# ONU Management Configuration Commands

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## 1.1 **Local ONU Management Commands**

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## 1.2 epon onu-registration-method mac

### *Syntax*

**epon onu-registration-method mac**

**no epon onu-registration-method**

To open the checkup mechanism of the ONU MAC address during MPCP registration, run **epon onu-registration-method mac**.

### *Parameter*

None

### *Default value*

The MAC address of ONU is not checked by default.

### *Command mode*

EPON port configuration mode

### *Remarks*

After the checkup of the ONU MAC address is enabled during MPCP registration, successful registration can only be conducted to those ONUs that has been bound to static entries through the running of the **epon bind-onu *mac-address llid-sequence*** command.

### *Example*

The following example shows how to open the checkup of MAC address' registration on ONU of interface EPON0/1.

```
switch_config# interface EPON0/1
switch_config_epon0/1# epon onu-registration-method mac
```

## 1.3 epon bind-onu

### *Syntax*

**epon bind-onu** *mac-address llid-sequence*

**no epon bind-onu** *mac-address*

To bind the MAC address of ONU to the EPON port and the LLID sequence number, run this command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *mac-address* | The format of the MAC address is **<xxxx.xxxx.xxxx>**. |
| *llid-sequence* | Value range: 1-64 |

### *Default value*

The MAC address has no default value, while the default value of **llid-sequence** is the unoccupied minimum LLID sequence.

### *Command mode*

EPON port configuration mode

### *Remarks*

Only when this command is used together with the **epon onu-registration-method mac** command can it take effect.

### *Example*

The following example shows how to bind LLID sequence 1 of port EPON0/1 to ONU 00e0.0f00.00001:

```
switch_config# interface EPON0/1
switch_config_epon0/1# epon bind-onu 00e0.0f00.00001 1
```

## 1.4 epon onu-authen-method manual

### *Syntax*

**epon onu-authen-method manual**

**no epon onu-authen-method manual**

To set the ONU authentication mode, run **epon onu-authen-method manual**. At present, you have options to abandon the authentication or to conduct manual authentication.

### *Parameter*

None

### *Default value*

If the ONU authentication is not conducted, the registration then automatically passes the authentication.

### *Command mode*

EPON port configuration mode

### *Remarks*

If the **epon onu-authen-method manual** command is configured for manual authentication, the administrator needs to confirm it manually after ONU registration is complete and then can a corresponding bandwidth be obtained and the remote configuration can be done.

### *Example*

The following example shows how to set the ONU authentication mode on port EPON0/1 to the manual authentication:

switch_config# interface EPON0/1

switch_config_epon0/1#epon onu-authen-method manual

## 1.5 epon mpcp-registration-mode

### *Syntax*

**epon mpcp-registration-mode {normal | ctc** *value***}**

To configure the delay of MPCP, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *value* | 1-50ms |

### *Default value*

The delay is 20ms by default.

### *Command mode*

EPON port configuration mode

### *Remarks*

None

### *Example*

The following example shows how to set the delay of MPCP of port EPON0/1 to 30ms.

OLT_config_epon0/1# **epon mpcp-registration-mode ctc** *20*

## 1.6 epon onu description

### *Syntax*

**epon onu description** *string*

To add the description string for ONU, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *string* | A character sting to describe ONU, which consists only of ASCII characters |

### *Default value*

None

### *Command mode*

LLID port configuration mode

### *Remarks*

None

### *Example*

The following example shows how to set the description string of ONU on port EPON0/1:1 to **p1004**.

OLT_config_epon0/1:1# epon onu description p1004

## 1.7 epon conform-onu

### *Syntax*

**epon conform-onu {mac-address** *value* **| interface epon** *slot/port:sequence***}**

To enable the registered ONU to pass authentication, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *value* | The format of the MAC address is **<xxxx.xxxx.xxxx>**. |
| *slot/port*[*:sequence*] | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

None

Example

The following example shows how to get ONU authenticated on port EPON0/1:1.

Switch# epon conform-onu interface epon 0/1:1

## 1.8 epon deregister-onu

### *Syntax*

**epon deregister-onu { interface epon** *slot/port:sequence***}**

To deregister ONU, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|

| | |
|---|---|
| *slot/port*[*:sequence*] | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

None

### *Example*

The following example shows how to deregister the registered ONU on port EPON0/1:1.

Switch# epon deregister-onu interface epon0/1:1

## 1.9 clear epon dynamic-binding

### *Syntax*

**clear epon dynamic-binding [interface epon** *slot/port***]**

To remove the information about dynamic ONU binding, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/port* | The **slot** parameter stands for the slot ID and the **port** parameter stands for the EPON port ID. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

Only when ONU does not pass authentication and after ONU is deregistered can the information about dynamic ONU binding be removed.

### *Example*

The following example shows how to remove the information about dynamic ONU binding on port EPON0/1:1 manually.

```
switch# clear epon dynamic-binding interface epon0/1:1
```

## 1.10 epon dynamic-binding-timeout {disable | enable}

### *Syntax*

**epon dynamic-binding-timeout {disable | enable}**

To remove the information about dynamic ONU binding automatically, run the previous command.

### *Parameter*

None

### *Default value*

disable

### *Command mode*

Global configuration mode

### *Remarks*

None

### *Example*

The following example shows how to remove the information about dynamic ONU binding automatically.

```
OLT_config#epon dynamic-binding-timeout enable
```

## 1.11 epon dynamic-binding-timeout *value*

### *Syntax*

**epon dynamic-binding-timeout** *value*

To set the timeout time of the automatic removal of the information about dynamic ONU binding , run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *value* | 30-300s |

### *Default value*

300s

### *Command mode*

Global configuration mode

### *Remarks*

None

### *Example*

The following example shows how to set the timeout time of the automatic removal of the information about dynamic ONU binding to 200s.

OLT_config# epon dynamic-binding-timeout 200

## 1.12 epon ctc-oam-discovery-timeout {disable | enable}

### *Syntax*

**epon ctc-oam-discovery-timeout {disable | enable}**

To enable or disable ONU registration when the successful discovery of CTC OAM of ONU times out, run this command.

### *Parameter*

None

### *Default value*

disable

### *Command mode*

Global configuration mode

### *Remarks*

None

### *Example*

The following example shows that ONU registration is disabled when the successful discovery of CTC OAM of ONU times out.

OLT_config#epon ctc-oam-discovery-timeout enable

## 1.13 **epon ctc-oam-discovery-timeout** *value*

### *Syntax*

**epon ctc-oam-discovery-timeout** *value*

To set the timeout time for waiting for successful CTC OAM discovery of ONU, run this command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *value* | 30-300s |

### *Default value*

60s

### *Command mode*

Global configuration mode

### *Remarks*

None

### *Example*

The following example shows how to set the timeout time for waiting for successful CTC OAM discovery of ONU.

```
OLT_config# epon ctc-oam-discovery-timeout 200
```

## 1.14 **epon ace-reset-delay** *value count*

### *Syntax*

**epon ace-reset-delay** *value count*

To set the waiting time and transmission times of OAM transmission after the initial registration of ACE ONU is resumed, run the above-mentioned command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *value* | 500-10000ms |
| *count* | 1-10 |

### *Default value*

3000ms, 3 times

### *Command mode*

Global configuration mode

### *Remarks*

None

### *Example*

The following example shows that the waiting time and transmission times of OAM transmission after the initial registration of ACE ONU are set to 4000ms and 5 times respectively.

```
OLT_config# epon ace-reset-delay 4000 5
```

## 1.15 epon dying-gasp-log {disable | enable}

### *Syntax*

**epon dying-gasp-log {disable | enable}**

To enable and disable the print of ONU power-off alarm log, run the above-mentioned command.

### *Parameter*

None

### *Default value*

enable

### *Command mode*

Global configuration mode

### *Remarks*

None

### *Example*

The following example shows how to shut down the print of the ONU power-off alarm log.

OLT_config#epon dying-gasp-log disable

## 1.16 epon snmp-ipaddress

### *Syntax*

**epon snmp-ipaddress** *ip-address*

To set the IP address of OLT manager, run the above-mentioned command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *ip-address* | Stands for the IP address of the network manager. |

### *Default value*

None

### *Command mode*

Global configuration mode

### *Remarks*

This IP address is used for network topology discovery in the hand-in-hand environment.

### *Example*

The following example shows how to set the IP address of OLT manager to 192.168.1.10.

OLT_config# epon snmp-ipaddress 192.168.1.10

## 1.17 serial-bridge remote

### *Syntax*

**serial-bridge remote** *index* **address** *A.B.C.D*

**no serial-bridge remote** *index* **address**

To set the IP address of the bridge of the serial interface of ONU, run **serial-bridge remote** *index* **address** *A.B.C.D*.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *index* | Index of the bridge |
| *A.B.C.D* | IP address of the bridge |

### *Default value*

None

### *Command mode*

Global configuration mode

### *Remarks*

This command is used to set the index and IP address of the front bridge.

### *Example*

The following example shows how to set the bridge 10.0.0.1 to 1.。

OLT_config# serial-bridge remote 1 address 10.0.0.1

## 1.18 show epon basic-info

### *Syntax*

**show epon basic-info**

To display the basic OLT information, run the previous command.

### *Parameter*

None

### *Default value*

None

### *Command mode*

Any mode will do.

### *Remarks*

Relevant information will not be displayed unless the OLT chip is hot plugged.

### *Example*

The following are basic information about OLT.

Switch# show epon basic-info
**ONU registration flapping suppression: disabled**
**Hello interval : 3 seconds**
**Dead interval : 5 counts**
**IROS : enabled**
**SC software version : 1025.0.0.1798569984**
**Number of registered OLTs : 1**
**----------**

**OLT chip index : 0**
**OLT chip module id : 0**
**OLT chip device id : 0x0**
**OLT chip MAC address: 00:e0:0f:de:d0:10**
**OLT status : operational**

## 1.19 show epon encryption

### *Syntax*

**show epon encryption**

To display the information about EPON encryption configuration, run the above-mentioned command.

### *Parameter*

None

### *Default value*

None

### *Command mode*

Any mode will do.

### *Remarks*

None

### *Example*

The following example shows how to display the information about EPON encryption configuration:

**Switch#show epon encryption**
**Encryption mode rekey time(ms)**
**---------- ----------**
**ctc churning 10000**

## 1.20 show epon mpcp-registration-mode

### *Syntax*

**show epon mpcp-registration-mode [interface epon** *slot/port***]**

To display the MPCP registration mode of the EPON port, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/port* | The **slot** parameter stands for the slot ID and the **port** parameter stands for the EPON port ID. |

### *Default value*

None

### *Command mode*

Any mode will do.

### *Remarks*

None

### *Example*

The following example shows how to display the ONU MPCP registration mode of the EPON port.

Switch# show epon mpcp-registration-mode interface epon 0/1

**MPCP registeration is delay time enabled on E0/1, and delay time is 20 ms**

## 1.21 show epon onu-authen-method

### *Syntax*

**show epon onu-authen-method [interface epon** *slot/port***]**

To display the ONU authentication mode, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/port* | The **slot** parameter stands for the slot ID and the **port** parameter stands for the EPON port ID. |

### *Default value*

None

### *Command mode*

Any mode will do.

### *Remarks*

None

### *Example*

The following example shows how to display the ONU registration mode of the EPON0/1 port.

Switch# show epon onu-authen-method interface epon 0/1

ONU authentication mode is manual on E0/1.

## 1.22 show epon onu-registration-method

### *Syntax*

**show epon onu-registration-method [interface epon** *slot/port***]**

To display the ONU MAC address checkup mode, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/port* | The **slot** parameter stands for the slot ID and the **port** parameter stands for the EPON port ID. |

### *Default value*

None

### *Command mode*

Any mode will do.

### *Remarks*

None

### *Example*

The following example shows how to display the ONU MAC address checkup mode of the EPON0/1 port.

Switch# show epon onu-registration-method interface epon 0/1

**ONU MAC address check when registeration is enabled on E0/1.**

# 1.23 show epon onu-information

### *Syntax*

**show epon onu-information [interface epon** *slot/port***]**

To display the ONU information, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/port* | The **slot** parameter stands for the slot ID and the **port** parameter stands for the EPON port ID. |

### *Default value*

None

### *Command mode*

Any mode will do.

### *Remarks*

None

### *Example*

The following example shows how to display all ONU binding information on port epon0/1.

Switch# show epon onu-information interface epon0/1

OLT#show epon onu-information interface e0/1

Interface EPON0/1 has registered 2 ONUs:

Intf Name MAC Address Description Bind Type Status Distance(m) RTT(TQ)

---------- -------------- --------------- --------- --------------- ----------- -------

EPON0/1:1 00e0.0fa7.0150 N/A static deregistered N/A N/A

EPON0/1:2 0025.5e1a.dbe6 N/A static auto_configured 52 2407

# Chapter 2 **Global Remote Control Commands of ONU**

## 2.1 **Global Remote Control Commands of ONU**

Global remote control commands of ONU are shown below:

- **epon reboot onu**
- **epon update onu image**
- **epon update onu eeprom-image**
- **epon ace-recover**
- **epon commit-onu-image-update**
- **epon switch-onu-pon**
- **epon switch-onu-pon-and-back**
- **epon onu encryption**
- **epon onu mac address-table static**
- **epon onu clear mac address-table dynamic**
- **epon onu mac address-table learning**
- **epon onu mac address-table aging-time**
- **epon onu scheduler policy**
- **epon onu scheduler wrr bandwidth**
- **epon onu cos map**
- **epon onu scheduler-pon policy**
- **epon onu scheduler-pon wrr bandwidth**
- **epon onu cos-pon map**
- **epon onu port-protect**
- **epon onu ip address**
- **epon onu spanning-tree**
- **epon onu mirror**

- **epon onu filter**
- **epon onu serial-mode**
- **epon onu serial-remote**
- **epon onu vlan**
- **show epon interface onu basic-info**
- **show epon interface onu ctc basic-info**
- **show epon onu mac address-table**

## 2.2 epon reboot onu

### *Syntax*

**epon reboot onu {mac-address** *value* **| interface epon** *slot/port:sequence***}**

To restart ONU, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *value* | The format of the MAC address is **<xxxx.xxxx.xxxx>**. |
| *slot/port*[*:sequence*] | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

None

### *Example*

The following example shows how to restart the registered ONU on port EPON0/1:1.

switch# epon reboot onu interface epon0/1:1

## 2.3 epon update onu image

### *Syntax*

**epon update onu image** *image_name* **interface epon** *slot/port*[*:sequence*]

To update the ONU version remotely through OLT, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *image_name* | Contains up to 32 characters. |
| *slot/port*[*:sequence*] | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

1. Unless the to-be-updated software matches the corresponding ONU type can this software not be updated.

2. During the update process of ONU software, do not cut off the power of ONU. After the completion of ONU update, OLT will notify users of the successful ONU update by the way of log, and ONU will use the updated version for rebooting.

3. After the ONU version is updated and restarted, you need to run **epon commit-onu-image-update** on OLT to confirm the ONU version.

### *Example*

The following example shows how to update the ONU version on port EPON0/1:1.

```
OLT# epon update onu image onu_bin interface epon epon0/1:1
```

## 2.4 epon commit-onu-image-update

### *Syntax*

**epon commit-onu-image-update {mac-address** *value* **| interface epon** *slot/port:sequence***}**

To confirm the update of the ONU version, run the above-mentioned command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *value* | The format of the MAC address is **<xxxx.xxxx.xxxx>**. |
| *slot/port*[:*sequence*] | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

This command is used after the ONU version is upgraded, restarted and re-registered.

### *Example*

The following example shows how to confirm the upgrade of the ONU version on port EPON0/1:1.

switch# epon commit-onu-image-update interface epon0/1:1

## 2.5 epon update onu eeprom-image

### *Syntax*

**epon update onu eeprom-image** *image_name* **interface epon** *slot/port:sequence*

The ONU EEPROM file has saved the MAC address and the sequence ID of ONU. If the information need be altered, the ONU EEPROM file need be updated. This command is used to update the ONU EEPROM file remotely from OLT.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *image_name* | Contains up to 32 characters. |
| *slot/port:sequence* | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

1. After the ONU EEPROM file is updated, ONU need be restarted and then the newly configured information takes effect.
2. During the update process of ONU software, do not cut off the power of ONU.

### *Example*

The following example shows how to use the **onu_eeprom.dat** file to update the ONU EEPROM on port EPON0/1:1.

OLT# epon update onu eeprom-image onu_eeprom.dat interface epon epon0/1:1

## 2.6 epon ace-recover

### *Syntax*

**epon ace-recover {mac-address** *value* **| interface epon** *slot/port:sequence***}**

To resume the default settings of ACE ONU, run the above-mentioned command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *value* | The format of the MAC address is **<xxxx.xxxx.xxxx>**. |
| *slot/port*[*:sequence*] | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

This command is valid only for the ONU of ACE.

### *Example*

The following example shows how to resume the default settings of ACE ONU on port EPON0/1:1.

Switch# epon ace-recover interface epon0/1:1

## 2.7 epon switch-onu-pon

### *Syntax*

**epon switch-onu-pon interface epon** *slot/port:sequence*

To switch the current PON port on ONU, run the above-mentioned command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/port*[*:sequence*] | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

This command is only valid for ONU with dual PON ports.

### *Example*

The following example shows how to switch the current PON port of ONU on port epon0/1:1.

switch# epon switch-onu-pon interface epon0/1:1

## 2.8 epon switch-onu-pon-and-back

### *Syntax*

**epon switch-onu-pon-and-back interface epon** *slot/port:sequence*

To switch the current PON port of ONU and then switch back to the original PON port, run the above-mentioned command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/port*[*:sequence*] | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Privileged mode

### *Remarks*

This command is only valid for ONU with dual PON ports.

### *Example*

The following example shows how to switch the current PON port of ONU and then switch back to the original PON port on port epon0/1:1.

switch# epon switch-onu-pon-and-back interface epon0/1:1

## 2.9 epon onu encryption

### *Syntax*

**epon onu encryption triple-churning**

**no epon onu encryption**

To set the ONU encryption mode, run **epon onu encryption triple-churning**.

***Parameter***

None

***Default value***

The default encryption mode of ONU is triple-churning.

***Command mode***

LLID port configuration mode

***Remarks***

The encryption function must be set for OLT and ONU simultaneously and the encryption modes are same, and then the encryption function can take effect.

***Example***

The following example shows how to set the ONU encryption mode on port EPON0/1:1 to **triple churning**.

```
switch_config# interface EPON0/1:1
switch_config_epon0/1:1# epon onu encryption triple-churning
```

## 2.10 epon onu mac address-table static

Syntax

**[no]epon onu mac address-table static** *mac-addr* **port** *port-num*

To add a static MAC address, run **mac address-table static *mac-addr* vlan *vlan-id* interface *interface-id***. *To cancel the static MAC address, run* ***no*** **mac address-table static *mac-addr* vlan *vlan-id* interface *interface-id***.

Parameter

| Parameter | Parameter description |
|---|---|
| *mac-addr* | Means an MAC address. Value range: H.H.H |
| *port-num* | Physical port that the MAC address belongs to |

### Default value

None

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to bind the MAC address, 0004.5600.67ab, to the UNI2 port.

switch_config#interface e0/1:1

switch_config_epon0/1:1#epon onu mac address-table static 0004.5600.67ab port 2

## 2.11 epon onu clear mac address-table dynamic

### Syntax

epon onu clear mac address-table dynamic [ address *H.H.H* | port *num*]

To clear the dynamic MAC address of ONU, run the previous command.

### Parameter

| Parameter | Parameter description |
|---|---|
| **H.H.H** | Stands for the MAC address that is designated to be deleted. |
| *Num* | Stands for the UNI port number. |

### Default value

None

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to remove the MAC address of the UNI1 port, which is corresponded by the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu clear mac address-table dynamic port 1

## 2.12 epon onu mac address-table learning

Syntax

**epon onu mac address-table learning { disable | svl }**

**no epon onu mac address-table learning**

To configure the learning of ONU MAC address table, run **epon onu mac address-table learning { disable | svl }**.

Parameter

| Parameter | Parameter description |
|---|---|
| **disable** | Shuts down MAC address learning. |
| **svl** | VLAN learning is shared by default. |

Default value

VLAN learning is shared by default.

Remarks

This command is configured in LLID port mode.

Example

The following example shows how to shut down ONU MAC address learning which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu mac address-table learning disable

## 2.13 epon onu mac address-table aging-time

Syntax

**epon onu mac address-table aging-time {** 0 | *time* **}**

**no epon onu mac address-table aging-time**

To set the aging time of the MAC address table of ONU, run **epon onu mac address-table aging-time {** 0 | ***time*** **}**.

Parameter

| Parameter | Parameter description |
|---|---|
| **0** | Means that the MAC address does not age. |
| **time** | Stands for the aging time of the MAC address, which ranges from 15 to 3825 seconds. |

Default value

300S

Remarks

This command is configured in LLID port mode.

Example

The following example shows how to set the aging time of the MAC address of ONU which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu mac address-table aging-time 200

## 2.14 epon onu scheduler policy

Syntax

**epon onu scheduler policy { sp | wrr }**

**no epon onu scheduler policy**

To set the schedule policy of the ONU CoS priority queue, run **epon onu scheduler policy { sp | wrr }**.

Parameter

| Parameter | Parameter description |
|---|---|
| **sp** | Uses the SP schedule policy. |
| **wrr** | Uses the WRR schedule policy. |

### Default value

The SP schedule policy is used by default.

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to set the ONU CoS priority queue of the LLID port, epon0/1:1, to wrr.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu scheduler policy wrr

## 2.15 epon onu scheduler wrr bandwidth

### Syntax

**epon onu scheduler wrr bandwidth** *weight1 ... weightn*

**no epon onu scheduler wrr bandwidth**

To set the bandwidth of the ONU CoS priority queue, run **epon onu scheduler wrr bandwidth *weight1...weightn***.

**Note:**

At present, the ONU chip does not support the bandwidth settings of the priority queue. The bandwidth settings is a fixed value, 1:2:4:8.  2 : 4 : 8。

### Parameter

| Parameter | Parameter description |
|---|---|
| *weight1 ... weightn* | Values of four CoS priority queues, ranging between 0 and 255 |

### Default value

The weights of four CoS priority queues are 1, 2, 4 and 8 respectively.

### Remarks

This command is configured in LLID port mode.

Example

The following example shows how to set the bandwidth of the ONU CoS priority queue of the LLID port, epon0/1:1, to 10, 50, 100, or 200.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu scheduler wrr bandwidth 10 50 100 200

## 2.16 epon onu cos map

Syntax

**epon onu cos map** *quid cos1 ... cosn*

**no epon onu cos map**

To set the ONU CoS priority queue, run **epon onu cos map *quid cos1..cosn***.

Parameter

| Parameter | Parameter description |
|---|---|
| *quid* | ID of the COS priority queue, ranging between 1 and 4 |
| *cos1 ... cosn* | CoS value defined by IEEE802.1p, ranging between 0 and 7 |

Default value

| CiS | Priority Queue |
|---|---|
| 0, 1 | 1 |
| 2, 3 | 2 |
| 4, 5 | 3 |
| 6，7 | 4 |

Remarks

This command is configured in LLID port mode.

Example

The following example shows how to map ONU priority values (3, 4, 5) of the LLID epon0/1:1 port to queue 3.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu cos map 3 3-5

## 2.17 epon onu scheduler-pon policy

### Syntax

**epon onu scheduler-pon policy { sp | wrr }**

**no epon onu scheduler-pon policy**

To set the schedule policy of the uplink ONU CoS priority queue, run **epon onu scheduler-pon policy { sp | wrr }**.

### Parameter

| Parameter | Parameter description |
|---|---|
| **sp** | Uses the SP schedule policy. |
| **wrr** | Uses the WRR schedule policy. |

### Default value

The SP schedule policy is used by default.

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to set the uplink priority queue of ONU, which corresponds to the LLID port (epon0/1:1), to wrr.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu scheduler-pon policy wrr

## 2.18 epon onu scheduler-pon wrr bandwidth

### Syntax

**epon onu scheduler-pon wrr bandwidth** *weight1 ... weightn*

**no epon onu scheduler-pon wrr bandwidth**

To set the bandwidth of the ONU CoS priority queue, run **epon onu scheduler wrr bandwidth *weight1...weightn***.

Parameter

| Parameter | Parameter description |
|---|---|
| *weight1 ... weightn* | Values of eight CoS priority queues, ranging between 0 and 255 |

Default value

The following example shows how to set the weight values of eight CoS priority queues to **1**, **1**, **1**, **1**, **1**, **1**, **1** and **1** respectively.

Remarks

This command is configured in LLID port mode.

Example

The following example shows how to set the bandwidth of the ONU CoS priority queue of the LLID port, epon0/1:1, to 1, 2, 4, or 8.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu scheduler-pon wrr bandwidth 1 2 4 8 16 32 64 128

## 2.19 epon onu cos-pon map

Syntax

**epon onu cos-pon map** *quid cos1 ... cosn*

**no epon onu cos-pon map**

To set the ONU CoS priority queue, run **epon onu cos map *quid cos1..cosn***.

Parameter

| Parameter | Parameter description |
|---|---|
| *quid* | ID of the COS priority queue, ranging between 1 and 8 |
| *cos1 ... cosn* | CoS value defined by IEEE802.1p, ranging between 0 and 7 |

Default value

| CiS | Priority Queue |
|---|---|

| | |
|---|---|
| 0 | 1 |
| 1 | 2 |
| 2 | 3 |
| 3 | 4 |
| 4 | 5 |
| 5 | 6 |
| 6 | 7 |
| 7 | 8 |

Remarks

This command is configured in LLID port mode.

Example

The following example shows how to map ONU priority values (3, 4, 5) of the LLID epon0/1:1 port to queue 3.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1#epon onu cos-pon map 3 3-5

## 2.20 epon onu port-protect

Syntax

**epon onu port-protect**

**no epon onu port-protect**

To configure ONU port isolation, run **epon onu port-protect**.

Parameter

Default value

ONU port isolation is enabled by default.

### Remarks

This command is configured in port configuration mode.

### Example

The following example shows how to enable the isolation of the ONU port which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port-protect

## 2.21 epon onu ip address

### Syntax

ONU，命令如下：

**epon onu ip address { dhcp | static** *ip-address netmask***}**

bstar ONU，命令如下：

**epon onu ip address** *A.B.C.D* **netmask** *A.B.C.D* **gateway** *A.B.C.D* **vlan** *value*

**no epon onu ip address**

To set the ONU IP address, run **epon onu ip address { dhcp | static *ip-address netmask*}**.

### Parameter

| Parameter | Parameter description |
|---|---|
| **Dhcp** | Sets dynamic IP address obtainment for ONU. |
| **Static** | Sets static IP address obtainment for ONU. |
| *ip-address* | Stands for the static IP address. |
| *Netmask* | Subnet mask |
| *A.B.C.D* | Address |
| *Value* | Vlan id |

### Default value

ONU 默认 DHCP 模式，如果 onu 获取不到，使用默认的 192.168.0.1

### Remarks

This command is configured in port configuration mode.

### Example

The following example shows how to set the ONU IP address mode to static and set the IP address to 172.0.0.10.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu ip address static 172.0.0.10 255.255.0.0

## 2.22 epon onu spanning-tree

### Syntax

**epon onu spanning-tree**

**no epon onu spanning-tree**

开启或关闭 ONU Spanning Tree。

### Parameter

### Default value

关闭 Spanning Tree 功能。

### Remarks

This command is configured in port configuration mode.

### Example

在 LLID 端口 epon0/1:1 开启 spanning tree。

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu spanning-tree

## 2.23 epon onu mirror

Syntax

**epon onu mirror session** *num* **destination** *dest-port* **source** *src-port* **[both | rx | tx]**

**no epon onu mirror session** *num*

配置 ONU 镜像功能。

Parameter

| Parameter | Parameter description |
|---|---|
| **num** | 镜像会话编号 |
| **dest-port** | 镜像目的端口号 |
| *src-port* | 镜像源端口号 |
| **both** | 镜像入口和出口 |
| **rx** | 镜像入口 |
| **tx** | 镜像出口 |

Default value

无镜像配置

Remarks

This command is configured in port configuration mode.

Example

配置 LLID 端口 epon0/1:1 镜像功能，将端口 1 的入口报文镜像到端口 2。

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu mirror session 1 destination 2 source 1 rx

## 2.24 epon onu filter

Syntax

**epon onu filter {icmp | arp | bpdu | igmp} threshold** *value*

**no epon onu filter {icmp | arp | bpdu | igmp}**

配置 ONU 防攻击功能。

Parameter

| Parameter | Parameter description |
|---|---|
| **value** | 每秒允许收到的报文字节数。 Value range: 52000 |

Default value

无防攻击功能

Remarks

This command is configured in port configuration mode.

Example

配置 LLID 端口 epon0/1:1 防 BPDU 攻击，阈值每秒 20 个。

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu filter bpdu threshold 20

## 2.25 epon onu serial-mode

Syntax

**epon onu serial-mode {tcp-server | tcp-client | udp} port** *port-value* [**timeout** *timeout-value*]

**no epon onu serial-mode**

Sets the CTC mode of ONU.

Parameter

| Parameter | Parameter description |
|---|---|
| **tcp-server** | tcp server模式 |
| **tcp-client** | tcp client模式 |
| **udp** | udp模式 |
| *port-value* | tcp或udp端口号，1-65535 |

| | |
|---|---|
| *timeout-value* | 超时时间，只有在tcp-server模式下才可以配置，1-65535，单位S |

Default value

关闭串口

Remarks

This command is configured in port configuration mode.

Example

配置 LLID 端口 epon0/1:1 串口工作模式为 tcp-server，tcp 端口号为 12000，超时时间为 100S。

switch_config#interface e0/1:1

switch_config_epon0/1:1# epon onu serial-mode tcp-server port 12000 timeout 100

## 2.26 epon onu serial-remote

Syntax

**epon onu serial-remote** *index*

**no epon onu serial-remote** *index*

配置 ONU 的串口前置机 IP 地址。

Parameter

| Parameter | Parameter description |
|---|---|
| **index** | 前置机索引 |

Default value

无前置机 IP 地址。

Remarks

This command is configured in port configuration mode.

### Example

配置 LLID 端口 epon0/1:1 串口前置机 IP 地址为索引 1 对应的 IP 地址。

switch_config# serial-bridge remote 1 address 10.0.0.1

switch_config#interface e0/1:1

switch_config_epon0/1:1# epon onu serial-remote 1

## 2.27 epon onu vlan

### Syntax

**epon onu vlan** *word*

**no epon onu vlan** *word*

在 ONU 上创建或删除 vlan。

### Parameter

| Parameter | Parameter description |
|---|---|
| *word* | Vlan id范围。 Value range: 1-4094 |

### Default value

None

### Remarks

This command is configured in port configuration mode.

### Example

配置 LLID 端口 epon0/1:1 下的 ONU 上创建 vlan 1-20。

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu vlan 1-20

# 2.28 show epon interface onu basic-info

### *Syntax*

**show epon interface** *slot/port:sequence* **onu basic-info**

To display the basic ONU information, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/por*[*:sequence* | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Any mode will do.

### *Remarks*

The basic ONU information cannot be displayed until ONU is registered.

### *Example*

The following is the basic ONU information of port e0/1:1.

```
OLT_config#show epon interface epon 0/1:1 onu basic-info
ONU Building version: 10.0.1A
ONU Compiled time: 15:49:06, Aug 28 2009

ONU SDK software version: 3.4.2.2
ONU chip type: CS8016.B0
ONU chip version: 0
ONU loader version: 02.00.01-1241677674

EEPROM Control Flag          : 0xaa
MAC address                  : 00e0.0f46.5f41
EEPROM version               : 1
HEC mode                     : 0
IGMP snooping mode           : 1
OAM version                  : 0
```

I2C interface mode : 1
MPCP timeout : 1000
Vendor code : 0
Model number : 0
Hardware version : 0
Year : 0
Week : 256
Serial number : 12200110
CRC Mode : 0
Query Key : 0
Disable auto reset : 0
Enable tk default mode : 0
Normal bringup mode : 1
PON Laser always on : 0
PON Laser ctrl polarity : 0
PON admin status : 1
UNI port MAC type : 0
UNI Auto negotiation : 1
UNI MII type : 3
UNI PinStrapOverWrite : 0
UNI admin status : 1
Security flag 802.1x mode : 1
Security flag UNI port control : 0
Security flag mcst/bcst control: 1
Security flag dot1x tunnel : 0
IOPVendorCode : 255
ONUConfigCode : 254
ONUCtrlVlan : 0
ctc_onu : 0x11-0x11-0x11
Laser on time : 64
Laser off time : 64
CTC OAM Bypass Mode : 0
CRC Mode Config : 0
FEC Enabled : 0
Unknown Multicast Drop : 0
Tx error detection : 0
IGMP vlan learning mode : 0
Laser Delay : 0
User vendor info : UTST/A002
Deregister backofftime : 60
Mdio address : 1
Dying Gasp Trigger Mode : 0
MII enable : 0
Switch Port Num : 4
KT ONU : 0x00-0x00-0x00
Classification Rule Num : 0

# 2.29 show epon interface onu ctc basic-info

### *Syntax*

**show epon interface** *slot/port:sequence* **onu ctc basic-info**

To display the CTC-defined basic ONU information, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *slot/por*[*:sequence* | The **slot** parameter stands for the slot number, the **port** parameter stands for the EPON port number and the **sequence** parameter stands for the LLID sequence. |

### *Default value*

None

### *Command mode*

Any mode will do.

### *Remarks*

The basic CTC-defined ONU information cannot be displayed until ONU is registered.

### *Example*

The following is the basic CTC-defined ONU information of port e0/1:1.

```
OLT_config#show epon interface epon 0/1:1 onu ctc basic-info
ONU Vender ID          : BDCM
ONU MODEL ID           : 0x20000000
ONU ID                 : 00e0.0fa7.0150
Hardware Version       : 0x20 30 30 30 00 00 00 00
Software Version       : 0x33 34 32 00 00 00 00 00 00 00 00 00 00 00 00 00
Firmware Version       : 0x00 00 00 02 00 03 00 04 00 02
Chipset Vendor ID      : BD
Chipset MODEL ID       : 0x2000
Chipset Revision       : 1
Chipset Date           : 08/01/29
Service Supported      :
  Support GE           : NO
  Support FE           : YES
  Support VOIP         : NO
```

```
   Support TDM CES     : NO
Number of GE Ports   : 0
Bitmap of GE Ports   :
Number of FE Ports   : 4
Bitmap of FE Ports   : 1-4
Number of POTS ports: 0
Number of E1 port     : 0
Number of US Queues : 8
QueueMax per US Port: 8
Number of DS Queues : 8
QueueMax per DS Port: 8
Battery Backup          : 0
OLT_config#
```

## 2.30 show epon onu mac address-table

### Syntax

**show epon interface** *interface-id* **onu mac address-table**

To display the ONU MAC address table, run the previous command.

### Parameter

| Parameter | Parameter description |
|---|---|
| *interface-id* | Stands for the LLID port ID. |

### Default value

None

### Remarks

This command is used to display the ONU MAC address table.

### Example

The following information shows the ONU MAC address table of the LLID port, epon0/1:1.

```
switch#show epon interface epon 0/1:1 onu mac address-table
```

# Chapter 3 **Remote UNI Control Commands of ONU**

## 3.1 **Remote UNI Control Commands of ONU**

Global remote control commands of ONU are shown below:

- **epon onu port ctc vlan mode**
- **epon onu port ctc vlan translation-entry**
- **epon onu port ctc vlan aggregation-entry**
- **epon onu port ctc flow-control**
- **epon onu port mac address-table dynamic maximum**
- **epon onu port storm-control**
- **epon onu port ctc rate-limit**
- **epon onu port loopback detect**
- **epon onu port duplex**
- **epon onu port speed**
- **epon onu port ctc auto-negotiation**
- **epon onu port block mac**
- **epon onu port default-cos**
- **epon onu port ctc shutdown**
- **epon onu port qos policy**
- **epon onu port ctc qos policy**
- **epon onu port mac access-group**
- **epon onu port ip access-group**
- **epon onu serial serial-attribute**
- **epon onu serial serial-buffer**
- **epon onu serial serial-keepalive**
- **epon onu serial loopback detect**
- **show epon onu {port | serial} statistics**

- **show epon onu {port | serial} state**
- **show epon onu port ctc vlan**

## 3.2 epon onu port ctc vlan mode

### *Syntax*

**epon onu port** *port-num* **ctc vlan mode {transparent | tag** *value* **| translation** *value* **| vlan-stacking** *value* **| aggregation** *value* **}**

**no epon onu port** *port-num* **ctc vlan mode**

To set the processing mode of UNI VLAN Tag of ONU, run the previous command.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| *num* | Stands for the UNI port. |
| *value* | Stands for the PVID value of the UNI interface and this value ranges from 1 to 4094. |

### *Default value*

The default processing mode of VLAN tag is **transparent**.

### *Command mode*

LLID port configuration mode

### *Remarks*

None

### *Example*

The following example shows how to set the processing mode of UNI VLAN tag of ONU to **tag**.

switch_config_e0/1:1# epon onu port 1 ctc vlan mode tag pvid 3

## 3.3 epon onu port ctc vlan translation-entry

### *Syntax*

**epon onu port *num* ctc vlan translation-entry *old-vid new-vid***

**no epon onu port *num* ctc vlan translation-entry *old-vid new-vid***

This command is used to set the translation entries of the ONU UNI port.

### *Parameter*

| Parameter | Parameter description |
|---|---|
| num | Stands for the UNI port number. |
| ***old-vid*** | Stands for the value of the SPVLAN translation entries of the UUI port, which ranges between 1 and 4094. |
| ***new-vid*** | Stands for the value of the CVLAN translation entries of the UUI port, which ranges between 1 and 4094. |

### *Default value*

None

### *Command mode*

LLID port configuration mode

### *Remarks*

The translation entry takes effect only when the VLAN of the ONU UNI port is in translation or vlan-stacking mode.

### *Example*

The following example shows how to set the number of the translation entries of UNI1 of ONU on the EPON0/1:1 to 1000 to 2000.

OLT_config_e0/1:1# epon onu port 1 ctc vlan translation-entry *1000 2000*

## 3.4 epon onu port ctc vlan aggregation-entry

### *Syntax*

**epon onu port *num* ctc vlan aggregation-entry *old-vid-range new-vid***

**no epon onu port *num* ctc vlan aggregation-entry *old-vid-range new-vid***

This command is used to set the translation entries of the ONU UNI port.

### *Parameter*

| Parameter | Parameter description |
|---|---|

| | |
|---|---|
| num | Stands for the UNI port number. |
| ***old-vid-range*** | Stands for the value of the SPVLAN translation entries of the UUI port, which ranges between 1 and 4094. |
| ***new-vid*** | Stands for the value of the CVLAN translation entries of the UUI port, which ranges between 1 and 4094. |

***Default value***

None

***Command mode***

LLID port configuration mode

***Remarks***

The translation entry takes effect only when the VLAN of the ONU UNI port is in aggregation mode.

***Example***

The following example shows how to set the number of the VLAN aggregation entries of UNI1 of ONU on the EPON0/1:1 to 101-108 to 2000.

OLT_config_e0/1:1# epon onu port 1 ctc vlan aggregation-entry *101-108 2000*

## 3.5 epon onu port ctc flow-control

Syntax

**epon onu port *num* ctc flow-control**

**no epon onu port** *num* **ctc flow-control**

To configure flow control for an ONU interface, run **epon onu port *num* flow-control**.

Parameter

| Parameter | Parameter description |
|---|---|
| ***num*** | Stands for the ONU UNI port ID. |

Default value

The flow control function of the port is disabled by default.

Remarks

This command is configured in port configuration mode.

Example

The following example shows how to enable the flow control of ONU UNI port 1 which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 ctc flow-control

## 3.6 epon onu port mac address-table dynamic maximum

Syntax

**epon onu port** *port-num* **mac address-table dynamic maximum** *addr-num*

**no epon onu port** *port-num* **mac address-table dynamic maximum**

To configure the maximum number of MAC addresses for a port, run the first one of the previous two commands.

Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |
| *addr-num* | Stands for the maximum number of MAC addresses, which ranges between 1 and 255. |

Default value

The number of addresses is not limited.

Remarks

This command is configured in LLID port mode.

Example

The following example shows how to set the maximum number of MAC addresses of ONU UNI port 2 which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 2 mac address-table dynamic maximum 3

# 3.7 epon onu port storm-control

## Syntax

**epon onu port** *port-num* **storm-control mode** *mode-num* **threshold** *count*

**no epon onu port** *port-num* **storm-control**

To configure storm control for an ONU UNI port, run **epon onu port *port-num* storm-control mode *mode-num* threshold *count***.

## Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |
| *mode-num* | Storm control mode:<br>1、 Only the broadcast packets are limited.<br>2、 Both broadcast and multicast packets are limited.<br>3、 Broadcast/multicast/unknown unicast packets are limited.<br>4、 All packets are limited. |
| *count* | Defines the threshold flux of the storm.<br>Value range: 256~100000 |

## Default value

The storm control function is disabled by default.

## Remarks

This command is configured in LLID port mode.

## Example

The following example shows how to set the storm control rate of the ONU UNI1 port, which corresponds to the Epon0/1:1 port, to 1000.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu storm-control mode 1 threshold 1000

## 3.8 epon onu port ctc rate-limit

### Syntax

**epon onu port** *port-num* **ctc rate-limit** *band* **{ ingress | egress}**

**no epon onu port** *port-num* **ctc rate-limit { ingress | egress}**

To configure the rate limitation for an ONU port, run **epon onu port *port-num* rate-limit *band* { ingress | egress}**.

### Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |
| *band* | Means the rate of the flow. The flow rate for the 100M port is from 64Kbps to 100Mbps and the step is 1Kbps. |
| **ingress** | Functions on the ingress port. |
| **egress** | Functions on the egress port. |

### Default value

The rate limitation is shut down on the port by default.

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to set rate limitation of ONU UNI port 1, which corresponds to the LLID port, epon0/1:1, to 128Kbps.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 ctc rate-limit 128 egress

## 3.9 epon onu port loopback detect

### Syntax

**epon onu port** *port-num* **loopback detect**

**no epon onu port** *port-num* **loopback detect**

To configure loopback detection for an ONU UNI port, run **epon onu port *port-num* loopback detect**.

### Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |

### Default value

The loopback detection of the port is shut down.

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to enable loopback detection on ONU UNI port 1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 loopback detect

## 3.10 epon onu port duplex

### Syntax

**epon onu port** *port-num* **duplex { half | full | auto }**

**no epon onu port** *port-num* **duplex**

To configure the duplex mode on the ONU UNI port, run **epon onu port *port-num* duplex { half | full | auto }**.

### Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |
| **half** | Sets the duplex mode of the port to half duplex. |
| **full** | Sets the duplex mode of the port to full duplex. |
| **auto** | Sets the duplex mode of the port to auto-negotiable. |

### Default value

The default duplex mode of the port is auto-negotiable.

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to set ONU UNI port 1, which corresponds to the LLID port, epon0/1:1, to full deplex.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 duplex full

## 3.11 epon onu port speed

### Syntax

**epon onu port** *port-num* **speed { 10 | 100 | auto }**

**no epon onu port** *port-num* **speed**

To configure the speed of ONU UNI port, run **epon onu port *port-num* speed { 10 | 100 | auto }**.

### Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |
| **10** | Sets the speed of a port to 10M. |
| **100** | Sets the speed of a port to 100M. |
| **auto** | Sets the speed of the interface to **auto**. |

### Default value

Automatic negotiation

### Remarks

This command is configured in LLID port mode.

Example

The following example shows how to set the speed of ONU UNI port 1, which corresponds to the LLID port, epon0/1:1, to 100M.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 speed 100

## 3.12 epon onu port ctc auto-negotiation

Syntax

**epon onu port** *port-num* **ctc auto-negotiation**

**no epon onu port** *port-num* **ctc auto-negotiation**

The above-mentioned commands are used to enable or disable the auto negotiation of the ONU UNI port.

Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |

Default value

The auto negotiation is enabled by default.

Remarks

This command is configured in LLID port mode.

Example

The following example shows how to enable the auto-negotiation of ONU which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 ctc auto-negotiation

## 3.13 epon onu port block mac

### Syntax

**epon onu port** *port-num* **epon onu port** *port-num* **block mac {src** *H.H.H* **| dest** *H.H.H***}**

**no epon onu port** *port-num* **epon onu port** *port-num* **block mac {src** *H.H.H* **| dest** *H.H.H***}**

To set the frame filtration of ONU UNI port, run **epon onu port** *port-num* **epon onu port** *port-num* **block mac {src** *H.H.H* **| dest** *H.H.H***}**.

### Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |
| **H.H.H** | Stands for the MAC address. |

### Default value

None

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to set the speed of ONU UNI port 1, which corresponds to the LLID port, epon0/1:1, to 100M.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 block mac src 0.0.1 dest 0.0.2

## 3.14 epon onu port default-cos

### Syntax

**epon onu port** *port-num* **default-cos** *value*

**no epon onu port** *port-num* **default-cos**

To set the default CoS Value of the ONU UNI port, run **epon onu port** *port-num* **default-cos** *value*.

### Parameter

| Parameter | Parameter description |
|---|---|
| *port-num* | Stands for the ONU UNI port ID. |
| **value** | Stands for the default CoS value. |

### Default value

0

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to set the default CoS value of ONU UNI port 1, which corresponds to the LLID port, epon0/1:1, to 2.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 default-cos 2

## 3.15 epon onu port ctc shutdown

### Syntax

**epon onu port** *num* **ctc shutdown**

**no epon onu port** *num* **ctc shutdown**

To enable the ONU UNI port, run **epon onu port *num* ctc shutdown**. To disable the ONU UNI port, run **no epon onu port *num* ctc shutdown**.

### Parameter

| Parameter | Parameter description |
|---|---|
| *num* | Stands for the ONU UNI port ID. |

### Default value

The UNI port is enabled by default.

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to set ONU UNI port 1, which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu port 1 ctc shutdown

## 3.16 epon onu port qos policy

### Syntax

**epon onu port *num* qos policy *name***

**no epon onu qos policy *name***

To configure the QoS policy of the ONU UNI port, run **epon onu port *num* qos policy *name***.

### Parameter

| Parameter | Parameter description |
|---|---|
| num | Stands for the ONU UNI port number. |
| *name* | Stands for the name of QoS policy mapping. |

### Default value

None

### Remarks

This command is configured in LLID port mode.

At present, the policy map only supports the following actions: drop, forward, bandwidth and edit the vlan tag of the outer layer.

### Example

The following example shows how to apply the QoS policy map, pmap, on ONU port 1, which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# **epon onu port 1 ctc qos policy pmap**

## 3.17 epon onu port ctc qos policy

### Syntax

**epon onu port *num* ctc qos policy *name***

**no epon onu qos policy *name***

To set the QoS policy of the ONU UNI port, run **epon onu port *num* ctc qos policy *name***.

### Parameter

| Parameter | Parameter description |
|---|---|
| num | Stands for the ONU UNI port number. |
| *name* | Stands for the name of QoS policy mapping. |

### Default value

None

### Remarks

This command is configured in LLID port mode.

At present, the action of the policy map only supports cos and queue, which of course depends on different ONUs.

### Example

The following example shows how to apply the QoS policy map, pmap, on ONU, which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# **epon onu port 1 ctc qos policy pmap**

## 3.18 epon onu port mac access-group

### Syntax

**epon onu port *num* mac access-group *name***

**no epon onu port *num* mac access-group *name***

To set the MAC access list of the ONU UNI port, run **epon onu port *num* mac access-group *name***.

### Parameter

| Parameter | Parameter description |
|---|---|
| num | Stands for the ONU UNI port number. |
| *name* | Stands for the name of the MAC access list. |

### Default value

None

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to apply the MAC access list, mac1, on port 1 of ONU, which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# **epon onu port 1 mac access-group mac1**

## 3.19 epon onu port ip access-group

### Syntax

**epon onu port *num* ip access-group *name***

**no epon onu port *num* ip access-group *name***

To set the IP access list of the ONU UNI port, run **epon onu port *num* ip access-group *name***.

### Parameter

| Parameter | Parameter description |
|---|---|
| num | Stands for the ONU UNI port number. |
| *name* | Stands for the name of the MAC access list. |

### Default value

None

### Remarks

This command is configured in LLID port mode.

### Example

The following example shows how to apply the IP access list, p1, on port 1 of ONU, which corresponds to the LLID port, epon0/1:1.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# **epon onu port 1 ip access-group p1**

## 3.20 epon onu serial serial-attribute

### Syntax

**epon onu serial *num* serial-attribute {speed *speed-value* | databits *databits-value* | stopbits *stopbits-value* | parity {none | odd | even | space | mark} | flow-control {none | software | hardware} | bus-type { RS232 | RS485} | duplex {half | full}}**

**no epon onu serial *num* serial-attribute [speed | databits | stopbits | parity | flow-control | bus-type | duplex]**

To set the attributes of a serial interface of ONU, run the first one of the previous two commands.

### Parameter

| Parameter | Parameter description |
|---|---|
| num | Stands for the number of the serial interface of ONU. |
| ***speed-value*** | Stands for the rate of the serial interface. |
| ***databits-value*** | Stands for the data bit. |
| ***stopbits-value*** | Stands for the stop bit. |
| **none \| odd \| even \| space \| mark** | Stands for the check mode.<br>none: means there is no check.<br>odd: means it is the odd check.<br>even: means it is the even check.<br>space: means it is the **space** check (0 check). |

| | |
|---|---|
| | mark: means it is the mark check (1 check). |
| **software \| hardware** | Stands for the flow control mode.<br>software: means it is the software-based flow control mode.<br>hardware: means it is the hardware-based flow control mode. |
| **RS232 \| RS485** | Stands for the mode of the serial interface.<br>RS232: Stands for the 232 mode of the serial interface.<br>RS485: Stands for the 485 mode of the serial interface. |
| **half \| full** | Duplex mode<br>half: half duplex<br>full: full duplex |

## Default value

Speed: 9600

databits: 8

stopbits: 1

parity: none (no check)

flow-control: none (no flow control)

bus-type: RS485

duplex: half

## Remarks

This command is configured in LLID port mode.

## Example

The following example shows how to set the speed to 115200, databits to 7, stopbits to 1, parity to odd, flow control to hardware, bus type to RS232 and duplex to half for serial interface 1 of ONU, which corresponds to the LLID port, epon0/1:1.

switch_config#interface e0/1:1

switch_config_epon0/1:1# **epon onu serial 1 serial-attribute speed 115200 databits 7 stopbits 1 parity odd flow-control hardware bus-type RS232 duplex half**

# 3.21 epon onu serial serial-buffer

## Syntax

**epon onu serial *num* serial-buffer {read-interval *time* | read-bytes *bytes*}**

**no epon onu serial *num* serial-buffer [read-interval | read-bytes]**

To set the buffer of the serial interface of ONU, run the first one of the previous two commands.

## Parameter

| Parameter | Parameter description |
|---|---|
| num | Stands for the number of the serial interface of ONU. |
| *time* | Stands for the maximum read time of the buffer. |
| *bytes* | Stands for the maximum bytes of the buffer. |

## Default value

read-interval：

read-bytes：

## Remarks

This command is configured in LLID port mode.

## Example

The following example shows how to set the maximum read time of the buffer of serial interface 1, which corresponds to the LLID port, epon0/1:1, to 50ms.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# **epon onu serial 1 serial-buffer read-interval 50 read-bytes 1000**

## 3.22 epon onu serial serial-keepalive

### Syntax

**epon onu serial** *num* **serial-keepalive idle** *idle-value* **timeout** *timeout-value* **count** *count-value*

**no epon onu serial** *num* **serial-keepalive**

To set the keepalive function of the serial interface of ONU, run the first one of the previous two commands.

### Parameter

| Parameter | Parameter description |
|---|---|
| *num* | Stands for the number of the serial interface of ONU. |
| *idle-value* | Stands for the idle time. |
| *timeout-value* | Stands for the timeout time of the keepalive packets. |
| *count-value* | Stands for the transmission times of the keepalive packets. |

### Default value

There is no the keepalive function.

### Remarks

This command is configured in port configuration mode.

### Example

The following example shows how to enable keepalive function of serial interface 1, that is, the idle time is set to 5000ms, the timeout time to 2000ms and the transmission times to 3.

switch_config#interface epon 0/1:1

switch_config_epon0/1:1# epon onu serial 1 serial-keepalive idle 5000 timeout 2000 count 3

## 3.23 epon onu serial loopback detect

### Syntax

**epon onu serial** *serial-num* **loopback detect**

**no epon onu serial** *serial-num* **loopback detect**

To configure loopback detection for an ONU serial interface, run **epon onu serial *serial-num* loopback detect**.

Parameter

| Parameter | Parameter description |
|---|---|
| *serial-num* | ID of ONU serial interface |

Default value

There is no loopback detection.

Remarks

This command is configured in LLID port configuration mode.

Example

The following example shows how to enable loopback detection of serial interface 1.

switch_config#interface e0/1:1

switch_config_epon0/1:1# epon onu serial 1 loopback detect

## 3.24 show epon onu {port | serial} statistics

Syntax

**show epon interface** *interface-id* **onu {port | serial}** *num* **statistics**

To display packet statistics on the ONU port, run the previous command.

Parameter

| Parameter | Parameter description |
|---|---|
| *interface-id* | Stands for the LLID port ID. |
| *num* | ID of the ONU interface or the serial interface |

Default value

None

Remarks

This command is used to show the transmission and reception of packets on the ONU port.

Example

The following example shows how to show the transmission and reception of packets on ONU UNI port 1 which corresponds to the LLID port, epon0/1:1.

switch#show epon interface epon 0/1:1 onu port 1 statistics

```
In Good Octets                : 0
In Bad Octets                 : 0
In Broadcasts Frames          : 0
In Multicasts Frames          : 0
In Unicasts Frames            : 0
In Pause Frame                : 0
In MAC Received Error Frames  : 0
In FCS Error Frames           : 0
Undersize Frames              : 0
Fragments Frames              : 0
Oversize Frames               : 0
Jabber Frames                 : 0
Out Octets                    : 0
Out Broadcasts Frames         : 0
Out Multicasts Frames         : 0
Out Unicasts Frames           : 0
Out Pause Frames              : 0
Out FCS Error Frames          : 0
Deferred Frames               : 0
Excessive Frames              : 0
Single Collision Frames       : 0
Multiple Collision Frames     : 0
Late Frames                   : 0
Collisions Frames             : 0
Rx/Tx 64 Octets               : 0
Rx/Tx 65-127 Octets           : 0
Rx/Tx 128-255 Octets          : 0
Rx/Tx 256-511 Octets          : 0
Rx/Tx 512-1023 Octets         : 0
Rx/Tx 1024-Max Octets         : 0
```

## 3.25 show epon onu {port | serial} state

Syntax

**show epon interface** *interface-id* **onu {port | serial}** *port-num* **state**

To display port configuration and state, run the previous command.

### Parameter

| Parameter | Parameter description |
|---|---|
| *interface-id* | Stands for the LLID port ID. |
| *port-num* | ID of the ONU interface or the serial interface |

### Default value

None

### Remarks

This command is used to display the link state of the ONU UNI port.

### Example

The following example shows how to display the state of ONU UNI port 1, which corresponds to the LLID port, epon0/1:1.

switch#show epon interface epon 0/1:1 onu port 1 state

Hardware state is Link-Down
Admin state is Up
Flow-Control is Disable
Duplex is Auto-Duplex
Speed is Auto-Speed
Storm-Control is Disable

## 3.26 show epon onu port ctc vlan

### Syntax

**show epon interface** *interface-id* **onu port** *port-num* **ctc vlan**

To display VLAN configuration and state of the UNI port, run the previous command.

### Parameter

| Parameter | Parameter description |
|---|---|
| *interface-id* | Stands for the LLID port ID. |
| *port-num* | ID of the ONU interface or the serial interface |

### Default value

None

## Remarks

This command is used to display VLAN settings and its state on the ONU UNI port.

## Example

The following example shows how to display the VLAN state of ONU UNI port 1, which corresponds to the LLID port, epon0/1:1.

```
Switch#show epon interface e0/1:1 onu port 1 ctc vlan
 Interface          : E0/1:1
 UNI                : 1
 VLAN mode          : translate
 Default VLAN ID : 3
 TPID               : 0x0
 Translation table
 Old VLAN ID      Old TPID      New VLAN ID      New TPID
 -----------      --------      -----------      --------
```