

GPON FTTH VOIP Service Provisioning (MA5800)-SIP

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Objectives

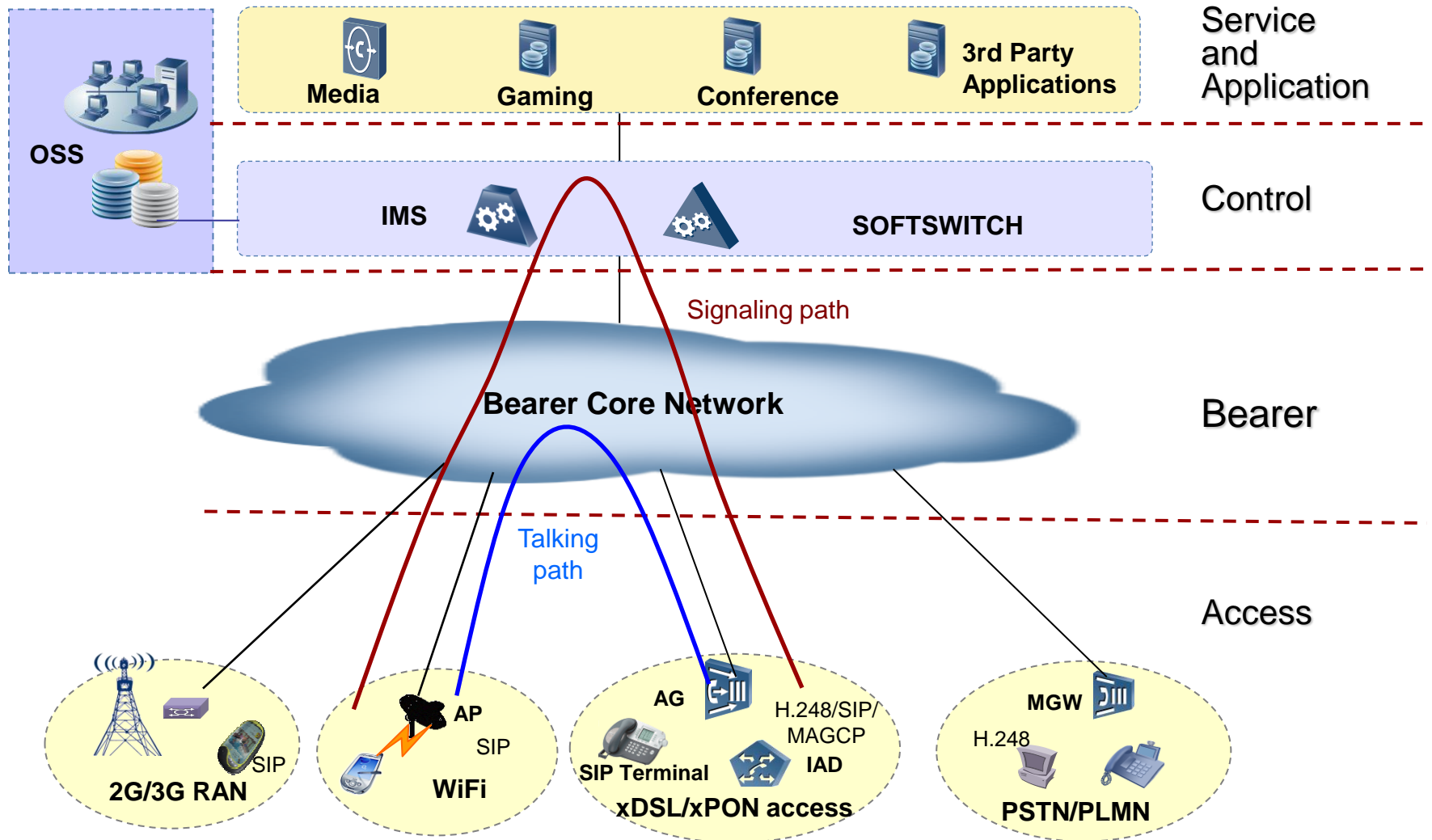
- Upon completion of this course, you will be able to:
 - Describe GPON FTTH VoIP service principle
 - Provision the GPON FTTH VoIP service
 - Know the basic steps to maintain the GPON FTTH VoIP service



Contents

1. GPON FTTH VoIP Service Overview
2. GPON FTTH VoIP Service Configuration Example
3. GPON FTTH VoIP Service Maintenance

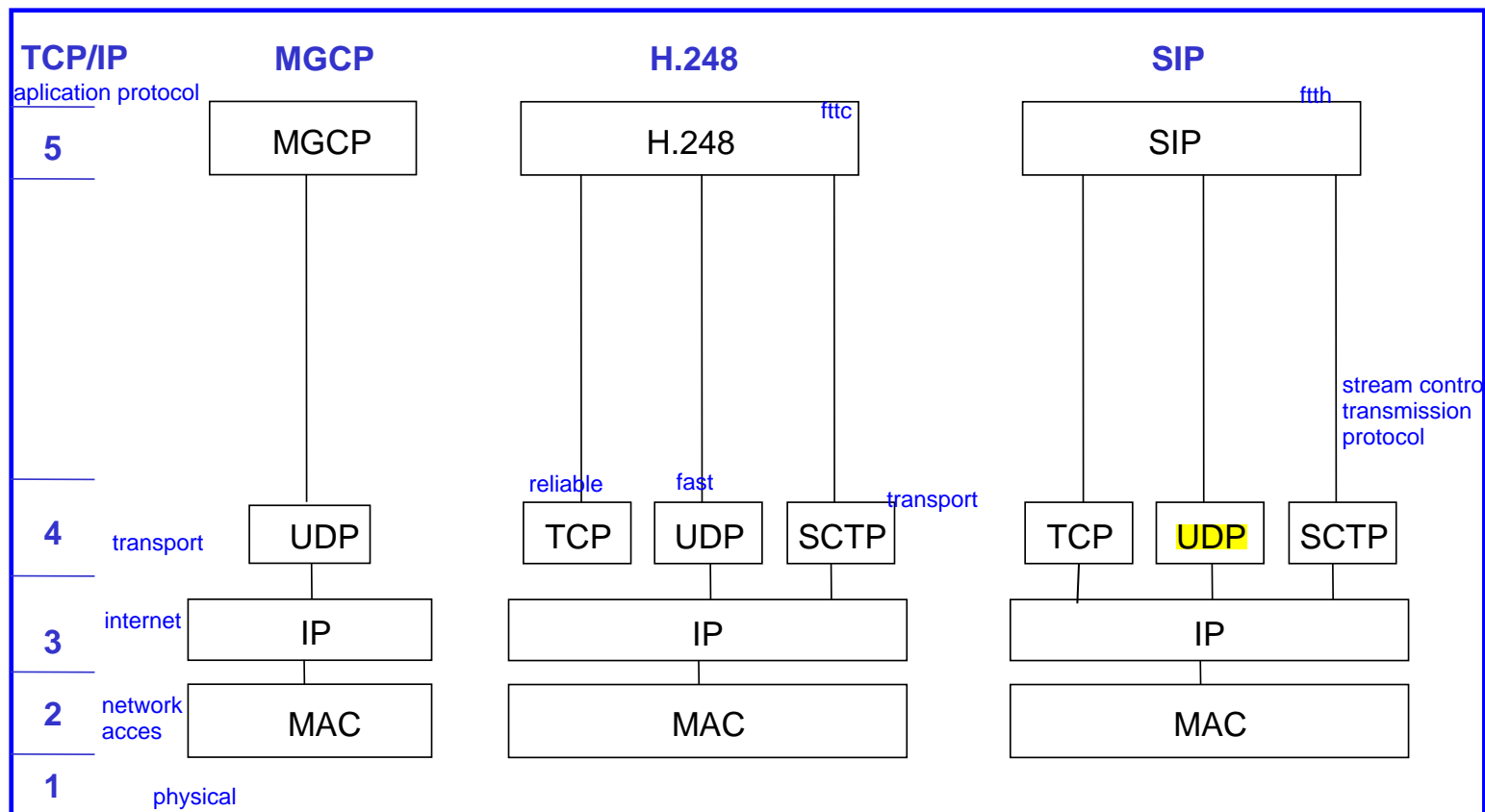
NGN Network Architecture



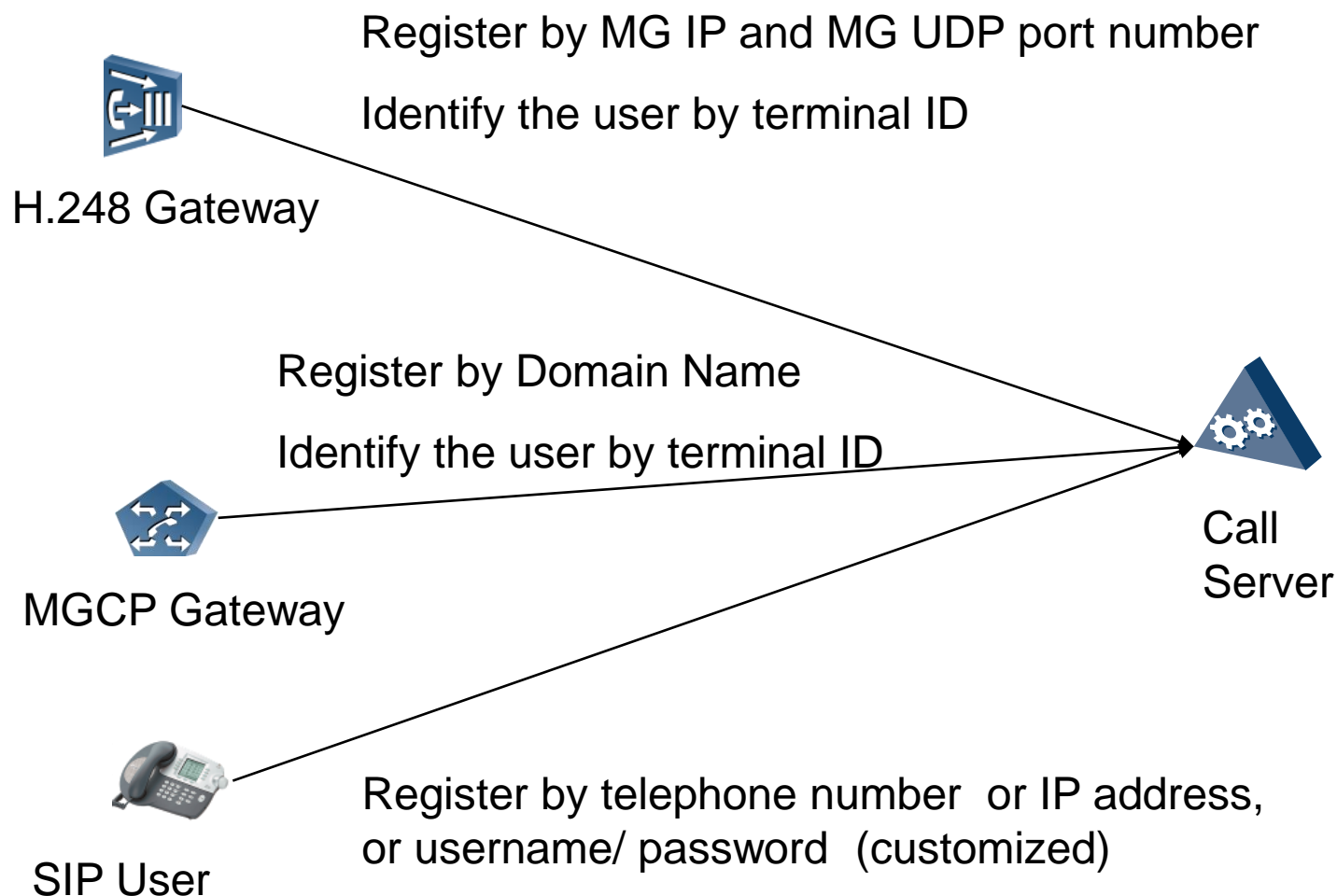
Protocol Introduction

- MGCP: Media Gateway Control Protocol
 - Provide signaling and call control for Media Gateways and Voice over IP (VoIP) terminal devices
 - Used for small gateway
- H.248/Megaco
 - H248 is a successor to MGCP and will finally replace it
 - Provide signaling and call control for Media Gateways and Voice over IP (VoIP) terminal devices
 - Used for large gateway
- SIP : Session Initiation Protocol
 - The core protocol of IETF multimedia data and control architecture.
 - It can be easily expanded, conveniently achieved, and suitable to implement Internet-based multimedia conference system.

VoIP Protocol Stack



Registration and Authentication





Questions

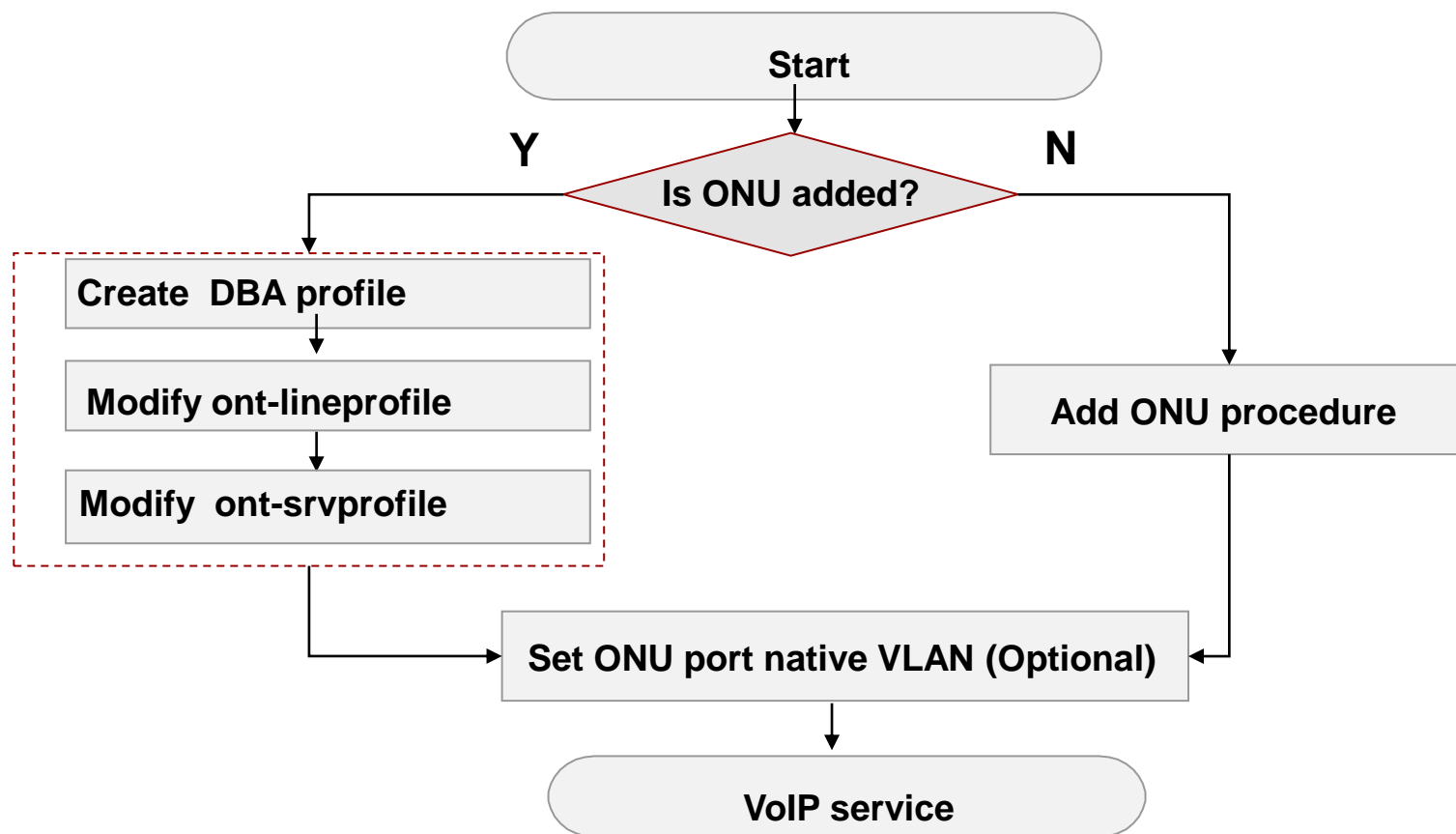
- How many layers are there in NGN? 4 layers
- Which layer does VoIP protocol work at ?
application layer
sip
mgcp
h.248
- How to identify SIP user?
- How to register H.248 Gateway to MGC?
media gateway control



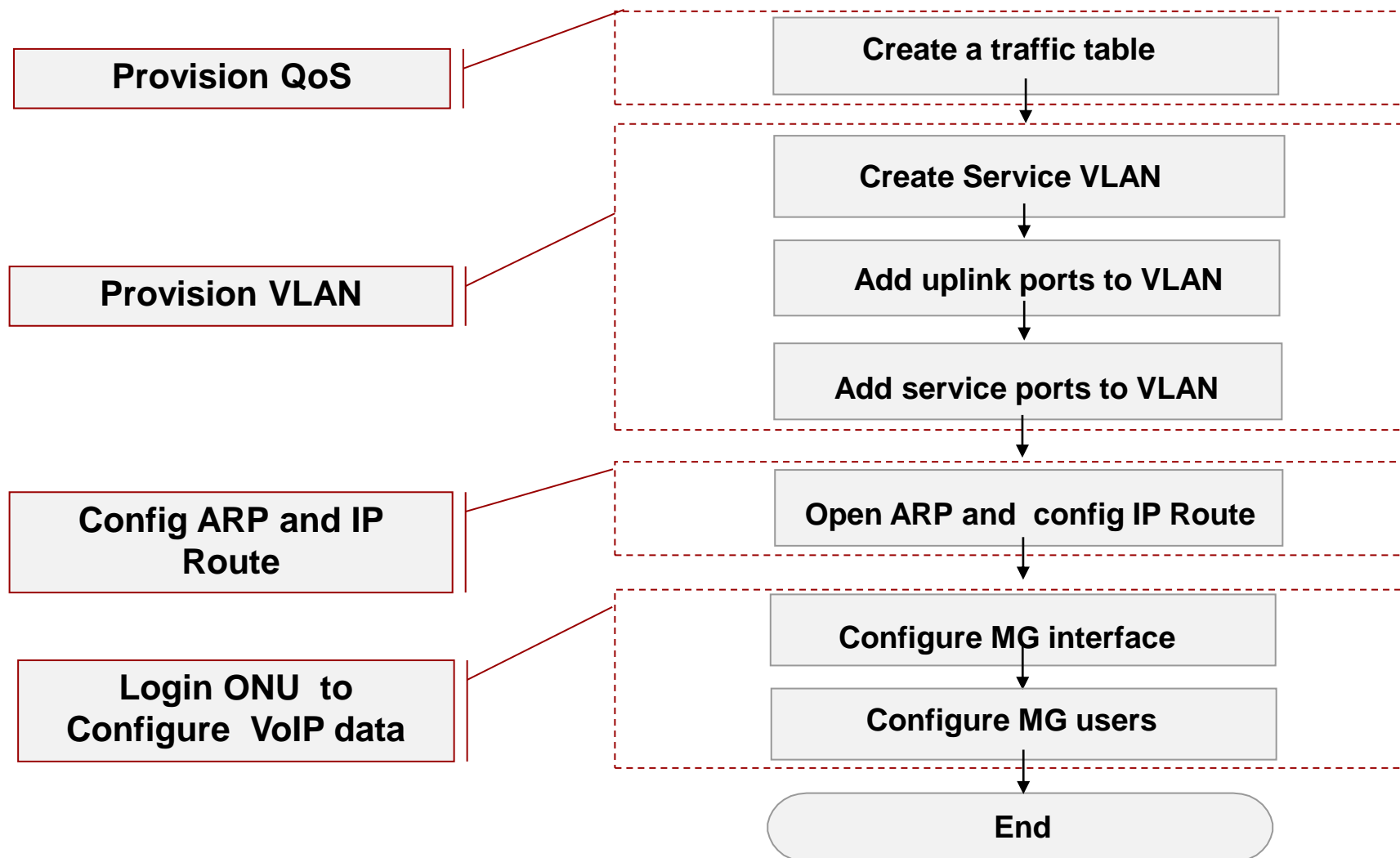
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1. GPON FTTH VoIP Service Overview
- 2. GPON FTTH VoIP Service Configuration Example**
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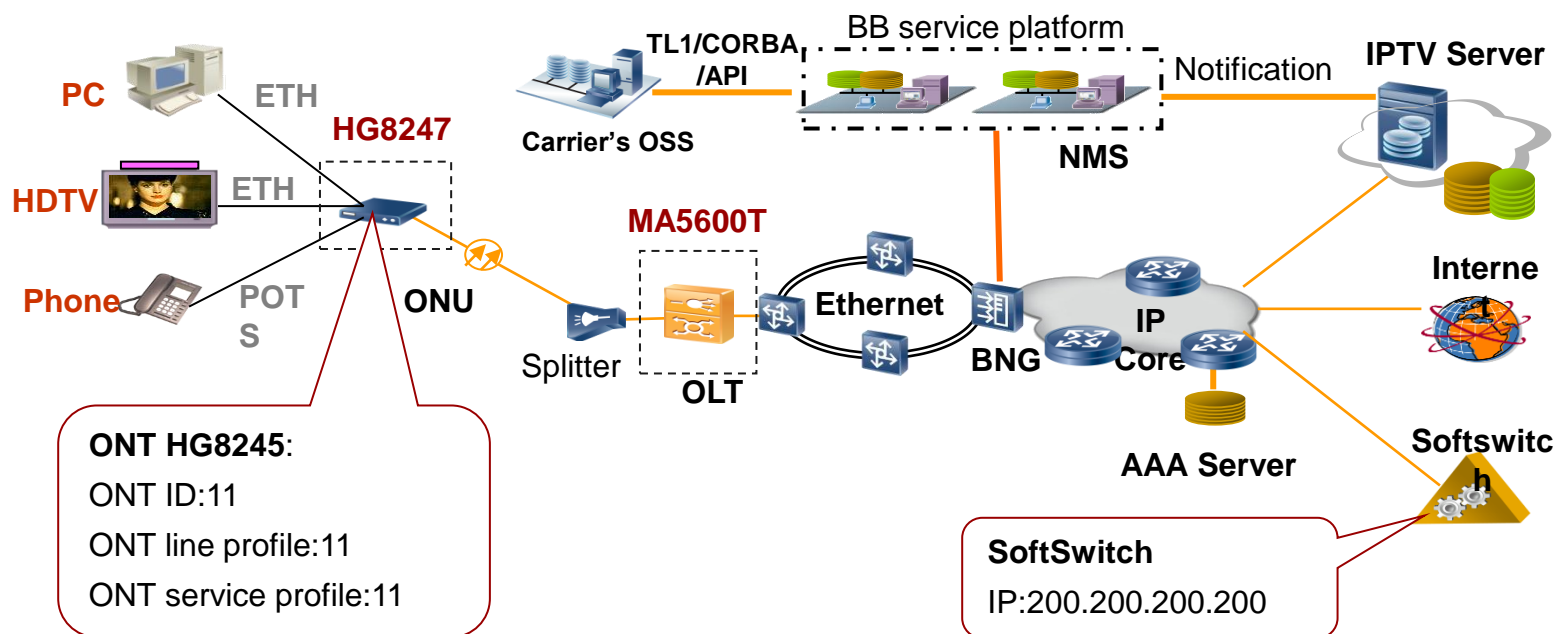
Flow Chart-Add ONT



Flow Chart-VoIP Service



GPON FTTH Case



acc to olt

| Type | ONU Port | C-VLAN | GEM | DBA | TCONT | Traffic table | S-VLAN | OLT port |
|-------------|----------|--------|-----|-----|-------|---------------------|--------|------------------------------|
| VoIP | Tel1 | 172 | 2 | 21 | 6 | 6 (Default): off | 172 | GPON: 0/2/0 Uplink: 0/9/0 |

without limit



Contents

2. GPON FTTH VoIP Service Configuration Example

2.1 OLT Side Configuration

2.2 ONT Side Configuration

OLT Side: Check the ONT Status

```
MA5800-X17(config)#interface gpon 0/2
MA5800-X17(config-if-gpon-0/2)#display ont info
{ portid<U><0,15> }: 0
{ all<K>|ontid<U><0,127> }: 11
{ <cr>||<K> }:
```

Command:

```
display ont info 0 11
```

```
-----
F/S/P           : 0/2/0
ONT-ID          : 11
Control flag     : active
Run state       : online
Config state    : normal
Match state     : match
-----
```

```
Line profile ID : 11
```

```
.....
```

```
-----
Service profile ID : 11
```

```
.....
```

OLT Side: Configure DBA Profile

- Create DBA profile

```
MA5800-X17(config)#dba-profile add
{ profile-id<K>|profile-
name<K>|type1<K>|type2<K>|type3<K>|type4<K>|type5<K> } :profile-id
{ profile-id<U><10,512> } : 21
{ profile-name<K>|type1<K>|type2<K>|type3<K>|type4<K>|type5<K> } : type3
{ assure<K> } : assure
{ assure-bandwidth<U><128,10000000> } : 1024
{ max<K> } : max
{ max-bandwidth<U><128,10000000> } : 2048
```

Command:

```
dba-profile add profile-id 21 type3 assure 1024 max 2048
```

Adding a DBA profile succeeded

Profile ID : 21

Profile name: dba-profile_21

OLT Side: Modify ONT-lineprofile (1/4)

- Modify GPON ONT-lineprofile
 - Enter the ONT-lineprofile mode

```
MA5800-X17(config)#ont-lineprofile gpon
{ <cr>|profile-id<K>|profile-name<K> }: profile-id
{ profile-id<U><0,8192> }: 11
{ <cr>|profile-name<K> }:
```

Command:

```
ont-lineprofile gpon profile-id 11
```

```
MA5800-X17(config-gpon-lineprofile-11)#
```


OLT Side: Modify ONT-lineprofile (2/4)

- Modify GPON ONT-lineprofile
 - Create T-CONT for VoIP service

```
MA5800-X17(config-gpon-lineprofile-11)#tcont
{ tcont-list<S><Length 1-13> }: 2
{ <cr>|dba-profile-id<K>|dba-profile-name<K> }: dba-profile-id
{ profile-id<U><0,512> }: 21
```

Command:

```
tcont 2 dba-profile-id 21
```

OLT Side: Modify ONT-lineprofile (3/4)

- Modify GPON ONT-lineprofile
 - Create GEM port for VoIP service

```
MA5800-X17(config-gpon-lineprofile-11)#gem add
{ gem-index<U><0,1023> }: 2
{ service-type<E><eth,tdm> }: eth
{ tcont<K> }: tcont
{ tcont-id<U><0,127> }: 2
{ <cr>|cascade<K>|downstream-priority-queue<K>|encrypt<K>|gem-
car<K>|priority-queue<K> }:
```

Command:

```
gem add 2 eth tcont 2
```

OLT Side: Modify ONT-lineprofile (4/4)

- Modify GPON ONT-lineprofile
 - Mapping GEM port to the C-VLAN

```
MA5800-X17(config-gpon-lineprofile-11)#gem mapping
{ gem-index<U><0,1023> }: 2
{ mapping-index<U><0,7> }: 2
{ 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> }: 172
{ <cr>|flow-car<K>|priority<K>|transparent<K> }:
```

Command:

```
gem mapping 2 2 vlan 172
```

```
MA5800-X17(config-gpon-lineprofile-11)#commit
MA5800-X17(config-gpon-lineprofile-11)#quit
```

OLT Side: Modify ONT-srvprofile (1/2)

- Modify GPON ONT-srvprofile
 - Enter the ONT-srvprofile mode

```
MA5800-X17(config)#ont-srvprofile gpon
{ <cr>|profile-id<K>|profile-name<K> }: profile-id
{ profile-id<U><0,8192> }: 11
{ <cr>|profile-name<K> }:
```

Command:

```
ont-srvprofile gpon profile-id 11
```

OLT Side: Modify ONT-srvprofile (2/2)

- Modify GPON ONT-srvprofile
 - Configure the IPhost interface in ONT

```
MA5800-X17(config-gpon-srvprofile-11)#port vlan
{ eth<K>|iphost<K>|moca<K>|vdsl<K> }: iphost
{ q-in-q<K>|translation<K>|transparent<K>|vlanid<U><0,4095> }: 172
{ <cr>|TLS<K>|priority<K>|prival<U><0,7> }:
```

Command:

```
port vlan iphost 172
Set ONT port(s) VLAN configuration, success: 1, failed: 0
```

```
MA5800-X17(config-gpon-srvprofile-11)#commit
MA5800-X17(config-gpon-srvprofile-11)#quit
```

OLT Side: Configure Port Native-VLAN

- Set the native-VLAN for IPhost interface

```
MA5800-X17(config)#interface gpon 0/2
```

```
MA5800-X17(config-if-gpon-0/2)#ont port native-vlan
```

```
{ portid<U><0,15> }: 0
```

```
{ ontid<U><0,127> }: 11
```

```
{ eth<K>|iphost<K>|moca<K>|vdsl<K> }: iphost
```

```
{ priority<K>|vlan<K> }: vlan
```

```
{ vlanid<U><0,4095> }: 172
```

```
{ <cr>|priority<K> }:
```

Command:

```
ont port native-vlan 0 11 iphost vlan 172
```

```
MA5800-X17(config-if-gpon-0/2)#quit
```

```
MA5800-X17(config)#
```

OLT Side: Provision VLAN (1/3)

- Configure service VLAN 172

```
MA5800-X17(config)#vlan 172 smart
```

- Add uplink port 0/9/0 to VLAN 172

```
MA5800-X17(config)#port vlan
{ name<K>|vlan-list<S><Length 1-255>|vlanid<U><1,4093> }: 172
{ frameid/slotid<S><Length 3-15>|inner-vlan-list<K>|to<K> }: 0/9
{ portlist<S><Length 1-255> }: 0
```

Command:

```
port vlan 172 0/9 0
```

OLT Side: Provision VLAN (2/3)

- (Optional) Enable the intercommunication in VLAN 172

- Method 1: ARP Proxy

- Create the L3 interface for VLAN 172

```
MA5800-X17(config)#interface vlanif 172  
MA5800-X17(config-if-vlanif172)#ip address 17.0.0.254 8  
MA5800-X17(config-if-vlanif172)#quit
```

- Enable the ARP proxy function

```
MA5800-X17(config)#arp proxy enable  
MA5800-X17(config)#interface vlanif 172  
MA5800-X17(config-if-vlanif172)#arp proxy enable  
MA5800-X17(config-if-vlanif172)#quit
```


OLT Side: Provision VLAN (3/3)

- (Optional) Enable the intercommunication in VLAN 172
 - Method 2: User-bridging
 - Create VLAN service-profile and enable the user-bridging function

```
MA5800-X17(config)#vlan service-profile profile-id 21
MA5800-X17(config-vlan-srvprof-21)#user-bridging enable
MA5800-X17(config-vlan-srvprof-21)#commit
MA5800-X17(config-vlan-srvprof-21)#quit
```

- Bind the VLAN service-profile to VLAN 172

```
MA5800-X17(config)#vlan bind service-profile
{ vlan-list<S><Length 1-255>|vlan-name<K> }: 172
{ profile-id<K>|profile-name<K> }: profile-id
{ profile-id<U><1,256> }: 21
```

OLT Side: Configure Service-port

- Create service-port

```
MA5800-X17(config)#service-port 21
{ adminstatus<K>|inbound<K>|modify<K>|outbound<K>|source<K>|tag-
transform<K>|uplink-port<K>|vlan<K> }: vlan
{ name<K>|vlanid<U><1,4093> }: 172
{ epon<K>|eth<K>|gpon<K>|port<K> }: gpon
{ frameid/slotid/portid<S><Length 5-18> }: 0/2/0
{ ont<K> }: ont
{ ontid<U><0,127> }: 11
{ eth<K>|gemport<K>|iphost<K>|vdsl<K> }: gemport
{ gemindex<U><0,1023> }: 2
{ <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
{ other-all<K>|priority-tagged<K>|untagged<K>|user-vlanid<U><1,4095> }: 172
{ <cr>|bundle<K>|inbound<K>|rx-cttr<K>|tag-transform<K>|user-encap<K> }: rx-cttr
{ rx-index<U><0,1023> }: 6
{ tx-cttr<K> }: tx-cttr
{ tx-index<U><0,1023> }: 6
```



Contents

2. GPON FTTH VoIP Service Configuration Example

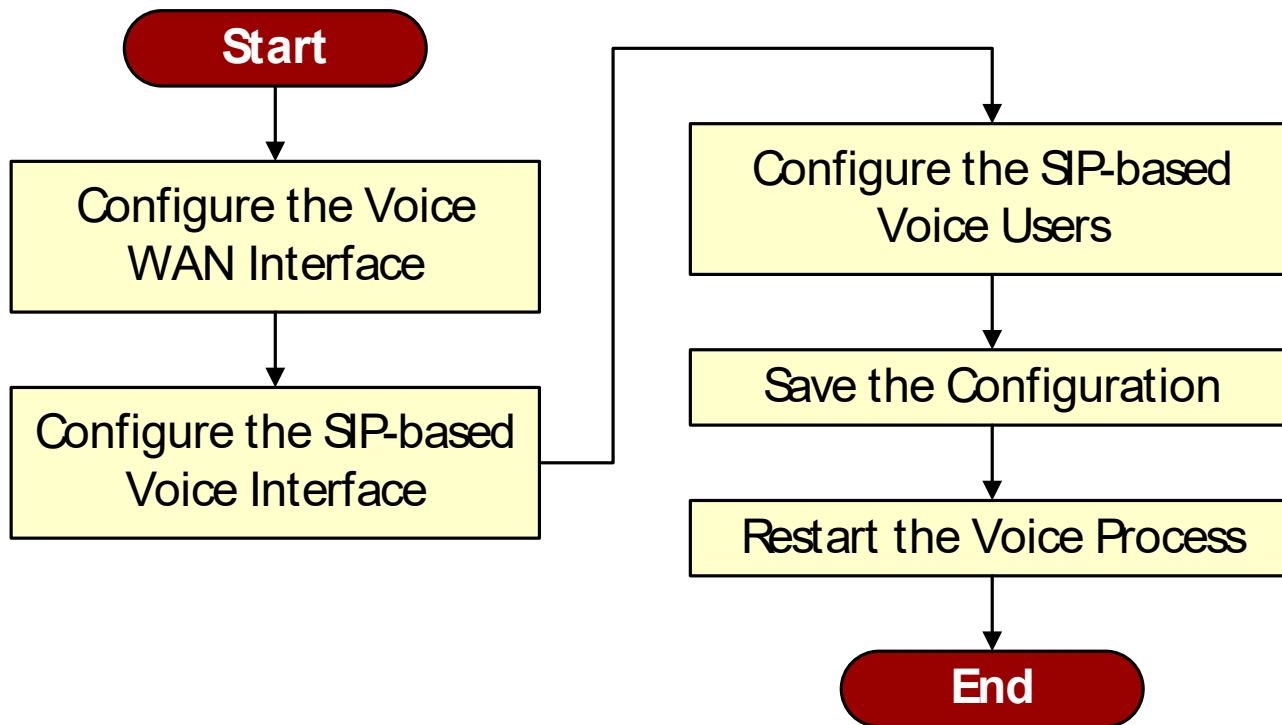
2.1 OLT Side Configuration

2.2 ONT Side Configuration

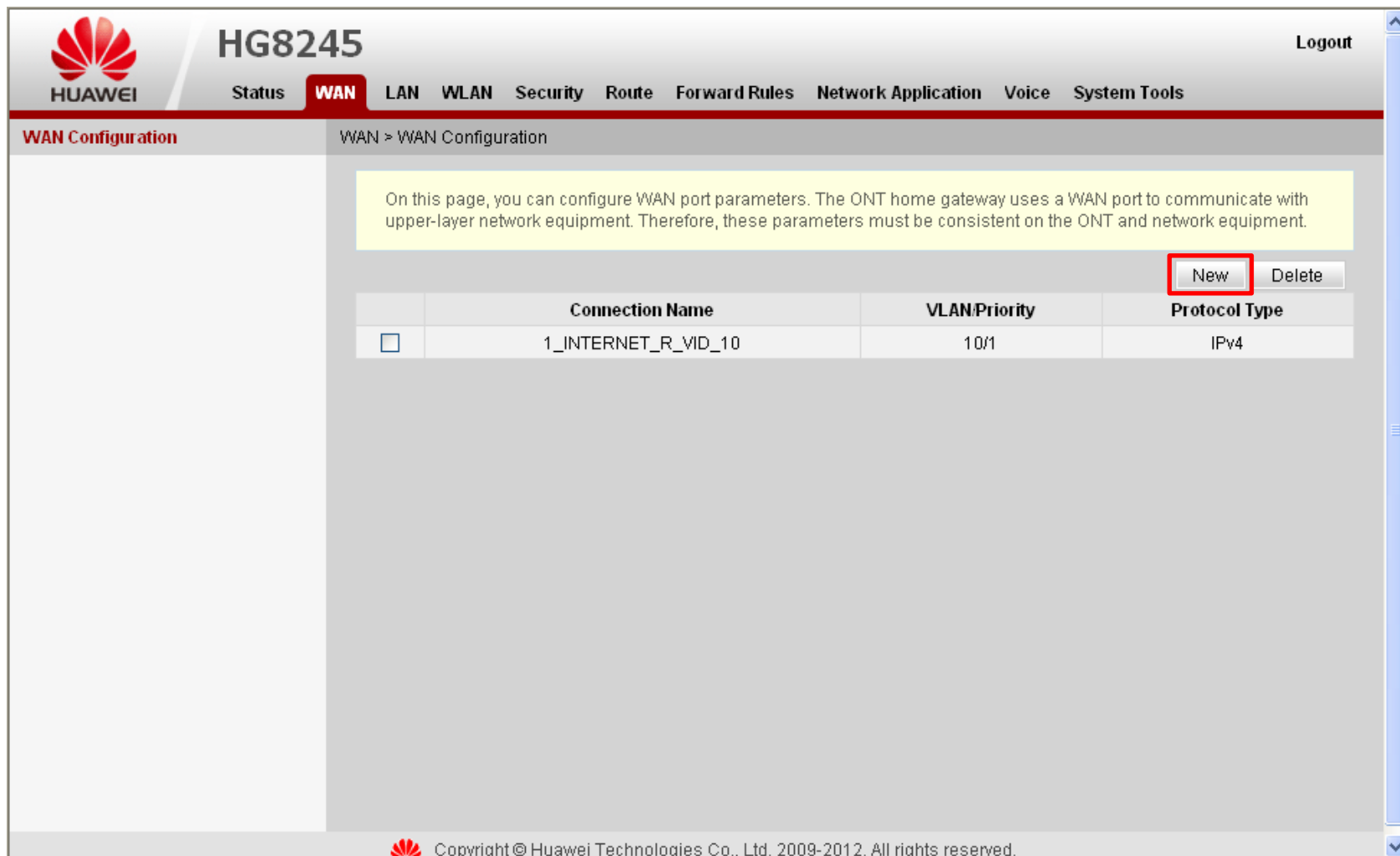
SIP Data Plan

| Parameter | | Data | |
|-----------------------------------|------------------|------------------------|-------------------|
| Service type of the WAN interface | | VoIP | |
| Connection mode | | Route | |
| VLAN ID of the WAN interface | | 172 | |
| Static IP address | | IP: 17.1.1.1/8 | Gateway: 17.0.0.1 |
| 802.1p | | 6 | |
| Region | | China | |
| Signaling protocol | | SIP | |
| IP & Port of the SIP server | | 200.200.200.200 : 5061 | |
| Domain name for SIP registration | | huawei.com | |
| SIP users | Telephone number | 7727001 | 7727002 |
| | Username | 7727001 | 7727002 |
| | Password | 7727000 | 7727000 |

Configuring Flowchart



Create the Voice WAN Interface



The screenshot displays the Huawei HG8245 web management interface. At the top, the Huawei logo and model number 'HG8245' are visible. A navigation bar includes links for Status, WAN (highlighted), LAN, WLAN, Security, Route, Forward Rules, Network Application, Voice, and System Tools. The main content area is titled 'WAN Configuration' and contains a descriptive text box: '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.' Below this text is a table with columns for Connection Name, VLAN/Priority, and Protocol Type. A 'New' button, highlighted with a red box, and a 'Delete' button are located above the table. The table contains one entry with a checkbox, the name '1_INTERNET_R_VID_10', and 'IPv4' as the protocol type.

| | Connection Name | VLAN/Priority | Protocol Type |
|--------------------------|---------------------|---------------|---------------|
| <input type="checkbox"/> | 1_INTERNET_R_VID_10 | 10/1 | IPv4 |

Voice WAN Interface Configuration

NewDelete

| | Connection Name | VLAN/Priority | Protocol Type |
|--------------------------|---------------------|---------------|---------------|
| <input type="checkbox"/> | 1_INTERNET_R_VID_10 | 10/1 | IPv4 |
| -- | -- | -- | -- |

Basic Information

Enable WAN:☒

Encapsulation mode:☒ IPoE ☐ PPPoE

Protocol type:IPv4

WAN mode:Route WAN

Service type:VOIP

Enable VLAN:☒

VLAN ID:172(1-4094)

802.1p:6

MTU:(1-1540)

IP acquisition mode:☒ Static ☐ DHCP ☐ PPPoE

IP address:17.1.1.1

Subnet mask:255.0.0.0

Default gateway:17.0.0.1

Primary DNS server:

Secondary DNS server:

ApplyCancel

TR069

INTERNET

TR069_INTERNET

VOIP


TR069_VOIP

VOIP_INTERNET

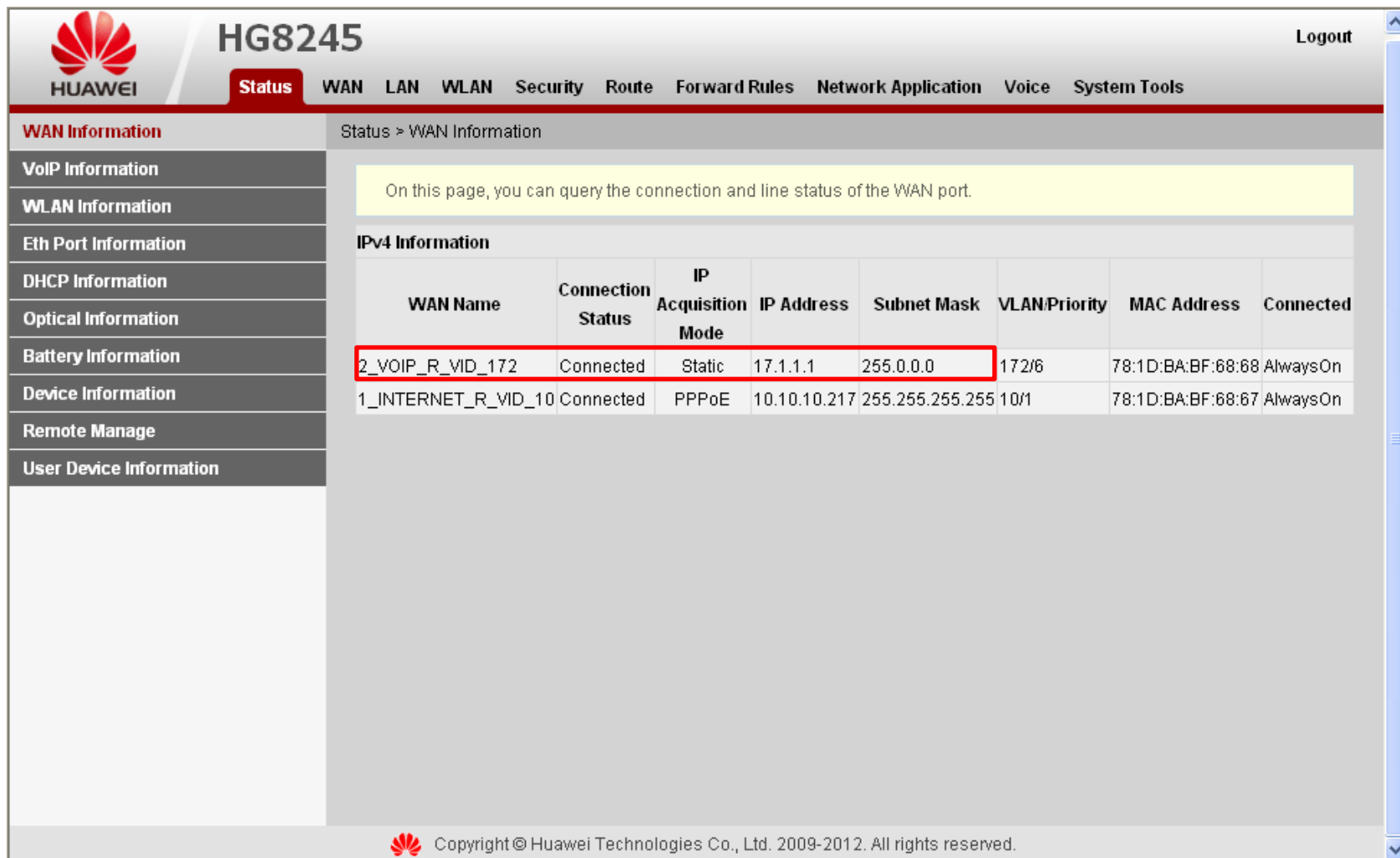
TR069_VOIP_INTERNET

IPTV

OTHER

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Check the Connection Status



The screenshot displays the Huawei HG8245 web management interface. The top navigation bar includes the Huawei logo, the model number 'HG8245', a 'Logout' link, and a 'Status' tab. Below the navigation bar, a sidebar on the left lists various system 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, a table titled 'IPv4 Information' provides details about the WAN connections. The table has eight columns: WAN Name, Connection Status, IP Acquisition Mode, IP Address, Subnet Mask, VLAN/Priority, MAC Address, and Connected. Two rows are listed: '2_VOIP_R_VID_172' and '1_INTERNET_R_VID_10'. The first row is highlighted with a red border, showing it is 'Connected' via 'Static' IP acquisition with address '17.1.1.1' and subnet mask '255.0.0.0'. The second row shows it is also 'Connected' via 'PPPoE' with address '10.10.10.217' and subnet mask '255.255.255.255'. The footer of the interface includes a copyright notice for Huawei Technologies Co., Ltd. from 2009 to 2012.

HUAWEI HG8245 Logout

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

WAN Information Status > WAN Information

On this page, you can query the connection and line status of the WAN port.

IPv4 Information

| WAN Name | Connection Status | IP Acquisition Mode | IP Address | Subnet Mask | VLAN/Priority | MAC Address | Connected |
|---------------------|-------------------|---------------------|--------------|-----------------|---------------|-------------------|-----------|
| 2_VOIP_R_VID_172 | Connected | Static | 17.1.1.1 | 255.0.0.0 | 172/6 | 78:1D:BA:BF:68:68 | AlwaysOn |
| 1_INTERNET_R_VID_10 | Connected | PPPoE | 10.10.10.217 | 255.255.255.255 | 10/1 | 78:1D:BA:BF:68:67 | AlwaysOn |

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SIP Interface Configuration (1/2)

The screenshot shows the Huawei HG8245 web interface. The top navigation bar includes the Huawei logo, the model name 'HG8245', and a 'Logout' link. Below this is a menu bar with options: Status, WAN, LAN, WLAN, Security, Route, Forward Rules, Network Application, Voice (highlighted), and System Tools. The left sidebar has 'VoIP Basic Configuration' (highlighted) and 'VoIP Advanced Configuration'. The main content area is titled 'Voice > VoIP Basic Configuration' and 'Interface Basic Parameters'. A yellow box contains the text: 'On this page, you can set the basic parameters for the voice interface.' Below this is a table of configuration parameters. The 'Outbound Proxy Address' and 'Outbound Proxy Port' fields are highlighted with a red box. The 'Outbound Proxy Address' is set to '200.200.200.200' (IP or Domain) and the 'Outbound Proxy Port' is set to '5061' (0-65535). Other parameters include Standby Outbound Proxy Address, Standby Outbound Proxy Port (5060), Primary Proxy Address, Primary Proxy Port (5060), Standby Proxy Address, Standby Proxy Port (5060), Home Domain (huawei.com), Local Port (5060), Digitmap ([xABCD].S|[xABCD].#), Digitmap Match Mode (Min), Registration Period (600), and a dropdown for '1_VOIP_R_VID_172' (Select the name of the WAN that will carry the voice signaling).

| | | |
|---------------------------------|---------------------|--|
| Outbound Proxy Address: | 200.200.200.200 | (IP or Domain) |
| Outbound Proxy Port: | 5061 | (0-65535) |
| Standby Outbound Proxy Address: | | (IP or Domain) |
| Standby Outbound Proxy Port: | 5060 | (0-65535) |
| Primary Proxy Address: | | (IP or Domain) |
| Primary Proxy Port: | 5060 | (0-65535) |
| Standby Proxy Address: | | (IP or Domain) |
| Standby Proxy Port: | 5060 | (0-65535) |
| Home Domain: | huawei.com | (IP or Domain) |
| Local Port: | 5060 | (0-65535) |
| Digitmap: | [xABCD].S [xABCD].# | |
| Digitmap Match Mode: | Min | |
| Registration Period: | 600 | (Unit:s)(1-65534) |
| Registration Port: | 1_VOIP_R_VID_172 | (Select the name of the WAN that will carry the voice signaling) |

SIP Interface Configuration (2/2)

Digitmap Match Mode:Max

Registration Period:600 (Unit:s)(1-65534)

Signaling Port:2_VOIP_R_VID_172 (Select the name of the WAN that will carry the voice signaling messages.)

Media Port:2_VOIP_R_VID_172 (Select the name of the WAN that will carry the voice media. The media port is same with signaling port when it is empty.)

Region:China

ApplyCancel

User Basic Parameters

On this page, you can set the basic parameters for the voice users.

NewDelete

| | Sequence | URI | Register User Name | Auth User Name | Password | Associated POTS |
|--------------------------|----------|-----|--------------------|----------------|----------|-----------------|
| <input type="checkbox"/> | 1 | -- | 7727003 | 7727003 | ***** | 1 |
| <input type="checkbox"/> | 2 | -- | 7727011 | 7727011 | ***** | 2 |

Enable User:☒

URI: (URI)


Register User Name:7727011 (Telephone Number)

Associated POTS:2

Auth User Name:7727011 (The length must be between 0-64.)

Password:***** (The length must be between 0-64.)

ApplyCancel

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SIP Users Configuration

Digitmap Match Mode:

Max

Registration Period:

600

(Unit:s)(1-65534)

Signaling Port:

(Select the name of the WAN that will carry the voice signaling messages.)

Media Port:

(Select the name of the WAN that will carry the voice media. The media port is same with signaling port when it is empty.)

Region:

China

Apply

Cancel

User Basic Parameters

On this page, you can set the basic parameters for the voice users.

New

Delete

| | Sequence | URI | Register User Name | Auth User Name | Password | Associated POTS |
|--------------------------|----------|-----|--------------------|----------------|----------|-----------------|
| <input type="checkbox"/> | 1 | -- | 7727001 | 7727001 | ***** | 1 |
| <input type="checkbox"/> | 2 | -- | 7727002 | 7727002 | ***** | 2 |

Enable User:

☒

URI:

(URI)

Register User Name:

7727001

(Telephone Number)

Associated POTS:

1

Auth User Name:

7727001

(The length must be between 0-64.)

Password:

(The length must be between 0-64.)

Apply

Cancel

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Check the Registration Status

The screenshot displays the Huawei HG8245 web management interface. The top navigation bar includes the Huawei logo, the model number 'HG8245', a 'Logout' link, and a 'Status' tab. Below the navigation bar, a sidebar on the left lists various system information categories: WAN Information, VoIP Information (highlighted in red), 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 > VoIP Information'. It contains a yellow informational box stating, 'On this page, you can query the voice user list and status.' Below this is a table with the following data:

| Sequence | URI | User Name(Telephone Number) | Associated POTS | User Status | Call Status |
|----------|-----|-----------------------------|-----------------|-------------|-------------|
| 1 | -- | 7727001 | 1 | Up | Idle |
| 2 | -- | 7727002 | 2 | Up | Idle |

Below the table, another yellow box instructs: 'To restart the VoIP service, click "Restart VoIP".' A 'Restart VoIP' button is located at the bottom of this section. The footer of the interface shows the Huawei logo and the copyright notice: 'Copyright © Huawei Technologies Co., Ltd. 2009-2012. All rights reserved.'



Questions

- Which port on the ONU is used to receive VoIP data from OLT?
A.ETH Port **B. IPhost** C.GPON Port
- By default, can the two users of the same access device communicate with each other in the L2?



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2. GPON FTTH VoIP Service Configuration Example
- 3. GPON FTTH VoIP Service Maintenance**

Query ONT Info

```
MA5800-X17(config)#interface gpon 0/2
MA5800-X17(config-if-gpon-0/2)#display ont info
{ portid<U><0,15> }: 0
{ all<K>|ontid<U><0,127> }: 11
{ <cr>||<K> }:
```

Command:

```
display ont info 0 11
```

```
-----
F/S/P           : 0/2/0
ONT-ID          : 11
Control flag    : active
Run state       : online
Config state    : normal
Match state     : match
.....
-----
```

```
Line profile ID : 11
.....
-----
```

```
Service profile ID : 11
```

Query the ONT-lineprofile

```
MA5800-X17(config)#display ont-lineprofile gpon
{ all<K>|profile-id<K>|profile-name<K> }:profile-id
{ profile-id<U><0,8192> }:11
```

Command:

```
display ont-lineprofile gpon profile-id 11
```

```
-----
Profile-ID           :11
Profile-name         :line-profile_11
```

.....

```
<T-CONT 2>          DBA Profile-ID:21
<Gem Index 2>
```

```
-----
|Serv-Type:ETH |Encrypt:off |Cascade:off |GEM-CAR:-      |
|Upstream-priority-queue:0 |Downstream-priority-queue:-  |
-----
```

| Mapping index | VLAN | Priority | Port type | Port ID | Bundle ID | Flow CAR | Transparent |
|---------------|------|----------|-----------|---------|-----------|----------|-------------|
|---------------|------|----------|-----------|---------|-----------|----------|-------------|

| | | | | | | | |
|---|-----|---|---|---|---|---|---|
| 2 | 172 | - | - | - | - | - | - |
|---|-----|---|---|---|---|---|---|

.....

Query the ONT-srvprofile

```
MA5800-X17(config)#display ont-srvprofile gpon profile-id 11
```

```
-----  
Profile-ID   : 11  
Profile-name: srv-profile_11  
Access-type  : GPON  
-----
```

```
Port-type      Port-number  
-----
```

```
POTS          2  
ETH           4  
VDSL          0  
TDM           0  
MOCA          0  
.....
```

```
-----  
Port  Port  Service-type Index S-VLAN S-PRI C-VLAN C-PRI ENCAP      S-PRI  
type  ID                               POLICY  
-----  
ETH    1      Translation  1     10    -     10    -     -          -  
IPHOST 1      Translation  1     172   -     172   -     -          -  
.....
```

Query Service Ports

- Run the **display service-port** command to query the information about the service ports you have configured

```
MA5800-X17(config)#display service-port all  
{ <cr>|e2e<K>|sort-by<K>||<K> }:
```

Command:

```
display service-port all  
Switch-Oriented Flow List
```

| INDEX | VLAN ID | VLAN ATTR | PORT TYPE | F/ S/ P | VPI | VCI | FLOW TYPE | FLOW PARA | RX | TX | STATE |
|-------|---------|-----------|-----------|---------|-----|-----|-----------|-----------|----|----|-------|
| 11 | 2000 | QinQ | gpon | 0/2 /0 | 11 | 1 | vlan | 10 | 11 | 11 | up |
| 21 | 172 | common | gpon | 0/2 /0 | 11 | 2 | vlan | 172 | 6 | 6 | up |



Summary

- NGN Architecture
 - 4 layers Including: access, bearer ,control , service and application
 - VoIP signaling should pass through control layer
 - VoIP voice should pass through bearer layer
- Current protocols used widely : MGCP/H.248/SIP
- Function of IPhost : provide voice access
- SIP VoIP key parameters
 - Server IP:Port / Local IP:Port / Tel Number / Username&Passowrd

Thank you

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