

# Uplink GP542R + Uplink OLT GP8862

Do poprawnej pracy nasze urządzenia potrzebują użycia VLAN. Jako urządzenie źródłowe został zastosowany MikroTik 4011. Na porcie ether2 został ustawiony DHCP Client oraz w sekcji Firewall->Nat została zrobiona maskarada na tym porcie. Podana konfiguracja pasuje do wszystkich ONT, które mogą ustawić tryb Route dla WAN.

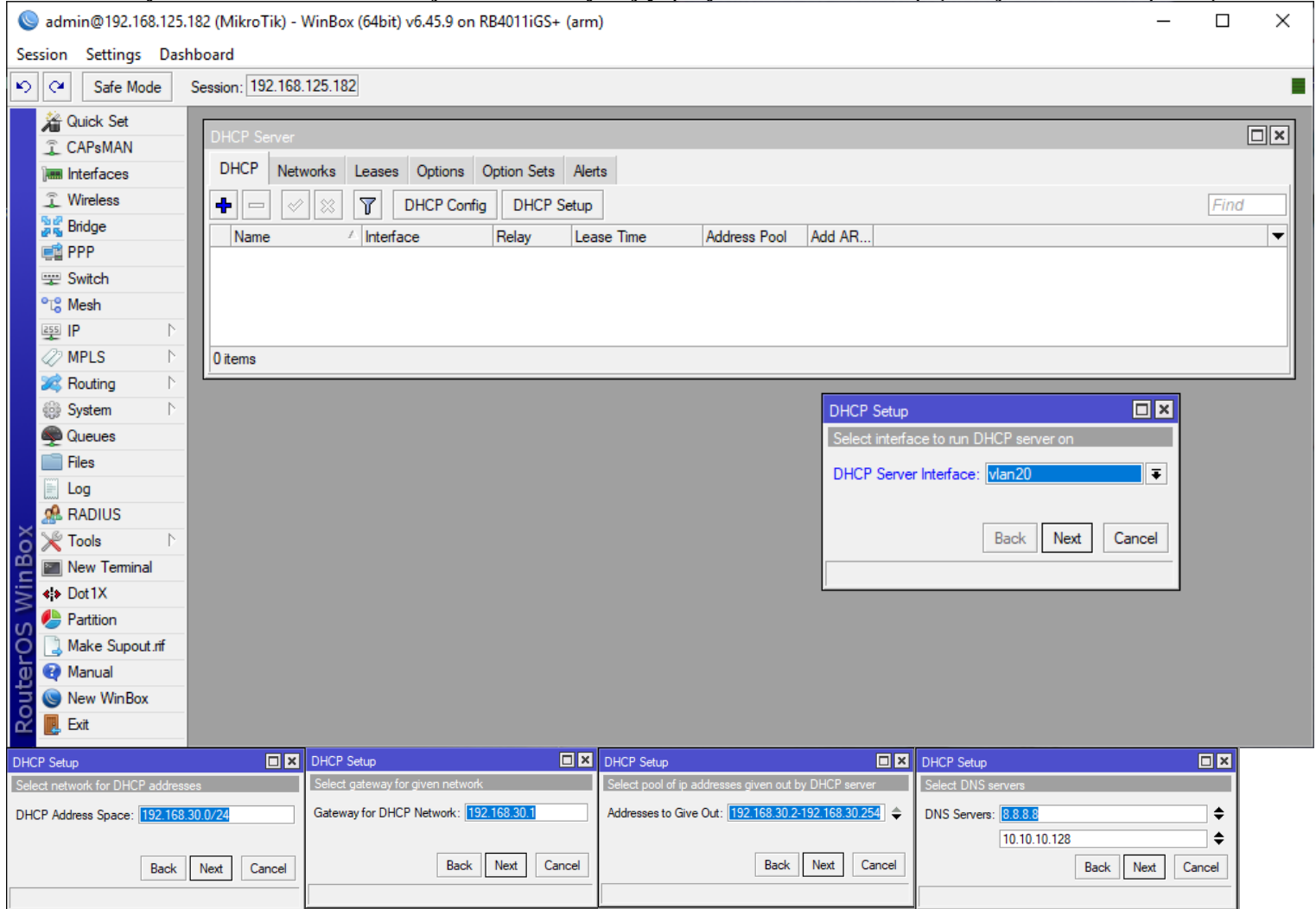
Rozpoczynamy konfigurację od Mikrotika.

1. Dodajemy VLAN 20 na porcie sfp-sfppplus1 i przypisujemy mu adres IP:

The screenshot shows the Mikrotik WinBox interface with the following configuration steps visible:

- Interface List:** A table showing existing interfaces. The 'vlan20' entry is highlighted in blue.
- Interface <vlan20> Configuration:** A dialog box with the following settings:
  - Name: vlan20
  - Type: VLAN
  - MTU: 1500
  - Actual MTU: 1500
  - L2 MTU: 1596
  - MAC Address: 08:55:31:6D:04:C8
  - ARP: enabled
  - VLAN ID: 20
  - Interface: sfp-sfppplus1
  - Use Service Tag
- Address List:** A table showing IP addresses assigned to interfaces. The address 192.168.30.1/24 is assigned to the 'vlan20' interface.
- Address <192.168.30.1/24> Configuration:** A dialog box with the following settings:
  - Address: 192.168.30.1/24
  - Network: 192.168.30.0
  - Interface: vlan20

## 2. Ustawiamy serwer DHCP na interfejsie vlan20 używając przycisku DHCP Setup (wersja dla PPPoE pkt. 3):



admin@192.168.125.182 (MikroTik) - WinBox (64bit) v6.45.9 on RB4011iGS+ (arm)

Session Settings Dashboard

Safe Mode Session: 192.168.125.182

RouterOS WinBox

Quick Set  
CAPsMAN  
Interfaces  
Wireless  
Bridge  
PPP  
Switch  
Mesh  
IP  
MPLS  
Routing  
System  
Queues  
Files  
Log  
RADIUS  
Tools  
New Terminal  
Dot1X  
Partition  
Make Supout.rtf  
Manual  
New WinBox  
Exit

DHCP Server

DHCP Networks Leases Options Option Sets Alerts

+ - ✓ ✗ ⚙ DHCP Config DHCP Setup Find

Name	Interface	Relay	Lease Time	Address Pool	Add AR...
0 items					

DHCP Setup

Select interface to run DHCP server on

DHCP Server Interface: vlan20

Back Next Cancel

DHCP Setup

Select network for DHCP addresses

DHCP Address Space: 192.168.30.0/24

Back Next Cancel

DHCP Setup

Select gateway for given network

Gateway for DHCP Network: 192.168.30.1

Back Next Cancel

DHCP Setup

Select pool of ip addresses given out by DHCP server

Addresses to Give Out: 192.168.30.2-192.168.30.254

Back Next Cancel

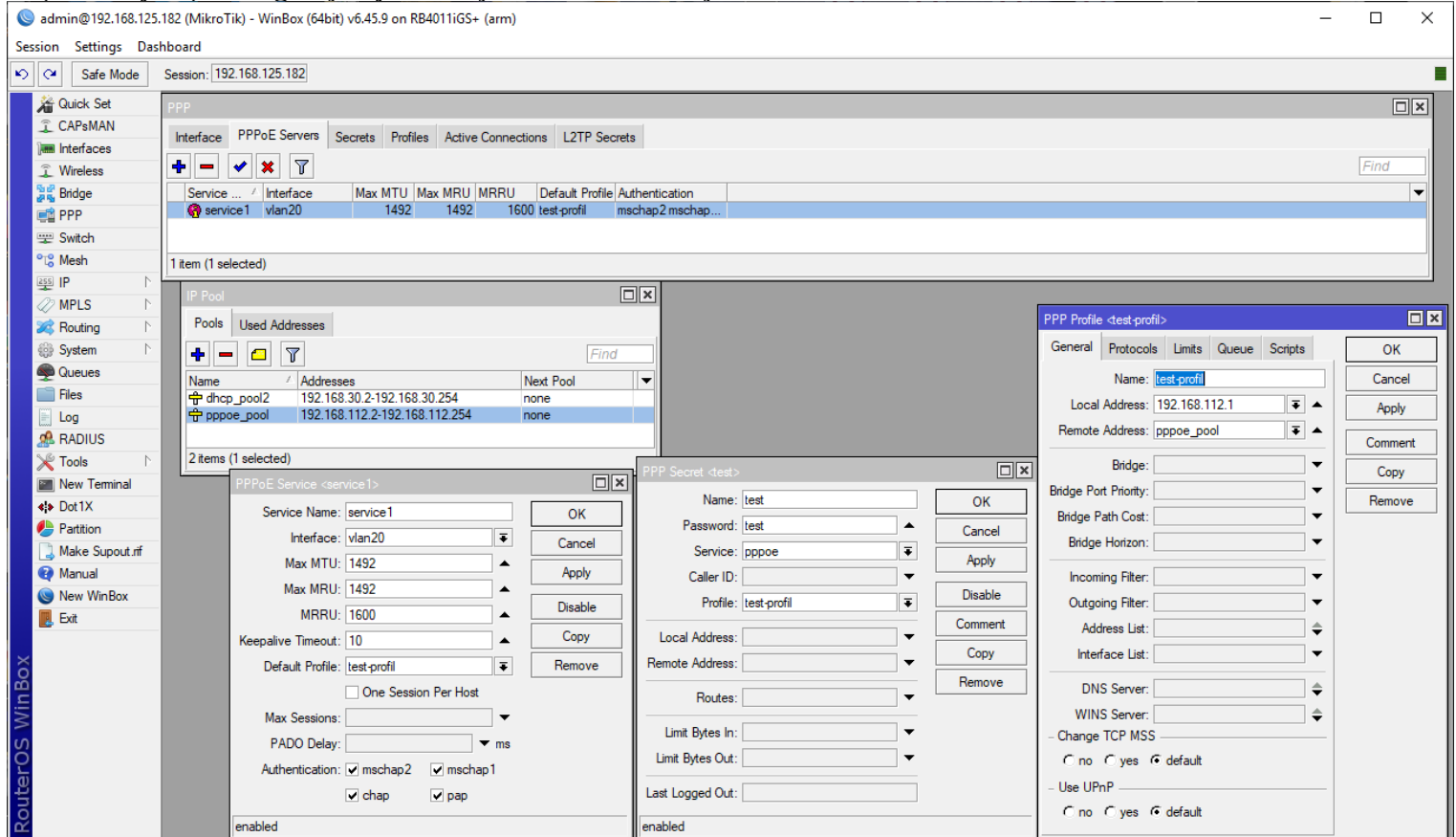
DHCP Setup

Select DNS servers

DNS Servers: 8.8.8.8  
10.10.10.128

Back Next Cancel

## 3. (alternatywa) konfigurujemy serwerj PPPoE na interfejsie vlan20:



admin@192.168.125.182 (MikroTik) - WinBox (64bit) v6.45.9 on RB4011iGS+ (arm)

Session Settings Dashboard

Safe Mode Session: 192.168.125.182

RouterOS WinBox

Quick Set  
CAPsMAN  
Interfaces  
Wireless  
Bridge  
PPP  
Switch  
Mesh  
IP  
MPLS  
Routing  
System  
Queues  
Files  
Log  
RADIUS  
Tools  
New Terminal  
Dot1X  
Partition  
Make Supout.rtf  
Manual  
New WinBox  
Exit

PPP

Interface PPPoE Servers Secrets Profiles Active Connections L2TP Secrets

+ - ✓ ✗ ⚙ Find

Service ...	Interface	Max MTU	Max MRU	MRRU	Default Profile	Authentication
service1	vlan20	1492	1492	1600	test-profil	mschap2 mschap...

1 item (1 selected)

IP Pool

Pools Used Addresses

+ - ✓ ✗ ⚙ Find

Name	Addresses	Next Pool
dhcp_pool2	192.168.30.2-192.168.30.254	none
pppoe_pool	192.168.112.2-192.168.112.254	none

2 items (1 selected)

PPPoE Service <service1>

Service Name: service1 OK Cancel

Interface: vlan20

Max MTU: 1492

Max MRU: 1492

MRRU: 1600

Keepalive Timeout: 10

Default Profile: test-profil

One Session Per Host

Max Sessions:

PADO Delay: ms

Authentication:  mschap2  mschap1  chap  pap

enabled

PPP Secret <test>

Name: test OK Cancel

Password: test

Service: pppoe

Caller ID:

Profile: test-profil

Local Address:

Remote Address:

Routes:

Limit Bytes In:

Limit Bytes Out:

Last Logged Out:

enabled

PPP Profile <test-profil>

General Protocols Limits Queue Scripts OK Cancel

Name: test-profil

Local Address: 192.168.112.1

Remote Address: pppoe\_pool

Bridge:

Bridge Port Priority:

Bridge Path Cost:

Bridge Horizon:

Incoming Filter:

Outgoing Filter:

Address List:

Interface List:

DNS Server:

WINS Server:

Change TCP MSS


no  yes  default

Use UPnP

no  yes  default

4. Przechodzimy do konfiguracji OLT. Podpinamy naszego GP8862 do portu AUX i do logowania używamy danych z naklejki znajdującej się na urządzeniu (domyślnie 192.168.8.200 admin / Xpon@Olt9417#). Po zalogowaniu przechodzimy do konfiguracji VLAN.

Dodajemy VLAN 20:



OLT Information

OLT Configuration

**VLAN**

Uplink Port

PON

MAC

LACP

QoS

ACL

VLAN
VLAN Port
QinQ/Translation
P2P

### New VLAN

VLAN ID  (1-4094)


Description

[Add](#)

### VLAN Table

VLAN ID	Description	Edit	Delete
1	default		
20	vlan20		

Ustawiamy VLAN 1 na forbidden dla wszystkich portów (wytnie to transmisję nietagowaną):



OLT Information

OLT Configuration

**VLAN**

Uplink Port

PON

MAC

LACP

QoS

ACL

IPv6 ACL

IGMP

IPv6 MLD

STP

Loopback

DHCP

DHCPv6

IPv6 SLAAC

IP Route

IPv6 Route

ONU Configuration

Profile Configuration

System Configuration

VLAN
**VLAN Port**
QinQ/Translation
P2P

### Port VLAN Configuration

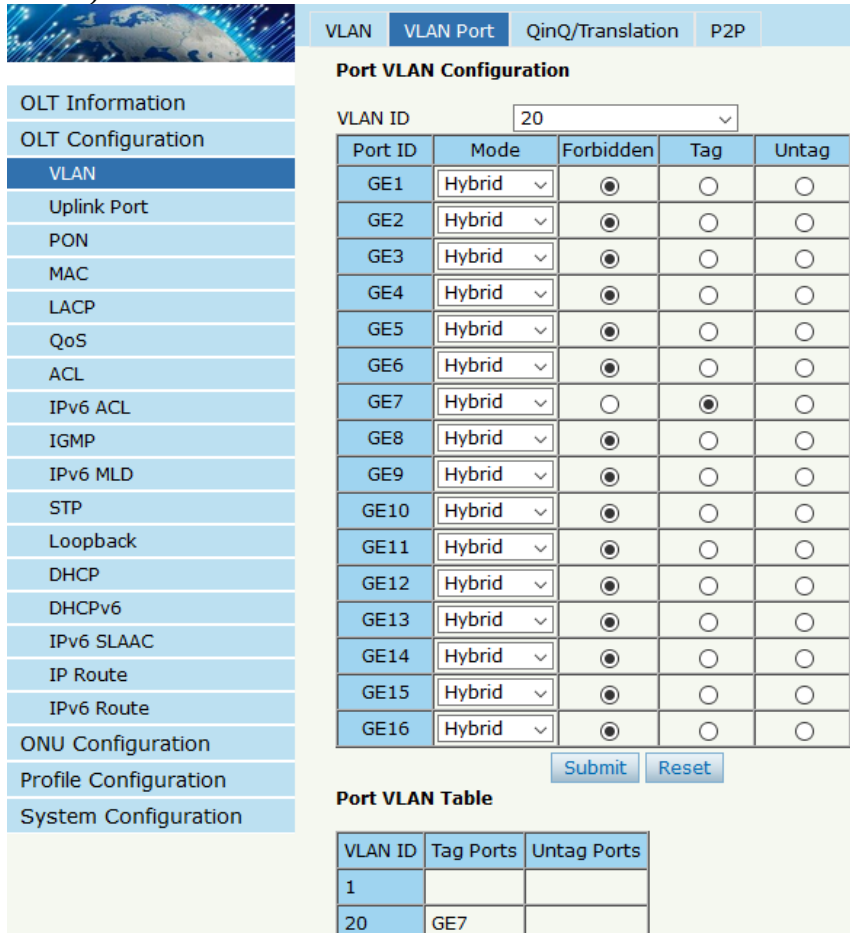
VLAN ID

Port ID	Mode	Forbidden	Tag	Untag
GE1	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE2	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE3	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE4	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE5	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE6	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE7	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE8	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE9	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE10	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE11	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE12	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE13	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE14	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE15	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE16	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Submit](#) [Reset](#)

### Port VLAN Table

Ustawiamy VLAN 20 dla naszego portu uplinkowego, który jest połączony z portem sfp-sfpplus1 w Mikrotiku (w moim przypadku jest to GE7):



**Port VLAN Configuration**

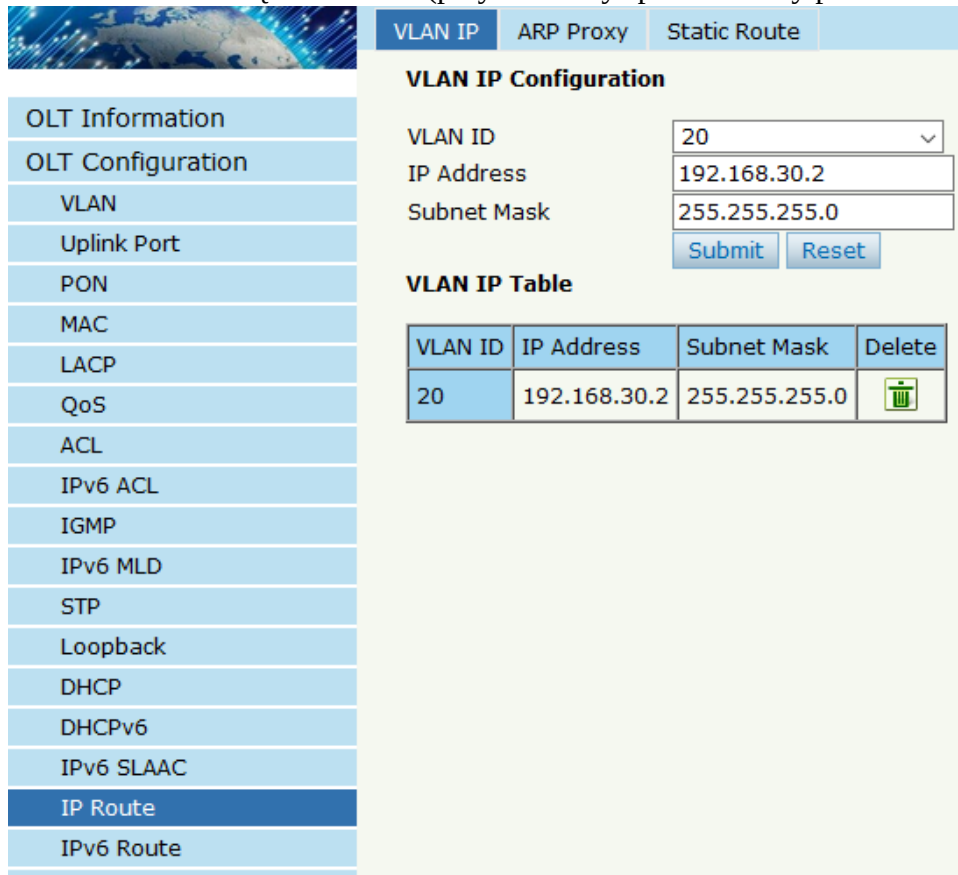
VLAN ID: 20

Port ID	Mode	Forbidden	Tag	Untag
GE1	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE2	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE3	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE4	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE5	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE6	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE7	Hybrid	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GE8	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE9	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE10	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE11	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE12	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE13	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE14	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE15	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GE16	Hybrid	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Port VLAN Table**

VLAN ID	Tag Ports	Untag Ports
1		
20	GE7	

Dodajemy adres IP na VLAN 20 do zarządzania OLT (przydatne aby sprawdzić czy przechodzi transmisja):




**VLAN IP Configuration**

VLAN ID: 20

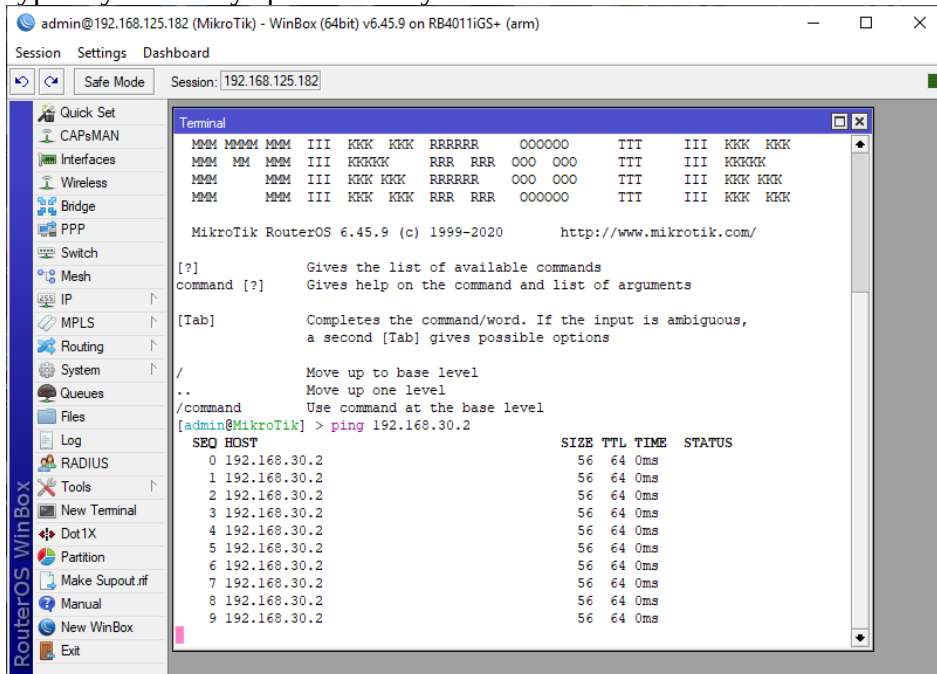
IP Address: 192.168.30.2

Subnet Mask: 255.255.255.0

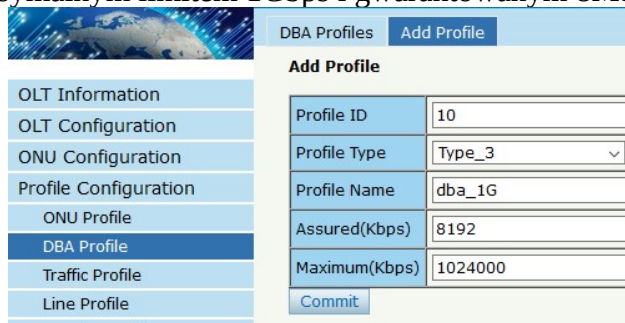
**VLAN IP Table**

VLAN ID	IP Address	Subnet Mask	Delete
20	192.168.30.2	255.255.255.0	

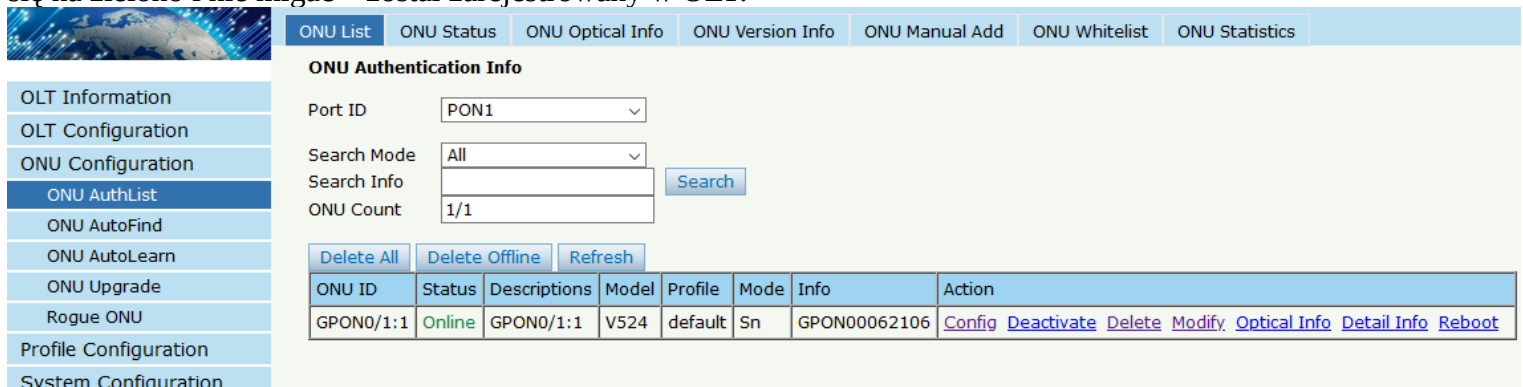
Puszczamy ping na przypisany adres aby sprawdzić czy VLAN działa:



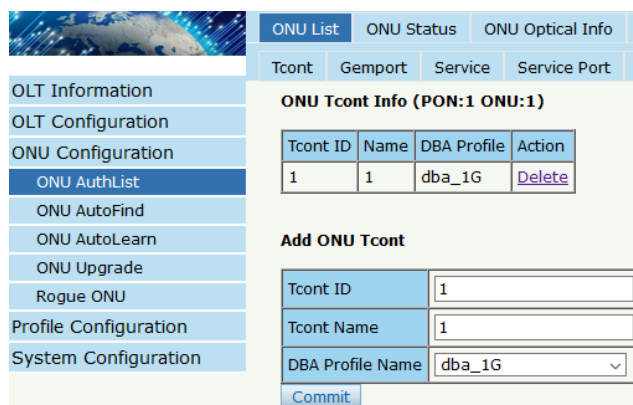
Dodajemy profil prędkości z maksymalnym limitem 1Gbps i gwarantowanym 8Mbps:



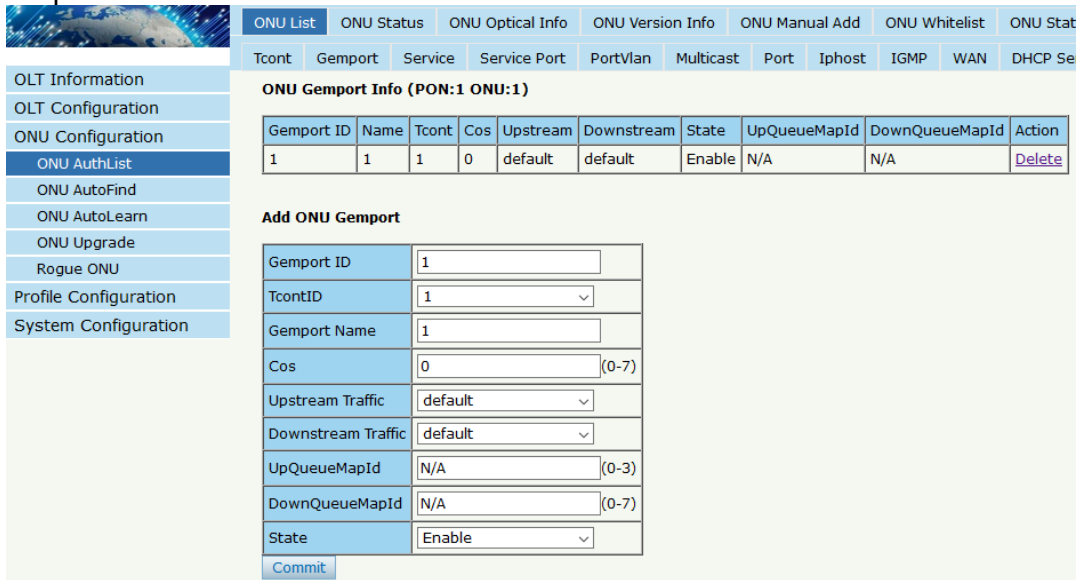
5. Podłączamy GP542R do OLT używając splittera minimum 1x8 aby uniknąć przesterowania sygnału i w konsekwencji braku połączenia po świetle. Po chwili od podłączenia GP542R jego dioda PON powinna zaświecić się na zielono i nie migać – został zarejestrowany w OLT:



Przechodzimy do ustawienia parametrów pracy GP542R z poziomu OLT klikając w przycisk Config. Konfigurujemy parametry Tcont:



## Konfigurujemy Gemport:



ONU List | ONU Status | ONU Optical Info | ONU Version Info | ONU Manual Add | ONU Whitelist | ONU Stat

Tcont | Gemport | Service | Service Port | PortVlan | Multicast | Port | Iphost | IGMP | WAN | DHCP Se

**ONU Gemport Info (PON:1 ONU:1)**

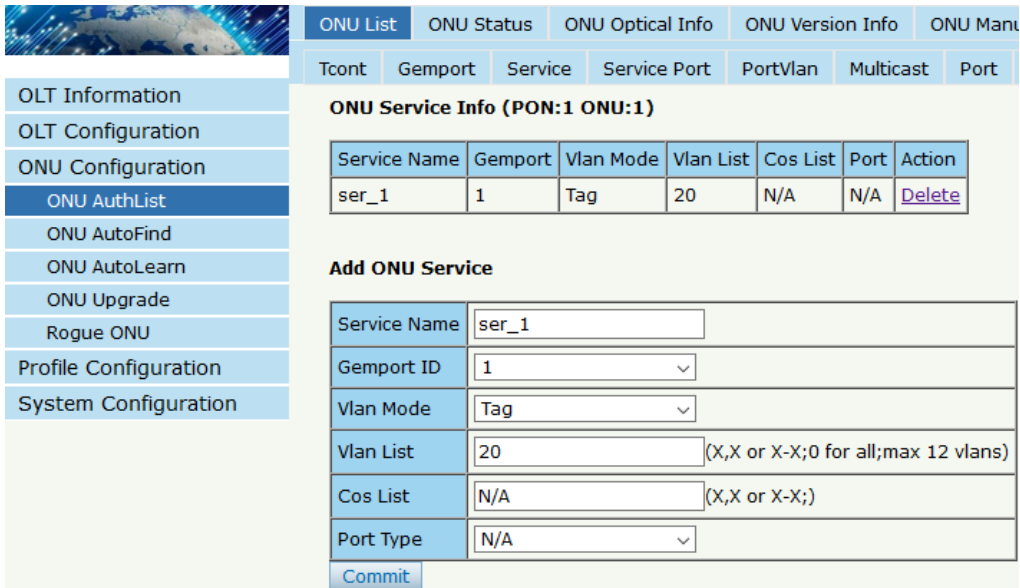
Gemport ID	Name	Tcont	Cos	Upstream	Downstream	State	UpQueueMapId	DownQueueMapId	Action
1	1	1	0	default	default	Enable	N/A	N/A	<a href="#">Delete</a>

**Add ONU Gemport**

Gemport ID	1
TcontID	1
Gemport Name	1
Cos	0 (0-7)
Upstream Traffic	default
Downstream Traffic	default
UpQueueMapId	N/A (0-3)
DownQueueMapId	N/A (0-7)
State	Enable

[Commit](#)

## Konfigurujemy Service:



ONU List | ONU Status | ONU Optical Info | ONU Version Info | ONU Manu

Tcont | Gemport | Service | Service Port | PortVlan | Multicast | Port

**ONU Service Info (PON:1 ONU:1)**

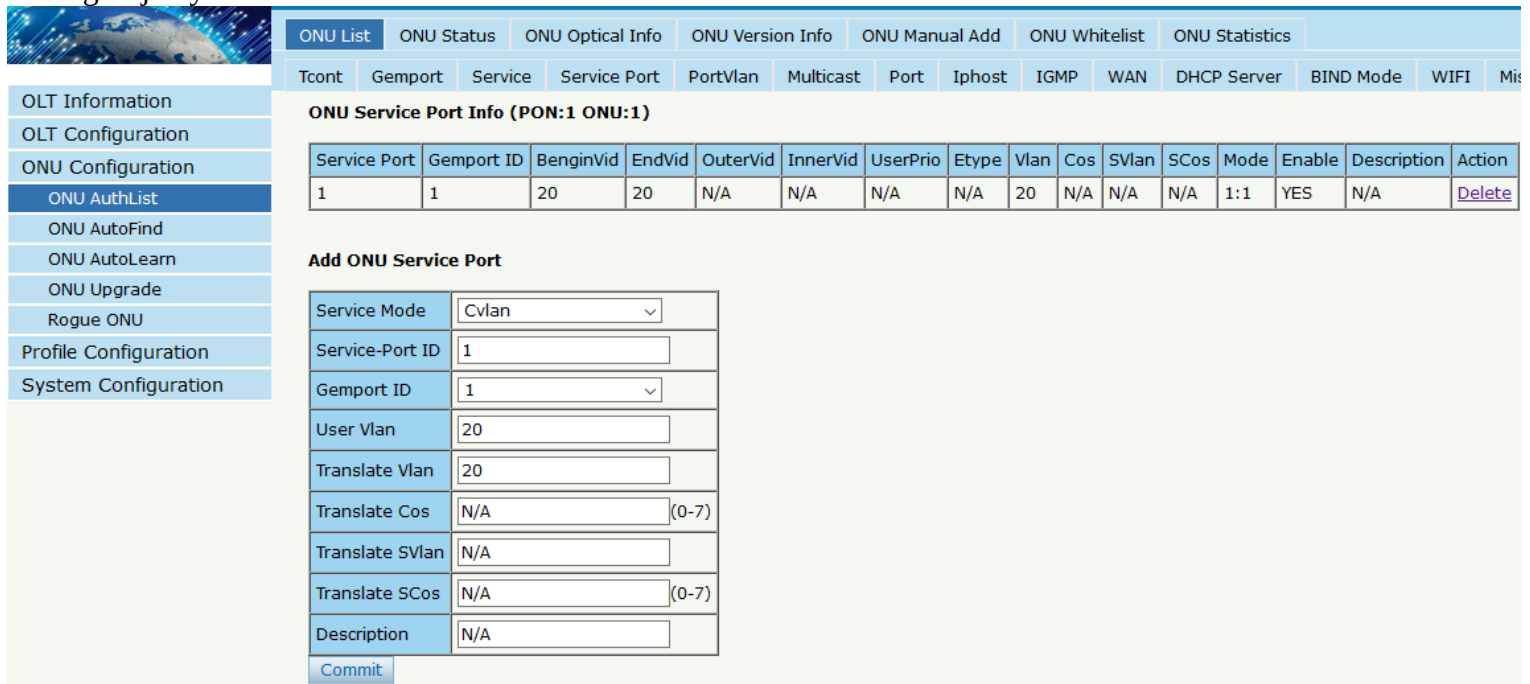
Service Name	Gemport	Vlan Mode	Vlan List	Cos List	Port	Action
ser_1	1	Tag	20	N/A	N/A	<a href="#">Delete</a>

**Add ONU Service**

Service Name	ser_1
Gemport ID	1
Vlan Mode	Tag
Vlan List	20 (X,X or X-X;0 for all;max 12 vlans)
Cos List	N/A (X,X or X-X;)
Port Type	N/A

[Commit](#)

## Konfigurujemy Service Port:



ONU List | ONU Status | ONU Optical Info | ONU Version Info | ONU Manual Add | ONU Whitelist | ONU Statistics

Tcont | Gemport | Service | Service Port | PortVlan | Multicast | Port | Iphost | IGMP | WAN | DHCP Server | BIND Mode | WIFI | Mis

**ONU Service Port Info (PON:1 ONU:1)**

Service Port	Gemport ID	BenginVid	EndVid	OuterVid	InnerVid	UserPrio	Etype	Vlan	Cos	SVlan	SCos	Mode	Enable	Description	Action
1	1	20	20	N/A	N/A	N/A	N/A	20	N/A	N/A	N/A	1:1	YES	N/A	<a href="#">Delete</a>

**Add ONU Service Port**

Service Mode	Cvlan
Service-Port ID	1
Gemport ID	1
User Vlan	20
Translate Vlan	20
Translate Cos	N/A (0-7)
Translate SVlan	N/A
Translate SCos	N/A (0-7)
Description	N/A

[Commit](#)

6. Konfigurujemy profil WAN dla GP542R. Aby to zrobić podłączamy się pod dowolny port LAN w GP542R i w przeglądarce logujemy się na 192.168.1.1.  
 W dniu pisania tego artykułu GP542R nie wspiera konfiguracji WAN z poziomu OLT, taka funkcjonalność może pojawić się w przyszłości.

The screenshot shows the WAN Configuration page with the following settings:

- Connectin Name: Add New Wan
- Mode: Route
- IP Version: IPv4
- DHCP:  Get address via ISP
- Static:  Get static address via ISP
- PPPoE:  Use PPPoE
- Enable NAT:
- Enable Vlan:
- Vlan ID: 20
- 802.1p: 0
- MTU: 1500
- Request DNS:  Enable
- Primary DNS: (empty)
- Secondary DNS: (empty)
- Default Gateway:
- Service Mode: TR069\_INTERNET
- Disable LAN DHCP:
- Binding Port:
  - Port\_1
  - Port\_2
  - Port\_3
  - Port\_4
  - Wireless(SSID1-5G)
  - Wireless(SSID5-2.4G)

Note: WAN connection doesn't share bind ports, the last bind action would override previous bind settings.

When binding port in bridge WAN and service mode is Other, PC connected to this binded port will not get DHCP IP address so avoid binding all LAN ports to this Bridge WAN.

Buttons: Apply, Delete

W sekcji Status → WAN Info możemy sprawdzić czy urządzenie połączyło się z serwerem DHCP:

The screenshot shows the Status page with the following information:

**WAN Status**

Service Interface	VLAN ID	Protocol	IGMP	State	IP Address	Subnet Mask	MAC Address
1_TR069_INTERNET_R_VID_20	20	IPoE	Enabled	up	192.168.30.254	255.255.255.0	78:88:8a:06:21:0f

**Network Info**

Service Interface	Default Gateway	PrimaryDNS	SecondaryDNS
1_TR069_INTERNET_R_VID_20	192.168.30.1		

The screenshot shows the DHCP Server interface with the following active lease:

Address	MAC Address	Client ID	Server	Active Address	Active MAC Address	Active Hos...
192.168.30.254	78:88:8A:06:21:0F	1:78:88:8a:6:21f	dhcp1	192.168.30.254	78:88:8A:06:21:0F	RTK_GW

1 item

# Konfiguracja dla PPPoE:

Status
Network
Security
Application
Management
Diagnostics
Help

Network
Internet
Bind Settings
LAN
5G
2.4G
TR069
QoS
Time
Route

Internet

### WAN Configuration

NAT Config

Connectin Name:	<input type="text" value="1_TR069_INTERNET_"/>
Mode:	<input type="text" value="Route"/>
IP Version:	<input type="text" value="IPv4"/>
DHCP	<input type="radio"/> Get address via ISP
Static	<input type="radio"/> Get static address via ISP
PPPoE	<input checked="" type="radio"/> Use PPPoE
Enable NAT:	<input checked="" type="checkbox"/>
Enable Vlan:	<input checked="" type="checkbox"/>
Vlan ID:	<input type="text" value="20"/>
802.1p:	<input type="text" value="0"/>
MTU:	<input type="text" value="1492"/>
Username:	<input type="text" value="test"/>
Password:	<input type="password" value="••••"/>
Service-Name:	<input type="text"/>
PPP type	<input type="text" value="Continuous"/>
Service Mode:	<input type="text" value="TR069_INTERNET"/>
Disable LAN DHCP:	<input type="checkbox"/>
Binding Port:	
<input checked="" type="checkbox"/> Port_1	<input type="checkbox"/> Port_2
<input type="checkbox"/> Port_3	<input type="checkbox"/> Port_4
<input checked="" type="checkbox"/> Wireless(SSID1-5G)	
<input checked="" type="checkbox"/> Wireless(SSID5-2.4G)	

Note: WAN connection doesn't share bind ports, the last bind action would override previous bind settings.

When binding port in bridge WAN and service mode is Other, PC connected to this binded port will not get DHCP IP address so avoid binding all LAN ports to this Bridge WAN.

Apply
Delete

Web for Mobile

W sekcji Status → WAN Info możemy sprawdzić czy urządzenie połączyło się z serwerem PPPoE:

Status
Status
Network
Security
Application
Management
Diagnostics
Help

Device Info
WAN Info
User Info
Remote Manage Info

IPv4 Info

### WAN Status

Service Interface	VLAN ID	Protocol	IGMP	State	IP Address	Subnet Mask	MAC Address
1_TR069_INTERNET_R_VID_20	20	PPPoE	Enabled	up	192.168.112.254	255.255.255.255	78:88:8a:06:21:0f

IPv6 Info

### Network Info

Service Interface	Default Gateway	PrimaryDNS	SecondaryDNS
1_TR069_INTERNET_R_VID_20	192.168.112.1	8.8.8.8	10.10.10.128

PPP							
Interface	PPPoE Servers	Secrets	Profiles	Active Connections	L2TP Secrets		
<div style="display: flex; align-items: center; gap: 10px;"> <span>[-]</span> <span>[Y]</span> </div>							
Name	Service	Caller ID	Encoding	Address	Uptime		
L test	pppoe	78:88:8A:06:21:0F		192.168.112.254	00:00:43		
1 item							