EPON OLT User Manual

Software version：-xxx_firmware_I_V1.0.0_Rel

Version	Date	Description
V1.0	2018.12.12	The First Version

CONTENTS

1.1 1. LOCAL AND REMOTE MANAGEMENT AND CONFIGURATION MANAGEMENT

This device provides a command line mode (CLI) local and remote management of equipment.

OLT provides 3 types of equipment management interface

- ✧ Console interface
- ✧ NMS outbound management interface
- ✧ Inbound management interface

1.2 CONSOLE INTERFACE

1.2.1 ESSENTIAL INFORMATION

The use of console port is changing RJ45 to serial line (pictured) and operating the user command line of OLT device.【The serial line is provided by our company】

【Notice】

1、It can use USB abut serial port if the PC has no serial port.

2、The default serial port baud rate is 9600 bps.

1.2.2 SOFTWARE OPERATION METHOD

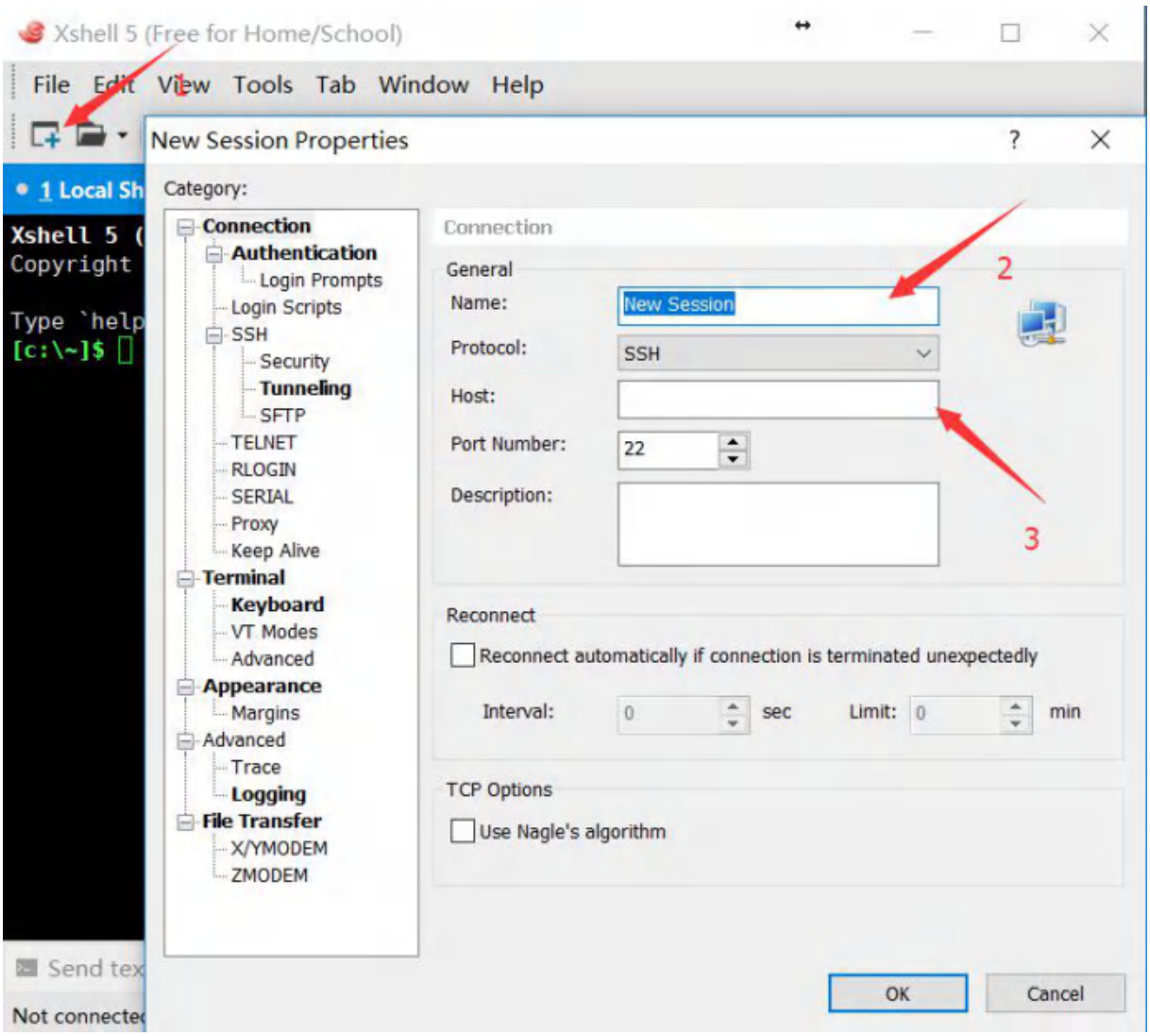
Open a serial port tool, such as xshell

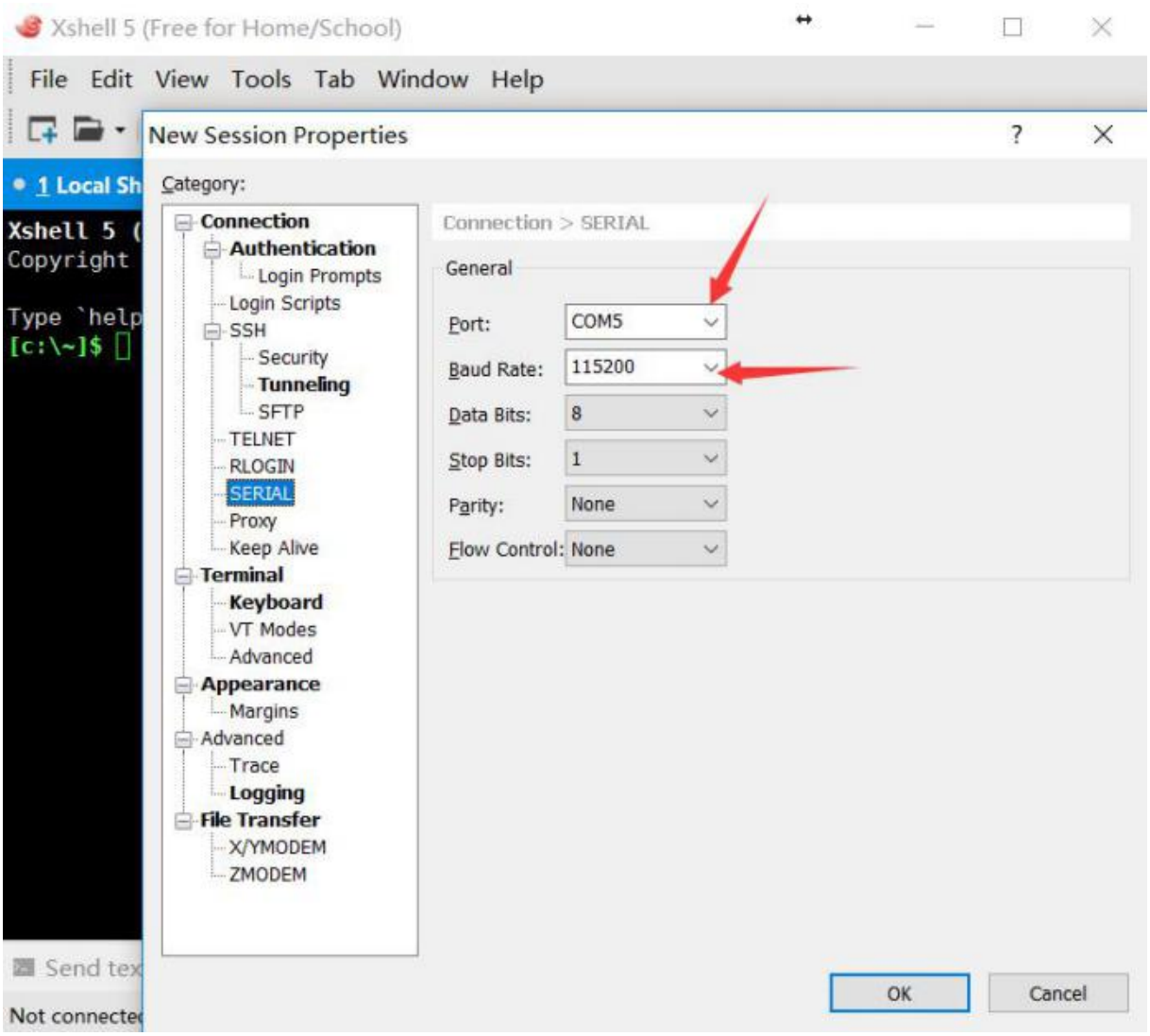
New-built a serial port link, and open it. Here are the steps:

【Notice】

User name：root

Password：123456


Xshell 5 (Free for Home/School)
File Edit View Tools Tab Window Help
1
1 Local Sh
Xshell 5 (
Copyright
Type `help
[c:\~]$
Send tex
Not connecte
New Session Properties
Category:
Connection
Authentication
Login Prompts
Login Scripts
SSH
Security
Tunneling
SFTP
TELNET
RLOGIN
SERIAL
Proxy
Keep Alive
Terminal
Keyboard
VT Modes
Advanced
Appearance
Margins
Advanced
Trace
Logging
File Transfer
X/YMODEM
ZMODEM
Connection
General
Name:
New Session
Protocol:
SSH
Host:
Port Number:
22
Description:
2
3
Reconnect
Reconnect automatically if connection is terminated unexpectedly
Interval:
0
sec
Limit:
0
min
TCP Options
Use Nagle's algorithm
OK
Cancel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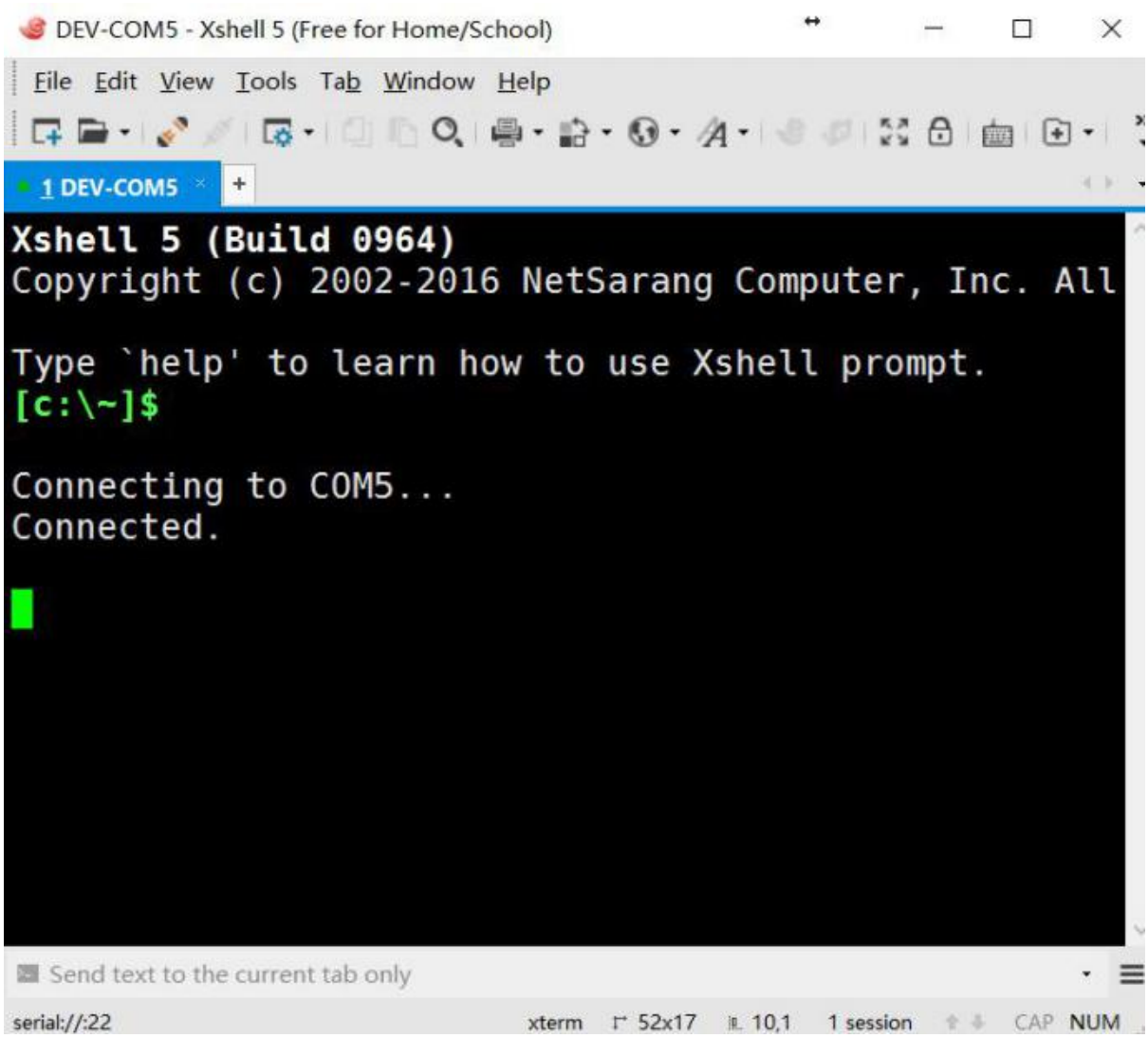
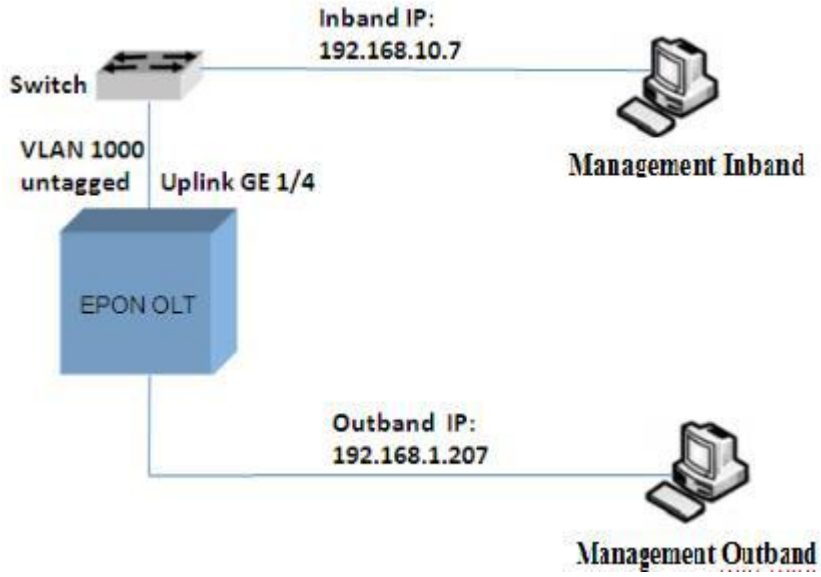
SSH
Security
Tunneling
SFTP
TELNET
RLOGIN
SERIAL
Proxy
Keep Alive
Terminal
Keyboard
VT Modes
Advanced
Appearance
Margins
Advanced
Trace
Logging
File Transfer
X/YMODEM
ZMODEM
Connection > SERIAL
General
Port: COM5
Baud Rate: 115200
Data Bits: 8
Stop Bits: 1
Parity: None
Flow Control: None
OK
Cancel
1 Local Sh
Xshell 5 (
Copyright
Type `help
[c:\~]$
Send tex
Not connecte



1.3 NMS OUTBOUND MANAGEMENT INTERFACE

The one end of the two RJ-45 ports on crossover network cable is connected to the nearest switch or network reachable switch, the other end is connected to the OLT.

Configuration management network diagram：



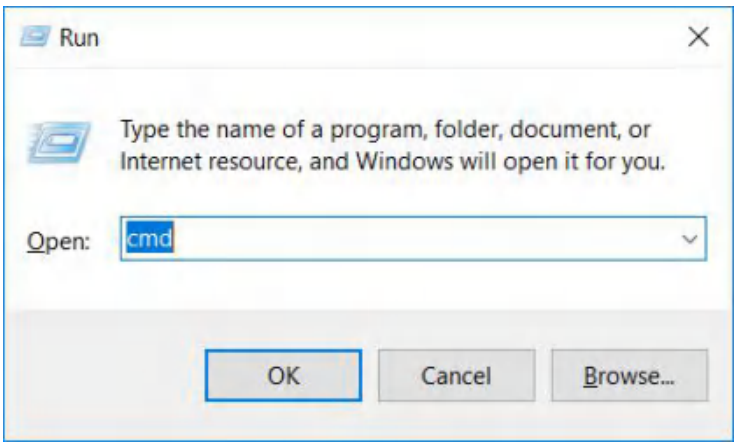
OLT administrator IP address is defaulted as 192.168.100.100. You can configure the inbound IP or modify the IP address of the PC to ensure the route access to PC is up to the network of OLT IP network management.

```
OLT(config)# show running-config

Current configuration:
!
interface vlan 1
exit
!!Acl configuration
!
!
!
!
!
!
interface vlanif 1
ifconfig 192.168.1.100 netmask 255.255.255.0
exit
system
ifconfig 192.168.100.1 netmask 255.255.255.0
exit
```

You can through the telnet remote access to OLT after configuring the IP address.

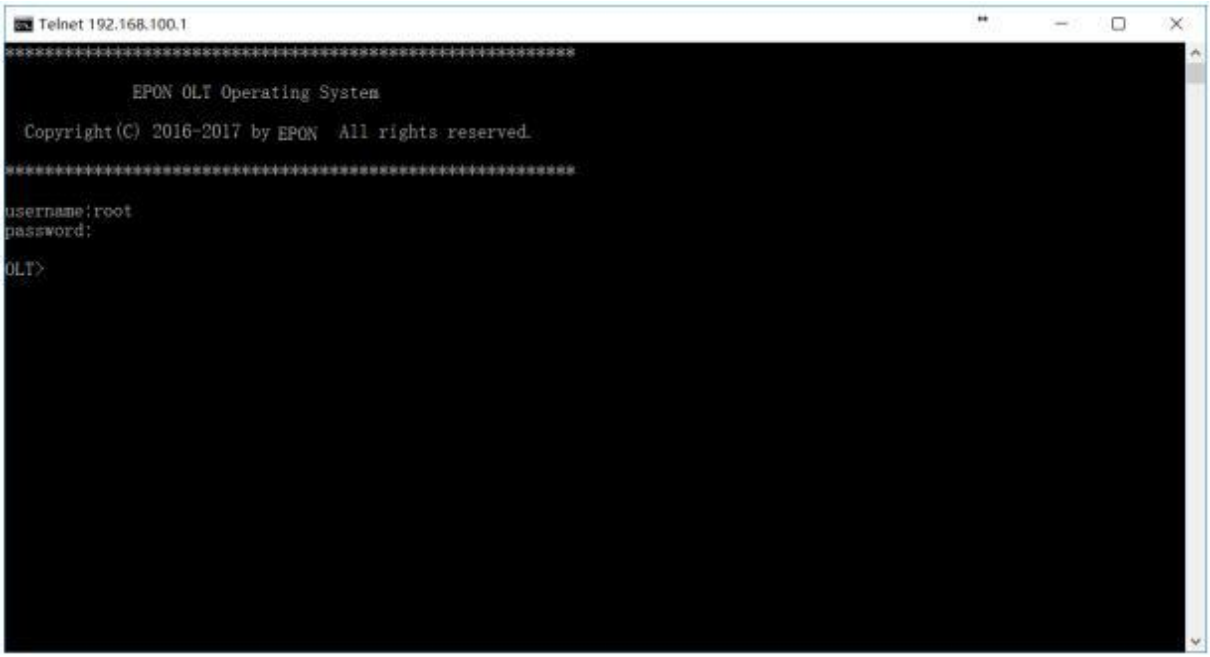
Opening windows operation window, input cmd：



Then telnet 192.168.1.100, and input username and password to enter the control command line [CLI] interface.

Username :root

Password:123456



1.34INBOUND MANAGEMENT INTERFACE

This OLT device can support inbound management configuration through uplink port(ge) or PON port following connected ONU. It needs configuration the IP address, subnet mask, and VLAN.

The relevant configuration routine：

E08(config)# interface vlanif 100

E08(config-vlanif-100)# ifconfig 192.168.2.1 netmask 255.255.255.0

```
E08(config-vlanif-100)# ifconfig
Description : For Inbound management
        For Inbound Vlan ID is 100
The Maximum Transmit Unit is 1500 bytes
Internet Address is 192.168.2.1, netmask 255.255.255.0
Hardware address is 80:66:29:0F:01:02
   Recive 0 packets, 0 bytes
   Transmit 0 packets, 0 bytes

E08(config-vlanif-100)# exit

E08(config)#

E08(config)# interface ge 1
E08(config-ge-1)# vlan mode access
E08(config-ge-1)# vlan access 100
E08(config)# ping 192.168.10.175
PING 192.168.10.175 (192.168.10.175): 56 data bytes
64 bytes from 192.168.10.175: seq=0 ttl=64 time=1.509 ms
64 bytes from 192.168.10.175: seq=1 ttl=64 time=0.705 ms
64 bytes from 192.168.10.175: seq=2 ttl=64 time=0.648 ms
64 bytes from 192.168.10.175: seq=3 ttl=64 time=0.982 ms

--- 192.168.10.175 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 0.648/0.961/1.509 ms

E08(config)#
```

2 MANAGE CONFIGURATIONS

Manage Configurations contain the system name, save configuration, system configuration etc.

2.1 CONFIGURATION THE EQUIPMENT SYSTEM INFORMATION

1. Configure system name：

   E08(config)# hostname E08

   E08 (config)#

2. Store system configuration：

   E08 (config)# save

   E08 configuration saved successfully

3. System configuration

   E08 (config)# system

   E08 (system)#

4. Check the alarm history record

   E08 (system)# alarm-history

5. Configuring and viewing outbound management IP

   E08 (system)# ifconfig

3 PON CONFIGURATION MANAGEMENT

3.1 PON PORT ONU REGISTRATION AND CERTIFICATION

1. ONU authentication type and mode configuration

It supportstwo certification methods of PON port at present, manual and automatic authentication . As long as the fiber splitter access to OLT's PON port, ONU can automatically authorize and it will be online , while manual authentication need to configure the relevant command to make the ONU online.

ONU authentication mode: support MAC authentication, and hybrid authentication, the latter will support loid authentication.

Check ONU authentication mode command：

```
E08(config)# hostname E08
E08(config)# interface epon 1
E08(config-epon-1)# onu-authorize
--------------------------------------------------------------------------------
 PON-PORT AUTH-MODE AUTH-TYPE
--------------------------------------------------------------------------------
   pon1      mac      auto
--------------------------------------------------------------------------------
```

【Notice】

(1)、OLT defaults automatic registration and authentication at present

(2)、Defauting mac authentication mode

2. ONU support the black and white list .

3. Manually bind a ONU to a ONU ID

```
E08 (config-epon-1)# bind-onu mac 00:00:00:11:11:11
E08 (config-epon-1)# show onu-info all
--------------------------------------------------------------------------------
PON/ONU  Mac-Address  Status Auth-State Config-State  Reg-time  ONU-TYPE
--------------------------------------------------------------------------------
1/1  00:00:00:11:11:11 Initial  TRUE  FALSE  2018/12/31 00:00:00
--------------------------------------------------------------------------------

E08 (config-epon-1)#
```

【Notice】：

The system will automatically assign the unused ID to the ONU if not specify ONU ID

4. Manually bind a ONU to a blacklist, and once bound to a blacklist, the system will block ONU registration online.

```
E08 (config-epon-1)# blacklist add mac 00:00:00:11:11:11
E08 (config-epon-1)# show blacklist onu-info all
--------------------------------------------------------------------------------
PON/ONU     Mac Address     Try REG Count
--------------------------------------------------------------------------------
1/1     00:00:00:11:11:11         0
--------------------------------------------------------------------------------

E08 (config-epon-1)#
```

3.2 DBA BANDWIDTH ALLOCATION

DBAs supports 5 types of bandwidth allocation

	Fixed	Assure	Max
Type1	√		
Type2		√	
Type3		√	√
Type4			√
Type5	√	√	√

Relevant Configuration command：

Configuring ONU ID 1 DBA bandwidth type as Type1,bandwidth is 10M：

```
E08 (config-epon-4)# sla-up 1 type1 fix 10000
```

Configuring ONU ID 1 DBA bandwidth type as Type2,guarantee bandwidth is 100M：

```
E08 (config-epon-4)# sla-up 1 type2 assure 100000
```

Configuring ONU ID 1 DBA bandwidth type as Type3,guarantee bandwidth is 100M，maximum bandwidth is 1000M：

```
E08 (config-epon-4)# sla-up 1 type3 assure 100000 max 1000000
```

Configuring ONU ID 1 DBA bandwidth type asType4,maximum bandwidth is 1000M：

```
E08 (config-epon-4)# sla-up 1 type4 max 100000
```

Configuring ONU ID 1 DBA bandwidth type Type5, fixed bandwidth is 10M, guaranteed bandwidth is 100M, the maximum bandwidth is 1000M：

```
E08 (config-epon-4)# sla-up 1 type5 fix 10000 assure 100000 max 1000000
```

【Notice】

The maximum bandwidth of one PON port is 1G.

4 ONU UNI CONFIGURATION

4.1 VLAN MODEL INTRODUCTION

ONU Ethernet port supports the following 4 kinds of VLAN mode:

1 VLAN pass-through

This mode is suitable for those the client's home gateway or switch provided by operators, whose VLAN TAG is reliable. In this mode, the ONU will received upload Ethernet frame without any processing of the Ethernet frame (regardless of whether the Ethernet frame with VLAN tag or not) and transparently forward to OLT, for download Ethernet frame forwarding mode is also transparent.

Table 5-1 ONU processing mode in VLAN transmission mode

Direction	Whether Ethernet packets has Tag	Processing Mode
Upload	With VLAN tag	Pass-through
	W/O VLAN Tag	
Download	With VLAN tag	
	W/O VLAN Tag	

2 VLAN mode tag

This mode is suitable for the client's home gateway or switch VLAN tag is not to be trusted. In order to realize the management and control of VLAN entered the network service, the operators need to add a network layer VLAN tag for them.

Table 5-2 ONU Procession mode in VLAN tab model

Direction	Whether Ethernet packets has Tag	Processing Mode
Upload	With VLAN tag	Discard
	W/O VLAN Tag	Adding new VLAN Tag and retransmission
Download	With VLAN tag	Transmission to the corresponding uni port according to VID and remove tag。
	W/O VLAN Tag	Discard

3 VLAN mode Translation

VLAN translation refers to the 1:1conversion between the input VLAN and the output VLAN.

In this mode, ONU will change the upload Ethernet frame VLAN TAG (the VID may not be the only use, could be with other users using the same VID in the same system) to the network side only VLAN tag, and perform the reverse operation in the download direction. When the ONU support VLAN translation, the VLAN translation function should support Ether type value is 0x8100, optional support other Ether type values.

Table 5- 3 ONU Procession mode in VLAN conversion mode

Direction	Whether Ethernet packets has Tag	Processing Mode
Upload	With VLAN tag	Changing the VID to corresponding VID (output VID) according to the table then retransmission if the original TAG VID has corresponding entry (Equal to the VID input) in the corresponding port of the VLAN translation list, or else discard it.
	W/O VLAN Tag	Marking the untagged packet as default VLAN then retransmission.
Download	With VLAN tag	Changing the VID to corresponding VID(input VID) according to the table then retransmission if the original TAG VID has corresponding entry (Equal to the VID input) in the corresponding port of the VLAN translation list, or else discard it. Stripping tag and retransmission if the original TAG VID is default VID
	W/O VLAN Tag	Discard

4 VLAN mode Trunk

The ONU user side interface supports VLAN trunk function. By setting the ONU UNI port "VLAN allows" list to control whether forwarding message.

Table 5- 4 ONU Procession mode in VLAN Trunk model

Direction	Whether Ethernet packets has Tag	Processing Mode
Upload	Has VLAN tag	Up forwarding the message if its VLAN belongs to “permit VLAN” of the port, or else discard it.
	No VLAN Tag	Retransmission the packet after mark the untagged as default VLAN
Download	Has VLAN tag	Down forward the message if its VLAN belongs to “permit VLAN” of the port, or else discard it. Stripping VLAN tag and down forward it if the VLAN ID of the message is “default VID”
	No VLAN Tag	Discard

Configure ONU UNI VLAN transparent

The system configuration is defaulted in, if the original configuration of the other mode to change the transmission mode, configuration commands are as follows:

E08(config)# interface onu 4/1

E08 (config-onu-4:1)# port-vlan 1 mode transparent

Configure ONU UNI VLAN tag

Taking configuration ONU 1/1/2 first UNI port as example onu1/1/2 example

Taking configuration of ONU 1/1/2 the first UNI port as example to explain OUN UNI VLAN marking configuration. The ONU 1/1/2 first port connected with the user's PC, user's data should be added VLAN 100 after enter into the ONU. Configuration commands as follows:

E08(config)# interface onu 4/1:1

E08 (config-onu-4:1)# port-vlan 1 mode tag 100 pri 0

Configure ONU UNI VLAN Trunk

Taking configuration of ONU 1/1/2 the first UNI port as example to explain ONU UNI VLAN trunk configuration. The ONU 1/1/2 first port connected to the AP Router, the router IP management data should not only be added VLAN 100 after enter into the ONU, but also pass through two businesses VLAN 2100 and 2101. Configuration commands are as follows:

1. Firstly configure the user port VLAN mode for trunk and PVID is 100, it has not yet come into effect at this moment.

E08(config)# interface onu 4/1:1

E08 (config-onu-4:1)# port-vlan 1 mode trunk 100 pri 1

2. Add trunk VLAN table

E08 (config-onu-4:1)# port-vlan 1 trunk add 2100,2101

Configure ONU UNI VLAN Translation

1. Configuration mode for vlan translation，and interface pvid as101

E08 (config-onu-4/2)# port-vlan 1 mode translation 101 pri 1

2. Configuration vlan translation table

E08 (config-onu-4/2)# port-vlan 1 translation add oldvlan 101 newvlan 102 pri 0

4.2 ONU UNI INTERFACE CONFIGURATION MANAGEMENT

1. Interface rate-limiting configuration

The port speed is divided into two kinds, the entrance and exit rate-limiting.

Configuration routines：

Configuration UNI port exit rate-limiting

E08 (config-onu-4/2)# port-rate-limit 1 egress cir 1000 pir 100000

2. Enable port loop detection

E08 (config-onu-4/2)# port-loop-detect 1 enable

3. Closing UNI interface

E08 (config-onu-4/2)# port-shutdown 1

Openning UNI interface

E08 (config-onu-4/2)# no port-shutdown 1

4. Enable port self-adaption

E08 (config-onu-4/2)# port-auto-neg 1 enable

5. fec switch

E08 (config-onu-4/2)# fec-mode mode enable

6. Port flow control

E08 (config-onu-4/2)# port-flow-control 1 enable

7. Check interface status

E08 (config-onu-4/2)# show onu-link-staus

5 SWITCHING SIDE CONFIGURATION MANAGEMENT

5.1 VLAN CONFIGURATION MANAGEMENT

VLAN (virtual local area network) is a kind of technology dividing logistically the LAN device into networks so as to realize the virtual work group. All the Et1000 VLAN are based on the port and all the GE interfaces are the VLAN1 member.

The same VLAN can have both tagged ports and untagged ports.

OLT supports three mode of port vlan mode: access /trunk /hybrid

Access: OLT one port only support one access vlan, it will be PVID;

Trunk: OLT can support a vlan list, and default it's PVID;

Hybrid: it can free specify.

5.1.1 VLAN INTERFACE

Create a VLAN command：

E08(config)# interface vlan
<1-4094> Vlan ID. <1-4094>

Take setting up VLAN 2000 as example to show the operating steps.The VLAN 2000 interface members are uplink port GE1 and PON port PON 1， both of them act as tagged interface accede to VLAN. The configuration command as following：

E08 (config)# interface vlan 2000

E08 (config-vlan-2000)# port ge 1 tagged

E08 (config-vlan-2000)# port epon 1 tagged

E08 (config-vlan-2000)# show vlan

Attribute Value

VLAN ID : 2000

Tagged Ports : PON01,GE01

Untagged Ports :

E08 (config-vlan-2000)#

Delet VLAN member port command:

E08 (config-vlan-2000)# no port epon 1

Delet VLAN command：

E08 (config)# no vlan 2000

【Notice】

1、 Above adding several interface to VLAN command can only be used when the interface mode is hybrid, this method cannot be used if in the other model .

2、If a VLAN is the management of VLAN, the configuration method is configuration after entering a port as a management inerface node. This method was stated at the 1.3 section , here will not description no longer.

5.1.2 INTERFACE VLAN CONFIGURATION

As the 3.1 section is described, it can configure VLAN under VLAN interface mode in port hybrid mode, this section explains what port mode, and how to configure.

Interface VLAN is divided into three kinds：access、trunk、hybrid

Configuration routines：

1. Set up VLAN

E08 (config)# interface vlan 2000

2. Configure Port Mode

E08 (config)# interface ge 1 #Enter the port node

E08(config-ge-1)# vlan mode hybrid

3. Configure VLAN

E08 (config-ge-1)# vlan access 2000

E08 (config-ge-1)# show vlan

Port vlan configuration:

Port type : access

Port default vlan : 2000

Tagged vlan :

Untagged vlan :

200

E08 (config-ge-1)#

4. The default port VLAN configuration (PVID):

E08 (config-epon-4)# port default-vlan 1000

5.2 MAC ADDRESS MANAGEMENT AND CONFIGURATION

5.2.1 DISPLAY MAC ADDRESS TABLE

Display all mac address：

E08 (config)# show mac-address all

Display the black hole MAC address table：

E08 (config)# show mac-address black-hole

Display the studied dynamic MAC address table：

E08 (config)# show mac-address dynamic

Displays the static MAC address table：

E08 (config)# show mac-address static

5.2.2 CONFIGURE MAC ADDRESS TABLE

1. Configure MAC address aging time

E08 (config)# mac-address age 100

2. Clear the MAC address table

E08 (config)# mac-address flush all

3. Add a static MAC address table

E08 (config)# mac-address static 00:11:22:33:44:55 vlan 100 port ge 1

4. Add an MAC address to the black hole MAC address table, the source MAC address is 00:12:21:12:12:12, VLAN is 10 of the packets will be discarded.

E08 (config)# mac-address black-hole 00:12:21:12:12:12 vlan 10

5.3 PORT CONFIGURATION MANAGEMENT

5.3.1 BASIC CONFIGURATION

Port duplex mode attribute set:

E08(config)# interface ge 2

E08(config-ge-2)# port duplex full

5.3.2 BROADCAST/MULTICAST/UNICAST STORM CONTROL CONFIGURATION

Limits the size of the broadcast traffic that the current port is allowed to receive:

E08(config)# interface ge 1

E08(config-ge-1)# port storm-control broadcast pps 1000

E08(config-ge-1)# show storm-control

Port GE01 storm control:

Bulticast pps: 1000

Multicast pps: 0

Unicast pps: 0

Limits the size of the multicast traffic that the current port is allowed to receive:

E08(config-ge-1)# port storm-control multicast pps 100

E08(config-ge-1)# show storm-control

Port GE01 storm control:

Bulticast pps: 1000

Multicast pps: 100

Unicast pps: 0

Limits the size of the unkown unicast traffic that the current port is allowed to receive:

E08(config-ge-1)# port storm-control unicast pps 10000

E08(config-ge-1)# show storm-control

Port GE01 storm control:

Bulticast pps: 1000

Multicast pps: 100

Unicast pps: 10000

5.3.3 PORT RATE LIMIT AND TRAFFIC SHAPING CONFIGURATION

E08(config)# interface ge 1

E08(config-ge-1)#

Confiure port egress rate limit:

E08(config-ge-1)# port rate-limit egress 128

E08 (config-ge-1)# show state

Attribute Value

Port Name : GE01

Port State : Enabled

Link speed : Auto-negotiation(- MBps -)

Flow ctrl : ON

MTU : 1518

Link status : DOWN

Port traffic shaping:

Egress rate : 128 kbps

Ingress rate : 0 kbps

Port vlan configuration:

Port type : hybrid

Port default vlan : 1

Tagged vlan :

Untagged vlan :

E08 (config-ge-1)#

Cancel port rate limit:

E08(config-ge-1)# no port rate-limit egress

5.3.4 PORT STATISTIC

E08(config-ge-1)# show statistic

Rx rate (kbps): 0 Tx rate (kbps): 0

RX octets : 0

RX frames : 0

RX unicast frames : 0

RX broadcast frames : 0

RX multicast frames : 0

RX discard frames : 0

RX error frames : 0

RX oversize frames : 0

RX frames 64 octets : 0

RX frames 65 to 127 octets : 0

RX frames 128 to 255 octets : 0

RX frames 256 to 511 octets : 0

RX frames 512 to 1023 octets : 0
RX frames 1024 to 1518 octets : 0
TX octets : 0
TX frames : 0
TX unicast frames : 0
TX broadcast frames : 0
TX multicast frames : 0
TX discard frames : 0
TX error frames : 0
TX oversize frames : 0
TX frames 64 octets : 0
TX frames 65 to 127 octets : 0
TX frames 128 to 255 octets : 0
TX frames 256 to 511 octets : 0
TX frames 512 to 1023 octets : 0
TX frames 1024 to 1518 octets : 0

E08 (config-ge-1)#

5.4 SPANNING-TREE

5.4.1 NETWORK DEMAND

- ONU is 1:1，uplink port is ge3；Enable global RSTP.
- Configure the corresponding functions on global and uplink port .

5.4.2 CONFIGURING STEPS

1. Enable the global RSTP function
   E08(config)# spanning-tree enable

2. Configure the device Bridge priority for is 4096
   E08(config)# spanning-tree priority 4096

3. Configure the device Forward Delay timer is 20s (Explain：The value of max-age is associated with hello and forward-delaymax-age,the specific relationship is ： 2*(forward-delay-1)>=max-age >=2*(hello +1))，it will prompt the conflict configuration if several configuration does not meet this relationship.

   E08(config)# spanning-tree timer forward-delay 20

4. Configuration the device Hello timer value 5s
   E08(config)#spanning-tree timer hello 5

5. Configuration the device max-age timer value is 18s
   E08(config)#spanning-tree timer max-age 18

5. Configuration the device uplink port RSTP spending is 200000
   E08(config)# interface ge 3
   E08(config-ge-3)#spanning-tree cost 20000

7. Setting the device uplink port as boundary port
   E08(config-ge-3)#spanning-tree edged-port enable

8. Activating or closing equipment the point-to-point mode on of uplink port
   E08(config-ge-3)#spanning-tree point-to-point auto
   E08(config-ge-3)#spanning-tree point-to-point force-true
   E08(config-ge-3)#spanning-tree point-to-point force-false

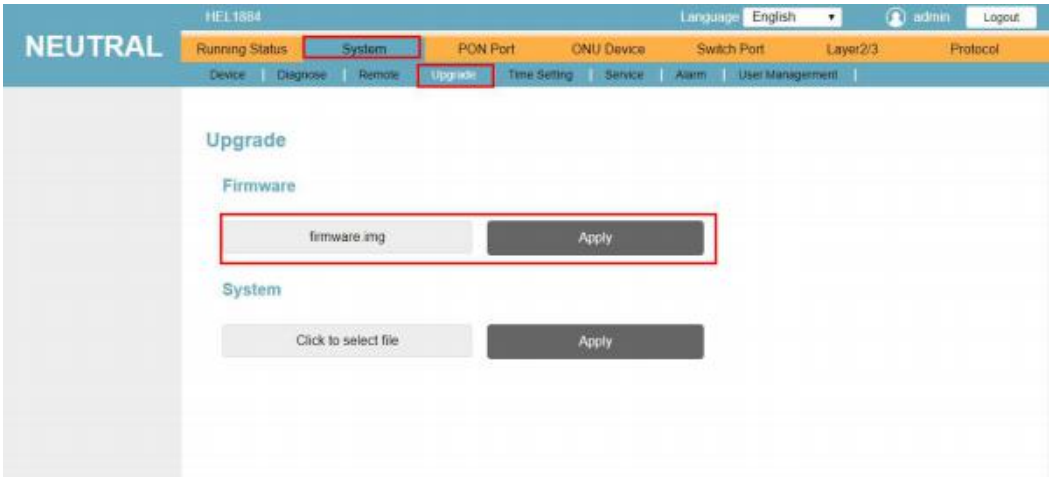
9. Setting the device uplink port priority
   E08(config-ge-3)#spanning-tree port-priority 144
   E08(config-ge-3)#show spanning-tree port-info

Port	Priority	Path Cost	Edge Status	Admin LinkType	Oper LinkType	Role	State
GE03	144	20000	Edge	Shared	Shared	None	Down

6 SYSTEM UPDATE

System support single image file update.

Update system or firmware.



I ABBREVIATION TERMINOLOGY

Abbreviation	English Explanation	Chinese Explanation
AES	Advanced Encryption Standard	高级加密标准
ARP	Address Resolution Protocol	地址解析协议
CATV	Cable Television	有线电视
CLI	Command Line Interface	命令行接口
MCSB	Main Control and Switching Board	控制与交换板卡
DBA	Dynamic Bandwidth Allocation	动态带宽分配
DHCP	Dynamic Host Configuration Protocol	动态主机配置协议
DMA	Destination MAC address	目的 MAC 地址
DSCP	Differentiated Services Code Point	区分服务代码点
DTE	Data Terminal Equipment	数据终端设备
EMS	Element Management System	网元管理系统
FCAPS	Fault, Configuration, Accounting, Performance and Security management	故障、配置、统计、性能和安全管理
FTTB	Fiber To The Building	光纤到大楼
FTTC	Fiber to the Curb	光纤到路边
FTTH	Fiber To The Home	光纤到户
GE	Gigabit Ethernet	千兆以太网
GEM	GPON Encapsulation Method	GPON 封装模式
GPON	Gigabit-Capable Passive Optical Network	千兆无源光网络
ICMP	Internet Control Message Protocol	Internet 控制消息协议
LAG	Link Aggregation Group	链路汇聚组
MAC	Medium Access Control	介质访问控制
MDU	Multi Dwelling Units	多住户单元
MGCP	Media Gateway Control Protocol	媒体网关控制协议
MIB	Management Information Base	管理信息库
MTBF	Mean Time Between Failures	平均故障间隔时间

Abbreviation	English Explanation	Chinese Explanation
MTTR	Mean Time to Repair	平均修复时间
NE	Network Element	网元
OAM	Operation, Administration and Maintenance	操作、管理和维护
ODN	Optical Distribution Network	光分配网络
OLT	Optical Line Terminal	光线路终端
OMCI	ONU Management and Control Interface	ONU 管理控制接口
ONT	Optical Network Terminal	光网络终端
ONU	Optical Network Unit	光网络单元
PDU	Protocol Data Unit	协议数据单元
PIR	Peak Information Rate	峰值比特率
PMD	Physical Medium Dependent	物理介质相关
PON	Passive Optical Network	无源光网络
POTS	Plain Ordinary Telephone Service	普通常规电话业务
PVID	Port based VLAN ID	基于端口的 VLAN 号
PVST	Per-VLAN (Rapid) Spanning Tree	基于 VLAN 的生成树
QoS	Quality of Service	服务质量
RSTP	Rapid Spanning Tree Protocol	快速生成树协议
RTT	Round Trip Time	环路时间
SCB	Single Copy Broadcast	单拷贝广播
SFU	Single Family Unit	单家庭单元
SLA	Service Level Agreement	服务等级协议
SMA	Source MAC Address	源 MAC 地址
SMB	Small to Medium Business	中小型企业
SMF	Single-mode Fiber	单模光纤
SNI	Service Node Interface	业务节点接口
SNMP	Simple Network Management Protocol	简单网络管理协议
STP	Spanning Tree Protocol	生成树协议

Abbreviation	English Explanation	Chinese Explanation
SVI	Switch Virtual Interface	交换虚拟接口
TC	Transmission Convergence	传输汇聚
T-CONT	Transmission Container	传输容器
TDM	Time Division Multiplex	时分复用
TOS	Type Of Service	业务类型
UNI	User Network Interface	用户侧接口
VLAN	Virtual Local Area Network	虚拟局域网
WRED	Weighted Random Early Detection	加权随机早期检测
WRR	Weighted Round Robin	加权轮询算法
XFP	10 Gigabit Small Form Factor Pluggable Module	10G 小型化可插拔光收发模块