Mikrotik 2

written by archi | 15 maja 2022

Mikrotik - tworzenie routingu statycznego pomiędzy sieciami

Celem laboratorium jest skonfigurowanie połączenia dwóch sieci LAN z wykorzystaniem warstwy 3 modelu ISO/OSI (L3). Rysunek poniżej przedstawia konfigurację bazową routerów. Oba skonfigurowane są identycznie. Twoim zadaniem jest zmiana konfiguracji urządzeń tak, aby zapewnić możliwość dostępu z sieci LAN1 i LAN2 do sieci Internet oraz zapewnić komunikację pomiędzy sieciami LAN1 i LAN2.

Rozpocznij od konfigurowania routera R2.

 Przypnij gniazdo z portu 3 (krosownica) swojego stanowiska do własnego switcha prywatnego, a następnie przypnij kolejny port switch prywatnego do routera Mikrotika **R2** do portu 2 (Ether2).

2. Po wykonaniu połączenia (krosowania) uruchom aplikację "WinBox" i znajdziesz router R2. Możesz połączyć się z nim klikając na adres MAC i podając właściwy login i hasło.

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3. Dodaj nowy Bridge bridge1, a następnie dodaj do niego porty Ether3 i Ether4.

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4. Ustaw adres IP dla bridge1 192.168.2.1/24

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5. Ustaw adres IP 192.168.20.10/30 dla portu sfp-sfpplus1+

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- 6. W sekcji "/ip route" dodajemy domyślny gateway
- /ip route
- add gateway=192.168.20.9

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7. Skonfiguruj serwer DHCP na interfejsie brigde1 – użyj przycisku "DHCP Setup" (IP / DHCP). Uwaga, podczas konfiguracji DHCP w kreatorze wpisz serwer DNS 8.8.8.8.

8. Dodaj domyślny routing dla klientów serwera DHCP i ustaw go na Gateway 192.168.20.9

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Następnie musisz zmienić ustawienia na routerze R1 (uruchom drugi raz program WinBox i połącz się z R1)

9. Podepnij kolejny port prywatnego switcha do routera R1 na port 2 (ether2)

10. Połącz port Ether1 na Mikrotiku R1 do Internetu (switch 48-portowy).

a) Skonfiguruj DHCP_Client na porcie Ether1 aby uzyskać adres IP od dostawcy Internetu

/ip/dhcp-client add interface=ether1

11. Dodaj Bridge bridge1 i dodaj porty Ether3 i Ether4 do bridge1

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12. Dodaj adres IP dla bridge1 10.0.101.1/24

13. Dodaj adres IP dla portu sfp-sfpplus1 192.168.20.9/30

ю	Cafe Mode	Session: 2C:C8:1B:05:2A:4F
	🚀 Quick Set	
	CAPsMAN	
	器 User Manager	
	Interfaces	
	Wireless	
	😝 WireGuard	
	😝 ZeroTier	
	👯 Bridge	Address Antwork Interface
	🛓 PPP	+ 10.0.100.142/24 10.0.100.0 ether1
	🙄 Switch	+ 192.168.20.9/30 192.168.20.8 sfp-sfpplus 1
	°T <mark>°</mark> Mesh	
	🐺 IP 🛛 🗅	Address <192.168.20.9/30>
	MPLS ▷	Address: 192.168.20.9/30 OK
	🖞 IPv6 🛛 🗈	Network: 192.168.20.8
	🔀 Routing 🗈	Interface: sfp-sfpplus 1
	🔯 System 🗈	Apply
	🙅 Queues	Disable
	Files	Comment
	🚊 Log	
	RADIUS	Сору
	🔀 Tools 🛛 🗅	Remove
	New Terminal	enabled
	TR069	
X	🚥 LoRa	
2	🖳 🔽 🔰	

14. Skonfiguruj serwer DHCP na bridge1

15. Kolejnym krokiem jest ustawienie routingu do klasy 192.168.2.0/24 poprzez dodanie odpowiedniego wpisu w routingu:

/ip route
add dst-address=192.168.2.0/24 gateway=192.168.20.10



16. Po zakończeniu wszystkich konfiguracji możesz przyłączyć przewód światłowodowy (pamiętaj o właściwym przyłączeniu nadajnika i odbiornika – przewód krosowy musi być skrzyżowany tzn. router R1 na porcie światłowodowym ma złącza 1 i 2 tak samo jak router R2. Łączymy złącze 1[R1] do złącza 2[R2] i złącze 2[R1] do złącza 1[R2]).

× Źródło: www.networkacademy.io

17. Sprawdź działanie odpowiednich interfejsów i ich adresację poprzez wykonanie polecenia ping do adresów z konfiguracji tj.: 192.168.20.9, 192.168.20.10 oraz 192.168.2.1

Terminal <1>					
SEQ HOST	SIZE	TTL	TIME	STATUS	•
0 192.168.2.1	56	64	137us		
1 192.168.2.1	56	64	105us		
2 192.168.2.1	56	64	116us		
3 192.168.2.1	56	64	109us		
4 192.168.2.1	56	64	108us		
5 192.168.2.1	56	64	107us		
6 192.168.2.1	56	64	106us		
7 192.168.2.1	56	64	105us		
8 192.168.2.1	56	64	104us		
9 192.168.2.1	56	64	108us		
10 192.168.2.1	56	64	99us		
11 192.168.2.1	56	64	108us		
12 192.168.2.1	56	64	104us		
13 192.168.2.1	56	64	101us		/
<pre>sent=14 received=14 packet-loss=0%</pre>	min-rtt=99us	avg-	-rtt=10	8us max-rtt=137us	
[admin@MikroTik] /ip/route>					
					`

Uruchomienie systemów operacyjnych gościa do testowania skonfigurowanego środowiska

18. Podłącz odpowiednio przewody swojej stacji do routerów R1 i R2. Połącz gniazdo z portu 1 (krosownica) do portu Ether4 routera R1 oraz połącz gniazdo z portu 2 (krosownica) do portu Ether4 routera R2.

19. Przywróć przed użyciem maszyny wirtualne do stanu "**Gotowa**", a następnie zmień ustawienia karty sieciowej w maszynie wirtualnej tak aby Win1 działała z kartą "Karta-Port1", a Win2 działała z kartą "Karta-Port2".



20. Uruchom maszyny wirtualne na swojej lokalnej maszynie dostępne w oprogramowaniu VMware Workstation Pro. Włącz maszyny VM: win-01 i win-02

21. Na konsoli maszyny win-01 uruchom polecenie CMD, a w nim wykonaj ping do routera tej maszyny tj. 10.0.101.1.

22 Następnie sprawdź łączność do drugiej sieci poprzez ping do adresu 192.168.2.1 23. Ustal adres IP każdej z maszyn win-01 (powinien być to adres z klasy 10.0.101.0/24) i win-02 (powinien być to adres z klasy 192.168.2.0/24)

24. Wykonaj ping z maszyny win-01 do maszyny win-02 oraz na odwrót (pamiętaj o wyłączeniu Windows Defender Firewall na obu maszynach).

25. Na maszynie win-01 wykonaj polecenie ping do jakiegoś adresu internetowego np. google.pl. Potem wykonaj to samo z maszyny win-02. Pamiętaj, że na routerze Mikrotik R1 potrzebne jest maskowanie adresów IP prywatnych w Firewall (czyli NAT).

26. Jeżeli ping działa - zgłoś do prowadzącego zajęcia !