EPON Configuration Manual

CONTENT

1 OLT Slot Management Configuration

1.1 Overview for EL5610-04P/08P/16P Slot

The EL5610-04P / 08P contains 4/8 * downlink Gigabit EPON port, 8 * GE Ethernet port, and 4 * Gigabit uplink port.

The EL5610-16P contains 16 * downlink Gigabit EPON port, 8 * GE Ethernet port, and 2 * 10 Gigabit uplink port.

This device is a cassette OLT, and slot_id is 0.

1.2 Show the onu of the PON Port

1.2.1 Show Current Online / non-online Service Slot Information and Its ONU Information

Perform the following configuration in global configuration mode:

Show all current online / non-online service slot information and its ONU information.

show onu-status

Show online onu

show pon

For example:

！ Show all current online service slot information and its online ONU information

OptiWay(config)#show onu-status

ONU   Mac Address   Rtt RegisterTime   Type Software   State

0/1/1 00:0a:5a:19:db:da   50 14/01/01 00:15:30 204G V100R001B01D002 Up

Total onu entries: 1 .

onu online : 1

！ Show online onu

OptiWay(config)#show pon

 ONU   Mac Address   LLID RTT REG-TYPE ONU-TYPE Description

0/1/1 00:0a:5a:19:db:da 0000 50 1G/1G   204g

Total   onu   entries: 1   .

2 PON Functional Configuration

2.1. Overview for PON Function

PON is short for Passive Optical Network, which does not contain any electronic devices and electronic power. A passive optical network consists of an OLT installed at the central control station and a set of ONUs installed in the user premises. The ODN between the OLT and the ONU contains fiber and passive splitter (or coupler). PON port is used for optical communication, supporting user authentication and data encryption, with faster speed and a special data transfer protocol.

PON function mainly refers to the function of the OLT PON port which is different from the Ethernet port. PON function and PON chip is directly related. The PON function of this device is supported by two PON chips, and each PON chip leads to four PON ports, which forms a total of eight PON port.

2.2 PON Functional Configuration

2.2.1 Task List of PON Functional Configuration

Task List of PON Functional Configuration

Configuration Task		Note	Detailed Configuration
Authentication Configuration	Enable/disable the Monitor Link function for ports (or aggregation groups)	required	1.2.2
ONU Interoperability Configuration (P2p)	Display the information of Monitor Link	required	1.2.3
Downlink Data Encryption			
DBA Algorithm Configuration	Configure the pon port	required	1.2.3
LLID MAC Address Limit Configuration	Display the information of Monitor Link	required	1.2.3

2.2.2 **Authentication Configuration**

The authentication configuration is a functional configuration that allows/deny the ONU to be registered. There are three types of authentication configuration modes: MAC address-based authentication, logical identification-based authentication, and hybrid authentication. MAC-based authentication is divided into two modes: whitelist authentication and blacklist authentication. When the MAC address-based authentication is enabled, there will be a corresponding ONU MAC entry to determine whether to allow the ONU to complete the registration. When the logical identification-based authentication is enabled, there will be a corresponding logical identifier entry to determine whether to allow the ONU to complete the registration. Logical identifier includes LOID (Logical ONU ID) and password. Hybrid authentication is an ONU authentication that supports both MAC address-based authentication and logical identification-based authentication.

When the authentication mode is disabled, all ONUs are allowed to register. In the whitelist mode, the MAC of the ONU to be registered is allowed to register only when the corresponding whitelist entry is existed. If the ONU is registered when the whitelist is enabled, the MAC table entry of the ONU will automatically be added to the whitelist entry. If the blacklist mode is enabled, the ONU on the blacklist entry can not be registered. In the logical identification-based authentication mode, the ONU can be registered only when the LOID and password are matched at the same time.

Authentication Configuration

Operation	Command	Remarks
disable authentication mode	**onu-authenticate slot** *slotid* **mode disable**	global mode
set the authentication mode of an OLT service board as white list mode	**onu-authenticate slot** *slotid* **mode mac-auth white-list**	global mode
set the authentication mode of an OLT service board as black list mode	**onu-authenticate slot** *slotid* **mode mac-auth black-list**	global mode
show the authentication mode	**show onu-authenticate mode** [**slot** *slotid* **olt** *ponid*]	global mode
disable authentication mode	**onu-authenticate mode disable**	PON port mode
set the authentication mode of PON port as white list mode	**onu-authenticate mode mac-auth white-list**	PON port mode

Operation	Command	Remarks
add the ONU whitelist to the PON port	**white-list add** *H:H:H*	PON port mode
remove the ONU from the whitelist	**white-list del**{ **all** | *onu-id* }	PON port mode
set the authentication mode of PON port as black list mode	**onu-authenticate mode mac-auth black-list**	PON port mode
add the ONU blacklist to the PON port	**black-list add** *H:H:H*	PON port mode
remove the ONU from the blacklist	**black-list del**{ **all** | *mac-id* }	PON port mode
show the authentication mode	**show onu-authenticate mode**	PON port mode
show the whitelist	**show white-list**	PON port mode
show the blacklist	**show black-list**	PON port mode

2.2.3 **ONU Interoperability Configuration（p2p）**

ONU Interoperability Configuration

Operation	Command	Remarks
Enable ONU P2P	**onu-p2p**	PON port mode
Disable ONU P2P	**no onu-p2p**	PON port mode

For example:

！ Enable the ONU interoperability of the 3rd PON port of the 0-slot PON board

OptiWay(config-if-pon-0/3)#onu-p2p

OptiWay(config-if-pon-0/1)#onu-p2p entry 1 source-onu 2 destination-onu 3

2.2.4 **DBA Algorithm Configuration**

Configure the DBA algorithm parameters.

dba algorithm *slot* { cbr | nonworkconserv | workconserv }

parameter description:

slot： 0-slot

{ cbr | nonworkconserv | workconserv }： algorithm

Configure the DBA mode

dba mode *slot* { hw | hw-tuning | sw | sw-tuning}

parameter description:

slot：0-slot

hw ： hardware mode

hw-tuning： hardware mode with fine tuning

sw ： software mode

sw-tuning： software mode with fine tuning

Configure DBA optical parameters

dba params slot pon-num cycletime discovfreq discovtime

parameter description:

slot：slot

pon-num：PON port

cycletime： cycle time

discovfreq：discovery frequency

discovtime：discovery window

For example:

！ Enable the 0-slot DBA as cbr

OptiWay(config)# **dba algorithm** *0* **cbr**

！ Enable the 0-slot DBA as software mode with fine tuning

OptiWay(config)# **dba mode** *0* **sw-tuning**

！ Configure the DBA optical parameters of the first PON port of the 0-slot PON board

OptiWay(config)# **dba params** *0 1 125000 255 65500*

Operation	Command	Remarks
Configure the DBA algorithm parameters	**dba algorithm***slot***{ cbr | nonworkconserv | workconserv }**	global mode
Configure the DBA mode	**dba mode** *slot***{ hw | hw-tuning | sw | sw-tuning}**	global mode
Configure the DBA optical parameters	**dba params** *slot pon-num***cycletime discovfreq discovtime**	global mode

2.2.5 **LLID MAC Address Limit Configuration**

LLID MAC Address Limit Configuration

Operation	Command	Remarks

Operation	Command	Remarks
Set LLID MAC address limit based on the ONU	**mac-address-table onu-index {** *llid* | **all } max-mac-count** *number*	PON port mode
Remove LLID MAC address limit based on the ONU	**no mac-address-table onu-index {** *llid* | **all } max-mac-count** *number*	PON port mode
Show LLID MAC address limit based on the ONU	**show mac-address-table onu-index { ** *llid* | **all } max-mac-count**	PON port mode

Set LLID MAC address limit based on the ONU

mac-address-table onu-index { *llid* \| **all } max-mac-count** *number*

Operation	Command	Remarks
Modify the Ethernet priorities or VLANs for IP packets	**classif** *ruleid* { **pon** | **onu** *onu_id* | **nni** } **permit packet ip** { [**ip-da** *ip*] | [**destination-port** *value*] | [**dot1p-priority** *value*] | [**dscp** *value*] | [i**p-protocol** { **id** | **icmp** | **igmp** | **tcp** | **udp** | **esp-ah** | **pim** }] | [**ip-sa** *ip*] | [**source-port** *value*] | [**vlan** *vlanStart_id vlanEnd_id*] } * [**gigabitethernet-priority-action** *value*] [**vlan-action** { **push** *vlanid* | **translation** *vlanid* | **pop** }]	PON port mode
Modify the Ethernet priorities or VLANs for ARP packets	**classif** *ruleid* { **pon** | **onu** *onu_id* | **nni** } **permit packet arp** { [**ip-da** *ip*] | [**destination-port** *value*] | [**dot1p-priority** *value*] | [**dscp** *value*] | [**ip-sa** *ip*] | [**source-port** *value*] | [**vlan** *vlanStart_id vlanEnd_id*] } * [**gigabitethernet-priority-action** *value*] [**vlan-action** { **push** *vlanid* | **translation** *vlanid* | **pop** }]	PON port mode
Modify the Ethernet priorities or VLANs for NO-IP and NO-ARP traffic classification	**classif** *ruleid* { **pon** | **onu** *onu_id* | **nni** } **permit packet eth** { [**destination-mac** *H:H:H*] | [**dot1p-priority** *value*] | [**gigabitethernet-type** *value*] | [**ip-protocol** { **id** | **icmp** | **igmp** | **tcp** | **udp** | **esp-ah** | **pim** }] | **[vlan** vlanStart_id vlanEnd_id**] } *** [**gigabitethernet-priority-action** *value*] [**vlan-action** { **push** *vlanid* | **translation** *vlanid* | **pop** }]	PON port mode

Modify the Ethernet priorities or VLANs for any types of traffic classification	**classif** *ruleid* { **pon** | **onu** onu_id | **nni** } **permit packet any** { [**destination-mac** *H:H:H* | **dot1p-priority** *value*] | [**ip-protocol** { **id** | **icmp** | **igmp** | **tcp** | **udp** | **esp-ah** | **pim** }] | **[vlan** *vlanStart_id vlanEnd_id* **] }** * [**gigabitethernet-priority-action** *value*] [**vlan-action** { **push** *vlanid* | **translation** *vlanid* | **pop** }]	PON port mode
Prohibit such IP packets from passing	**classif** *ruleid* { **pon** | **onu** *onu_id* | **nni** } **deny packet ip** { [**ip-da** *ip*] | [**destination-port** *value*] | [**dot1p-priority** *value*] | [**dscp** *value*] | [**ip-protocol** { **id** | **icmp** | **igmp** | **tcp** | **udp** | **esp-ah** | **pim** }] | [**ip-sa** *ip*] | [**source-port** *value*] | [**vlan** *vlanStart_id vlanEnd_id*] } *	PON port mode
Prohibit such ARP packets from passing	**classif** *ruleid* { **pon** | **onu** *onu_id* | **nni** } **deny packet arp** { [**ip-da** *ip*] | [**destination-port** *value*] | [**dot1p-priority** *value*] | [**dscp** *value*] | [**ip-sa** *ip*] | [**source-port** *value*] | [**vlan** *vlanStart_id vlanEnd_id*] } *	PON port mode
Prohibit such NO-IP and NO-ARP packets from passing	**classif** *ruleid* { **pon** | **onu** *onu_id* | **nni** } **deny packet eth** { [**destination-mac** *H:H:H*] | [**dot1p-priority** *value*] | [**Gigabitethernettype** *value*] | [**ip-protocol** { **id** | **icmp** | **igmp** | **tcp** | **udp** | **esp-ah** | **pim** }] | **[vlan** *vlanStart_id vlanEnd_id* **] }** *	PON port mode
Prohibit such packets from passing	**classif** *ruleid* { **pon** | **onu** onu_id | **nni** } **deny packet any** { [**destination-mac** *H:H:H* | **dot1p-priority** *value*] | **[ip-protocol { id** | **icmp** | **igmp** | **tcp** | **udp** | **esp-ah** | **pim** }] | **[vlan** *vlanStart_id vlanEnd_id* **] }** *	PON port mode

Remove the quantity limitation of MAC addresses for the ONU-based LLID

no mac-address-table onu-index { *llid* \| **all } max-mac-count** *number*

parameter description:

llid：ONU LLID index, with the range of 1－64

number：quantity limitation of MAC addresses, with the range of 1－1000

all：all LLID indexes

For example:

! Set the quantity limitation of MAC addresses for the first LLID to be 20

OptiWay(config-if-pon-0/1)#mac-address-table onu-index 1 max-mac-count 20

! Set the quantity limitation of MAC addresses for all LLIDs to be 20

OptiWay(config-if-pon-0/1)#mac-address-table onu-index all max-mac-count 20

! Remove the quantity limitation of MAC addresses for the first LLID

OptiWay(config-if-pon-0/1)#no mac-address-table onu-index 1 max-mac-count

2.2.6 **PON Port Isolation**

Overview for PON Port Isolation

Port isolation is used to implement L2 isolation between packets. Adding different ports to different VLANs will waste a limited amount of VLAN resources while port isolation can save the VLAN resources for it can be used to isolate ports within the same VLAN. Users only need to add the ports to the isolation group to achieve L2 isolation. Port isolation provides users with a more secure and flexible networking solution.

Port Isolation Configuration

By default, VLAN isolation mechanism of PON board is enabled. The default isolation VLAN corresponds to PON ports 4010-4013. After the VLAN isolation is set, the PON board will reboot.

Perform the following configuration in PON configuration mode:

VLAN isolation mechanism will be enabled when you configure the isolated VLAN ID.

enable-pon-vlan-isolation vlan *vlan0-id vlan1-id vlan2-id vlan3-id*

Disable VLAN isolation

no enable-pon-vlan-isolation

Display VLAN isolation information

show enable-pon-vlan-isolation

2.2.7 **Traffic Classification Configuration**

Service board classification is based on the PON board to achieve traffic classification function. The function of this classification is to filter the packets through the fields of VLAN / source IP / destination IP / packet type, and to set whether or not to allow them to pass through. If the traffic is set to allow passing through, it will set the Ethernet priority of the packets, and then tag the packet, or strip the tag of packet, or exchange the VLAN ID. The uplink data flow can be set for the PON port and the ONU. The downlink data flow can be set for the NNI port.

The filtrate item will vary depending on the type of packet.

Packet Type：IP/ARP/NOIP-NOARP，"ANY" refers to all packet types.

Filtrate Item：destination IP, source IP, Ethernet priority, source logical port, destination logical port, IP protocol type, VLAN ID, and DSCP

Action Item：Modify the Ethernet priority of the packet, and then tag the packet, or strip the tag of packet, or exchange the VLAN ID.

Note：In global mode, the above settings can also be set for the uplink data flow or downlink data flow of the entire OLT service board.

Remove the traffic classification rules	**no classif** *ruleid*	PON port mode
Remove the traffic classification from the OLT service board	**no classif** [**slot***slotid*]	global mode
Display the traffic classification configuration	**show classif [** *ruleid* **]**	PON port mode
Display all traffic classifications or the traffic classification of an OLT service board	**show classif [slot** *slotid* **]**	global mode

Modify the Ethernet priorities or VLANs for IP packets

classif ruleid { pon | onu *onu_id* | nni } permit packet ip

{ [ip-da *ip*] | [destination-port *value*] |

  [dot1p-priority *value*] | [dscp *value*] |

  [ip-protocol { id | icmp | igmp | tcp | udp | esp-ah | pim }] |

  [ip-sa *ip*] | [source-port *value*] | [vlan *vlanStart_id vlanEnd_id*] } *

[ethernet-priority-action *value*]

[vlan-action { push *vlanid* | translation *vlanid* | pop }]

Modify the Ethernet priorities or VLANs for ARP packets

classif ruleid { pon | onu *onu_id* | nni } permit packet arp

{ [ip-da *ip*] | [destination-port *value*] |

  [dot1p-priority *value*] | [dscp *value*] |

  [ip-sa *ip*] | [source-port *value*] | [vlan *vlanStart_id vlanEnd_id*] } *

[ethernet-priority-action *value*]

[vlan-action { push *vlanid* | translation *vlanid* | pop }]

Modify the Ethernet priorities or VLANs for NO-IP and NO-ARP traffic classification

classif ruleid { pon | onu onu_id | nni } permit packet eth

{ [destination-mac *H:H:H:H:H:H*] |

 [dot1p-priority *value*] | [ethernet-type *value*] |

[ip-protocol { id | icmp | igmp | tcp | udp | esp-ah | pim }] |

[vlan vlanStart_id vlanEnd_id**] } ***

[ethernet-priority-action *value*]

[vlan-action { push *vlanid* | translation *vlanid* | pop }]

Modify the Ethernet priorities or VLANs for any types of traffic classification

classif ruleid { pon | onu onu_id | nni } permit packet any

{ [destination-mac *H:H:H:H:H:H* | dot1p-priority *value*] |

  [ip-protocol { id | icmp | igmp | tcp | udp | esp-ah | pim }] |

   [vlan vlanStart_id vlanEnd_id **] } ***

[ethernet-priority-action *value*]

[vlan-action { push *vlanid* | translation *vlanid* | pop }]

Prohibit such IP packets from passing

classif ruleid { pon | onu *onu_id* | nni } deny packet ip

{ [ip-da *ip*] | [destination-port *value*] |

  [dot1p-priority *value*] | [dscp *value*] |

  [ip-protocol { id | icmp | igmp | tcp | udp | esp-ah | pim }] |

  [ip-sa *ip*] | [source-port *value*] | [vlan *vlanStart_id vlanEnd_id*] } *

Prohibit such ARP packets from passing

classif ruleid { pon | onu *onu_id* | nni } deny packet arp

{ [ip-da *ip*] | [destination-port *value*] |

  [dot1p-priority *value*] | [dscp *value*] |

  [ip-sa *ip*] | [source-port *value*] | [vlan *vlanStart_id vlanEnd_id*] } *

Prohibit such NO-IP and NO-ARP packets from passing

classif ruleid { pon | onu onu_id | nni } deny packet eth

{ [destination-mac *H:H:H:H:H:H*] |

 [dot1p-priority *value*] | [ethernet-type *value*] |

[ip-protocol { id | icmp | igmp | tcp | udp | esp-ah | pim }] |

[vlan vlanStart_id vlanEnd_id **] } ***

Prohibit such packets from passing

classif ruleid { pon | onu onu_id | nni } deny packet any

{ [destination-mac *H:H:H:H:H:H* | dot1p-priority *value*] |

 [ip-protocol { id | icmp | igmp | tcp | udp | esp-ah | pim }] |

  [vlan vlanStart_id vlanEnd_id**] } ***

Note： **In global configuration mode, the above configurations can also be set for the uplink data traffic and the downlink data traffic of the entire OLT service board.**

remove traffic classification rules

no classif *ruleid*

If you want to remove the traffic classification for the OLT service board, you need to

enter the global configuration mode to perform the operation.

no classif [**slot** *slotid*]

 parameter description:

ruleid：rule number index of traffic classification, with the range of 1－99

onu_id：ONU index, with the range of 1－32

For example:

！ Set the traffic classification rule of onu 1 of port 1 under the pon board 3.

Filtrate the IP packets with source IP address 192.168.0.32 and vlanid = 100, tagged them with vlanid = 200

OptiWay(config-if-pon-0/1)#class 1 onu 1 permit packet ip source-ip 192.168.0.32 vlan 100 200 vlan-action push 200

！ Remove the traffic classification rule of rule 1 of port 1 under the pon board 3

OptiWay(config-if-pon-0/1)#no class 1

Perform the following configuration in PON configuration mode:

Display the traffic classification configuration

show classif [*ruleid* **]**

If you want to display all traffic classifications or the traffic classification of an OLT service board, you should enter the global configuration mode.

show classif [slot *slotid* **]**

parameter description:

ruleid：rule number index of traffic classification, with the range of 1-100

For example:

！ Display the traffic classification rule of rule 1 of port 1 under the pon board 3

OptiWay(config-if-pon-0/1)#show classif onu

PON 0/1

classif onu 1 onu-rule 1 deny vlan utag

Total entries: 1

3 ONU Management Configuration

3.1 Overview for ONU Management

ONU management is mainly carried out in accordance with the CTC standard.

3.2 ONU Functional Configuration

3.2.1 Task List of ONU Functional Configuration

Task List of ONU Functional Configurations is as follow：

- Configure ONU Descriptor

- Display ONU Descriptor

- Bind ONU Type and MAC

- Reboot the ONU

- Configure ONU Uplink/Downlink Bandwidth, Traffic Shaping and Policy

- Enable/disable Port Flow Control

- Enable/disable Port

- Enable/disable Port Self-Negotiation

- Configure ONU Uplink/Downlink Bandwidth

- Configure Port VLAN Mode

- Configure Port Traffic Classification

- Display Port Traffic Statistics

- Display Uplink/Downlink Bandwidth, Bandwidth Shaper and Policy

- Display Loopback Test Status

- Display Port Information

- Display ONU Serial Number

- Display ONU Firmware Version

- Display PON Chip Information

- Display ONU Capabilities

- Display Uplink/Downlink Bandwidth

- Display Port VLAN Mode

- Display Port Traffic Classification

- Display Controllable Multicast

- Display FEC Status and Capabilities

- Configure Quantity Limitation of ONU MAC Addresses

- Display Quantity Limitation of ONU MAC Addresses

- Configure ONU Descriptor

- Display ONU Descriptor

- Configure ONU IP Address

- Display ONU IP Address

3.2.2 **Configure ONU Descriptor**

You can use the following commands to make the necessary description of the ONU to distinguish the ONUs. Please perform the configurations in ONU configuration mode.

onu-description *onu-name*

For example:

！ Configure the descriptor of onu0/4/1 as *greennet*

OptiWay(onu-0/4/1)#onu-description greennet

Configure ONU Descriptor

Operation	Command	Remarks
Configure ONU descriptor	**onu-description** *onu-name*	ONU mode

3.2.3 **Display ONU Descriptor**

Display ONU descriptor.

show onu-description

For example:

！Display the descriptor of onu0/4/1.

OptiWay(onu-3/4/1)#show onu-description

      Display ONU Descriptor

Operation	Command	Remarks
Display ONU descriptor	**show onu-description**	ONU mode

3.2.4 **Bind ONU Type and MAC**

You can specify the ONU type and MAC and then bind it to the ONU index. You can also unbind the ONU. Please perform the configurations in global mode and ONU mode.

global mode：

onu-binding mac *H:H:H:H:H:H* **onu** *onu-id*

onu-binding type onu-type **onu** onu-id

onu-binding mac *H:H:H:H:H:H* **type** *onu-type* **onu** *onu-id*

no onu-binding onu *onu-id*

ONU mode：

onu-binding mac H:H:H:H:H:H

onu-binding type onu-type

onu-binding mac *H:H:H:H:H:H* **type** *onu-type*

no onu-binding mac

no onu-binding type

For example:

！ Bind the ONU type and MAC of 0 / 4/1.

OptiWay(config)# onu-binding mac 0:0:0:0:0:11 type 2040 onu 0/4/1

！ Unbind onu 0/4/1.

OptiWay(config)# no onu-binding onu 0/4/1

！ Bind the ONU type of 0 / 4/1.

OptiWay(onu-0/4/1)#onu-binding type 2040

！ Bind the MAC of 0 / 4/1.

OptiWay(onu-0/4/1)#onu-binding mac 0:0:0:0:0:11

！ Unbind the ONU type of 0 / 4/1.

OptiWay(onu-0/4/1)#no onu-binding type

！ Unbind the MAC of 0 / 4/1.

OptiWay(onu-0/4/1)#no onu-binding mac

Bind/unbind ONU Type and MAC

Operation	Command	Remarks
Bind/unbind ONU Type and MAC	**onu-binding type** *onu-type* **onu** *onu-id* **no onu-binding onu** *onu-id*	global mode
Bind/unbind ONU Type and MAC	**bind onuid** *H:H:H:H:H:H* **onu-binding type** *onu-type* **no onu-binding** **no onu-binding mac** **no onu-binding type**	onu mode

3.2.5 **Display ONU Information**

You can use the following commands to obtain the information of the registered ONU, including the ONU MAC, RTT, online time, ONU type, software version, online status, etc.

show onu-status

For example:

！ Display the status information of the current online ONU.

OptiWay(onu-0/1/1)#show onu-status

ONU   Mac Address   Rtt   RegisterTime   Type   Software   State

0/1/1 00:0a:5a:19:db:da 49   14/01/01 00:01:45 204G   V100R001B01D002   Up

Total onu entries: 1 .

onu online : 1 .

Display ONU Information

Operation	Command	Remarks
Display the information of online ONU	**show onu-status**	any views

3.2.6 **Reboot the ONU**

Perform the following configuration In ONU mode:

onu-reboot

For example:

！Reboot ONU 0/3/1.

OptiWay(config)#onu 0/3/1

OptiWay(onu-0/3/1)#onu-reboot

  Reboot ONU

Operation	Command	Remarks
Reboot onu	**onu-reboot**	ONU mode

3.2.7 **Configure ONU Uplink/Downlink Bandwidth, Bandwidth Shaper and Policy**

Perform the following configurations in ONU configuration mode:

Configure the ONU uplink bandwidth

onu-bandwidth upstream fir *fir-number* **cir** *cir-number* **pir** *pir-number* **weight** *weight-number*

parameter description:

fir-number：fixed bandwidth, with the range of 0-950000 Kbps

cir-number：assured bandwidth, with the range of 0-950000 Kbps

pir-number：maximum bandwidth, with the range of 512~1000000 Kbps

Configure the ONU downlink bandwidth

  onu-bandwidth downstream pir *pir-num* burst *burst-num*

parameter description:

ditto

mixed：It refers to mark when the traffic exceeds cir. Moreover, it will discard the packets when the traffic exceeds the pir.

Configure the ONU downlink policy

onu-bandwidth police downstream { cir { dorp | mark } | pir { dorp | mark }

| mixed }

parameter description:

 ditto

Restore the uplink and downlink bandwidth of the ONU to the default configuration:

no onu-bandwidth upstream

no onu-bandwidth downstream

Disable ONU bandwidth shaper

no onu-bandwidth shaper

Disable ONU uplink and downlink police

no onu-bandwidth police upstream

no onu-bandwidth police downstream

For example:

！ Configure the ONU uplink bandwidth.

OptiWay(onu-0/3/1)# onu-bandwidth upstream fir 0 cir 600000 pir 980000

！ Configure ONU bandwidth shaper

OptiWay(onu-0/3/1)# onu-bandwidth shaper cir

！ Configure ONU uplink police

OptiWay(onu-0/3/1)# onu-bandwidth police upstream pir drop

！ Restore the original configuration of the ONU downlink bandwidth

OptiWay(onu-0/3/1)#no onu-bandwidth downstream

！ Disable ONU bandwidth shaper

OptiWay(onu-0/3/1)#no onu-bandwidth shaper

！ Disable downlink police

OptiWay(onu-0/3/1)#no onu-bandwidth police downstream

Configure ONU Uplink/Downlink Bandwidth, Bandwidth Shaper and Policy

tion	Command	Remarks
Configure ONU uplink bandwidth	**onu-bandwidth upstream fir***fir-number***cir***cir-number***pir***pir-number* [**burst***burst-number*] [**priority***priority-number*] [**delay***delay-number*] [**jitter***jitter-number*]	ONU mode

tion	Command	Remarks
Configure ONU downlink bandwidth	**onu-bandwidth downstream fir** *fir-number***cir** *cir-number***pir** *pir-number* [**burst***burst-number*] [**priority***priority-number*] [**delay***delay-number*] [**jitter***jitter-number*]	ONU mode
Configure ONU bandwidth shaper	**onu-bandwidth shaper { cir	pir }**	ONU mode
Configure ONU uplink policy	**onu-bandwidth police upstream { cir { dorp	mark }	pir { dorp	mark }	mixed }**	ONU mode
Configure ONU downlink policy	**onu-bandwidth police downstream { cir { dorp	mark }	pir { dorp	mark }	mixed }**	ONU mode
Restore the ONU uplink and downlink bandwidth to the default configuration	**no onu-bandwidth upstream** **no onu-bandwidth downstream**	ONU mode
Disable ONU bandwidth shaper	**no onu-bandwidth shaper**	ONU mode
Disable uplink/downlink police	**no onu-bandwidth police upstream** **no onu-bandwidth police downstream**	ONU mode

3.2.8 **Configure ONU Uplink/Downlink Bandwidth, Bandwidth Shaper and Policy**

Perform the following configurations in ONU configuration mode:

Configure ONU multicast rate limit.

onu-bandwidth multicast rate-limit

Configure ONU broadcast rate limit.

onu-bandwidth broadcast rate-limit

Restore the ONU multicast default configurations.

no onu-bandwidth multicast

Restore the ONU broadcast default configurations.

no onu-bandwidth broadcast

Display the ONU multicast rate limit configurations.

show onu-bandwidth multicast

Display the ONU broadcast rate limit configurations.

show onu-bandwidth broadcast

For example:

！ Configure ONU 0/3/1 multicast rate limit to be1000kbs

OptiWay(onu-0/3/1)#onu-bandwidth multicast 1000

Configure ONU uplink/downlink bandwidth, bandwidth shaper and policy

Operation	Command	Remarks
Configure ONU multicast rate limit.	**onu-bandwidthmulticast***rate-limit*	ONU mode
Configure ONU broadcast rate limit.	**onu-bandwidthbroadcast***rate-limit*	ONU mode
Restore the ONU multicast default configurations.	**no onu-bandwidthmulticast**	ONU mode
Restore the ONU broadcast default configurations.	**no onu-bandwidthbroadcast**	ONU mode
Display the ONU multicast rate limit configurations.	**show onu-bandwidthmulticast**	ONU mode
Display the ONU broadcast rate limit configurations.	**show onu-bandwidthbroadcast**	ONU mode

3.2.9 **Enable/disable Port Flow Control**

Perform the following configurations in ONU port configuration mode:

Enable port flow control

onu-flow-control

Disable port flow control

no onu-flow-control

For example:

！ Enable port flow control

OptiWay(onu-0/3/1-reth-0/1)#flow-control

ONU port flow control

Operation	Command	Remarks
Enable port flow control	**onu-flow-control**	onu port mode
Disable port flow control	**no onu-flow-control**	onu port mode

3.2.10 **Enable/disable Port Flow Control**

Perform the following configurations in ONU port configuration mode:

Disable port flow control

onu-shutdown

Enable port flow control

no onu-shutdown

For example:

！Disable port flow control

OptiWay(onu-0/3/1-reth-0/1)#onu-shutdown

Enable/disable Port Flow Control

Operation	Command	Remarks
Disable port flow control	**onu-shutdown**	onu port mode
Enable port flow control	**no onu-shutdown**	onu port mode

3.2.11 **Configure ONU Uplink/Downlink Bandwidth**

Perform the following configurations in ONU port configuration mode:

Configure the uplink bandwidth of the CTC port

onu-bandwidth ingress cir *cir-number* **cbs** *cbs-number* **ebs** *ebs-number*

parameter description:

cir-number：rate of ingress, with the range of 64 - 1024000 kbps

cbs-number：depth of the token bucket algorithm, with the range of 1523 - 1000000 Byte

ebs-number：extra battle size, with the range of 0 - 1522 Byte

Disable the uplink bandwidth limit of CTC port

no onu-bandwidth ingress

Configure the downlink bandwidth of the CTC port

onu-bandwidth egress cir *cir-number* **pir** *pir-number*

parameter description:

cir-number：rate of egress, with the range of 64 - 1024000 kbps

pir-number：rate of peak information, with the range of 64 - 1024000 kbps

Disable the downlink bandwidth limit of CTC port

no onu-bandwidth egress

For example:

！Configure the uplink bandwidth of the port

OptiWay(onu-0/3/1-reth-0/1)#onu-bandwidth ingress cir 20000 cbs 20000 ebs 123

！Configure the downlink bandwidth of the port

OptiWay(onu-0/3/1-reth-0/1)#onu-bandwidth egress cir 20000 pir 20000

uplink/downlink bandwidth of the port

Operation	Command	Remarks
Configure the uplink bandwidth of the port	**onu-bandwidth ingress cir** *cir-number* **cbs** *cbs-number* **ebs** *ebs-number*	onu port mode
Disable the uplink bandwidth limit of the port	**no onu-bandwidth ingress**	onu port mode
Configure the downlink bandwidth of the port	**onu-bandwidth egress cir** *cir-number* **pir** *pir-number*	onu port mode
Disable the downlink bandwidth limit of the port	**no onu-bandwidth egress**	onu port mode

3.2.12 **Configure Port VLAN Mode**

Perform the following configurations in ONU configuration mode (for all ports) and ONU port configuration mode (for a certain port):

Configure the CTC port vlan mode

onu-vlan-mode { transparent | tag vlan *vlan-number* **| translation**

{ vlan *vlan_number* **old_vlan** *vlan_number1* **new_vlan** *vlan_number2* **} | { delete old_vlan** *vlan_number1* **new_vlan** *vlan_number2* **} | trunk vlan vlan_number allow-vlan** *vlan_number3***}**

parameter description:

vlan-number：the default vlan ID for the port

vlan_number1：the element in the conversion list

vlan_number2：the element in the conversion list

vlan_number3：the element in the conversion list

For example:

！Configure the port as the translation mode.

OptiWay(onu-0/3/1-reth-0/1)# onu-vlan-mode translation vlan 3 old_vlan 5

new_vlan 6

！ Add a new conversion entry.

OptiWay(onu-0/3/1-reth-0/1)# onu-vlan-mode translation vlan 3 old_vlan 52

new_vlan 67

！ Configure all ports as tag mode.

OptiWay(onu-0/3/1)# onu-vlan-mode tag vlan 34

! Configure the port as trunk mode.

OptiWay(onu-0/3/1-reth-0/1)#onu-vlan-mode trunk vlan 3 allow-vlan 3-6,8-10

⚠️note：

In the ONU configuration mode, you can configure only two vlan modes: transparent mode and tag mode. However, in the ONU port mode, you can configure four vlan modes: transparent mode, tag mode, trunk mode, and translation mode. When configuring the translation mode, if you need to add a new conversion entry based on the original conversion, you can re-enter *Commandonu-vlan-mode translation vlan vlan_number old_vlan vlan_number1 new_vlan vlan_number2*. In addition, if the parameter of *vlan vlan_number* is not the same as the value in the original entry, the new entry will replace the original entry.

Configure Port VLAN Mode

Operation	Command	Remarks
Configure port VLAN mode	**onu-vlan-mode { transparent | tag vlan** *vlan-number*| **translation** {**vlan***vlan_number***old_vlan***vlan_number 1***new_vlan***vlan_number2* **} | {deleteold_vlan***vlan_number1***new_vla n***vlan_number2* **} |trunk vlan** *vlan_number* **allow-vlan** *vlan_number3*}	ONU mode

3.2.13 **Configure Port Traffic Classification**

Perform the following configurations in ONU configuration mode (for all ports) and ONU port configuration mode (for a certain port):

Add the flow classification rule

onu-classification precedence *precedence-num* **que-mapped** *que-mapped-num* **ethernet-pri**

ority *ethernetPriority-num* { select-filed select-value | select-filed select-value | select-filed select-value }

parameter description:

precedence-num： priority of traffic classification rules

que-mapped-num： queue number of the rule map

ethernetPriority-num： Ethernet priority

select-value ： it includes destination-ip, destination-mac, destination-port, dot1p-priority, dscp ， ethernet-type, ip-protocol , ipv6-precedence, source-ip , source-mac, source-port, vlan, etc.

Remove the flow classification rule

no onu-classification precedence *precedence-num*

For example:

！ Add a flow classification:

OptiWay(onu-0/3/1-reth-0/1)# onu-classification precedence 1 que-mapped 1 ethernet-priority 2 destination-mac 11:22:33:44:55:66

！ Delete a flow classification:

OptiWay(onu-0/3/1-reth-0/1)#no onu-classification precedence 1

⚠️note：

1. For ONU Ethernet port 1, it supports up to 8 rules. When the port has already configured 8 rules (precedence values are 1-8), if you add a new rule with a precedence value of 4, the the rule with the original precedence value of 4-7 becomes 5-8, and the rule with the original precedence value of 8 is deleted. If you delete an existing rule, the rule's precedence values for the lower priority rules are decremented by one.

2. When the ONU type is 204S, you can only set one filter option. Moreover, L2 filter option conflicts with L3 filter option. If you set the filter option to VLAN, you can not set the MAC filter option rules; if you set the VLAN filter option, you can not set the IP filter option.

3. When the ONU type is 24HG, the traffic classification does not take effect in the transparent mode.

4. When the ONU type is 1717, the traffic classification is not supported.

Configure Port Traffic Classification

Operation	Command	Remarks

Operation	Command	Remarks
Add a traffic classification rule	**onu-classification precedence** *precedence-num* **que-mapped** *que-mapped-num* **ethernet-pri** **ority** *ethernetPriority-num* **{ select-filed select-value | select-filed select-value | select-filed select-value }**	ONU mode or port mode
Remove the traffic classification rule	**no onu-classification precedence** *precedence-num*	ONU moder or port mode
Remove all the traffic classification rules	**no onu-classification all**	ONU mode or port mode

3.2.14 **Configure the FEC Operating Mode**

Perform the following configurations in ONU configuration mode:

Configure the FEC operating mode:

onu-fec mode { enable\| disable }

For example:

！ Enable FEC function:

OptiWay(onu-0/3/1)# onu-fec mode enable

Configure the FEC Operating Mode

Operation	Command	Remarks
Configure the FEC operating mode	**onu-fec mode { enable| disable }**	ONU MODE

3.2.15 **Display Uplink/Downlink Bandwidth, Traffic Shaping and Policy**

Display the following configurations in ONU configuration mode:

Display the uplink and downlink bandwidth of the ONU

show onu-bandwidth {downstream\| upstream}

For example:

！ Display the uplink bandwidth of the ONU

OptiWay(onu-0/1/1)#show onu-bandwidth upstream

ONU:0/1/1

upstream   : fir=0 cir=0 pir=1000000 weight=1

OptiWay(onu-0/1/1)#show onu-bandwidth downstream

downstream:

  onu-bandwidth: pir 1000000 kbps burst 0

     Display the uplink and downlink bandwidth of the ONU

Operation	Command	Remarks
Display the uplink and downlink bandwidth of the ONU	**show onu-bandwidth {downstream| upstream}**	ONU MODE

3.2.16 **Display Port Information**

In ONU mode ：

Display ONU port information

show onu-interface [**ethernet** *ethernet_number*]

parameter description:

ethernet-number： specific port number

For example:

Displays information for port 1.

OptiWay(onu-0/1/1-reth-0/1)#show onu-interface ethernet 0/1

ONU 0/1/1

ONU port 1 is Enable, port link is LINK UP

ONU auto negotiate ability :

  ability value[1] : Half duplex 1000BASE-T

  ability value[2] : Full duplex 1000BASE-T

  ability value[3] : Half duplex 100BASE-TX

  ability value[4] : Full duplex 100BASE-TX

  ability value[5] : Full duplex 10BASE-T

  ability value[6] : Half duplex 10BASE-T

  ability value[7] : Full duplex Symmetric PAUSE

  ability value[8] : Full duplex Asymmetric PAUSE

speed auto is Disable, Flow control is Enable

bandwidth ingress is Enable

   cir(ingress rate of port) 1048568

   cbs(depth of token bucket) 0

   ebs(the extra burst size) 0

bandwidth egress is Enable

   cir(egress rate of port) 1048568

   pir(peak information rate) 0

Display port information

Operation	Command	Remarks
Display port information	**show onu-interface** [**ethernet** *ethernet_number*]	ONU MODE

3.2.17 Display ONU Serial Number

In ONU mode ：

Display the ONU serial number

show onu-sn

For example:

Display the ONU serial number

OptiWay(onu-0/1/1)#show onu-sn

Vendor ID   : EPON

MODEL   : 204G

ONUID(MAC)   : 00:0a:5a:19:db:da

HW   : V2.0

SW   : V100R001B01D002

Display the ONU serial number

Operation	Command	Remarks
Display the ONU serial number	**show onu-sn**	ONU MODE

3.2.18 Display ONU Firmware Version

In ONU mode ：

Display ONU firmware version

show onu-firmware

For example:

Display ONU firmware version

OptiWay(onu-0/1/1-reth-0/1)#show onu-firmware

firmware of ONU 0/1/1 :

4d.61.79.20.32.39.20.32.30.31.35.20.31.36.3a.30.37.3a.30.34.00.00.00.00.14.05.ee.00.e0.4c.89.00

Display ONU firmware version

Operation	Command	Remarks
Display ONU firmware version	**show onu-firmware**	ONU MODE

3.2.19 **Display PON Chip Information**

In ONU mode:

Display PON chip information

show onu-pon-chip

For example:

Display PON chip information

OptiWay(onu-0/1/1)#show onu-pon-chip

Chipset of onu 0/1/1 :

Vendor id   :IM

Model Id   :0x30 0x0

Revision   :0x70

IC_Version/Date   :08/01/29

Display PON chip information

Operation	Command	Remarks
Display PON chip information	**show onu-pon-chip**	ONU MODE

3.2.20 **Display ONU Capabilities**

In ONU mode:

Display ONU capabilities

show onu-capabilities

For example:

Display ONU capabilities

OptiWay(onu-0/1/1)#show onu-capabilities

onu 0/1/1 :

onu capability-2: OnuType   SFU

onu capability-2: MultiLLID   Not Support

onu capability-2: ProtectionType   Not Support

onu capability-2: NumOfPon   2

onu capability-2: NumOfSlot   0

onu capability-2: NumOfInterfaceType   1

onu capability-2: InterfaceType   GE

onu capability-2: NumOfPort   4

onu capability-2: BatteryBackup   Not Support

Display ONU capabilities

Operation	Command	Remarks
Display ONU capabilities	**show onu-capabilities**	ONU MODE

3.2.21 **Display Uplink/Downlink Bandwidth**

Display in ONU mode:

Display uplink bandwidth

show onu-bandwidth ingress [**interface ethernet** *ethernet _number*]

parameter description:

gigabitethernet-number：specific port number

Display downlink bandwidth

show onu-bandwidth egress [**interface ethernet** *ethernet _number*]

parameter description:

ethernet-number： specific port number on ONU

Display Uplink/Downlink Bandwidth

Operation	Command	Remarks
Display uplink bandwidth	**show onu-bandwidth ingress** [**interface ethernet** *ethernet_number*]	ONU MODE
Display downlink bandwidth	**show onu-bandwidth egress** [**interface ethernet** *ethernet_number*]	ONU MODE

3.2.22 **Display Port VLAN Mode**

Display in ONU mode:

Display the port vlan mode

show onu-vlan-mode [**interface ethernet** *ethernet-num*]

parameter description:

ethernet-number： specific port number

For example:

Display vlan mode for port 1.

OptiWay(onu-0/1/1-reth-0/1)#show onu-vlan-mode interface ethernet 1

ONU 0/3/1 :

port ID : 1 ctc vlan mode : transparent

Display vlan mode for all ports.

OptiWay(onu-0/1/1)#show onu-vlan-mode

onu 0/1/1 :

port ID : 1 ctc vlan mode : transparent

port ID : 2 ctc vlan mode : transparent

port ID : 3 ctc vlan mode : transparent

port ID : 4 ctc vlan mode : transparent

Display Port VLAN Mode

Operation	Command	Remarks
Display port VLAN mode	**show onu-vlan-mode [interface ethernet** *ethernet_num*]	ONU MODE

3.2.23 **Display Port Traffic Statistics**

Display in ONU mode:

Display port traffic statistics

show statistics onu *onu-id*

For example:

Display port traffic statistics

OptiWay(onu-0/1/1-reth-0/1)#show statistics 0/4/1

SLOT/PON TOTAL(BYTES) UNICASTS(packets)   MULTICASTS(packets)   BROADCASTS(packets)

0/4/1 port:pon

| input | 6389705 | 511 | 92443 | 6176 |

input   6389705   511   92443   6176

output   80054   73   0   498

0/4/1 port:uni

input   549817   73   6907   498

output   2354053   10   30565   6176

Display port traffic statistics

Operation	Command	Remarks
Display port traffic statistics	**show statistics onu** *onu-id*	ONU MODE

3.2.24 **Display Port Traffic Classification**

Displayed in ONU mode or port configuration mode:

Display the traffic classification rule configurations

show onu-classification interface [**ethernet** *ethernet_num*]

For example:

Display the traffic classification rule configurations:

OptiWay(onu-0/1/1-reth-0/1)#show onu-classification

Rules 1 Precedence 1 QueMapped 2 GigabitEthernet/priority 5

Destination-port 55

Rules 2 Precedence 3 QueMapped 2 GigabitEthernet/priority 5

Destination-port 44

Rules 3 Precedence 4 QueMapped 2 GigabitEthernet/priority 5

Destination-port 88

Rules 4 Precedence 5 QueMapped 2 GigabitEthernet/priority 5

Destination-port 66

Display Port Traffic Classification

Operation	Command	Remarks
Display port traffic classification	**show onu-classification [interface ethernet** *ethernet_num* **]**	ONU MODE and onu port mode

3.2.25 **Display FEC Status and Capabilities**

Perform the following configurations in ONU configuration mode:

Display FEC status and capabilities

show onu-fec

For example:

Display FEC status and capabilities

OptiWay(onu-0/1/1-reth-0/1)#show onu-fec

onu fec ability: supported   mode:disable

Display FEC status and capabilities

Operation	Command	Remarks
Display FEC status and capabilities	**show onu-fec**	ONU MODE

3.2.26 **Configure Quantity Limitation of ONU MAC Addresses**

Perform the following configurations in ONU configuration mode (for all ports) and ONU port configuration mode (for a certain port):

Configure quantity limitation of ONU MAC addresses

onu-mac-address-table max-mac-count *number*

Remove quantity limitation of ONU MAC addresses

no onu-mac-address-table max-mac-count

parameter description:

number： quantity limitation of ONU MAC addresses

For example:

Configure the quantity limitation of MAC addresses of all ports of ONU 0/3/1 to be 20.

OptiWay(onu-0/1/1-reth-0/1)#onu-mac-address-table max-mac-count 20

Configure the quantity limitation of MAC addresses on port 3 of ONU 0/3/1 to be 40

OptiWay(onu-0/1/1-reth-0/1)#interface ethernet 0/3

OptiWay(onu-0/3/1-reth-0/3)#onu-mac-address-table max-mac-count 40

Remove the quantity limitation of MAC addresses on all ports of ONU 0/3/1

OptiWay(onu-0/1/1-reth-0/1)#no onu-mac-address-table max-mac-count

Quantity Limitation of ONU MAC Addresses

Operation	Command	Remarks
Configure the quantity limitation of MAC addresses	**onu-mac-address-table max-mac-count** *number*	ONU MODE, ONU port mode
Remove the quantity limitation of MAC addresses	**no onu-mac-address-table max-mac-count**	ONU MODE, ONU port mode

3.2.27 **Display Quantity Limitation of ONU MAC Addresses**

Perform the following configurations in ONU configuration mode (for all ports) and ONU port configuration mode (for a certain port):

Display the quantity limitation of MAC addresses

show onu-mac-address-table max-mac-count

Display the quantity limitation of MAC addresses of all ports of ONU 0/3/1

OptiWay(onu-0/1/1)#show onu-mac-address-table max-mac-count

ONU 0/1/1

Port   limit switch   Max mac address number

1   disable   0

2   disable   0

3   disable   0

4   disable   0

Display the quantity limitation of MAC addresses of port 3 of ONU 0/3/1

OptiWay(onu-0/1/1-reth-0/1)#interface ethernet 0/3

OptiWay(onu-0/3/1-reth-0/3)#show onu-mac-address-table max-mac-count

Port   limit switch   Max mac address number

3   disable   0

Display Quantity Limitation of ONU MAC Addresses

Operation	Command	Remarks
Display quantity limitation of ONU MAC addresses	**show onu-mac-address-table max-mac-count**	ONU MODE

3.2.28 **Configure ONU IP Address**

Perform the following configurations in ONU configuration mode:

Configure ONU IP

onu-ip address static *ip-address ip-address-mask* [*ip-address-gateway* | cvlan]

Remove ONU IP

no onu-ip address

For example:

Configure ONU 0/3/1 IP

OptiWay(onu-0/1/1-reth-0/1)# onu-ip address static 1.1.1.22 255.255.255.0 1.1.1.1

Configure onu IP Address

Operation	Command	Remarks
Configure ONU IP	**onu-ip address static** *ip-addressip address-mask* [*ip-address-gateway]*	ONU MODE
Remove ONU IP	**no onu-ip address**	ONU MODE

3.2.29 **Display ONU IP Address**

Perform the following configurations in ONU configuration mode:

Configure ONU IP

show onu-ip address [**onu** *onu-id* |**mac** *H:H:H:H:H:H*]

For example:

Display ONU 0/4/1 IP

OptiWay(onu-0/4/1)#show onu-ip address onu

ONU   Mac Address   Ipaddress Subnet Mask   Gateway Status

1/4/1   1122-3344-5566 1.1.1.22 255.255.255.0   1.1.1.1   static

Display onu IP Address

Operation	Command	Remarks
Display onu IP Address	**show onu-ip address** [**onu** *onu-id* | **mac** *mac-address*]	ONU MODE

3.2.30 **ONU CTC Upgrade**

In privileged mode, load the onu mirror to olt:

load onu-image ftp inet *ftp-server-ip file-name username passport*

upgrade onu, ONU mode

onu-ctc-upgrade

onu-ctc-upgrade-commit

For example:

In privileged mode, load the onu mirror to olt:

OptiWay#load onu-image ftp inet 1.1.1.1 onu.blob grn 123

OptiWay#configure terminal

OptiWay(config)#onu 0/1/1

In ONU mode, upgrade onu ctc:

OptiWay(onu-0/1/1)#onu-ctc-upgrade

After the successfully upgrade, restart onu, and then:

OptiWay(onu-0/1/1)#onu-ctc-upgrade-commit

onu ctc upgrade

Operation	Command	Remarks
Load the upgrade file of onu ctc	**load onu-image ftp inet** *ftp-server-ip file-name username passport*	privileged mode
Upgrade onu ctc	**onu-ctc-upgrade**	ONU MODE
Confirm the onu ctc upgrade	**onu-ctc-upgrade-commit**	ONU MODE

3.2.31 **Configure ONU STP**

Perform the following configuration in ONU mode:

Configure onu stp

onu-spanning-tree { forward-time *value* **| hello-time** *value* **| maxage** *value* **| priority** *value* **}**

Display onu stp configuration

show onu-spanning-tree

Restore onu stp configuration to the default value

no onu-spanning-tree

For example:

Configure the forwarding time of onu stp.

OptiWay(onu-0/1/1)#onu-spanning-tree forward-time 16

Display the current onu stp configurations

OptiWay(onu-0/1/1)#show onu-spanning-tree

ONU 0/1/1

stpmode   :disable

forwardtime :15(s)

hellotime   :2(s)

maxage   :20(s)

priority   :32768

restore onu stp configuration to the default value

OptiWay(onu-0/1/1)#no onu-spanning-tree

Configure onu stp

Operation	Command	Remarks
Configure onu stp	**onu-spanning-tree { forward-time** *value* **| hello-time** *value* **| maxage** *value* **| priority** *value* **}**	ONU MODE
Display the configurations of onu stp	**show onu-spanning-tree**	ONU MODE
Disable onu stp	**no onu-spanning-tree**	ONU MODE

3.2.32 **Configure onu Management vlan**

Perform the following configuration in ONU mode:

Configure onu management vlan

onu-ip vlan cvlan 3 [priority *priority* **| svlan** *svlan* **]**

For example:

OptiWay(onu-0/1/1)#onu-ip vlan cvlan 3 priority 2 svlan 4

Configure onu management vlan

Operation	Command	Remarks
Configure onu management vlan	**onu-ip vlan cvlan 3 [priority** *priority* **| svlan** *svlan* **]**	ONU MODE

3.2.33 **Display Optical Parameters**

Perform the following configurations in ONU configuration mode:

Display optical parameters,

show onu-opm-diagnosis

For example:

Display onu 0/1/1 optical parameters:

OptiWay(onu-0/1/1)#show onu-opm-diagnosis

ONU: 0/1/1

Optical Transceiver Diagnosis :

    Work Temperature   : 41.58 C

    Supply Voltage(Vcc) : 3.25 V

TX Bias Current   : 9.60 mA

TX Power(Output)   : 1.37 mW (0.00 dBm)

RX Power(Input)   : 0.6 mW (-12.20 dBm)

Display Optical Parameters

Operation	Command	Remarks
Display Optical Parameters	**show onu-opm-diagnosis**	ONU MODE

4 PSG Configuration

4.1 Overview for PSG Function

There are multiple ONUs sharing one optical bandwidth in the EPON system, so it is necessary to provide optical protection to avoid traffic losing.

PSG is the shorten form for Protection Switching Group. It made up by a pair of backbone optical fiber, adopting 2:N optical splitter generally. Configure one of the optical links to be master one, and the other to be slave one. Traffic flow is transmitted by master optical link. If the interruption happens in master optical link, the traffic flow will transfer to the slave optical link.

4.2 PSG Function Configuration

4.2.1 Task List of PSG Function Configuration

Task List of PSG Function Configuration as shown below:

- Enable / Disable PON Port

- Display the Status of PON Port

- Create / Delete PSG Groups

- Manually Switch the Master / Slave Ports in PSG Group

- Display the Information of PSG Groups

4.2.2 Enable / Disable PON Port

In pon port mode, enable/disable the PON port.

no shutdown

shutdown

For example:

！Disable pon 0/2.

OptiWay(config)#no admin-enable-pon slot 0 pon 2

！Enable pon 0/2.

OptiWay(config)# admin-enable-pon slot 0 pon 2

Enable / Disable PON Port

Operation	Command	Remarks
Enable PON Port	**no shutdown**	Pon port mode
Disable PON Port	**shutdown**	Pon port mode
Display PON Port	**show interface brief**	Any mode

4.2.3 **Create / Delete/ Display PON Port**

Perform the following configurations in global configuration mode:

Create a PSG group

psg creat slot *slot_id* **active-pon** *pon_index* **standby-pon** *pon_index*

Display the PSG group configuration

show psg slot *slot_id*

Remove the PSG group

psg delete slot *slot_id* **psg-id** *psg_id*

parameter description:

slot_id：slot number, and the value is 0

pon_inde/pon_index：index of master and slave PON ports, with the range of 1-8

psg_id：PSG group id, with the range of 1-4

For example:

！Create a PSG group with port 1 as master port and port 3 as slave port.

OptiWay(config)#psg creat slot 0 psg-id 1 active-pon 1 standby-pon 3

！Display the configuration of PON port

OptiWay(config)#show psg slot 0

psg id   active pon   standby pon   administrative status

1   pon-0/1   pon-0/3   admin-up

！Delete PON port

OptiWay(config)#psg delete slot 0 psg-id 1

⚠️note：Before creating a PSG group, you should disable the master and slave ports firstly. The PSG group number is automatically assigned to the currently created PSG group.

Create / Delete/ Display PON port

Operation	Command	Remarks
Create PON port	**psg creat slot** *slot_id* **active-pon** *pon_index* **standby-pon** *pon_index*	global mode
Delete PON port	**psg delete slot** *slot_id* **psg-id** *psg_id*	global mode
Display the configuration of PON port	**show psg slot** *slot_id*	any mode

4.2.4 **Manually Switch the Master / Slave Ports in PSG Group**

Perform the following configurations in global configuration mode:

Switch the master / slave port in the PSG group

psg switch slot *slot_id* **psg-id** *psg_id*

parameter description:

slot_id：slot number, and the value is 0

psg_id：PSG group id, with the range of 1-4

For example:

！Switch the master / spare port in PSG group 1, and then save the psg state.

OptiWay(config)#psg switch slot 0 psg-id 1

OptiWay(config)#psg restore slot 0 psg-id 1

Manually Switch the Master / Slave Ports in PSG Group

Operation	Command	Remarks
Manually switch the master / slave ports in PSG group	**psg switch slot** *slot_id* **psg-id** *psg_id*	global mode

4.2.5 **Configuration Example**

！ Configure psg group 1, set pon0 / 1 as the master port, and pon0 / 3 as the slave port.

OptiWay(config)#interface pon 0/1

OptiWay(config-if-pon-0/1)#shutdown

OptiWay(config-if-pon-0/1)#interface pon 0/3

OptiWay(config-if-pon-0/3)#shutdown

OptiWay(config-if-pon-0/3)#exit

OptiWay(config)#psg creat slot 0 psg-id 1 active-pon 1 standby-pon 3

！ Display psg configuration

OptiWay(config)#show psg slot 0

psg id   active pon   standby pon   administrative status

1   pon-0/1   pon-0/3   admin-up

！ Remove the configured PSG group

OptiWay(config)#psg delete slot 0 psg-id 1

！ Manually switch the master/salve port of psg

OptiWay(config)#psg switch slot 0 psg-id 1

OptiWay(config)#psg restore slot 0 psg-id 1