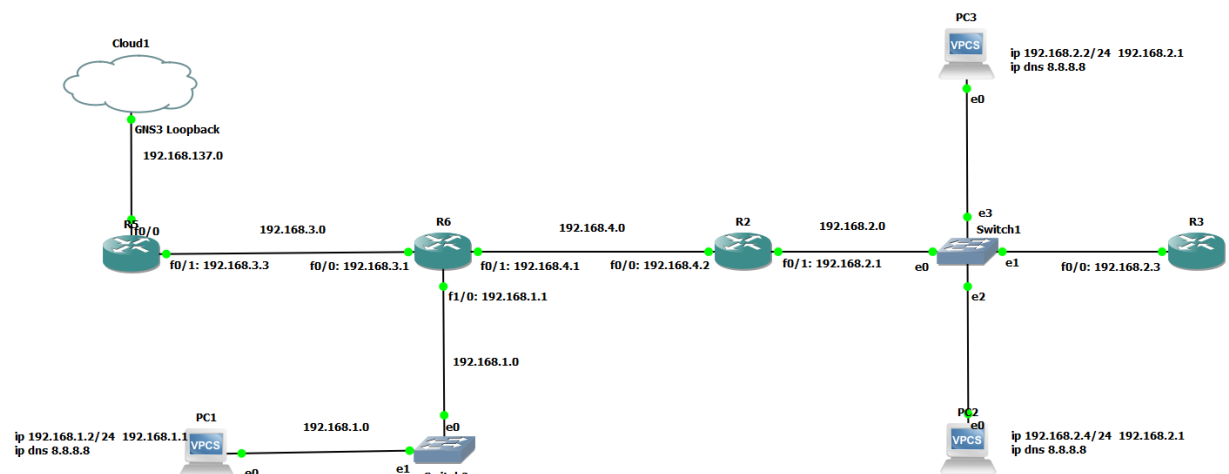Technologie Sieciowe
Lista 4

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W symulatorze GNS3 skonfiguruj wirtualną sieć o podanej topologii, tak aby:
Wirtualna sieć była połączona z zewnętrzną ('fizyczną') siecią 'Cloud'.
Ruter R5 uzyskiwał dynamiczny adres IP z sieci 'Cloud'.
Pozostałe urządzenia posiadały statyczne adresy w swoich sieciach.

Schemat:

Konfiguracje R#:
R5:
conf t
int f0/0
ip address DHCP
ip nat outside
no shut
end

conf t
ip domain-lookup
ip name-server 8.8.8.8
end

conf t
int f0/1
ip add 192.168.3.3 255.255.255.0
ip nat inside
no shut
end

conf t

```
router rip
version 2
no auto-summary
network 192.168.0.0
network 192.168.3.0
default-information originate
end

conf t
access-list 10 permit 192.168.1.0 0.0.254.255
access-list 10 permit 192.168.2.0 0.0.253.255
access-list 10 permit 192.168.3.0 0.0.252.255
access-list 10 permit 192.168.4.0 0.0.251.255

ip nat inside source list 10 interface f0/0 overload
end
write

R6
conf t
int f0/0
no shut
ip add 192.168.3.1 255.255.255.0
end

conf t
ip domain-lookup source-interface f0/0
ip name-server 8.8.8.8
end

conf t
int f1/0
no shut
ip add 192.168.1.1 255.255.255.0
end

conf t
int f0/1
no shut
ip add 192.168.4.1 255.255.255.0
end

conf t
router rip
version 2
no auto-summary
```

```
network 192.168.1.0
network 192.168.4.0
network 192.168.3.0
end
write

R2
conf t
int f0/1
ip add 192.168.2.1 255.255.255.0
no shut
int f0/0
ip add 192.168.4.2 255.255.255.0
no shut
end

conf t
router rip
version 2
no auto-summary
network 192.168.2.0
network 192.168.4.0
end

conf t
ip domain-lookup
ip name-server 8.8.8.8
end
write

R3
conf t
int f0/0
ip add 192.168.2.3 255.255.255.0
no shut
end

conf t
router rip
version 2
no auto-summary
network 192.168.2.0
end

conf t
ip domain-lookup
```

ip name-server 192.168.0.1
end
write

Konfiguracje PC#:
PC1:
ip 192.168.1.2/24 192.168.1.1
ip dns 8.8.8.8
PC2:
ip 192.168.2.4/24 192.168.2.1
ip dns 8.8.8.8
PC3:
ip 192.168.2.2/24 192.168.2.1
ip dns 8.8.8.8

   Możliwe było wysyłanie komunikatów "ping" pomiędzy dowolna parą urządzeń sieci wirtualnej. Ping między PC2(192.168.2.4) oraz PC1(192.168.1.2):

```
PC2> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=62 time=60.814 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=62 time=60.815 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=62 time=61.843 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=62 time=62.561 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=62 time=60.357 ms
```

   Ustaw przechwytywanie komunikatów w sieciach: 192.168.0.0, 192.168.2.0, 192.168.3.0.
Po poleceniu „ping":
192.168.2.0:

20 125.440967	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xa9c3, seq=1/256, ttl=64 (no response fou...
21 127.454159	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xabc3, seq=2/512, ttl=64 (reply in 22)
22 127.516097	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xabc3, seq=2/512, ttl=62 (request in 21)
23 127.862092	c2:03:27:9c:00:01	CDP/VTP/DTP/PAgP/UD…	CDP	352 Device ID: R2 Port ID: FastEthernet0/1
24 129.927083	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xadc3, seq=1/256, ttl=64 (reply in 25)
25 129.987022	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xadc3, seq=1/256, ttl=62 (request in 24)
26 131.016725	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xaec3, seq=2/512, ttl=64 (reply in 27)
27 131.076949	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xaec3, seq=2/512, ttl=62 (request in 26)
28 132.094738	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xb0c3, seq=3/768, ttl=64 (reply in 29)
29 132.155708	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xb0c3, seq=3/768, ttl=62 (request in 28)
30 133.157047	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xb1c3, seq=4/1024, ttl=64 (reply in 31)
31 133.218409	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xb1c3, seq=4/1024, ttl=62 (request in 30)
32 134.223116	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xb2c3, seq=5/1280, ttl=64 (reply in 33)
33 134.282681	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xb2c3, seq=5/1280, ttl=62 (request in 32)

192.168.4.0:

22 100.425469	c2:02:21:0c:00:01	CDP/VTP/DTP/PAgP/UD…	CDP	352 Device ID: R6 Port ID: FastEthernet0/1
23 101.244389	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xa9c3, seq=1/256, ttl=63 (no response fou...
24 103.257098	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xabc3, seq=2/512, ttl=63 (reply in 25)
25 103.287057	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xabc3, seq=2/512, ttl=63 (request in 24)
26 103.649691	c2:03:27:9c:00:00	CDP/VTP/DTP/PAgP/UD…	CDP	352 Device ID: R2 Port ID: FastEthernet0/0
27 105.730300	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xadc3, seq=1/256, ttl=63 (reply in 28)
28 105.759793	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xadc3, seq=1/256, ttl=63 (request in 27)
29 106.820322	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xaec3, seq=2/512, ttl=63 (reply in 30)
30 106.849442	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xaec3, seq=2/512, ttl=63 (request in 29)

192.168.1.0:

17 107.641699	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xb0c3, seq=3/768, ttl=62 (reply in 18)
18 107.641699	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xb0c3, seq=3/768, ttl=64 (request in 17)
19 108.704665	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xb1c3, seq=4/1024, ttl=62 (reply in 20)
20 108.705662	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xb1c3, seq=4/1024, ttl=64 (request in 19)
21 109.768319	192.168.2.4	192.168.1.2	ICMP	98 Echo (ping) request id=0xb2c3, seq=5/1280, ttl=62 (reply in 22)
22 109.768319	192.168.1.2	192.168.2.4	ICMP	98 Echo (ping) reply id=0xb2c3, seq=5/1280, ttl=64 (request in 21)