



netis PON OLT

Command Line Manual



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OLT WEB page configuration - command line manual

1. Login to the command line management interface

1.1. Functional overview

BLK-C1 is functionally rich, including system management, Ethernet management, security management, QOS management, multicast management, PPPoE management, DHCP management, STP management, network analysis, VLAN management, VLAN stacking management, ACL management and performance statistics management. This manual will introduce them respectively in the following chapters and sections.

1.2. Log into device through Telnet

1.2.1. Network connection

If BLK-C1 is configured through Telnet, it requires having a computer with network card to connect BLK-C1 through Ethernet cables. Default IP address of BLK-C1 is as the same of IP address labeled on factory equipment. Subnet mask is **255.255.255.0**. Therefore, before logging into OLT, please make sure IP address of network card and OLT IP within the same network segment: 192.168.2.*** (<***<255 and *** is not equal to 201).

1.2.2. Checking connection

After TCP/IP protocol configuration is completed, verify if the computer can communicate with BLK-C1 by using Ping command. Open DOS window and type IP address of Ping BLK-C1 in **DOS Prompt** field to execute Ping command.

- For Windows 98/Me, click Start - Run. Enter command and click **Confirm**.
- For Windows 2000/XP, click Start - Run. Enter cmd and click **Confirm**.

Enter following commands in **DOS Prompt** field.

If command window returns commands as shown below,

```
C:\Documents and Settings\admin>ping 192.168.2.***  
Pinging 192.168.2.*** with 32 bytes of data:  
  
Reply from 192.168.2. ***: bytes=32 time=1ms TTL=64  
Reply from 192.168.2. ***: bytes=32 time=1ms TTL=64  
Reply from 192.168.2. ***: bytes=32 time=1ms TTL=64  
Reply from 192.168.2. ***: bytes=32 time=1ms TTL=64  
  
Ping statistics for 192.168.2. ***:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0%  
loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

BLK-C1 and computer are successfully connected.

If computer fails to connect to BLK-C1, command window will return the following content:

```
C:\Documents and Settings\admin>ping 192.168.2. ***  
Pinging 192.168.2.201 with 32 bytes of data:  
  
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.  
  
Ping statistics for 192.168.2. ***:  
    Packets: Sent = 4, Received = 0, Lost = 4 (100%  
loss),
```

Confirm network settings in your computer and cable integrity.

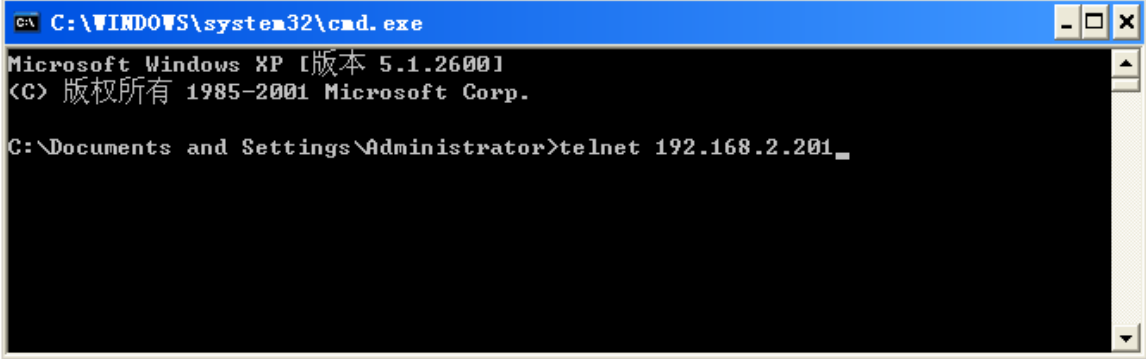


Notice

Connect network card on your computer to OLT management port using a Level 5 twisted pair before entering above commands.

1.2.3. Login

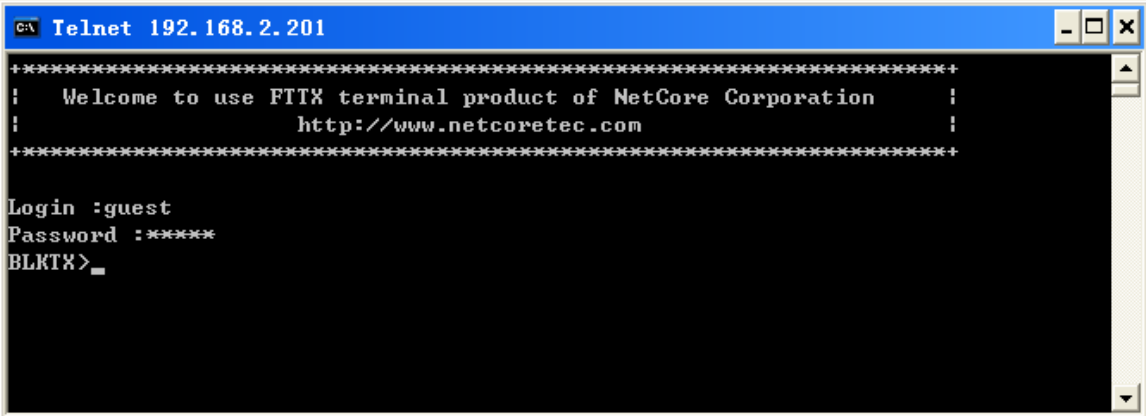
1. Open DOS command window, type telnet 192.168.2.*** (factory ip is labeled on the product). Take 192.168.2.201 for example.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>telnet 192.168.2.201_
```

2. Type “guest” as username and password into login prompt.



```
Telnet 192.168.2.201
*****
! Welcome to use FTTX terminal product of NetCore Corporation !
! http://www.netcoretec.com !
*****

Login :guest
Password :*****
BLKTX>
```

✓ Tips. The default login username and password for BLK-C1 is “guest”.

3. If username and password are correct, log in CLI of OLT and execute system command.


```
C:\ Telnet 192.168.2.136

+*****+
! Welcome to use FTIX product C1X series of NetCore Corporation      !
!                               http://www.netcoretec.com              !
+*****+

Login :guest
Password :*****
BLKCK>ls
enable          - Enter into configure mode.
logout          - Login out current CLI session.
list            - List current aviable CLI user.

display-system  - Display olt system configuration and status information.
display-alarm   - Display alarm configuration and status information.
display-cdr     - Display cdr configuration and status information.
display-epon-onu - Display epon onu configuration and status information.
display-epon-slot - Display epon board configuration and status information.
display-epon-port - Display epon port configuration and status information.
display-ether   - Display ethernet configuration and status information.
display-l2protocol - Display layer 2 protocol configuration and status information.
display-perf-stat - Display performance and statistics configuration and status information.
cls            - Clear screen.
ping          - Ping a remote host.
history       - Display the executed successfully CLI command history.
quit         - Quit from current CLI mode to previous CLI mode.
ls           - Display all aviable CLI command list.
man          - Display a CLI command help and it's usage.
logout       - Login out current CLI session.
keepalive    - Set CLI keep alive timeout.

BLKCK>
```

1.3. Command line interface

1.3.1 Brief introduction to command line interface

BLK-C1 provides a CLI-based man-machine interaction interface to facilitate configuration and management by user. Command line interface has following features:

- Inquire command command list through “help” or “?”;
- Inquire specific command syntax through “man” online;
- Support list of command history, select “↑” or “↓” to execute command.
- Support auto-completion to command, <Tab> key is used to complete command automatically. Press <tab> before command input is completed to automatically search the closest matching command. If command is only match, the command will display; if there are several matching commands, all commands will display for user to choose.

1.3.2. Command line vision

According to functions and roles of CLI, commands divide into different views. User enter normal vision after logging into Telnet, execute enable command to enter Configuration view. In Configuration vision, execute corresponding commands to enter terminal and maintenance mode. In each sub-view, execute corresponding commands to return to upper view.

| View | Function | Prompt | Enter command | Exit command |
|-------------|---|----------------------|--|--|
| Normal | View system configuration parameters and running status | BLKCX> | Connect and login to OLT through Telnet to enter this mode | Execute Logout to disconnect with OLT |
| Configure | Configure system | BLKCX# | Enter enable <passwd> under Normal view | Execute quit to return Normal view, execute Logout to disconnect with OLT |
| Maintenance | Enter configuration mode of system management | BLKCX(config-maint)# | Enter configure maintenance in Configure view | Execute quit to return Configure view, execute Logout to disconnect with OLT |
| Terminal | Enter into terminal configuration mode | BLKTX(config-t)# | Enter configure terminal in Configure view | Execute quit to return Configure view, execute Logout to disconnect with OLT |

Table 1-1 CLI view

1.3.3. Command classification

CLI commands are divided into proprietary command and universal command according to command execution view.

1.3.3.1. Proprietary command

Proprietary commands only can be executed in specific view, each view contains specific commands of the view.

1.3.3.2. Universal command

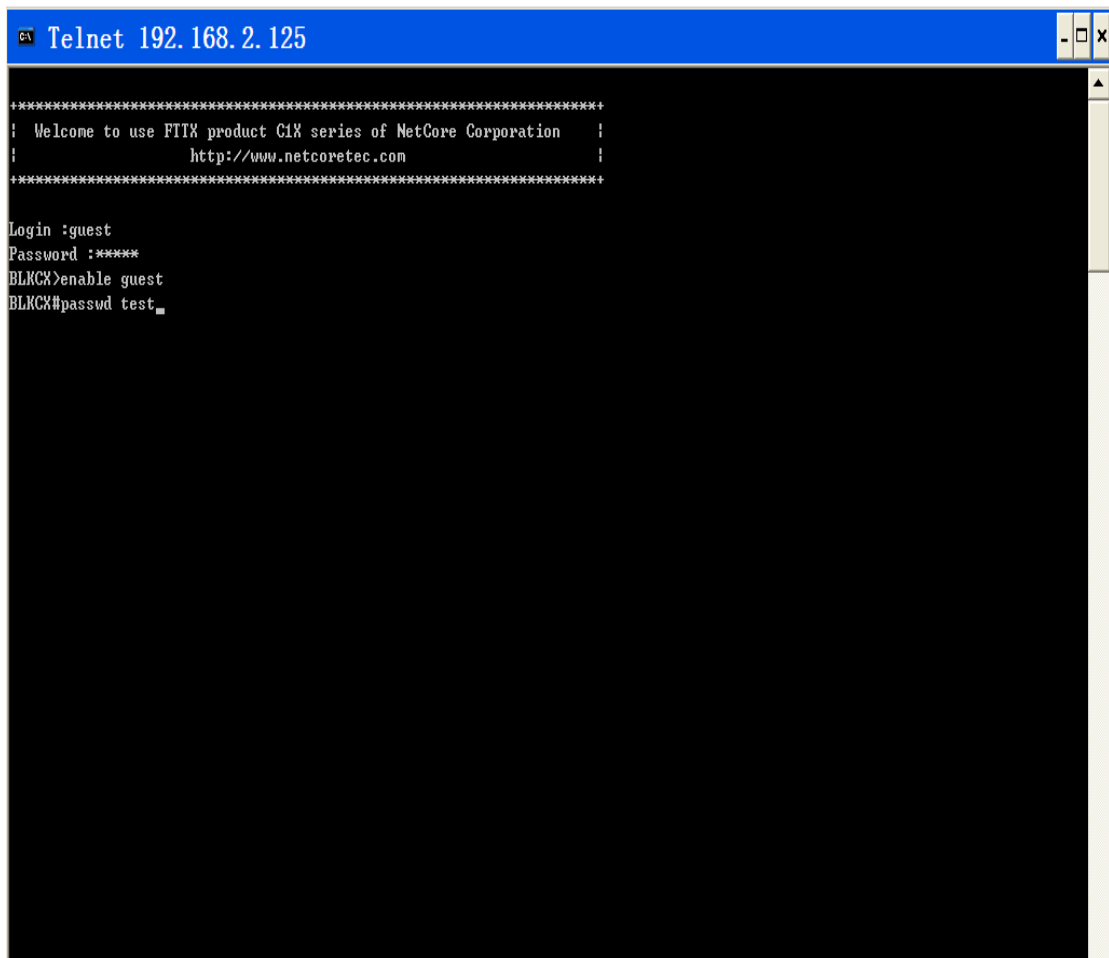
Universal command can be executed under any view.

| Command | Description |
|--------------------------|---|
| display-alarm | Inquire alarm configuration and status information |
| display-epon | Inquire EPON configuration and status information |
| display-ether | Inquire Ethernet configuration and status information |
| display-perf-stat | Inquire performance statistics task configuration |
| display-system | Inquire system configuration and status information |
| cls | Clean screen |
| ping | Ping distance host |
| history | Display list of command history |
| quit | Quit current view and return to upper view |
| help | Display command list in current view |
| man | Display helping grammar of specific command |
| logout | Logout current session |
| who | Display current login user |
| keepalive | Configure CLI timeout |

Table 1-2 General commands of CLI

1.3.4. Changing configure view password

It requires password authentication to switch to Configure view from Normal view. Default password is “guest”. Enter Configure view to change password first, then execute passwd command to set new password. E.g. When change password of Configure view to “test”, type new password to enter Configure view to execute next enable command.



```
Telnet 192.168.2.125

*****
! Welcome to use FITX product C1X series of NetCore Corporation  !
!           http://www.netcoretec.com                        !
*****

Login :guest
Password :*****
BLKCKX>enable guest
BLKCKX#passwd test_
```

Figure 3-1 Change configure view password



Notice. It recommends to change default password and remember the new password.
It will fail to manage OLT equipment if the password is lost.

2. System state

2.1. OLT network element information

| Operating steps | Description |
|---|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#display-system deviceid | Inquire network element information (equipment information) |

2.2. OLT module information

| Operating steps | Description |
|---|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#display-system board-info | Inquire OLT module information |

2.3. network element information

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#display-epon-port registered-onu 1/1 | Inquire ONU registered under PON port 1/1 Configuration command: display-epon-port registered-onu <slot/port> Command reference: <slot/port> slot indicates pon module, ports indicates certain port under this module |

BLK-C1 has two PON modules totally, each module has 8 PON ports. All registered ONUs are each port has been found and counted together.

3. Global property management of convergence and exchange

3.1. MAC aging time configuration

| Operating steps | Description |
|----------------------------------|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#mac-age-time 300 | MAC aging time configuration Configuration command: mac-age-time <macAgeTime> Command reference: <macAgeTime> indicates time range. |

3.2. Static TRUNK group configuration

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface trunk 1 | Configure static TRUNK group with ID of 1 Configuration command: interface trunk <trunkId> Command reference: <trunkId> indicates ID number. |
| BLKCX(config-t-if-trunk-1)#trunk add 3/1,3/2 | Add uplink port 3/1,3/2 to TRUNK group |

3.3. Adding port mirroring

| Operating steps | Description |
|------------------------------------|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#port-mirror mode 2 | Open port mirroring. Configuration command: port-mirror mode <mode> Command reference: <mode> indicates 1 and 2; 1 represents disable and 2 represents enable. |

| | |
|---|---|
| BLKCX(config-t)#port-mirror add 3/3 3/4 ingress | <p>Adding port mirroring.</p> <p>Configuration command: port-mirror add <srcPort> <destPort> <direction>;</p> <p>Command reference: <srcPort> indicates original port address, the format is <slot/port>; <destPort> indicates destination port address and <direction> indicates direction selection. There are three option: {ingress egress both-direction}.</p> |
|---|---|

3.4. Adding MAC filtering

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#mac-filter add 08:10:11:12:14:06 1 1 3/1,1/3 | <p>Adding MAC filtering</p> <p>Configuration command: mac-filter add <xx:xx:xx:xx:xx:xx> <vlanID> <filterMode> <portList></p> <p>Command reference: <xx:xx:xx:xx:xx:xx> indicates required MAC address; <vlanID> indicates port VLAN; <filterMode> indicates filtering mode and <portlist> indicates filtering port which can be several ports.</p> |

3.5. Querying MAC forwarding table

| Operating steps | Description |
|---|------------------------------------|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#display-ether mac-table | Inquire MAC forwarding table |

3.6. Port isolation

| Operating steps | Description |
|-----------------|-------------|
|-----------------|-------------|

| | |
|--|------------------------------------|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#port-isolate add 2 3/1,3/2 | Configure port isolation of OLT |
| BLKCX(config-t)#display-ether port-isolate | Configure port isolation of OLT |

3.7 MAC aging time

| Operating steps | Description |
|----------------------------------|------------------------------------|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#mac-age-time 300 | Configure MAC aging time |

4. Ethernet port attribute management of convergence and exchange

4.1. Configuring port enabling

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface ge 3/1 | Enter into required uplink port |
| BLKCX(config-t-if-ge-3/1)#ge-admin enable | Open uplink port 3/1 Configuration command: ge-admin <enable disable> Command reference: <enable disable> indicates enable and diable. |

4.2. Configuring port attribute

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface ge 3/1 | Enter into required uplink port |
| BLKCX(config-t-if-ge-3/1)#flow-control enable enable | Open flow control of ingress and egress Configuration command: flow-control <ingressFlowPause> <egressFlowPause> Command reference: <ingressFlowPause> indicates flow control of ingress, divided into enable and disable; <engressFlowPause> indicates flow control of egress, divided into enable and disable. |
| BLKCX(config-t-if-ge-3/1)#rate-limit ingress 55555 512 | Configure ingress rate Configuration command: rate-limit ingress <ingressRate> <ingressBurst> Command reference: <ingressRate> indicates value of required rate and <ingressBurst> indicates minimum value. |
| BLKCX(config-t-if-ge-3/1)#rate-limit egress 55555 512 | Configure egress rate Configuration command: rate-limit egress |

| | |
|--|---|
| | <egressRate> <egressBurst> Command reference is as the same as above. |
| BLKCX(config-t-if-ge-3/1)#storm-control broadcast enable 55555 | Configure broadcast suppression Configuration command: storm-control broadcast <broadcastFilter> <broadcastFilterRate> Command reference: <broadcastFilter> indicates suppress is enable or disable and <broadcastFilterRate> indicates configured rate. |
| BLKCX(config-t-if-ge-3/1)#storm-control multicast enable 55555 | Configure multicast suppression Configuration command: storm-control multicast <multicastFilter> <multicastFilterRate> Command reference: <multicastFilter> indicates multicast suppress is enable or disable and <multicastFilterRate> indicates configured rate. |

4.3. Configuring port mode

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface ge 3/1 | Enter into required uplink port |
| BLKCX(config-t-if-ge-3/1)#port-mode electric 1000m electric | Configure media type of uplink port Configuration command: port-mode <portType> <rateMode> <OptimizeMode> Command reference: <portType> indicates media type, divided into {optics/electric}; <rateMode> indicates rate mode of port, divided into 10M, 100M and 1000M and <OptimizeMode> indicates media type too. |
| BLKCX(config-t-if-ge-3/1)#duplex full | Configure full duplex Configuration command: duplex <half full> Command reference: half indicates half duplex and full indicates full duplex. |
| BLKCX(config-t-if-ge-3/1)#auto-negotiation enable | Configure self-adaption mode to support Configuration command: auto-negotiation <enable disable> Command reference: enable is to support self-adaption and disable is not to support |

| | |
|--|----------------|
| | self-adaption. |
|--|----------------|

4.4. Configuring port function

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface ge 3/1 | Enter into required uplink port |
| BLKCX(config-t-if-ge-3/1)#ge-attr enable none | Configure port to support backpressure enabling, discard mode is Do Not Discard Configuration command: ge-attr <backPress> <discardMode> Command reference: <backPress> indicates backpressure enabling is enable or disable {enable/disable} and; <discardMode> indicates discard mode, divided into {none untag all}. |

4.5. Configuring port Qos scheduling

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface ge 3/1 | Enter into required uplink port |
| BLKCX(config-t-if-ge-3/1)#ge-qos schedule sp | Configure port to sp algorithm (priority) Configuration command: ge-qos schedule <sp wrr sp+wrr> Command reference: sp represents priority algorithm; wrr represents wuplinkhting algorithm and sp+wrr represents mixed algorithm of priority and wuplinkhting. |
| BLKCX(config-t-if-ge-3/1)#ge-qos priority 0 0 | Configure queue priority to zero for ID with 0 Configuration command: ge-qos priority <queueld> <priority> Command reference: <queueld> Qos queue ID and <priority> indicates priority of labeled queues. |
| BLKCX(config-t-if-ge-3/1)#ge-qos wuplinkht 0 1 | Configure queue wuplinkhting to 1 for ID with 0 Configuration command: ge-qos wuplinkht <queueld> <wuplinkht> |

| | |
|--|--|
| | Command reference: <queuelid> indicates Qos queue ID and <wuplinkht> indicates wuplinkhting of labeled queues. |
|--|--|

5. VLAN management of convergence and exchange

5.1. Configuring multiple VLAN attribute

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#vlan-stack 1/2 enable 0x8100 | Configure multiple VLAN attribute Configuration command: vlan-stack <slot/port> <enable/disable> <tpid> Command reference: <slot/port> indicates port and <enable/disable> indicates enable or disable. Default value of <tpid> is 0x8100. |

5.2. Configuring VLAN table

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#vlan member add 1000 1 untagged 1/3,3/1 | Add vlan1000 to port 1/3 and 3/1 and configure mode to tagged. Configuration command: vlan member add <vlanID> <vlanType> <tagged untagged> <portList> Command reference: <vlanID> indicates vlan value; <vlanType> indicates step length, which is the range of vlan, divided into VLAN and VLAND domain. Tagged of corresponding web is untagged mode; untagged is on the contrary. |

5.3. Configuring port VLAN

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#vlan port-vlan config 1/3 | Configure port 1/3 as 1000 and priority as 0 |

| | |
|--------|--|
| 1000 0 | Configuration command: vlan port-vlan config <slot/port> <vlanID> <priority> Command description: <slot/port> indicates moles and ports, <vlanID> indicates size of port vlan and <priority> indicates priority of ports. |
|--------|--|

5.4. Configuring VLAN switching control

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#vlan trans-mode enable | Open vlan switching mode Configuration command: vlan trans-mode <transMode> Command reference: <transMode> indicates enable or disable to switching mode. |

5.5. Adding range table of vlan

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#vlan-range 800 853 | Add vlan range |
| BLKCX(config-t-vlan-range-800-853)#member add tagged 2/2,3/2 | Add vlan to specific port within the range |

6. Global properties management of PON

6.1. Global configuration of PON

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#epon-sys gepon-oui 0x00 0x00 0x00 | Configure operator identifier Configuration command: epon-sys gepon-oui <ouiParameter1> <ouiParameter2> <ouiParameter3> Command reference: <ouiParameter> hexadecimal digital input. The displayed input on page is decimal digit conversed from hexadecimal. |
| BLKCX(config-t)#epon-sys ctc-mpcp enable 20 | Configure multi-point control protocol to enable and MPCP discovery delay time to 20ms Configuration command: epon-sys ctc-mpcp <enable> <delay> Command reference: <enable> indicates enable or disable and <delay> is to configure MPCP discovery delay time. |
| BLKCX(config-t)#epon-sys encryption enable CTC-CHURNING 9985 | Configure PON encryption to enable, encryption mode to CTC-CHURNING and key update time to 9985 Configuration command: epon-sys encryption <enable disable> <AES128 CTC-CHURNING> <rekeytimer> Command reference: <enable disable> indicates enable or disable; <AES128 CTC-CHURNING> indicates encryption mode selection and; <rekeytimer> is to configure key update time. |
| BLKCX(config-t)#epon-sys oam-timeout 14 | Configure OAM timeout to 14s Configuration command: epon-sys oam-timeout <timeoutValue> Command reference: <timeoutValue> is to configure OAM timeout. |

6.2. Luminous power

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#epon-sys opticalpower-detect-mode enable | Configure luminous power detection to enable Configuration command: epon-sys opticalpower-detect-mode <detectMode> Command reference: <detectMode> is to configure luminous power detection to enable or disable. |
| BLKCX(config-t)#epon-sys opticalpower-threshold 24 20 4 10 | Configure upper threshold value of luminous power alarm production upper limit to 24, lower threshold value of luminous power alarm production to 4 and lower threshold value of luminous power alarm disappearing to 10. (Note: displayed value is configured CLI minus 30. Configuration command: epon-sys opticalpower-threshold <ceilThreshold> <ceilClear> <lowerThreshold> <lowerClear> Command reference: four brackets represents the required values. |

6.3. Configuring PON redundancy protection group

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#slot epon 1 | Enter EPON module 1 |
| BLKCX(config-t-slot-epon-1)#psg create 5 1 2 | Create PON protection group 5, add PON port 1 and 2 into protection group Configuration command: : psg create <psgid> <activePon> <standbyPon> Configuration description: |

| | |
|---|---|
| | <p><psgid> indicates index [5.6] of created psg; <activePon> indicates main port and <standbyPon> indicates secondary PON port.</p> |
| <p>Explanation:</p> <p>1. Before protection group is configured, port 1 and 2 of PON module 1 requires no ONU authentication table and ports shall be disabled.</p> | |

7. PON module attribute management

7.1. Configuring MAC aging time

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#slot epon 1 | Enter into EPON version 1 Configuration command: slot epon <slotID> Command reference: <slotID> indicates ID of required EPON. |
| BLKCX(config-t-slot-epon-1)#epon-mac-age 1000 | Configure aging time of EPON version 1 to 1000ms Configuration command: epon-mac-age <agingTime> Command reference: <agingTime> time configuration number. |

7.2. Configuring buffer management parameter

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#slot epon 1 | Enter into EPON version 1 Configuration command: slot epon <slotID> Command reference: <slotID> indicates ID of required EPON. |
| BLKCX(config-t-slot-epon-1)#buffer-management wred enable | Configure buffer management to enable Configuration command: buffer-management wred <enable disable> Command reference: <enable disable> is to configure buffer management enabling. |
| LKCX(config-t-slot-epon-1)#buffer-management drop 80 70 60 50 70 50 | Configure minimum buffer threshold percentage 0 to 80, maximum buffer threshold percentage 0 to 70, maximum threshold discard percentage 0 to 60, minimum buffer threshold percentage 1 to 50, maximum buffer threshold percentage 1 to 70 and maximum threshold discard |

| | |
|--|---|
| | <p>percentage 1 to 50 in sequence.</p> <p>Configuration command: buffer-management drop <minThresh0> <maxThresh0> <maxDrop0> <minThresh1> <maxThresh1> <maxDrop1></p> <p>Command reference: <minThresh0> is to configure minimum buffer threshold percentage 0; <maxThresh0> is to configure maximum buffer threshold percentage 0; <maxDrop0> is to configure maximum threshold discard percentage 0; <minThresh1> is to configure minimum buffer threshold percentage 1; <maxThresh1> is to configure maximum buffer threshold percentage 1 and <maxDrop1> is to configure maximum threshold discard percentage 1.</p> |
|--|---|

7.3. Configuring queue scheduling parameter

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#slot epon 1 | <p>Enter into EPON version 1</p> <p>Configuration command: slot epon <slotID></p> <p>Command reference: <slotID> indicates ID which enter into EPON version.</p> |
| BLKCX(config-t-slot-epon-1)#epon-qos schedule 0 | <p>Configure queue scheduling mode of EPON module 1 to SP</p> <p>Configuration command: epon-qos schedule <scheduleAlg></p> <p>Command reference: <scheduleAlg> indicates four configuration modes of {0:SP 1:WRR 2:Hierarchical 3:SPnotOAM}.</p> |
| BLKCX(config-t-slot-epon-1)#epon-qos queue-wuplinkht 0 1 | <p>Configure wuplinkhting of queue 0 to 1</p> <p>Configuration command:</p> |

| | |
|--|---|
| | epon-qos queue-wuplinkht <cosQueueId> <wuplinkht> Command reference: <cosQueueId> indicates queue ID and <wuplinkht> indicates queue wuplinkhting. |
|--|---|

7.4. Configuring COS queue mapping

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#slot epon 1 | Enter into EPON version 1 Configuration command: slot epon <slotID> Command reference: <slotID> indicates ID which enter into EPON version. |
| BLKCX(config-t-slot-epon-1)#epon-qos queue-map dot1p 0 1 2 4 5 3 4 7 | Configure 802.1p values from 0-7 to 0 1 2 4 5 3 4 7 in sequence Configuration command: epon-qos queue-map dot1p <dot1p0> <dot1p1> <dot1p2> <dot1p3> <dot1p4> <dot1p5> <dot1p6> <dot1p7> Command reference: <dot1p0>~<dot1p7> is corresponding queue values. |

7.5. Configuring DBA mode

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#slot epon 1 | Enter into EPON version 1 Configuration command: slot epon <slotID> Command reference: <slotID> indicates ID which enter into EPON version. |
| BLKCX(config-t-slot-epon-1)#dba-type hw | Configure dba mode to hw Configuration command: dba-type <hw sw hw-dynamic sw-dynamic> Command reference: there are four configuration modes of dba, which are <hw sw hw-dynamic sw-dynamic> |

| | |
|---|--|
| BLKCX(config-t-slot-epon-1)#dba-algorithm max-min | <p>Command dba algorithm mode to max-min</p> <p>Configuration command: dba-algorithm <max-min ceilingmax-min fixedmin></p> <p>Command reference: dba algorithm has three configuration modes of <max-min ceilingmax-min fixedmin>.</p> |
|---|--|

7.6. Configuring DBA parameter

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | <p>Enter into pon1/1</p> <p>Configuration command: interface epon <slot/port></p> <p>Command reference: <slot/port> indicates modules and ports.</p> |
| BLKCX(config-t-if-epon-1/1)#dba cycle-size 150000 | <p>Configure dba cycle time to 15000TQ</p> <p>Configuration command: dba cycle-size <cycleTime></p> <p>Command reference: <cycleTime> is dba cycle time configuration.</p> |
| BLKCX(config-t-if-epon-1/1)#dba discovery-freq 253 | <p>Configure dba discovery frequency to 253</p> <p>Configuration command: dba discovery-freq <discoveryFrequency></p> <p>Command reference: <discoveryFrequency> indicates discovery frequency parameter configuration.</p> |
| BLKCX(config-t-if-epon-1/1)#dba discovery-size 1024 | <p>Configure dba discovery window to 1024TQ (TQ=16ns)</p> <p>Configuration command: dba discovery-size <discoveryTime></p> <p>Command reference: <discoveryTime> indicates parameters of discovery windows, rang [1024,14000].</p> |

7.7. Storm suppression parameter

| Operating steps | Description |
|-----------------------------|------------------------------------|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#slot epon 1 | Enter into EPON version 1 |

| | |
|---|---|
| | <p>Configuration command: slot epon <slotID></p> <p>Command reference: <slotID></p> <p>indicates ID which enter into EPON version.</p> |
| BLKCX(config-t-slot-epon-1)#unknown-packet-policy broadcast enable 16 23 | <p>Configure broadcast strategy to enable, rate to 16 and broadcast bust size to 23</p> <p>Configuration command: unknown-packet-policy multicast <enable> <rate> <burstSize></p> <p>Command reference: <enable></p> <p>indicates enabling of enable or disable; <rate> indicates broadcast rate parameter configuration and <burstSize> indicates broadcast bust size configuration.</p> |
| BLKCX(config-t-slot-epon-1)#unknown-packet-policy multicast enable16 25 | <p>Configure unknown multicast strategy to enable, unknown multicast rate to 16 and unknown multicast bust size to 25</p> <p>Configuration command: unknown-packet-policy multicast <enable> <rate> <burstSize></p> <p>Command reference: <enable></p> <p>indicates enabling of enable or disable; <rate> indicates unknown multicast rate parameter configuration and <burstSize> indicates unknown multicast bust size configuration.</p> |
| BLKCX(config-t-slot-epon-1)#unknown-packet-policy unicast enable 33333 26 | <p>Configure unknown unicast strategy to enable, rate to 16 and broadcast bust size to 25</p> <p>Configuration command: unknown-packet-policy multicast <enable> <rate> <burstSize></p> <p>Command reference: <enable></p> <p>indicates enabling of enable or disable; <rate> indicates unknown unicast rate parameter configuration and <burstSize> indicates unknown unicast bust size configuration.</p> |

7.8. Querying MAC

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#slot epon 1 | Enter into EPON version 1 Configuration command: slot epon <slotID> Command reference: <slotID> indicates ID which enter into EPON version. |
| BLKCX(config-t-slot-epon-1)#display-ether mac-table | Query mac of epon modules. |

8. Attribute management of PON port

8.1. EPON port enabling

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Configure Epon port enabling Configuration command: : epon-admin <enable disable> |

8.2. Limiting MAC

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-mac-limit 1023 | Configure MAC address table capacity of pon 1/1 to 1023 Configuration command: epon-mac-limit <macLearning> Command reference: <macLearning> is learning mac address table parameters limited by ports. |

8.3. Configuring port attribute

| Operating steps | Description |
|------------------------------------|------------------------------------|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 |

| | |
|---|---|
| | Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#p2p disable | Disable p2p function of pon port 1/1 Configuration command: p2p <controlState> Command reference: <controlState> indicates enable or disable. |

8.4. Configuring ONU authentication mode

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#onu-auth-mode set 0 | Configure authentication mode of pon port to no authentication Configuration command: onu-auth-mode set <mode> Command reference: <mode> indicates four authentication modes of {0:Disable 1:MAC 2:LOID 3:Hybird. |

8.5. Configuring ONU authentication table

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#onu-auth-table | Configure mac address to |

| | |
|---|--|
| e add 1 mac=08:10:02:11:12:14 onuLoid=onu1 password=onu1 | 08:10:02:11:12:14 and add into our authentication table with alias and password of "onu1". Configuration command: onu-auth-table add <llid> <[mac=xx:xx:xx:xx:xx:xx] [onuLoid=STR] [password=STR]]> Command reference: <llid> is logic ID of onu, <xx:xx:xx:xx:xx:xx> value mac address; <onuLoid> indicates alias of onu and <password> indicates onu password. |
|---|--|

8.6. Removing MAC forwarding table

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-mac-table clear port | Remove all mac addresses of pon port 1/1. |

8.7. Limiting EPON port MAC address

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-mac-limit 1023 | Configure EPON MAC address limitation Configuration command: epon-mac-limit <macLearning> Command reference: <macLearning> indicates quantity of learning MAC address. |

8.8. Configuring P2P enabling

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#p2p disable | Disable P2P state Configuration command: p2p <controlState> Command reference: <controlState> indicates enable and disable. P2P is default to disable. |

9. Attribute management of LLID ports

9.1. Configuring LLID MAC limitation

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#llid-mac-limit 1023 | Configure mac address table capacity of onu 1 to 1023 |

9.2. Configuring LLID SLA parameter

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#dba-sla fixed-bandwidth 1000 1000 | Configure llid to1, and configure onu upstreaming fixed bandwidth to 1M and down-streaming fixed bandwidth to 1M Configuration command: dba-sla fixed-bandwidth <firUp> <firDown> Command reference: <firUp> is |

| | |
|--|--|
| | upstreaming parameters and <firDown> is down-streaming parameters. |
| BLKCX(config-t-if-onu-1/1/1)#dba-sla committed-bandwidth 2000 2000 | Configure llid to1, and configure upstreaming assured bandwidth of onu to 2M and down-streaming assured bandwidth to 2M Configuration command: dba-sla committed-bandwidth <cirUp> <cirDown> Command reference: <firUp> is upstreaming parameters and <firDown> is down-streaming parameters. |
| BLKCX(config-t-if-onu-1/1/1)#dba-sla peak-bandwidth 1000000 1000000 | Configure llid to1, and configure upstreaming maximum bandwidth of onu to 1000M and down-streaming maximum bandwidth to 1000M Configuration command: dba-sla peak-bandwidth <pirUp> <pirDown> Command reference: <firUp> is upstreaming parameters and <firDown> is down-streaming parameters. |
| BLKCX(config-t-if-onu-1/1/1)#dba-sla burst-size 100 100 | Configure onu upstreaming maximum burst size to 100 and down-streaming maximum burst size to 100 Configuration command: dba-sla burst-size <burstSizeUp> <burstSizeDown> Command reference: <burstSizeUp> is upstreaming parameters and <burstSizeDown> is down-streaming parameters. |
| BLKCX(config-t-if-onu-1/1/1)#dba-sla priority 1 1 | Configure onu upstreaming and down-streaming priority to 1 Configuration command: dba-sla priority <priorityUp> <priorityDown> Command reference: <priorityUp> upstreaming priority, <priorityDown> is down-streaming priority. |

9.3. Configuring LLID port strategy

| Operating steps | Description |
|------------------------------------|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 |

| | |
|---|---|
| | Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#policing 1 4 | Configure upstreaming policing strategy of onu to labeled business flow that exceeds its PIR and configure down-streaming policing strategy to dropped business flow that exceeds its PIR. Configuration command: policing <upstreamAction(INT)> <downstreamAction(INT)> Command reference: <upstreamAction(INT)> is upstreaming policing action type: 0:Disable policing 1:Mark traffic once it exceeds its CIR 2:Mark traffic once it exceeds its PIR 3:Mark traffic once it exceeds its CIR and drop once it exceeds its PIR 4:Drop traffic once it exceeds its CIR 5:Drop traffic once it exceeds its PIR |

9.4. Configuring LLID port shaping

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#shaping 0 | Configure shaping action of onu to disable Configuration command: shaping <action> |

| | |
|--|---|
| | <p>Command description: <action> indicates shaping action, divided into three types:</p> <p>0: Disable downstream shaping</p> <p>1: Shape traffic to conform to its CIR</p> <p>2: Shape traffic to conform to its PIR</p> |
|--|---|

9.5. Configuring LLID encryption enabling control

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | <p>Enter into pon1/1</p> <p>Configuration command: interface epon <slot/port></p> <p>Command reference: <slot/port> modules and ports.</p> |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | <p>Open pon port 1/1</p> <p>Configuration command: epon-admin <enable disable></p> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#onu-encryption enable | <p>Configure onu encryption to enable</p> <p>Configuration command: onu-encryption <enable></p> <p>Command description: <enable> is encryption enabling of enable and disable.</p> |

9.6. Inquiring LLID port information

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | <p>Enter into pon1/1</p> <p>Configuration command: interface epon <slot/port></p> <p>Command reference: <slot/port> modules and ports.</p> |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | <p>Open pon port 1/1</p> <p>Configuration command: epon-admin <enable disable></p> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu llid-port 1/1 1 | Inquire LLID port information |

9.7. Setting up LLID loopback

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-loopback start 65 99 | Configure llid loopback action to start, packet size of loopback to 65 and packet quantity of loopback to 99 Configuration command: oam-loopback start <packetSize> <count> Command reference: <packetSize> is packet size of loopback and <count> is packet quantity of loopback. |
| BLKCX(config-t-if-onu-1/1/1)#oam-loopback stop | Configure llid loopback action end. |

10. Global property management of ONU

10.1. Configuring multicast mode

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-system multicast-switch igmp-snooping | Configure onu to adopt igmp-snooping mode Configuration command: oam-system multicast-switch <switchMode> Command description: <switchMode> indicates multicast type, divided into igmp-snooping and ctc-igmp (telecom managed). |

10.2. Configuring Multicast fast leave function

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |

| | |
|--|---|
| BLKCX(config-t-if-onu-1/1/1)#fast-leave enable | Configure fast leave management status of onu to enable Configuration command: fast-leave <enable disable> |
|--|---|

10.3. Configuring ONU FEC capacity

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#onu-fec enable | Configure FEC technological ability of onu to allow Configuration command: onu-fec <fecEnable> Command reference: <fecEnable> indicates enable for disable. |

10.4 . Configuring ONU DBA

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |

| | | |
|--|---|---|
| BLKCX(config-t-if-onu-1/1/1)#oam-system oamdba 1023,1023,1023,1023,1023,1023,1023,1023 | 1 | <p>Configure queue set of onu to 1, corresponding queues from 0-7 is 8 data on the left.</p> <p>Configuration command: oam-system oamdba <queueSetNum> <bitMapThresholdList></p> <p>Command reference: <queueSetNum> is queue set quantity and <bitMapThresholdList> is corresponding dba value to queue.</p> |
|--|---|---|

10.5. Configuring ONU protection switching time

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | <p>Enter into pon1/1</p> <p>Configuration command: interface epon <slot/port></p> <p>Command reference: <slot/port> modules and ports.</p> |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | <p>Open pon port 1/1</p> <p>Configuration command: epon-admin <enable disable></p> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-system holdover enable 33 | <p>Configure holdover state of onu to enable and retention time to 33ms</p> <p>Configuration command: oam-system holdover <holdoverState> <timeValue></p> <p>Command reference: <holdoverState> indicates state, divided into:</p> <p>1:Disactivated 2:Activated</p> |

10.6. Configuring ONU main port

| Operating steps | Description |
|------------------------------------|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 |

| | |
|--|---|
| | <p>Configuration command: interface epon <slot/port></p> <p>Command reference: <slot/port> modules and ports.</p> |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | <p>Open pon port 1/1</p> <p>Configuration command: epon-admin <enable disable></p> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | <p>Configure llid to1 and enter into onu mode</p> |
| BLKCX(config-t-if-onu-1/1/1)#oam-system active-ponport 1 | <p>Configure port number of main pon to 0</p> <p>Configuration command: oam-system active-ponport <onuPonPort></p> <p>Command reference: <onuPonPort> indicates port number of onu, there are two types of 0 and 1.</p> |

11. ONU UNI port attribute management

11.1. Configuring ONU UNI port Pause frame

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether ether-port pause 1 enable | Configure flow control of onu port 1 to enable Configuration command: oam-ether ether-port pause <onuport> <enable disable> Command reference: <onuport> indicates port number and <enable disable> indicates flow control enabling of enable or disable. |

11.2. Configuring ONU UNI port upstream rate-limiting

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |

| | |
|---|---|
| BLKCX(config-t-if-onu-1/1/1)#oam-ether ether-port us-rate-limiting 1 enable 1024 1523 100 | Configure upstreaming rate-limiting of onu port1 to enable, configure cir to 1024, cbs to 1523 and ebs to 100 Configuration command: oam-ether ether-port us-rate-limiting <onuport> <enable disable> <cir> <cbs> <ebs> Command reference: <onuport> indicates port; <enable disable> indicates rate-limiting enabling of enable or disable an; <cir> <cbs> <ebs> respectively represent required values. |
|---|---|

11.3. Configuring ONU UNI port downstream rate-limiting

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether ether-port ds-rate-limiting 1 enable 1024 1024 | Configure down-streaming rate-limiting of onu port1 to enable, configure cir to 1024 and pir to 1024 Configuration command: oam-ether ether-port ds-rate-limiting <onuport> <enable disable> <cir> <pir> Command reference: <onuport> indicates port; <enable disable> indicates rate-limiting enabling of enable or disable an; <cir> <cbs> respectively represent required values. |

11.4. Configuring ONU UNI port VLAN

| Operating steps | Description |
|--------------------------|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |

| | |
|---|--|
| BLKCX(config-t)#interface epon 1/1 | <p>Enter into pon1/1</p> <p>Configuration command: interface epon <slot/port></p> <p>Command reference: <slot/port> modules and ports.</p> |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | <p>Open pon port 1/1</p> <p>Configuration command: epon-admin <enable disable></p> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether vlanmode transparent 1 | <p>Configure vlan mode of onu port 1 to transparent</p> <p>Configuration command: oam-ether vlanmode transparent <onuPort></p> <p>Command reference: <onuPort> is port number of onu.</p> |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether vlanmode tag 1 0x8100 1 4000 | <p>Configure vlan mode of onu port 1 to tag, priority to 1 and default port vlan to 4000</p> <p>Configuration command: oam-ether vlanmode tag <onuport> <defaultTpid> <defaultCos> <defaultVlanId></p> <p>Command reference: <onuport> is onu port; <defaultTpid> is TPID, divided into two types of {0x8100 ! 0x9100}; <defaultCos> is default priority and <defaultVlanId> is VLAN ID of default port.</p> |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether vlanmode translation 2 0x8100 1 4000 0x8100/100/0x8100/200,0x8100/101/0x8100/201 | <p>Configure vlan mode of onu port to translation, priority to 1. Default port vlan is 4000. Translate vlan100 and 101 to 200 and 201</p> <p>Configuration command: oam-ether vlanmode translation <onuport> <defaultTpid> <defaultCos> <defaultVlanId> <transEntryList></p> <p>Command reference: <onuport> is onu port; <defaultTpid> is TPID, divided into two types of {0x8100 ! 0x9100}; <defaultCos> is default priority; <defaultVlanId> is VLAN ID of default port and; <transEntryList> translation format.</p> |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether vlanmode n2one 1 0x8100 1 4000 0x8100/1000,0x8100/103,0x8100/203;0x8100/1001,0x8100/204,0x8100/105 | <p>Configure vlan mode of onu port to N:1 join mode, priority to 1, default port vlan to 4000, translate and aggregate vlan 103 and 203 to 1000, translate and aggregate vlan 204 and 105 to vlan 1001</p> <p>Configuration command: oam-ether vlanmode n2one <onuport> <defaultTpid> <defaultCos> <defaultVlanId> <aggregationVlanList></p> |

| | |
|--|---|
| | Command reference: <onuport> is onu port; <defaultTpid> is TPID, divided into two types of {0x8100 ! 0x9100}; <defaultCos> is default priority; <defaultVlanId> is VLAN ID of default port and; <aggregationVlanList> is to configure aggregation format. |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether vlanmode trunk 1 0x8100 1 4000 0x8100/101,0x8100/102,0x8100/103 | Configure vlan mode of onu port to Trunk mode, priority to 1. Default port vlan to 4000. Allow messages of vlan with 101, 102 and 103. Configuration command: oam-ether vlanmode trunk <onuport> <defaultTpid> <defaultCos> <defaultVlanId> <trunkVlanList> Command reference: <onuport> is onu port; <defaultTpid> is TPID, divided into two types of {0x8100 ! 0x9100}; <defaultCos> is default priority; <defaultVlanId> is VLAN ID of default port and; <trunkVlanList> is to configure vlan trunk format. |

11.5. Configuring ONU UNI port flow classification

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether classifier addrule 1 1 0 0 0x03/02:10:08:19:21:22/0x00 | Configure flow control of onu port1 Configuration command: oam-ether classifier addrule <onuPort> <precedence> <queueMapped> <priorityMark> <fieldEntryList> Command reference: <onuPort> is onu ports; <precedence> indicates rule priority; <queueMapped> |

| | |
|--|--|
| | indicates mapped queue; <priorityMark> is priority mark and; <fieldEntryList> is to configure field. |
|--|--|

11.6. Configuring ONU UNI port multicast VLAN

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether multicast-vlan add 1 1001,1002 | Add multicast vlan with 1001 and 1002 to onu port 1 Configuration command: oam-ether multicast-vlan add <onuPort> <vlanIDList> Command reference: <onuPort> is onu ports and <vlanIDList> is multicast vlan list. |

11.7. Clearing ONU UNI port multicast VLAN

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether multicast-vlan clear 1 | Clear multicast vlan of onu port 1 Configuration command: oam-ether multicast-vlan clear <onuPort> |

| | |
|--|--|
| | Command reference: <onuPort> is onu ports. |
|--|--|

11.8. Configuring ONU UNI port maximum multicast group

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#igmp-onu-max-group add 1 10 | Configure maximum multicast quantity of onu port 1 to 10 Configuration command: igmp-onu-max-group add <onuPort(INT)> <maxGroupNum(INT)> Command reference: <onuPort> is onu ports and; <maxGroupNum(INT)> is maximum multicast quantity. |

11.9. Configuring ONU UNI port enabling

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether | Configure onu port 1 to enable. |

| | |
|--------------------------------|--|
| ether-port adminstate 1 enable | |
|--------------------------------|--|

11.10. Configuring ONU UNI port automated negotiation

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether ether-port autoneg 1 enable | Configure port self-adaption state of onu port 1 to enable. |

12. ONU alarm attribute management

12.1. ONU alarm enabling control

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure lld to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-alarm alarmadmin-state 35 2 | Configure management state of onu alarm id with 35 to enable. Configuration command: oam-alarm alarmadmin-state <alarmAdminId> <reportMode> Command reference: <alarmAdminId> is alarm ID. Different IDs represent different content. <reportMode> is to configure management states, divided into {1:Disabled, 2:Enabled}. |

12.2. ONU UNI port alarm

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |

| | |
|--|---|
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure lld to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-alarm onuport-alarmadmin-state 1 0 0 41 enable | Configure ONU UNI port alarm Configuration command: oam-alarm onuport-alarmadmin-state <onuPort> <OnuSubRack> <OnuSlot> <alarmAdminId> <reportMode> Command reference: <onuPort> is onu ports; <OnuSubRack> is onu bar; <OnuSlot> is onu modules and; <alarmAdminId> is alarm ID. Different IDs represent different content. <reportMode> is to configure management states, divided into {1:Disabled, 2:Enabled}. |

12.3. Configuring ONU alarm threshold

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure lld to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-alarm alarm-threshold 34 22 33 | Configure alarm mode of onu to low voltage alarm, configure alarm report threshold to 22 and alarm clearing threshold to 33 Configuration command: oam-alarm alarm-threshold <alarmThresholdId> <alarmThreshold> <clearThreshold> Command reference: <alarmThresholdId> is alarm modes, defaulted to three alarms. 1: low voltage alert (34); 2: High temperature alarm (37); 3: Low temperature alarm (38). <alarmThreshold> indicates alarm reporting threshold value and <clearThreshold> indicates alarm clearing threshold value. |

12.4. Configuring ONU UNI port alarm threshold

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-alarm onuport-alarm-threshold 1 0 0 41 22 33 | Configure ONU UNI port alarm threshold Configuration command: oam-alarm onuport-alarm-threshold <onuPort> <OnuSubRack> <OnuSlot> <alarmThresholdId> <alarmThreshold> <clearThreshold> |

13. ONU global information attribute management

13.1. ONU version information

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu oam-device-info 1/1 1 | Inquire ONU version information Configuration command: display-epon-onu oam-device-info <slot/port> <onuld> |

| | |
|--|---|
| | Command reference: <slot/port> indicates slots and ports and; <onuld> indicates llid number of onu. |
|--|---|

13.2. ONU firmware information

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu oam-device-firmware 1/1 1 | Inquire ONU firmware information Configuration command: display-epon-onu oam-device-firmware <slot/port> <onuld> Command reference: <slot/port> indicates slots and ports and; <onuld> indicates llid number of onu. |

13.3. PON chip information

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu oam-chip-id 1/1 1 | Inquire PON chip Configuration command: display-epon-onu oam-chip-id <slot/port> <onuld> |

| | |
|--|---|
| | Command reference: <slot/port> indicates slots and ports and; <onuld> indicates llid number of onu. |
|--|---|

13.4. Multicast fast leave capacity

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu fastleave-ability 1/1 1 | Inquire multicast fast leave capacity Configuration command: display-epon-onu fastleave-ability <slot/port> <onuld> Command reference: <slot/port> indicates slots and ports and; <onuld> indicates llid number of onu. |

13.5. Multicast fast leave status

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu fastleave 1/1 1 | Inquire multicast fast leave status Configuration command: display-epon-onu fastleave <slot/port> <onuld> |

| | |
|--|---|
| | Command reference: <slot/port> indicates slots and ports and; <onuld> indicates llid number of onu. |
|--|---|

14. ONU UNI port state attribute management

14.1. Querying ONU UNI port link status

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu oam-ether-linkstate 1/1 1 1 | Inquire link state of ONU port 1 Configuration command: display-epon-onu oam-ether-linkstate <slot/port> <onuld> <onuport> Command reference: <slot/port> indicates slots and ports; <onuld> indicates llid number of onu and: <onuport> indicates onu port. |

14.2. Querying ONU UNI port PHY enabling status

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |

| | |
|---|--|
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu oam-ether-admin 1/1 1 1 | <p>Inquire PHY enabling status of ONU port 1</p> <p>Configuration command: display-epon-onu oam-ether-admin <slot/port> <onuld> <onuport></p> <p>Command reference: <slot/port> indicates slots and ports; <onuld> indicates llid number of onu and: <onuport> indicates onu port.</p> |
|---|--|

14.3. Querying ONU UNI port automated negotiation result

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | <p>Enter into pon1/1</p> <p>Configuration command: interface epon <slot/port></p> <p>Command reference: <slot/port> modules and ports.</p> |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | <p>Open pon port 1/1</p> <p>Configuration command: epon-admin <enable disable></p> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu oam-ether-autoneg 1/1 1 1 | <p>Inquire automated negotiation of ONU port 1</p> <p>Configuration command: display-epon-onu oam-ether-autoneg <slot/port> <onuld> <onuport></p> <p>Command reference: <slot/port> indicates slots and ports; <onuld> indicates llid number of onu and: <onuport> indicates onu port.</p> |

14.4. Querying ONU UNI port local technological ability

| Operating steps | Description |
|------------------------------------|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | <p>Enter into pon1/1</p> <p>Configuration command: interface epon <slot/port></p> <p>Command reference: <slot/port> modules</p> |

| | |
|---|---|
| | and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu local-ability 1/1 1 1 | Inquire local technological ability of OUN port 1 Configuration command: display-epon-onu local-ability <slot/port> <onuld> <onuport> Command reference: <slot/port> indicates slots and ports; <onuld> indicates llid number of onu and: <onuport> indicates onu port. |

14.5. Querying ONU UNI asserted technological ability

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu declare-ability 1/1 1 1 | Inquire asserted technological ability of OUN port 1 Configuration command: display-epon-onu declare-ability <slot/port> <onuld> <onuport> Command reference: <slot/port> indicates slots and ports; <onuld> indicates llid number of onu and: <onuport> indicates onu port. |

14.6. Querying ONU FEC functional status

| Operating steps | Description |
|-----------------|-------------|
|-----------------|-------------|

| | |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#display-epon-onu oam-fec 1/1 1 | Inquire FEC functional state of ONU port 1 Configuration command: display-epon-onu oam-fec <slot/port> <onuld> Command reference: <slot/port> indicates slots and ports and; <onuld> indicates llid number of onu. |

15. Maintenance operation for ONU

15.1. Resetting ONU

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-system onu-reset | Reset onu of llid number to 1. |

15.2. Restarting UNI port automatic negotiation

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configure mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-ether ether-port autoneg-restart 1 | Restart automatic negotiation of onu port 1 Configuration command: oam-ether ether-port autoneg-restart <onuport> Command reference: <onuport> is onu ports. |

15.3. Configuring ONU UNI port loopback

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#oam-system loopdetect-mode 1 1 | Configure loop detection of onu port 1 to diable Configuration command: oam-system loopdetect-mode <onuport> <modestring> Command reference: <onuport> is onu ports; <modestring> is enabling state, 1 represents Disactivated and 2 represents Activated. |

16. Multicast management

16.1. Configuring multicast parameters

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#igmp parameter enable enable | Enable multicast function Configuration command: igmp parameter enable <disable enable> Command reference: <disable enable> is disable or enable. |
| BLKCX(config-t)#igmp parameter mode proxy | Configure multicast mode to proxy Configuration command: igmp parameter mode <proxy snooping> Command reference: <proxy snooping> indicates multicast proxy mode on the left side and snooping mode on the right side. |
| aBLKCX(config-t)#igmp parameter proxy-ip 192.168.2.14 | Configure ip of proxy mode to 192.168.2.14 Configuration command: igmp parameter proxy-ip <xxx.xxx.xxx.xxx> |
| BLKCX(config-t)#igmp parameter proxy-vlan 4000 | Configure proxy vlan ID to 4000 Configuration command: igmp parameter proxy-vlan <proxyVlanId> |
| BLKCX(config-t)#igmp parameter robustness 2 | Configure maximum time to inquiry to 2 Configuration command: igmp parameter robustness <robustCount> Command reference: <robustCount> is parameter selection through inquiring maximum time (default value is 2). |
| BLKCX(config-t)#igmp parameter query-interval 125 | Configure interval timer through inquiry to 125s Configuration command: igmp parameter query-interval <queryInterval> Command reference: <queryInterval> is parameter selection through interval timer inquiry. (Default value is 125.) |
| BLKCX(config-t)#igmp parameter query-response-interval 10 | Configure response timer through inquiry to 10s Configuration command: igmp parameter query-response-interval |

| | |
|--|--|
| | <p><queryResponseInterval></p> <p>Command reference: <queryResponseInterval> is parameter selection through response timer query.</p> |
| <p>BLKCX(config-t)#igmp parameter last-member-query-count 2</p> | <p>Configure maximum time of specific group query to 2</p> <p>Configuration command: igmp parameter last-member-query-count <queryCount></p> <p>Command reference: <queryCount> indicates configuration parameters for specific query with maximum time. (Default value is 2.)</p> |
| <p>BLKCX(config-t)#igmp parameter last-member-query-interval 125</p> | <p>Configure query interval timer for specific group to 125s</p> <p>Configuration command: igmp parameter last-member-query-interval <lastMemberQueryInterval></p> <p>Command reference: <lastMemberQueryInterval> indicates configuration parameters of query interval timer for specific group. (Default value is 125.)</p> |
| <p>BLKCX(config-t)#igmp parameter gmi 260</p> | <p>Configure gmi (port aging time of router) timer to 260</p> <p>Configuration command: igmp parameter gmi <gmiTime></p> <p>Command reference: <gmiTime> indicates configuration parameters of gmi timer.</p> |
| <p>BLKCX(config-t)#igmp preview limit 86400</p> | <p>Configure multicast preview time to 86400</p> <p>Configuration command: igmp preview limit <previewLimitValue></p> <p>Command reference: <previewLimitValue> is configuration of time parameters.</p> |
| <p>BLKCX(config-t)#igmp preview style 0</p> | <p>Configure multicast preview style to Count</p> <p>Configuration command: igmp preview style <previewStyleValue></p> <p>Command reference: <previewStyleValue> is control modes of multicast preview, divided into {0:Preview count 1:Preview Total-time}, where 0 indicates counting and 1 indicates total amount of time length.</p> |
| <p>BLKCX(config-t)#igmp parameter control-enable enable</p> | <p>Enable managed multicast enabling.</p> <p>Configuration command: igmp parameter control-enable <disable enable></p> |

| | |
|---|--|
| BLKCX(config-t)#igmp preview time 3600 | <p>Configure single preview time of managed multicast to 3600</p> <p>Configuration command: igmp preview time <previewTimeValue></p> <p>Command reference: <previewTimeValue> is configuration parameters for single preview time of managed multicast.</p> |
| BLKCX(config-t)#igmp preview interval 4500 | <p>Configure preview interval of managed multicast to 4500</p> <p>Configuration command: igmp preview interval <previewIntervalTimevalue></p> <p>Command reference: <previewIntervalTimevalue> is configuration parameters for preview interval of managed multicast.</p> |
| BLKCX(config-t)#igmp preview count 100 | <p>Configure preview times to 100</p> <p>Configuration command: igmp preview count <previewCountValue></p> <p>Command reference: <previewCountValue> is to configure parameters of preview times.</p> |
| BLKCX(config-t)#igmp preview reset-cycle 4800 | <p>Configure authority reset cycle to 4800</p> <p>Configuration command: igmp preview reset-cycle <previewResetCycle></p> <p>Command reference: <previewResetCycle> is to configure authority reset cycle.</p> |
| BLKCX(config-t)#igmp parameter multicast-control-type 1 | <p>Configure control type of managed multicast to GDA MAC+VLANID</p> <p>Configuration command: igmp parameter multicast-control-type <multicastControlType></p> <p>Command reference: <multicastControlType> indicates control types for managed multicast, divided into {0:GDA MAC 1:GDA MAC+VlanID 2:GDA MAC+SA MAC 3:GDA IP+VlanID}, in where 1 and 4 are often used.</p> |

16.2. Adding multicast source

| Operating steps | Description |
|-----------------|-------------|
|-----------------|-------------|

| | |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#igmp olt-mc-vlan add 1 4000 224.1.1.1 224.1.1.5 | <p>Add multicast ip addresses of vlan4000 from 224.1.1.1 to 224.1.1.5</p> <p>Configuration command: igmp olt-mc-vlan add <index> <vlanId> <startIp> <endIp></p> <p>Command reference: <index> is index; <vlanId> is multicast vlan and; <startIp> <endIp> is starting multicast addresses.</p> |

16.3. Static multicast group

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#igmp olt-mc-static-table add 1 224.1.1.4 1/2 | <p>Configure static multicast group ip of port 1/2 to 224.1.1.4</p> <p>Configuration command: igmp olt-mc-static-table add <index> <xxx.xxx.xxx.xxx> <slot/port></p> <p>Command reference: <index> is index; <xxx.xxx.xxx.xxx> is multicast address and; <slot/port> is modules and ports.</p> |

16.4. Multicast permission template

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#igmp olt-mc-auth-template add 1 224.1.1.1/1 | <p>Add multicast authority template 224.1.1.1 to allow</p> <p>Configuration command: igmp olt-mc-auth-template add <index> <ipaddrAuthList></p> <p>Command reference: <index> is index; <ipaddrAuthList>= multicast address + <index> { Indexes here are 1 (allow), 2 (preview) and 3 (reject).}</p> |

16.5. User managed multicast and user multicast channel

| Operating steps | Description |
|-----------------|-------------|
|-----------------|-------------|

| | |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface epon 1/1 | Enter into pon1/1 Configuration command: interface epon <slot/port> Command reference: <slot/port> modules and ports. |
| BLKCX(config-t-if-epon-1/1)#epon-admin enable | Open pon port 1/1 Configuration command: epon-admin <enable disable> |
| BLKCX(config-t-if-epon-1/1)#onu 1 | Configure llid to1 and enter into onu mode |
| BLKCX(config-t-if-onu-1/1/1)#igmp-onu-auth-template add 1 1 2 1 | Add authentication table 1 to OUN port 1 and allow channel Configuration command: : igmp-onu-auth-template add <onuPort> <index> <option> <templateIndex> Command reference: <onuPort> indicates onu ports; <index> indicates index; <option> indicates add method, usually defaulted to 2 (binding mode) and; <templateIndex> indicates authentication table parameters. |

16.6. CDR control parameters

| Operating steps | Description |
|--|--|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#cdr report-mode periodical | Configure CDR reporting to periodical report Configuration command: cdr report-mode <periodical counting force> Command reference: <periodical counting force>, periodical indicates periodical report, counting indicates counting overflow report and force indicates forced report. |
| BLKCX(config-maint)#cdr report-interval 80 | Configure periodical report time to 180 |

| | |
|--|--|
| | Configuration command: cdr report-interval <time> |
| BLKCX(config-maint)#cdr not-record-time 50 | Configure CDR interval time to 50 Configuration command: cdr not-record-time <shortestTime> |

16.7. All user channel information

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#display-l2protocol igmp state all | Inquire all user channel information |

16.8. Specific user channel information

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#display-l2protocol igmp state onuport 1/1 | Inquire specific user channel information |

16.9. Specific channel user information

| Operating steps | Description |
|---|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#display-l2protocol igmp state channel 224.1.1.1 | Inquire specific channel user information Configuration command: display-l2protocol igmp state channel <igmpChannelIp> Command reference: <igmpChannelIp> indicates multicast channels. |

17. Spanning tree management

17.1. Configuring bridge of spanning tree

| Operating steps | Description |
|--------------------------------------|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#stp mode enable | Configure bridge of spanning tree to enable Configuration command: stp mode <disable enable> |
| BLKCX(config-t)#stp priority 500 | Configure priority to 500 Configuration command: stp priority <bridgePriority> Command reference: <bridgePriority> indicates parameters, defaulted to 32768. |
| BLKCX(config-t)#stp max-age 20 | Configure aging time to 20 Configuration command: stp max-age <maxAge> Command reference: <maxAge> is to configure aging time parameters, defaulted to 20. |
| BLKCX(config-t)#stp hello-time 2 | Configure hello time to 2 Configuration command: stp hello-time <hellotime> Command reference: <hellotime> indicates parameter configuration, defaulted to 2. |
| BLKCX(config-t)#stp forward-delay 15 | Configure forwarding and delay time to 15 Configuration command: stp forward-delay <forwardDelayValue> Command reference: <forwardDelayValue> indicates parameter configuration, defaulted to 2. |

17.2. Configuring port of spanning tree

| Operating steps | Description |
|----------------------------------|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface ge 3/1 | Enter uplink port 3/1 |

| | |
|--|--|
| | Configuration command: interface ge <slot/port> Command reference: <slot/port> indicates uplink ports. |
| BLKCX(config-t-if-ge-3/1)#stp-port mode enable | Configure uplink port to enable Configuration command: stp-port mode <disable enable> |
| BLKCX(config-t-if-ge-3/1)#stp-port priority 128 | Configure priority to 128 Configuration command: stp-port priority <portPriority> Command reference: <portPriority> indicates parameter configuration, defaulted to 128. |
| BLKCX(config-t-if-ge-3/1)#stp-port pathcost 0 | Configure path cost to 0 Configuration command: stp-port pathcost <pathcost> Command reference: <pathcost> indicates parameter configuration, defaulted to 0. |
| BLKCX(config-t-if-ge-3/1)#stp-port point2point yes | Configure point to point function to Yes Configuration command: stp-port point2point <point2point> Command reference: <point2point> is mode selection, divided into {yes no auto}. |
| BLKCX(config-t-if-ge-3/1)#stp-port isedge yes | Configure uplink port as edge port Configuration command: stp-port isedge <yes no> |

17.3. Inquiring Bridge status of spanning tree

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface ge 3/1 | Enter uplink port 3/1 Configuration command: interface ge <slot/port> Command reference: <slot/port> indicates uplink ports. |
| BLKCX(config-t-if-ge-3/1)#display-l2protocol stp bridge | Inquire bridge configuration of spanning tree |

17.4. Inquiring port state of spanning tree

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#interface ge 3/1 | Enter uplink port 3/1 Configuration command: interface ge <slot/port> Command reference: <slot/port> indicates uplink ports. |
| BLKCX(config-t-if-ge-3/1)#display-l2protocol stp port-state 3/1 | Inquire port state of spanning tree |

18. DHCP management

18.1. Configuring DHCP information

| Operating steps | Description |
|--|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#dhcp enable enable | Configure DHCP state to enable Configuration command: dhcp enable <disable enable> |
| BLKCX(config-t)#dhcp access-node BLK-C1 | Configure device node information Configuration command: dhcp access-node <locationString> Command reference: <locationString> indicates input of device node. |
| BLKCX(config-t)#dhcp offer-enable enable | Open Off option Configuration command: dhcp offer-enable <disable enable> |

18.2. Message statistics

| Operating steps | Description |
|--|---|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#dhcp query-action start | Open DHCP message statistics control Configuration command: dhcp query-action <start end> |
| BLKCX(config-t)#display-l2protocol dhcp statistic-query 1/1 | Inquire port DHCP message statistics information |

19. PPPoE management

19.1. Configuring PPPoE information

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode Enter into terminal configuration mode |
| BLKCX(config-t)#pppoe enable enable | Configure PPPoE to enable Configuration command: pppoe enable <disable enable> |
| BLKCX(config-t)#pppoe access-node BLK-C1 | Configure PPPoE access node to BLK-C1 Configuration command: pppoe access-node <location> Command reference: <location> indicates information input, it does not exceed 48 bytes. |

19.2. Message statistics

| Operating steps | Description |
|---|--|
| BLKCX#configure terminal | Enter into terminal configuration mode |
| BLKCX(config-t)#pppoe query-action start | Open DHCP message statistics control Configuration command: pppoe query-action <start end> |
| BLKCX(config-t)#display-l2protocol pppoe statistic-query 1/1 | Inquire port DHCP message statistics information |

20. Alarm management

20.1. Configuring alarm information redefinition

| Operating steps | Description |
|--|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#alarm redefine 1 1 1 | <p>Configure alarm ID to 1, alarm type to equipment alarm and alarm level to urgent alarm</p> <p>Configuration command: alarm redefine <alarmId> <alarmRedefType> <alarmRedefLevel></p> <p>Command reference: <alarmId> is alarm ID; <alarmRedefType> is alarm type, divided into five types: 1 equipment alarm, 2 business alarm, 3 communication alarm, 4 environment alarm and 5 processing failed. <alarmRedefLevel> indicates alarm level, divided into 4 types: 1 urgent alarm, 2 important alarm, 3 secondary alarm and 4 warning.</p> |

20.2. Configuring alarm shield

| Operating steps | Description |
|--|--|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#alarm shield-switch enable | <p>Configure alarm shield to enable</p> <p>Configuration command: alarm shield-switch <enable disable></p> |

20.3. Configuring alarm filtering time

| Operating steps | Description |
|-----------------------------|------------------------------|
| BLKCX#configure maintenance | Enter into system management |

| | |
|---|--|
| | configuration mode |
| BLKCX(config-maint)#alarm jitter-time 5 | Configure alarm filtering time to 5 Configuration command: alarm jitter-time <timeValue> Command reference: <timeValue> is time parameter configuration. |

20.4. Inquiring alarm definition table

| Operating steps | Description |
|--|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#display-alarm redefine | Inquire alarm redefinition table |

20.5. Inquiring all current alarms

| Operating steps | Description |
|--|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#display-alarm log-list | Inquire all current alarms |

21. Statistics management

Parameter description: description after each <> brace is to explain the configuration item.

<statType> :Performance statistic type.{1:EtherPort | 2:EtherTcp/IP | 3:EtherL2 | 4:EtherPHY | 5:EtherRMON | 6:PONport|7:ONU}

<collectGrain>:Performance statistic data collect grain. {1:quarter | 2:hour}

<reportGrain> :Performance statistic data report grain. {1:quarter | 2:hour}

<isON> :Statistic task state control, {1:start | 0: stop}

<objectFlag> :Statistic objects . {1:all (Not support) | 2:appointed}

<timeFlag> :Statistic time template flag. {1:all | 2:appointed}

<index> :Performance statistic object index. [1,12]

<slot/port> :Statistic object port.

<onuld> :Optional parameter. Whent statistic Type is onu, onuld must supply. [1,64]

<weekDay> :Week day of statistic time template. {0:Sun.| 1:Mon. |2:Tues |3:Wed. |4:Thurs |5:Fri. |6:Sat. |7:Weekly}

<cycleBegin> :Statistic cycle begin time,unit: quarter. [0,95]

<cycleEnd> :Statistic cycle end time. unit: quarter[0,95]

<switchValue> :Add the statistic object or del it. {on|off}

21.1. Adding statistics task

| Operating steps | Description |
|--|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#perf-stat task add 1 1 1 1 2 1 | Add statistics task Configuration command: perf-stat task add <statType> <collectGrain> <reportGrain> <isON> <objectFlag> <timeFlag> |

21.2. Adding statistical object

| Operating steps | Description |
|--|--|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#perf-stat object add 1 1 1/1 | Add statistics object pon 1/1 Configuration command: perf-stat object |

| | |
|--|------------------------------------|
| | add <statType> <index> <slot/port> |
|--|------------------------------------|

21.3. Statistical information of Ethernet port

| Operating steps | Description |
|--|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#display-perf-stat ether-port 1/1 | Inquire statistical information of Ethernet port Configuration command: display-perf-stat ether-port <slot/port> |

21.4. Statistical information of PON port

| Operating steps | Description |
|---|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#display-perf-stat epon-port 1/1 | Inquire statistical information of PON port 1/1 Configuration command: display-perf-stat epon-port <slot/port> |

21.5. Statistical information of LLID

| Operating steps | Description |
|--|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#display-perf-stat onu-llid 1/1 1 | Inquire statistical information of llid with 1 under pon 1/1 Configuration command: display-perf-stat onu-llid <slot/port> <onuld> |

22. System maintenance

22.1. Configuring network parameter

| Operating steps | Description |
|--|--|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#outband 192.168.2.125 255.255.255.0 08:10:02:00:00:7d | Configure out band management Configuration command: outband <ip> <mask> [mac] Command reference: <ip> is IP address; <mask> is subnet mask and [mac] is MAC address of olt. |
| BLKCX(config-maint)#inband 192.168.1.125 255.255.255.0 0 08:10:01:00:00:7d | Configure in band management Configuration command: inband <ip> <mask> <vlanId> [mac] Command reference: <ip> is IP address; <mask> is subnet mask and [mac] is MAC address of olt. |
| BLKCX(config-maint)#net-server gateway 192.168.2.16 | Configure default gateway to 192.168.2.16 Configuration command: net-server gateway xxx.xxx.xxx.xxx |
| BLKCX(config-maint)#net-server dns-master 192.168.32.34 | Configure master DNS Configuration command: net-server dns-master xxx.xxx.xxx.xxx |
| BLKCX(config-maint)#net-server dns-slave 192.168.23.35 | Configure slave DNS Configuration command: net-server dns-slave xxx.xxx.xxx.xxx |
| BLKCX(config-maint)#net-server time-server 192.168.2.14 | Configure NTP time server IP address or URL address Configuration command: net-server time-server <serverAddress> |
| BLKCX(config-maint)#net-server time-zone 0 | Configure time zone Configuration command: net-server time-zone <tzValue> |
| BLKCX(config-maint)#net-server sntp-ctrl 1 | Configure SNTP time synchronization to enable Configuration command: net-server sntp-ctrl |

| | |
|--|------------|
| | <ctrlFlag> |
|--|------------|

22.2. Configuring FTP service parameters

| Operating steps | Description |
|---|--|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#ftp-server directory updatefile ./ | Configure data type and ftp path Configuration command: ftp-server directory <ftpUploadType> <ftpPath> Command reference: <ftpUploadType> indicates data types and <ftpPath> FTP paths. |
| BLKCX(config-maint)#ftp-server host 192.168.2.3 21 test test | Configure server ip, username and password Configuration command: ftp-server host <xxx.xxx.xxx.xxx> <userName> <password> Command reference: <xxx.xxx.xxx.xxx> is server ip, <userName> is username and <password> is password. |

22.3. Configuring alarm threshold of loading equipment

| Operating steps | Description |
|--|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#system-load 80 70 80 70 | Configure alarm threshold of loading equipment |

22.4. Configuring alarm threshold of environment temperature

| Operating steps | Description |
|---|---|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#temperature-threshold 1 70 65 | Configure alarm threshold of environment temperature |

22.5. Resetting slot

| Operating steps | Description |
|-----------------------------------|--|
| BLKCX#configure maintenance | Enter into system management configuration mode |
| BLKCX(config-maint)#reset slot 1 | Reset pon slot 1 Configuration command: reset slot <slotID> |
| BLKCX(config-maint)#reset chassis | Reset whole machine |