

GPON FTTH HSI Service Provisioning

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Objectives

- Upon completion of this course, you will be able to :
 - Describe GPON FTTH HSI service principle
 - Master how to do the GPON FTTH HSI service configuration
 - Know the basic steps to check the GPON HSI service

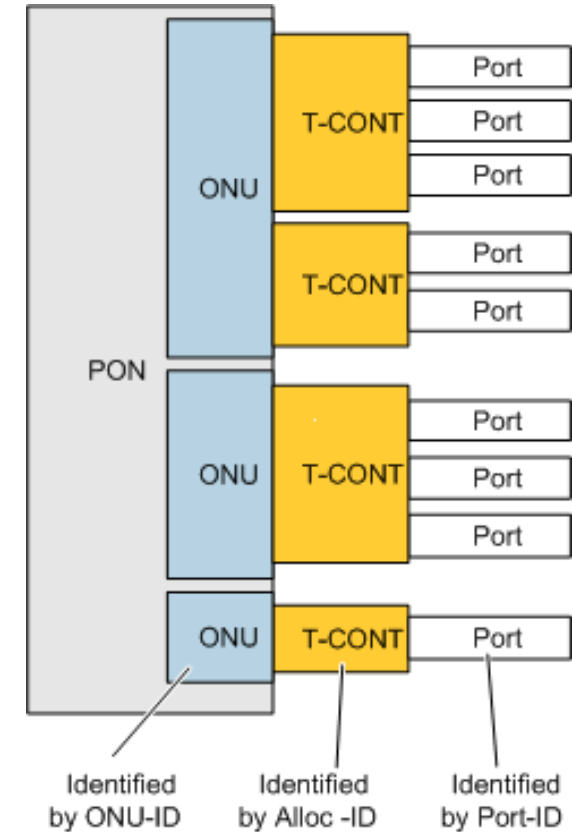


Contents

- 1. GPON HSI Service Implementation Principle**
2. GPON HSI Service Configuration Basics
3. GPON HSI Service Configuration Example
4. ONT Configuration Example (Optional)
5. GPON HSI Service Maintenance

GPON Service Multiplex Structure

- In the G-PON TC layer, a T-CONT, that is identified by Alloc-ID, is the basic control unit. The concept of a port, identified by Port-ID, is used for multiplexing traffic flows over a T-CONT.
- There are three important concepts:
 - ONU-ID
 - T-CONT
 - GEM Port



DBA

- DBA Bandwidth Types
 - Each DBA corresponds to different bandwidth types.
 - Each bandwidth type has its own QoS feature.

	Delay Sensitive	Allocation Mode	TCONT Type				
			Type 1	Type 2	Type 3	Type 4	Type 5
Fixed	Yes	Provisioned	√				√
Assured	No	Provisioned		√	√		√
Non-Assured	No	Dynamic			√		√
Best-effort	No	Dynamic				√	√
Max	No	Provisioned			√	√	√

Mapping From Service to GEM Port

- Relationship Between GEM Port and Service Traffic

Mapping	Details	Application
VLAN ID mapping	It maps the service traffic of the specified VLAN ID to a unique Port-ID.	The ONU/ONT adopts the VLAN ID to differentiate the user service traffic.
802.1p mapping	It maps the specified 802.1p service traffic to a unique Port-ID.	The ONU/ONT adopts the priority to differentiate the user service traffic. The user packet must be Pri-tagged.
VLAN ID+802.1p mapping	It maps the specified VLAN ID + 802.1p service traffic to a unique Port-ID.	The ONU/ONT adopts the priority +VLAN ID to differentiate the user service traffic.



Questions

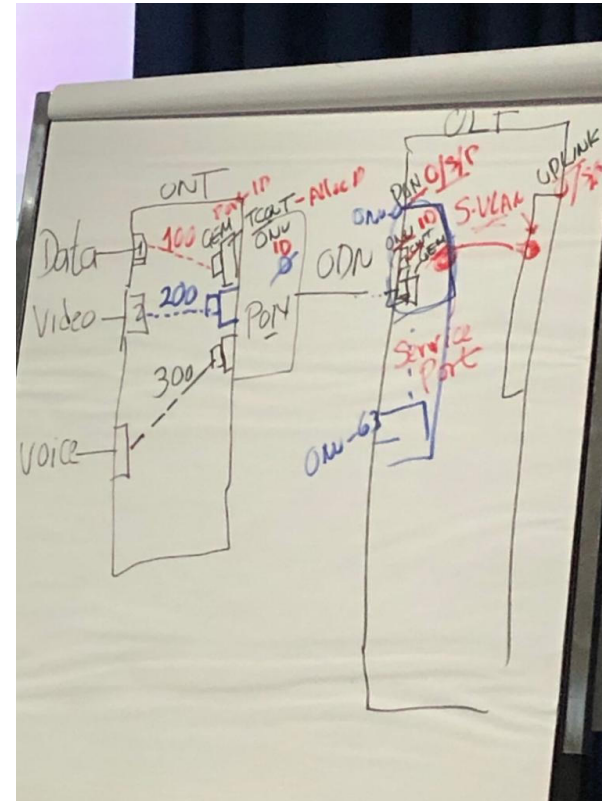
tdm on ethernet

- Which kind of frame is transmitted in GPON?
- How to identify GEM Port? uiq identifier, gemport id
- What's the basic control unit of the upstream service stream in the GPON system? the tcon
- What's the difference between assure bandwidth and fixed bandwidth?
minimum bandwidth bandwidth dedicated
always reserved

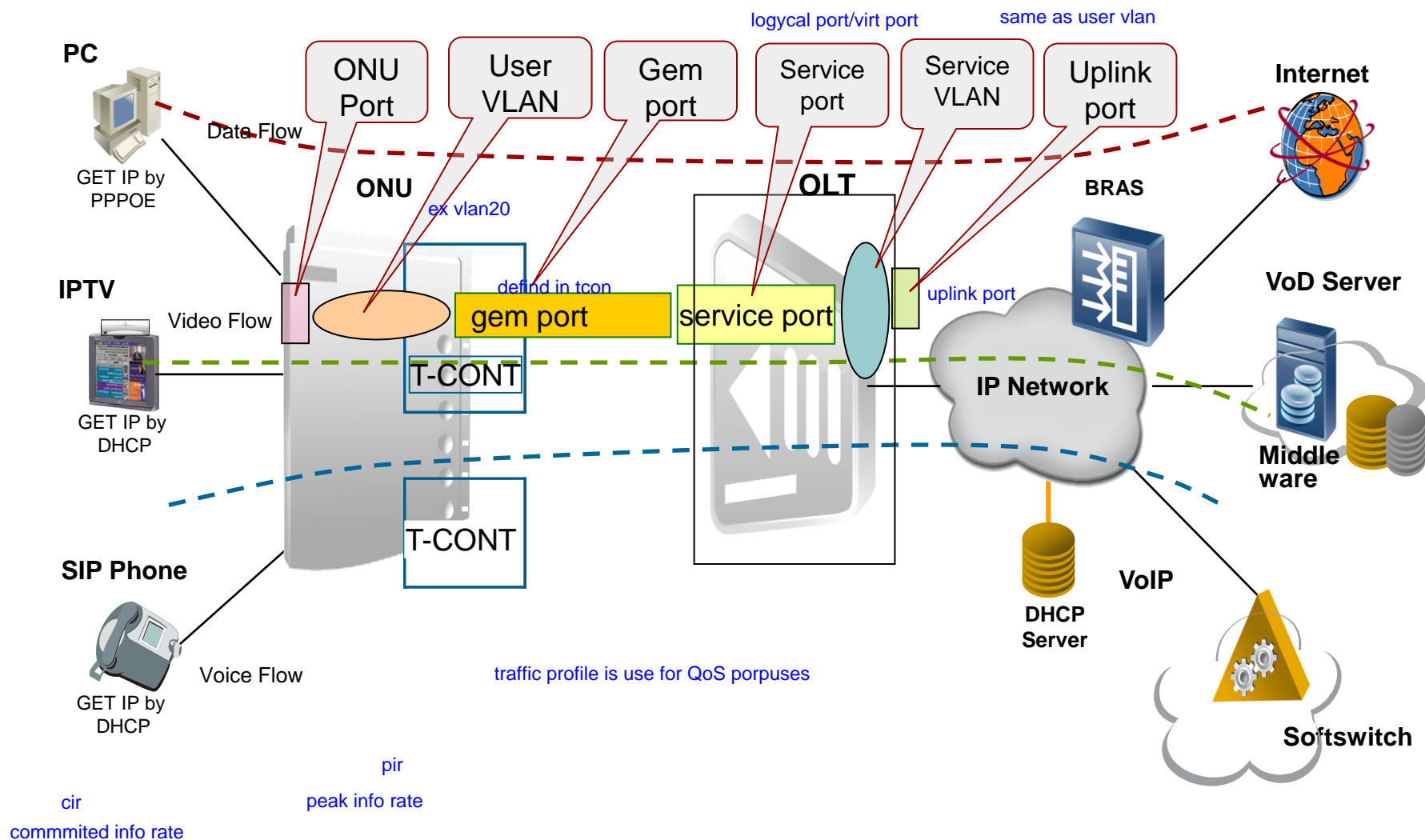


Contents

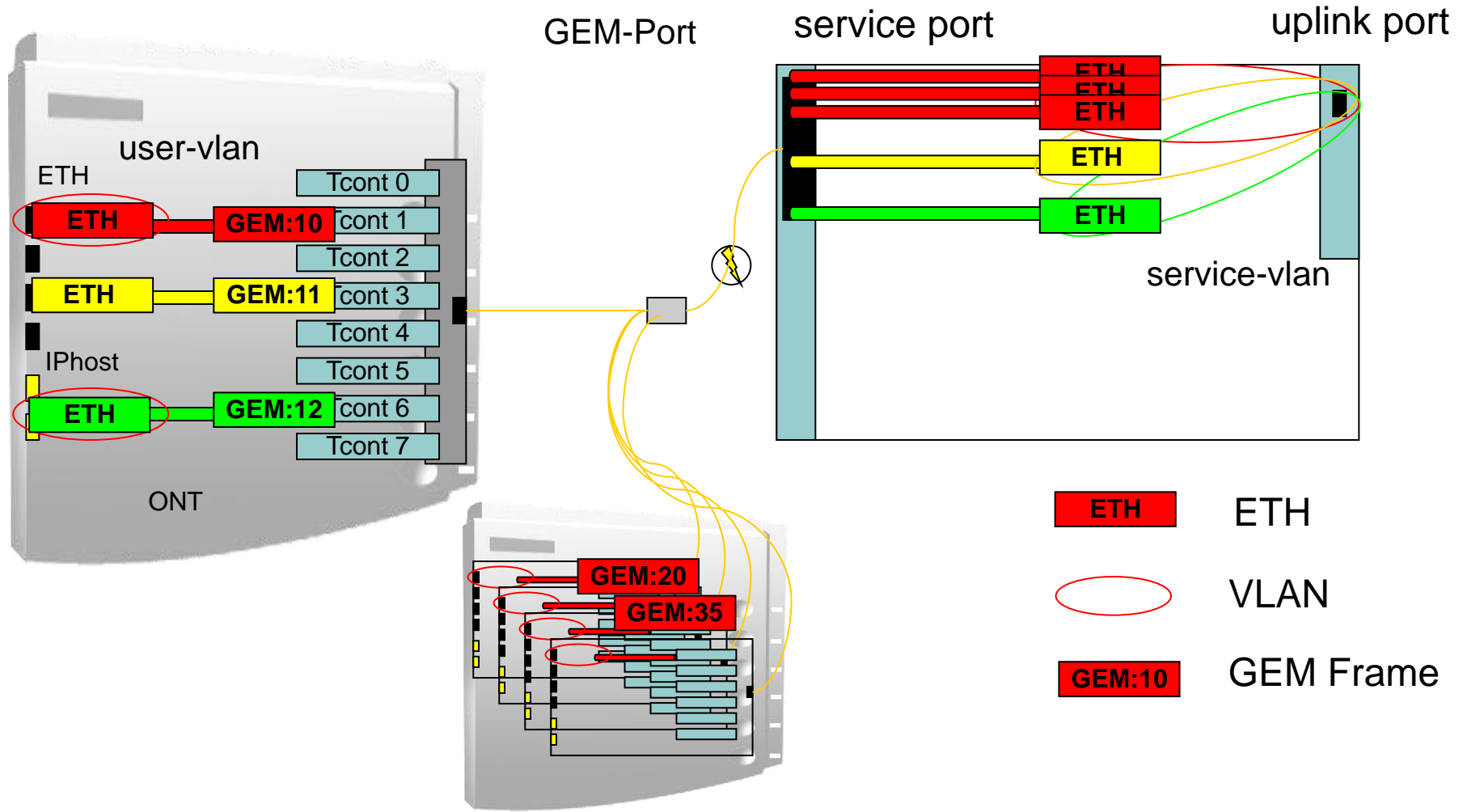
1. GPON HSI Service Implementation Principle
- 2. GPON HSI Service Configuration Basics**
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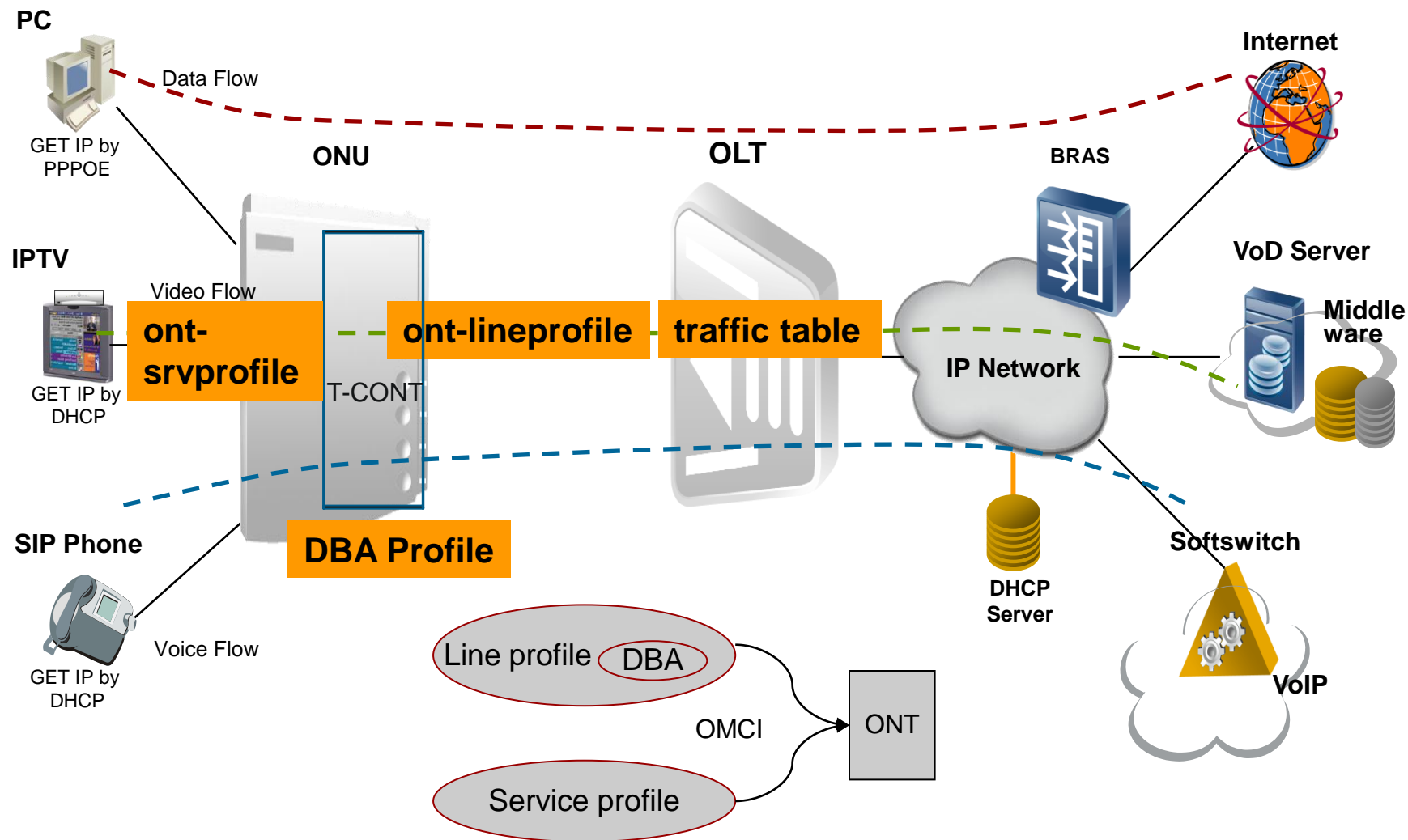
Service Mapping



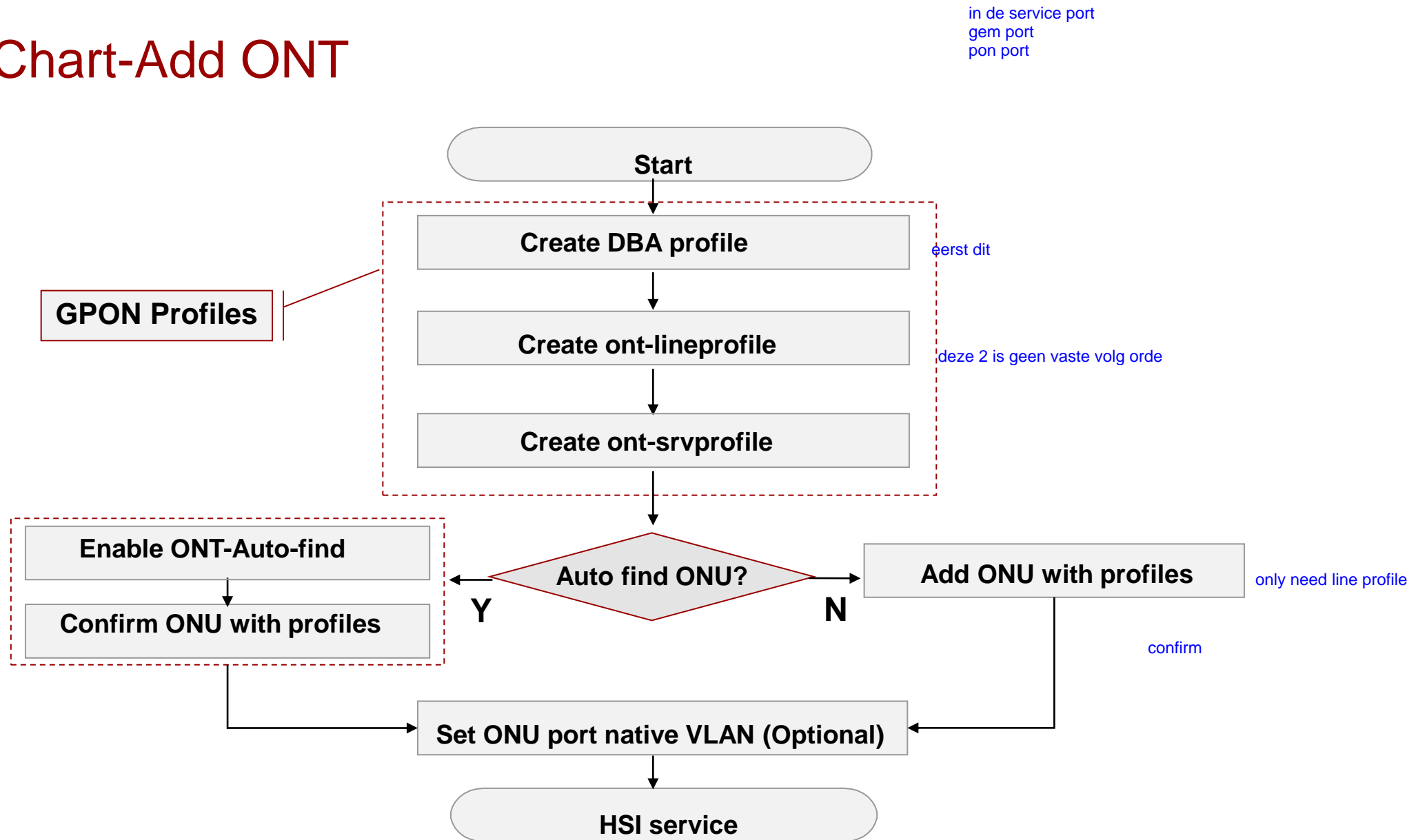
ONT and OLT Service Flow Principle



Service Control

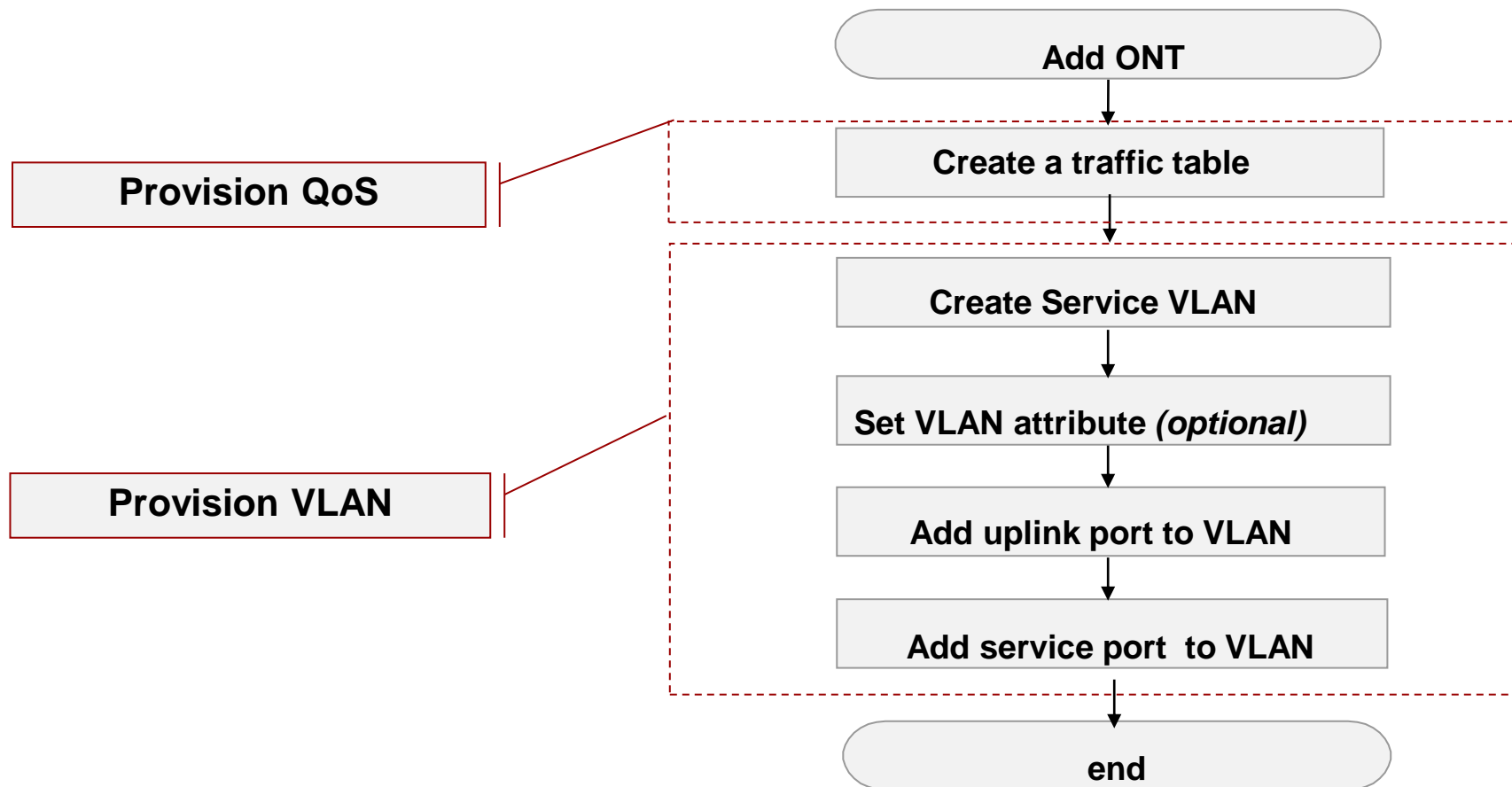


Flow Chart-Add ONT



Flow Chart-HSI Service

provision mean create modify activate



Create DBA Profile

query dba
display dba-profile all

- Add dba-profile

```
■ huawei(config)#dba-profile add profile-id
  { profile-id<U><10,512> }:20
  { profilename<K>|type1<K>|type2<K>|type3<K>|type4<K>|type5<K> }:profile-name
  { profile-name<S><Length 1-33> }:10M      kan maar 1 keer worden gebruikt
  { type1<K>|type2<K>|type3<K>|type4<K>|type5<K> }:type4
  { max<K> }:max
  { max-bandwidth<U><128, 10000000 > }:10240
```

Create ONT Line Profile(1/4)

- Add ont-lineprofile

- huawei(config)#**ont-lineprofile gpon profile-id 66**
 - { <cr>|profile-name<K> }:**profile-name**
 - { profile-name<S><Length 1-32> }:**ftth**
- huawei(config-gpon-lineprofile-66)#

Remark: If we don't assign profile-id, system will assign profile-id randomly.

Create ONT Line Profile(2/4)

test question

□ TCONT **bind dba-profile** (necessary step)

```
■ huawei(config-gpon-lineprofile-66)#tcont
  { tcont-list<S><Length 1-13> }:2
  { <cr>|dba-profile-id<K>|dba-profile-name<K> }:dba-profile-id
  { profile-id<U><0,515> }:20 as in dba id
```

□ **Add gem port** and mapping to TCONT (necessary step)

```
■ huawei(config-gpon-lineprofile-66)#gem
  { add<K>|delete<K>|mapping<K>|modify<K> }:add
  { gem-index<U><0,1023> }:20 as in gem mapping gem index is zelfde als tcont index
  { service-type<E><eth,tdm> }:eth
  { tcont<K> }:tcont
  { tcont-id<U><0,127> }:2 zelfde als in tcon list
  { <cr>|cascade<K>|downstream-priority-queue<K>|encrypt<K>|gem-car<K>|priority-queue<K> }:
```


Create ONT Line Profile(3/4)

▣ Set mapping mode

■ huawei(config-gpon-lineprofile-66)#**mapping-mode**

```
{ iptos<K>|port<K>|port-priority<K>|port-vlan<K>|port-vlan-priority<K>|priority<K>|vlan<K>|vlan-iptos<K>|vlan-priority<K> }:vlan
```

▣ Set mapping relationship between gem port and VLAN (**necessary step**)

■ huawei(config-gpon-lineprofile-66)#**gem mapping**

```
{ gem-index<U><0,1023> }:20 as in gem port moet 2 zijn als tcont
```

```
{ mapping-index<U><0,7> }:0
```

```
{ e1<K>|eth<K>|eth-bundle<K>|flow-car<K>|iphost<K>|ippath<K>|moca<K>|priority<K>|tdm-vcl<K>|transparent<K>|vdsl<K>|vlan<K> }vlan
```

```
{ untag<K>|vlan-id<U><0,4095> }:10 customer vlan
```

```
{ <cr>|flow-car<K>|priority<K>|transparent<K> }:
```

commit

Create ONT Line Profile(4/4)

- Set QoS mode

- huawei(config-gpon-lineprofile-66)#**qos-mode**
 { flow-car<K>|gem-car<K>|priority-queue<K> }:**priority-queue**

- Commit configuration

- huawei(config-gpon-lineprofile-66)#**commit**
 - huawei(config-gpon-lineprofile-66)#**quit**

Remark:The configuration will take effective after commit.

Create ONT Service Profile(1/3)

- Add an ont service profile with profile name-hg8245

- huawei(config)#**ont-srvprofile gpon profile-id 88**
 { <cr>|profile-name<K> }:**profile-name**
 { profile-name<S><Length 1-32> }:**hg8245**
- huawei(config-gpon-srvprofile-88)#

Create ONT Service Profile(2/3)

- Set the port capability of ont (**necessary step**)

```
■ huawei(config-gpon-srvprofile-88)#ont-port
{ catv<K>|eth<K>|moca<K>|pots<K>|tdm-srvtype<K>|tdm-type<K>|tdm<K> }:eth
{ eth-port<U><0,24> }:4 ethernet port
{ <cr>|catv<K>|moca<K>|pots<K>|tdm-srvtype<K>|tdm-type<K>|tdm<K> }:pots
{ adaptive<K>| pots-port<U><0,32> }:2
{ <cr>|catv<K>|moca<K>|tdm-srvtype<K>|tdm-type<K>|tdm<K> }:
```

- Set the service vlan on ont port (**necessary step**)

```
■ huawei(config-gpon-srvprofile-88)#port vlan
{ eth<K>|iphost<K>|moca<K> }:eth
{ ont-portlist<S><Length 1-128> }:1 1-4 is in any
{ downstream<K>|q-in-q<K>|translation<K>|transparent<K>|vlanid<U><0,4095> }:10 zelfde als bij gem mapping
{ <cr>|TLS<K>|priority<K>|prival<U><0,7> }:
```

Create ONT Service Profile(3/3)

- Commit configuration

```
huawei(config-gpon-srvprofile-88)#commit  
huawei(config-gpon-srvprofile-88)#quit
```

Remark:The configuration will take effective after commit.

ONT Register-Query Ont Serial Number

- Enable ont autofind function

- huawei(config-if-gpon-0/1)#**port 0 ont-auto-find enable**

- Query ont serial number

- huawei(config-if-gpon-0/1)#**display ont autofind 0**

dispay ont autofind all

Command:

display ont autofind 0

copy is dubble click to select
paste is recht klik to paste

```
-----  
Number           : 1  
F/S/P            : 0/1/0  
Ont SN           : 48575443BF656E04  
Password         : 0x00000000000000000000  
Loid             :  
Checkcode        :  
VendorID         : HWTC  
Ont Version      : 130C4400  
Ont SoftwareVersion : V1R002C00S203  
Ont EquipmentID   : 245  
Ont autofind time : 2021-03-16 19:22:08+08:00  
-----
```

ONT Register-Add/Confirm ONT

display ont info 0 all

- Add or confirm ONT

```
▣ huawei(config-if-gpon-0/1)#ont add // or ont confirm
    { portid<U><0,7> }:0
    { loid-auth<K>|ontid<U><0,127>|password-auth<K>|protect-side<K>|sn-auth<K> }:1
    { loid-auth<K>|password-auth<K>|sn-auth<K> }:sn-auth
    { sn<S><Length 13-16> }:48575443BF656E04
    { omci<K>|password-auth<K>|snmp<K> }:omci
    { <cr>|desc<K>|ont-lineprofile-id<K>|ont-lineprofile-name<K>|ont-srvprofile-id<K>|ont-srvprofile-name<K> }:ont-
      lineprofile-id
    { profile-id<U><0,8192> }:66 als eerder defined
    { <cr>|desc<K>|ont-srvprofile-id<K>|ont-srvprofile-name<K> }:ont-srvprofile-id
    { profile-id<U><0,8192> }:88 in my case 98
```

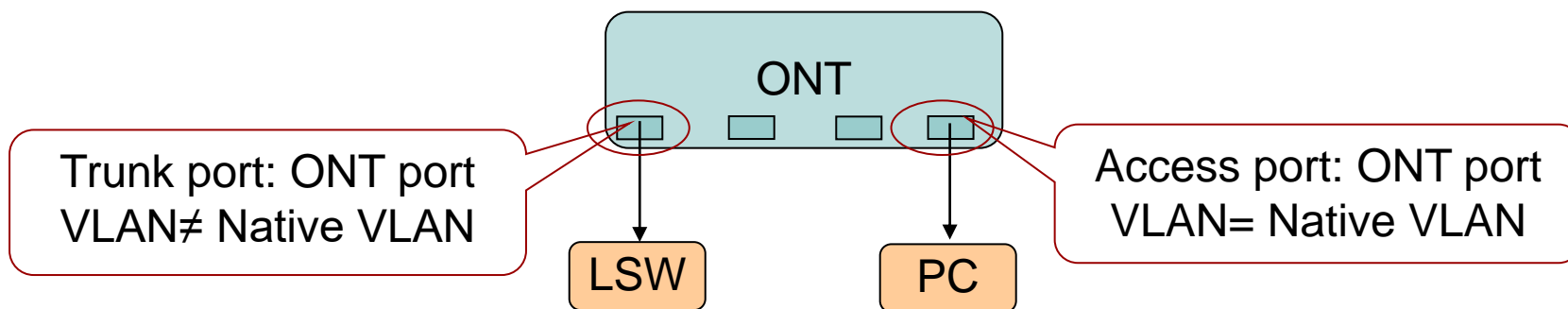
Set ONT Port Native VLAN

- Set ont port native vlan

gpon port ont

```
huawei(config-if-gpon-0/1)#ont port native-vlan 0 1 eth 1 vlan 10
```

When the user's terminal can't identify VLAN Tag, then please configure native-vlan.



Create a traffic table

■ huawei(config)#traffic table ip

display traffic table ip from index 0

{ cir<K>|index<K>|modify<K>|name<K> }:**index**

traffic table 14 gbr

{ row-index<U><0,1023> }:**7**

ont id

{ cir<K>|name<K> }:**cir**

pik is at least 2maal cir

{ cir<U><0,10240000>|off<K> }:**1024**

{ car-threshold<K>|cbs<K>|color-dei<K>|color-mode<K>|color-policy<K>|coupling-flag<K>|fix<K>|pbs<K>|pir<K>|priority<K> }:**pir**

{ pir<U><64,10240000> }:**2048**

{ car-threshold<K>|cbs<K>|color-dei<K>|color-mode<K>|color-policy<K>|coupling-flag<K>|fix<K>|pbs<K>|priority<K> }:**priority**

{ prival<U><0,7>|user-cos<K>|user-inner-cos<K>|user-tos<K> }:**0**

{ inner-priority<K>|priority-policy<K> }:**priority-policy**

{ priority-policy<E><Local-Setting,Tag-In-Package,Tag-In-Ingress-Package> }:**local-Setting**

Provision VLAN(1/3)

- Add VLAN

service vlan

smart can support several service and uplink port

vlan 8000

- huawei(config)#**vlan 2000**
{ <cr>|to<K>|vlantype<E><mux,standard,smart,super> }:**smart**

in the olt

- Set VLAN attribute

- huawei(config)#**vlan attrib 2000**
{ common<K>|q-in-q<K>|stacking<K>|to<K> }:**q-in-q**

- Add uplink port into VLAN

uplink port can be activated in any the service slot or in the control board

- huawei(config)#**port vlan 2000 0/2 0**

geeft error bij test

in are case tcon and gem number are the same

Provision VLAN(2/3)

- **Add service port**

```
■ huawei(config)#service-port vlan 2000 vlan already created in the olt
  { adsl<K>|atm<K>|epon<K>|eth<K>|gpon<K>|port<K>|shdsl<K>|vdsl<K> }:gpon
  { frameid/slotid/portid<S><Length 5-18> }:0/1/0
  { ont<K> }:ont
  { ontid<U><0,127> }:1
  { eth<K>|gemport<K>|iphost<K> }:gemport
  { gemindex<U><0,1023> }:20 als bij gem mapping to connect servise en customer vlan
  { <cr>|bundle<K>|inbound<K>|multi-service<K>|rx-cttr<K>|tag-transform<K> }:multi-service
  { user-8021p<K>|user-encap<K>|user-vlan<K> }:user-vlan service vlan
  { other-all<K>|priority-tagged<K>|untagged<K>|user-vlanid<U><1,4095> }:10 cutomer vlan
  { <cr>|bundle<K>|inbound<K>|rx-cttr<K>|tag-transform<K>|user-encap<K> }:
```

Provision VLAN(3/3)

```
{ <cr>|bundle<K>|inbound<K>|rx-cttr<K>|tag-transform<K>|user-encap<K> }:inbound
{ traffic-table<K> }:traffic-table
{ index<K>|name<K> }:index
{ index<U><0,1023> }:7
{ outbound<K> }:outbound
{ traffic-table<K> }:traffic-table
{ index<K>|name<K> }:index
{ index<U><0,1023> }:7
```

display service port all

all

// Inbound indicates the transmit direction (from the subscriber side to the network side).

Outbound indicates the receive direction (from the network side to the subscriber side).



Questions

at the moment not registered

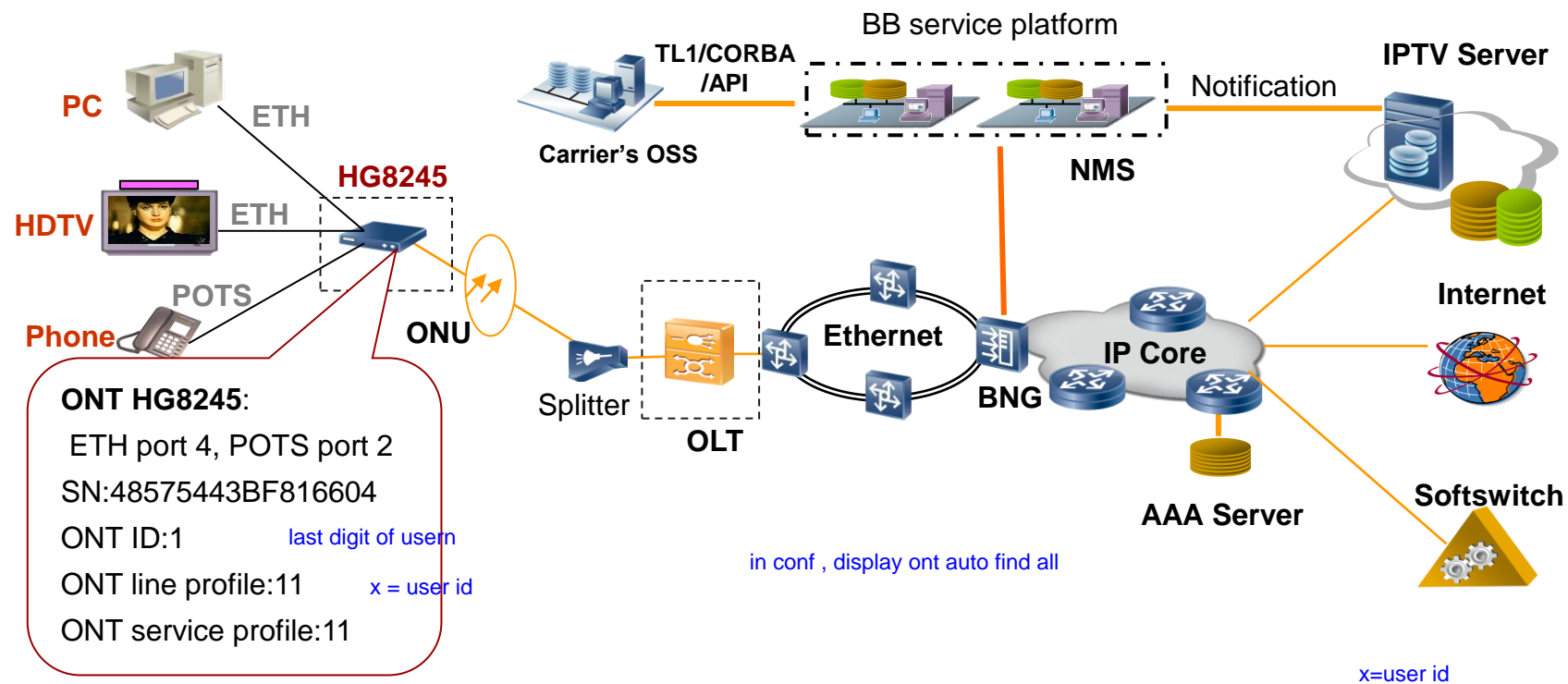
- How to query the onu found by OLT but not registered?
A. display ont info B. **display ont autofind**
- While creating a line-profile , which 3 steps you should care more?
tcont, gempport and vlan
- When do we need to set Native VLAN?
customer vlan as native vlan



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- 3. GPON HSI Service Configuration Example**
4. ONT Configuration Example (Optional)
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GPON FTTH Case



Type	ONU Port	C-VLAN	GEM	DBA	TCONT	Traffic table	S-VLAN	OLT port
HSI	ETH1	20 <small>same</small>	1 <small>same</small>	11 <small>1x</small>	1	11: 10M/20M	2000 <small>of common</small> QinQ	GPON: 0/1/0 Uplink: 0/2/0

Configure Procedure (2/3)

- Configure ONT service profile

- huawei(config)#**ont-srvprofile gpon profile-id 11** dba
- huawei(config-gpon-srvprofile-11)#**ont-port eth 4 pots 2**
- huawei(config-gpon-srvprofile-11)#**port vlan eth 1 20**
- huawei(config-gpon-srvprofile-11)#**commit**

- Add ONT

- huawei(config)#**interface gpon 0/1**
- huawei(config-if-gpon-0/1)#**port 0 ont-auto-find enable**
- huawei(config-if-gpon-0/1)# **ont confirm 0 ontid 1 sn-auth**
48575443BF816604 omci ont-lineprofile-id 11 ont-srvprofile-id 11

Configure Procedure (3/3)

- Configure ONT native VLAN (Optional)

- huawei(config)# **interface gpon 0/1**
- huawei(config-if-gpon-0/1)#**ont port native-vlan 0 0 eth 1 vlan 20**

- Provision VLAN

- huawei(config)#**vlan 2000 smart**
- huawei(config)#**vlan attrib 2000 q-in-q**
- huawei(config)#**port vlan 2000 0/2 0**
- huawei(config)# **service-port 2 vlan 2000 gpon 0/1/0 ont 1 gemport 1 multi-service user-vlan 20**
inbound traffic-table index 11 outbound traffic-table index 11

Configure Procedure (1/3)

- Configure traffic table

- huawei(config)#**traffic table ip index 11 cir 10240 pir 20480 cbs 20480 pbs 40960 priority user-cos 0 priority-policy local-Setting**

- Configure DBA profile

- huawei(config)#**dba-profile add profile-id 11 type4 max 20480**

- Configure ONT line profile

- huawei(config)# **ont-lineprofile gpon profile-id 11**
 - huawei(config-gpon-lineprofile-11)#**tcont 1 dba-profile-id 11**
 - huawei(config-gpon-lineprofile-11)#**gem add 1 eth tcont 1**
 - huawei(config-gpon-lineprofile-11)#**gem mapping 1 1 vlan 20**
 - huawei(config-gpon-lineprofile-11)#**commit**



Questions

- What's the attribute of SVLAN in the double vlan tags mode?
 - A. Common B. QinQ C. Stacking
- How many management modes are there for onu?

omci

snmp



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Config ONT by Web-login



to monitor en configur

WAN Configuration

HG8245 - http://192.168.100.1/index.asp

WAN Configuration

WAN > WAN Configuration

On this page, you can configure WAN port parameters. The ONT home gateway uses a WAN port to communicate with upper-layer network equipment. Therefore, these parameters must be consistent on the ONT and network equipment.

Connection Name	VLAN/Priority	Protocol Type
1_VOIP_R_VID_172	172/0	IPv4

Basic Information

Enable WAN: ☒

Encapsulation mode: ☒ IPoE ☒ PPPoE

Protocol type: IPv4

WAN mode: Route WAN

Service type: INTERNET

Enable VLAN: ☒

VLAN ID: 20 (1-4094)

802.1p: 0

MRU: (1-1540)

User name: user1@pppoe1

Password: *****

Binding options: ☐ LAN1 ☐ LAN2 ☐ LAN3 ☐ LAN4 ☐ SSID1 ☐ SSID2 ☐ SSID3 ☐ SSID4

IP acquisition mode: ☐ Static ☐ DHCP ☒ PPPoE

Enable NAT: ☒

Dialing method: Automatic

Multicast VLAN ID: (1-4094)

Apply Cancel

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Local intranet | Protected Mode: Off

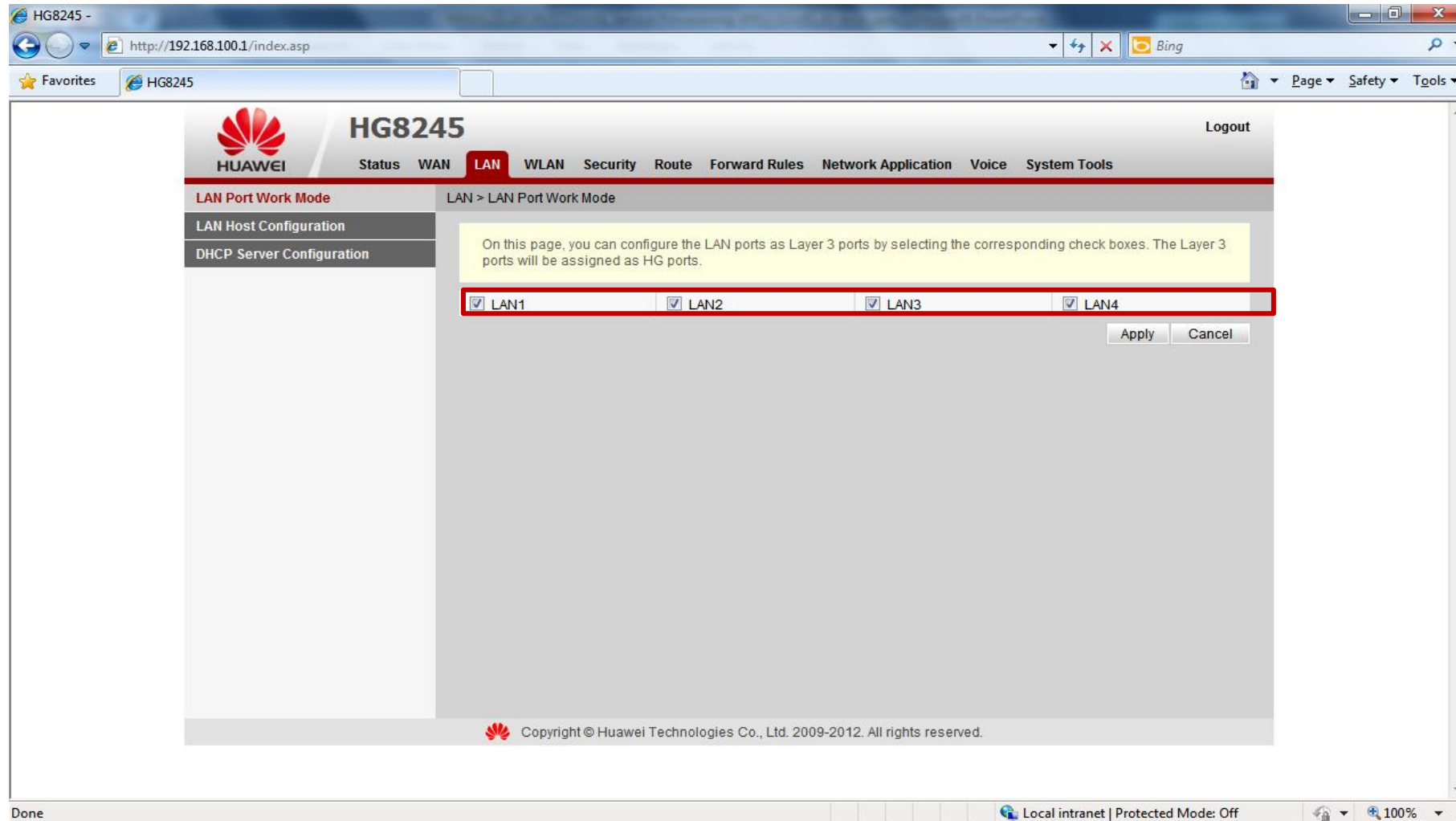
Show WAN Configuration

The screenshot displays the Huawei HG8245 web management interface. The browser address bar shows the URL `http://192.168.100.1/index.asp`. The interface includes a top navigation bar with the Huawei logo, the model name 'HG8245', and a 'Logout' link. Below this is a menu bar with tabs: Status, WAN, LAN, WLAN, Security, Route, Forward Rules, Network Application, Voice, and System Tools. The 'Status' tab is selected, and the left sidebar lists various information categories: WAN Information, VoIP Information, WLAN Information, Eth Port Information, DHCP Information, Optical Information, Battery Information, Device Information, Remote Manage, and User Device Information. The main content area is titled 'Status > WAN Information' and contains a yellow informational box stating: 'On this page, you can query the connection and line status of the WAN port.' Below this is a section for 'IPv4 Information' containing a table with the following data:

WAN Name	Connection Status	IP Acquisition Mode	IP Address	Subnet Mask	VLAN/Priority	MAC Address	Connected
1_VOIP_R_VID_172	Connected	Static	17.248.48.2	255.0.0.0	172/0	4C:1F:CC:E7:9E:94	AlwaysOn
2_INTERNET_R_VID_20	Connected	PPPoE	10.10.10.243	255.255.255.255	20/0	4C:1F:CC:E7:9E:95	AlwaysOn

The second row of the table is highlighted with a red border. At the bottom of the interface, a copyright notice reads: 'Copyright © Huawei Technologies Co., Ltd. 2009-2012. All rights reserved.'

LAN Configuration 1/2



LAN Configuration 2/2

HG8245 -
http://192.168.100.1/index.asp

Logout

HUAWEI HG8245

Status WAN LAN WLAN Security Route Forward Rules Network Application Voice System Tools

LAN Port Work Mode LAN > DHCP Server Configuration

LAN Host Configuration

DHCP Server Configuration

On this page, you can configure DHCP server parameters for the LAN-side device (including the HGW, STB, camera, computer, and phone) to obtain IP addresses.

Primary Address Pool

Enable primary DHCP server: ☒

Enable DHCP relay: ☒

LAN host IP address: 192.168.100.1

Subnet mask: 255.255.255.0

Start IP address: 192.168.100.2 * (It must be in the same subnet as the IP address of the LAN host.)

End IP address: 192.168.100.254 *

Lease time: 3 days

Primary DNS server:

Secondary DNS server:

Primary Address Pool Subsection

Device Type	Start IP Address	End IP Address
HGW:		
STB:		
Camera:		
Computer:		
Phone:		

Secondary Address Pool

Done Local intranet | Protected Mode: Off 100%

WLAN Configuration

HUAWEI **HG8245** Logout

Status WAN LAN **WLAN** Security Route Forward Rules Network Application Voice System Tools

WLAN Configuration WLAN > WLAN Configuration

On this page, you can set the WLAN parameters, including the WLAN switch, SSID configuration and channel selection.

☒ Enable WLAN

Basic Configuration New Delete

SSID Index	SSID Name	SSID State	Associated Device Number	Broadcast SSID	Security Configuration
<input type="checkbox"/> 1	WirelessNet	Enable	32	Enable	Unconfigured

SSID Configuration in Detail

SSID Name: *

Enable SSID: ☒

Associated Device Number: *

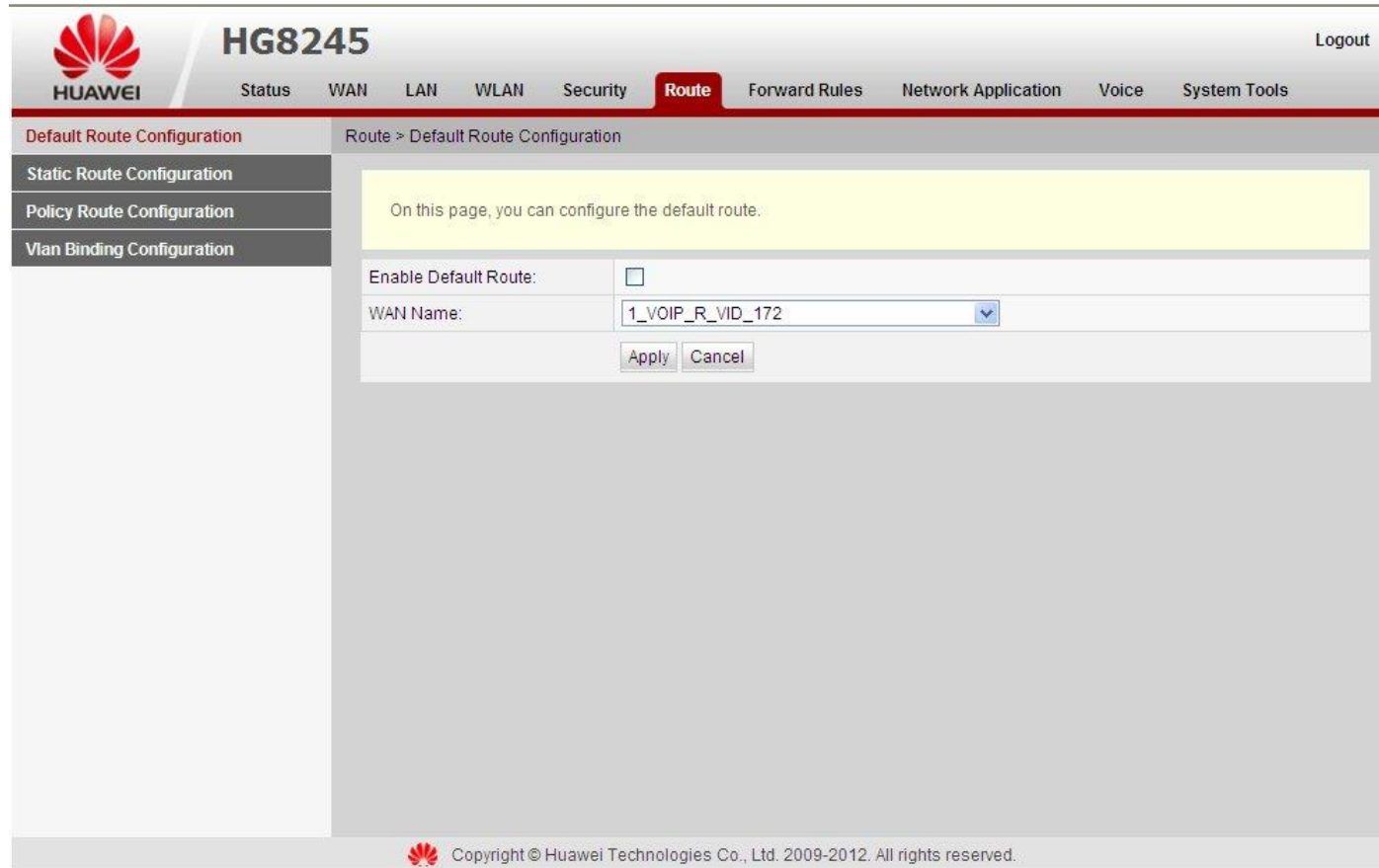
Broadcast SSID: ☒

WMM Enable: ☒

Authentication Mode: ▼


Encryption Mode: ▼

Route Configuration 1/4



The screenshot shows the Huawei HG8245 web management interface. At the top, the Huawei logo and model number 'HG8245' are displayed. A navigation bar includes links for Status, WAN, LAN, WLAN, Security, Route (highlighted), Forward Rules, Network Application, Voice, and System Tools. A 'Logout' link is in the top right corner. On the left, a sidebar lists configuration options: Default Route Configuration (selected), Static Route Configuration, Policy Route Configuration, and Vlan Binding Configuration. The main content area is titled 'Route > Default Route Configuration'. It contains a yellow informational box stating 'On this page, you can configure the default route.' Below this, there is a form with two fields: 'Enable Default Route:' with an unchecked checkbox, and 'WAN Name:' with a dropdown menu showing '1_VOIP_R_VID_172'. At the bottom of the form are 'Apply' and 'Cancel' buttons. The footer of the interface includes the Huawei logo and the text 'Copyright © Huawei Technologies Co., Ltd. 2009-2012. All rights reserved.'

Route Configuration 2/4

**HG8245**Logout

StatusWANLANWLANSecurity**Route**Forward RulesNetwork ApplicationVoiceSystem Tools


Default Route ConfigurationRoute > Static Route Configuration

Static Route ConfigurationPolicy Route ConfigurationVlan Binding Configuration

On this page, you can configure the static route (including the IP address, subnet mask, gateway IP address, and WAN interface name). When you configure the static route, if the specified WAN interface is offline, please clear the gateway IP address.

NewDelete

	WAN Name	Destination Address	Gateway	Subnet Mask
Destination Address:		<input type="text" value="10.77.69.130"/>		
Subnet Mask:		<input type="text" value="255.0.0.0"/>		
Gateway:		<input type="text" value="190.1.1.254"/>		
WAN Name:	<input type="text" value="1_VOIP_R_VID_172"/>			
<div>ApplyCancel</div>				

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Route Configuration 3/4

The screenshot shows the Huawei HG8245 web interface. The top navigation bar includes the Huawei logo, the model number 'HG8245', and a 'Logout' link. Below this is a menu with 'Status', 'WAN', 'LAN', 'WLAN', 'Security', 'Route' (highlighted), 'Forward Rules', 'Network Application', 'Voice', and 'System Tools'. On the left, a sidebar lists configuration options: 'Default Route Configuration', 'Static Route Configuration', 'Policy Route Configuration' (highlighted), and 'Vlan Binding Configuration'. The main content area is titled 'Route > Policy Route Configuration'. It contains a yellow informational box stating: 'The policy route can be configured on this page. This route is used to send the packets of certain services (Internet, IPTV) to the OLT through a specific WAN.' Below this is a table with columns 'Vendor ID' and 'WAN Name'. Above the table are 'New' and 'Delete' buttons. The table has one row with 'Vendor ID' set to an empty text box (with a hint: '*(Option60; for example: *VenderID* *VenderID VenderID* or VenderID)') and 'WAN Name' set to a dropdown menu showing '1_VOIP_R_VID_172'. At the bottom of the form are 'Apply' and 'Cancel' buttons. The footer contains the Huawei logo and copyright text: 'Copyright © Huawei Technologies Co., Ltd. 2009-2012. All rights reserved.'

HUAWEI HG8245 Logout

Status WAN LAN WLAN Security **Route** Forward Rules Network Application Voice System Tools

Default Route Configuration
Static Route Configuration
Policy Route Configuration
Vlan Binding Configuration

Route > Policy Route Configuration

The policy route can be configured on this page. This route is used to send the packets of certain services (Internet, IPTV) to the OLT through a specific WAN.

New Delete

	Vendor ID	WAN Name
Vendor ID:	<input type="text"/>	*(Option60; for example: *VenderID* *VenderID VenderID* or VenderID)
WAN Name:	1_VOIP_R_VID_172	
Apply Cancel		

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Route Configuration 4/4

The screenshot displays the Huawei HG8245 web interface. The top navigation bar includes the Huawei logo, the model number 'HG8245', and a 'Logout' link. Below this is a menu with tabs: Status, WAN, LAN, WLAN, Security, **Route**, Forward Rules, Network Application, Voice, and System Tools. The left sidebar shows configuration categories: Default Route Configuration, Static Route Configuration, Policy Route Configuration, and **Vlan Binding Configuration**. The main content area is titled 'Route > Vlan Binding Configuration' and contains a yellow message box stating 'On this Page, Vlan binding configuration can be done.' Below this is a table with columns 'Port', 'Port Mode', and 'Vlan Pairs'. The table lists LAN1 through LAN4, all with 'Port Bind' mode and '--' for Vlan Pairs. At the bottom, there is a configuration form with 'Port' set to 'LAN1' and 'Port Mode' set to 'Port Bind'. A red arrow points from the 'Port Mode' dropdown to a button labeled 'Vlan Bind Port Bind'. The footer contains the copyright notice: 'Copyright © Huawei Technologies Co., Ltd. 2009-2012. All rights reserved.'

Port	Port Mode	Vlan Pairs
LAN1	Port Bind	--
LAN2	Port Bind	--
LAN3	Port Bind	--
LAN4	Port Bind	--

Port: LAN1
Port Mode: Port Bind
Apply Cancel

Vlan Bind Port Bind



Contents

1. GPON HSI Service Implementation Principle
2. GPON HSI Service Configuration Basics
3. GPON HSI Service Configuration Example
4. ONT Configuration Example (Optional)
- 5. GPON HSI Service Maintenance**

Query Board

■ huawei(config)#display board 0

```
-----
- SlotID BoardName Status SubType0 SubType1 Online/Offline
- -----
- 1
- 2 H901GPHF Normal
- .....
- 4 H901OGHK Failed
- .....
- 9 H901MPLB Active_normal
- .....
- -----
```

to find subscribers on the board

status of all board

service disturbance

Query Auto-find ONT

- huawei(config)#**interface gpon 0/1**
- huawei(config-if-gpon-0/1)#**port 0 ont-auto-find enable**
- huawei(config-if-gpon-0/1)#**display ont autofind 0**

display ont autofind all

```
-----  
Number           : 1  
F/S/P            : 0/1/0  
Ont SN           : 48575443BF816604  
Password         : 123456  
Loid             : 0000000000  
Checkcode        :  
VenderID         : HWTC  
Ont Version      : V1R1C01B035  
Ont SoftwareVersion : V1R1C01B035  
Ont EquipmentID   : EchoLife:HG850  
Ont autofind time : 2021-01-25 16:26:19  
-----
```

Query ONT Status

▣ huawei(config-if-gpon-0/1)#**display ont info 0 all**

F/S/P	ONT	SN	Control	Run	Config	Match	Protect
ID	flag	state	state	state	side		
0/ 1/0 1	48575443BF816604	active	online	normal	match	no	
0/ 1/0 2	48575443A7FE3705	active	offline	initial	initial	no	

all the ont that are working on the olt

F/S/P ONT-ID Description

0/ 1/0 1 ONT_NO_DESCRIPTION
0/ 1/0 2 ONT_NO_DESCRIPTION

In port 0/ 1/0 , the total of ONTs are: 2, online: 1

Query ONT Information

■ huawei(config-if-gpon-0/1)#display ont info 0 1

F/S/P : 0/1/0

ONT-ID : 1

Control flag : active

Run state : online

Config state : normal

Match state : match

DBA type : SR

ONT distance(m) : 18

ONT battery state : support but invalid

Memory occupation : -

CPU occupation : -

Temperature : -

Authentic type : SN-auth

Ont-servprofile: 11

Ont-line profile: 11

When the ONT is normal and online,
the status is "up".

After the ONT is normal and online,
such status indicates whether the
configuration restoration is enabled
and whether the configuration
restoration is complete

It indicates whether the ONT actual
capability is the same as the service
profile bound to the ONT.

Query DBA-profile

- huawei(config)#**display dba-profile all**

Profile-ID	type	Bandwidth	Fix	Assure	Max	Bind
		compensation(kbps)	(kbps)	(kbps)	(kbps)	times

1	1	No	5120	0	0	
2	1	No	1024	0	0	0
3	4	No	0	0	32768	0
4	1	No	1024000	0	0	0
5	1	No	32768	0	0	1
6	1	No	102400	0	0	0
7	2	No	0	32768	0	3
8	2	No	0	102400	0	0
9	3	No	0	32768	65536	0
10	4	No	0	0	1024000	1

Remark: There are 9 default dba-profile,ID:1-9.

Query Traffic Table

- huawei(config)#**display traffic table ip from-index 0**

```
-----  
TID CIR(kbps) CBS(bytes) PIR(kbps) PBS(bytes) Pri Copy-policy Pri-Policy  
-----  
0 1024 34768 2048 69536 6 - tag-pri  
1 2496 81872 4992 163744 6 - tag-pri  
2 512 18384 1024 36768 0 - tag-pri  
3 576 20432 1152 40864 2 - tag-pri  
4 64 4048 128 8096 4 - tag-pri  
5 2048 67536 4096 135072 0 - tag-pri  
6 off off off off 0 - tag-pri  
11 10240 20480 20480 40960 0 - local-setting  
-----
```

Total Num : 8

Query ONT Line Profile (1/2)

- huawei(config)#**display ont-lineprofile gpon profile-id 11**

Profile-ID :11

Profile-name :hg8245

Access-type :GPON

FEC upstream switch :Disable

OMCC encrypt switch :Off

Qos mode :PQ

Mapping mode :VLAN

VoIP config method :Default

Query ONT Line Profile (2/2)

<T-CONT 0> DBA Profile-ID:1

<T-CONT 1> DBA Profile-ID:10

<Gem Index 1>

|Serv-Type:ETH |Encrypt:off |Cascade:off |Priority:0 |GEM-CAR:- |

Mapping-index VLAN Priority Port-type Port-ID Flow-CAR

1 20 - - - -

Binding times :1

Query ONT Service Profile (1/4)

- huawei(config)#**display ont-srvprofile gpon profile-id 11**

Profile-ID : 11

Profile-name: hg8245

Access-type : GPON

Port-type Port-number

POTS 2

ETH 4

TDM 0

MOCA 0

CATV 0

Query ONT Service Profile (2/4)

- -----
- TDM port type : E1
- TDM service type : TDMoGem
- MAC learning function switch : Enable
- ONT transparent function switch : Disable
- Multicast forward mode : Unconcern
- Multicast forward VLAN : -
- Multicast mode : Unconcern
- Upstream IGMP packet forward mode : Unconcern
- Upstream IGMP packet forward VLAN : -
- Upstream IGMP packet priority : -
- Native VLAN option : Concern
- -----

Query ONT Service Profile (3/4)

```
-----  
Port-type Port-ID QinQmode PriorityPolicy Inbound outbound  
-----
```

```
ETH      1    unconcern unconcern  unconcern unconcern  
ETH      2    unconcern unconcern  unconcern unconcern  
ETH      3    unconcern unconcern  unconcern unconcern  
ETH      4    unconcern unconcern  unconcern unconcern  
-----
```

```
Port-type Port-ID Dscp-mapping-table-index  
-----
```

```
ETH      1      0  
ETH      2      0  
ETH      3      0  
ETH      4      0  
IPHOST   1      0  
-----
```

Query ONT Service Profile (4/4)

Port Port Service-type Index S-VLAN S-PRI C-VLAN C-PRI ENCAP S-PRI
type ID POLICY

ETH 1 Translation 1 20 - 20 - - -

Notes: * indicates transparent attribute of the vlan

Port-type Port-ID IGMP-mode IGMP-VLAN IGMP-PRI Max-MAC-Count

ETH 1 - - - Unlimited
ETH 2 - - - Unlimited
ETH 3 - - - Unlimited
ETH 4 - - - Unlimited

Binding times : 1

Query VLAN

- huawei(config)#display vlan all

VLAN	Type	Attribute	STND-Port NUM	SERV-Port NUM

1	smart	common	2	0
10	smart	common	1	1
2000	smart	QinQ	1	1

- huawei(config)#display vlan 2000

F/S	/P	Native VLAN	State

0/2/0	1	up	uplink port in de service port

Query Service Port

- huawei(config)#**display service-port vlan 2000**

```
-----  
INDEX VLAN VLAN PORT F/ S/ P VPI VCI FLOW FLOW RX TX STATE  
  ID  ATTR TYPE          TYPE PARA  
-----  
1  2000 QinQ  gpon  0/1/0  1  1  vlan 20  11 11  up  
-----
```

Query ONT Port Attribute

gpon
port ont id

- huawei(config-if-gpon-0/1)#**display ont port attribute 0 1 eth**

```
-----  
ONT  ONT  ONT  Auto-neg Speed Duplex Port  Flow  
port port-type      (Mbps)      switch control VLAN  
-----  
1  1  ETH enable auto auto on off 20  0  
1  2  ETH enable auto auto on off 1  0  
1  3  ETH enable auto auto on off 1  0  
1  4  ETH enable auto auto on off 1  0  
-----
```



Questions

display service port and id

display ont info

- How to check the HSI service configuration succeeds ?
- If the connection failed and it prompts error 678,how to check the HSI service configuration?
 - A. Display onu info (including line-profile etc.)
 - B. Display onu autofind
 - C. Display service port
 - D. Display vlan D



Summary

- GPON Concepts and functions:
 - TCONT, GEM Port, ONU, VLAN, Uplink Port
 - ont-lineprofile, ont-srvprofile, dba-profile, traffic table
- Service Configuration procedure:
 - Ont Profiles
 - Ont Register
 - VLAN provision

Thank You

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