High Availability Local Networks

HALNy NETWORKS

ONT HALNy HGU
WEB Configuration

Wersja: 1.2

List of items

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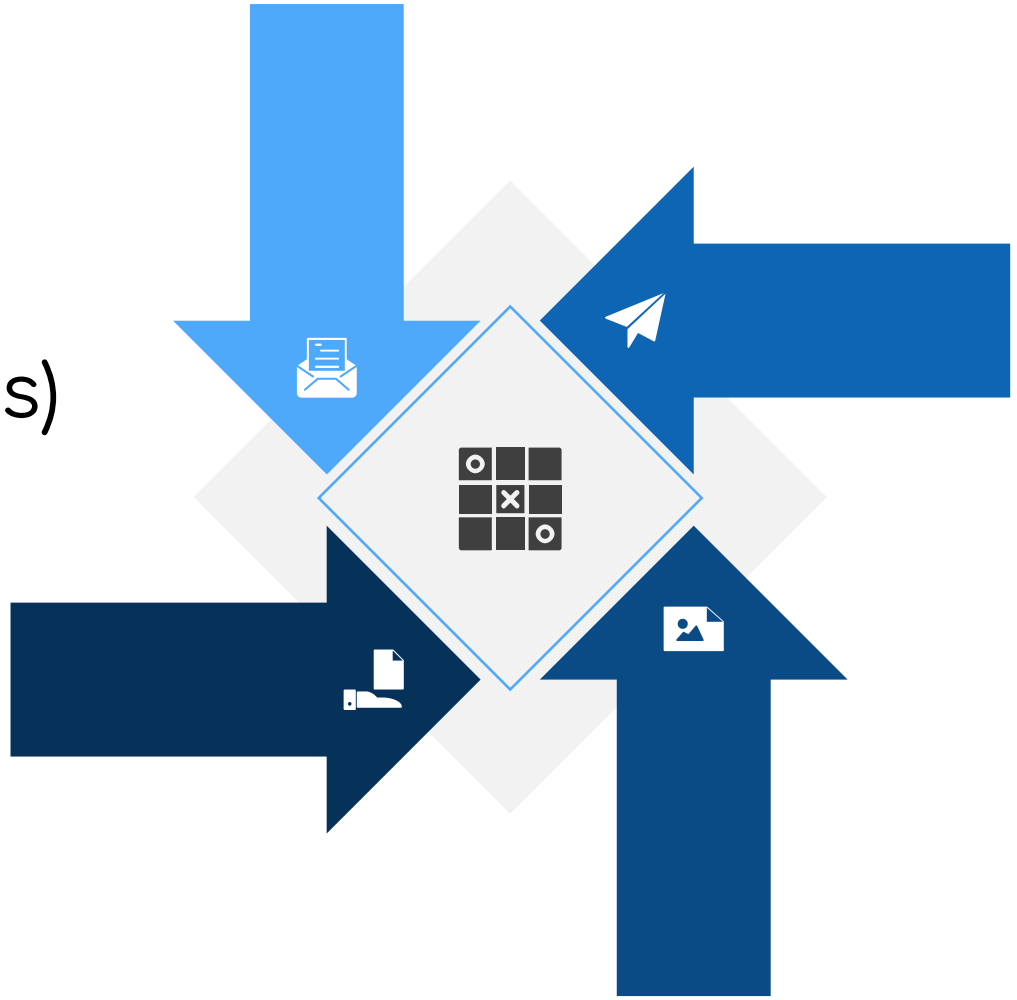
I. Interoperability (IOP)

IOP with different OLT vendors:

- HUAWEI
- DASAN
- ZTE
- CISCO (ALTICE Labs)
- ZHONE
- ALU / NOKIA
- RAISECOM
- ZYXEL



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II. WAN Concept

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ONT should support minimum up to 6 WAN interfaces:

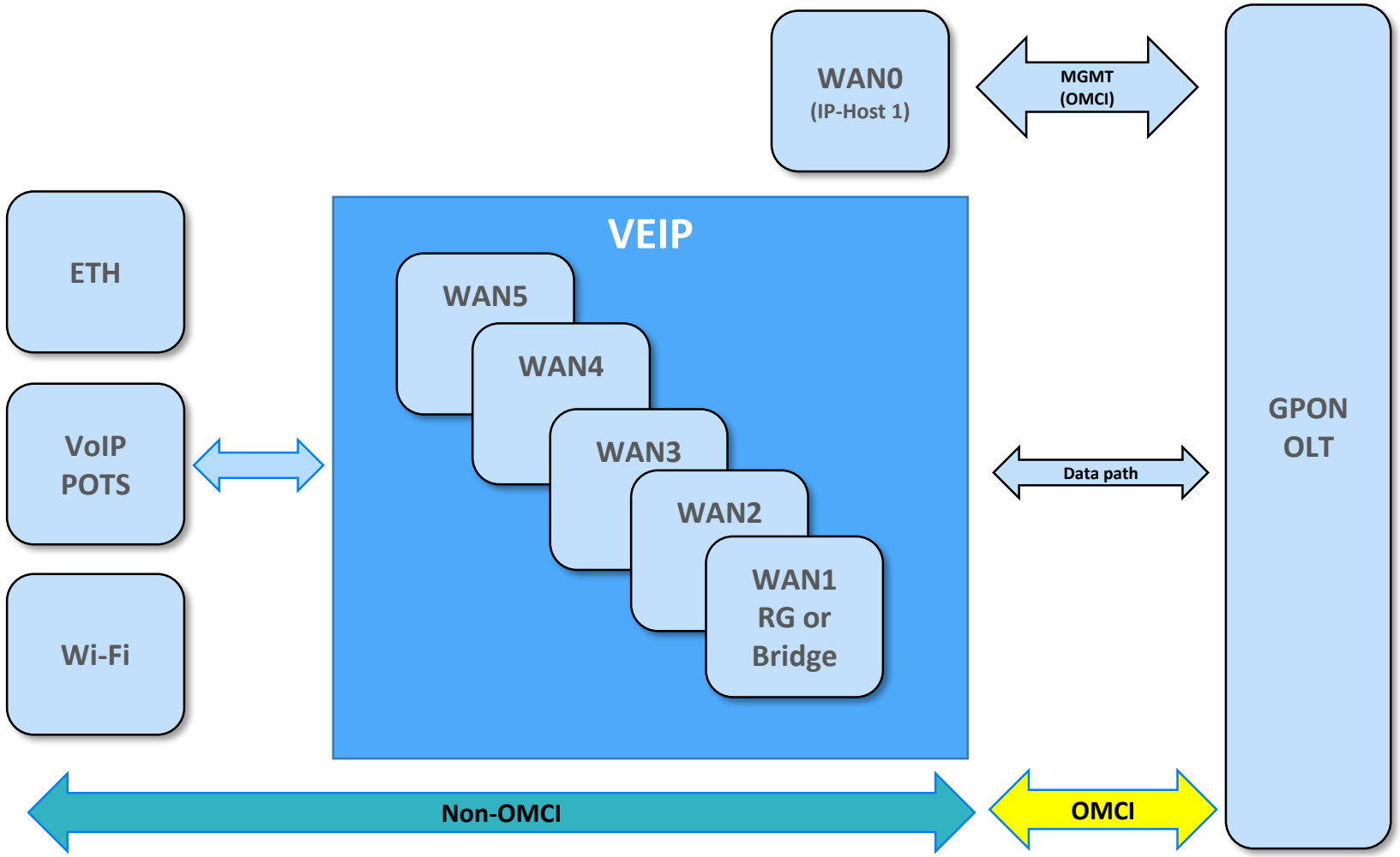
WAN 0

- Used for remote management/monitoring (WEB, SSH, SNMP) and provisioning (DHCP, TR-069),
- DHCP Client or Static IP,
- Always available – no matter of ONT VEIP configuration.

WAN 1 – WAN 5

- Part of VEIP interface (Virtual Ethernet Interface Point),
- Used for services (Internet, IPTV, VOIP),
- Controlled by WEB, provisioning or backup file,
- All UNI and SSID interfaces are belonged to one VEIP and it cannot be controlled by OMCI,
- Each WAN can be set as bridge or router.

II. WAN Concept



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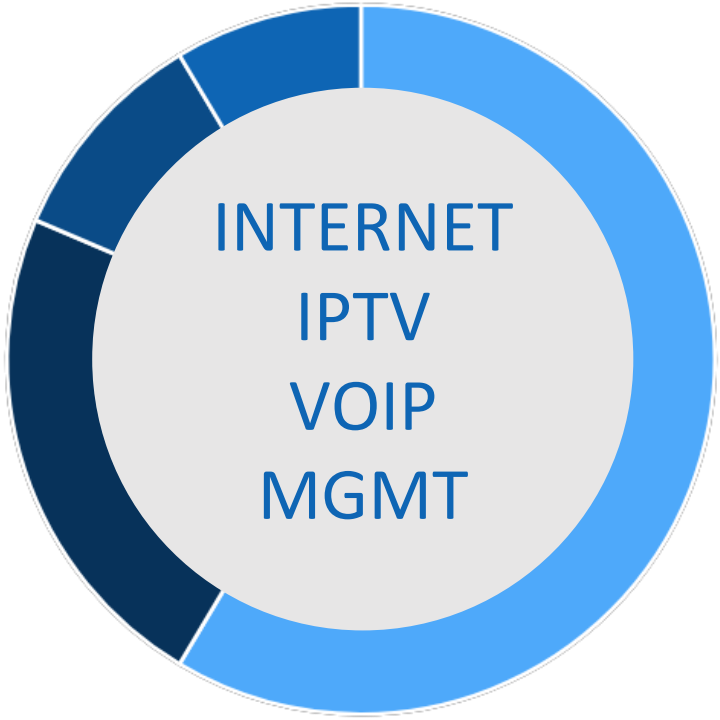
III. SUPPORTED SERVICE SCENARIO

ONT Web Access

1. ONT Configuration (Bridge Mode – only INTERNET: 1-4/WIFI)
2. ONT Configuration (Bridge Mode - INTERNET: 1-4/WIFI, VOIP interface)
3. ONT Configuration (Bridge Mode – INTERNET: 1-2/WIFI, IPTV: 3-4, VOIP interface)
4. ONT Configuration (Router Mode – only INTERNET: 1-4/WIFI)
5. ONT Configuration (Router Mode – INTERNET: 1-4/WIFI, VOIP interface)
6. ONT Configuration (Router Mode – INTERNET: 1-2/WIFI, IPTV: 3-4, VOIP interface)
7. ONT Configuration (Router Mode – Rate-Limit)



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Configuration is related to below ONTs:

HL-4GMV
- 4GE
- 2POTS
- IEEE 802.11b/g/n/ac
- GPON Uplink

HL-4G (HGU)
- 4GE
- GPON Uplink

HL-1GE (HGU)
- 1GE
- GPON Uplink

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ONT Web Access

Web Access via Network Connection

You can access the device's Web GUI interface remotely in the same network. You should know the device's IP address for web access.
You can check IP address from OLT side - configured on ONT IP-HOST-1
SWITCH(config-gpon-olt[1])# show onu ip-host 1

```
-----------------------------------------
 OLT : 1, ONU : 1, Host : 1(0x0000)
-----------------------------------------
 IP Option                    : DHCP
 MAC Address        : e0:5a:9f:6x:xx:xx
 Current IP         : 10.10.10.2
 Current Mask       : 255.255.255.0
 Current Gateway    : 10.10.10.254
 Current Primary DNS   :
 Current Secondary DNS :
 Domain name        :
 Host name                    :
```

1. Connect your PC to the network accessible to the device.
2. Open a web browser, and enter http://IP_ADDRESS in a URL field, and then press Enter.
3. Type LOGIN/PASSWORD in each field, and log into the system by clicking OK.

Initial page is displayed. Default logins and passwords are:

Access from IP-HOST-1/LAN:

- Admin account: admin / AdmiN*123
- User account: useradmin / useradmin123

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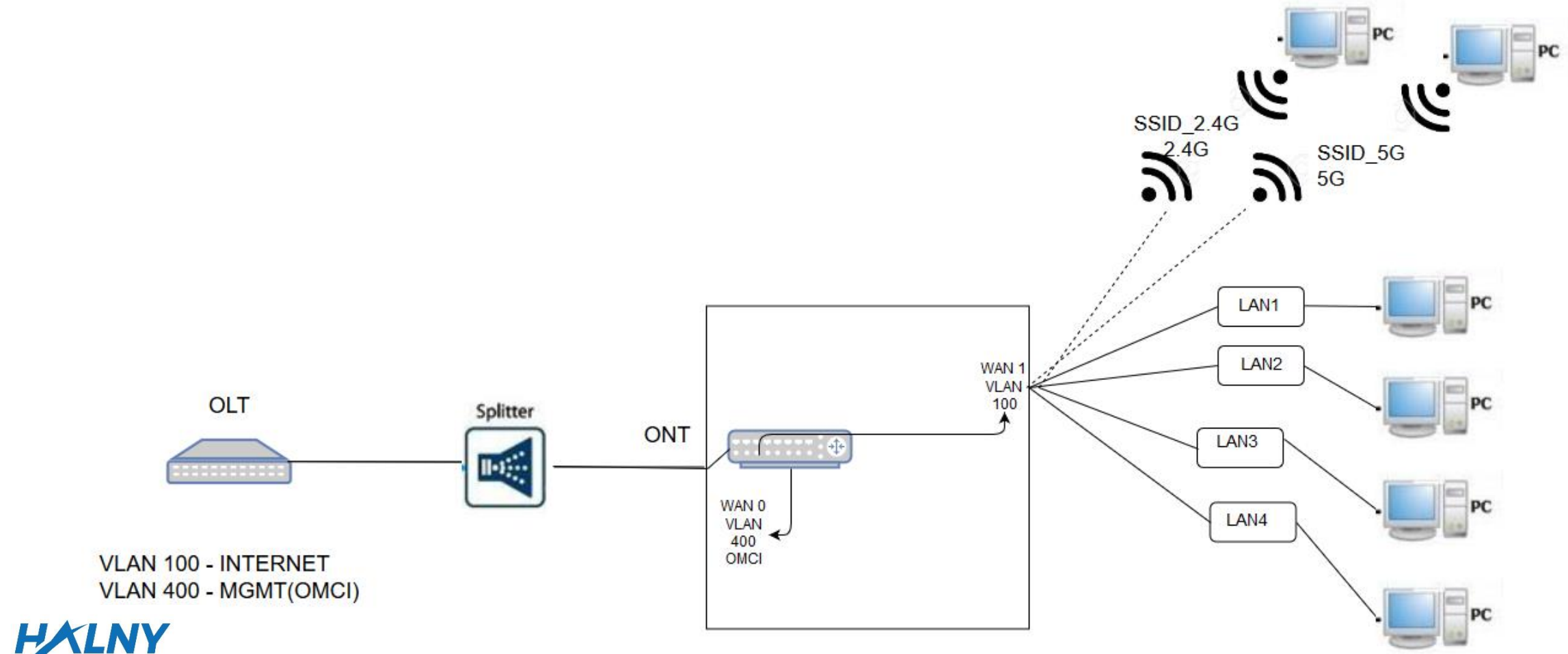
1. Bridge Mode – only INTERNET: 1-4/WIFI

- WAN1 – Bridge mode
- VLAN configuration on WAN0
- LAN1-LAN4, SSID1_2.4G, SSID1_5G assigned to WAN1 (access ports)



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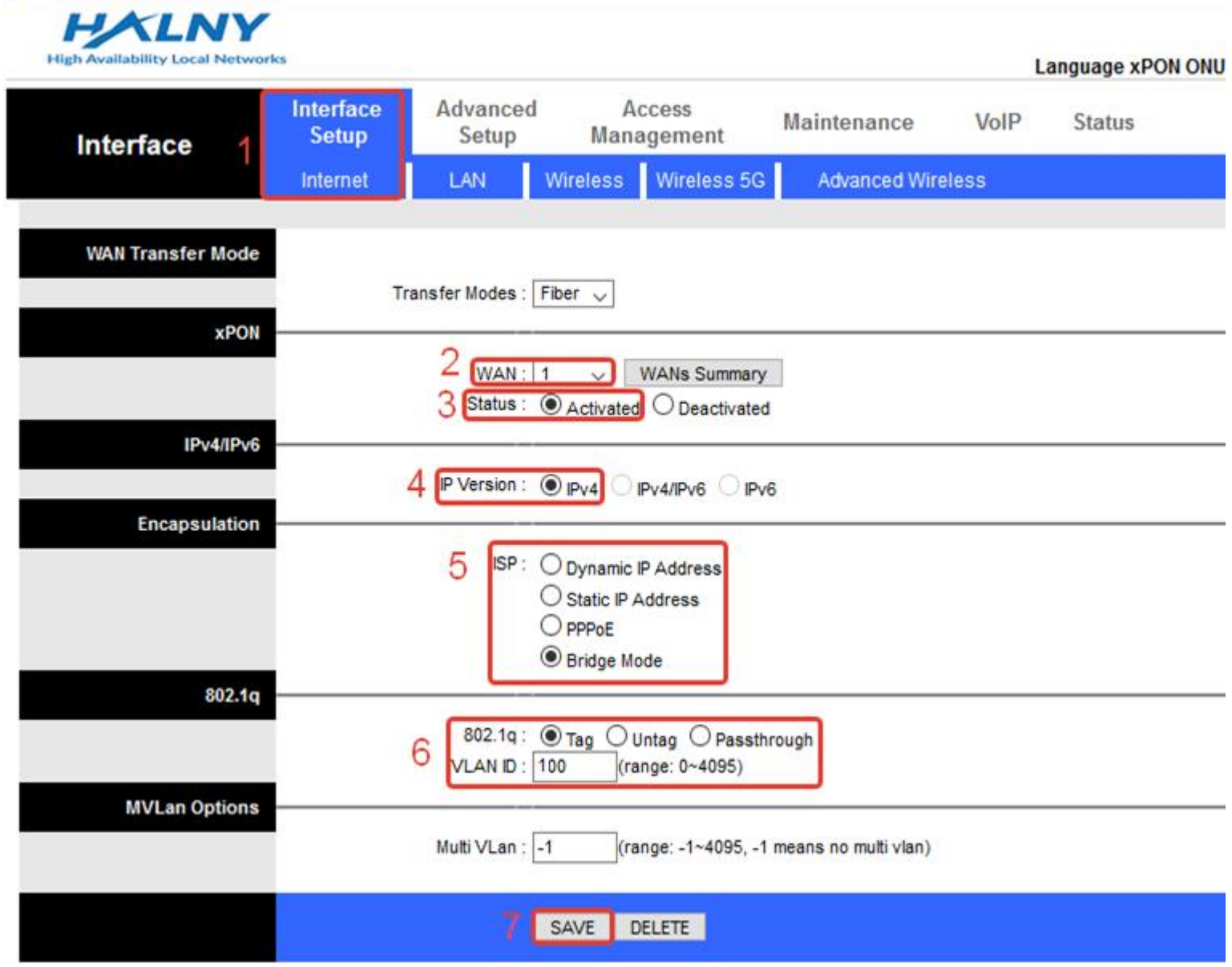
1. Bridge Mode – only INTERNET: 1-4/WIFI

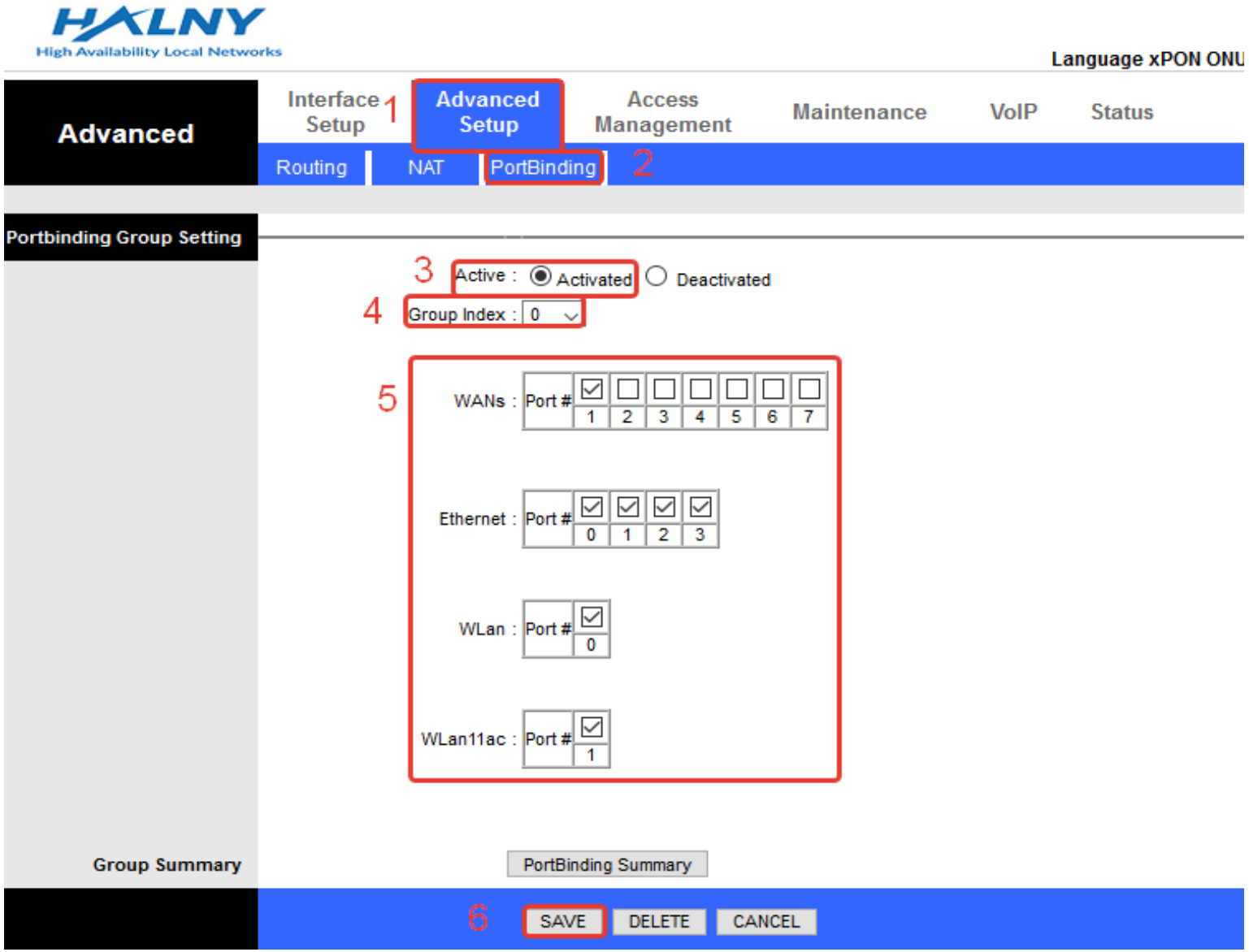
1. Create WAN Interface for INTERNET:

    1. Go Interface Setup -> Internet
    2. Choose Wan
    3. Enable WAN interface
    4. Select IP Version: IPv4
    5. Choose ISP : Bridge Mode
    6. Choose 802.1q: Tag and Set VLAN-ID
    7. Save settings



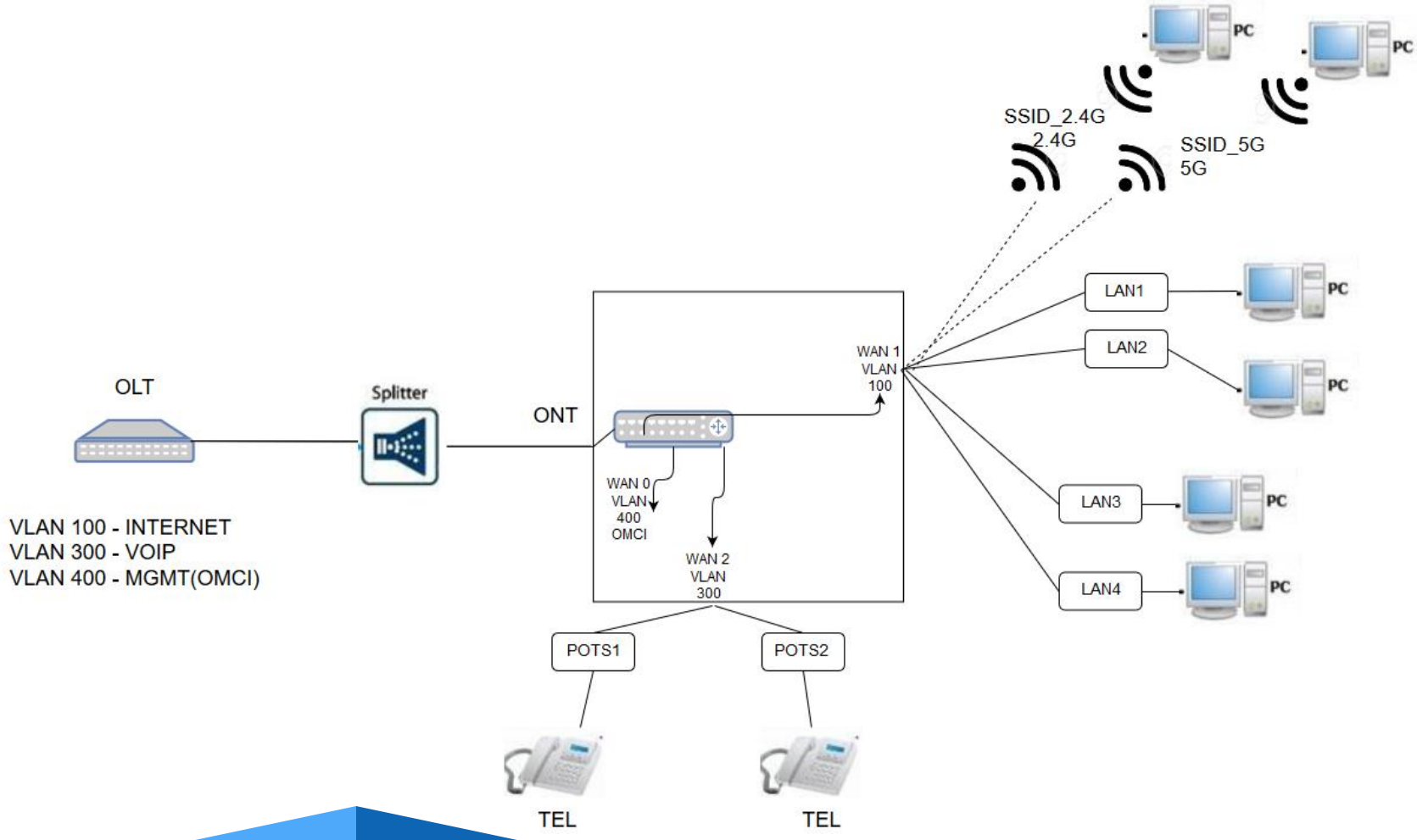
1. Bridge Mode – only INTERNET: 1-4/WIFI

1. Go Advanced Setup
2. Go Port Binding
3. Enable Port Binding
4. Select index 0 for Internet
5. Set mapping for Internet ports:
6. Save settings



2. Bridge Mode – INTERNET: 1-4/WIFI, VOIP interface

- **WAN1 – VLAN 100 – INTERNET Bridge mode**
  - **LAN1 - LAN4, SSID1_2.4G, SSID1_5G assigned to WAN1 (access ports)**
- **WAN2 – VLAN 300 – IP Interface (Static IP / DHCP Client / PPPoE Client)**
  - **POTS1, POTS2 assigned to WAN2**



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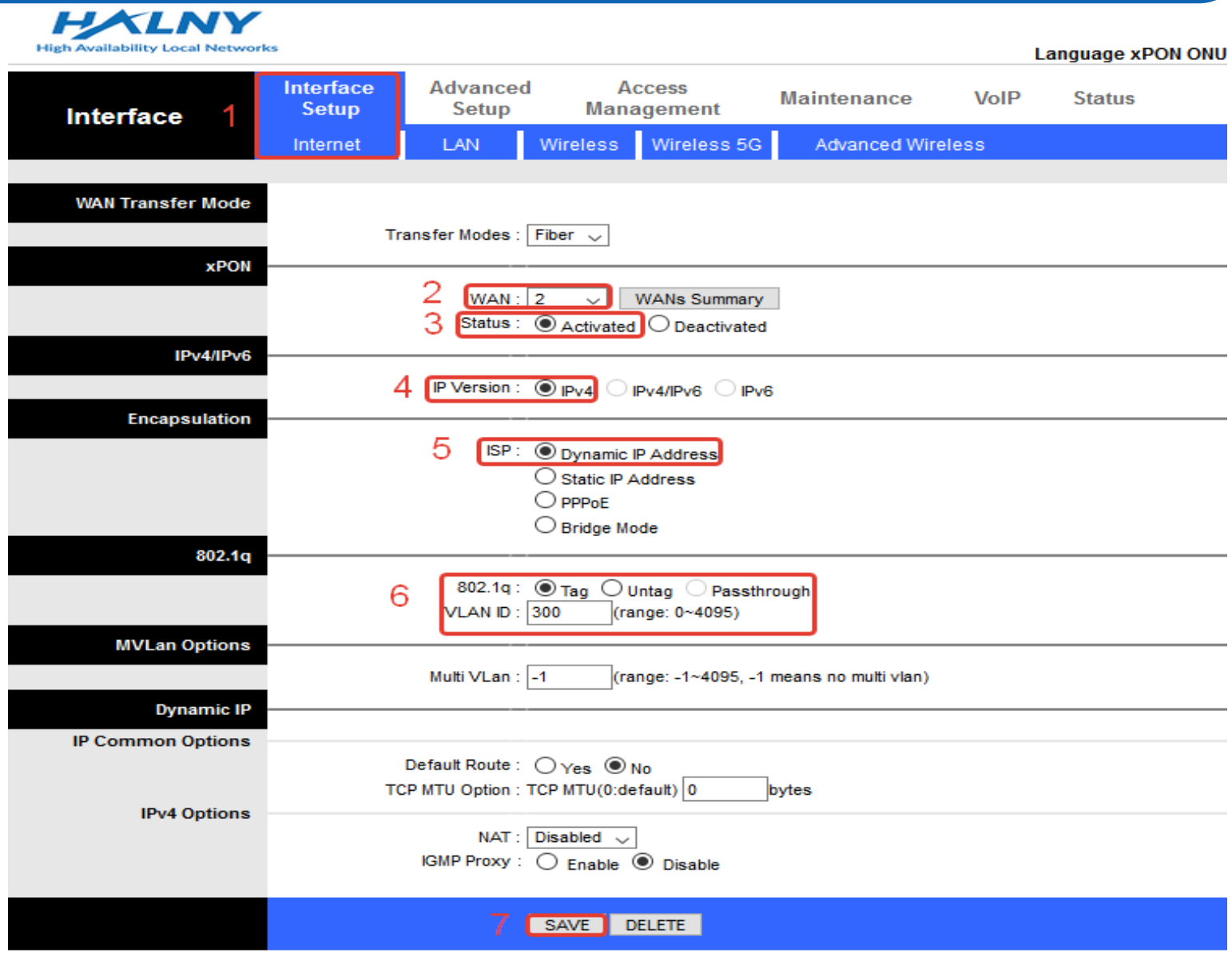
2. Bridge Mode – INTERNET: 1-4/WIFI, VOIP interface

1. Create WAN Interface for INTERNET – the same as in topic:
   Bridge Mode – only INTERNET: 1-4/WIFI

2. Create second WAN interface for VOIP:

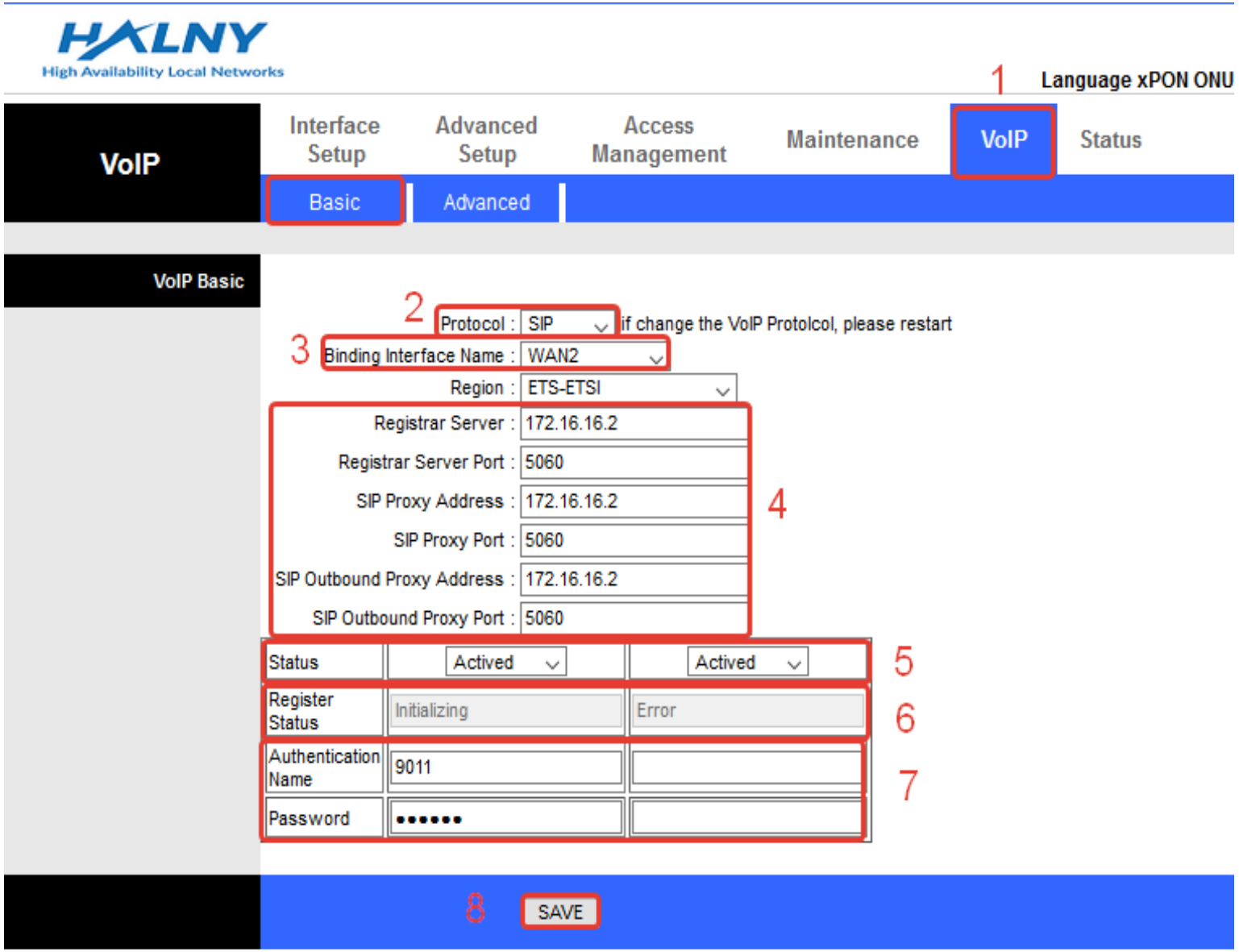
   1. Go Interface Setup -> Internet
   2. Choose Wan
   3. Enable WAN interface
   4. Select IP Version: IPv4
   5. Choose ISP: Dynamic IP Address
   6. Choose 802.1q: Tag and Set VLAN-ID
   7. Save settings



2. Bridge Mode – INTERNET: 1-4/WIFI, VOIP interface

3. Basic VOIP configuration:

1. Go VoIP -> Basic
2. Choose Protocol: SIP
3. Bind WAN interface name
4. Set SIP server addresses and destination port
5. Enable port
6. Refresh page to check Register Status
7. Set authentication name, password for VOIP account
8. Save settings

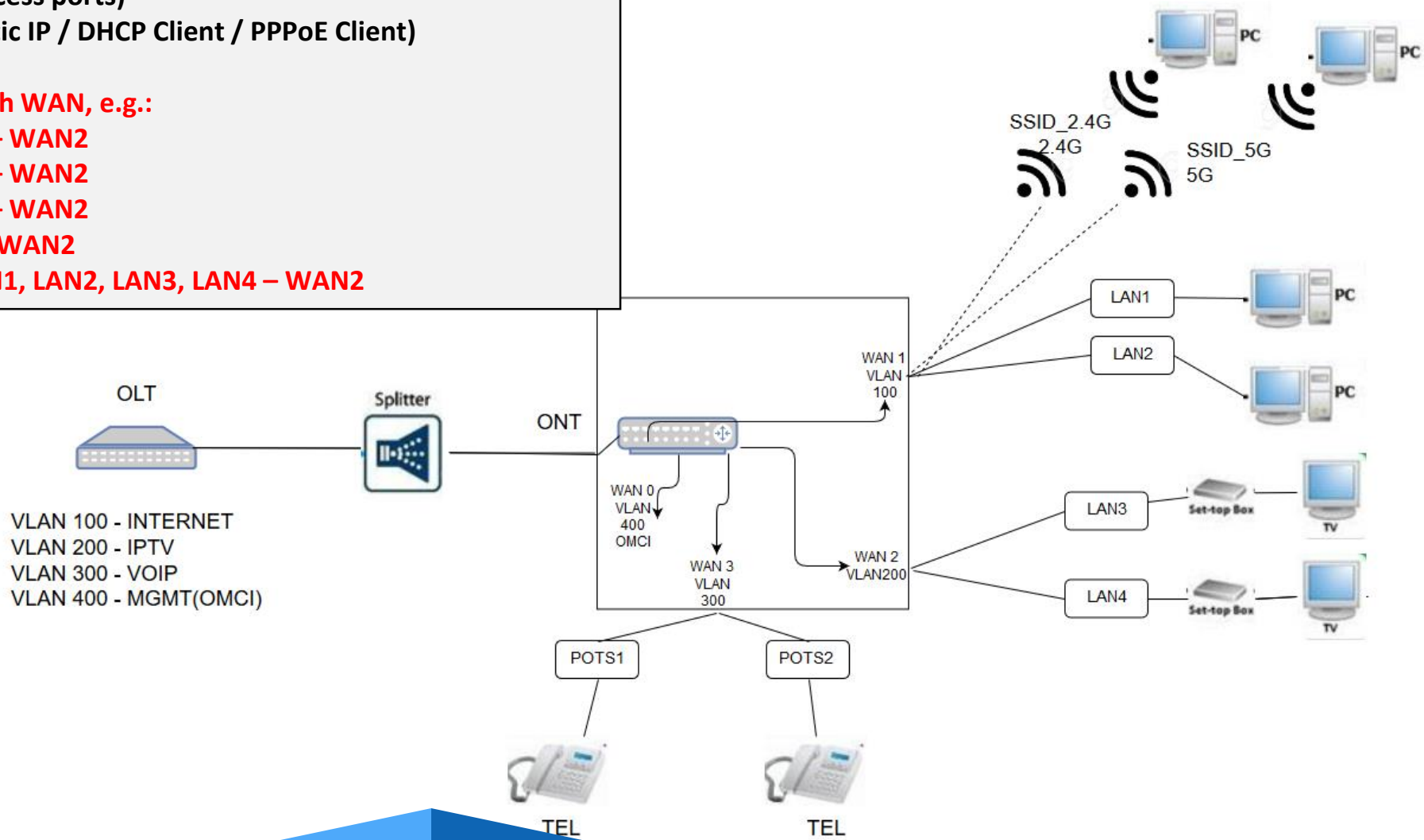


3. Bridge Mode – INTERNET: 1-2/WIFI, IPTV: 3-4, VOIP interface

- WAN1 – VLAN 100 – INTERNET Bridge mode
  - LAN1, LAN2, SSID1_2.4G, SSID1_5G assigned to WAN1 (access ports)*
- WAN2 – VLAN 200 – IPTV Bridge mode (IGMP snooping enabled)
  - LAN3, LAN4 assigned to WAN2 (access ports) *
- WAN3 – VLAN 300 – IP Interface (Static IP / DHCP Client / PPPoE Client)
  - POTS1, POTS2 assigned to WAN3

*** Different LAN ports number assigned to each WAN, e.g.:**

- LAN1 – WAN1 | LAN2, LAN3, LAN4 – WAN2
- LAN1, LAN2 – WAN1 | LAN3, LAN4 – WAN2
- LAN1, LAN2, LAN3 – WAN1 | LAN4 – WAN2
- LAN1 – WAN1 | LAN2, LAN3, LAN4 – WAN2
- SSID1_2.4G, SSID1_5G – WAN1 | LAN1, LAN2, LAN3, LAN4 – WAN2



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3. Bridge Mode – INTERNET: 1-2/WIFI, IPTV: 3-4, VOIP interface

1. Create WAN Interface for INTERNET – the same as in topic:
   Bridge Mode – only INTERNET: 1-4/WIFI

2. Create WAN Interface for VoIP – the same as in topic:
   Bridge Mode - INTERNET: 1-4/WIFI, VOIP interface

3. Create WAN Interface for IPTV:

   1. Go Interface Setup -> Internet
   2. Choose Wan
   3. Enable WAN interface
   4. Select IP Version: IPv4
   5. Choose ISP: Bridge Mode
   6. Choose 802.1q: Tag and Set VLAN-ID
   7. Save settings

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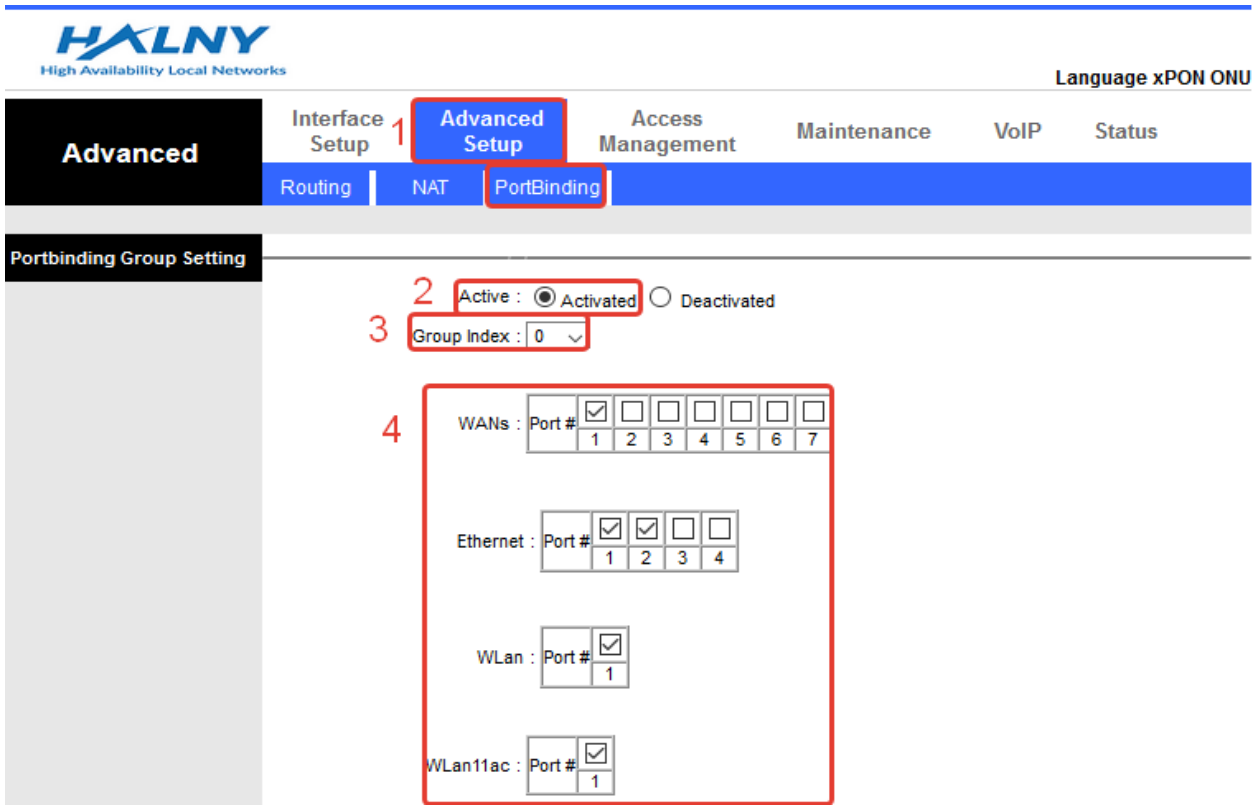
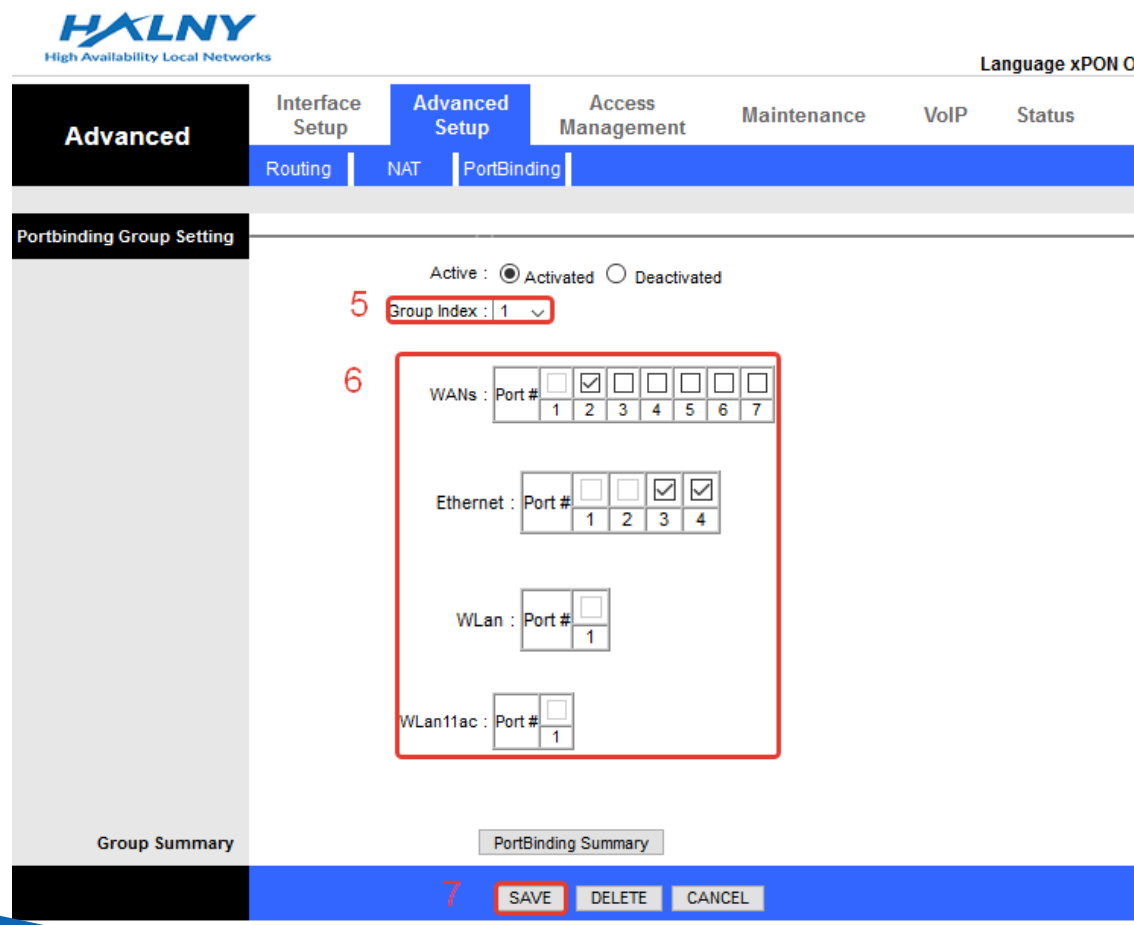
3. Bridge Mode – INTERNET: 1-2/WIFI, IPTV: 3-4, VOIP interface

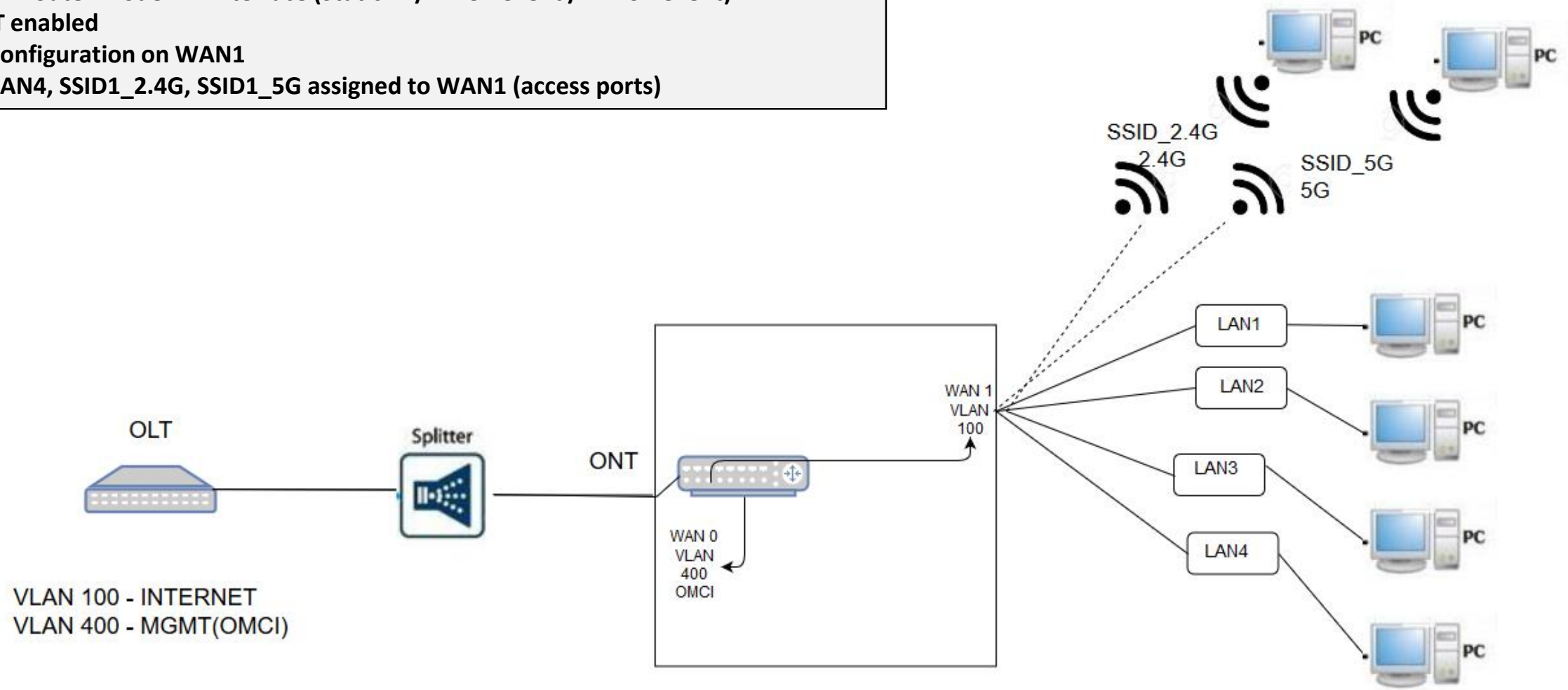
1. Go Advanced Setup -> Port Binding
2. Enable Port Binding
3. Select index 0 for Internet
4. Set mapping for Internet ports:
   - Mark 1-2 ethernet, Wlan and Wlan11ac to WAN 1
5. Select index 1 for IPTV
6. Set mapping for Internet ports:
   - Mark 3-4 ethernet to WAN 2
7. Save settings





4. Router Mode – only INTERNET: 1-4/WIFI

- **WAN1 – Router Mode - IP Interface (Static IP / DHCP Client / PPPoE Client)**
  - **NAT enabled**
- **VLAN configuration on WAN1**
- **LAN1-LAN4, SSID1_2.4G, SSID1_5G assigned to WAN1 (access ports)**



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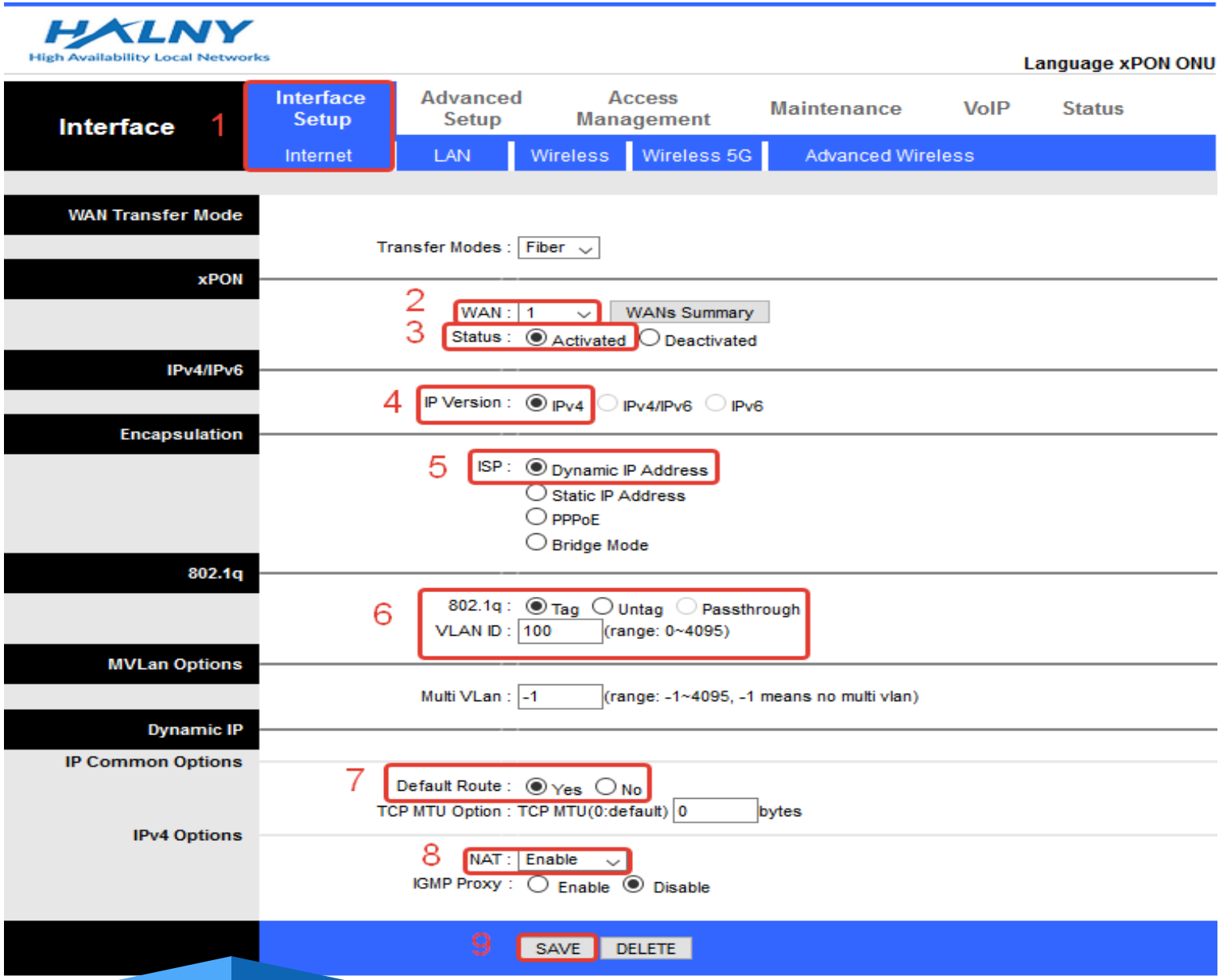
4. Router Mode – only INTERNET: 1-4/WIFI

1. Create WAN Interface for INTERNET:
    1. Go Interface Setup -> Internet
    2. Choose Wan
    3. Enable WAN interface
    4. Select IP Version: IPv4
    5. Choose ISP: Dynamic IP Address
    6. Choose 802.1q: Tag and Set VLAN-ID
    7. Enable Default Route on interface
    8. Enable NAT
    9. Save settings



4. Router Mode – only INTERNET: 1-4/WIFI

1. Create WAN Interface for INTERNET - ***PPPoE***:
    1. Go Interface Setup -> Internet
    2. Choose Wan
    3. Enable WAN interface
    4. Select IP Version: IPv4
    5. Choose ISP: PPPoE
    6. Choose 802.1q: Tag and Set VLAN-ID
    7. Set PPPoE Username and Password
    8. Enable Default Route on interface
    9. Set Dynamic IP Address
    10. Enable NAT
    11. Save settings

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4. Router Mode – only INTERNET: 1-4/WIFI

1. Create WAN Interface for INTERNET - *Static IP*:

    1. Go Interface Setup -> Internet
    2. Choose Wan
    3. Enable WAN interface
    4. Select IP Version: IPv4
    5. Choose ISP: Static IP Address
    6. Choose 802.1q: Tag, Set VLAN-ID
    7. Enable Default Route on interface
    8. Set IP address, mask, gateway
    9. Enable NAT
    10. Save settings

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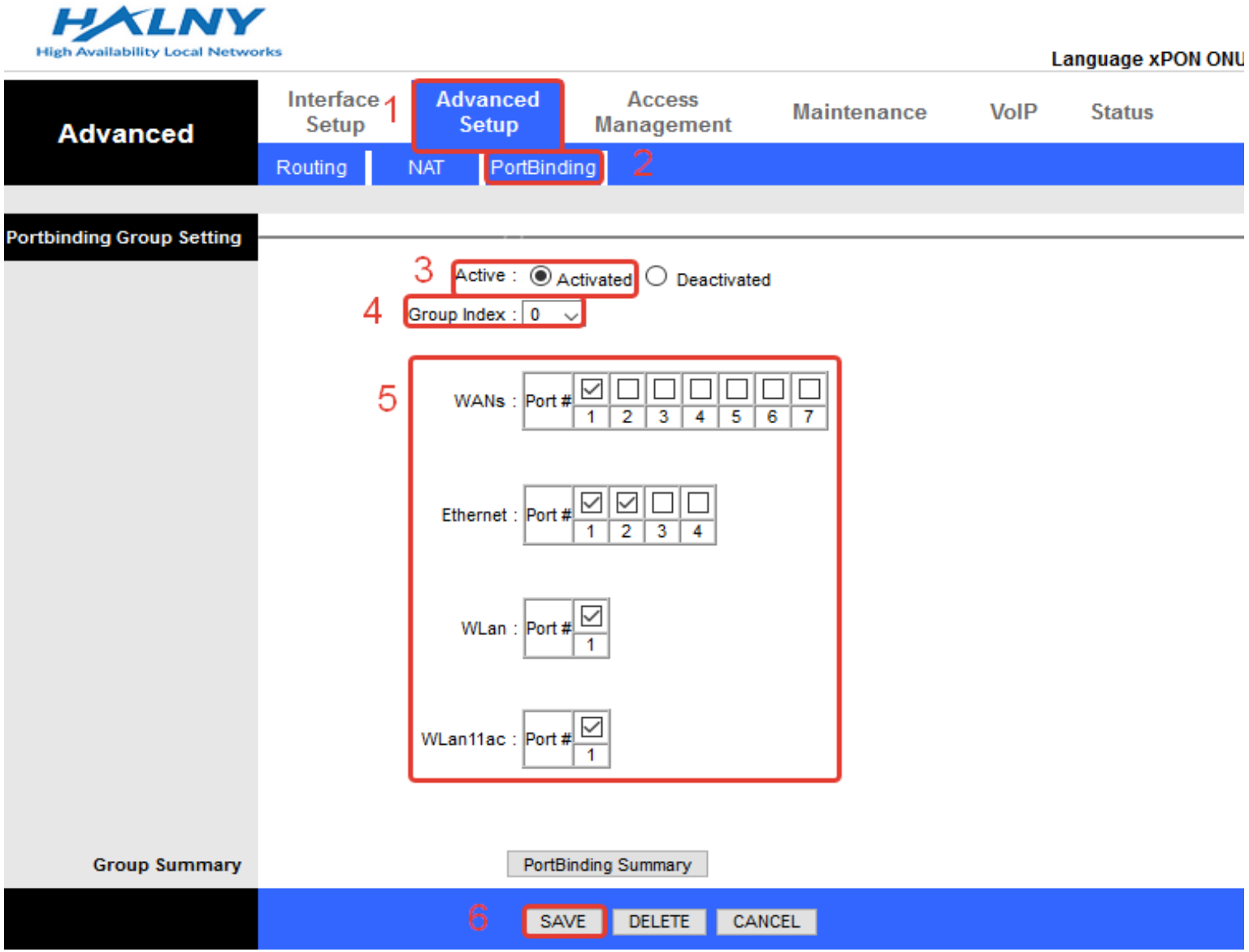
4. Router Mode – only INTERNET: 1-4/WIFI

1. Go Advanced Setup
2. Go Port Binding
3. Enable Port Binding
4. Select index 0 for Internet
5. Set mapping for Internet ports:
6. Save settings



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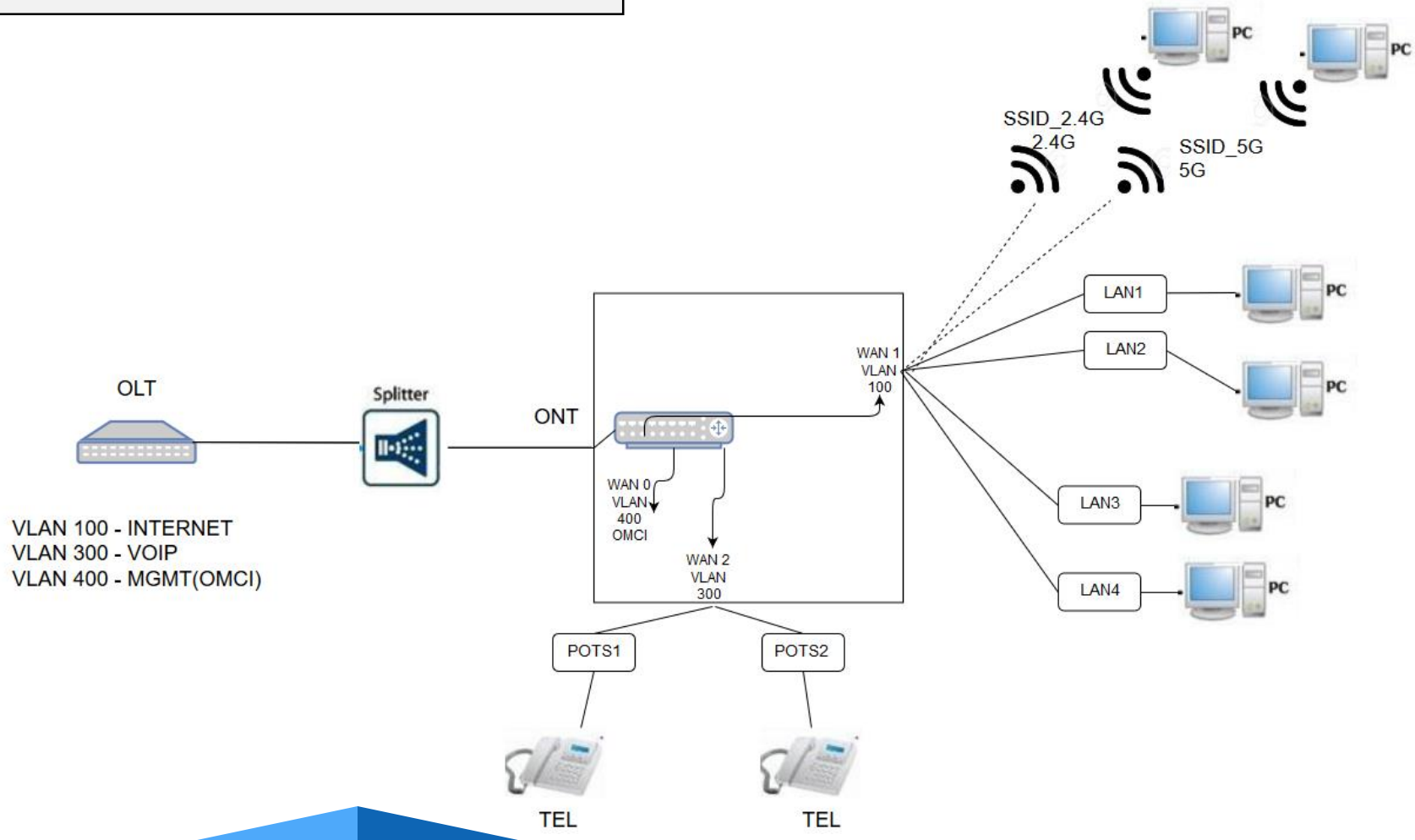
5. Router Mode – INTERNET: 1-4/WIFI, VOIP interface

- **WAN1 – VLAN 100 – Router Mode - IP Interface (Static IP / DHCP Client / PPPoE Client)**
  - **LAN1, LAN2, SSID1_2.4G, SSID1_5G assigned to WAN1 (access ports)**
  - **NAT enabled**
- **WAN2 – VLAN 300 – IP Interface (Static IP / DHCP Client / PPPoE Client)**
  - **POTS1, POTS2 assigned to WAN2**



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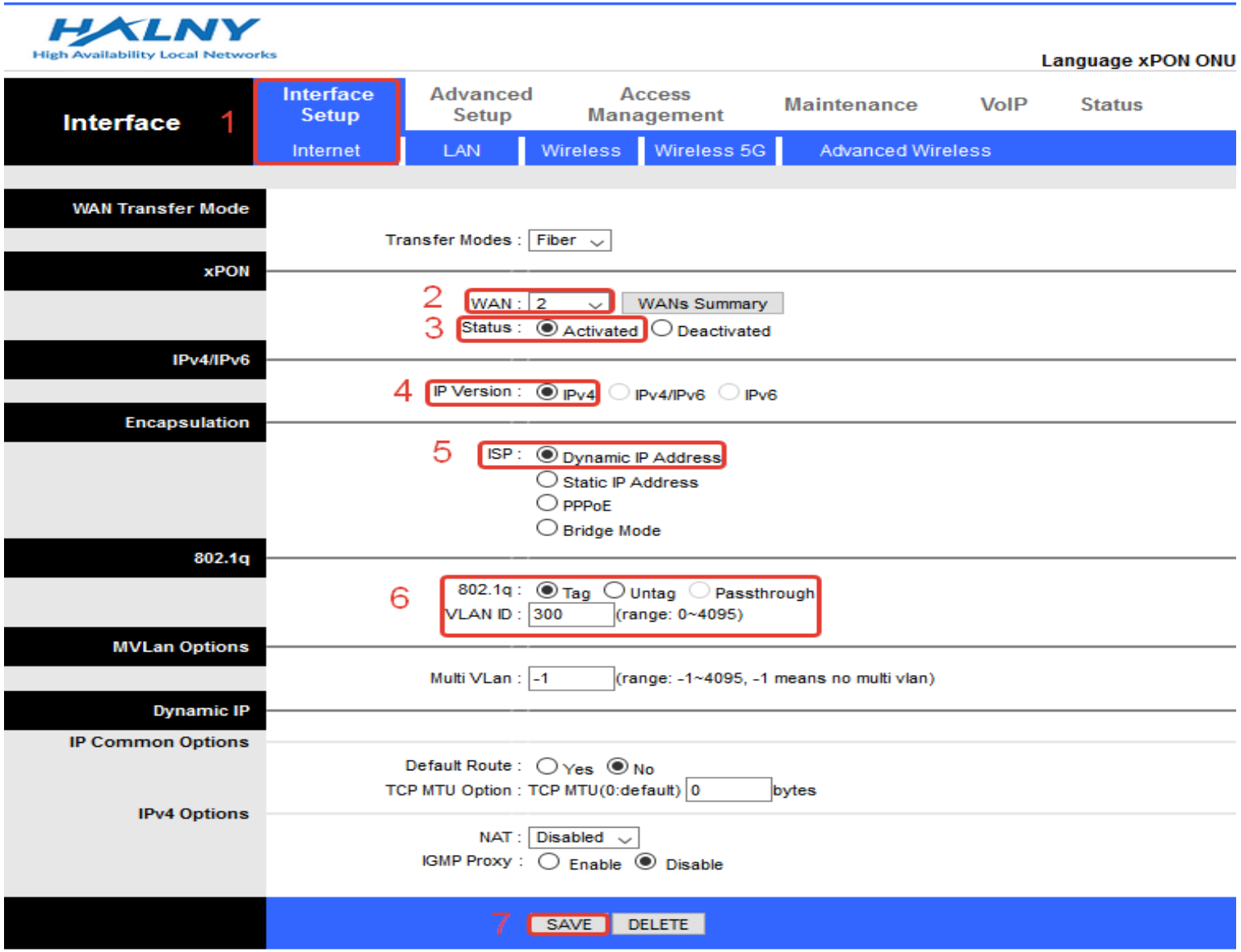
5. Router Mode – INTERNET: 1-4/WIFI, VOIP interface

1. Create WAN Interface for INTERNET – the same as in topic:
   Router Mode – only INTERNET: 1-4/WIFI

2. Create second WAN interface for VOIP:

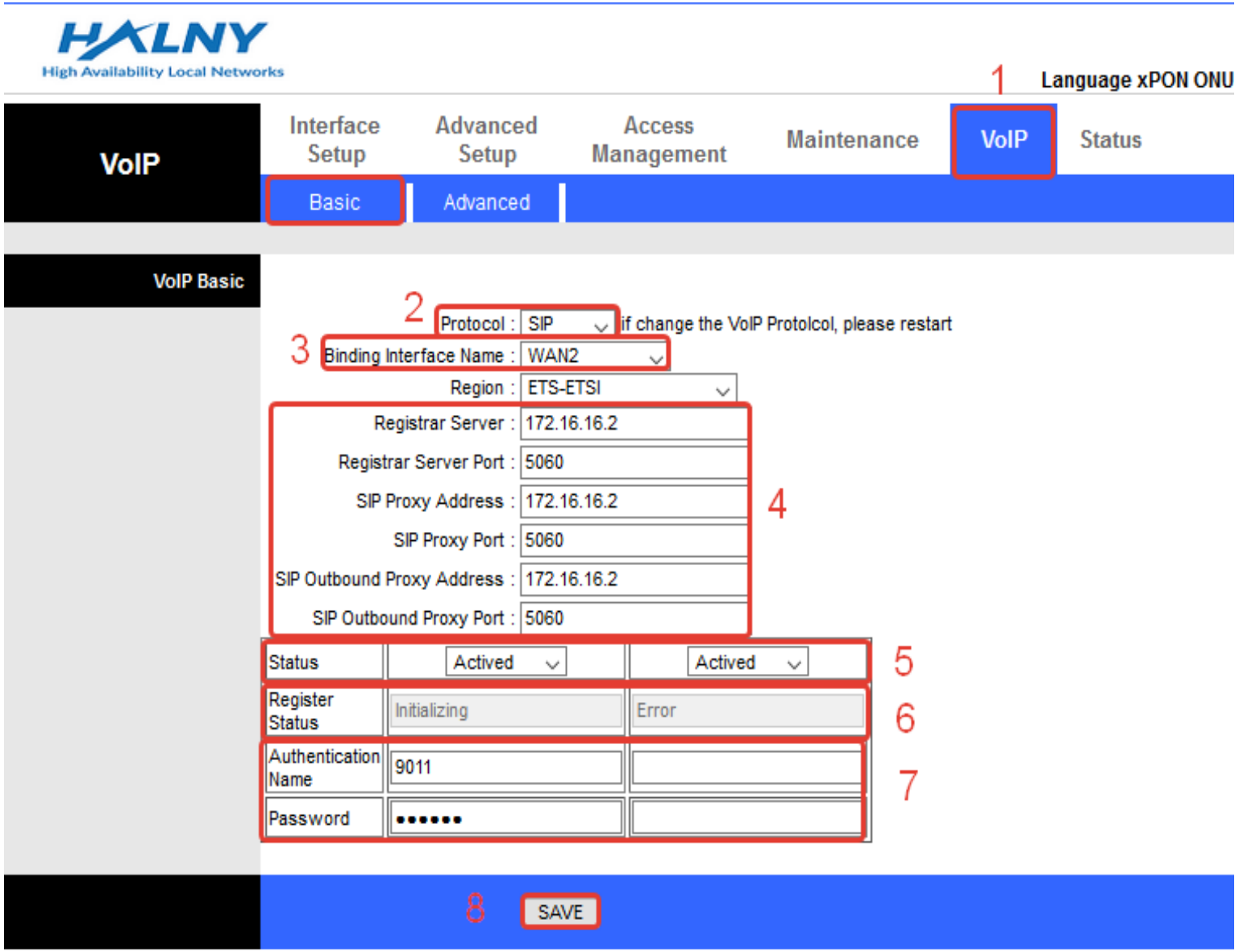
   1. Go Interface Setup -> Internet
   2. Choose Wan
   3. Enable WAN interface
   4. Select IP Version: IPv4
   5. Choose ISP: Dynamic IP Address
   6. Choose 802.1q: Tag and Set VLAN-ID
   7. Save settings



5. Router Mode – INTERNET: 1-4/WIFI, VOIP interface

3. Basic VOIP configuration:

1. Go VoIP -> Basic
2. Choose Protocol: SIP
3. Bind WAN interface name
4. Set SIP server addresses and destination port
5. Enable port
6. Refresh page to check Register Status
7. Set authentication name, password for VOIP account
8. Save settings

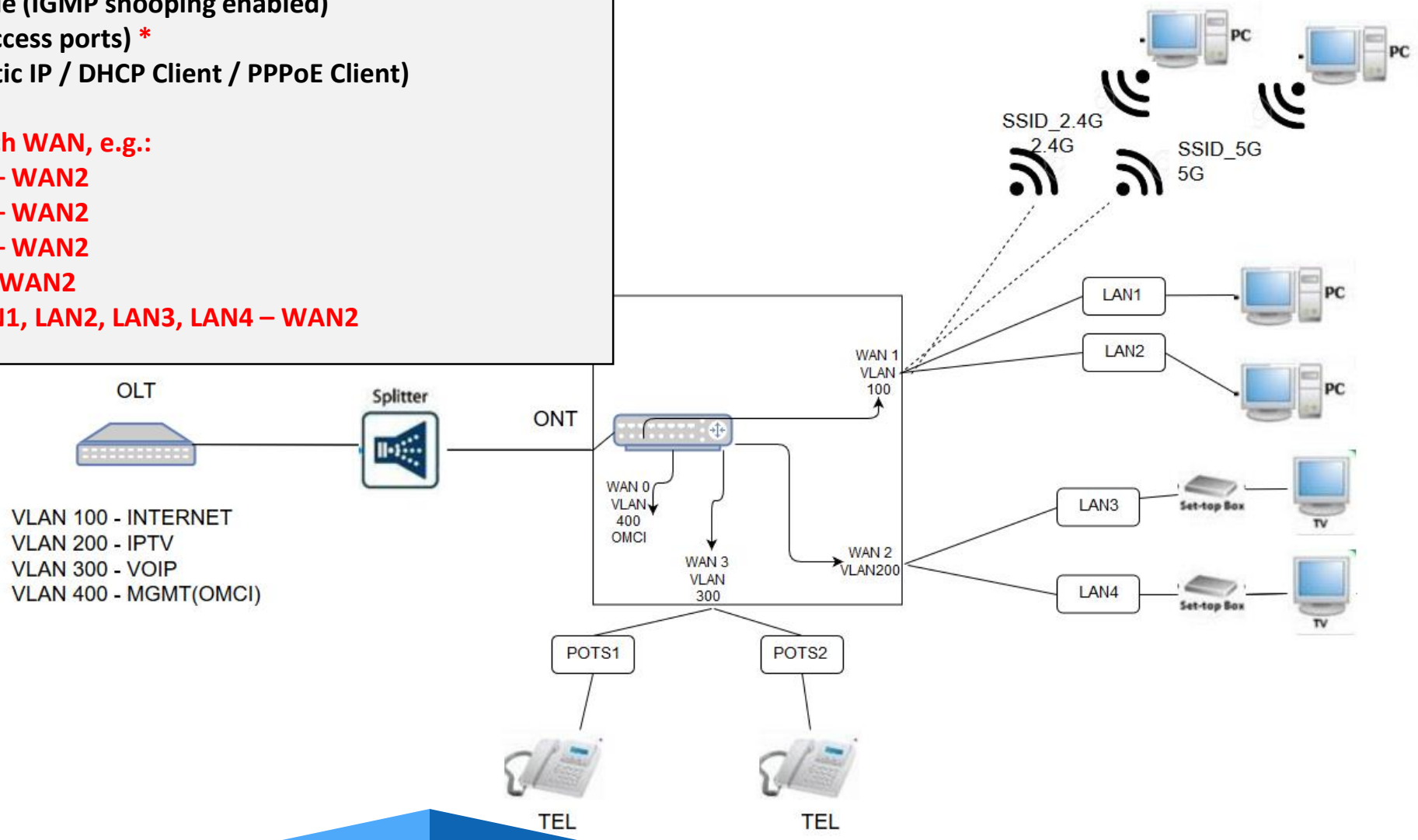


6. Router Mode – INTERNET: 1-2/WIFI, IPTV: 3-4, VOIP interface

- WAN1 – VLAN 100 – Router Mode - IP Interface (Static IP / DHCP Client / PPPoE Client)
  - LAN1, LAN2, SSID1_2.4G, SSID1_5G assigned to WAN1 (access ports)*
  - NAT enabled
- WAN2 – VLAN 200 – IPTV Bridge mode (IGMP snooping enabled)
  - LAN3, LAN4 assigned to WAN2 (access ports) *
- WAN3 – VLAN 300 – IP Interface (Static IP / DHCP Client / PPPoE Client)
  - POTS1, POTS2 assigned to WAN3

*** Different LAN ports number assigned to each WAN, e.g.:**

- **LAN1 – WAN1 | LAN2, LAN3, LAN4 – WAN2**
- **LAN1, LAN2 – WAN1 | LAN3, LAN4 – WAN2**
- **LAN1, LAN2, LAN3 – WAN1 | LAN4 – WAN2**
- **LAN1 – WAN1 | LAN2, LAN3, LAN4 – WAN2**
- **SSID1_2.4G, SSID1_5G – WAN1 | LAN1, LAN2, LAN3, LAN4 – WAN2**



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6. Router Mode – INTERNET: 1-2/WIFI, IPTV: 3-4, VOIP interface

1. Create WAN Interface for INTERNET – the same as in topic:
   Router Mode – only INTERNET: 1-4/WIFI

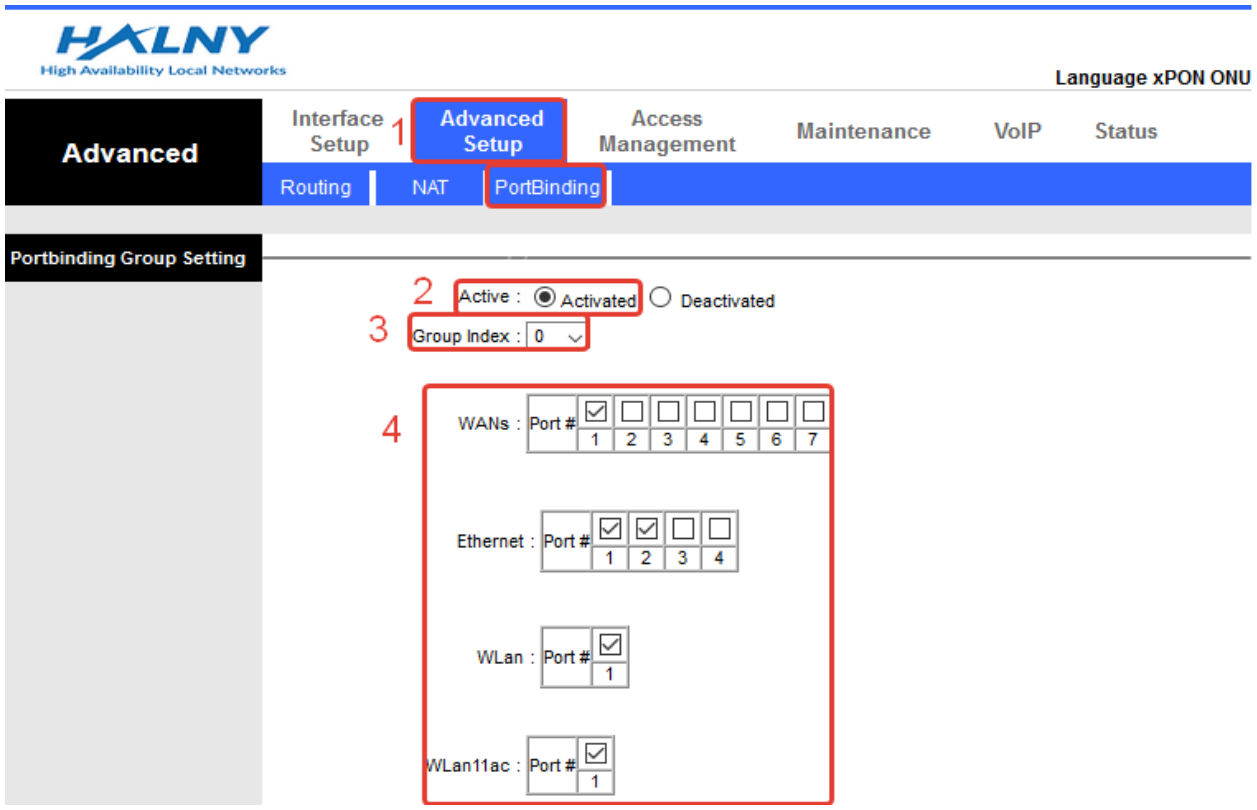
2. Create WAN Interface for VoIP – the same as in topic:
   Router Mode - INTERNET: 1-4/WIFI, VOIP interface

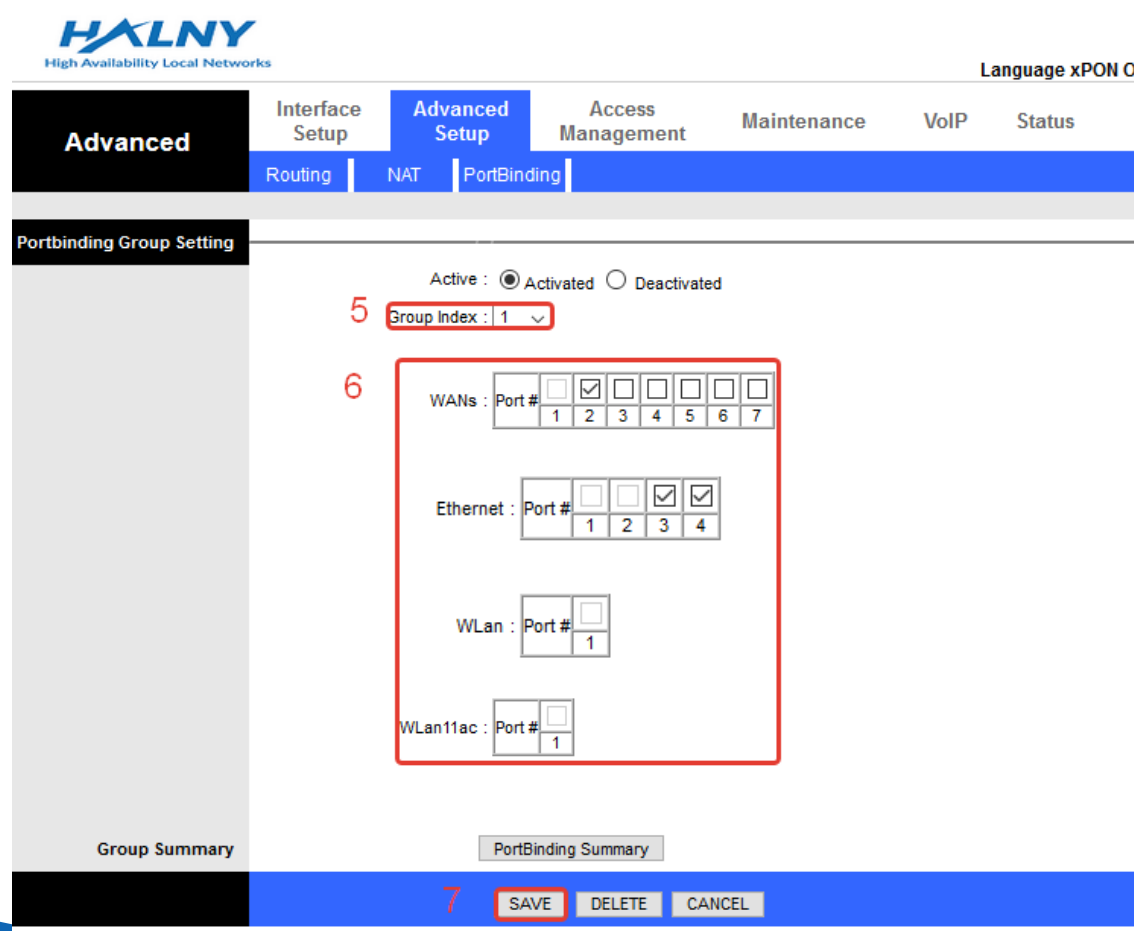
3. Create WAN Interface for IPTV:

   1. Go Interface Setup -> Internet
   2. Choose Wan
   3. Enable WAN interface
   4. Select IP Version: IPv4
   5. Choose ISP: Bridge Mode
   6. Choose 802.1q: Tag and Set VLAN-ID
   7. Save settings

6. Router Mode – INTERNET: 1-2/WIFI, IPTV: 3-4, VOIP interface

1. Go Advanced Setup -> Port Binding
2. Enable Port Binding
3. Select index 0 for Internet
4. Set mapping for Internet ports:
   - Mark 1-2 ethernet, Wlan and Wlan11ac to WAN 1
5. Select index 1 for IPTV
6. Set mapping for Internet ports:
   - Mark 3-4 ethernet to WAN 2
7. Save settings



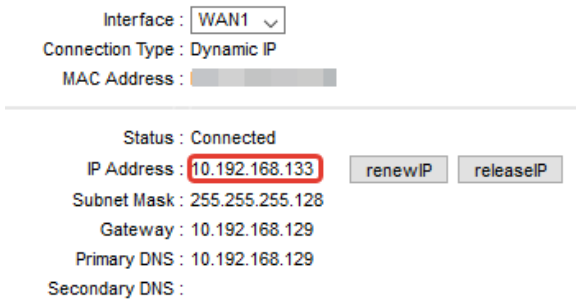


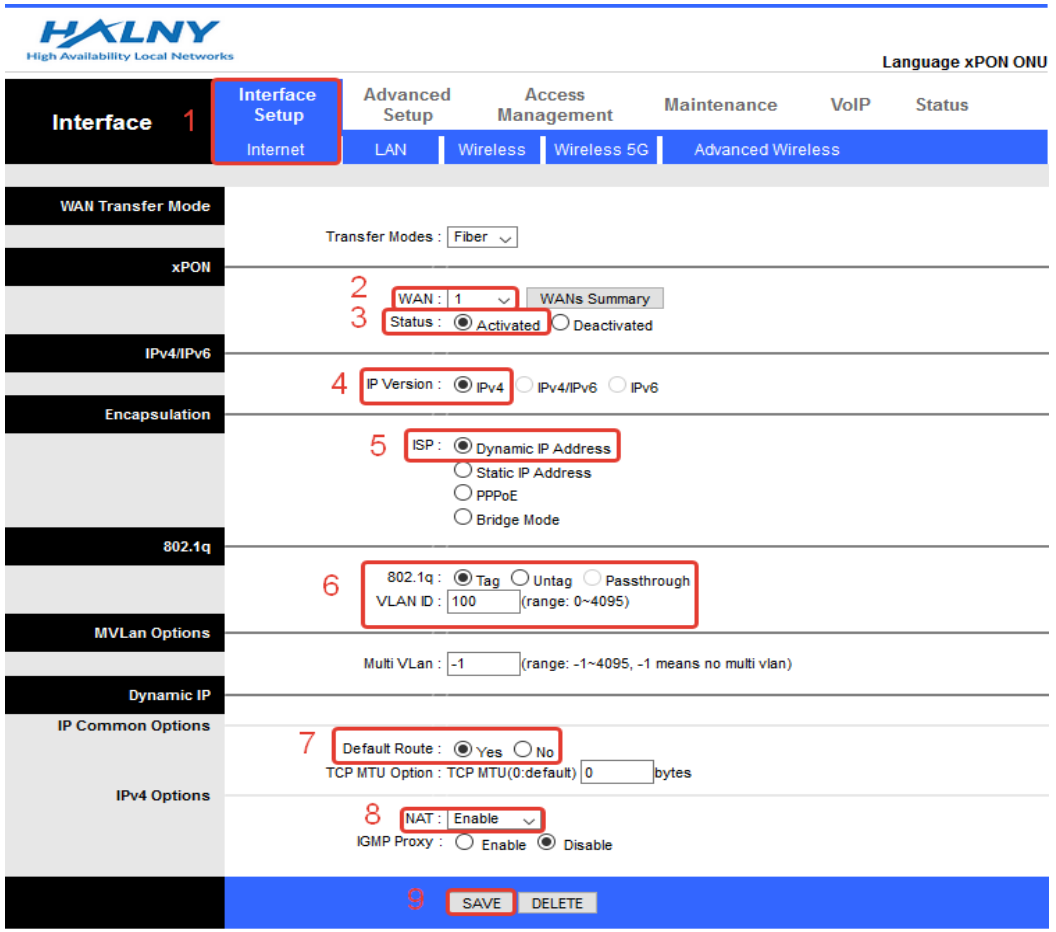
Remote management via Wan ip address

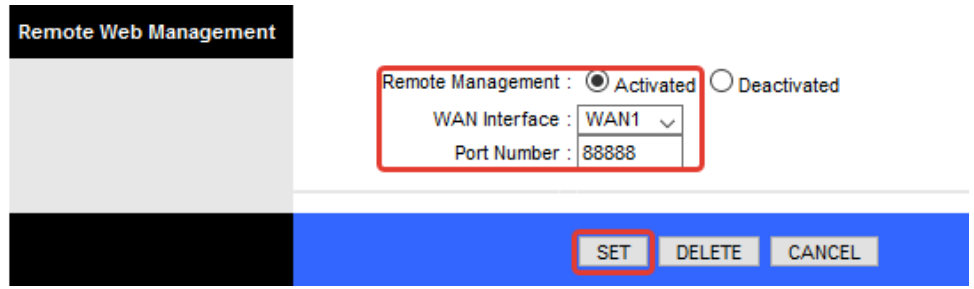
Configuration of remote management via WAN ip address

Create WAN Interface for INTERNET:

1. Go Interface Setup -> Internet
2. Choose Wan
3. Enable WAN interface
4. Select IP Version: IPv4
5. Choose ISP: Dynamic IP Address || Static IP || PPoE
6. Choose 802.1q: Tag and Set VLAN-ID
7. Enable Default Route on interface
8. Enable NAT
9. Save settings
10. Then go to the Access Management tab, next ACL tab:
10. Enable remote web management
11. Set port which is higher then 4000







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ONT HL-4GMV Rate-limit configuration

Rate-limit should be set via www or xml provisioning. If You set gemport rate-limit in traffic-profile(DASAN, Zyxel) – these settings will be overwritten by ONT. For DASAN OLT set gemport to 1/1 and gemport count to 1.

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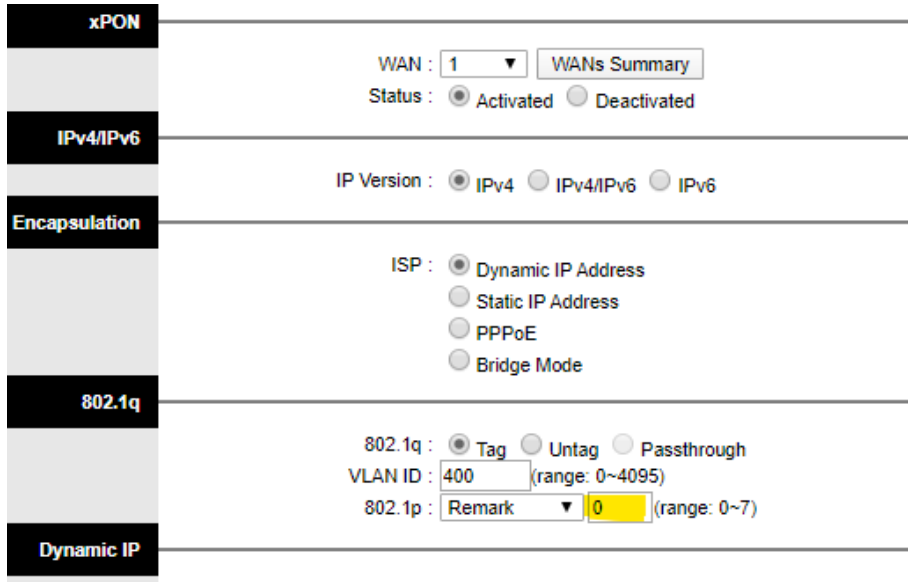
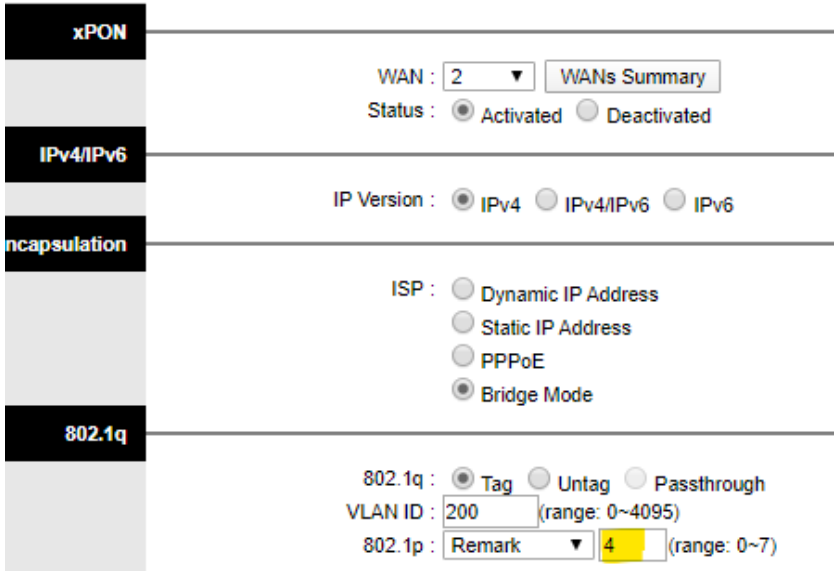
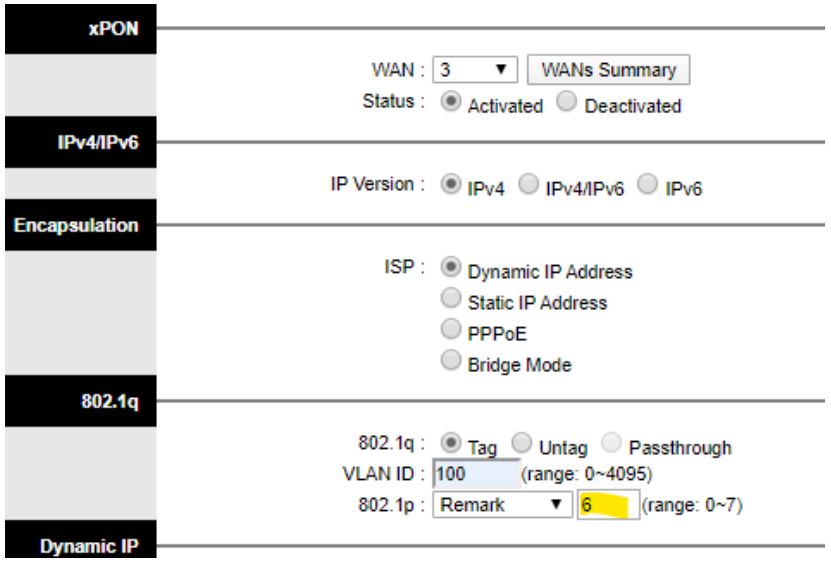
ONT HL-4GMV Rate-limit configuration

Rate-limit is set per CoS value. Before setting rate-limit value, 802.1p bit has to be set correctly, from range 0-7. For example:
WAN1 – **Internet CoS ->0**
WAN2 – **IPTV CoS ->4**
WAN3 – **VoIP CoS ->6**







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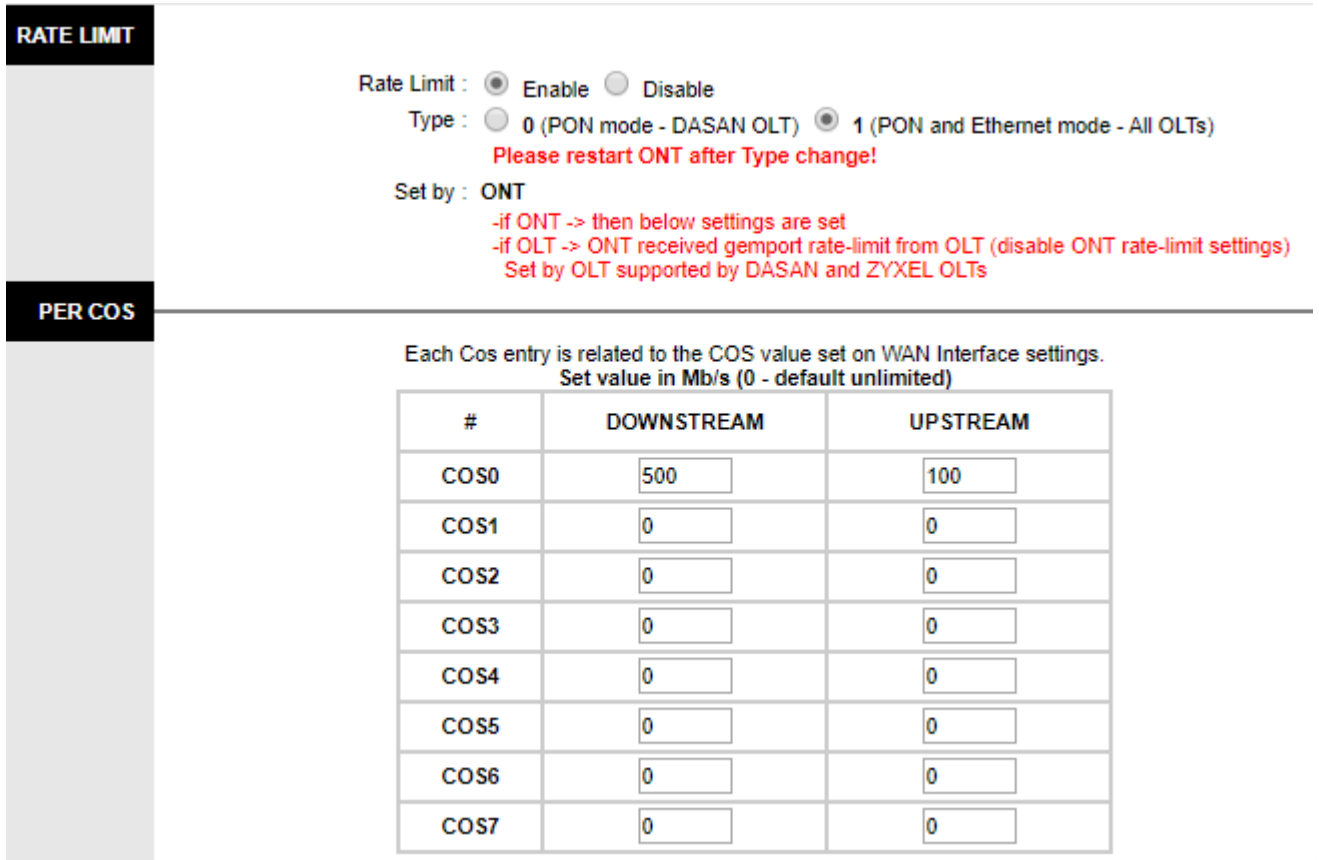
ONT HL-4GMV Rate-limit configuration

Rate-limit 500/100 Mbit/s settings for Internet WAN0 with CoS=0
corresponding configuration from previous slide

```
traffic-profile HL-4GMV_RL create
 tcont 1
  gemport 1/1
  dba-profile DBA
 tcont 2
  gemport 2/1
  dba-profile DBA
 mapper 1
  gemport count 1
 mapper 2
  gemport count 1
 bridge 1
  ani mapper 1
  uni virtual-eth 1
   multicast-profile HL-4GMV-200
 bridge 2
  ani mapper 2
  link ip-host-config 1
 ip-host-config 1
  ip address dhcp
  extended-vlan-tagging-operation MGMT
 apply
```



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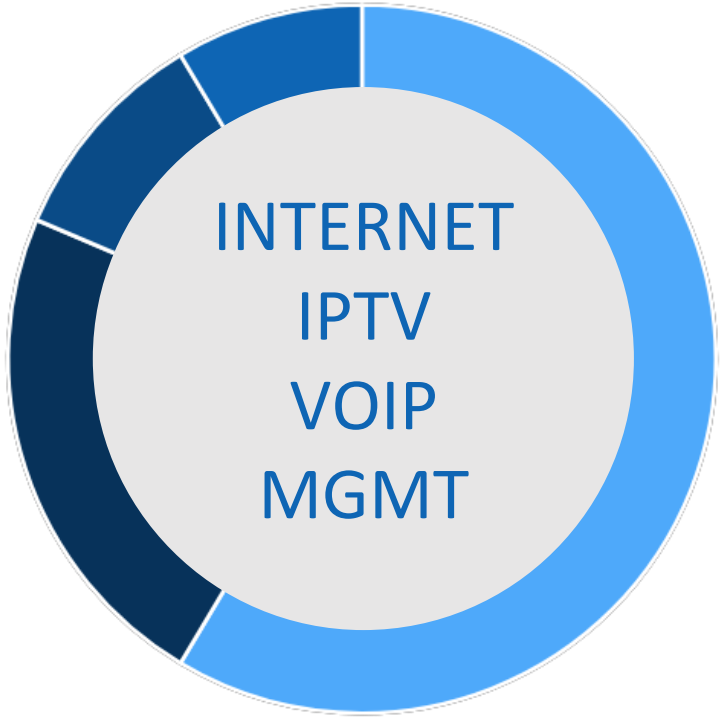
In separated files You can find how to configure OLTs from different vendors.



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THANK YOU
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