Uplink GP542R + Uplink OLT GP8862

Do poprawnej pracy nasze urządzenia potrzebują użycia VLAN. Jako urządzenie źródłowe został zastosowany Mikroitk 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-sfpplus1 i przypisujemy mu adres IP:

🕓 ad	lmin@192.168.12	5.182 (Mil	kroTik	c) - WinB	ox (6	4bit) v6.4	5.9 on RB40	11iGS+ (arm)											_	[×
Sessio	n Settings Da	shboard																				
6	Safe Mode	Session	: 192.	168.125.1	182																	
1	Quick Set	Interfac	na Liet																			
Ĵ	CAPsMAN	intende			. (-								
Jun	I Interfaces	Interfa	ace	Interface	List	Ethernet	EoIP Tunn	el IP Tunnel	GRE Tu	nnel V	LAN VRRF	B	Bonding L1	E								
Ĵ	Wireless	+ -	-	🖌 🗙	1	1 7	Detect Inter	net													Find	
50 A	Bridge		Vame		Δ.Τ	[vpe		Actual MTU	L2 MTU	Tx			Rx		Tx Pack	(et (p/s)	R	x Packet (p/s)	FP 1	Γx		-
e i	PPP		> ethe	er1	E	themet		1500	1592	2	0	bps		0 bps		• •	0		0		01	bps
	Switch	R 🔹	> ethe	er2	E	themet		1500	1592	2	117.9 k	bps		5.2 kbps			11		7		4.9 kł	bps
°te	Mesh		 ethe 	er3 er4	E	themet		1500	1592	2	0	bps bpe		0 bps			0		0		01	ops
255	IP 1		 ethe 	er5	Ē	themet		1500) 1592	2	0	bps		0 bps			0		0		01	bps
	MPLS		> ethe	er6	E	Ethernet		1500	1592	2	0	bps		0 bps			0		0		01	bps
	Bouting	•	> ethe	er7	E	themet		1500	1592	2	0	bps		0 bps			0		0		01	bps
422	Suntom	•	 ethe 	er8 9		themet		1500	1592	2	0	bns	- (() bos			0		0			<u></u>
	Ousues		 ethe 	er10	E	Ethernet		1500) 1592	2	0		errace <vian< td=""><td>20></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>읙</td></vian<>	20>								읙
	Queues	R 🔹	⇒sfp-	sfpplus 1	E	Ethernet		1500	1600)	0	e G	General Lo	op Protect	Status	Traffic					OK	
	Files	R	্ 🚸 ।	vlan20	V	/LAN		1500) 1596	5	0	Ł	Name	vlan20							`ancel	Ξl
	Log	DR	<	3-8 <pppo< td=""><td>e P</td><td>PPoE Ser</td><td>rver Binding</td><td>1492</td><td>2</td><td></td><td>0</td><td>L .</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>=1</td><td></td><td>ancer</td><td>- 8</td></pppo<>	e P	PPoE Ser	rver Binding	1492	2		0	L .	-						=1		ancer	- 8
2	RADIUS	•											lype	VLAN						1	Apply	
×	Tools N	13 item	ns (1 se	elected)									MTU	1500						Г	Vienhle	٦U
	New Terminal		_							_			Actual MTU	1500							lisable	41
<}	Dot1X									×			12 MTU	1596						Co	omment	
	Partition			+ -	*	×] 7		Find					00.55.21.0	04.00					1	Сору	11
	Make Supout.rif			Addr			Network	Interfac				L **	IAC Address	00.33.31.0	00.04.00							ΞL
0	Manual			+ 19 中 19	92.16	8.30.1/	192.168.30.	0 vlan20	5	•			ARP	enabled					₹		emove	41
	New WinBox			D 🕂 1	92.16	8.112.1	192.168.112	2.254 <pppoe< td=""><td>test></td><td></td><td></td><td>A</td><td>RP Timeout</td><td>:</td><td></td><td></td><td></td><td></td><td>•</td><td></td><td>Torch</td><td></td></pppoe<>	test>			A	RP Timeout	:					•		Torch	
	Exit			0 🖓 1	92.16	8.125.1	192.168.12	5.0 ether2				L, "	VLAN ID	20								1
							Address <1	92.168.30.1/2	4>			×	Interface	efo-efoolus	.1				ī			1
							Address:	192.168.30.1/	/24		OK	٦L	intenace	sip-sippius								1
							Network	192 168 30 0						Use Se	rvice lag)						1
							Notwork.	132.100.30.0		<u> </u>	Cancel											1
Ň							Interface:	vlan20		•	Apply											
nB											Disable											
N.											Disable											1
S											Comment											
õ											Сору] n	abled		runni	ing		slav	'e			-1
Ite				-							Remove											
of				3 items (1	selec	ted)	onabled					-										
R							enabled															

2. Ustawiamy serwer DHCP na interfejsie vlan20 używając przycisku DHCP Setup (wersja dla PPPoE pkt	3):	
Sadmin@192.168.125.182 (MikroTik) - WinBox (64bit) v6.45.9 on RB4011iGS+ (arm)		×
Session Settings Dashboard		
Safe Mode Session: 192.168.125.182		
CAPSMAN Marcla Marcla CAPSMAN Marcla Marcla Marcla Marcla Marcla Marcla CAPSMAN Marcla Marcla	Find	
DHCP Setup DHCP Setup DHCP Setup DHCP Setup		
Select network for DHCP addresses Select gateway for given network Select pool of ip addresses given out by DHCP server Select DNS servers		
DHCP Address Space: 192.168.30.0/24 Gateway for DHCP Network: 192.168.30.1 Addresses to Give Out: 192.168.30.2-192.168.30.254 DNS Servers: 8.8.8 10.10.10.128 10.10.10.128 10.10.10.128 10.10.10.128 10.10.10.128] ≑ ≑	
Back Next Cancel Back Next Cancel	ancel	

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

Sadmin@192.168.12	.182 (MikroTik) - WinBox (64bit) v6.45.9 on RB4011iGS+ (arm)		- 🗆 ×
Session Settings Da	hboard		
Safe Mode	Session: 192.168.125.182		
🔏 Quick Set	PPP		
CAPsMAN	Interface PPPoF Servers Secrets Profiles Active Connections 12TP Secret		
Interfaces	Interiace This Servers Secrets Fromes Active Connections E21F Secrets	S	
🗊 Wireless			Find
Bridge	Service A Interface Max MTU Max MRU MRRU Default Profile Au	thentication	
PPP		спарт пізспар	
Switch			
255 ID N	l item (1 selected)		
	IP Pool		
Routing	Pools Used Addresses		PPP Profile <test-profil></test-profil>
∰ System ►			General Protocols Limits Queue Scripts OK
🙊 Queues	Name / Addresses Next Pool		Name: test-profil
Files	+tance / tanceses / text + te		
E Log	☆ pppoe_pool 192.168.112.2-192.168.112.254 none		
A RADIUS	Disease (Lastante D		Comment
X Tools	2 fems () selected)	PPP Secret <test></test>	Bridge: Copy
New Terminal		Name: test OK	Bridge Port Priority:
	Service Name: service1 OK	Password: test	Bridge Path Cost:
Make Supout if	Interface: vlan20 Cancel	Service: pppoe	Bridge Horizon:
Manual	Max MTU: 1492 Apply	Caller ID:	Incoming Filter:
New WinBox	Max MRU: 1492	Profile: test-profil	Outgoing Filter:
📕 Exit	MRRU: 1600	Comment	
	Keepalive Timeout: 10	Local Address:	
Xo	Default Profile: test-profil Test Remove	Remote Address:	
nB	One Session Per Host	Routes:	DNS Server:
Mi	Max Sessions:		WINS Server:
S	PADO Delay: 📉 🔻 ms		- Change TCP MSS
ar o	Authentication: 🗸 mschap2 📝 mschap1		C no C yes 🕫 default
ute	✓ chap ✓ pap	Last Logged Out:	- Use UPnP
Ro	enabled	enabled	Cino Ciyes 🤆 default
		P	

4. Przechodzimy do konfiguracji OLT. Podpinamy naszego GP8862 do portu AUX i do logowania używamy danych z naklejki znajduącej się na urządzeniu (domyślnie 192.168.8.200 admin / Xpon@Olt9417#). Po zalogowaniu przechodzimy do konfiguracji VLAN. Dodajemy VLAN 20:

	VLAN VL	AN Port Q	inQ/T	ranslation	P2P	
	New VLA	N				
OLT Information			20			(1-4094)
OLT Configuration	Descriptio	n	vla	n20	(14054)	
VLAN	D Coorip in					
Uplink Port	VLAN Tal	ble				
PON						
MAC	VLAN ID	Description	Edit	Delete		
LACP	1	default	2			
QoS	20	vlan20	2			
ACL		1				

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

	VLAN VLA	AN Port	Qin	Q/Translatio	on P2P	
	Port VLAN	l Configura	atio	n		
OLT Information	VLAN ID	1	1		~	
OLT Configuration	Port ID	Mode		Forbidden	Tag	Untag
VLAN	GE1	Hybrid	~ •		0	0
Uplink Port	GE2	Hybrid	$\overline{}$	•	0	0
PON	GE3	Hybrid			0	0
MAC	GE4	Hybrid				
LACP		Livbrid				
QoS	GES	Hybrid	4	•	0	0
ACL	GE6	Hybrid		۲	0	0
IPv6 ACL	GE7	Hybrid	~	۲	0	0
IGMP	GE8	Hybrid	\sim	۲	0	0
IPv6 MLD	GE9	Hybrid	<	۲	0	0
STP	GE10	Hybrid	\sim	۲	0	0
Loopback	GE11	Hybrid	\sim	۲	0	0
DHCP	GE12	Hybrid	\sim		0	0
DHCPv6	GE13	Hybrid	$\overline{}$	۲	0	0
IPv6 SLAAC	GE14	Hybrid			0	
IP Route	GE15	Hybrid				
IPv6 Route	0015	Hybrid	兽		0	0
ONU Configuration	GE16	Hybrid			0	0
Profile Configuration				Submit	Reset	
System Configuration	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):

hit is a second of the	VLAN	VLAN VLAN		Qin	Q/Translatio	on I	P2P	
	Port	VLAN	l Configui	ratio	n			
OLT Information	νι αν	ID	Г	20				
OLT Configuration	Port	t ID	Mode	20	Forbidden	Та		Untag
VLAN	GE	1	Hybrid	~		0)	0
Uplink Port	GE	2	Hybrid	~			<u> </u>	0
PON	G		Hybrid	~			<u></u>	
MAC	G	= 4	Hybrid				<u>,</u>	0
LACP			Hybrid			0	,	0
QoS	GE	:5	Hybrid	~	۲	C)	0
ACL	GE	56	Hybrid	~	۲	C)	0
IPv6 ACL	GE	-7	Hybrid	\sim	0	۲)	0
IGMP	GE	8	Hybrid	\sim	۲	С		0
IPv6 MLD	GE	59	Hybrid	\sim	۲	С)	0
STP	GE	10	Hybrid	\sim	۲	C)	0
Loopback	GE	11	Hybrid	~		C)	0
DHCP	GE	12	Hybrid	~		0)	0
DHCPv6	GE	13	Hybrid	~			<u> </u>	0
IPv6 SLAAC	GE	14	Hybrid	-				
IP Route		15	Hybrid				<u>,</u>	
IPv6 Route	GE	15	Hybrid		•	0)	0
ONU Configuration	GE	16	Hybrid	~		C		0
Profile Configuration					Submit	Reset		
System Configuration	Port	VLAN	Table					
	VLAN	ID	Tag Ports	Un	tag Ports			
	1							
	20		GE7					

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

a hite	VLAN IP	ARP Proxy	Static Route									
	VLAN IP Configuration											
OLT Information			20									
OLT Configuration		SS	192,168,30,2									
VLAN	Subnet N	4ask	255.255.255.0									
Uplink Port			Submit Re	set								
PON	VLAN IP	Table										
MAC			Cube at Marale	Dalata								
LACP	VLAN ID	IP Address	Subnet Mask	Delete								
QoS	20	192.168.30.2	255.255.255.	이 🔟								
ACL												
IPv6 ACL												
IGMP												
IPv6 MLD												
STP												
Loopback												
DHCP												
DHCPv6												
IPv6 SLAAC												
IP Route												
IPv6 Route												

Puszczamy ping na przypisany adres aby sprawdzić czy VLAN działa:

	0 100 100 105 100	
Safe Mode	Session: 192.168.123.182	
🔏 Quick Set	Teminal	
CAPsMAN	MMM MMMM MMM III KKK KKK RRBRR 000000 TTT III KKK KKK	
Interfaces	MMM MM MMM III KKKKK RRR RRR 000 000 TTT III KKKKK	
Wireless	MMM MMM III KKK KKK RRRRR 000 000 TTT III KKK KKK	
🕌 🖁 Bridge	MMM MMM III KKK KKK RRR RRR 000000 TTT III KKK KKK	
🚅 PPP	MikroTik RouterOS 6.45.9 (c) 1999-2020 http://www.mikrotik.com/	
🛫 Switch		
°t¦8 Mesh	[?] Gives the list of available commands	
255 IP 🗈 🗈	Command [1] Orves help on the command and 1150 of arguments	
🧷 MPLS 🗈 🗈	[Tab] Completes the command/word. If the input is ambiguous,	
😹 Routing 🛛 🗅	a second [Tab] gives possible options	
🌐 System 🗈	/ Move up to base level	
Queues	Move up one level	
Files	/command Use command at the base level	
E Log	SEO HOST SIZE TTL TIME STATUS	
🧟 RADIUS	0 192.168.30.2 56 64 0ms	
🖌 📉 Tools	1 192.168.30.2 56 64 0ms	
New Terminal	3 192.168.30.2 56 64 0ms	
Dot1X	4 192.168.30.2 56 64 Oms	
🟓 Partition	5 192.168.30.2 56 64 0ms	
	56 64 0ms	
Make Supout.nf		
Make Supout.nf	8 192.168.30.2 56 64 Oms	

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

line and the	DBA Profiles Add	l Profile
	Add Profile	
OLT Information		-
OLT Configuration	Profile ID	10
ONU Configuration	Profile Type	Type_3 v
Profile Configuration	Profile Name	dba_1G
ONU Profile	Assured(Kbps)	8192
DBA Profile	noodi cu(nopoy	0152
Traffic Profile	Maximum(Kbps)	1024000
Line Profile	Commit	

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:

a hite	ONU List	ONU Statu	s ONU Opt	ical Info	ONU	Versior	n Info 🛛 ON	NU Manua	al Add	ONU Whitelis	st ONU S	Statistics		
	ONU Aut	hentication	Info											
OLT Information	Port ID	PON	1	~										
OLT Configuration			-	-										
ONU Configuration	Search M	ode All		~		_								
ONU AuthList	Search In	ro pt 1/1			Search	1								
ONU AutoFind		1/1												
ONU AutoLearn	Delete A	All Delete	Offline Ref	resh										
ONU Upgrade	ONU ID	Status	Descriptions	Model	Profile	Mode	Info	Ac	tion					
Rogue ONU	GPON0/1	1:1 Online	GPON0/1:1	V524	default	Sn	GPON0006	52106 <u>Co</u>	onfig	Deactivate Del	ete <u>Modify</u>	Optical In	fo Detail Inf	o <u>Reboot</u>
Profile Configuration														
System Configuration														

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

	ONU	J List	ONU S	tatus	ON	U Optical	Info	
	Tcor	nt G	emport	Serv	ice	Service	Port	I
OLT Information	0		nt Info	(PON:1		U:1)		
OLT Configuration	_							
ONU Configuration	Тс	ont ID	Name	DBA PI	rofile	Action		
ONU AuthList	1		1	dba_1	dba_1G			
ONU AutoFind								
ONU AutoLearn	Ad	d ONU	Tcont					
ONU Upgrade								_
Rogue ONU	Тс	ont ID		1				
Profile Configuration	Тс	ont Na	me	1				
System Configuration	D	BA Prof	ile Nam	e dba	_1G		~]
	C	ommit						_

Konfigurujemy Gemport:

	ONU List O	NU Stat	us O	NU O	ptical Info	ONU Versi	on Info	ONU Mar	nual Add	ONU W	hitelist	ONU Stat
	Tcont Gemp	oort 9	Service	Se	ervice Port	PortVlan	Multicast	t Port	Iphost	IGMP	WAN	DHCP Se
OLT Information	ONU Gempo	rt Info	(PON:		U:1)							
OLT Configuration	-		-		-		_					
ONU Configuration	Gemport ID	Name	Tcont	Cos	Upstream	Downstrea	m State	UpQueu	ieMapId	DownQue	eueMapId	Action
ONU AuthList	1	1	1	0	default	default	Enable	N/A		N/A		<u>Delete</u>
ONU AutoFind												
ONU AutoLearn	Add ONU Ge	mport										
ONU Upgrade												
Rogue ONU	Gemport ID		1									
Profile Configuration	TcontID		1			~						
System Configuration	Gemport Na	me	1									
	Cos		0			(0-7)						
	Upstream Tr	affic	defau	ult		~						
	Downstream	n Traffic	defau	ult		~						
	UpQueueMa	apId	N/A			(0-3)						
	DownQueue	eMapId	N/A			(0-7)						
	State		Enab	le		~						
	Commit											

Konfigurujemy Service:

		NU List	Status C		IU Optica	l Info	ONU Versi	on Info	0	ONU Manı					
	Tcont Gempor			t Servio	Service		Port	PortVlan	Multicast		Port				
OLT Information	C)NU Se	rvice I	nfo (PON	:10	ONU:1)									
OLT Configuration															
ONU Configuration	1	Service Name		Gemport	Vla	an Mode	Vlan Lis	t Cos List	Port	Action	ו				
ONU AuthList		ser_1		1	Та	g	20	N/A	N/A	Delet	e				
ONU AutoFind															
ONU AutoLearn	A	dd ON	U Serv	ice											
ONU Upgrade	Г														
Rogue ONU	1	Service	Name	ser_1											
Profile Configuration	•	Gempo	rt ID												
System Configuration	•	Vlan Mo	ode	Tag v											
	•	Vlan Lis	st	20			(X,X	or X-X;0 fo	or all;n	iax 12	vlans)				

N/A

N/A

(X,X or X-X;)

v

Cos List

Port Type

Commit

Konfigurujemy Service Port:

and it is a second second	ONU List ON	J Status	ONU Optical	Info	ONU Versio	on Info	ONU Manu	ual Add	ON	U Whi	itelist	ONU	Statistic	s			
	Tcont Gempo	rt Service	Service	Port I	PortVlan	Multicast	Port	Iphost	IG	MP	WAN	DHC	9 Serve	BIN	D Mode	WIFI	Mis
OLT Information	ONU Service	Port Info (P	ON:1 ONU:	:1)													
OLT Configuration				-													
ONU Configuration	Service Port	Gemport ID	BenginVid	EndVid	OuterVid	InnerVid	UserPrio	Etype	Vlan	Cos	SVlan	SCos	Mode	Enable	Descripti	on Acti	ion
ONU AuthList	1	1	20	20	N/A	N/A	N/A	N/A	20	N/A	N/A	N/A	1:1	YES	N/A	Del	ete
ONU AutoFind																	
ONU AutoLearn	Add ONU Serv	vice Port															
ONU Upgrade					_												
Rogue ONU	Service Mode	Cvlan		~	_												
Profile Configuration	Service-Port I	D 1															
System Configuration	Gemport ID	1		~													
	User Vlan	20															
	Translate Vlar	n 20															
	Translate Cos	N/A		(0-	-7)												
	Translate SVIa	an N/A															
	Translate SCo	s 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.

W sekcji

S

Konfiguracja dla PPPoE:

Network	Status	Networ	k	Sec	urity	Арр	ication	Mar	agement	Diagnostics	Help				
	Internet Bin	d Settings	LAN	5G	2.4G	TR069	QoS	Time	Route						
Internet	WAN Confi	iguration													
NAT Config	Connectin Na	ame:	1_TR069	9_INTER	NET_ ~										
NATCOMIG	Mode:	[Route		~										
	IP Version:	[IPv4		~										
	DHCP	() Get add	dress via	ISP										
	Static	(O Get static address via ISP												
	PPPoE	(Use PPPoE												
	Enable NAT:	E													
	Enable Vlan:	[Z												
	Vlan ID:		20												
	802.1p:		0		~										
	MTU:		1492												
	Username:	[test												
	Password:	[••••												
	Service-Nam	ie:													
	PPP type	[Continuo	ous	\sim										
	Service Mod	e:	TR069_I	INTERN	T V										
	Disable LAN	DHCP: [
	Binding Port	:													
	Port_1	[Port_2												
	Port_3	[Port_4												
	Wireless((SSID1-5G)													
	∠ wireless((33ID9-2.4G)													
	Note: WAN con	nection doesn't sh	are bind p	ports, the	last bind	action would	override pre	evious bin	d settings.						
	When binding ports to this Bri	port in bridge WAN idge WAN.	and servi	ice mode	e is Other,	PC connecte	d to this bin	ded port w	rill not get DHCP	IP address so avoid bind	ing all LAN				
Web for Mobile	Apply	Delete													

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

Status	Status	Network	Security		Application		Managem	ent Diagn	ostics	Help	
otatas	Device Info	WAN Info User In	fo Rei	note Ma	nage Inf	0					
IPv4 Info	WAN Statu	S									
	Se	Service Interface			IGMP	State	IP Address	Subnet Mas	k MAC	MAC Address	
IPv6 Info	1_TR069_	INTERNET_R_VID_20	20	PPP ₀ E	Enabled	up	192.168.112.254	255.255.255.2	255 78:88	:8a:06:21:0f	
CPON Info	Network In	fo									
or on mo		Service Interface			Defa	ult Gatew	<i>r</i> ay Pri	maryDNS	Seconda	aryDNS	
		1_TR069_INTERNET_R_VID_20					.1	8.8.8		10.10.10.128	

P	PP												
	Interface	PPP	PoE Servers Secrets Profiles		Active Conr	nections	L2TP Secrets						
	- 7												
	Name	Δ.	Service	Caller ID		Encoding	Address		Uptime				
L	🤗 test		рррое	78:88:8A:0	3:21:0F		192.168	.112.254	00:00:43				
1	item												