific retransmission process mode please refer to Appendix A
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
< tpid>	**TPID**(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol
<cos>	Set priority in value range of 0-7, 0 represents the lowest priority, 7 represents the highest
<default-vlan>	Set default VLAN ID in <1-4094>, data frames without VLAN label will be marked with VLAN label in the upstream
<aggregated-list>	Like: 5:12-16, 5 represents SVLAN, 12-16 represents CVLAN, with 4 lists limit

[Configuration Case]

Case1: Set the port mode as aggregation, TPID as 0x8100, priority as 0, default VLAN as 100, SVLAN as VLAN5 and CVLAN as 7-9 of ethernet port of user ONU template:

```
epon(onu-template-1)#system onu-template-config-system uni ctc vlan-mode aggregation 0x8100 0 100 aggregate-list 5:7-9
epon#
```

4.14.19.2. Tag Mode

Command Syntax	epon(onu-template-1)# **config uni <*uniId*> ctc vlan-mode tag < tpid> <cos> <vlan>**
Function Description	Set ethernet port of user ONU template as tag mode, under this mode, only the datas corresponding to the vlan port and get through in the downstream, only the datas without tag label can get through and will be marked with vlan label Specific retransmission process mode please refer to Appendix A
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
< tpid>	**TPID**(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol
<cos>	Set priority in value range of 0-7, 0 represents the lowest priority, 7 represents the highest
<vlan>	Set VLAN ID in the value range <1-4094>

[Configuration Case]

Case1: Set the port mode as tag, TPID as 0x8100, priority as 0, VLAN as 100 of ethernet port of user ONU template:

```
epon(onu-template-1)# config uni 1 ctc vlan-mode tag 0x8100 0 100
epon(onu-template-1)#
```

4.14.19.3. Translation Mode

Command Syntax	epon(onu-template-1)# **config uni <*uniId*> ctc vlan-mode translation <tpid> <cos> <default-vlan> vlan-list < vlan-exchange-list>**

Function Description	Set ethernet port of user ONU template as translation mode, which will convert the vlan data of network side into user side in the downstream, upstream is the opposite Specific retransmission process mode please refer to Appendix A
<unild>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
< tpid>	**TPID**(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol
<cos>	Set priority in value range of 0-7, 0 represents the lowest priority, 7 represents the highest
<default-vlan>	Set default VLAN ID in <1-4094>, data frames in the upstream without VLAN label will be marked with VLAN label
<vlan-exchange-list>	Like 10-20, will convert the data of vlan20 into the data of vlan10 in the dowmstream, upstream is the opposite, with the limit of 8 conversion lists

[Configuration Case]

Case1: Set the ethernet port of user ONU template as follows: Translation mode, TPID as 0x8100, priority as 0, default VLAN as 100 and the VLAN conversion of VLAN10 to VLAN20:

```
epon(onu-template-1)# config uni 1 ctc vlan-mode translation 0x8100 0 0
2 translate-list 10-20
epon(onu-template-1)#
```

4.14.19.4. Transparent Mode

Command Syntax	epon(onu-template-1)# **config uni *<unild>* ctc vlan-mode transparent**
Function Description	Set ethernet port of user ONU template as transparent mode, all datas can go through in the upstream and dowmstream without any restrictions Specific retransmission process mode please refer to Appendix A

<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets

[Configuration Case]

Case1: Set ethernet port 1 of user ONU template as transparent mode:

```
epon(onu-template-1)# config uni 1 ctc vlan-mode transparent
epon(onu-template-1)#
```

*4.14.19.5. **Trunk Mode***

Command Syntax	epon(onu-template-1)# **config uni *<uniId>* ctc vlan-mode trunk <tpid> <cos> <default-vlan> vlan-list < vlanLlist>**
Function Description	Set ethernet port of user ONU template as trunk mode, Downstream: Only the configured tag packages can go through, untag packages will be discarded Upstream: Only the configured tag packages can go through, untag packages will be forwarded with default VLAN ID label Specific retransmission process mode please refer to Appendix A
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
< tpid>	**TPID**(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol
<cos>	Set priority in value range of 0-7, 0 represents the lowest priority, 7 represents the highest
<default-vlan>	Set default VLAN ID in <1-4094>, data frames in the upstream without VLAN label will be marked with VLAN label
< vlanLlist>	Like 10-20, which means the data frames that belongs to list VLAN10-20 can be forwarded in upstream and downstream, the data frames that does not belong to list VLAN10-20 will be discarded

[Configuration Case]

Case1: Set the ethernet port 1 of user ONU template as follows: Trunk mode, TPID as 0x8100, priority as 0, default VLAN as 100 and the VLAN list as VLAN10-20:

```
epon(onu-template-1)# config uni 1 ctc vlan-mode trunk 0x8100 0 100
 vlan-list 10-20
epon(onu-template-1)#
```

*4.14.19.6. **Vlan-Pool Mode***

Command Syntax	epon(onu-template-1)# **config uni *<uniId>* ctc vlan-mode vlan-pool <vlan-pool>**
Function Description	Set ethernet port of user ONU template as vlan-pool mode, under this mode, port's vlan will be binded in a VLAN pool, which will be distributed into the port automatically after ONU launches
<uniId>	ONU user port ID, value range in <1-24> depending on the configuration of capability sets
<vlan-pool>	Set VLAN pool ID in value range of <1-4>

[Configuration Case]

Case1: Set the Ethernet port 1 of user ONU template as vlan-pool mode and bind it to vlan pool 1:

```
epon(onu-template-1)# config uni 1 ctc vlan-mode vlan-pool 1
epon(onu-template-1)#
```

4.14.20. Local Application of User ONU Template

Command Syntax	epon(onu-template-1)# ***apply <oltId> <onuId> <templateId>***
Function Description	Set the aging time of mac address of user ONU template
<oltId>	Corresponding ID of PON port, value range in <1-8> depending on the PON port of OLT

<onuId>	ONU ID of application template, value range is all, or <1-64>, depending on the ID of registered ONU, “all” represents applying the template to all ONU under the PON port
<templateId>	ID of user ONU template

[Configuration Case]

Case1: Apply the user template with ID 1 to the ONU with onuid of 5 of the first PON port:

```
epon(onu-template-1)# apply 1 5 1
epon(onu-template-1)#
```

4.14.21. Global Application of User ONU Template

Command Syntax	epon(onu-template-1)# ***apply-to-all-onu <templateId>***
Function Description	Set the aging time of mac address of user ONU template
<templateId>	ID of user ONU template

[Configuration Case]

Case1: Apply user ONU template 1 to all ONU under all PON ports of OLT:

```
epon(onu-template-1)# apply-to-all-onu 1
epon(onu-template-1)#
```

4.14.22. View Configuration of User ONU Template

Command Syntax	epon# ***show system onu-template-config <templateID>***
Function Description	Configurate multicast VLAN of Ethernet port of user ONU template
<templateID>	Set ID for user ONU template, value range in <0-255>, 0 represents default template

[Configuration Case]

Case1: View configuration of user ONU template 1:

```
epon# show system onu-template-config 1
As the default template, this template will be apply to all onu.
------------------------------------------------------------------
Current template name:template1, 1 CATV, 2 PORT, 0 POTS
There are(is) 1 ONU using this template.
CATV state: Enable
FEC state: Disable
IGMP FastLeave state: Disable
IGMP Mode : pass-through

UNI 1 Admin: Enable
UNI 1 Auto-Nego state: Enable
UNI 1 Egress Rate: 5000 kbps
UNI 1 FlowCtrl state: Enable
UNI 1 IGMP Max-Group: 32
UNI 1 IGMP Tag-Handle Mode: switch
  3<->9
  2<->5
  3<->4
UNI 1 IGMP Vlan List:
44,
UNI 1 Ingress Rate: Disable
UNI 1 Loop-Detect state: Enable
UNI 1 Looped state  : Disable
UNI 1 AgingTime  : 300 s
UNI 1 Statistics Monitor state : Disable
UNI 1 VLAN  MODE: from VLAN POOL 2
……
epon#
```

5. SWITCH CONTROLLER CARD MANAGEMENT

5.1. Port Configuration Management

5.1.1. Enter Main Controller Card Port Management Mode

Command Syntax	epon#**swport** ***<port>***
Function Description	Enter main controller card port management mode, parameters of main controller card can be set in this mode
<port>	Specify port list, which can be any port of ge1 ~ ge16 depending on how many ports supported by OLT

[Configuration Case]

Case1: Enter the management mode of main controller card port 1:

```
epon# swport ge1
epon(GE-1)#
```

5.1.2. Configurate Port Receiving and Forwarding Packege Function

Command Syntax	**epon(GE-1)# admin <admin>**
Function Description	Enable port receiving and forwarding packege function, user can apply the function in network debugging in some situations
<admin>	Disable: Disable port receiving and forwarding packege function Enable: Enable port receiving and forwarding packege function

[Configuration Case]

Case1: Enable receiving and forwarding packege function of port ge1:

```
epon(GE-1)# admin enable
epon(GE-1)#
```

5.1.3. Configurate Port Receiving Frame Type

Command Syntax	epon(GE-1)# **admit-frame <*type*>**
Function Description	Configurate the frame type of receiving message of main controller card port
<type>	Message frame type, optional parameters: <all|tagged|untagged> All: Receive all frame types Tagged: Only receive messages with tag untagged: Only receive messages without tag

[Configuration Case]

Case1: Set all receiving frame types of ge1 port:

```
epon(GE-1)# admit-frame all
epon(GE-1)#
```

5.1.4. Configurate Port as Auto-Negotiating

Command Syntax	epon(GE-1)# **auto-nego**
Function Description	Set main controller card as auto-negotiating

[Configuration Case]

Case1: Set ge1 port as auto-negotiating:

```
epon(GE-1)# auto-nego
epon(GE-1)#
```

5.1.5. Configurate Port Default Priority

Command Syntax	epon(GE-1)# **def-pri <*priority*>**
Function Description	Configurate default priority of main controller card like PVID, when port receives data package without VLAN tag, the package will be assigned with the default priority of 802.1P of

	the port, the data package will enter different priority queue and obtain different services based on the corresponding priority and flow classification approach
<priority>	Specify the configuration value of port priority as integer in legal range of 0 ~ 7

[Configuration Case]

Case1: Set the priority of port ge1 as 0:

```
epon(GE-1)# def-pri 0
epon(GE-1)#
```

5.1.6. Configurate Port flow Control Function

Command Syntax	epon(GE-1)# **flow-ctrl *<admin>***
Function Description	Manage flow control of main controller card port such as restricting the forwarding speed of packege
<admin>	Port flow control function, optional parameter <disable|enable> Disable: Disable flow control function Enable: Enable flow control function

[Configuration Case]

Case1: Enable flow control function of port ge1:

```
epon(GE-1)# flow-ctrl enable
epon(GE-1)#
```

5.1.7. Configurate Port Mac Address Learning Function

Command Syntax	epon(GE-1)# **learning *<admin>***
Function Description	Enable or disable port Mac address learning function

<admin>	Port mac address learning function, optional parameter : <disable|enable> Disable: Disable port mac address learning function Enable: Enable port mac address learning function

[Configuration Case]

Case1: Enable mac address learning function of port ge1:

```
epon(GE-1)# learning enable
epon(GE-1)#
```

5.1.8. Configurate Port Outer-TPID

Command Syntax	epon(GE-1)# **outer-tpid *<tpid>***
Function Description	TPID(Tag Protocol Identifier) A field in VLAN Tag that is regulated into the value of 0x8100 by IEEE 802.1q protocol, as the default value as well. Some manufacturers set the recongnizable TPID value as 0x9100 or others, in order to be compatible with these device, global adjusting function for TPID value of VLAN-VPN message is offered, users can set TPID by theirselves. Port will replace the IPID value of outer VLAN Tag of message with the preset value of users before transmitting the message, then the VLAN-VPN message that enters the public network can be recognized by other manufacturer's devices
<tpid>	Value as label procotol value presented in the form of decimal, like: 0x8100 equals 33024

[Configuration Case]

Case1: Set the label protocol value of ge1 port as 0x8100, 33024 in decimalism:

```
epon(GE-1)# outer-tpid 33024
epon(GE-1)#
```

5.1.9. Add Port Packege Filtering Function based on ACL

Command Syntax	epon(GE-1)#**packet-filter install *<start-id> <end-id>***

Function Description	Whether data package can get through port or not is decided by the port with combining ACL
<start-id>	Optional parameter range: 1-10000, build an ACL rule first
<end-id>	Optional parameter range: 2-10000, build an ACL rule first. The parameter can be configurated or not

[Configuration Case]

Case1: Build an ACL rule for port to decide whether to let the received package get through:

```
epon(GE-2)# packet-filter install 2
 Bound ACL 2 to ge-2 success.
epon(GE-2)#
```

Case2: Build two ACL rules for port to decide whether to let the received package get through:

```
epon(GE-1)# packet-filter install 1 2
 Bound ACL 1 to ge-1 success.
 Bound ACL 2 to ge-1 success.
epon(GE-1)#
```

5.1.10. Delete ACL Rule of Port Package Filtering Function

Command Syntax	epon(GE-1)#**packet-filter uninstall *<id>***
Function Description	Delete ACL rule of port package filtering function, remove the restriction for data package accessing
<id>	Optional parameter range: all or 1-10000

[Configuration Case]

Case1: Delete the 2nd ACL rule of package filtering function of port ge2:

```
epon(GE-2)# packet-filter uninstall 2
 ACL 2 uninstall success on ge-2.
epon(GE-2)#
```

5.1.11. Configurate Port PVID

Command Syntax	epon(GE-1)#**pvid *<pvid>***
Function Description	Configurate default VLAN ID of main controller card port, the entered data will be marked with default VLAN ID label
<pvid>	Optional parameter range: 0-4094

[Configuration Case]

Case1: Set port default VLAN ID as 100:

```
epon(GE-1)# pvid 100
epon(GE-1)#
```

5.1.12. Configurate Port Entrance Parameter of Speed Limit

Command Syntax	epon(GE-1)# **rate-ctrl ingress *<rate>***
Function Description	Configurate entrance switching speed parameter of controller card
<rate>	0-1000000(kps)

[Configuration Case]

Case1: Restrict port entrance data speed under 100000 kps:

```
epon(GE-1)# rate-ctrl ingress 100000
epon(GE-1)#
```

5.1.13. Configurate Port Exit Parameter of Speed Limit

Command Syntax	epon(GE-1)# **rate-ctrl egress *<rate>***
Function Description	Configurate exit switching speed parameter of controller card
<rate>	0-1000000(kps)

[Configuration Case]

Case1: Restrict port exit data speed under 100000 kps:

```
epon(GE-1)# rate-ctrl egress 100000
epon(GE-1)#
```

5.1.14. Configurate Current Port Speed and Duplex Mode

Command Syntax	epon(GE-1)#**speed <*speed*> duplex <*duplex*>**
Function Description	Only support 10m. The 100m and 1000m only support adaptable
<speed>	Valid parameter value range: <10m|100m|1000m>
<duplex>	Optional configuration option: full|half> Full: Full duplex mode Half: Half duplex mode

[Configuration Case]

Case1: Set port speed as 10m full duplex mode:

```
epon(GE-1)# speed 10m duplex full
epon(GE-1)#
```

5.1.15. Clear Port Performance Statistical Data

Command Syntax	epon(GE-1)# **statistics-clear**
Function Description	Clear port performance statistical data

[Configuration Case]

Case1: Clear the performance statistical data of port 1:

```
epon(GE-1)# statistics-clear
epon(GE-1)#
```

5.1.16. View Port Performance Statistical Data

Command Syntax	epon(GE-1)# **show swport <ge1-ge16> statistics**

Function Description	View port performance statistical data

[Configuration Case]

Case1: View the performance statistical data of port 1:

```
epon(GE-1)# show swport ge1 statistics
 GE-1 Statistics:
 InOctets  : 0   InDiscards  : 0
 InUcastPkts : 0   InBcastPkts  : 0   InMcastPkts : 0
 InErrors  : 0   InUnknownProtos : 0

 OutOctets : 0   OutDiscards  : 0
 OutUcastPkts : 0   OutBcastPkts : 0   OutMcastPkts : 0
 OutErrors : 0   OutQueueLen  : 0
epon(GE-1)#
```

5.1.17. Enable/Disable Port Storm Control Function and Configurate Storm Control Parameter

Command Syntax	epon(GE-1)# ***storm-ctrl <type> <enable> <rate>***
Function Description	Enable/Disable port storm control function and configurate the data package type and speed of storm control
<type>	Support data pakage as follows by now: broadcast multicast unknown-unicast
<enable>	Enable: Enable storm control function Disable: Disable storm control function
<rate>	Control speed, value range: 0-33554431(kbps)

[Configuration Case]

Case1: Enable the storm control function of the port with control speed of 330000:

```
epon(GE-1)# storm-ctrl broadcast enable 330000
epon(GE-1)#
```

5.1.18. View Port Storm Control Function

Command Syntax	epon(GE-1)# **show swport ge1 storm-ctrl**
Function Description	View port storm control function

[Configuration Case]

Case1: View the storm control function of port 1:

```
epon(GE-1)# show swport ge1 storm-ctrl
GE1 storm control configuration:
  type   status rate(pps)
  broadcast  enable 330000
  multicast  disable -
  unknown unicast enable 500
epon(GE-1)#
```

5.1.19. Batch Adding VLAN Function in Switch Port

Command Syntax	epon(GE-1)# **vlan add *<vidlist> <tag>***
Function Description	Batch creating VLAN and set tag mode in the port
<vidlist>	Value range in 1-4094
<tag>	Marking method, as optional parameter, fixed in tag value Give out tag parameter that means member port is marked port, the message exits through the port will be marked with VLAN label When tag parameter is default, which means member port is not-marked port, the message exits through the port will not be marked with VLAN label

[Configuration Case]

Case1: Batch creating VLAN2-100 with tag label and VLAN101-200 without tag label in switch port ge1:

```
epon(GE-1)# vlan add 2-100 tag
```

```
epon(GE-1)# vlan add 101-200
```

5.1.20. Batch Removing VLAN Function in Switch Port

Command Syntax	epon(GE-1)# **vlan delete <*vidlist*>**
Function Description	Batch Removing member port in the port
<vidlist>	Value range in 1-4094

[Configuration Case]

Case1: Remove VLAN2-200 in ge1 port:

```
epon(GE-1)# vlan del 2-200
```

5.1.21. View Port Information

Command Syntax	epon# **show swport ge1 attribute**
Function Description	View current configuration of main controller card

[Configuration Case]

Case1: View current configuration of main controller car port 1:

```
epon(GE-1)# show swport ge1 attribute
    GE-1 STATE
Link-State   : Link-down
Admin-State   : Enable
Flow-Control  : Enable
Speed-State   : 0
Duplex-State  : Half
Outer-tpid   : 33024(0x8100)
Learning   : Enable
Egress-Rate-Limit : 100000
Ingress-Rate-Limit : 100000
Priority   : 0
PVID    : 100
```

```
epon(GE-1)#
```

5.2. Switch Mode Configuration

5.2.1. View VLAN-Enabled Configuration

Command Syntax	epon#**show swmode vlan**
Function Description	View controller card switch mode

[Configuration Case]

Case1: View configuration of current switch mode of main controller card:

```
epon# show swmode vlan
VLAN STATUS : Disable
```

5.2.2. Configurate VLAN Switch Mode

Command Syntax	epon# **swmode vlan** ***<mode>***
Function Description	Enable or disable VLAN switch mode of main controller card
<mode>	VLAN mode of main controller card, valid value in: Enable|disable

[Configuration Case]

Case1: Enable VLAN switch mode of main controller card:

```
epon# swmode vlan enable
epon#
```

5.2.3. Configurate OLT Switch Mode

Command Syntax	epon# **swmode pve** ***<diy\ isolate\ normal | switch | onebyone\ uplink-isolate>***
Function Description	Configurate OLT switch mode

<diy>	Flexibly configurate interworking port group, which support the quantity of switch port for the most
<isolate>	Separation distance of PON port and up-link port
<normal>	Separation distance between PON ports, one PON port can communicate with several up-link ports
<switch>	All ports can communicate with each other
<onebyone>	One PON port can only communicate with one corresponding up-link port, like PON1 can only communicate with ge1, PON5 can only communicate with ge5
<uplink-isolate>	Separation distance of up-link port

[Configuration Case]

Case1: Set the switch mode of OLT as uplink-isolate:

```
epon# swmode pve uplink-isolate
epon#
```

Case2: Set the switch mode of OLT as diy and add port group1 to enable the communication between ge1 and ge3:

```
epon# swmode pve diy group add 1 “ge1,ge3”
epon#
```

Case3: Delete port group1 of diy switch mode of OLT:

```
epon# swmode pve diy group del 1
epon#
```

5.2.4. View OLT Switch Mode

Command Syntax	epon#**show swmode pve**
Function Description	View OLT switch mode

[Configuration Case]

Case1: View configuration of OLT switch mode:

```
epon# show swmode pve
system working mode: normal
epon#
```

5.3. ACL Configuration Management

5.3.1. Create ACL and Enter ACL Configuration View

Command Syntax	epon# **acl <id>**
Function Description	Create one ACL and enter acl configuration view
<id>	ACL ID has several parameters as follows: <1-2000>: Basic ACL, can only match source IP address <2001-5000>: Advanced ACL can match dscp, destination IP address, destination port, IP protocol, source IP address, source port, sevice type <5001-8000>: Link ACL, can match destination MAC, Ethernet type, source MAC and VLAN <8001-10000>: User ACL, does not support the function by now

[Configuration Case]

Case1: Create one ACL with ACL ID of 2 and enter the ACL configuration view:

```
epon# acl 2
 Create 1 ACL(s) success
epon(acl-basic-2)#
```

5.3.2. Delete Existing ACL

Command Syntax	epon# **acl-del <id>**
Function Description	Delete existing ACL
<id>	ACL ID, value as all, 1-10000, all represents all ACL

[Configuration Case]

Case1: Delete ACL with ACL ID of 2:

```
epon# acl-del 2
 Remove 1 ACL(s) success
epon#
```

5.3.3. Configurate Action of ACL Rule

Command Syntax	epon(acl-basic-2)# **rule <id> action <action>**
Function Description	Rule action configuration, permit or reject matched specified parameter, used on all ACL
<id>	Rule ID, value range in 1-16
<action>	Optional parameter: <deny>: Rejection of rule action <permit>: Permission of rule action

[Configuration Case]

Case1: Set the action of rule1 as rejection:

```
epon(acl-basic-2)# rule 1 action deny
 Create 1 rule(s) success
epon(acl-basic-2)#
```

5.3.4. Configurate Matched Source IP Address of ACL Rule

Command Syntax	epon(acl-basic-2)# **rule <id> match src-ip <ip> <wild-card>**
Function Description	Configurate matched source Ip address of ACL rule. Only applicable to the ACL with ACL ID in 1-5000
<id>	Rule ID, value range in 1-16
<ip>	IP address, in the form of A.B.C.D
<wild-card>	Wildcard-mask, in the form of A.B.C.D

[Configuration Case]

Case1: Set the matched source IP of rule1 as 192.168.5.123 and wildcard-mask as 0.0.0.255:

```
epon(acl-basic-2)# rule 1 match src-ip 192.168.5.123 0.0.0.255
epon(acl-basic-2)#
```

5.3.5. Configurate Matched DSCP of ACL Rule

Command Syntax	epon(acl-basic-2001)# **rule <id> match dscp <value>**
Function Description	Configurate matched DSCP of ACL rule, the service type of TOS can not be matched if DSCP is matched already, or confict will be caused. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<value>	DSCP value, range in 0-63

[Configuration Case]

Case1: Set the matched DSCP value of rule1 as 0:

```
epon(acl-adv-2001)# rule 1 match dscp 0
epon(acl-adv-2001)#
```

5.3.6. Configurate Matched Destination IP of ACL Rule

Command Syntax	epon(acl-basic-2001)# **rule <id> match dst-ip <ip> <wild-card>**
Function Description	Configurate Matched Destination IP of ACL Rule, only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<ip>	IP address, in the form of A.B.C.D
<wild-card>	Wildcard-mask, in the form of A.B.C.D

[Configuration Case]

Case1: Set the matched destination IP of rule1 as 192.168.1.1 and wildcard-mask as 0.0.0.255:

```
epon(acl-adv-2001)# rule 1 match dst-ip 192.168.1.1 0.0.0.255
```

```
epon(acl-adv-2001)#
```

5.3.7. Configurate Matched Destination Port of ACL Rule

Command Syntax	epon(acl-basic-2001)# **rule <id> match dst-port <port>**
Function Description	Configurate matched destination port of ACL rule, match IP protocol as TCP/UDP first. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<port>	Port number, value range in 0-65535

[Configuration Case]

Case1: Set the matched destination port of rule1 as port 233:

```
epon(acl-adv-2001)# rule 1 match dst-port 233
epon(acl-adv-2001)#
```

5.3.8. Configurate Matched IP Protocol of ACL Rule

Command Syntax	epon(acl-basic-2001)# **rule <id> match ip-protocol <protocol>**
Function Description	Configurate matched IP protocol of ACL rule. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
< protocol >	IP protocol, optional parameter: Egp: Exterior Gateway Protocol Icmp: Internet Control Message Protocol Igmp: Internet Group Management Protocol Tcp: Transmission Control Protocol Udp : User Datagram Protocol

[Configuration Case]

Case1: Set Matched IP Protocol of rule1 as UDP protocol:

```
epon(acl-adv-2001)# rule 1 match ip-protocol udp
epon(acl-adv-2001)#
```

5.3.9. Configurate Matched Source Port of ACL Rule

Command Syntax	epon(acl-basic-2001)# **rule <id> match src-port <port>**
Function Description	Configurate matched source port of ACL rule, match IP protocol as TCP/UDP first. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<port>	Port number, value range in 0-65535

[Configuration Case]

Case1: Set the matched source port of rule1 as port 23:

```
epon(acl-adv-2001)# rule 1 match src-port 23
epon(acl-adv-2001)#
```

5.3.10. Configurate Matched Service Type TOS of ACL Rule

Command Syntax	epon(acl-basic-2001)# **rule <id> match tos <value>**
Function Description	Configurate matched service type TOS of ACL rule, DSCP can not be matched if the service type of TOS is matched already, or confict will be caused. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<value>	Service type, value range in 0-15

[Configuration Case]

Case1: Set the matched service type of rule1 as 0:

```
epon(acl-adv-2001)# rule 2 match tos 0
 Create 1 rule(s) success
epon(acl-adv-2001)#
```

5.3.11. Configurate Matched Destination MAC Address of ACL Rule

Command Syntax	epon(acl-basic-5001)# **rule <id> match dst-mac <mac> <mask>**
Function Description	Configurate matched destination MAC address of ACL rule. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<mac>	MAC address, in the form of AA-BB-CC-DD-EE-FF
<mask>	Mask, in the form of AA-BB-CC-DD-EE-FF

[Configuration Case]

Case1: Set the matched destination MAC address as 08-c6-b3-26-a1-07 and mask as ff-ff-ff-ff-ff-ff of rule1:

```
epon(acl-link-5001)# rule 1 match dst-mac  08-c6-b3-26-a1-07 ff-ff-ff-ff-ff-ff
 Create 1 rule(s) success
epon(acl-link-5001)#
```

5.3.12. Configurate Matched Ethernet Data Frame Type of ACL Rule

Command Syntax	epon(acl-basic-5001)# **rule <id> match eth-type <type>**
Function Description	Configurate matched ethernet data frame type of ACL rule. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<type>	Ethernet data frame type value (presented as hexadecimal number), optional parameter: 0x0800: IP 0x0806: ARP 0x8035: RARP 0x814C: SNMP 0x86DD: IPV6 0x880B: PPP

	0x8863: PPPoE_DISC 0x8864: PPPoE_SESSION

[Configuration Case]

Case1: Set the matched Ethernet type value of rule1 as 0x0800, which is data frame as well:

```
epon(acl-link-5001)# rule 1 match eth-type 0x0800
epon(acl-link-5001)#
```

5.3.13. Configurate Source MAC Address of ACL Rule

Command Syntax	epon(acl-basic-5001)# **rule <id> match src-mac <mac> <mask>**
Function Description	Configurate source mac address of ACL rule. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<mac>	MAC address, in the form of AA-BB-CC-DD-EE-FF
<mask>	Mask, in the form of AA-BB-CC-DD-EE-FF

[Configuration Case]

Case1: Set the matched MAC address as 08-c6-b3-26-a1-04 and mask as ff-ff-ff-ff-ff-ff of rule1:

```
epon(acl-link-5001)# rule 1 match src-mac  08-c6-b3-26-a1-04 ff-ff-ff-ff-ff-ff
epon(acl-link-5001)#
```

5.3.14. Configurate Matched VLAN of ACL Rule

Command Syntax	epon(acl-basic-5001)# **rule <id> match vlan <vid>**
Function Description	Configurate matched VLAN of ACL rule. Only applicable to the ACL with ACL ID in 2001-5000
<id>	Rule ID, value range in 1-16
<vid>	VLAN ID, value range in 1-4094

[Configuration Case]

Case1: Set the matched VLAN of rule1 as 100:

```
epon(acl-link-5001)# rule 1 match vlan 100
epon(acl-link-5001)#
```

5.3.15. View Current ACL Configuration

Command Syntax	epon# **show acl <id>**
Function Description	View current ACL configuration
<id>	Rule ID, value range in 1-10000 or all, all represents all ACL

[Configuration Case]

Case1: View all current ACL configuration:

```
epon# show acl all
 ACL: 2001
 Installed on: no port install
 Rule 1 action: deny
  Match: dscp 0
  Match: destination ip address :192.168.1.1
    wild card ip address :0.0.0.255
  Match: source ip address :192.168.2.1
    wild card ip address :0.0.0.255
  Match: destination protocol port 233~233
  Match: source protocol port 23~23
  Match: ip protocol udp
 Rule 2 action: none
  Match: tos 0
 ACL: 2
 Installed on: no port install
 Rule 1 action: deny
  Match: source ip address :192.168.5.123
    wild card ip address :0.0.0.255
 Rule 2 action: none
 Rule 4 action: none
  Match: source ip address :192.143.23.23
```

```
  wild card ip address :0.0.0.255
epon#
```

Case2: View current configuration of ACL with ID 2001:

```
epon# show acl 2001
 ACL: 2001
 Installed on: no port install
 Rule 1 action: deny
  Match: dscp 0
  Match: destination ip address :192.168.1.1
    wild card ip address :0.0.0.255
  Match: source ip address :192.168.2.1
    wild card ip address :0.0.0.255
  Match: destination protocol port 233~233
  Match: source protocol port 23~23
  Match: ip protocol udp
 Rule 2 action: none
  Match: tos 0
epon#
```

5.4. MAC Address Management

5.4.1. Configurate MAC Aging Time of Main Controller Card

Command Syntax	epon# **mac-address aging** ***<timeout>***
Function Description	Configurate MAC aging time of main controller card
<timeout>	MAC aging time, value range in 0-65535 (s), 300s as default value

[Configuration Case]

Case1: Set the MAC aging time of main controller card as 600 seconds:

```
epon# mac-address aging 600
epon#
```

5.4.2. View Aging Time of Main Controller Card

Command Syntax	epon# **show mac-address aging**
Function Description	View aging time of main controller card

[Configuration Case]

Case1: View aging time of main controller card:

```
epon# show mac-address aging
MAC address table aging time: 600s
epon#
```

5.5. Switch Port VLAN Configuration Management

5.5.1. Create VLAN

Command Syntax	epon#**vlan <*vlanid*>**
Function Description	Create one VLAN then enter the management mode of the VLAN and configurate the VLAN
< vlanid >	Specify the VLAN ID that needs to be modified or created, integer value, range in 1 ~ 4094

[Configuration Case]

Case1: Create VLAN100 and enter the management mode of VLAN100:

```
epon#vlan 100
epon(vlan-100))#
```

5.5.2. Add VLAN Port Member

Command Syntax	epon(vlan-100) # **member add <member> *<tag>***
Function Description	Add VLAN port member and set it as tag mode, or it will be access mode, which is equivalent to trunk mode when setting tag

<member>	Specify the adding VLAN member port list, which can be any combination among ge1~ge16. Port representing method refer to the illustration of 2.3 Typical Parameter Type
<tag>	Marking method, as optional parameter, fixed in tag value Give out tag parameter that means member port is marked port, the message exits through the port will be marked with VLAN label When tag parameter is default, which means member port is not-marked port, the message exits through the port will not be marked with VLAN label

[Configuration Case]

Case1: Add main controller card port ge1, ge2 and ge3 as tagged member port of VLAN100, port ge4 and ge5 are untagged member port of VLAN100:

```
epon(vlan-100)#member add ge1-ge3 tag
epon(vlan-100)#member add ge4-ge5
```

5.5.3. Delete VLAN Port Member

Command Syntax	epon(vlan-100)# **member del *<member>***
Function Description	Delete VLAN port member
<member>	Specify the deleting VLAN member port list, which can be any combination among ge1~ge16. Port representing method refer to the illustration of 2.3 Typical Parameter Type

[Configuration Case]

Case1: Delete member port ge2 and ge3 of main controller card VLAN100:

```
epon(vlan-100)# member del ge2,ge3
epon(vlan-100)#
```

5.5.4. Delete VLAN

Command Syntax	epon(vlan-100)#**delete *<vlanList>***

Function Description	Delete VLAN
<vlanlist>	Specify the deleting VLAN list, valid value is any combination in 1 ~ 4094, like: delete vlan 10,20,30 delete vlan 100-120 delete vlan 10,100-110,200

[Configuration Case]

Case1: Delete main controller card VLAN 100:

```
epon(vlan-100)# delete 100
epon(vlan-100)#
```

5.5.5. View Current VLAN Configuration

Command Syntax	epon#**show vlan <*vlanId*>**
Function Description	View current VLAN configuration of main controller card
<vlanId>	All: View all current VLAN configuration of main controller card 1-4094: View VLAN configuration of main controller card vlanid

[Configuration Case]

Case1: View all current VLAN configuration of main controller card:

```
epon# show vlan all
-------------------------------------------------
VLAN ID: 1
Tagged ports:
 none
Untagged ports:
  ge-9 ge-10 ge-11 ge-12 ge-13 ge-14 ge-15 ge-16
  ge-1 ge-2 ge-3 ge-4 ge-5 ge-6 ge-7 ge-8
-------------------------------------------------
```

```
VLAN ID: 200
Tagged ports:
  ge-9 ge-13
Untagged ports:
  ge-2
-------------------------------------------------
VLAN ID: 300
Tagged ports:
  ge-13
  ge-2
Untagged ports:
 none
epon#
```

5.6. RSTP Configuration Management

5.6.1. Enable/Disable RSTP Configuration

Command Syntax	epon# **rstp <state>**
Function Description	Enable or disable RSTP function
<state>	Enable: Enable RSTP function Disable: Disable RSTP function

[Configuration Case]

Case1: Enable RSTP function:

```
epon# rstp enable
Enable RSTP successful!
epon#
```

Case2: Disable RSTP function:

```
epon# rstp disable
Disable RSTP successful!
epon#
```

5.6.2. Maximum Aging Time Configuration of RSTP Bridge

Command Syntax	epon# **rstp bridge maxage <*aging*>**
Function Description	Configurate RSTP maximum aging time
<aging>	Value range in 6-40, it should be less or equal 2 times of maximum transmitting delay

[Configuration Case]

Case1: Suppose the maximum transmitting delay is 15 seconds, set the maximum aging time of the device as 30 seconds:

```
epon# rstp bridge maxage 15
Configurate RSTP max age successful!
epon#
```

5.6.3. Maximum Transmitting Delay Configuration of RSTP Bridge

Command Syntax	epon# **rstp bridge fdelay <*fdelay*>**
Function Description	Configurate RSTP maximum transmitting delay
<fdelay>	Value range in 4-30 Maximum aging time must be less or equal 2 times of maximum transmitting delay

[Configuration Case]

Case1: Set the maximum transmitting delay of the device as 10 seconds:

```
epon# rstp bridge fdelay 10
Configurate RSTP forward delay successful!
epon#
```

5.6.4. Priority Configuration of RSTP Bridge

Command Syntax	epon# **rstp bridge priority <*prio*>**

Function Description	Configurate bridge priority
<prio>	Value range in p0-p65535 Attention: Bridge priority should be a multiple of 4096, is used in the selection of root bridge of network

[Configuration Case]

Case1: Set the bridge priority as p4096:

```
epon# rstp bridge priority p4096
Configurate RSTP bridge priority successful!
epon#
```

5.6.5. Configurate Maximum Quantity of BPDU Forwarded by RSTP each Second

Command Syntax	epon# **rstp hold-count <*count*>**
Function Description	Configurate maximum quantity of BPDU forwarded by RSTP each second
<count>	Value range in 1-10

[Configuration Case]

Case1: Set the maximum quantity of BPDU forwarded by RSTP each second as10:

```
epon# rstp hold-count 10
Configurate RSTP transmit holle packet limit successful!
epon#
```

5.6.6. RSTP Port Priority

Command Syntax	epon# **rstp port <*protid*> priority <*prio*>**
Function Description	Configurate port priority of device
<protid>	Switch port of device, like: ge1, ge2, ge3 , ge4 , ge5 , ge6, ge7 , ge8

<prio>	Port priority Attention: In the situation that the link cost and transmitting bridge ID are the same, the port with the lowest priority will be transmitting port. Tunable parameter value in 0～440 with step size of 16

[Configuration Case]

Case1: Set the priority of port ge1 as 0:

```
epon# rstp port ge1 priority p0
GE(1)'s priority configuration successful!
epon#
```

5.6.7. RSTP Port Path Cost

Command Syntax	epon# **rstp port <*protid*> path-cost <*pathcost*>**
Function Description	Configurate RSTP Port Path Cost
<protid>	Switch port of device, like: ge1, ge2, ge3 , ge4 , ge5 , ge6, ge7 , ge8
<pathcost>	Configurate port path cost Attention: The port with the lowest path cost will be the root port when bridge ID are the same

[Configuration Case]

Case1: Set the path cost of port ge1 as 2000:

```
epon# rstp port ge1 path-cost 2000
GE(1)'s path cost configuration successful!
epon#
```

5.6.8. RSTP Portfast Configuration

Command Syntax	epon# **rstp port <*protid*> edgecfg <*edge*>**
Function Description	Configurate RSTP portfast

<protid>	Switch port of device, like: ge1, ge2, ge3 , ge4 , ge5 , ge6, ge7 , ge8
<edge>	edge: Set as protfast none-edge: Set as not portfast auto: Port status of auto-negotiating Attention: Portfast directly switch into the transmitting status without the step of discarding-learning-forwarding as other ports need the step

[Configuration Case]

Case1: Set port ge1 as RSTP portfast:

```
epon# rstp port ge1 edgecfg edge
GE(1)'s edge attribute configuration successful!
epon#
```

[Configuration Case]

Case2: Set port ge1 as auto-negotiating status:

```
epon# rstp port ge1 edgecfg auto
GE(1)'s edge attribute configuration successful!
epon#
```

5.6.9. Configuration of Point-to-Point Attribute of RSTP

Command Syntax	epon#**rstp port *<protid>* p2pcfg *<p2p>***
Function Description	Configurate point-to-point attribute of RSTP port
<protid>	Switch port of device, like: ge1, ge2, ge3 , ge4 , ge5 , ge6, ge7 , ge8
<p2p>	Shared: Shared port None-edge: P2P Port Auto: Auto-negotiating Attention: Only point-to-point port is allowed to switch into transmitting status, the rest needs the step of discarding-learning-forwarding to switch into transmitting status

[Configuration Case]

Case1: Set the attribute of ge1 port as point-to-point of FSTP:

```
epon# rstp port ge1 p2pcfg p2p
GE(1)'s link type configuration successful!
epon#
```

5.6.10. Synchronization of RSTP Protocol Version

Command Syntax	epon#**rstp port <*protid*> mcheck**
Function Description	Configurate the synchronization function of RSTP Protocol
<protid>	Switch port of device, like: ge1, ge2, ge3 , ge4 , ge5 , ge6, ge7 , ge8

[Configuration Case]

Case1: Enable the version checking function of ge1 port:

```
epon# rstp port ge1 mcheck
GE(1) force version successful!
epon#
```

5.6.11. View RSTP Running Status

Command Syntax	epon#**show rstp <protid>**
Function Description	View RSTP running status of every port
<protid>	Optional parameter: When this parameter is not added, view the RSTP information of all ports When this parameter is added, view the RSTP information of specific port which can be ge1-ge8

[Configuration Case]

Case1: View RSTP running status of the port:

```
epon# show rstp ge1
-------GE(1) RSTP int:-------
 Port Protocol  : Disable
 Port STP Mode  : RSTP
 Port Role   : UNKNOWN
 Port Priority  : 1
 Port Path Cost  : 2000
 Port Edge Admin  : Edge
 Port Edge Status  : Edge
 Port Link Type Admin : P2P
 Port Link Type Status: P2P
 Port Status   : Forwarding
epon#
```

[Configuration Case]

Case2: View RSTP running status:

```
epon# show rstp
RSTP Bridge Status:
 RSTP Setting   :Disable
 Bridge ID [PRI-MAC] :4096-  08-c6-b3-26-a1-01
 Bridge Hello Time :2 sec
 Bridge Max Age  :15 sec
 Bridge Forward Delay :10 sec
 Transmit Hold Count :10
 Root Bridge ID  :0-00:00:00:00:00:00
 Root Path Cost  :0
RSTP Port Status:
 GE Mode Pri PathCost EdgeC EdgeO P2pC P2pO State  Role
 1 RSTP 1 2000  Edge Edge P2P P2P LinkDown UNKNOWN
 2 RSTP 128 20000  Auto NEdge Auto P2P LinkDown UNKNOWN
 3 RSTP 128 20000  Auto NEdge Auto P2P LinkDown UNKNOWN
 4 RSTP 128 20000  Auto NEdge Auto P2P LinkDown UNKNOWN
 5 RSTP 128 20000  Auto NEdge Auto P2P LinkDown UNKNOWN
 6 RSTP 128 20000  Auto NEdge Auto P2P LinkDown UNKNOWN
 7 RSTP 128 20000  Auto NEdge Auto P2P LinkDown UNKNOWN
 8 RSTP 128 20000  Auto NEdge Auto P2P LinkDown UNKNOWN
Total 8 RSTP ports dumped.
```

```
epon#
```

5.7. Trunk Aggregation Function Configuration

5.7.1. Enter Trunk Group View

Command Syntax	epon# **trunk <*tid*>**
Function Description	Enter trunk group view, trunk group implements port aggregation
<tid>	Serial port group of device is 1-4

[Configuration Case]

Case1: Enter the view of trunk group 1:

```
epon# trunk 1
epon(trunk-1)#
```

5.7.2. Configurate Receiving Frame Type of Trunk Group

Command Syntax	epon(trunk-1)# **admit-frame <*type*>**
Function Description	Configurate receiving frame type of trunk group
<type>	Frame type, optional parameter: <all|tagged|untagged>。 All: Receive all types of frame Tagged: Only receive tagged message untagged: Onlyu receive untagged message

[Configuration Case]

Case1: Set trunk group 1 as receiving all types of frame:

```
epon(trunk -1)# admit-frame all
epon(trunk -1)#
```

5.7.3. Configurate Auto-Negotiating Function of Trunk Group

Command Syntax	epon(trunk -1)# **auto-nego**
Function Description	Configurate auto-negotiating function of trunk group

[Configuration Case]

Case1: Set trunk group 1 as auto-negotiating:

```
epon(trunk-1)# auto-nego
epon(trunk-1)#
```

5.7.4. Configurate Default Priority of Trunk Group

Command Syntax	epon(trunk -1)# **def-pri *<priority>***
Function Description	Configurate default priority of trunk group like PVI, when port receives data package without VLAN tag, the package will be assigned with the default priority of 802.1P of the port, the data package will enter different priority queue and obtain different services based on the corresponding priority and flow classification approach
<priority>	Specify the configuration value of trunk group priority as integer in legal range of 0 ~ 7

[Configuration Case]

Case1: Set the priority of trunk group 1 as 0:

```
epon(trunk -1)# def-pri 0
epon(trunk -1)#
```

5.7.5. Configurate Trunk Group flow Control Function

Command Syntax	epon(trunk -1)# **flow-ctrl *<admin>***
Function Description	Manage flow control of main controller card trunk group such as restricting the forwarding speed of packege

<admin>	Trunk group flow control function, optional parameter <disable|enable> Disable: Disable flow control function Enable: Enable flow control function

[Configuration Case]

Case1: Enable flow control function of trunk group 1:

```
epon(trunk -1)# flow-ctrl enable
epon(trunk -1)#
```

5.7.6. Configurate Trunk Group Mac Address Learning Function

Command Syntax	epon(trunk -1)# **learning *<admin>***
Function Description	Enable or disable trunk group Mac address learning function
<admin>	Enable or disable trunk group Mac address learning function, optional parameter : <disable|enable> Disable: Disable trunk group Mac address learning function Enable: Enable trunk group Mac address learning function

[Configuration Case]

Case1: Enable mac address learning function of trunk group 1:

```
epon(trunk -1)# learning enable
epon(trunk -1)#
```

5.7.7. ConfigurateLoad Balancing Function of Trunk Group

Command Syntax	epon(trunk -1)# **load-balance <type>**
Function Description	User can configurate trunk group port as load balancing according to the configurated type
<type>	Configurate load balancing of trunk group, optional parameter as follows:

	src-mac: Balance the load of member port according to source Mac address dst-mac: Balance the load of member port according to destination Mac address src-dst-mac: Balance the load of member port according to destination Mac address and source Mac address src-ip: Balance the load of member port according to source IP address dst-ip: Balance the load of member port according to destination IP address src-dst-ip: Balance the load of member port according to destination IP address and source IP address

[Configuration Case]

Case1: Set trunk group 1 as balancing load of member port according to destination IP address:

```
epon(trunk-1)# load-balance dst-ip
epon(trunk-1)#
```

5.7.8. Configurate PVID of Trunk Group

Command Syntax	epon(trunk -1)#**pvid *<pvid>***
Function Description	Configurate default VLAN ID of trunk group, the entered data will be marked with default VLAN ID label
<pvid>	Optional parameter range: 0-4094

[Configuration Case]

Case1: Set default VLAN ID of trunk group 1 as 100:

```
epon(trunk -1)# pvid 100
epon(trunk -1)#
```

5.7.9. Configurate Trunk Group Entrance Parameter of Speed Limit

Command Syntax	epon(trunk -1)# **rate-ctrl ingress *<rate>***

Function Description	Configurate entrance switching speed parameter of trunk group
<rate>	0-1000000(kps)

[Configuration Case]

Case1: Restrict trunk group entrance data speed under 100000 kps:

```
epon(trunk-1)# rate-ctrl ingress 100000
epon(trunk-1)#
```

5.7.10. Configurate Trunk Group Exit Parameter of Speed Limit

Command Syntax	epon(trunk -1)# **rate-ctrl egress <*rate*>**
Function Description	Configurate exit switching speed parameter of trunk group
<rate>	0-1000000(kps)

[Configuration Case]

Case1: Restrict the exit data speed of trunk group 1 under 100000 kps:

```
epon(trunk-1)# rate-ctrl egress 100000
epon(trunk-1)#
```

5.7.11. Configurate Current Trunk Group Speed and Duplex Mode

Command Syntax	epon(trunk -1)#**speed <*speed*> duplex <*duplex*>**
Function Description	Only support 10m. The 100m and 1000m only support adaptable
<speed>	Valid parameter value range: <10m|100m|1000m>
<duplex>	Optional configuration option: full|half> Full: Full duplex mode Half: Half duplex mode

[Configuration Case]

Case1: Set trunk group speed as 10m full duplex mode:

```
epon(trunk-1)# speed 10m duplex full
epon(trunk-1)#
```

5.7.12. Enable/Disable Trunk Group Storm Control Function and Configurate Port Storm Control Parameter

Command Syntax	epon(trunk-1)# ***storm-ctrl <type> <enable> <rate>***
Function Description	Enable/Disable port storm control function and configurate the data package type and speed of storm control
<type>	Support data pakage as follows by now: broadcast multicast unknown-unicast
<enable>	Enable: Enable storm control function Disable: Disable storm control function
<rate>	Control speed, value range: 0-33554431(kbps)

[Configuration Case]

Case1: Enable the storm control function of trunk group 1 with control speed of 330000:

```
epon(trunk-1)# storm-ctrl broadcast enable 330000
epon(trunk-1)#
```

5.7.13. Batch Adding VLAN Function in Trunk Group

Command Syntax	epon(trunk-1)# **vlan add <*vidlist*> <*tag*>**
Function Description	Batch creating VLAN and set tag mode in trunk group
<vidlist>	Value range in 1-4094
<tag>	Marking method, as optional parameter, fixed in tag value

	Give out tag parameter that means member port is marked port, the message exits through the port will be marked with VLAN label When tag parameter is default, which means member port is not-marked port, the message exits through the port will not be marked with VLAN label

[Configuration Case]

Case1: Batch creating VLAN2-100 with tag label and VLAN101-200 without tag label in trunk group 1:

```
epon(trunk-1)# vlan add 2-100 tag
epon(trunk-1)# vlan add 101-200
```

5.7.14. Batch Removing VLAN Function in Trunk Group

Command Syntax	epon(trunk-1)# **vlan del <*vidlist*>**
Function Description	Batch Removing member port in trunk group
<vidlist>	Value range in 1-4094

[Configuration Case]

Case1: Remove VLAN2-200 in trunk group:

```
epon(trunk-1)# vlan del 2-200
```

5.7.15. Add Trunk Member Port in Trunk Group

Command Syntax	epon(trunk-1)# **member add <*member*>**
Function Description	Add trunk member port of trunk group
<member>	Add portlist, please refer to 2-3

[Configuration Case]

Case1: Add member port ge1-ge4 in trunk goup 1:

```
epon(trunk-1)# member add ge1-ge4
epon(trunk-1)#
```

5.7.16. Remove Trunk Member Port in Trunk Group

Command Syntax	epon(trunk-1)# **member del <*member*>**
Function Description	Remove member port of trunk interface
<member>	Remove portlist, please refer to 2-3

[Configuration Case]

Case1: Remove member port ge1-ge4 in trunk goup 1:

```
epon(trunk-1)# member del ge1-ge2
epon(trunk-1)#
```

5.7.17. Remove the Entire Trunk Group

Command Syntax	epon(trunk-1)**# delete <*trunkList*>**
Function Description	Remove the entire trunk of the configuration of trunk list, firstly the configuration of member port of trunk group should exist
<trunklist>	Trunklist range in 1-4

[Configuration Case]

Case1: Remove trunk group 1-2:

```
epon(trunk-1)# delete 1-2
epon(trunk-1)#
```

5.7.18. View Configuration of Trunk Group

Command Syntax	epon# **show trunk <*trunkid*>**

Function Description	View configuration of trunk group
<trunkid>	all: View all configuration of trunk group 1-4: Specify the configuration of trunk group

[Configuration Case]

Case1: View configuration of trunk group 1:

```
epon(trunk-1)# show trunk 1
------------------------------------------------------------
TRUNK-1 Load Balance : src-mac

TRUNK-1 Member Ports Attribute:
Flow-Control   : Disable
Speed-Duplex   : auto-nego
Learning    : Enable
Egress-Rate-Limit  : Disable
Ingress-Rate-Limit  : Disable
Priority    : 0
PVID     : 1
Admit Frame    : all
TAG VLAN :
100,123,
UNTAG VLAN :
 none

TRUNK-1 Member Ports Storm Control configuration:
 type   status rate(pps)
 broadcast  enable 500
 multicast  enable 500
 unknown unicast enable 500

TRUNK-1 Member PORTS:
```

```
  GE-3
  GE-4
epon(trunk-1)#
```

5.8. RMON Network Monitoring and Configurating

5.8.1. Delete RMON Statistics

5.8.1.1. Delete RMON Statistics of All Interfaces

Command Syntax	epon# **rmon statistics clear-all**
Function Description	Delete statistics of all interfaces of device

[Configuration Case]

Case1: Delete RMON Statistics of All Interfaces:

```
epon# rmon statistics clear-all
epon#
```

5.8.1.2. Delete RMON Statistics of Specified Port

Command Syntax	epon# **rmon statistics clear** ***<port>***
Function Description	Delete RMON statistics of specified port
<port>	Interface, refer to above 2.3

[Configuration Case]

Case1: Delete RMON statistics of specified port

```
epon# rmon statistics clear ge1
epon#
```

5.8.2. RMON History Configuration

5.8.2.1. Configurate RMON History in Interface

Command Syntax	epon# **rmon history add** ***<port> <entry-number> <buckets-number> <interval> <owner>***
Function Description	Rmon history configuration
<port>	Interface, refer to above 2.3
<entry-number>	History index number, range in 1-65535
<buckets-number>	Stored history records, range in 1-65535
<interval>	Time interval of history statistics
<owner>	Owner

[Configuration Case]

Case1: Set the RMON index of ge1 interface as 1, time interval of statistics as 5 seconds, the maximum record of history statistics as 5 and the owner as user1.

```
epon# rmon history add ge1 1 5 5 user1
epon#
```

5.8.2.2. Delete Configuration of RMON History of Interface

Command Syntax	epon# **rmon history del < *entry-number>***
Function Description	Delete configuration of RMON history
<entry-number>	History index, range in 1-65535

[Configuration Case]

Case1: Delete the configuration of 1 of RMON history:

```
epon# rmon history del 1
```

```
epon#
```

5.8.3. RMON Event Configuration

5.8.3.1. Add RMON Event

Command Syntax	epon#**rmon event add** ***<entry-number>*** ***<description>*** ***<type>*** ***<owner>***
Function Description	Add RMON eventt
<entry-number>	Event index, range in 1-65535
<description>	1-127 bytes
<type>	none: Do not record any information log: Record log information trap: Record trap information log-trap: Record log and trap information
<owner >	User name with the limit of 27 character string

[Configuration Case]

Case1: Add RMON event with index of 100, description of test, configuration of recording log information and the owner as user 1:

```
epon# rmon event add 100 test log user1
epon#
```

5.8.3.2. Delete RMON Event

Command Syntax	epon#**rmon event del** ***<entry-number>***
Function Description	Delete RMON event
<entry-number>	Event index, range in 1-65535

[Configuration Case]

Case1: Delete the RMON event with index of 100, description of test, configuration of recording log information and the owner as user 1:

```
epon# rmon event del 100
epon#
```

5.8.4. RMON Alarm Configuration

5.8.4.1. Add RMON Alarm Group

Command Syntax	epon#**rmon alarm add *<entry-number> <alarm-variable> <interval> <type> <rising-value> <rising-event> <falling-value> <falling-event> <owner>***
Function Description	Add RMON alarm event
<entry-number>	Event index, range in 1-65535
<alarm-variable>	Oid every leaf node of interface has oid value
<interval>	RMON alarm time interval
<typer >	delta: Relative sampling, which is the sample value difference between two time interval absolute: Absolute sampling, which is the value reached within specified time
<rising-value>	Upper threshold, range in 2147483648 - +2147483647
<rising-event>	Upper limit event
<falling-value>	Lower threshold, range in 2147483648 - +2147483647
<falling-event>	Lower limit event configuration
<Owner>	Event owner configuration

[Configuration Case]

Case1: Add absolute sampling RMON alarm with OID of 1.3.6.1.2.1.16.1.1.1.4.1, time interval of 5 seconds, upper threshold as 40000, down theshold as 20000 and event of 1.

```
epon# rmon alarm add 1 1.3.6.1.2.1.16.1.1.1.4.1 5 absolute 40000 1 20000 1
yx
epon#
```

5.8.4.2. *Delete RMON Alarm Group*

Command Syntax	epon#**rmon alarm del <*entry-number*>**
Function Description	**Delete RMON alarm group**
<*entry-number*>	event index, range in 1-65535

[Configuration Case]

Case1: Delete RMON alarm event 1:

```
epon# rmon alarm del 1
epon#
```

5.8.5. View RMON Statistics

Command Syntax	epon# **show rmon statistics <*port*>**
Function Description	View RMON statistics
<port>	Switch interface of device

[Configuration Case]

Case1: View RMON statistics of interface ge1:

```
epon# show rmon statistics ge1
 GE-1 Statistics:
 etherStatsOctets  : 2151210 etherStatsPkts   : 2248
5
 etherStatsBroadcastPkts  : 19504  etherStatsMulticastPkts : 2368
```

```
etherStatsUndersizePkts : 0   etherStatsOversizePkts : 0

etherStatsFragments  : 0   etherStatsJabbers  : 0

etherStatsCRCAlignErrors: 0   etherStatsCollisions : 0

etherStatsDropEvents : 14615
Packets received according to length:
64  : 13830  65-127 : 7791  128-255 : 375
256-511  : 83   512-1023 : 138  1024-1518 : 268
epon#
```

5.8.6. View RMON History

Command Syntax	epon# **show rmon history** ***<port>***
Function Description	View RMON History
<port>	Switch interface of device

[Configuration Case]

Case1: View RMON History of interface ge1:

```
epon# show rmon history ge1
 HistoryControlEntry 1 owned by user1 is VALID
 Samples interface  : GE-1
 Sampling interval  : 5(sec) with 5 buckets max
 Sampled values of record 1 :
 dropevents  : 0   octets   : 1336
 packets   : 18   broadcast packets : 14
 multicast packets : 4   CRC alignment errors : 0
 undersize packets : 0   oversize packets  : 0
 fragments   : 0   jabbers   : 0
 collisions  : 0   utilization   : 0
```

```
Sampled values of record 2 :
dropevents  : 0   octets    : 2160
packets   : 24   broadcast packets : 23
multicast packets : 1   CRC alignment errors : 0
undersize packets : 0   oversize packets  : 0
fragments   : 0   jabbers    : 0
collisions  : 0   utilization   : 0
Sampled values of record 3 :
dropevents  : 0   octets    : 1644
packets   : 20   broadcast packets : 19
multicast packets : 1   CRC alignment errors : 0
undersize packets : 0   oversize packets  : 0
fragments   : 0   jabbers    : 0
collisions  : 0   utilization   : 0
Sampled values of record 4 :
dropevents  : 0   octets    : 1152
packets   : 16   broadcast packets : 16
multicast packets : 0   CRC alignment errors : 0
undersize packets : 0   oversize packets  : 0
fragments   : 0   jabbers    : 0
collisions  : 0   utilization   : 0
Sampled values of record 5 :
dropevents  : 0   octets    : 768
packets   : 12   broadcast packets : 11
multicast packets : 0   CRC alignment errors : 0
undersize packets : 0   oversize packets  : 0
fragments   : 0   jabbers    : 0
collisions  : 0   utilization   : 0

epon#
```

5.8.7. View RMON Event

Command Syntax	epon# **show rmon event** ***<entry-number>***
Function Description	View RMON event
<entry-number>	Event index, 0 represents all events

[Configuration Case]

Case1: View RMON event of ge1:

```
epon# show rmon history ge1
 HistoryControlEntry 1 owned by user1 is VALID
 Samples interface  : GE-1
 Sampling interval  : 5(sec) with 5 buckets max
 Sampled values of record 1 :
 dropevents  : 0   octets    : 1336
 packets   : 18   broadcast packets : 14
 multicast packets : 4   CRC alignment errors : 0
 undersize packets : 0   oversize packets  : 0
 fragments   : 0   jabbers    : 0
 collisions  : 0   utilization   : 0
 Sampled values of record 2 :
 dropevents  : 0   octets    : 2160
 packets   : 24   broadcast packets : 23
 multicast packets : 1   CRC alignment errors : 0
 undersize packets : 0   oversize packets  : 0
 fragments   : 0   jabbers    : 0
 collisions  : 0   utilization   : 0
 Sampled values of record 3 :
 dropevents  : 0   octets    : 1644
 packets   : 20   broadcast packets : 19
 multicast packets : 1   CRC alignment errors : 0
 undersize packets : 0   oversize packets  : 0
```

```
fragments   : 0   jabbers    : 0
collisions  : 0   utilization   : 0
Sampled values of record 4 :
dropevents  : 0   octets    : 1152
packets   : 16   broadcast packets : 16
multicast packets : 0   CRC alignment errors : 0
undersize packets : 0   oversize packets  : 0
fragments   : 0   jabbers    : 0
collisions  : 0   utilization   : 0
Sampled values of record 5 :
dropevents  : 0   octets    : 768
packets   : 12   broadcast packets : 11
multicast packets : 0   CRC alignment errors : 0
undersize packets : 0   oversize packets  : 0
fragments   : 0   jabbers    : 0
collisions  : 0   utilization   : 0

epon#
```

5.8.8. View RMON Eventlog

Command Syntax	epon# **show rmon eventlog <*entry-number*>**
Function Description	View RMON eventlog
<entry-number>	Event index, 0 represents all events

[Configuration Case]

Case1: View RMON eventlog:

```
epon# show rmon eventlog 1
 logEntry 1 is VALID.
  Generates eventLog 1.1 at 01/01/00 00:31:25
  Description : The alarm formula defined in prialarmEntry 1,
```

```
less than(or =) 4000 with alarm value 0. Alarm sample type is delta.
Generates eventLog 1.2 at 01/01/00 03:13:25
Description : The alarm formula defined in prialarmEntry 2,
less than(or =) 20000 with alarm value 0. Alarm sample type is absolute.
```

5.8.9. View RMON Alarm Group

Command Syntax	epon#**show rmon alarm** <*entry-number*>
Function Description	View RMON alarm
<entry-number>	Alarm index, 0 represents viewing all alarm information

[Configuration Case]

Case1: View all alarm information:

```
epon# show rmon alarm 0
 AlarmEntry 1 owned by yx is VALID
  Samples type   : absolute
  Variable formula  : 1.3.6.1.2.1.16.1.1.1.4.1<etherStatsOctets.1>
  Sampling interval  : 5(sec)
  Rising threshold  : 40000(linked with event 1)
  Falling threshold  : 20000(linked with event 1)
  When startup enables : risingOrFallingAlarm
  Latest value   : 1978134

epon#
```

5.9. Port Image Configuration

5.9.1. Enable/Disable Port Mirroring Function

Command Syntax	epon# **mirror admin** <*admin*>
Function Description	Enable/Disable port mirroring function

<admin>	Enable: Enable port mirroring function Disable: Disable port mirroring function

[Configuration Case]

Case1: Enable port mirroring function

```
epon# mirror admin enable
 Set switch mirror enable successful !
epon#
```

5.9.2. Specify Source Port of Mirroring Message

Command Syntax	epon# **mirror source_port *<port>* *<type>***
Function Description	Specify source port of mirroring function, which is the port will be mirrored
<port>	Switch port of device
<tyoe>	none: Source port of mirrioring has not been set egress: Exit traffic of source port ingress: Entrance traffic of source port full: Entrance traffic and exit traffic of source port will be all mirrored

[Configuration Case]

Case1: Enable traffic mirroring function:

```
epon# mirror source_port ge1 ingress
 Set switch mirror source port: 1 successful!
epon#
```

Case2: Set mirroring for the entrance traffic of ge1:

```
epon# mirror source_port ge2 egress
 Set switch mirror source port: 2 successful!
epon#
```

Case3: Set mirroring for the entrance traffic and exit traffic of interface ge3:

```
epon# mirror source_port ge3 full
 Set switch mirror source port: 3 successful!
epon#
```

5.9.3. Specify Destination Port of Mirroring Message

Command Syntax	epon# **mirror dest_port <*port*>**
Function Description	Specify destination port of mirroring message, which receives data from mirroring port
<port>	Switch board of switch device

[Configuration Case]

Case1: Set the destination port of mirroring as ge8:

```
epon# mirror dest_port ge8
 Set switch mirror destnation port: 8 successful
epon#
```

5.9.4. View Mirroring Function Configuration

Command Syntax	epon# **show mirror**
Function Description	View port mirroring configuration

[Configuration Case]

Case1: View port mirroring configuration:

```
epon# show mirror
==================== SWITCH MIRROR CONFIG ====================
 Admin    : enable
 destnationPort  : ge4
 sourceIngressPorts : ge1
 sourceEgressPorts : ge1
```

```
epon#
```

5.10. DHCP SNOOPING Configuration

5.10.1. Enable/Disable DHCP SNOOPING Function

Command Syntax	epon# **dhcp-snooping admin <*admin*>**
Function Description	Enable/Disable DHCP SNOOPING function
<admin>	Enable: Enable DHCP SNOOPING function Disable: Disable DHCP SNOOPING function

[Configuration Case]

Case1: Enable dhcp snooping function:

```
epon# dhcp-snooping admin enable
Set dhcp snooping admin status to enable successfully.
epon#
```

5.10.2. Enable/Disable ARP DETECT Function of DHCP SNOOPING

Command Syntax	epon# ***dhcp-snooping arp-detect <admin>***
Function Description	Enable/Disable ARP DETECT function of DHCP SNOOPING
<admin>	Enable: Enable ARP DETECT function of DHCP SNOOPING Disable: Disable ARP DETECT function of DHCP SNOOPING

[Configuration Case]

Case1: Enable ARP DETECT function of DHCP SNOOPING:

```
epon# dhcp-snooping arp-detect enable
epon#
```

5.10.3. Enable/Disable ARP REPLY FAST Function of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping arp-reply-fast <*admin*>**
Function Description	Enable/Disable ARP REPLY FAST function of DHCP SNOOPING
<admin>	Enable: Enable ARP REPLY FAST function of DHCP SNOOPING Disable: Disable ARP REPLY FAST function of DHCP SNOOPING

[Configuration Case]

Case1: Enable ARP REPLY FAST function of DHCP SNOOPING:

```
epon# dhcp-snooping arp-reply-fast enable
epon#
```

5.10.4. Enable/Disable CHADDR-CHECK Function of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping chaddr-check <*admin*>**
Function Description	Enable/Disable CHADDR-CHECK function of DHCP SNOOPING
<admin>	Enable: Enable CHADDR-CHECK function of DHCP SNOOPING Disable: Disable CHADDR-CHECK function of DHCP SNOOPING

[Configuration Case]

Case1: Enable CHADDR-CHECK function of DHCP SNOOPING:

```
epon# dhcp-snooping chaddr-check enable
epon#
```

5.10.5. Configurate Binding List of DHCP SNOOPING

5.10.5.1. Clear All Entries of Binding List of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping bind-table clear all**

Function Description	Clear all entries of binding list of DHCP SNOOPING

[Configuration Case]

Case1: Clear all entries of binding list of DHCP SNOOPING:

```
epon# dhcp-snooping bind-table clear all
epon#
```

5.10.5.2. Clear All Dynamic Entries of Binding List of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping bind-table clear dynamic**
Function Description	Clear all dynamic entries of binding list of DHCP SNOOPING

[Configuration Case]

Case1: Clear all dynamic entries of binding list of DHCP SNOOPING:

```
epon# dhcp-snooping bind-table clear dynamic
epon#
```

5.10.5.3. Clear Entries of Specifed IP of Binding List of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping bind-table clear ip <ip-address>**
Function Description	Clear entries of specifed IP of binding list of DHCP SNOOPING
<ip-address>	IP address, in the form of X.X.X.X

[Configuration Case]

Case1: Clear entries of specifed IP 192.168.1.1 of binding list of DHCP SNOOPING

```
epon# dhcp-snooping bind-table clear ip 192.168.1.1
epon#
```

5.10.5.4. Clear All Static Entries of Binding List of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping bind-table clear static**
Function Description	Clear all static entries of binding list of DHCP SNOOPING

[Configuration Case]

Case1: Clear all static entries of binding list of DHCP SNOOPING:

```
epon# dhcp-snooping bind-table clear static
epon#
```

5.10.5.5. Clear Entries of Specifed VLAN of Binding List of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping bind-table clear vlan <vlan> all**
Function Description	Clear entries of specifed VLAN101 of binding list of DHCP SNOOPING
<vlan>	VALN ID, range in 1-4094

[Configuration Case]

Case1: Clear entries of specifed VLAN101 of binding list of DHCP SNOOPING:

```
epon# dhcp-snooping bind-table clear vlan 101 all
epon#
```

5.10.5.6. Configurate Time Interval of Binding List of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping bind-table delete-time <time>**
Function Description	Delete time interval of binding list of DHCP SNOOPING
<time>	Time interval, value range in 1-86400 with the unit of second

[Configuration case]

Case1: Set the time interval of binding list of DHCP-SNOOPING as 300 seconds:

```
epon# dhcp-snooping bind-table delete-time 300
epon#
```

5.10.5.7. Save Binding Entries of DHCP SNOOPING to TFTP Server

Command Syntax	epon# **dhcp-snooping bind-table save-to-tftp <ip-address>**
Function Description	Save binding entries of DHCP SNOOPING to specified TFTP server, which should be enalbled and configurated first
<ip-address>	IP address of specified server, in the form of X.X.X.X

[Configuration Case]

Case1: Save binding entries of DHCP SNOOPING to the TFTP server with IP 192.168.5.165:

```
epon# dhcp-snooping bind-table save-to-tftp 192.168.5.165
Backup local DHCP bind table to host 192.168.5.165.
Remote filename: dhcp_snooping.db.
epon#
```

5.10.5.8. Configurate Delay Time for Binding Entries of DHCP SNOOPING Writing into Flash

Command Syntax	epon# **dhcp-snooping bind-table write-time <time>**
Function Description	Configurate delay time for binding entries of DHCP SNOOPING writing into flash. When binding entries of DHCP SNOOPING are updated, which will be written into flash after the set time
<time>	Delay time, range in 240-86400 with the unit of second

[Configuration Case]

Case1: Set the delay time for binding entries of DHCP SNOOPING writing into flash as 3600s:

```
epon# dhcp-snooping bind-table write-delay 3600
epon#
```

5.10.5.9. Write Binding Entries of DHCP SNOOPING into Flash

Command Syntax	epon# **dhcp-snooping bind-table write-to-flash**
Function Description	Input this command, OLT will write binding enties of DHCP SNOOPING into flash

[Configuration Case]

Case1: Write binding enties of DHCP SNOOPING into flash

```
epon# dhcp-snooping bind-table write-to-flash
epon#
```

5.10.6. Configurate Static Binding Entries of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping binding mac <mac-address> ip <ip-address> vlan <vlan> port <port>**
Function Description	Configurate static binding entries of DHCP SNOOPING
<mac-address>	MAC address, in the form of XX-XX-XX-XX-XX-XX
<ip-address>	IP address, in the form of X.X.X.X
<vlan>	VLAN ID, vaule range in 1-4094
<port>	Port ID, value range in ge1-ge16

[Configuration Case]

Case1: Set the MAC address as 08-c6-b3-26-a1-01, VLAN as 101 and port as ge1 of static entries of DHCP SNOOPING:

```
epon# dhcp-snooping binding mac 08-c6-b3-26-a1-01 ip 192.168.1.2 vlan 101 port ge1
epon#
```

5.10.7. Enable/Disable Option82 Function of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping option admin <*admin*>**
Function Description	Enable/Disable option82 function of DHCP SNOOPING
<admin>	Enable: Enable option82 function of DHCP SNOOPING Disable: Disable option82 function of DHCP SNOOPING

[Configuration Case]

Case1: Enable option82 function of DHCP SNOOPING:

```
epon# dhcp-snooping option82 admin enable
epon#
```

5.10.8. Configurate Option82 Strategy of DHCP SNOOPING:

Command Syntax	epon# **dhcp-snooping option policy < policy >**
Function Description	Configurate option82 strategy of DHCP SNOOPING
< policy >	Strategy, optional parameter: drop: Drop keep: Keep replace: Replace

[Configuration Case]

Case1: Set the option82 strategy of DHCP SNOOPING as drop:

```
epon# dhcp-snooping option82 policy drop
epon#
```

5.10.9. Configurate Trust/Untrust Port of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping port < port-list > <type>**

Function Description	Configurate trust/untrust port of DHCP SNOOPING
< port-list >	Port list, range in ge1, ge3-ge7, ge16
<type>	Optional parameter: untrust: DHCP message of the port will be rejected trust: DHCP message of the port will be received

[Configuration Case]

Case1: Set ge1 as trust port of DHCP SNOOPING:

```
epon# dhcp-snooping port ge1 trust
epon#
```

5.10.10. Configurate VLAN of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping vlan add <vlan-list>**
Function Description	Configurate VLAN of DHCP SNOOPING, only receive DHCP message of the VLAN
<vlan-list>	VLAN list, value range in 1-4094, like 1, 22-37, 4094

[Configuration Case]

Case1: Set the VLAN of DHCP SNOOPING as 101:

```
epon# dhcp-snooping vlan add 101
epon#
```

5.10.11. Add VLAN of DHCP SNOOPING

Command Syntax	epon# **dhcp-snooping vlan add <vlan-list>**
Function Description	Add VLAN of DHCP SNOOPING, only receive DHCP message of the VLAN
<vlan-list>	VLAN list, value range in 1-4094, like 1, 22-37, 4094

[Configuration Case]

Case1: Add 101 of VLAN of DHCP SNOOPING:

```
epon# dhcp-snooping vlan add 101
epon#
```

5.10.12. View DHCP SNOOPING Configuration

5.10.12.1. View All Entries of Binding List of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table all**
Function Description	View all entries of binding list of DHCP SNOOPING

[Configuration Case]

Case1: View all entries of binding list of DHCP SNOOPING

```
epon# show dhcp-snooping bind-table all
---------------------------------------------------------------------------
 database entries count: 1  database entries delete time: 3600(s)
---------------------------------------------------------------------------
  MacAddress  IpAddress  Vlan Port Lease(s) Type  Status
---------------------------------------------------------------------------
 08:C6:B3:26:A2:06 192.168.8.100 1  cpu -  Static Valid
---------------------------------------------------------------------------
epon#
```

5.10.12.2. View All Dynamic Entries of Binding List of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table dynamic**
Function Description	View all dynamic entries of binding list of DHCP SNOOPING

[Configuration Case]

Case1: View all dynamic entries of binding list of DHCP SNOOPING:

```
epon# show dhcp-snooping bind-table dynamic
There is not any record.
```

```
epon#
```

5.10.12.3. View Entries of Specifed IP of Binding List of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table ip <ip-address>**
Function Description	View entries of specifed IP of binding list of DHCP SNOOPING
<ip-address>	IP address, in the form of X.X.X.X

[Configuration Case]

Case1: View entries of specifed IP 192.168.8.100 of binding list of DHCP SNOOPING:

```
epon# show dhcp-snooping bind-table ip 192.168.8.100
---------------------------------------------------------------------------
 database entries count: 1  database entries delete time: 3600(s)
---------------------------------------------------------------------------
  MacAddress  IpAddress  Vlan Port Lease(s) Type  Status
 ---------------------------------------------------------------------------
 08:C6:B3:26:A2:06 192.168.8.100 1  cpu -  Static Valid
---------------------------------------------------------------------------
epon#
```

5.10.12.4. View All Static Entries of Binding List of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table static**
Function Description	View all static entries of binding list of DHCP SNOOPING

[Configuration Case]

Case1: View all static entries of binding list of DHCP SNOOPING:

```
epon# show dhcp-snooping bind-table static
---------------------------------------------------------------------------
 database entries count: 1  database entries delete time: 3600(s)
```

```
---------------------------------------------------------------------------
 MacAddress  IpAddress  Vlan Port Lease(s) Type  Status
 ---------------------------------------------------------------------------
 08:C6:B3:26:A2:06 192.168.8.100 1  cpu -  Static Valid
---------------------------------------------------------------------------
epon#
```

5.10.12.5. View Entries of Specifed VLAN of Binding List of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table vlan <vlan-id> all**
Function Description	View all entries of specifed VLAN of binding list of DHCP SNOOPING
<vlan-id>	VALN ID, range in 1-4094

[Configuration Case]

Case1: View entries of specifed VLAN1 of binding list of DHCP SNOOPING:

```
epon# show dhcp-snooping bind-table vlan 1 all
---------------------------------------------------------------------------
 database entries count: 1  database entries delete time: 3600(s)
---------------------------------------------------------------------------
 MacAddress  IpAddress  Vlan Port Lease(s) Type  Status
 ---------------------------------------------------------------------------
 08:C6:B3:26:A2:06 192.168.8.100 1  cpu -  Static Valid
---------------------------------------------------------------------------
epon#
```

5.10.12.6. View All Dynamic Entries of Specified VLAN of Binding List of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table vlan <vlan-id> dynamic**
Function Description	View all dynamic entries of specified VLAN of binding list of DHCP SNOOPING

<vlan-id>	VALN ID, range in 1-4094

[Configuration Case]

Case1: View all dynamic entries of VLAN1 of binding list of DHCP SNOOPING

```
epon# show dhcp-snooping bind-table vlan 1 dynamic
There is not any record.


epon#
```

5.10.12.7. View All Entries of Specified VLAN and Specified IP Address of Binding List of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table vlan <vlan-id> ip <ip-address>**
Function Description	View all entries of specified VLAN and specified IP address of binding list of DHCP SNOOPING
<vlan-id>	VALN ID, range in 1-4094
<ip-address>	IP address, in the form of X.X.X.X

[Configuration Case]

Case1: View all entries of VLAN1 and IP 192.168.8.1 of binding list of DHCP SNOOPING:

```
epon# show dhcp-snooping bind-table vlan 1 ip 192.168.8.100
--------------------------------------------------------------------------------
 database entries count: 1  database entries delete time: 3600(s)
--------------------------------------------------------------------------------
  MacAddress  IpAddress  Vlan Port Lease(s) Type  Status
 --------------------------------------------------------------------------------
 08:C6:B3:26:A2:06 192.168.8.100 1  cpu -  Static Valid
--------------------------------------------------------------------------------
epon#
```

5.10.12.8. View All Static entries of Specified VLAN of Binding List of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table vlan <vlan-id> static**
Function Description	View all static entries of specified VLAN of binding list of DHCP SNOOPING
<vlan-id>	VALN ID, range in 1-4094

[Configuration Case]

Case1: View all static entries of VLAN1 of binding list of DHCP SNOOPING:

```
epon# show dhcp-snooping bind-table vlan 1 static
---------------------------------------------------------------------------
 database entries count: 1  database entries delete time: 3600(s)
---------------------------------------------------------------------------
  MacAddress  IpAddress  Vlan Port Lease(s) Type  Status
 ---------------------------------------------------------------------------
 08:C6:B3:26:A2:06 192.168.8.100 1  cpu -  Static Valid
---------------------------------------------------------------------------
epon#
```

5.10.12.9. View All Configration of DHCP SNOOPING

Command Syntax	epon# **show dhcp-snooping bind-table all**
Function Description	View all configuration of binding list of DHCP SNOOPING

[Configuration Case]

Case1: View all configuration of DHCP SNOOPING

```
epon# show dhcp-snooping configuration
---------------------------------------------------------------------------
 DHCP Snooping Configurations
 ---------------------------------------------------------------------------
 Switch DHCP Snooping status     : Enable
```

```
DHCP Snooping verification of hwaddr status : Enable
DHCP Snooping option82 status    : Disable
DHCP Snooping option82 policy    : Keep
DHCP Snooping database wirte-delay time(s) : 3600
Switch ARP dectection status    : Enable
Switch ARP reply-fast status    : Enable

Port status information:
--------------------------------------------------------------------------------
Trust port list : -
Untrust port list : ge9-ge16,ge1-ge8
--------------------------------------------------------------------------------
epon#
```

5.11. IGMP Configuration

5.11.1. Configurate Working Mode of IGMP

Command Syntax	epon# **igmp mode** ***<mode>***
Function Description	Configurate working mode of IGMP
<mode>	snooping: Snooping mode proxy: proxy mode ctc: Controllable multicasting mode disable: Disable IGMP function

[Configuration case]

Case1: Set the working mode of IGMP as proxy:

```
epon# igmp mode proxy
epon#
```

5.11.2. Configurate Fast-Leave Function of IGMP

Command Syntax	epon# **igmp fast-leave *<admin>***
Function Description	Enable/Disable fast-leave function of IGMP
<admin>	enable: Enable fast-leave function disable: Disable fast-leave function

[Configuration case]

Case1: Enable fast-leave function of IGMP:

```
epon# igmp fast-leave enable
Set igmp snooping fast leave status to Enable successfully.
epon#
```

5.11.3. Configurate Forwording Strategies of IGMP

Command Syntax	epon# **igmp policy < policy >**
Function Description	Configurate forwording strategies of IGMP
< policy >	pass: In pass stragegy, the message joined in the multicast group will be converted into corresponding multicast VLAN while in the mapping relationships between multicast IP address and multicast VLAN, or will not be processed with VLAN conversion and transparent transmission of VLAN protocol discard: In discard strategy, the message joined in the multicast group will be converted into corresponding multicast VLAN while in the mapping relationships between multicast IP address and multicast VLAN, or will be discarded

[Configuration case]

Case1: Set forwarding strategy of IGMP as pass:

```
epon# igmp policy pass
Set igmp policy pass successfully.
```

```
epon#
```

5.12. IGMP PROXY Configuration

5.12.1. Configurate Query Interval of IGMP PROXY

Command Syntax	epon# ***igmp proxy interval <time>***
Function Description	Configurate query interval of IGMP PROXY, which is the time interval of sending IGMP common group query message
<time>	Query interval, range in <2~3000>S

[Configuration case]

Case1: Set the query interval of IGMP proxy as 300s:

```
epon# igmp proxy interval 300
Set igmp query interval to 300s successfully.
epon#
```

5.12.2. Configurate Maximum Response Time of IGMP PROXY

Command Syntax	epon# **igmp proxy max-response-time *<time>***
Function Description	Configurate maximum response time of IGMP PROXY
<time>	Maximum response time, range in <1~25>S

[Configuration case]

Case1: Set the maximum response time of IGMP proxy as10s:

```
epon# igmp proxy max-response-time 10
Set igmp query max response time to 10s successfully.
epon#
```

5.12.3. Configurate Robustness of IGMP PROXY

Command Syntax	epon# **igmp proxy robustness < *robustness>***

Function Description	User can use this command to set robustness coefficient of system, which changes depends on network stabilization and also decides the aging time of multicast user. Robustness coefficient is set for improving system robustness, directly affects the length of multicast user aging time and the number of time of sending universal group query message. If a subnet might lose packet, then the robustness coefficient needs to be increased to guarantee the stability of multicast user.
< robustness>	Robustness, range in <1~10>

[Configuration case]

Case1: Set robustness coefficient of IGMP proxy as 5:

```
epon# igmp proxy robustness 5
Set igmp robustness to 5s successfully.
epon#
```

5.12.4. Configurate Source IP Address of IGMP PROXY

Command Syntax	epon# **igmp proxy source_ip *<source_ip>***
Function Description	Configurate source IP address of IGMP PROXY
<source_ip>	Source IP address: <X.X.X.X>

[Configuration case]

Case1: Set the source IP address of IGMP proxy as 192.168.5.56:

```
epon# igmp proxy source_ip 192.168.5.56
Set igmp query source ip to 192.168.5.56 successfully.
epon#
```

5.12.5. Configurate Query Times of Specified Group of IGMP PROXY

Command Syntax	epon# **igmp proxy sp_count *<sp_count>***

Function Description	Configurate query times of specified group of IGMP PROXY
<sp_count>	Number of times, value range in 1-10

[Configuration case]

Case1: Set the query times of specified group of IGMP proxy as 10:

```
epon# igmp proxy sp_count 10
Set igmp specific query count to 10 successfully.
epon#
```

5.12.6. Configurate Query Time Interval of Specified Group of IGMP PROXY

Command Syntax	epon# **igmp proxy sp_interval *<time>***
Function Description	Configurate query time interval of specified group of IGMP PROXY, which must be longer than maximum response time of specified group query
<time>	Time interval, value range in 100-10000 with the unit of second

[Configuration case]

Case1: Set query time interval of specified group of IGMP PROXY as 1000 milliseconds:

```
epon# igmp proxy sp_interval 1000
Set igmp specific query interval to 100ms successfully.
epon#
```

5.12.7. Configurate Maximum Response Time of Specified Group Query of IGMP PROXY

Command Syntax	epon# **igmp proxy sp_response < sp_reponse >**
Function Description	Configurate maximum response time of specified group query of IGMP PROXY, which must be shorter than the time interval of specified group query

< sp_response >	Maximum response time, value range in 100-10000 with the unit of millisecond

[Configuration case]

Case1: Set the maximum response time of specified group query of IGMP PROXY as 200ms:

```
epon# igmp proxy sp_response 200
Set igmp specific query response to 200ms successfully.
epon#
```

5.13. Multicast VLAN Configuration

5.13.1. Enter Multicast VLAN View

Command Syntax	epon# **multicast-vlan <mvlan>**
Function Description	Enter multicast VLAN view
<mvlan>	Multicast VLAN ID, value range in 1-4094

[Configuration case]

Case1: Enter multicast VLAN100 view

```
epon# multicast-vlan 100
epon(multicast-vlan-100)#
```

5.13.2. Configurate Match IP Address of Specified Multicast in Multicast VLAN

Command Syntax	epon(multicast-vlan-100)# ***igmp match group ip <ip> to-ip <ip>***
Function Description	Only the multicast traffic in the multicast address range can match the multicast VLAN
<ip>	Multicast address, range in 224.0.0.1-239.255.255.255

[Configuration case]

Case1: Set the match IP address of multicast VLAN100 in the range from 224.3.3.3 to 224.3.4.4:

```
epon(multicast-vlan-100)# igmp match group ip 224.3.3.3 to-ip 224.3.4.4
epon(multicast-vlan-100)#
```

5.13.3. Delete Match Multicast Address in Multicast VLAN

Command Syntax	epon(multicast-vlan-100)# ***no igmp match group ip <ip> to-ip <ip>***
Function Description	Delete match multicast address in multicast VLAN
<ip>	Multicast address, range in 224.0.0.1-239.255.255.255

[Configuration case]

Case1: Delete the match multicast address in multicast VLAN200:

```
epon(multicast-vlan-200)# no igmp match group ip 224.3.3.3 to-ip 224.3.4.4
epon(multicast-vlan-200)#
```

5.13.4. Delete All Match Multicast Address in Multicast VLAN

Command Syntax	epon(multicast-vlan-100)# ***igmp match group all***
Function Description	Delete all match multicast address in multicast VLAN

[Configuration case]

Case1: Delete all match multicast address in multicast VLAN200:

```
epon(multicast-vlan-200)# no igmp match group all
epon(multicast-vlan-200)#
```

5.13.5. Add Multicast User in Multicast VLAN

Command Syntax	epon(multicast-vlan-100)# ***igmp member user-index < user-index >***
Function Description	Add multicast user in multicast VLAN, create user-index in BTV first.

< user-index >	Multicast user number, value range in 0-4095。

[Configuration case]

Case1: Add multicast user with number 2 in multicast VLAN100:

```
epon(multicast-vlan-100)# igmp member user-index 2
epon(multicast-vlan-100)#
```

5.13.6. Delete Specified Multicast User in Multicast VLAN

Command Syntax	epon(multicast-vlan-100)#*no igmp member user-index < user-index >*
Function Description	Delete specified multicast user in multicast VLAN, create user-index in BTV first.
< user-index >	Multicast user number, value range in 0-4095。

[Configuration case]

Case1: Delete multicast user with number 2 in multicast VLAN100:

```
epon(multicast-vlan-100)#no igmp member user-index 2
epon(multicast-vlan-100)#
```

5.13.7. Configurate Forwarding Strategy for Unkonwn VLAN Multicast Traffic in Multicast VLAN

Command Syntax	epon(multicast-vlan-200)# *igmp multicast-unknown policy < policy>*
Function Description	Configurate forwarding strategy for unkonwn VLAN multicast traffic in multicast VLAN
< policy >	Optional parameter: transparent: Transmit unknown VLAN multicast data transparently discard: Discard unknown VLAN multicast data

[Configuration case]

Case1: Set the forwarding strategy for unkonwn VLAN multicast traffic in multicast VLAN200:

```
epon(multicast-vlan-200)# igmp multicast-unknown policy transparent
epon(multicast-vlan-200)#
```

5.13.8. Add Static Multicast Program and Single Multicast IP Address in Multicast VLAN

Command Syntax	epon(multicast-vlan-200)# ***igmp program add program-index < program-index > ip < ip>***
Function Description	Add static multicast program and single multicast IP address in multicast VLAN
<program-index>	Multicast program parameter, value range in 0-4095
< ip>	Multicast IP address in ther form of X.X.X.X

[Configuration case]

Case1: Add static multicast program 1 and multicast IP address as 224.2.2.2 in multicast VLAN:

```
epon(multicast-vlan-200)# igmp program add program-index 1 ip 224.2.2.2
epon(multicast-vlan-200)#
```

5.13.9. Add Static Multicast Program and Multicast IP Address Group in Multicast VLAN

Command Syntax	epon(multicast-vlan-200)# ***igmp program add program-index <program-index> range ip < ip> to-ip <to-ip>***
Function Description	Add static multicast program and multicast IP address group in multicast VLAN
<program-index>	Multicast program parameter, value range in 0-4095
< ip>	Begin multicast IP address in ther form of X.X.X.X。
<to-ip>	End multicast IP address in ther form of X.X.X.X。

[Configuration case]

Case1: Add static multicast program 2 and multicast IP address group from 224.1.1.1 to 224.3.3.3 in multicast VLAN:

```
epon(multicast-vlan-200)# igmp program add program-index 2 range ip 224.1.1.1 to-ip 224.3.3.3
epon(multicast-vlan-200)#
```

5.13.10. Delete All Static Multicast Program in Multicast VLAN

Command Syntax	epon(multicast-vlan-200)# ***igmp program delete all***
Function Description	Delete all static multicast program in multicast VLAN

[Configuration case]

Case1: Delete all static multicast program in multicast VLAN:

```
epon(multicast-vlan-200)# igmp program delete all
epon(multicast-vlan-200)#
```

5.13.11. Delete Specified Static Multicast Program in Multicast VLAN

Command Syntax	epon(multicast-vlan-200)# ***igmp program delete program-index <program-index>***
Function Description	Delete specified static multicast program in multicast VLAN
<program-index>	Multicast program parameter, value range in 0-4095

[Configuration case]

Case1: Delete static multicast program 1 in multicast VLAN:

```
epon(multicast-vlan-200)# igmp program delete program-index 1
epon(multicast-vlan-200)#
```

5.13.12. Configurate Routing Port of IGMP in Multicast VLAN

Command Syntax	epon(multicast-vlan-200)# ***igmp router-port < router-port >***
Function Description	Configurate routing port of IGMP in multicast VLAN

< router-port >	Ge port of OLT, value range in <ge1 | ge2 | ge3 | ge4 | ge5 | ge6 | ge7 | ge8>

[Configuration case]

Case1: Set the routing port of IGMP as ge1 in multicast VLAN:

```
epon(multicast-vlan-200)# igmp router-port ge1
epon(multicast-vlan-200)#
```

5.13.13. Delete Routing Port of IGMP in Multicast VLAN

Command Syntax	epon(multicast-vlan-200)# ***no igmp router-port < router-port >***
Function Description	Delete routing port of IGMP in multicast VLAN
< router-port >	Ge port of OLT, value range in <ge1 | ge2 | ge3 | ge4 | ge5 | ge6 | ge7 | ge8>

[Configuration case]

Case1: Delete routing port ge1 of IGMP in multicast VLAN200:

```
epon(multicast-vlan-200)# no igmp router-port ge1
epon(multicast-vlan-200)#
```

5.14. BTV Configuration

5.14.1. Enter BTV Configuration View

Command Syntax	epon# **btv**
Function Description	Enter BTV configuration view

[Configuration case]

Case1: Enter BTV configuration view:

```
epon# btv
epon(btv)#
```

5.14.2. Bind User and Rights Template for Multicast in BTV

Command Syntax	epon(btv)# ***igmp control bind user-index < user-index > profile-index < profile-index >***
Function Description	Bind user and rights template for multicast in BTV, create user and rights template first
< user-index >	Multicast user number, value range in 0-4095
< profile-index >	Rights template number, value range in 0-255

[Configuration case]

Case1: Bind user 1 and rights template 1 in BTV:

```
epon(btv)# igmp control bind user-index 1 profile-index 1
epon(btv)#
```

5.14.3. Release Multicast User and Rights Tempalte in BTV

Command Syntax	epon(btv)# ***igmp control delete user-index < user-index > profile-index < profile-index >***
Function Description	Release multicast user and rights tempalte in BTV
< user-index >	Multicast user number, value range in 0-4095
< profile-index >	Rights template number, value range in 0-255

[Configuration case]

Case1: Release multicast user 1 and rights template 1 in BTV:

```
epon(btv)# igmp control bind user-index 1 profile-index 1
epon(btv)#
```

5.14.4. Enable Multicast Preview Funtion in BTV

Command Syntax	epon(btv)# ***igmp preview enable***

Function Description	Enable multicast preview funtion in BTV

[Configuration case]

Case1: Enable multicast preview funtion in BTV:

```
epon(btv)# igmp preview enable
Set iptv Preview status to Enable successfully.
epon(btv)#
```

5.14.5. Disable Multicast Preview Funtion in BTV

Command Syntax	epon(btv)# ***igmp preview disable***
Function Description	Disable multicast preview funtion in BTV

[Configuration case]

Case1: Disable multicast preview funtion in BTV:

```
epon(btv)# igmp preview disable
Set iptv Preview status to Disable successfully.
epon(btv)#
```

5.14.6. Clear Preview Times of All Multicast Users to Zero in BTV

Command Syntax	epon(btv)# ***igmp preview reset count***
Function Description	Clear preview times of all multicast users to zero in BTV

[Configuration case]

Case1: Clear preview times of all multicast users to zero in BTV:

```
epon(btv)# igmp preview reset count
Reset igmp preview count successfully.
epon(btv)#
```

5.14.7. Configurate Everyday Zero Clearing Time for Preview Times of Multicast User in BTV

Command Syntax	epon(btv)# ***igmp preview auto-reset-time <time>***
Function Description	Configurate everyday zero clearing time for preview times of multicast user in BTV
<time>	Time, in the form of hh:mm:ss. Default as 4:0:0

[Configuration case]

Case1: Set the everyday zero clearing time for preview times of multicast user at 6:40a.m in BTV:

```
epon(btv)# igmp preview auto-reset-time 06:40:00
epon(btv)#
```

5.14.8. Add Multicast User Preview Template in BTV

Command Syntax	epon(btv)# ***igmp preview-profile add preview-index <preview-index> duration <duration> interval <interval> count <count>***
Function Description	Add multicast user preview template in BTV
<preview-index>	Preview template number, value range in 0 - 31
<duration>	Preview time, value range in 0 – 6000 with the unit of second
<interval>	Preview time interval, value range in 1 – 7650 with the unit of second
<count>	Preview times, value range in 1 – 255

[Configuration case]

Case1: Add multicast user preview template in BTV:

```
epon(btv)# igmp preview-profile add preview-index 1 duration 300 interval 30 count 3
epon(btv)#
```

5.14.9. Delete Specified Multicast User Preview Template in BTV

Command Syntax	epon(btv)# ***igmp preview-profile delete preview-index <preview-index>***
Function Description	Delete specified multicast user preview template in BTV
<preview-index>	Preview templage number, value range in 0 - 31

[Configuration case]

Case1: Delete multicast user preview template 1 in BTV:

```
epon(btv)# igmp preview-profile delete preview-index 1
epon(btv)#
```

5.14.10. Delete All Multicast User Preview Template in BTV

Command Syntax	epon(btv)# ***igmp preview-profile delete all***
Function Description	Delete all multicast user preview template in BTV

[Configuration case]

Case1: Delete all multicast user preview template in BTV:

```
epon(btv)# igmp preview-profile delete all
epon(btv)#
```

5.14.11. Add Multicast User Rights Template in BTV

Command Syntax	epon(btv)# ***igmp profile add profile-index <profile-index>***
Function Description	Add multicast user rights template in BTV

[Configuration case]

Case1: Add multicast user rights template 2 in BTV:

```
epon(btv)# igmp profile add profile-index 2
```

```
epon(btv)#
```

5.14.12. Delete All Multicast User Rights Template in BTV

Command Syntax	epon(btv)# ***igmp profile delete all***
Function Description	Delete all multicast user rights template in BTV

[Configuration case]

Case1: Delete all multicast user rights template 1 in BTV:

```
epon(btv)# igmp profile delete all
epon(btv)#
```

5.14.13. Delete Specified Multicast UserRights Template in BTV

Command Syntax	epon(btv)# ***igmp profile delete profile-index <profile-index>***
Function Description	Delete specified multicast user rights template in BTV

[Configuration case]

Case1: Delete multicast user rights template 1 in BTV:

```
epon(btv)# igmp profile delete profile-index 1
epon(btv)#
```

5.14.14. Configurate Multicast UserRights Template in BTV

Command Syntax	epon(btv)# ***igmp profile profile-index <profile-index> add program-index <program-index> <forbidden|preview|watch> <preview-index>***
Function Description	Configurate multicast userrights template in BTV
<profile-index>	Rights template number, value range in 0 – 255

<program-index>	Multicast program number, value range in 0 - 255
<forbidden|preview|watch>	forbidden: Fobid user watching multicast program preview: Preview multicast program, configurate preview template number first. watch: Allow user watch multicast program continuously
<preview-index>	Preview templare number, value range in 0 – 31

[Configuration case]

Case1: Configurate multicast user rights templage 2 in BTV:

```
epon(btv)# igmp profile profile-index 1 add program-index 1 preview 1
epon(btv)#
```

5.14.15. Delete Multicast Program of Multicast User Rights Templage in BTV

Command Syntax	epon(btv)# *igmp profile profile-index <profile-index> delete program-index <program-index>*
Function Description	Delete multicast program of multicast user rights templage in BTV
<profile-index>	Rights template number, value range in 0 – 255
<program-index>	Multicast program number, value range in 0 - 255

[Configuration case]

Case1: Delete multicast program 1 of multicast user rights template 1 in BTV:

```
epon(btv)# igmp profile profile-index 1 add program-index 1
epon(btv)#
```

5.14.16. Modify Multicast User Rights Templage in BTV

Command Syntax	epon(btv)# ***igmp profile profile-index <profile-index> modify program-index <program-index> <forbidden|preview|watch> <preview-index>***
Function Description	Modify multicast user rights templage in BTV
<profile-index>	Rights template number, value range in 0 – 255
<program-index>	Multicast program number, value range in 0 - 255
<forbidden|preview|watch>	forbidden: Fobid user watching multicast program preview: Preview multicast program, configurate preview template number first. watch: Allow user watch multicast program continuously
<preview-index>	Preview templare number, value range in 0 – 31

[Configuration case]

Case1: Modify multicast user rights template 1 into forbidding watching multicast program in BTV:

```
epon(btv)# igmp profile profile-index 1 modify program-index 1 forbidden
epon(btv)#
```

5.14.17. Add Multicast User in BTV

Command Syntax	epon(btv)# ***igmp user add user-index <user-index> pon <pon> ont <ont> vlan <vlan> <authority> <max-program>***
Function Description	Add multicast user in BTV
<user-index>	User number, value range in 0 - 4095
<pon>	PON port ID, value range in 1 - 8

<ont>	ONU ID, value range in 0 - 63
<vlan>	Vlan ID, value range in 1 – 4094
<authority>	Optional parameter, default as no-auth no-auth: Authentication needed. Authentication needed users need to bind multicast rights template before watching program auth: Authentication not needed. Authentication no needed users can watch all multicast programs in the multicast VLAN
<max-program>	Optional parameter, default as 8 Maximum number of program(optional range in 1-32), which is the program number user can watch at the same time with default value of 8

[Configuration case]

Case1: Add multicast user in BTV:

```
epon(btv)# igmp user add user-index 1 pon 1 ont 1 vlan 100
epon(btv)#
```

5.14.18. Delete All Multicast Users in BTV

Command Syntax	epon(btv)# ***igmp user delete all***
Function Description	Delete all multicast users in BTV

[Configuration case]

Case1: Delete all multicast users in BTV:

```
epon(btv)# igmp profile delete all
epon(btv)#
```

5.14.19. Delete Specified Multicast User in BTV

Command Syntax	epon(btv)# ***igmp user delete user-index <user-index>***

Function Description	Delete specified multicast user in BTV
< user-index >	Multicast user number, value range in 0 - 4095。

[Configuration case]

Case1: Delete multicast user 1 in BTV:

```
epon(btv)# igmp user delete user-index 1
epon(btv)#
```

5.14.20. Modify Authentication Configuration of Specified Multicast User in BTV

Command Syntax	epon(btv)# ***igmp user modify user-index <user-index> authority <authority>***
Function Description	Modify authentication configuration of specified multicast user in BTV
< user-index >	Multicast user number, value range in 0 - 4095。
<authority>	Optional parameter, default as no-auth no-auth: Authentication needed. Authentication needed users need to bind multicast rights template before watching program auth: Authentication not needed. Authentication no needed users can watch all multicast programs in the multicast VLAN

[Configuration case]

Case1: Modify multicast user 1 into needing authentication in BTV:

```
epon(btv)# igmp user modify user-index 1 authority auth
epon(btv)#
```

5.14.21. Modify Maximum Program Number of Specified Multicast User in BTV

Command Syntax	epon(btv)# ***igmp user modify user-index <user-index> max-program < max-program >***

Function Description	Modify maximum program number of specified multicast user in BT
< user-index >	Multicast user number, value range in 0 - 4095。
<max-program>	Optional parameter, default as 8 Maximum number of program(optional range in 1-32), which is the program number user can watch at the same time with default value of 8

[Configuration case]

Case1: Modify the maximum program number of multicast user 1 into 9 in BTV:

```
epon(btv)# igmp user modify user-index 1 max-program 9
epon(btv)#
```

5.15. View IGMP Configuration

5.15.1. View IGMP Basic Configuration

Command Syntax	epon#**show igmp config**
Function Description	View IGMP basic configuration

[Configuration case]

Case1: View IGMP basic configuration:

```
epon# show igmp config
 Global config:
 Igmp mode      : Proxy
 Igmp policy    : Pass
 Fast leave     : On

 Proxy config:
 Robustness count    : 5
 General query max response time(s) : 10
 General query interval(s)   : 60
 Specific query interval(ms)   : 1000
```

```
Specific query count    : 2
Specific query max response time(ms): 800
Source ip of the proxy    : 192.168.1.253


epon#
```

5.15.2. View All Controllable Multicast User Information

Command Syntax	epon#**show igmp control all**
Function Description	View all controllable multicast user information

[Configuration case]

Case1: View all controllable multicast user information:

```
epon# show igmp control all
Total Control:1
============================================================
 User-Index Profile_Index
  1   1
============================================================
epon#
```

5.15.3. View Specified Controllable Multicast user Information

Command Syntax	epon#**show igmp control user-index <user-index>**
Function Description	View All controllable multicast user information。
<user-index>	Controllable multicast User number, value range in 0 - 4095

[Configuration case]

Case1: View All controllable multicast user information:

```
epon# show igmp control all
Total Control:1
============================================================
 User-Index Profile_Index
```

```
 1   1
============================================================
epon#
```

5.15.4. View All Joined Multicast Group Information

Command Syntax	epon#**show igmp group all**
Function Description	View all joined multicast group information

[Configuration case]

Case1: View all joined multicast group information:

```
epon# show igmp group all
Total Group:2
============================          IGMP          SNOOPING          ENTRIES
============================
 Index Multicast-IP  Multicast-MAC  VID RouterPort MemberPort
 1  224.3.3.3   01:00:5e:03:03:03 200 NONE   P1
 2  224.2.2.2   01:00:5e:02:02:02 200 NONE   P1
================================================================================
epon#
```

5.15.5. View Specified Joined Multicast Group Information

Command Syntax	epon#**show igmp group ip-address < ip-address >**
Function Description	View specified joined multicast group information
< ip-address >	Multicast IP address in the form of X.X.X.X

[Configuration case]

Case1: View the information of joined multicast group 224.2.2.2:

```
epon# show igmp group ip-address 224.2.2.2
Total Group:1
============================================================
 Multicast-IP : 224.2.2.2
```

```
Multicast-MAC: 01:00:5e:02:02:02
VID  : 200
Router  : NONE
Host  : P1
============================================================
epon#
```

5.15.6. View Joined Multicast Group Information of Specified Multicast VLAN

Command Syntax	epon#**show igmp group vlan <vlan>**
Function Description	View joined multicast group information of specified multicast VLAN
<vlan>	Multicast VLAN ID, value range in 1 – 4094。

[Configuration case]

Case1: View the joined multicast group information of multicast VLAN200:

```
epon# show igmp group vlan 200
Total Group:2
============================  IGMP  SNOOPING  ENTRIES
============================
 Index Multicast-IP  Multicast-MAC  VID RouterPort MemberPort
 1  224.3.3.3  01:00:5e:03:03:03 200 NONE  P1
 2  224.2.2.2  01:00:5e:02:02:02 200 NONE  P1
================================================================================
epon#
```

5.15.7. View All Binding Multicast Group Information

Command Syntax	epon#**show igmp match group all**
Function Description	View all binding multicast group information

[Configuration case]

Case1: View all binding multicast group information:

```
epon# show igmp match group all
Total Match Group:1
============================================================
 MVlan Igmp Mode  Match Mode  Program
 200  snooping  disable   224.2.2.2-224.5.5.5
============================================================
epon#
```

5.15.8. View Binding Multicast Group Information of Specified Multicast VLAN

Command Syntax	epon#**show igmp match group vlan <vlan>**
Function Description	View all binding multicast group information
<vlan>	Vlan ID, value range in 1-4094。

[Configuration case]

Case1: View all binding multicast group information:

```
epon# show igmp match group vlan 200
Total Match Group:1
============================================================
 MVlan Igmp Mode  Match Mode  Program
 200  snooping  disable   224.2.2.2-224.5.5.5
============================================================
epon#
```

5.15.9. View All Binding Member Information of Multicast VLAN

Command Syntax	epon#**show igmp multicast-vlan-member all**
Function Description	View all binding member information of multicast VLAN

[Configuration case]

Case1: View all binding member information of multicast VLAN:

```
epon# show igmp multicast-vlan-member all
```

```
Total Mvlan Member:1
================================================================================
 User-Index Port ONUId Vlan Authority Mvlan Max-program
  1   p1  1  200  no-auth  200   8
================================================================================
epon#
```

5.15.10. View Binding Multicast Member Information of Specified Multicast VLAN

Command Syntax	epon#**show igmp multicast-vlan-member vlan <vlan>**
Function Description	View binding multicast member information of specified multicast VLAN
<vlan>	Vlan ID, value range in 1-4094。

[Configuration case]

Case1: View binding multicast member information of specified multicast VLAN:

```
epon# show igmp multicast-vlan-member vlan 200
Total Mvlan Member:1
================================================================================
 User-Index Port ONUId Vlan Authority Mvlan Max-program
  1   p1  1  200  no-auth  200   8
================================================================================
epon#
```

5.15.11. View Process Mode for Unkonwn Multicast VLAN of Specified Multicast VLAN

Command Syntax	epon#**show igmp multicast-unknown vlan <mvlan>**
Function Description	View process mode for unkonwn multicast vlan of specified multicast VLAN
< mvlan >	Multicast VLAN, value range in 1 - 4094

[Configuration case]

Case1: View process mode for unkonwn multicast vlan of multicast VLAN200:

```
epon# show igmp multicast-unknown vlan 200
Unknown multicast policy of vlan 200 is transparent
epon#
```

5.15.12. View All Multicast Preview Template Configuration

Command Syntax	epon#**show igmp preview all**
Function Description	View all multicast preview template configuration

[Configuration case]

Case1: View all multicast preview template configuration:

```
epon(btv)# show igmp preview all
Total Preview-Profile:1
============================================================
 Preview-Index Duration(s) Interval(s) Time
 1   100   60   5
============================================================
epon(btv)#
```

5.15.13. View Everyday Zero Clearing Time for Preview Times of Multicast User

Command Syntax	epon#**show igmp preview auto-reset-time**
Function Description	View everyday zero clearing time for preview times of multicast user

[Configuration case]

Case1: View everyday zero clearing time for preview times of multicast user:

```
epon(btv)# show igmp preview auto-reset-time
 Iptv preview auto-reset-time is 4:0:0

epon(btv)#
```

5.15.14. View Perview Template Configuration of Specified Multicast

Command Syntax	epon#**show igmp preview preview-index < preview-index >**
Function Description	View perview template configuration of specified multicast
<preview-index >	Multicast preview template number, value range in 0 – 31。

[Configuration case]

Case1: View the configuration of perview template 1:

```
epon(btv)# show igmp preview preview-index 1
Total Preview-Profile:1
============================================================
 Preview-Index Duration(s) Interval(s) Time
 1   10   1   1
============================================================
epon(btv)#
```

5.15.15. View All Multicast Rights Template Information

Command Syntax	epon#**show igmp profile profile-index all**
Function Description	View all multicast rights template information

[Configuration case]

Case1: View all multicast rights template information:

```
epon# show igmp profile all
Total Profile:1
============================================================
 Profile-Index  Profile-Member
 1   1
============================================================
epon#
```

5.15.16. View Specified Multicast Rights Template Information

Command Syntax	epon#**show igmp profile profile-index <profile-index>**
Function Description	View specified multicast rights template information
<profile-index>	Multicast rights template number, value range in 0 - 255

[Configuration case]

Case1: View the information of multicast template 1:

```
epon# show igmp profile profile-index 1
Profile Index:1
============================================================
 Program-index Permission Mvlan Program
  1   preview  200  224.2.2.2
============================================================
epon#
```

5.15.17. View All Multicast Program Information

Command Syntax	epon#**show igmp program all**
Function Description	View all multicast program information

[Configuration case]

Case1: View all multicast program information:

```
epon(btv)# show igmp program all
Total Program:1
============================================================
 Program-Index MVlan Program
  1   200  224.1.1.1
============================================================
epon(btv)#
```

5.15.18. View Specified Multicast Program Information

Command Syntax	epon#**show igmp program program-index <program-index>**
Function Description	View specified multicast program information
<program-index>	Multicast program number, value range in 0 - 255

[Configuration case]

Case1: View the information of multicast program 1:

```
epon(btv)# show igmp program program-index 1
Total Program:1
============================================================
 Program-Index MVlan Program
  1   200  224.1.1.1
============================================================
epon(btv)#
```

5.15.19. View Routing Port of Specified Multicast VLAN

Command Syntax	epon#**show igmp router-port vlan <mvlan>**
Function Description	View Routing Port of Specified Multicast VLAN
< mvlan >	Multicast VLAN, value range in 1 - 4094

[Configuration case]

Case1: View the routing port of multicast VLAN200:

```
epon# show igmp router-port vlan 200
 VID   : 200
 Router  : Ge1
epon#
```

5.15.20. View All Multicast User Information

Command Syntax	epon#**show igmp user all**
Function Description	View all multicast user information

[Configuration case]

Case1: View all multicast user information:

```
epon# show igmp user all
Total User:1
==========================================================================
 User-Index Port ONUId Vlan Authority State Max-Program
  1   p1  1  200  no-auth  offline  8
==========================================================================
epon#
```

5.15.21. View Specified Multicast User Information

Command Syntax	epon#**show igmp user user-index <user-index>**
Function Description	View specified multicast user information
<program-index>	Multicast program number, value range in 0 - 255

[Configuration case]

Case1: View the information of multicast user 1:

```
epon# show igmp user user-index 1
Total User:1
==========================================================================
 User-Index Port ONUId Vlan Authority State Max-Program
  1   p1  1  200  no-auth  offline  8
==========================================================================
epon#
```

5.16. Configruate User Execution Timeout

Command Syntax	epon#**exec-timeout <timeout>**
Function Description	Configruate user execution timeout, the system will make log out the user if the user has not configurated device for the timeout time
<timeout>	Timeout, value range in 0-3600 with unit of minute, 0 represents never log out automatically

[Configuration Case]

Case1: Set user execution timeout as 3600 minutes, which means OLT will log out the user in 3600 minute if the user do not configurate anymore:

```
epon# exec-timeout 3600
epon#
```

5.17. View User Execution Timeout

Command Syntax	epon#**show exec-timeout**
Function Description	View user execution timeout

[Configuration Case]

Case1: View user execution timeout:

```
epon# show exec-timeout
 The timeout value is 36000 min.
epon#
```

5.18. Clear All Learned MAC Addresses

Command Syntax	epon#**reset mac-address-table**
Function Description	Clear all learned mac addresses

[Configuration Case]

Case1: Clear all learned mac addresses:

```
epon# reset mac-address-table
epon#
```

6. OLT MANAGEMENT

6.1. OLT Basic Configuration

6.1.1. Enter OLT Configuration Interface

Command Syntax	epon#**olt** ***<oltID>***
Function Description	Enter OLT management mode, in which managing OLT, and its down link and ONU
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: Manage the 1st PON port of OLT:

```
epon#olt 1
epon(olt-1)#
```

6.1.2. Enable/Disable OLT PON Interface

Command Syntax	epon(olt-1)#**admin** ***<admin>***
Function Description	Enable/Disable OLT PON interface
<admin>	Disable: Disable OLT PON interface, the PON port will not be able to communicate Enable: Enable OLT PON interface, the PON port will be able to communicate

[Configuration Case]

Case1: Enable the 1st OLT PON interface:

```
epon(olt-1)# admin enable
Set slot 1 olt 1 admin status to Enable successfully.

epon(olt-1)#
```

6.1.3. Long Wavelength Light Detecting Function

6.1.3.1. Long Wavelength Light Detecting Function for All ONU of PON Interface

Command Syntax	epon(olt-1)# **optical lao**
Function Description	Light detecting for all ONU of PON, kick off the ONU with luminous error

[Configuration Case]

Case1: Enable the 1st PON port of OLT:

```
epon(olt-1)# optical lao
epon(olt-1)#
```

6.1.3.2. Detect Specified ONU of PON Interface

Command Syntax	epon(olt-1)# **optical lol *<llid_1> <llid_2> <llid_3>***
Function Description	Light detecting for specified ONU of PON, kick off the ONU with luminous error

[Configuration Case]

Case1: 对该pon口下llid为2的onu进行长光检测:

```
epon(olt-1)# optical lol 2
epon(olt-1)#
```

6.1.4. Enable/Disable P2P Function

Command Syntax	epon(olt-1)# **p2p *<enable | disable>***
Function Description	Enable/Disable OLT P2P function, when this function is enabled, each ONU of the PON port can communicate with each other without uplink switch, or not when disabled
<eable>	Enable P2P function
<disable>	Disable P2P function

[Configuration Case]

Case1: Enable P2P function of the PON port:

```
epon(olt-1)# p2p enable
Set slot 1 olt 1 p2p status to Enable successfully.

epon(olt-1)#
```

6.1.5. TPID Configurate TPID of OLT PON Interface

Command Syntax	epon(olt-1)# **tpid out-tpid *<tpid>***
Function Description	Configurare default TPID value of ACL rule
<tpid>	Presented in decimal, like the decimal of 0x8100 is 33024(other common value like 0x9100, 0x88a8)

[Configuration Case]

Case1: Set TPID value of ACL rule as 33024（0x8100）:

```
epon(olt-1)# tpid out-tpid 33024
epon(olt-1)#
```

6.1.6. Enable Encryption Capability of OLT PON Interface

Command Syntax	epon(olt-1)# **encrypt enable <interval>**
Function Description	Enable the encryption capability of OLT PON interface for downstream data and set the time interval of key exchanging
<interval>	Time interval, value range in 774-786426, second unit

[Configuration Case]

Case1: Enable the encryption capability of OLT PON interface for downstream data and set the time interval of key exchanging as 1000ms:

```
epon(olt-1)# encrypt enable 1000
Set slot 1 olt 1 encrypt status to Enable successfully.

epon(olt-1)#
```

6.1.7. Disable Encryption Capability of OLT PON Interface

Command Syntax	epon(olt-1)# **encrypt disable**
Function Description	Disable the encryption capability of OLT PON interface for downstream data

[Configuration Case]

Case1: Disable the encryption capability of OLT PON interface for downstream data:

```
epon(olt-1)# encrypt disable
Set slot 1 olt 1 encrypt status to Disable successfully.

epon(olt-1)#
```

6.1.8. Add VLAN Transforming Entry of OLT PON Interface

Command Syntax	epon(olt-1)# **modified-vlan add <cvlan> <svlan>**
Function Description	Transform upstream user VLAN(CVLAN) to service provider VLAN(SVLAN), and downstream service provider VLAN to user VLAN in OLT PON interface
<cvlan>	User VLAN, value range in 1-4094
<svlan>	Service provider VLAN, value range in 1-4094

[Configuration Case]

Case1: Add VLAN transforming entry of CVLAN as 100 in OLT PON interface 4:

```
epon(olt-4)# modified-vlan add 100 200
epon(olt-4)#
```

6.1.9. Delete VLAN Transforming entry of OLT PON Interface

Command Syntax	epon(olt-1)# **modified-vlan del <cvlan>**
Function Description	Delete VLAN Transforming entry of OLT PON Interface

<cvlan>	User VLAN, value range in 1-4094

[Configuration Case]

Case1: Delete VLAN Transforming entry of CVLAN as 100 of OLT PON Interface:

```
epon(olt-4)# modified-vlan del 100
epon(olt-4)#
```

6.1.10. Configurate VLAN Pool of OLT PON Interface

Command Syntax	epon(olt-1)# **vlan-pool <pool-id> start-vlan <start-vlan> end-vlan <end-vlan>**
Function Description	Configurate VLAN Pool of OLT PON Interface
<pool-id>	VLAN pool ID, value range in 1-4
<start-vlan>	Begin VLAN ID, value range in 1-4094
<end-vlan>	End VLAN ID, value range in 1-4094

[Configuration Case]

Case1: Set the VLAN of OLT PON interface 1 as VLAN pool of 100 to 200:

```
epon(olt-1)# vlan-pool 1 start-vlan 100 end-vlan 200
Set slot 1 olt 1 VLAN POOL from 100 to 200 successfully.

epon(olt-1)#
```

6.2. Illegal ONU configuration

6.2.1. Deregister Illegal ONU of OLT PON Interface

Command Syntax	epon(olt-1)# **illegal-onu deregister *<llid>***
Function Description	Deregister illegal ONU of OLT PON interface
<llid>	Optional parameter as follows:

	Llid: Illegal ONU llid, presented in hexadecimal like 0x0001 All: All illegal ONU

[Configuration Case]

Case1: Deregister all illegal ONU of OLT PON interface 4:

```
epon(olt-4)# illegal-onu deregister all
epon(olt-4)#
```

6.2.2. Restart Illegal ONU of OLT PON Interface

Command Syntax	epon(olt-1)# **illegal-onu reboot *<llid>***
Function Description	Restart Illegal ONU of OLT PON Interface
<llid>	Optional parameter as follows: Llid: Illegal ONU llid, presented in hexadecimal like 0x0001 All: All illegal ONU

[Configuration Case]

Case1: Restart all illegal ONU of OLT PON interface 4:

```
epon(olt-4)# illegal-onu reboot all
epon(olt-4)#
```

6.3. OLT ACL Configuration Management

6.3.1. Delete All Current ACL of OLT:

Command Syntax	epon(olt-1)#**acl delete**
Function Description	Delete all current ACL of OLT

[Configuration Case]

Case1: Delete all current ACL of OLT:

```
epon(olt-1)# acl delete
Delete ACL 1 successfuly.
```

```
Delete ACL 2 successfuly.
```

6.3.2. Delete Current Specified ACL of OLT

Command Syntax	epon(olt-1)# **acl <*aclId*> delete**
Function Description	Delete current ACL specified by aclId of OLT
<aclid>	ACL ID, value range in 1 – 30

[Configuration Case]

Case1: Delete current ACL with label 1 of OLT:

```
epon(olt-1)# acl 1 delete
Delete ACL 1 successfuly.
```

6.3.3. Add OLT ACL

Command Syntax	epon(olt-1)#**acl *<aclId>* rule *<direction>* *<precedence>* *matching "matching string" action "action string"***
Function Description	Add an ACL rule in current OLT
<aclId>	Parameter range in <1-30>
<direction>	Rule application direction: Upstream downstream
<precedence>	Rule priority: <4-7>
matching string	Matching string of rule in the form of "proto=12 dst-port=34" Present matchable domain as follows: Destination MAC address: [dst-mac] <xx:xx:xx:xx:xx:xx>. Source MAC address: [src-mac] <xx:xx:xx:xx:xx:xx>. Tag value: [tag-num] <0 | 1 | 2 | more>. Outer layer vlan: [top-vid] <vid | vidL-vidH>, vid:1~4094.

	Inlayer vlan: [inner-vid] <vid | vidL-vidH>, vid:1~4094. Outer layer protocol 802.1p priority: [top-8021p] <8021p | 8021pL-8021pH>, 8021p:0~7. Inlayer protocol 802.1p priority: [inner-8021p] <8021p | 8021pL-8021pH>, 8021p:0~7. Ethernet type: [eth-type] <0~65535>. Differentiated services code point: [dscp] <0~63>. Protocol number: [proto] <0~65535>. Destination IP address: [dst-ip] <x.x.x.x | x.x.x.x-x.x.x.x>. Source IP address: [src-ip] <x.x.x.x | x.x.x.x-x.x.x.x>. Destination port number: [dst-port] <0~65535>. Source port number: [src-port] <0~65535>.
action string	Action string of rule in the form of "8021p= 7 dscp= 63". Present supporting scope as follows: Priority: [cos] <0~7>. 802.1p priority: [8021p] <0~7>. Differentiated services code point: [dscp] <0~63>. Filter: [fwd] deny. Speed rate: [rate] cir <cir> cbs <cbs> pir <pir> pbs <pbs>, cir, pir: <0~1000000>Kpbs. cbs, pbs: <0~4095>KB Outer layer vlan pop: [top-vlan] pop. Inserting outer layer vlan: [top-vlan] push vid <1~4094>. Transformation outer layer vlan: [top-vlan] swap vid <1~4094>. Inlayer vlan pop: [inner-vlan] pop. Inserting inlayer vlan: [inner-vlan] push vid <1~4094>. Transformation inlayer vlan: [inner-vlan] swap vid <1~4094>.

[Configuration Case]

Case1: Filter data packet of destination MAC as 00:00:00:00:00:02 in upstream:

```
epon(olt-1)# acl 1 rule upstream 4 matching "dst-mac=00:00:00:00:00:02" action "fwd= deny"
```

Case2: Insert outer layer VLAN4094 in the destination MAC as 00:00:00:00:00:01 in downstream:

```
epon(olt-1)# acl 2 rule downstream 4 matching "dst-mac=00:00:00:00:00:01" action "top-vlan push vid 4094"
```

Case3: Add outer layer vlan200 in the data packets of outer layer vlan100 in the upstream:

```
epon(olt-1)# acl 3 rule upstream 4 match "top-vid=100" action "top-vlan push vid 200"
```

Case4: Add outer layer valn1000 in the data packets of destination IP 198.19.1.2 in the upstream:

```
epon(olt-1)# acl 1 rule upstream 4 matching "dst-ip=198.19.1.2" action "top-vlan push vid 1000"
```

Case5: Add outer layer vlan1000 in the packets of destination port number 2 in upstream:

```
epon(olt-1)# acl 1 rule upstream 4 matching "dst-port=2" action "top-vlan push vid 1000"
```

6.4. Bingding and Unbinding ONU in OLT

6.4.1. Binding ONU in OLT

Command Syntax	epon# **bind onu-id <id> mac-address <mac> type <type>**
Function Description	Register ONU in manual registion mode
<id>	ONU ID
<mac>	ONU MAC address
<type>	Type: ONU1FEC, ONU1GEC, ONU1GEM, ONU4FEC, ONU4FEC, ONU1GEZ, ONU2GEM, ONU4GEM, ONU4FE1TVC-WDM, ONU4GEB, ONU4GE, ONU4GE, ONU2FEW, ONU4FEW, ONU4FE1TVC,

	ONU4FE1TVW-WDM, ONU4FE1TVW, ONU4FE1TVL-WDM, ONU4FE1TVL, ONU4FE1TVLW-WDM, ONU4FE1TVLW, ONU4GED, ONU4FE1TVA-WDM, ONU4FE1TVA, ONU4FE1TVAW-WDM, ONU4FE1TVAW, ONU4GEH, ONU4GEW, ONU1FE, ONU1GE, ONU1FE1GE, ONU4FE, ONU8FEB, ONU8FEB, ONU4FE1TV-WDM, ONU4GE2P1TVW, ONU4GE2P1TVS, ONU2G1PW, ONU4GE2P. ONU4FER1TV.ONU4GER1TV, ONU4FER1TVL, ONU4GER1TVL. ONU4FER1TVWB, ONU4FER1TVLWB, ONU4GER1TVWB. ONU4GER1TVLWB, ONU16FEB, ONU24FEB,

[Configuration Case]

Case1: Bind the ONU with ID 5, MAC 08-c6-b3-26-a1-03, type ONU1FEC in OLT PON interface 1:

```
epon(olt-1)# bind onu-id 5 mac-address 08-c6-b3-26-a1-03 type ONU1FEC
Onu id has been bound.
epon(olt-1)#
```

6.4.2. Unbind ONU in OLT

Command Syntax	epon# **no-bind onu-id <id>**
Function Description	Unregister ONU
<id>	ONU ID

[Configuration Case]

Case1: Unregister the ONU with ONU ID 5:

```
epon(olt-1)# no-bind onu-id 5
epon(olt-1)#
```

6.5. OLT MAC Address List Management

6.5.1. Configurate Aging Time of MAC Address List of OLT PON Interface

Command Syntax	epon(olt-1)# **mac-address-table aging-time *<aging-time>***
Function Description	Configurate aging time of MAC address list of current OLT
<aging-time>	Aging time, valid value range in <0~65535> with unit of second, MAC address list will not age when the aging time is 0

[Configuration Case]

Case1: Set the address aging time of OLT 1 as 200 seconds:

```
epon(olt-1)# mac-address-table aging-time 200
Set slot 1 olt 1 bridge cfg successfully!

epon(olt-1)#
```

6.5.2. Empty Address List of OLT PON Port

Command Syntax	epon(olt-1)# **mac-address-table flush**
Function Description	Empty current MAC address list of OLT PON port

[Configuration Case]

Case1: Empty current OLT MAC address list:

```
epon(olt-1)# mac-address-table flush
Flush slot 1 olt 1 mac address table successfully!

epon(olt-1)#
```

6.5.3. Enable/Disable MAC Learning Function of OLT PON Port

Command Syntax	epon(olt-1)# **mac-address-table learning <admin>**

Function Description	Enable MAC learning function of current OLT
<admin>	Optional parameter: Enable: Enable MAC learning function of OLT PON port Disable: Disable MAC learning function of OLT PON port

[Configuration Case]

Case1: Enable MAC learning function of OLT PON port 1:

```
epon(olt-1)# mac-address-table learning enable
Set slot 1 olt 1 bridge cfg successfully!

epon(olt-1)#
```

6.5.4. Enable/Disable MAC Address Migrating Function of OLT PON Port

Command Syntax	epon(olt-1)# **mac-address-table move <admin>**
Function Description	Enable MAC address migrating function of current OLT PON Port
<admin>	Optional parameter: Enable: Enable MAC address migrating function of current OLT Disable: Disable MAC address migrating function of current OLT

[Configuration Case]

Case1: Enable MAC address migrating function of current OLT PON port 1:

```
epon(olt-1)# mac-address-table move enable
Set slot 1 olt 1 bridge cfg successfully!

epon(olt-1)#
```

6.6. OLT Authentication Management

6.6.1. Disable OLT Authenticating Function

Command Syntax	epon# **auth disable**
Function Description	Disable OLT authenticating function

[Configuration Case]

Case1: Disable OLT authenticating function:

```
epon# auth disable
Set slot 1 disable-auth mode successfully.

epon#
```

6.6.2. Enable OLT White List Authenticating Function

Command Syntax	epon# **auth whitelist enable**
Function Description	Enable OLT white list authenticating function. Only the ONU in the white list can register the OLT.

[Configuration Case]

Case1: Enable OLT white list authenticating function:

```
epon# auth whitelist enable
Set slot 1 whitelist mode successfully.

epon#
```

6.6.3. Add, Delete and View White List Member

Add white list Member

Command Syntax	epon# **auth whitelist add *<oltID>* onu *<onuMAC>***
Function Description	Add OLT authenticated white list member, OLT will enable the authenticating function when adding member for the first time

<oltID>	PON port ID, valid value range in 1-8
<onuMAC>	ONU-MAC in the form of 00-01-02-AB-CD-EF

[Configuration Case]

Case1: Add the ONU with MAC address of 00-1b-62-48-5b-09 into white list:

```
epon# auth whitelist add 1 onu 00-1b-62-48-5b-09
Add ONU (00-1b-62-48-5b-09) to slot 1 PON 1 whitelist successfully.
epon#
```

Delete White List Member

Command Syntax	epon# **auth whitelist delete *<oltID>* onu *<onuMAC>***
Function Description	Delete OLT authenticated white list Member。
<oltID>	PON port ID, valid value range in 1-8
<onuMAC>	ONU-MAC in the form of 00-01-02-AB-CD-EF

[Configuration Case]

Case1: Remove the ONU with MAC address of 00-1b-62-48-5b-09 out of white list:

```
epon# auth whitelist delete 1 onu 00-1b-62-48-5b-09
Delete ONU (00-1b-62-48-5b-09) from slot 0 PON 1 whitelist successfully.

epon#
```

View White List Member

Command Syntax	epon# **show auth whitelist**
Function Description	View OLT White List

[Configuration Case]

Case1: View OLT White List:

```
epon# show auth whitelist
 whitelist onu mac:
 pon-1 00-1b-62-48-5b-09
 pon-2 00-13-25-00-dd-01
 Total is 2.
```

6.6.4. Enable OLT Black List Authenticating function

Command Syntax	epon# **auth blacklist enable**
Function Description	Enable OLT black list authenticating function, the ONU in the black list can not regester in the OLT

[Configuration Case]

Case1: Enable OLT Black List authenticating function:

```
epon# auth blacklist enable
Set slot 1 whitelist mode successfully.


epon#
```

6.6.5. Add, Delete, View Black List Member

Add Black List Member

Command Syntax	epon# **auth blacklist add <*oltID*> onu <onuMAC>**
Function Description	Add OLT authenticated black list member, OLT will enable the authenticating function when adding member for the first time
<oltID>	PON port ID, valid value range in 1-8
<onuMAC>	ONU-MAC in the form of 00-01-02-AB-CD-EF

[Configuration Case]

Case1: Add the ONU with MAC address of 00-01-02-AB-CD-EF into black list:

```
epon# auth blacklist add 1 onu 00-01-02-AB-CD-EF
Add ONU (00-01-02-ab-cd-ef) to slot 1 PON 1 blacklist successfully.
```

```
epon#
```

Delete Black List Member

Command Syntax	epon# **auth blacklist delete <*oltID*> onu <*onuMAC*>**
Function Description	Delete OLT authenticated black list member
<oltID>	PON port ID, valid value range in 1-8
<onuMAC>	ONU-MAC in the form of 00-01-02-AB-CD-EF

[Configuration Case]

Case1: Remove the ONU with MAC address of 00-01-02-AB-CD-EF out of black list:

```
epon# auth blacklist delete 1 onu 00-01-02-AB-CD-EF
Delete ONU (00-01-02-ab-cd-ef) from slot 1 PON 1 blacklist successfully.

epon#
```

View Black List Member

Command Syntax	epon# **show auth blacklist**
Function Description	View OLT black list

[Configuration Case]

Case1: View OLT black list:

```
epon# show auth blacklist
blacklist onu mac:
pon-1 00-1b-62-48-5b-09
pon-2 00-13-25-00-dd-01
Total is 2.
```

6.6.6. Configurate OLT Ctc-Mode Hybrid Authenticating Mode

Command Syntax	epon# **auth ctc-mode hybrid**
Function Description	Enable hybrid authenticating mode, which support LOID and MAC auhenticating

[Configuration Case]

Case1: Enable hybrid authenticating mode:

```
epon# auth ctc-mode hybrid
Set slot 1 hybrid-auth mode successfully.

epon#
```

6.6.7. Configurate OLT Ctc-Mode Loid Authenticating Mode

Command Syntax	epon# **auth ctc-mode loid**
Function Description	Enable LOID authenticating mode

[Configuration Case]

Case1: Enable LOID authenticating mode:

```
epon# auth ctc-mode loid
Set slot 1 loid-auth mode successfully.

epon#
```

6.6.8. Configurate OLT Ctc-Mode Mac Authenticating Mode

Command Syntax	epon# **auth ctc-mode mac**
Function Description	Enable MAC authenticating mode

[Configuration Case]

Case1: Enable MAC authenticating mode:

```
epon# auth ctc-mode mac
Set slot 1 mac-auth mode successfully.

epon#
```

6.6.9. Add LOID Account

Command Syntax	epon# **auth ctc-mode add-loid <*loid*> password <*password*>**
Function Description	Add LOID account
<loid>	{MAX 24 Chars}
<password>	{MAX 12 Chars}

[Configuration Case]

Case1: Add LOID account test with password 123:

```
epon# auth ctc-mode add-loid test password 123
Add ONU Loid(test) to slot 1 successfully.

epon#
```

6.6.10. Delete LOID Account

Command Syntax	epon# **auth ctc-mode delete-loid <*loid*> password <*password*>**
Function Description	Delete LOID account
<loid>	{MAX 24 Chars}
<password>	{MAX 12 Chars}

[Configuration Case]

Case1: Delete LOID account test with password 123:

```
epon# auth ctc-mode delete-loid 123 password 123
Delete ONU Loid(123) from slot 1 successfully.
```

```
epon#
```

6.7. OLT Packet Filtering

6.7.1. Enable/Disable Filtering Function for DHCP Message in OLT

Command Syntax	epon(olt-1)# **packet-filter dhcp <*admin*>**
Function Description	Filter the message in the upstream of DHCP server
<admin>	Enable: Enable filtering function Disable: Disable filtering function

[Configuration Case]

Case1: Enable filtering function for DHCP packet:

```
epon(olt-1)# packet-filter dhcp enable
epon(olt-1)#
```

6.7.2. Enable/Disable Filtering Function for Eoc_Mme Message in OLT

Command Syntax	epon(olt-1)# **packet-filter eoc_mme <*admin*>**
Function Description	Filter EOC message
<admin>	Enable: Enable filtering function Disable: Disable filtering function

[Configuration Case]

Case1: Enable filtering function for EOC_mme packet:

```
epon(olt-1)# packet-filter eoc_mme enable
epon(olt-1)#
```

6.7.3. Enable/Disable Filtering Function for Netbios Message in OLT

Command Syntax	epon(olt-1)# **packet-filter netbios <*admin*>**
Function Description	Filter NETBIOS message
<admin>	Enable: Enable filtering function Disable: Disable filtering function

[Configuration Case]

Case1: Enable filtering function for Netbios packet:

```
epon(olt-1)# packet-filter netbios enable
epon(olt-1)#
```

6.7.4. Enable/Disable Filtering Function for 8306_Rtk_Loopback Message in OLT

Command Syntax	epon(olt-1)# **packet-filter 8306_rtk_loopback <*admin*>**
Function Description	Filter 8306_rtk_loopback message
<admin>	Enable: Enable filtering function Disable: Disable filtering function

[Configuration Case]

Case1: Enable filtering function for 8306_rtk_loopback packet:

```
epon(olt-1)# packet-filter 8306_rtk_loopback enable
epon(olt-1)#
```

6.8. OLT QinQ Configuration

6.8.1. Configurate QinQ Function

Command Syntax	epon(olt-1)# **qinq enable <*s-vlan*> raw-vlan-id-inbound <*c-vlan*> <*port-list*>**

Function Description	Configurate QinQ function
<s-vlan>	Outer layer VLAN tag , value range in 1-4094。
<c-vlan>	Inlayer VLAN list, value range in 1-4094。
<port-list>	Specify up link port list, which can be any up link port in ge1 ~ ge8

[Configuration Case]

Case1: Throw the message from uplink port ge1 and inlayer as VLAN50-90 into outer layer VLAN 100:

```
epon(olt-1)# qinq enable 100 raw-vlan-id-inbound 50-90 ge1
```

6.8.2. Disable QinQ Function

Command Syntax	epon(olt-1)# **qinq disable *<qinq-vid>***
Function Description	Disable QinQ function
<qinq-vid>	Outer layer VLAN tag , value range in 1-4094。

[Configuration Case]

Case1: vlan100 Disable the outer layer of PON1 port:

```
epon(olt-1)# qinq disable 100
epon(olt-1)#
```

6.9. Off-Line ONU Configuration

6.9.1. Add Off-Line ONU and Configurate ONU Template

Command Syntax	epon#**offline-onu add *<onuID> <onuMAC> <templateID>***

Function Description	Add off-line onu and configurate ONU template, only the off-line ONU without binding any template before can be binded with template. Use OFFLINE-ONU command to delete the binded template
<onuID>	The value of ONU ID after ONU launches
<onuMAC>	ONU MAC address
<templateID>	The template binded by ONU after launching, the template should exist first. OLT will deliver configuration to ONU based on the template binded by ONU when launching for the first time. All ONU will bind system template with templateID 0 automatically after launching in the default situation

[Configuration Case]

Case1: Bind the ONU with MAC address 00-1b-62-48-5b-0 and ONUID 1 with template 1:

```
epon(olt-1)# offline-onu add 1 00-1b-62-48-5b-09 1
epon(olt-1)#
```

6.9.2. Delete Off-Line ONU

Command Syntax	epon(olt-1)# **offline-onu del <onuID>**
Function Description	Delete off-line ONU
<onuID>	onuID : 1-64 or all, all represents all ONU

[Configuration Case]

Case1: Delete off-line ONU with ONUID 1:

```
epon(olt-1)# offline-onu del 1
epon(olt-1)#
```

6.10. OLT Card Information Inquiry

6.10.1. View OLT ACL

Command Syntax	epon#**show olt *<oltID>* acl**
Function Description	View all current OLT ACL
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View all current OLT ACL:

```
epon(olt-1)# show olt 1 acl
=================== SLOT 1 OLT 1 ACL 1 ===================
 Direction  : upstream
 Precedence  : 4
 Matching string : "dscp=63 "
 Action string : "dscp=0 "
```

6.10.2. View OLT Interface Status

Command Syntax	epon(olt-1)# **show olt *<oltId>* admin**
Function Description	Viw status of OLT PON interface
<oltId>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View status of OLT 1 interface:

```
epon(olt-1)# show olt 1 admin
Slot 1 olt 1 admin status: Enable.
```

6.10.3. View All ONU List with On-Line and Off-Line of PON

Command Syntax	epon#**show olt *<oltID> all-onu-info***

Function Description	View all ONU list with on-line and off-line of PON
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View all ONU list with on-line and off-line that registered in PON:

```
epon(olt-1)# show olt 1 all-onu-info
onuId   mac   onu state  software-Ver template
onu-01 00:01:62:45:66:06 powerdown     0(system template)
onu-02 00:01:62:45:66:01 powerdown     0(system template)
onu-03 08:C6:B3:08:00:80 powerdown     0(system template)
```

6.10.4. View Basic Information of OLT Interface

Command Syntax	epon#**show olt *<oltID>* attribute**
Function Description	View basic information of OLT PON interface
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View basic information of OLT PON1 interface:

```
epon(olt-1)# show olt 1 attribute
Slot 1 olt 1 attributes:
 Fw Version  : 4.2.7.58
 Cfg Version  : 1.7.3.14
 Loader Version : cefabeba
 LLID Support  : 64
 LLID Registered : 4
 LLID Online  : 1

epon(olt-1)#
```

6.10.5. View Status of Encryption Capability (encrypt) of OLT PON Interface

Command Syntax	epon#**show olt *<oltID>* encrypt**
Function Description	View status of encryption capability of OLT PON interface
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View status of encryption capability of OLT PON1 interface:

```
epon(olt-1)# show olt 1 encrypt
Slot 1 olt 1 encrypt status: Disable.

epon(olt-1)#
```

6.10.6. View Learned MAC Address in PON Interface

Command Syntax	epon(olt-1)# **show olt *<oltId>* mac-address-table < *onu*>**
Function Description	View learned mac address in PON interface
<oltId>	PON port ID, valid value range in 1-8
<onu>	Null, then view all learned MAC addresses in all ports Not null, then view learned MAC address of specified ONU

【Configurate Case】

Case1: View all learned mac addresses in PON1 interface:

```
epon# show olt 1 mac-address-table
============== SLOT 1 OLT 1 MAC Address Table ==============
 Index MAC Address   ONU  VID  Aging(s)
 1  08:C6:B3:18:F4:5B  12  1  145
 2  C8:1F:66:F3:20:A7  12  0  241
 3  08:C6:B3:11:22:33  16  1  131
```

```
 4  EC:17:2F:50:C3:30  16  0  282

========== 4 MAC Address Table Entries Found ==========

epon#
```

Case2: View all learned MAC addresses of ONU 12 in PON1 interface:

```
epon# show olt 1 mac-address-table 12
========== SLOT 1 OLT 1 ONU 12 MAC Address Table ==========
 Index MAC Address   ONU  VID  Aging(s)
 1  08:C6:B3:18:F4:5B  12  1  225
 2  C8:1F:66:F3:20:A7  12  0  271

========== 2 MAC Address Table Entries Found ==========

epon#
```

6.10.7. View Function Status of Learning MAC Address in PON Interface

Command Syntax	epon#**show olt *<oltID>* mac-learning**
Function Description	View function status of learning mac address in PON interface
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View function status of learning mac address in PON1 interface:

```
epon# show olt 1 mac-learning
================= SLOT 1 OLT 1 BRIDGE CFG ==================
 MAC move  : Enable
 MAC learning : Enable
 Aging time : 300(s)

epon#
```

6.10.8. View VLAN Converting Entry in PON Interface

Command Syntax	epon#**show olt *<oltID>* modified-vlan**
Function Description	View VLAN converting entry in PON interface
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View VLAN converting entry in PON1 interface:

```
epon(olt-1)# show olt 1 modified-vlan
Vlan Translation:
c-vid  s-vid
------------------
 100  111
epon(olt-1)#
```

6.10.9. View Multi-Point Control Protocol Configuration in PON Interface

Command Syntax	epon#**show olt *<oltID>* mpcp-config**
Function Description	View multi-point control protocol configuration in PON interface
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View multi-point control protocol configuration in PON1 interface:

```
epon(olt-1)# show olt 1 mpcp-config
slot 1 olt 1 MPCP configuration:

 grant mode: periodical
 grant freq: 5000(unit:0.1ms)
 grant size: 3076(unit:TQ)
 gate size: 200(unit:TQ)
 gate tmr: 200(unit:0.1ms)
```

```
epon(olt-1)#
```

6.10.10. View On-Line ONU List in PON Interface

Command Syntax	epon#**show olt *<oltID>* online-onu**
Function Description	View on-line onu list in PON interface in any mode
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View on-line onu list in PON1 interface:

```
epon(olt-1)# show olt 1 online-onu
onuId   mac   type   CTC-Ver distance
onu-03 08:C6:B3:00:00:06  XXXXXX  30   6m
onu-10 00:a1:02:01:30:d8  XXXXXX  20   6m
onu-11 08:C6:B3:07:d4:78  XXXXXX  21   6m
```

6.10.11. View Optical Power of OLT Optical Module

Command Syntax	epon#**show olt *<oltID>* optical**
Function Description	View optical power of OLT optical module
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View optical power of OLT optical module:

```
epon# show olt 1 optical
Slot 1 olt 1 optical informations:
 Temperature  : 45.28 (C)
 Voltage   : 2.30 (V)
 Current   : 1.23 (mA)
 Tx Power   : -6.45 (dBM)
 Rx Power   : 0.00 (dBM)
```

6.10.12. View On-Line ONU Information like Optical Power and Temperature in OLT PON Interface

Command Syntax	epon#**show olt *<oltID>* optical-online-onu**
Function Description	View on-line ONU information like optical power and temperature in OLT PON interface
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View on-line ONU information like optical power and temperature in OLT PON interface:

```
epon(olt-1)# show olt 1 optical-online-onu
 ------------------------------------------------------------------------
 PON ONU Voltage(V) Tx-power(dBm) Rx-power(dBm) bias(mA) Temperature(C)
 ------------------------------------------------------------------------
 1 12 3.29  1.53   -15.36   11.90  37.02
 1 19 3.30  1.74   -11.00   11.22  34.82
 ------------------------------------------------------------------------
epon(olt-1)#
```

6.10.13. View P2P Status in OLT

Command Syntax	epon# **show olt *<oltId>* p2p**
Function Description	View P2P Status in OLT
<oltId>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View P2P Status in OLT PON interface:

```
epon# show olt 1 p2p
Slot 1 olt 1 p2p status: Enable
```

6.10.14. View All Kinds of Filtering Rule Status in PON Interface

Command Syntax	epon# **show olt <*oltId*> packet-filter <*type*>**
Function Description	View all kinds of filtering rule status in PON interface
<oltId>	PON port ID, valid value range in 1-8
<type>	Optional parameter: NULL: View filtering status of all packets dhcp: View status of DHCP filtering rule netbios: View status of NETBIOS filtering rule eoc_mme: View status of NETBIOS filtering rule 8306_rtk_loopback: View status of 8306_RTK_LOOPBACK filtering rule

[Configuration case]

Case1: View status of DHCP filtering rule in OLT PON1 interface:

```
epon# show olt 1 packet-filter
=================== SLOT 1 OLT 1 Packet Filter===================
 DHCP : enable
 Netbios : disable
 EOC MME : disable
 8036 RTK loopback : disable


epon#
```

Case2: View status of all filtering rule in OLT PON1 interface::

```
epon# show olt 1 packet-filter
=================== SLOT 1 OLT 1 Packet Filter===================
 DHCP : enable
 Netbios : disable
 EOC MME : disable
```

```
8036 RTK loopback : disable


epon#
```

6.10.15. View OLT Authenticating Mode

Command Syntax	epon# **show auth mode**
Function Description	View current OLT authenticating mode
<oltId>	PON port ID, valid value range in 1-8

[Configuration case]

Case1: View current OLT authenticating mode:

```
epon# show auth mode
Slot 1 current auth-mode is disable.


epon#
```

6.10.16. View TPID Value in PON Interface

Command Syntax	epon# **show olt <*oltId*> tpid out-tpid**
Function Description	View TPID value in OLT
<oltId>	PON port ID, valid value range in 1-8

[Configuration case]

Case1: View TPID value in OLT:

```
epon(olt-1)# show olt 1 tpid out-tpid
Output tpid : 33024(0X8100)


epon(olt-1)#
```

6.10.17. View VLAN Pool in PON Interface

Command Syntax	epon# **show olt <oltId> vlan-pool <pool-id>**
Function Description	View VLAN pool information in OLT PON interface
<oltId>	PON port ID, valid value range in 1-8
<pool-id>	VLAN pool ID, value in all, 1-4. All represents all VLAN pool

[Configuration case]

Case1: View all VLAN pool information in OLT PON1 interface:

```
epon(olt-1)# show olt 1 vlan-pool all
Slot 1 olt 1 VLAN POOL 1 Range : 100-200.

Slot 1 olt 1 VLAN POOL 2 Range : 1-4094.

Slot 1 olt 1 VLAN POOL 3 Range : 1-4094.

Slot 1 olt 1 VLAN POOL 4 Range : 1-4094.

epon(olt-1)#
```

7. ONU MANAGEMENT AND INFORMATION VIEWING

7.1. View ONU Basic Information

7.1.1. View On- Line ONU List in PON Interface

Command Syntax	epon#**show olt *<oltID>* online-onu**
Function Description	Use this command to view on- line onu list in PON interface in any mode
<oltID>	PON port ID, valid value range in 1-8

[Configuration Case]

Case1: View view on- line onu list in PON interface:

```
epon(olt-1)# show olt 1 online-onu
onuId   mac   type   CTC-Ver distance
onu-03 08:C6:B3:00:00:06  XXXXXX  30   6m
onu-10 00:a1:02:01:30:d8  XXXXXX  20   6m
onu-11 08:C6:B3:07:d4:78  XXXXXX  21   6m
```

7.1.2. View ONU Version Information

Command Syntax	epon# **show olt <oltId> onu *<onuid>* ctc sn**
Function Description	View version information of on-line ONUin PON interface
<oltId>	PON port ID, valid value range in 1 - 8
<onuid>	Specified on-line ONUID, valid value range in 1-6

[Configuration Case]

Case1: View ONU version information:

```
epon# show olt 7 onu 12 ctc sn
onu model  : 0x3131326d
onu base-MAC : 08-c6-b3-00-00-04
onu hardware Ver: V1.0
```

```
onu software Ver: V2.0.2
```

7.1.3. View ONU Hardware Information

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc capabilities**
Function Description	View hardware information of on-line ONUin PON interface
<oltId>	PON port ID, valid value range in 1 – 8
<onuid>	Specified on-line ONUID, valid value range in 1-6

[Configuration Case]

Case1: View ONU hardware information:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc capabilities
GE port number  : 0
FE port number  : 1
POTS port number  : 0
CATV     : not-support
support backupBattery: not-support
support multiLlid : not-support
epon(olt-5/onu-6)#
```

7.1.4. View ONU Basic Information

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc attribute**
Function Description	View basic information of on-line ONUin PON interface
<oltId>	PON port ID, valid value range in 1 - 8
<onuid>	Specified on-line ONUID, valid value range in 1-6

[Configuration Case]

Case1: View ONU basic information:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc attribute
```

```
--------------------------------------------------------------------------------
PON ONU Port Admin Link Flow-control Auto-neg Ingress-rate Egress-rate
--------------------------------------------------------------------------------
5 6 1 enable down enable  enable Unlimit  Unlimit
--------------------------------------------------------------------------------
epon(olt-5/onu-6)#
```

7.1.5. View ONU Optical Power Information

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc optical**
Function Description	View optical power information of on-line ONUin PON interface
<oltId>	PON port ID, valid value range in 1 - 8
<onuid>	Specified on-line ONUID, valid value range in 1-6

[Configuration Case]

Case1: View ONU optical power information:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc optical
ONU_OPM_DIAGNOSIS_RSP: temperature 45 C

ONU_OPM_DIAGNOSIS_RSP: supply voltage 3.35 V

ONU_OPM_DIAGNOSIS_RSP: tx bias current 11 mA

ONU_OPM_DIAGNOSIS_RSP: tx power 1.73 dBm

ONU_OPM_DIAGNOSIS_RSP: rx power -15.72 dBm

epon(olt-5/onu-6)#
```

7.1.6. View ONU FEC Function Status

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc fec**

Function Description	View FEC function status of on-line ONUin PON interface
<oltId>	PON port ID, valid value range in 1 - 8
<onuid>	Specified on-line ONUID, valid value range in 1-6

[Configuration Case]

Case1: View ONU FEC function status:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc fec
FEC state: Disable
epon(olt-5/onu-6)#
```

7.1.7. View ONU Sleeping Control Status

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc sleep-control**
Function Description	View sleeping control status of on-line ONUin PON interface
<oltId>	PON port ID, valid value range in 1 - 8
<onuid>	Specified on-line ONUID, valid value range in 1-6

[Configuration Case]

Case1: View ONU sleeping control status:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc sleep-control
ONU has leave Sleep-Mode!
epon(olt-5/onu-6)#
```

7.1.8. View ONU Managing IP

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc mng-ip**
Function Description	View managing IP of on-line ONUin PON interface
<oltId>	PON port ID, valid value range in 1 - 8

<onuid>	Specified on-line ONUID, valid value range in 1-6

[Configuration Case]

Case1: View ONU managing IP:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc mng-ip
ip  : 192.168.101.1
netmask : 255.255.255.0
gateway : 192.168.101.1
cVlan : 1
sVlan : 0
priority : 5
epon(olt-5/onu-6)#
```

7.1.9. View ONU Managing SNMP

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc mng-snmp**
Function Description	View managing SNMP of on-line ONUin PON interface. The ONU with SFU and HGU is not supported by now
<oltId>	PON port ID, valid value range in 1 - 8
<onuid>	Specified on-line ONUID, valid value range in 1-6

7.2. Enter ONU Management Interface

Command Syntax	epon(olt-7)#**onu <*onuid*>**
Function Description	Enter ONU management interface and configurate ONU parameter
<onuid>	Specified ONUID, valid value range in 1-64。

[Configuration Case]

Case1: Enter ONU1 management interface:

```
epon(olt-7)#onu 1
epon(olt-7/onu-1)#
```

7.3. ONU Basic Operation Management

7.3.1. Restart ONU

Command Syntax	epon(olt-7/onu-1)# **ctc reboot**
Function Description	Restart ONU device

[Configuration case]

Case1: Restart ONU:

```
epon(olt-5/onu-6)# ctc reboot
Please wait...
epon(olt-5/onu-6)#
01/01/00 01:46:29 onu-1-5-6 (ctc-30) offline...

01/01/00 01:46:37 onu-1-5-6 (llid-2,mac-08-c6-b3-09-d8-fc,ctc-30)online...

epon(olt-5/onu-6)#
```

7.3.2. Unregister ONU

Command Syntax	epon(olt-7/onu-1)# **deregister**
Function Description	Re-register ONU

[Configuration case]

Case1: Re-register ONU:

```
epon(olt-5/onu-6)# deregister

01/01/00 01:48:14 onu-1-5-6 (ctc-30) offline...
epon(olt-5/onu-6)#
01/01/00 01:48:20 onu-1-5-6 (llid-2,mac-08-c6-b3-09-d8-fc,ctc-30)online...

01/01/00 01:48:28 onu-1-1-13 (llid-0,mac-00-11-22-33-44-55,ctc-30)online...

epon(olt-5/onu-6)#
```

7.3.3. Enable /Disable ONU FEC Function

Command Syntax	epon(olt-7/onu-1)# **ctc fec *<oper>***
Function Description	Configrate ONU fec function
<oper>	Vaule in <enable/disable> Enable: Enable ONU FEC function Disable: Disable ONU FEC function

[Configuration case]

Case1: Enable ONU FEC function:

```
epon(olt-5/onu-6)# ctc fec enable

epon(olt-5/onu-6)#
```

7.3.4. Restore ONU into Default Setting

Command Syntax	epon(olt-7/onu-1)#**default**
Function Description	Restore ONU into factory default setting Attention: This command will delete all ONU configuration, restore into factory default setting and restart ONU automatically

[Configuration case]

Case1: Restore ONU into factory default setting:

```
epon(olt-5/onu-6)# default
epon(olt-5/onu-6)#
01/01/00 01:57:27 onu-1-5-6 (ctc-30) offline...

01/01/00 01:57:36 onu-1-5-6 (llid-2,mac-08-c6-b3-09-d8-fc,ctc-30)online...

epon(olt-5/onu-6)#
```

7.3.5. Configurate ONU Managing IP Address

Command Syntax	epon(olt-2/onu-4)#**ctc mng-ip *<ip>* *<netmask>* *<gateway>* *<CVLAN>* *<SVLAN>* <priority>**
Function Description	Configurate ONU managing IP adress
Parameter Dscription	<ip> - example: 192.168.12.122 <netmask> - example: 255.255.255.0 <gateway> - example: 192.168.0.1 <CVLAN> - 0-4094 <SVLAN> - 0-4094 <priority> - 0-7

[Configuration case]

Case1: Set the managing IP as 192.168.12.122, subnet mast as 255.255.255.0, default gateway as 192.168.12.1, user VLAN as 10, service provider vlan as 101 and priotity 0 of ONU:

```
epon(olt-5/onu-6)# ctc mng-ip 192.168.12.122 255.255.255.0 192.168.12.1 10 101 0

epon(olt-5/onu-6)#
```

7.3.6. Configurate ONU Managing SNMP Parameter

Command Syntax	epon(olt-5/onu-7)# **ctc mng-snmp <SNMPVer> <TrapHostIPAddr> <TrapPort> <SNMPServerPort> <CommunityForRead> <CommunityForWrite>**
Function Description	Configurate ONU managing SNMP parameter
Parameter Dscription	<SNMPVer>: SNMP version - <v1 | v2c> <TrapHostIPAddr>: Trap address - example: 192.168.120.12 <TrapPort>: Trap port - 1-65535(default:162) <SNMPServerPort>: SNMP service port - 1-65535(default:161) <CommunityForRead>: Community of reading - string, length< 32 chars (default:public)

	<CommunityForWrite>: Community of writing - string, length< 32 chars(default:private)

[Configuration case]

Case1: Configurate ONU managing SNMP parameter as follows:

```
epon(olt-5/onu-7)# ctc mng-snmp v1 192.168.5.165 162 161 public private

epon(olt-5/onu-7)#
```

7.3.7. Configurate ONU LINK Quantity

Command Syntax	epon(olt-2/onu-4)#**ctc multi-llid <number>**
Function Description	Configurate ONU LINK quantity
<number>	Quantity, value range in 0-7

[Configuration case]

Case1: Set ONU LINK quantity as 1 :

```
epon(olt-5/onu-7)# ctc multi-llid 1

epon(olt-5/onu-7)#
```

7.3.8. Save All ONU Configuation

Command Syntax	epon(olt-7/onu-1)# **save**
Function Description	Save all ONU configuation

[Configuration case]

Case1: Save all ONU configuation:

```
epon(olt-5/onu-6)# save
OK!
epon(olt-5/onu-6)#
```

7.3.9. Update ONU Software Version

Command Syntax	epon(olt-7/onu-1)# **ctc upgrade <*tftp-server*> <*image-file*>**
Function Description	Update ONU software version
<tftp-server>	TFTP server IP address in the form of X.X.X.X
<image-file>	Updated image file, like fw-name.mif

[Configuration case]

Case1: Update ONU software version:

```
epon(olt-5/onu-7)# ctc upgrade 192.168.101.11 fw-name.mif

 upgrading onu(1-5-7)...100%.OK
 Please wait a minute to finish the work...
01/01/00 04:46:41 onu-1-5-7 (ctc-30) offline...

All done.
update ONU OK!
epon(olt-5/onu-7)#
01/01/00 04:47:14 onu-1-5-7 (llid-0,mac-08-c6-b3-18-f4-59,ctc-30)online...

epon(olt-5/onu-7)#
```

7.4. ONU Alarm Configurating and Viewing

7.4.1. ONU Device Alarm Configuration

Command Syntax	epon(olt-7/onu-1)# **ctc alarm device <type> <admin> <alarmThreshold> <clearingAlarmThres>**
Function Description	Configurate alarm function and parameter of ONU device
<type>	onuTempHigh: High temperature alarming onuTemplow: Low temperature alarmin PowerAlarm : Battery alarming

	IADConnectionFail : IAD connection alarming SleepStatusUpdate: Sleeping status updating alarmin
<admin>	Enable: Enable alarm function Disable: Disable alarm function
<alarmThreshold>	Threshold value, integer
<clearingAlarmThreshold>	Threshold value, integer

[Configuration case]

Case1: Configurate alarm function parameter of ONU device:

```
epon(olt-5/onu-7)# ctc alarm device onuTempHigh enable 100 101
Not support..
epon(olt-5/onu-7)#
```

7.4.2. ONU PON Interface Alarm Configuration

Command Syntax	epon(olt-7/onu-1)# **ctc alarm pon-if <type> <admin> <alarmThreshold> <clearingAlarmThres>**
Function Description	Configurate alarm function and parameter of ONU PON interface
<type>	RXPowerHigh: Receiving power overhigh alarming RXPowerLow: Receiving power overlow alarming TXPowerHigh: Forarding power overhigh alarming TXPowerLow: Forarding power overlow alarming TXBiasHigh: Forarding deviation overhigh alarming TXBiasLow: Forarding deviation alarming VccHigh: Voltage overhigh alarming VccLow: Voltage overlow alarming TempHigh: Temperature overhigh alarming TempLow: Temperature overlow alarming

<admin>	Enable: Enable alarm function Disable: Disable alarm function
<alarmThreshold>	Threshold value, integer
<clearingAlarmThreshold>	Threshold value, integer

[Configuration case]

Case1: Configurate alarm function and parameter of ONU PON interface:

```
epon(olt-5/onu-7)# ctc alarm pon-if VccHigh enable 220 2200
Not support..
epon(olt-5/onu-7)#
```

7.4.3. ONU Voice Interface Alarm Configuration

Command Syntax	epon(olt-7/onu-1)# **ctc alarm port pots <pots> <type> <admin> <alarmThreshold> <clearingAlarmThres>**
Function Description	Configurate ONU voice interface alarm function and parameter
<pots>	Voice interface ID, <1 - 2>
<type>	POTSPortFail: Voice interface fail alarming
<admin>	Enable: Enable alarm function Disable: Disable alarm function
<alarmThreshold>	Threshold value, integer
<clearingAlarmThreshold>	Threshold value, integer

[Configuration case]

Case1: Configurate ONU voice interface alarm function and parameter:

```
epon(olt-5/onu-7)# ctc alarm port pots 1 POTSPortFail enable 40000 100
```

```
Not support..
epon(olt-5/onu-7)#
```

7.4.4. ONU User Interface Alarm Configration

Command Syntax	epon(olt-7/onu-1)# **ctc alarm port uni <uni> <type> <admin> <alarmThreshold> <clearingAlarmThres>**
Function Description	Configurate ONU user interface alarm function and parameter
<uni>	User interface ID, <1 - 24>
<type>	EthPortAutoNegFail: Interface auto-negotiating fail alarming EthPortLOS: Interface signal losing alarming EthPortFail: Interface fail alarming EthPortLoopback: Interface loop alarming EthPortCongestion: Interface congestion alarming
<admin>	Enable: Enable alarm function Disable: Disable alarm function
<alarmThreshold>	Threshold value, integer
<clearingAlarmThreshold>	Threshold value, integer

7.4.5. ONU Performance Statistics Alarm Configuration

Command Syntax	epon(olt-7/onu-1)# **ctc alarm statistic <interface> <type> <admin> <alarmThreshold> <clearingAlarmThres>**
Function Description	Configurate ONU performance statistics alarm function and parameter
<interface>	pon-if: PON interface uni: User interface
<type>	downDropEvents: Downstream data packet losing alarming

	upDropEvents : Upstream data packet losing alarming downCRCErr : Downstream data packet CRC error detecting alarming downUndersize : Downstream data packet overshort alarming upUndersize: Upstream data packet overshort alarming downOversize: Downstream data packet overlong alarming upOversize: Upstream data packet overlong alarming downFragments: Downstream data packet incompletion alarming downJabbe: Downstream giant data packet alarming
<admin>	Enable: Enable alarm function Disable: Disable alarm function
<alarmThreshold>	Threshold value, integer
<clearingAlarmThreshold>	Threshold value, integer

[Configuration case]

Case1: Configurate ONU performance statistics alarm function and parameter:

```
epon(olt-5/onu-7)# ctc alarm statistics pon-if downUndersize enable 1000 1000
epon(olt-5/onu-7)#
```

7.4.6. View ONU Alarm Information

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc alarm < type >**
Function Description	View alarm information of on-line ONU in PON interface
<oltId>	PON port ID, valid value range in 1 - 8。
<onuid>	Specified on-line ONUID, valid value range in 1-64。

<type>	Device: Device alarm information pon-if: PON interface alarm information port: User port alarm information statistics: Performance statistics alarm information

[Configuration Case]

Case1: View ONU user port alarm information:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc alarm port
 Port  Alarm(port)   State Threshold ClearingAlarmThreshold
 uni-1 EthPortAutoNegFail disable 0   0
 uni-1 EthPortLOS   disable 0   0
 uni-1 EthPortFail   disable 0   0
 uni-1 EthPortLoopback  enable  0   0
 uni-1 EthPortCongestion disable 0   0
epon(olt-5/onu-6)#
```

7.5. ONU IGMP Configurating and Viewing

7.5.1. Delete All ONU Multicast Groups

Command Syntax	epon(olt-7/onu-1)# **ctc igmp clear-all-multicast-ctrl-group**
Function Description	Delete all ONU multicast groups

[Configuration case]

Case1: Delete all ONU multicast groups:

```
epon(olt-5/onu-7)# ctc igmp clear-all-multicast-ctrl-group


epon(olt-5/onu-7)#
```

7.5.2. Enable /Disable ONU Multicast Fast Leave Function

Command Syntax	epon(olt-7/onu-1)# **ctc igmp fast-leave <*oper*>**
Function Description	Configurate multicast fast leave function

<oper>	Value in <enable/disable> Enable: Enable ONU multicast fast leave function Disable: Disable ONU multicast fast leave function

[Configuration case]

Case1: Enable ONU multicast fast leave function:

```
epon(olt-5/onu-7)# ctc igmp fast-leave enable

epon(olt-5/onu-7)#
```

7.5.3. Configurate ONU Multicast Mode

Command Syntax	epon(olt-7/onu-1)# **ctc igmp mode < *mode* >**
Function Description	Configurate multicast mode, support IPv6
<mode>	Parameter value : igmp-mld-snooping: Multicast spy controllable-igmp-mld: Controllable multicast pass-through: Transparent transmission

[Configuration case]

Case1: Set the ONU multicast mode as snooping mode:

```
epon(olt-5/onu-7)# ctc igmp mode igmp-mld-snooping

epon(olt-5/onu-7)#
```

7.5.4. View ONU Multicast Configuration

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc igmp *config***
Function Description	View multicast configuration of on-line ONU in PON Interface
<oltId>	PON port ID, valid value range in 1 - 8。

<onuid>	Specified on-line ONUID, valid value range in 1-64。

[Configuration Case]

Case1: View ONU multicast configuration:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc igmp config
IGMP-WORKING-MODE : pass-through
IGMP-FASTLEAVE-MODE : Disable
epon(olt-5/onu-6)
```

7.5.5. View ONU Multicast Group Information

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc i*gmp multicast-group***
Function Description	View multicast group information of on-line ONU in PON Interface
<oltId>	PON port ID, valid value range in 1 - 8。
<onuid>	Specified on-line ONUID, valid value range in 1-64。

[Configuration Case]

Case1: View ONU multicast group information:

```
epon(olt-5/onu-6)# show olt 5 onu 6 ctc igmp multicast-group
 ERROR : There is not any onu group address record
epon(olt-5/onu-6)#
```

7.6. ONU Voice Call VOIP Configurating and Viewing (Only Apply to Specific ONU)

7.6.1. Configurate ONU Parameter of VOIP Fax/Modem Task

Command Syntax	epon(olt-7/onu-1)# **ctc voip fax-modem <voiceT38Enable> <voice-fax-modem-co**
Function Description	Configurate ONU parameter of VOIP fax/modem task

<voiceT38Enable>	Threshold value, integer
<voice-fax-modem-co>	Threshold value, integer

7.6.2. Configurate ONU VOIP Global-Config IP Parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip global-config ip-mode <mode>**
Function Description	Configurate ONU VOIP global-config IP parameter
<mode>	static-ip: Static IP mode dhcp : DHCP dynamic configuration host mode pppoe: PPPoE Ethernet point to point mode

7.6.3. Configurate ONU VOIP Global-Config PPPoE Parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip global-config pppoe <mode> <username> <password>**
Function Description	Configurate ONU VOIP global-config PPPoE parameter
<mode>	auto: automatical authenticatiion mode chap : Chanllenge handshake authentication mode pap: Password authentication protocol
<username>	User name, 1-32 characters
<password>	Password, 1-32 characters

7.6.4. Configurate ONU VOIP Global-Config Static IP Parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip global-config static-ip <ip> <netmask> <gateway>**

Function Description	Configurate ONU VOIP global-config static IP parameter
<ip>	IP address in the form of X.X.X.X
<netmask>	Subnet mask in the form of X.X.X.X
<gateway>	Gateway in the form of X.X.X.X

7.6.5. Configurate ONU VOIP Global-Config Tag Processing parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip global-config tagged-handle <tagged-mode> <voice-cvlan> <voice-svlan> < voice-priority>**
Function Description	Configurate ONU VOIP global-config tag processing parameter
<tagged-mode>	transparent : Transparent transmission mode tag : Tag mode, access mode as well vlan-stacking: vlan superposition mode
<voice-cvlan>	User VLAN: value range in 0 - 4094
<voice-svlan>	Servicer VLAN: value range in 0 - 4094
<voice-priority>	Priority: value range in 0 – 7。

7.6.6. Configurate ONU VOIP H.248 Heartbeat Parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip h248-config heartbeat < heartbeat -mode> < heartbeat -cycle> < heartbeat -count>**
Function Description	Configurate ONU voip H.248 heartbeat parameter
<heartbeat-cycle>	Cycle, value range in 1-65535 seconds

<heartbeat-count>	Heartbeat quantity, value range in 1-255。

7.6.7. Configurate ONU VOIP H.248 Parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip h248-config parameter < MGPortNo> < MGCIP> < MgcComPortNo> <RegMode> <MID> <Backup-MgcIp> <Backup-MgcComPortN>**
Function Description	Configurate ONU VOIP H.248 parameter
< MGPortNo>	MG port number, value range in 0 – 65535。
< MGCIP>	Primary soft switching platform IP address
<MgcComPortNo>	Primary soft switching platform port number
<RegMode>	Logon mode: ip-addr: IP address registration domain-name: Domain name registration device-name: Device name registration
<MID>	MG mark, support 64 characters for the most
<Backup-MgcIp>	Backup IP address of primary soft switching platform
<Backup-MgcComPortN>	Backup port number of primary soft switching platform, value range in 0 – 65535。

7.6.8. Configurate ONU VOIP H.248 RTP TID Parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip h248-rtp-tid <number-of-RTP-TID> <RTP-TID-Prefix> <RTP-TID-Digit-Begi> <RTP-TID-Mode> <RTP-TID-Digit-Leng>**
Function Description	Configurate ONU VOIP H.248 RTP TID Parameter。
<number-of-RTP-TID>	RTP TID number, value range in 0-255
<RTP-TID-Prefix>	RTP TID prefixion with the limit of 16 characters
<RTP-TID-Digit-Begi>	RTP TID initial value of digit part: 0-4294967295
<RTP-TID-Mode>	RTP TID alignment of digit part <alignment | no-alignment>
<RTP-TID-Digit-Leng>	RTP TID digit number of digit part: 0-255。

7.6.9. Configurate ONU VOIP IAD Operation Parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip iad-operation <op>**
Function Description	Configurate ONU VOIP H.248 parameter。
<op>	<re-registration | log-off | reset>。

7.6.10. Configurate ONU VOIP SIP Heartbeat Parameter

Command Syntax	epon(olt-7/onu-1)# **ctc voip sip-config heartbeat <heartbeat Switch> <heartbeatCycle> <heartbeatCount>**
Function Description	Configurate ONU VOIP SIP heartbeat parameter

<heartbeatSwitch>	Enable: Enable Disable: Disable
<heartbeatCycle>	Heartbeat cycle, value range in 1 – 65535 seconds
<heartbeatCount>	Heartbeat quantity, value range in 1 - 65535。

7.6.11. Configurate ONU VOIP SIP Parameter Backup Proxy Server

Command Syntax	epon(olt-7/onu-1)# **ctc voip sip-config parameter backup-proxy-server <IP> <PortNo>**
Function Description	Configurate parameter of ONU VOIP SIP parameter backup proxy server
<IP>	Server IP address in the form of X.X.X.X
<PortNo>	Port number, value range in 0-65535

7.6.12. Configurate ONU VOIP SIP Parameter Misc

Command Syntax	epon(olt-7/onu-1)# **ctc voip sip-config parameter misc <MGPortNo> <RegInterval>**
Function Description	Configurate ONU VOIP SIP parameter misc。
<MGPortNo>	Port number, 1 - 65535。
<RegInterval>	Registration time interval, value range in 1-4294967295

7.6.13. Configurate ONU VOIP SIP Parameter Backup Registration Server

Command Syntax	epon(olt-7/onu-1)# **ctc voip sip-config parameter backup-reg-server <IP> <PortNo>**
Function Description	Configurate parameter of ONU VOI SIP parameter backup registration server

<IP>	Server IP address in the form of X.X.X.X
<PortNo>	Port number, value range in 0-65535

7.6.14. Configurate ONU VOIP SIP Parameter Out-Bound Server

Command Syntax	epon(olt-7/onu-1)# **ctc voip sip-config parameter outbound-server <IP> <PortNo>**
Function Description	Configurate parameter of ONU VOIP SIP parameter-out-bound server
<IP>	IP address in the form of X.X.X.X
<PortNo>	Port number, value range in 0-65535

7.6.15. Configurate ONU VOIP SIP Parameter Proxy Server

Command Syntax	epon(olt-7/onu-1)# **ctc voip sip-config parameter proxy-server <IP> <PortNo>**
Function Description	Configurate ONU VOIP SIP parameter proxy server
<IP>	IP address in the form of X.X.X.X
<PortNo>	Port number, value range in 0-65535

7.6.16. Configurate ONU VOIP SIP Parameter Registration Server

Command Syntax	epon(olt-7/onu-1)# **ctc voip sip-config parameter reg-server <IP> <PortNo>**
Function Description	Configurate parameter ONU VOIP SIP parameter registration server
<IP>	IP address in the form of X.X.X.X
<PortNo>	Port number, value range in 0-65535

7.6.17. View ONU VOIP Configuration

Command Syntax	epon# **show olt <oltId> onu <*onuid*> ctc voip < *fax-modem |global-config|h248-config|h248-rtp-tid| h248-rtp-tid-info| iad-infor | sip-config*>**
Function Description	View configuration of on-line ONU in PON interface
<oltId>	PON port ID, valid value range in 1 - 8
<onuid>	Specified on-line ONUID, valid value range in 1-64

7.7. ONU LINK Configurating and viewing

7.7.1. Enter ONU LINK Configuration Mode

Command Syntax	epon(olt-7/onu-1)#**link <*linkID*>**
Function Description	Enter ONU LINK configuration mode
<linkID>	parameter value range in <1-8>

[Configuration Case]

Case1: Enter ONU LINK configuration mode:

```
epon(olt-5/onu-7)# link 1
epon(olt-5/onu-7/link-1)#
```

7.7.2. Enable /Disable ONU LINK Encryption Capabilities

Command Syntax	epon(olt-5/onu-7/link-1)# **encrypt <admin>**
Function Description	Enable /Disable ONU LINK encryption capabilities
<admin>	parameter value : Enable: Enable ONU LINK encryption capabilities

	Disable: Disable ONU LINK encryption capabilities

[Configuration Case]

Case1: Enable ONU LINK encryption capabilities:

```
epon(olt-5/onu-7/link-1)# encrypt enable
Enable slot 1 olt 5 onu 7 link 1 encrypt successfuly.

epon(olt-5/onu-7/link-1)#
```

7.7.3. View Status of ONU LINK Encryption Capabilities

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> link <LinkID> encrypt**
Function Description	View status of encryption capabilities in ONU interface. Only support ONU of TK sulotion
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<LinkID>	Link ID, value range in 1-8。

[Configuration Case]

Case1: View status of ONU LINK encryption capabilities:

```
epon(olt-5/onu-6/link-1)# show olt 5 onu 6 link 1 encrypt
============== SLOT 1 OLT 5 ONU 6 LINK 1 Encrypt ===============
 Admin : enable
 Running status : enable

epon(olt-5/onu-6/link-1)#
```

7.7.4. ONU LINK Upstream Speed Limit Configuration

Command Syntax	epon(olt-7/onu-1/link-1)# **sla upstream *<fix> <cir> <pir> <weight>***
Function Description	Configurate ONU LINK upstream speed limit
<fix>	Fixed bandwidth, parameter value range in <0~950000>Kbps
<cir>	Assure bandwidth, parameter value range in <1~950000>Kbps
<pir>	Best effort bandwidth, parameter value range in <512~1000000>Kbps
<weight>	WWR weight, parameter value range in <1~20>

[Configuration Case]

Case1: Set the upstream speed limit of ONU LINK as fixed bandwidth 5000Kbps, assure bandwidth 10000Kbps, best effort bandwidth 100000Kbps and weight 1:

```
epon(olt-5/onu-7/link-1)# sla upstream 5000 10000 100000 1
Set slot 1 olt 5 onu 7 link 1 sla successfuly.

epon(olt-5/onu-7/link-1)#
```

7.7.5. ONU LINK Downstream Speed Limit Configuration

Command Syntax	epon(olt-7/onu-1/link-1)# **sla downstream *<pir> <burst> <weight>***
Function Description	Configurate ONU LINK downstream speed limit
<pir>	Fixed bandwidth, parameter value range in <512~1000000>Kbps
<burst>	Burst, parameter value range in <128~16383>*256Byte
<weight	Weight, parameter value range in <0~15>

[Configuration Case]

Case1: Set the downstream speed limit of ONU LINK as best effort bandwidth 100000Kbps, burst 1638, weight 5:

```
epon(olt-5/onu-7/link-1)# sla downstream 100000 1638 5
Set slot 1 olt 5 onu 7 link 1 sla successfuly.

epon(olt-5/onu-7/link-1)#
```

7.7.6. View ONU LINK Speed Limit Configuration of Uptream and Dowmstream

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> link <LinkID> sla**
Function Description	View ONU LINK speed limit configuration of uptream and dowmstream
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<LinkID>	Link ID, value range in 1-8。

[Configuration Case]

Case1: View ONU LINK speed limit configuration of uptream and dowmstream:

```
epon(olt-5/onu-6)# show olt 5 onu 6 link 1 sla
============== SLOT 1 OLT 5 ONU 6 LINK 1 SLA ===============
 Up stream:
  FIR : 5000 Kbps
  CIR : 10000 Kbps
  PIR : 20000 Kbps
  Weight : 1
 Dn stream:
  PIR : 1000000 Kbps
  Burst : 512(131072Bytes)
  Weight : 1
```

```
epon(olt-5/onu-6)#
```

7.7.7. ONU LINK ACL Configuration

Command Syntax	epon(olt-7/onu-1/link-1)#**acl** ***<Aclid>*** **rule** ***<direction>*** ***<precedence>*** **matching** ***<matching string>*** **action** ***<action string>***
Function Description	Configurate ONU LINK ACL rule
<aclid>	A CL ID, parameter value range in 1-8
<direction>	parameter value : upstream downstream Upstream: Uptream rule Downstream: Downstream rule
<precedence>	priority, parameter value range in <4-7>
<matching string>	Matched rule, parameter value : Destination MAC address: [dst-mac] <xx:xx:xx:xx:xx:xx>. Source MAC address: [src-mac] <xx:xx:xx:xx:xx:xx>. Tag value: [tag-num] <0 | 1 | 2 | more>. Outer layer vlan: [top-vid] <vid | vidL-vidH>, vid:1~4094. Inlayer vlan: [inner-vid] <vid | vidL-vidH>, vid:1~4094. Outer layer 802.1p priority: [top-8021p] <8021p | 8021pL-8021pH>, 8021p:0~7. Inlayer 802.1p priority: [inner-8021p] <8021p | 8021pL-8021pH>, 8021p:0~7. Ethernet type: [eth-type] <0~65535>. Differentiated services code point: [dscp] <0~63>. Protocol number: [proto] <0~65535>. Destination IP address: [dst-ip] <x.x.x.x>. Source IP address: [src-ip] <x.x.x.x>. Destination port number: [dst-port] <0~65535>. Source port number: [src-port] <0~65535>.

<actionstring>	Action rule, parameter value : Priority: [cos] <0~7>. 802.1p priority: [8021p] <0~7>. Differentiated services code point: [dscp] <0~63>. Filter: [fwd] deny. Speed rate: [rate] cir <cir> cbs <cbs> pir <pir> pbs <pbs>, Cir, pir: <0~1000000>Kpbs. cbs, pbs: <0~4095>KB Outer layer vlan pop: [top-vlan] pop. Inserting outer layer vlan: [top-vlan] push vid <1~4094>. Switching outer layer vlan: [top-vlan] swap vid <1~4094>. Inlayer vlan pop: [inner-vlan] pop. Inserting inlayer vlan [inner-vlan] push vid <1~4094>. Switching inlayer vlan: [inner-vlan] swap vid <1~4094>.

[Configuration Case]

Case1: Enter ONU LINK to configurate ACL rule:

```
epon(olt-7/onu-1/link-1)#acl 1 rule upstream 4 matching dst-
mac=00:11:11:11:11:11 action fwd=deny
```

7.7.8. View ONU LINK ACL Configuration

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> link <LinkID> acl**
Function Description	View ONU LINK ACL configuration
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<LinkID>	Link ID, value range in 1-8。

[Configuration Case]

Case1: View ONU LINK ACL Configuration:

```
epon(olt-5/onu-6)# show olt 5 onu 6 link 1 acl
============= SLOT 1 OLT 5 ONU 6 LINK 1 ACL 1 ============
 Direction  : upstream
```

```
Precedence  : 4
Matching string : "proto=12 "
Action string : "cos=0 "

epon(olt-5/onu-6)#
```

7.8. Enable /Disable ONU Port Segregating Function (Only Support ONU of TK Solution by now)

Command Syntax	epon(olt-7/onu-1)# **protect <*admin*>**
Function Description	Enable /Disable ONU port segregating function, users in the same ONU port can not communicate with each other when enabled. Only support ONU of TK solution by now
< admin>	Enable: Enable ONU port segregating function Disable: Disable ONU port segregating function

[Configuration Case]

Case1: Enable ONU port segregating function:

```
epon(olt-5/onu-7)# protect enable

epon(olt-5/onu-7)#
```

7.9. View Status of ONU Port Segregating Function (Only Support ONU of TK Solution by now)

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> protect**
Function Description	View status of ONU port segregating function. Only support onu of tk solution by now
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

[Configuration Case]

Case1: View status of ONU port segregating function:

```
epon# show olt 5 onu 5 protect
UNI ISOLATE STATE: Enable
epon#
```

7.10. Enable /Disable ONU RSTP Function (Only Support ONU of TK Solution by now)

Command Syntax	epon(olt-7/onu-1)# **rstp <*admin*>**
Function Description	Enable /Disable ONU loop detecting function. Only support onu of tk solution by now
< admin>	Enable: Enable ONU loop detecting function Disable: Disable ONU loop detecting function

[Configuration Case]

Case1: Enable ONU loop detecting function:

```
epon(olt-5/onu-7)# rstp enable

epon(olt-5/onu-7)#
```

7.11. View Status of ONU RSTP Function (Only Support ONU of TK Solution by now)

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> rstp**
Function Description	View status of ONU RSTP function. Only support onu of tk solution by now
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

[Configuration Case]

Case1: View status of ONU RSTP Function:

```
epon(olt-5/onu-6)# show olt 5 onu 5 rstp
ONU Rapid Spanning Tree: enable
epon(olt-5/onu-6)#
```

7.12. Configurate User Information of ONU Device

Command Syntax	epon(olt-7/onu-1)# **description *<info-string>***
Function Description	Configurate user information of ONU device
< info-string>	Strings of information

[Configuration Case]

Case1: Set user information in ONU device as test:

```
epon(olt-5/onu-8)# description test

epon(olt-5/onu-8)#
```

7.13. View User Information of ONU Device

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> description**
Function Description	View user information of ONU device
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

[Configuration Case]

Case1: View information of onu6:

```
epon(olt-5/onu-6)# show olt 5 onu 6 description
 onu description : test1
epon(olt-5/onu-6)#
```

7.14. Configurate Perforamance Statistics of ONU PON Interface

Command Syntax	epon(olt-7/onu-1)# **pon ctc statistics *<monitoring-status> <monitoring-period>***
Function Description	Enable /Disable perforamance statistics function of ONU PON interface and set statistical period
< *monitoring-status*>	Statistical status: <disable|enable>
< *monitoring-period*>	Statistical period: 1-4294967295 second

[Configuration Case]

Case1: Enable perforamance statistics function of ONUPON interface, and set the statistical period 4000 seconds:

```
epon(olt-5/onu-7)# pon ctc statistics enable 40000

epon(olt-5/onu-7)#
```

7.15. Clear ONU Perforamance Statistics Data (Only Support ONU of TK Solution by now)

Command Syntax	epon(olt-7/onu-1)# **clear-statistics**
Function Description	Clear ONU perforamance statistics data. Only support onu of tk solution by now

[Configuration Case]

Case1: Clear ONU perforamance statistics data:

```
epon(olt-5/onu-7)# clear-statistics
epon(olt-5/onu-7)#
```

7.16. View Status of Perforamance Statistics Function of ONU PON Interface

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> pon ctc statistics**

Function Description	View status of perforamance statistics function of ONU PON interface
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

[Configuration Case]

Case1: View status of perforamance statistics function of ONU6 PON interface:

```
epon(olt-5/onu-6)# show olt 5 onu 6 pon ctc statistics
STATE : disable
epon(olt-5/onu-6)#
```

7.17. View Current Performance Statistics Data of ONU PON Interface

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> pon ctc current-period-statistics**
Function Description	View current performance statistics data of ONU PON interface
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

[Configuration Case]

Case1: View current performance statistics data of ONU PON interface1:

```
epon(olt-5/onu-6)# show olt 5 onu 6 pon ctc current-period-statistics
Downstream DropEvents  : 0
Upstream DropEvents   : 0
Downstream Octets   : 0
Upstream Octets    : 3456
Downstream Frames   : 0
Upstream Frames    : 54
Downstream Broadcast Frames : 0
Upstream Broadcast Frames : 54
Downstream Multicast Frames : 0
```

```
Upstream Multicast Frames : 0
Downstream CRC error frames : 0
Downstream Undersize Frames : 0
Upstream Undersize Frames : 0
Downstream Oversize Frames : 0
Upstream Oversize Frames : 0
Downstream Fragments  : 0
Downstream Jabbers   : 0
Downstream Collisions  : 32
epon(olt-5/onu-6)#
```

7.18. View Last Record of Performance Statistics Data of ONU PON Interface

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> pon ctc lasttime-period-statistics**
Function Description	View last record of performance statistics data of ONU PON interface
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

[Configuration Case]

Case1: View last record of performance statistics data of ONU PON interface1:

```
epon(olt-5/onu-6)# show olt 5 onu 6 pon ctc lasttime-period-statistics
Downstream DropEvents  : 0
Upstream DropEvents   : 0
Downstream Octets   : 0
Upstream Octets    : 0
Downstream Frames   : 0
Upstream Frames    : 0
Downstream Broadcast Frames : 0
Upstream Broadcast Frames : 0
Downstream Multicast Frames : 0
Upstream Multicast Frames : 0
Downstream CRC error frames : 0
Downstream Undersize Frames : 0
```

```
Upstream Undersize Frames : 0
Downstream Oversize Frames : 0
Upstream Oversize Frames : 0
Downstream Fragments  : 0
Downstream Jabbers   : 0
Downstream Collisions  : 0
epon(olt-5/onu-6)#
```

7.19. ONU CATV Port Managing and Viewing

7.19.1. Enable /Disable CATV Port

Command Syntax	epon(olt-7/onu-1)# **catv *<state>***
Function Description	Enable/Disable ONU CATV port
< admin>	Value in <enable | disable>: Enable: Enable CATV port Disable: Disable CATV port

[Configuration case]

Case1: Enable ONU CATV port:

```
epon(olt-5/onu-7)# catv enable

epon(olt-5/onu-7)#
```

7.19.2. View Status and Receiving Power of ONU CATV Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> catv**
Function Description	View status and receiving power of ONU CATV port
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

[Configuration Case]

Case1: View status and receiving power of ONU CATV port:

```
epon(olt-5/onu-6)# show olt 5 onu 7 catv
CATV State: Enable
Rx Power: P0<=-9dBm
epon(olt-5/onu-6)#
```

7.20. ONU Voice Port Configuration Managing and Viewin

7.20.1. Enter ONU Voice Port Managing Interface

Command Syntax	epon(olt-7/onu-1)# **pots *<pots>***
Function Description	Enter ONU voice port managing mode. Configurate parameter of ONU voice port
< pots>	Specify ONU voice port, valid value range in <1-2>

[Configuration Case]

Case1: Enter the managing interface of ONU1 voice port:

```
epon(olt-7/onu-1)#pots 1
epon(olt-7/onu-1/pots-1)#
```

7.20.2. View Working Status of ONU Voice Port

Command Syntax	epon(olt-7/onu-1/pots-1)# **show olt <oltId> onu <onuId> onuId < pots > ctc status**
Function Description	View working status of ONU voice port
Parameter Dscription	oltId: OLT PON interface ID onuId: ONU ID pots: Voice port ID

[Configuration Case]

Case1: View working status of ONU voice port1:

```
epon(olt-5/onu-8/pots-1)# show olt 5 onu 8 pots 1 ctc status
```

```
    ONU-5/8 POTS-1 Attibute
Admin-State    : Disable
IADPots-State    : Registering
IADPots-ServiceState   : Endlocal
IADPots-CodeMode     : G711A
epon(olt-5/onu-8/pots-1)#
```

7.20.3. Enable/Disable ONU Voice Port

Command Syntax	epon(olt-7/onu-1/pots-1)# **ctc admin <*admin*>**
Function Description	Enable/Disable ONU voice port
< admin>	Value in <enable | disable>: Enable: Enable voice port Disable: Disable voice port

[Configuration Case]

Case1: Enable ONU1 voice port1

```
epon(olt-7/onu-1/pots-1)# ctc admin enable
```

7.20.4. Configurate H.248 User TID of ONU Voice Port

Command Syntax	epon(olt-7/onu-1/pots-1)# **ctc h248-user-tid <*User-TID*>**
Function Description	Configurate H.248 user TID of ONU voice port
< User-TID>	String with length limit of 32 characters

[Configuration Case]

Case1: Set H.248 user TID of ONU voice port1 as 100:

```
epon(olt-7/onu-1/pots-1)# ctc h248-user-tid 100
```

7.20.5. View H.248 User TID of ONU Voice Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> pots < pots > ctc h248-user-tid**
Function Description	View H.248 user TID of ONU voice port
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
< pots >	Voice port ID, valid value in 1-2

[Configuration Case]

Case1: View the H.248 user TID of CATV port1 of ONU1:

```
epon(olt-5/onu-6)# show olt 5 onu 10 pots 1 ctc h248-user-tid
 H248-UserTid    : 7
epon(olt-5/onu-6)#
```

7.20.6. Configurate SIP User Parameter of ONU Voice Port

Command Syntax	epon(olt-7/onu-1/pots-1)# **ctc sip-user-config *<user-account>* *<user-name>* *<user-password>***
Function Description	Configurate SIP user parameter of ONU voice port
< user-account>	User quantity, character length limit of 16
<user-name>	User name, character length limit of 32
<user-password>	User password, character length limit of 32

[Configuration Case]

Case1: Add one SIP user with user name of 222 and password 222 in ONU1 voice port1:

```
epon(olt-7/onu-1/pots-1)# ctc sip-user-config 1 222 222
```

7.20.7. View SIP User Parameter of ONU Voice Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> pots < pots > ctc sip-user-config**
Function Description	View SIP user parameter of ONU voice port
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
< pots >	Voice port ID, valid value range in 1 – 2。

[Configuration Case]

Case1: View SIP user parameter of CATV port1 of ONU1:

```
epon(olt-5/onu-6)# show olt 5 onu 10 pots 1 ctc sip-user-config
 SipUser-account    :
 SipUser-user     : 7莞
 SipUser-password    :
epon(olt-5/onu-6)#
```

7.21. ONU User Port Configuration Managing and Viewing

7.21.1. Enter ONU User Port Managing Interface

Command Syntax	epon(olt-7/onu-1)# **uni <*uni*>**
Function Description	Enter ONU user port managing mode. Configurate parameter of ONU user port
< uni>	Specify ONU user port, valid value range in <1-24>。

[Configuration Case]

Case1: Enter the managing interface of ONU1 voice port1:

```
epon(olt-7/onu-1)#uni 1
epon(olt-7/onu-1/uni-1)#
```

7.21.2. View ONU User Port Basic Information

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> attribute**
Function Description	View ONU User Port MAC address list
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View MAC address list ONU1 user port1:

```
epon(olt-5/onu-5/uni-1)# show olt 5 onu 5 uni 1 ctc attribute
 ------------------------------------------------------------------------
  ONU-5/5 UNI-1 Attibute
 ------------------------------------------------------------------------
 Link-State   : linkDown
 Admin-State   : Disable
 FlowCtrl-State  : Disable
 AutoNego-State  : Enable
 LoopDetect-State : Enable
 Ingress-Rate  : Unlimit
 Egress-Rate   : Unlimit
 ------------------------------------------------------------------------
epon(olt-5/onu-5/uni-1)#
```

7.21.3. Configurate Bridge Aging Time of ONU User Port (Only apply to ONU of TK solution)

Command Syntax	epon(olt-5/onu-6/uni-1)# **bridge age-time <time>**
Function Description	Configurate bridge aging time of ONU user port (Only apply to ONU of TK solution)

< time>	Time, valid value range in <0-286>

[Configuration Case]

Case1: Set the bridge aging time of ONU port1 as50 seconds:

```
epon(olt-5/onu-6/uni-1)# bridge age-time 50

epon(olt-5/onu-6/uni-1)#
```

7.21.4. ConfigurateBridge MAC Address Quantity Limit of ONU User Port (Only apply to ONU of TK solution)

Command Syntax	epon(olt-5/onu-6/uni-1)# **bridge mac-limit <count>**
Function Description	ConfigurateBridge MAC address quantity limit of ONU user port (Only apply to ONU of TK solution)
<count>	Quantity, valid value range in <0-64>, 0 represents no limit

[Configuration Case]

Case1:Set the bridge mac-limit time of ONU port 1 as 30 seconds:

```
epon(olt-5/onu-6/uni-1)# bridge mac-limit 30

epon(olt-5/onu-6/uni-1)#
```

7.21.5. View ONU User Port Bridge Configuration (Only apply to ONU of TK solution)

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> bridge**
Function Description	View ONU user port bridge configiration (Only apply to ONU of TK solution)
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View bridge configiration of ONU1 user port1:

```
epon(olt-5/onu-5/uni-1)# show olt 5 onu 5 uni 1 bridge
 automatic learning entry limit :0
 aging time      :72s
epon(olt-5/onu-5/uni-1)#
```

7.21.6. Enable/Disable ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc admin <admin>**
Function Description	Enable /Disable ONU user port。
<admin>	Enable: Enable ONU user port。 Disable: Disable ONU user port。

[Configuration Case]

Case1: Enable ONU user port uni1:

```
epon(olt-5/onu-6/uni-1)# ctc admin enable

epon(olt-5/onu-6/uni-1)#
```

7.21.7. Enable/Disable ONU User Port Auto-negotiating Function

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc auto-nego<admin>**
Function Description	Enable /Disable ONU user port auto-negotiating function
<admin>	Enable: Enable ONU user port auto-negotiating function Disable: Disable ONU user port auto-negotiating function

[Configuration Case]

Case1: Enable ONU user portuni 1 auto-negotiating function:

```
epon(olt-5/onu-6/uni-1)# ctc auto-nego enable

epon(olt-5/onu-6/uni-1)#
```

7.21.8. Force ONU User Port to Re-Auto-Negotiate

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc re-auto-nego**
Function Description	Force ONU user port to re-auto-negotiate

[Configuration Case]

Case1: Force ONU user port uni 1 to re-auto-negotiate:

```
epon(olt-5/onu-6/uni-1)# ctc re-auto-nego

epon(olt-5/onu-6/uni-1)#
```

7.21.9. Enable/Disable ONU User Port Flow Control Function

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc flow-ctrl <admin>**
Function Description	Enable /Disable ONU user port flow control function
<admin>	Enable: Enable ONU user port flow control function Disable: Disable ONU user port flow control function

[Configuration Case]

Case1: Enable ONU user portuni 1 flow control function:

```
epon(olt-5/onu-6/uni-1)# ctc flow-ctrl enable

epon(olt-5/onu-6/uni-1)#
```

7.21.10. Enable/Disable ONU User Port Loop Detecting Function

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc loop-detect <admin>**

Function Description	Enable /Disable ONU user port loop detecting function
<admin>	Enable: Enable ONU user port loop detecting function Disable: Disable ONU user port loop detecting function

[Configuration Case]

Case1: Enable ONU user portuni 1 loop detecting function:

```
epon(olt-5/onu-6/uni-1)# ctc loop-detect enable

epon(olt-5/onu-6/uni-1)#
```

7.21.11. Enable/Disable ONU User Port When Loop Happens

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc looped <admin>**
Function Description	Enable /Disable ONU user port when loop happens
<admin>	Enable: Enable ONU user port when loop happens Disable: Disable ONU user port when loop happens

[Configuration Case]

Case1: Enable ONU user portuni 1 when loop happens:

```
epon(olt-5/onu-6/uni-1)# ctc looped enable

epon(olt-5/onu-6/uni-1)#
```

7.21.12. Configurate MAC Address Aging Time of ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc mac-aging-time <timer>**
Function Description	Configurate MAC address aging time of ONU user port. (Only apply to ONU of TK solution)
<timer>	Time, value range in 0-4294967295, unit second

[Configuration Case]

Case1: Set MAC address aging time of ONU user port uni 1 as 50 seconds:

```
epon(olt-5/onu-6/uni-1)# ctc mac-aging-time 50

epon(olt-5/onu-6/uni-1)#
```

7.21.13. View MAC Address Aging Time Configuration of ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> mac-aging-time**
Function Description	View MAC address aging time configuration of ONU user port
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View MAC address aging time configuration of ONU1 user port1:

```
epon(olt-5/onu-6/uni-1)# show olt 5 onu 6 uni 1 ctc mac-aging-time
STATE : enable
TIME : 50 second(s)
epon(olt-5/onu-6/uni-1)#
```

7.21.14. Enable/Disable Performance Statistics Function and Configurate Its Cycle of ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc statistics <monitoring-status> <monitoring-period>**
Function Description	Enable/Disable performance statistics function and configurate its cycle of ONU user port
<monitoring-status>	Enable: Enable ONU user port performance statistics function Disable: Disable ONU user port performance statistics function

<monitoring-period>	Monitoring cycle, value range in 1-4294967295, unit second

[Configuration Case]

Case1: Enable performance statistics function and set the cycle as 5000 seconds of ONU user port uni 1:

```
epon(olt-5/onu-6/uni-1)# ctc statistics enable 5000

epon(olt-5/onu-6/uni-1)#
```

7.21.15. View Status of Performance Statistics Function of ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> ctc statistics**
Function Description	View status of performance statistics function of ONU user port
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View status of performance statistics function of ONU1 user port1 ：

```
epon(olt-5/onu-6/uni-1)# show olt 5 onu 6 uni 1 ctc statistics
STATE : disable
epon(olt-5/onu-6/uni-1)#
```

7.21.16. View Current Performance Statistics Data of ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> ctc current-period-statistics**
Function Description	View current performance statistics data of ONU user port

<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View current performance statistics data of ONU1 user port1:

```
epon(olt-5/onu-6/uni-1)# show olt 5 onu 6 uni 1 ctc current-period-statistics
Downstream DropEvents  : 0
Upstream DropEvents   : 0
Downstream Octets   : 224516
Upstream Octets    : 0
Downstream Frames   : 2738
Upstream Frames    : 0
Downstream Broadcast Frames : 2738
Upstream Broadcast Frames : 0
Downstream Multicast Frames : 0
Upstream Multicast Frames : 0
Downstream CRC error frames : 0
Downstream Undersize Frames : 0
Upstream Undersize Frames : 0
Downstream Oversize Frames : 0
Upstream Oversize Frames : 0
Downstream Fragments  : 0
Downstream Jabbers   : 0
Downstream Collisions  : 32
epon(olt-5/onu-6/uni-1)#
```

7.21.17. View Last Record of Performance Statistics Data of ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> ctc lasttime-period-statistics**
Function Description	View last record of performance statistics data of ONU user port

<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View last record of performance statistics data of ONU1 user port1:

```
epon(olt-5/onu-6/uni-1)# show olt 5 onu 6 uni 1 ctc lasttime-period-statistics
Downstream DropEvents  : 0
Upstream DropEvents   : 0
Downstream Octets   : 0
Upstream Octets    : 0
Downstream Frames   : 0
Upstream Frames    : 0
Downstream Broadcast Frames : 0
Upstream Broadcast Frames : 0
Downstream Multicast Frames : 0
Upstream Multicast Frames : 0
Downstream CRC error frames : 0
Downstream Undersize Frames : 0
Upstream Undersize Frames : 0
Downstream Oversize Frames : 0
Upstream Oversize Frames : 0
Downstream Fragments  : 0
Downstream Jabbers   : 0
Downstream Collisions  : 0
epon(olt-5/onu-6/uni-1)#
```

7.21.18. Configurate Upstream Speed Limit of ONU User Port

Command Syntax	epon(olt-5/onu-6/uni-1)# **ctc ingress-policy <max-rate>**
Function Description	Configurate upstream speed limit of ONU user port

<max-rate>	Maximum speed, value range in 0–1000000, unit Kbps, 0 represents no speed limit

[Configuration Case]

Case1: Set the upstream speed limit of ONU port1 as 5000 Kbps:

```
epon(olt-5/onu-6/uni-1)# ctc ingress-policing 5000

epon(olt-5/onu-6/uni-1)#
```

7.21.19. Configurate Downstream Speed Limit of ONU User Port

Command Syntax	epon(olt-5/onu-6/uni-1)# **ctc egress-policy <max-rate>**
Function Description	Configurate downstream speed limit of ONU user port
<max-rate>	Maximum speed, value range in 0–1000000, unit Kbps, 0 represents no speed limit

[Configuration Case]

Case1: Set the downstream speed limit of ONU port1 as 5000 Kbps:

```
epon(olt-5/onu-6/uni-1)# ctc egress-policing 5000

epon(olt-5/onu-6/uni-1)#
```

7.21.20. Configurate ONU User Port Information

Command Syntax	epon(olt-5/onu-6/uni-1)# **description <info-string>**
Function Description	Configurate ONU user port information
< info-string>	String of information

[Configuration Case]

Case1: Set the information of ONU port 1 as ForTest:

```
epon(olt-5/onu-6/uni-1)# description ForTest
```

```
epon(olt-5/onu-6/uni-1)#
```

7.21.21. View ONU User Port Information

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> description**
Function Description	View ONU user port information
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View ONU1 user port1 information:

```
epon(olt-5/onu-5/uni-1)# show olt 5 onu 5 uni 1 description
 uni description : test
epon(olt-5/onu-5/uni-1)#
```

7.21.22. Clear ONU User Port MAC Address List

Command Syntax	epon(olt-7/onu-1/uni-1)# **mac-address-table-clear**
Function Description	Clear ONU user port MAC address list. (Only apply to ONU of TK solution)

[Configuration Case]

Case1: Clear ONU1 user port1 mac address list:

```
epon(olt-5/onu-6/uni-1)# mac-address-table-clear


epon(olt-5/onu-6/uni-1)#
```

7.21.23. View ONU User Port MAC Address List

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> mac-address-table**
Function Description	View ONU user port MAC address list
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View ONU1 user port1 mac address list:

```
epon(olt-5/onu-5/uni-1)# show olt 5 onu 6 uni 1 mac-address-table
uni index    mac  type
0 mac address found on uni-1(onu-1-5-6)
epon(olt-5/onu-5/uni-1)#
```

7.21.24. Configurate ONU User Port QOS Egress-Shapping Parameter

Command Syntax	epon(olt-7/onu-1/uni-1)# **qos egress-shapping <max-rate> <schedule-algorithm>**
Function Description	Configurate ONU user port QOS egress-shapping parameter. (Only apply to ONU of TK solution)
<max-rate>	Maximum data rate, value range in 0-100000, unit M
<schedule-algorithm>	weighted-fair: Weighted fairness strict-priority: Strict priority

[Configuration Case]

Case1: Configurate ONU1 user port1 egress-shapping parameter as follows:

```
epon(olt-5/onu-6/uni-1)# qos egress-shapping 5000 weighted-fair


epon(olt-5/onu-6/uni-1)#
```

7.21.25. Configurate ONU User Port QOS Ingress-Shapping Parameter

Command Syntax	epon(olt-7/onu-1/uni-1)# **qos ingress-shapping <max-rate> <traffic-type>**
Function Description	Configurate ONU user port QOS ingress-shapping parameter. (Only apply to ONU of TK solution)
<max-rate>	Maximum data rate, value range in 0-100000, unit M
<traffic-type>	broadcast : Broadcast broadcastAndMulticast: Broadcast and multicast broadcastMulticastAndFloodedUnicast: Broadcast multicast and unkown unicast all: All data traffic

[Configuration Case]

Case1: Configurate ONU1 user port1 ingress-shapping parameter as follows:

```
epon(olt-5/onu-6/uni-1)# qos ingress-shapping 5000 broadcast

epon(olt-5/onu-6/uni-1)#
```

7.21.26. View ONU User Port QOS Egress-Shapping Parameter

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> qos egress-policing**
Function Description	View ONU user port QOS egress-shapping parameter. (Only apply to ONU of TK solution)
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View ONU1 user port1 egress-shapping parameter:

```
epon# show olt 5 onu 5 uni 1 qos egress-shapping
```

```
max traffic ouput rate :0(kbps)
schedule algorithm  :weighted-fair
epon#
```

7.21.27. View ONU User Port QOS Ingress-Shapping Parameter

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> qos ingress-policing**
Function Description	View ONU user port QOS ingress-shapping parameter. (Only apply to ONU of TK solution)
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View ONU1 user port1 ingress-shapping parameter:

```
epon# show olt 5 onu 5 uni 1 qos ingress-policing
 max traffic input rate :0(kbps)
 traffic type   :all
epon#
```

7.21.28. Enable ONU Port Storm Control Function

Command Syntax	epon(olt-7/onu-1/uni-1)# **storm-ctrl enable *<type>* *<threshold>***
Function Description	Enable ONU user port storm control function
<type>	Broadcast: Broadcast Multicast: Multicast broadcast-multicast: Broadcast + Multicast unknown-uc: Unkonwn unicast broadcast-unknown-uc: Broadcast + Unkonwn unicast

	multicast-unknown-u: Multicast + Unkonwn unicast bc-mc-unknown-uc: Broadcast + Multicast + Unkonwn unicast
<threshold>	[8-16777215], unit(Kbps)

[Configuration Case]

Case1: Enable ONU user port storm control function:

```
epon(olt-5/onu-6/uni-1)# storm-ctrl enable broadcast 5000

epon(olt-5/onu-6/uni-1)#
```

7.21.29. Disable ONU Port Storm Control Function

Command Syntax	epon(olt-7/onu-1/uni-1)# **storm-ctrl disable**
Function Description	Disable ONU user port ONU user port storm control function

[Configuration Case]

Case1: Disable ONU user port ONU user port storm control function:

```
epon(olt-5/onu-6/uni-1)# storm-ctrl disable

epon(olt-5/onu-6/uni-1)#
```

7.21.30. View Status of Storm Control Function of ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> storm-ctrl**
Function Description	View current status of storm control function of ONU user port
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。

<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View status of storm control function of ONU user port:

```
epon# show olt 5 onu 6 uni 1 storm-ctrl
 UNI-1 Storm Ctrl Configuration :
 state : disable
epon#
```

7.21.31. ONU User Port IGMP Configurating and Viewing

7.21.31.1. Configurate Quantity of Multicast Group of ONU User Port

Command Syntax	epon(olt-5/onu-7/uni-1)# **ctc igmp max-group <*groups*>**
Function Description	Configurate quantity of multicast group of ONU user port
<groups>	Specify quantity of multicast group, value range in <0-255>

[Configuration Case]

Case1: Set the quantiy of multicast group of ONU user port as10:

```
epon(olt-5/onu-6/uni-1)# ctc igmp max-group 10

epon(olt-5/onu-6/uni-1)#
```

7.21.31.2. Configurate Not-Strip Multicast VLAN Tag of ONU User Port

Command Syntax	epon(olt-5/onu-7/uni-1)# **ctc igmp tag-handle not-strip-vlan-tag**
Function Description	Configurate not-strip multicast VLAN tag of ONU user port

[Configuration Case]

Case1: Configurate not-strip multicast vlan tag of onu user port:

```
epon(olt-5/onu-6/uni-1)# ctc igmp tag-handle not-strip-vlan-tag
```

```
epon(olt-5/onu-6/uni-1)#
```

7.21.31.3. *Configurate Strip Multicast VLAN Tag of ONU User Port*

Command Syntax	epon(olt-5/onu-7/uni-1)# **ctc igmp tag-handle strip-vlan-tag**
Function Description	Configurate strip multicast VLAN tag of ONU user port

[Configuration Case]

Case1: Configurate strip multicast vlan tag of ONU user port:

```
epon(olt-5/onu-6/uni-1)# ctc igmp tag-handle strip-vlan-tag

epon(olt-5/onu-6/uni-1)#
```

7.21.31.4. *Configurate Switching Multicast VLAN Tag of ONU User Port*

Command Syntax	epon(olt-5/onu-7/uni-1)# **ctc igmp tag-handle switch rule1 <tag> <tag-down>**
Function Description	Configurate switching multicast VLAN tag of ONU user port
<tag>	Servicer multicast VLAN tag, value range in 1-4094
<tag-down>	User multicast VLAN tag, value range in 1-4094

[Configuration Case]

Case1: Configurate multicast VLAN 100 switching into VLAN 10 in ONU user port downstream:

```
epon(olt-5/onu-6/uni-1)# ctc igmp tag-handle switch rule1 100 10

epon(olt-5/onu-6/uni-1)#
```

7.21.31.5. *Add Multicast VLAN in ONU User Port*

Command Syntax	epon(olt-5/onu-7/uni-1)# **ctc igmp vlan add < *vlanTagList*>**

Function Description	Add multicast VLAN in ONU user port
< *vlanTagList* >	Vlan list, value range in <1-4094>

[Configuration Case]

Case1: Add multicast VLAN 100 in ONU user port:

```
epon(olt-5/onu-6/uni-1)# ctc igmp vlan add 100

epon(olt-5/onu-6/uni-1)#
```

7.21.31.6. *Delete Multicast VLAN in ONU User Port*

Command Syntax	epon(olt-5/onu-7/uni-1)# **ctc igmp vlan delete < *vlanTagList*>**
Function Description	Delete multicast vlan in ONU user port
< *vlanTagList* >	Vlan list, value range in <1-4094>

[Configuration Case]

Case1: Delete multicast VLAN 100 in ONU user port:

```
epon(olt-5/onu-6/uni-1)# ctc igmp vlan delete 100

epon(olt-5/onu-6/uni-1)#
```

7.21.31.7. *Clear All Multicast VLAN in ONU User Port*

Command Syntax	epon(olt-5/onu-7/uni-1)# **ctc igmp vlan clear**
Function Description	Clear all multicast VLAN in ONU user port

[Configuration Case]

Case1: Clear all multicast VLAN in ONU user port:

```
epon(olt-5/onu-6/uni-1)# ctc igmp vlan delete 100

epon(olt-5/onu-6/uni-1)#
```

7.21.31.8. View IGMP Configuration of ONU User Port

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> ctc igmp config**
Function Description	View current IGMP configuration of ONU user port
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View current IGMP configuration of ONU user port:

```
epon(olt-5/onu-6/uni-1)# show olt 5 onu 6 uni 1 ctc igmp config
Multicast Strip Mode: Not Strip VLAN Tag

epon(olt-5/onu-6/uni-1)#
```

7.21.32. ONU User Port VLAN Mode Configurating and Viewing

7.21.32.1. Configurate Aggregation Mode of ONU Port VLAN (Apply to Specific ONU)

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc vlan-mode aggregation <*tpid*> <*cos*> <*default-vlan*> aggregation-list（Optional）**
Function Description	Configurate ONU user port VLAN as aggregation mode Specific forwording process mode please refer to appendix A
<tpid >	Specify VLAN TPID, default as 0x8100
<cos>	Specify VLAN priority, valid value in <0-7>

<vlan>	Specify VLAN of ONU user port aggregation mode, valid value in <1-4094>, default as 1
Aggregation-list	Spcify aggregation list of ONU user port VLAN, support 4 for the most

[Configuration Case]

Case1: Set ONU user port VLAN mode as aggregation, default-VLAN as 100:

```
epon(olt-7/onu-1/uni-1)# ctc vlan-mode aggregation 0x8100 7 100

epon(olt-7/onu-1/uni-1)#
```

7.21.32.2. Configurate Tag Mode of ONU Port VLAN （Access Mode）

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc vlan-mode tag *<tpid>* *<cos>* *<vlan>***
Function Description	Configurate ONU user port VLAN as tag mode, which is access mode Specific forwording process mode please refer to appendix A
<tpid >	Specify VLAN TPID, default as 0x8100
<cos>	Specify VLAN priority, valid value in <0-7>
<vlan>	Specify VLAN of ONU user port tag mode, valid value in <1-4094>, default as 1

[Configuration Case]

Case1: Set ONU user port VLAN mode as tag, VLAN as 100:

```
epon(olt-7/onu-1/uni-1)# ctc vlan-mode tag 0x8100 7 100

epon(olt-7/onu-1/uni-1)#
```

7.21.32.3. Configurate Trunk Mode of ONU Port VLAN

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

Function Description	Configurate ONU user port VLAN as trunk mode Specific forwording process mode please refer to appendix A
<tpid >	Specify VLAN TPID, default as 0x8100
<cos>	Specify VLAN priority, valid value in <0-7>
<vlan>	Specify VLAN of ONU user port trunk mode, valid value in <1-4094>, default as 1
Vlan-list	Optional configuration, which can access VLAN list, support the number of 60 of VLAN for the most

[Configuration Case]

Case1: Set ONU user port VLAN mode as trunk, default-VLAN as 100, VLAN-list as 200, 2050:

```
epon(olt-7/onu-1/uni-1)# ctc vlan-mode trunk 0x8100 7 100 vlan-list 200,2050


epon(olt-7/onu-1/uni-1)#
```

7.21.32.4. *Configurate Translation Mode of ONU Port VLAN*

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc vlan-mode translation *<tpid>* *<cos>* *<default-vlan>* translate-list (Optional)**
Function Description	Configurate ONU user port VLAN as translation mode Specific forwording process mode please refer to appendix A
<tpid >	Specify VLAN TPID, default as 0x8100
<cos>	Specify VLAN priority, valid value in <0-7>
<vlan>	Specify VLAN of ONU user port translation mode, valid value in <1-4094>, default as 1
translation-list	Specify switching list of user port VLAN, support 8 switching list for the most

[Configuration Case]

Case1: Set ONU user port VLAN mode as translation, default-VLAN as 100, translation-list as 200-300,300-400:

```
epon(olt-7/onu-1/uni-1)# ctc vlan-mode translation 0x8100 7 100 translation-list 200-300,300-400

epon(olt-7/onu-1/uni-1)#
```

7.21.32.5. *Configurate Transparent Mode of ONU Port VLAN*

Command Syntax	epon(olt-7/onu-1/uni-1)# **ctc vlan-mode transparent**
Function Description	Configurate ONU user port VLAN as translation mode Specific forwording process mode please refer to appendix A

[Configuration Case]

Case1: Set ONU user port VLAN mode as transparent:

```
epon(olt-7/onu-1/uni-1)# ctc vlan-mode transparent

epon(olt-7/onu-1/uni-1)#
```

7.21.32.6. *View VLAN Configuration of ONU user port*

Command Syntax	epon(olt-7/onu-1/uni-1)#**show olt <oltId> onu <onuId> uni <uni> ctc vlan-mode**
Function Description	View current VLAN Configuration of ONU user port
<oltId>	PON port ID, valid value range in 1 - 8。
<onuId>	Specified on-line ONUID, valid value range in 1 - 64。
<uni>	ONU USER PORT, valid value range in 1 – 24。

[Configuration Case]

Case1: View current VLAN Configuration of ONU user port:

```
epon(olt-7/onu-1/uni-1)> show olt 7 onu 1 uni 1 ctc vlan-mode
VLAN  MODE: translate
Default VLAN: TPID-0x8100, COS-6, VID-3
```

Traslate List:

2000<->3000

2050<->3050

8. DEVICE DIAGNOSTIC INFORMATION

8.1. Test Device Connectivity by Ping Command

Command Syntax	epon# **ping** ***<host>***
Function Description	Test accessibility between device and destination mainframe
<host>	IP address of destination mainframe

[Configuration Case]

Case1: IP address of the device is 192.168.1.100, connect computer with IP 192.168.1.23 by network cable directly:

```
epon(GE-1)# ping 192.168.1.234
PING 192.168.1.234 (192.168.1.234): 56 data bytes
64 bytes from 192.168.1.234: seq=0 ttl=64 time=8.559 ms
64 bytes from 192.168.1.234: seq=1 ttl=64 time=0.746 ms
64 bytes from 192.168.1.234: seq=2 ttl=64 time=0.561 ms
64 bytes from 192.168.1.234: seq=3 ttl=64 time=0.650 ms
```

8.2. “Tracert” View route to Mainframe Device

Command Syntax	epon# **tracert** ***<host>***
Function Description	View route from device to destination mainframe
<host>	IP address of destination mainframe

[Configuration Case]

Case1. View routing path from device to mainframe:

```
epon(GE-1)# tracert 192.168.1.234
traceroute to 192.168.1.234 (192.168.1.234), 10 hops max, 38 byte packets
 1 192.168.1.234 (192.168.1.234) 4.698 ms 0.060 ms 0.069 ms
```

9. APPENDIS A

Process Mode for All Kinds of Message of Different VLAN Mode

1. Transparent Mode:

Message Direction	Message Type	Process Mode
Uptream	Untag message	Forward without changing untag packet
	Tag message	Forward without changing Ethernet packet （Keep ariginal VLAN TAG）
Downstrea m	Untag message	Forward without changing untag packet
	Tag message	Forward without changing Ethernet packet （Keep ariginal VLAN TAG）

2. Tag Mode (Access Mode):

Message Direction	Message Type	Process Mode
Uptream	Untag message	Forward after configurating port PVID
	Tag message	Discard the message
Downstrea m	Untag message	Discard the message
	Tag message	If VLAN ID of tag message in down stream equals configurated VID, forward to the corresponding UNI port according to VID, if not, then discard the message

3. Translation Mode:

Message Direction	Message Type	Process Mode
Uptream	Untag message	Forward after configurating default VLAN

	Tag message	Forward if VLAN ID of tag message is in configurated VID switching list, discard if not
Downstream	Untag message	Discard the message
	Tag message	If VLAN ID of tag message has corresponding entry (configurated inputting VID) in VLAN translation list of corresponding port, forward after switching the VID into corresponding outputting VID according to the VLAN translation list, discard if not. Forward down after stripping VLAN mark if the VLAN ID of tag message is “default VLAN”

4. Trunk Mode:

Message Direction	Message Type	Process Mode
Uptream	Untag message	Forward after configurating default VLAN
	Tag message	Forward if VLAN ID of tag message belongs to the “access allowed VLAN” of the port, discard if not
Downstream	Untag message	Discard the message
	Tag message	Forward down if VLAN ID of tag message belongs to the “access allowed VLAN” of the port, discard if not. Forward down after stripping VLAN mark if the VLAN ID of tag message is “default VLAN”

5. Aggregation Mode:

Message Direction	Message Type	Process Mode
Uptream	Untag message	Forward after configurating default VLAN
	Tag message	If VLAN ID of message equals one of the “aggregated VALN” in VLAN aggregation list of the port, switch VID of the message into corresponding “VLAN to be aggregated”, record source MAC

		address of business flow as well, then forward, discard if not. At present, VID switching of ONU is required, other fields like TPID, CFI and Pri are not required, ONU will not process with TPID and Pri field of VLANConfig Parameters domain of receiving VLAN VariableContainer, and set the switched TPID as default value of 0x8100, Pri will remain the original value
Downstream	Untag message	Discard the message
	Tag message	If VLAN ID of message equals the “VLAN to be aggregated” of VLAN aggregation list of the port, forward after switching VID into corresponding “aggregated VLAN” based on the VLAN aggregation list and MAC address. If the VID of original tag is default VID, forward after stripping tag. If VLAN ID is neither “VLAN to be aggregated” nor default VLAN ID, the discard the message. At present, VID switching of ONU is required, other fields like TPID, CFI and Pri are not required, ONU will not process with TPID and Pri field of VLANConfig Parameters domain of receiving VLAN VariableContainer, and set the switched TPID as default value of 0x8100, Pri will remain the original value